Exhibit R-2, RDT&E Budget Item Justification: PB 2017 United States Special Operations Command	Date: February 2016
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	228.283	58.656	59.597	54.577	-	54.577	29.451	11.193	12.857	13.101	Continuing	Continuing
S0417: *Underwater Systems*	221.211	48.086	52.328	50.150	-	50.150	25.295	6.527	6.063	6.185	Continuing	Continuing
S1684: *Surface Craft*	7.072	10.570	7.269	4.427	-	4.427	4.156	4.666	6.794	6.916	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for engineering and manufacturing development of Special Operations Forces (SOF) Surface and Undersea Mobility platforms. This program element also provides for pre-acquisition activities to quickly respond to new requirements for SOF surface and undersea mobility, looking at multiple alternatives to include cross-platform technical solutions, service-common solutions, Commercial-Off-The-Shelf technologies, and new development efforts.

The Underwater Systems project provides for engineering and manufacturing development of combat submersibles, SOF operator diving systems, underwater support systems, and underwater equipment. This project also provides for pre-acquisition activities (materiel solutions analysis, advanced component and prototype development) to respond to emergent requirements. These submersibles, equipment, and diving systems are used by SOF in the conduct of infiltration/extraction, personnel/material recovery, hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other missions. The capabilities of the submersible systems, diving systems, and unique equipment provides small, highly trained forces the ability to successfully engage the enemy and conduct clandestine operations associated with SOF maritime missions.

The Surface Craft project provides for engineering and manufacturing development of medium and heavy surface combatant craft, combatant craft mission equipment, and pre-planned product improvement and technology insertion engineering changes to meet the unique requirements of SOF. This project element also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to quickly respond to new requirements for maritime craft and subsystems. The craft capabilities and unique equipment provide small, highly trained forces the ability to successfully engage the enemy and conduct operations associated with SOF maritime missions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 United States Special Operations Command	Date: February 2016
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	56.746	63.597	52.590	-	52.590
Current President's Budget	58.656	59.597	54.577	-	54.577
Total Adjustments	1.910	-4.000	1.987	-	1.987
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.750	-			
• SBIR/STTR Transfer	-1.840	-			
• Other Adjustments	-	-	1.987	-	1.987

Change Summary Explanation

Funding:

FY 2015: Net increase of $ 1.910 million is for a reprogramming of $3.680 million to support engineering and testing for the Shallow Water Combat Submersible, $0.070 million to support the contract award for the Next Generation Combatant Craft Forward Looking Infrared Radar, and a decrease of $ 1.840 million is due to a transfer of funds to Small Business Innovative Research/Small Business Technology Transfer programs.

FY 2016: This program element was reduced due to a Congressional Directed Reduction of ($4.000) million to the Dry Combat Submersible program.

FY 2017: Net Increase of $1.987 million due to revised program strategy for the Combatant Craft Medium of $0.407 million increase, Combatant Craft Assault (previously High Speed Assault Craft) of $0.500 million increase, SOF Combat Diving of $1.490 million increase, and a decrease of ($0.410) million due to a Departmental economic assumption decrease.

Schedule: Due to delay in development and builder's trial of the DCS prototypes, further development and testing efforts were subsequently delayed into FY 2016 and FY 2017.

Technical: None.

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command			Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S0417 / *Underwater Systems*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S0417: *Underwater Systems*	221.211	48.086	52.328	50.150	-	50.150	25.295	6.527	6.063	6.185	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for engineering and manufacturing development of combat underwater submersibles, Special Operations Forces (SOF) operator diving systems, underwater support systems, and underwater equipment. This project also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to respond to emergent requirements. These submersibles, equipment, and diving systems are used by SOF in the conduct of infiltration/ extraction, personnel/material recovery, hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other missions. The capabilities of the submersible systems, diving systems, and unique equipment provides small, highly trained forces the ability to successfully engage the enemy and conduct clandestine operations associated with SOF maritime missions. Sub-projects include:

• Shallow Water Combat Submersible (SWCS): This sub-project provides for the engineering, manufacturing, testing, and development of one Engineering Developmental Model (EDM) to replace the SEAL Delivery Vehicle (SDV) system. The EDM is being developed due to obsolescence of the SDV system. This project will utilize mature technologies, which include electric propulsion along with upgraded navigation, communication, and sensor suites. It also provides for integration efforts with the current Dry Deck Shelter (DDS), development of engineering changes for SWCS production craft configuration, and integration of other diving technologies to meet SOF requirements.

• Dry Combat Submersible (DCS): This sub-project provides for the advanced engineering, manufacturing, testing, and development efforts for a surface-launched, dry, diver lock-in/lock-out vessel capable of inserting and extracting SOF and/or payloads into denied areas. USSOCOM will award an Engineering and Manufacturing Development contract in FY 2016 to produce one production representative vessel, with options to produce two additional vessels following testing. Current efforts leverage commercial practices to develop dry submersible prototypes to assess submersible capabilities and reduce risk in the DCS program. USSOCOM developed and is currently testing two submersible prototypes. USSOCOM has also conducted risk reduction efforts on a third leased vehicle to include validation of test processes, commercial classification processes, and development of the SOCOM safety certification process which permits SEALs to operate the vehicles. In addition, the prototypes are being and will continue to be used to evaluate capability enhancing technologies in a relevant environment. Technologies include, but are not limited to, safe Li-Ion batteries, silver zinc batteries, improved sonar systems, an advanced battery management system, and a three-dimensional Electro Optical Infrared (EO/ IR) sensor.

• DDS Modernization: This sub-project provides for the pre-planned product improvements, testing, and integration of specialized underwater systems to meet the unique requirements of SOF, and compatibility with the submarine fleet. The current DDS is a certified diving system which attaches to modified host submarines that provides for insertion of SOF forces and platforms. Funding supports product improvements to the current DDS, as well as associated diver equipment for in-service submarine support systems, unmanned underwater vehicles, and follow on development efforts for future SOF payloads.

• SOF Combat Diving: This sub-project provides for the engineering, manufacturing, testing, development, and transition of SOF peculiar diving equipment providing the SOF combat diver the ability to engage the enemy and conduct operations. SOF Combat Diving will provide capabilities to USSOCOM components and will support

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

the SDV, SWCS, and DCS in conduct of infiltration/extraction, material recovery, underwater ship attack, beach clearance, and other missions. Technologies include, but are not limited to, commercial and developmental life support, maneuverability, employment of weapons, diver navigational accuracy and situational awareness, thermal protection, and underwater communications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: SWCS	19.981	7.596	0.950
FY 2015 Accomplishments: Completed EDM manufacturing and development and started developmental testing. Executed dry, pool, and open water testing. Obtained Milestone C approval.			
FY 2016 Plans: Continue EDM development testing, certification and government acceptance. Incorporate any necessary engineering design changes and modifications to meet key performance parameters.			
FY 2017 Plans: Completes EDM, including final logistics packages, develops and incorporates any engineering changes into SWCS production craft configuration as needed.			
Title: DCS	28.105	34.232	38.700
FY 2015 Accomplishments: Completed manufacturing, obtained commercial classification, and began testing of the two submersible prototypes. Achieved SOF Embarkation approval for leased vessel, validating process and enabling initial SOF pilot training and multiple lock-in/lock-out evolutions. Validated test plans and procedures for use with DCS. Completed testing of government-furnished EO/IR sensor, silver zinc battery, battery management system, and began initial testing of lithium ion battery. Battery development efforts have resulted in more than doubling the range of the leased vessel. Obtained Milestone B approval, conducted Industry Day, and released Request for Proposals for DCS program of record.			
FY 2016 Plans: Continue testing of lithium ion battery and begin characterization testing of the prototypes. Award an engineering and manufacturing development (EMD) contract for a production representative system.			
FY 2017 Plans: Continues EMD for DCS production representative system. Completes testing of the prototypes and initiates refit of one prototype submersible to be used as a training vessel.			
Title: DDS Modernization	-	10.000	8.500
FY 2016 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Begin development of the modernization necessary to extend useful life, transition from SSGN to Virginia Class host platform, and increase capacity to carry larger payloads. ***FY 2017 Plans:*** Continues development of the modernization necessary to extend useful life of the DDS, transitions from SSGN to Virginia Class host platform, and increases capacity to carry larger payloads.			
Title: SOF Combat Diving ***FY 2016 Plans:*** Begin development of SOF peculiar diving technologies for transition to the SOF combat diver for thermal protection to include free diver heating/cooling system, compact multi-diver heating system, and propulsion power interface. ***FY 2017 Plans:*** Continues thermal protection and man and unmanned testing. Begins development for situational awareness and underwater breathing apparatuses.	-	0.500	2.000
Accomplishments/Planned Programs Subtotals	48.086	52.328	50.150

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PROC/0210US: *Underwater Systems*	25.408	29.021	37.098	-	37.098	91.032	54.299	7.820	7.977	Continuing	Continuing

Remarks

D. Acquisition Strategy

• SWCS used full and open competition, with a down select to a single contractor. The full spectrum of contracting activities is being utilized for any integration and subsystem requirements, using existing contracts where appropriate, government agencies and new contracts as necessary.

• DCS performed risk reduction efforts on a leased vessel (S301i) to define future DCS program plans and procedures as well as used Broad Area Announcements for Research and Development contracts to design, build, and test prototypes (Button 5.60 and S351) to refine and validate key performance parameters and attributes for the future DCS, leveraging commercial technologies, practices, and safety classification standards. USSOCOM will solicit and award a competitive engineering and manufacturing development contract for a production representative system in FY16 and award two options for procurement vessels in FY18 and FY19.

• DDS Modernization will use existing DDS contracts to develop modernization efforts and execute configuration changes required to achieve performance requirements specified by the government.

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

• SOF Combat Diving: The full spectrum of contracting activities is planned to be utilized, using existing contracts where appropriate, government agencies, and new contracts competitively selected as necessary.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 United States Special Operations Command			Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S0417 / *Underwater Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Shallow Water Combat Submersible (SWCS)	C/CPIF	Teledyne Brown Engineering : Huntsville, AL	59.276	18.024	Aug 2015	7.000	Jan 2016	-		-		-	0.000	84.300	-
SWCS Engineering Changes	C/Various	Various : Various	-	-		-		0.950	Dec 2016	-		0.950	Continuing	Continuing	-
Dry Combat Submersibles (DCS) (Button 5.60 prototype)	C/Various	General Dynamic-Electric Boat : Groton, CT	25.403	0.635	Mar 2015	2.877	Jul 2016	-		-		-	0.000	28.915	-
DCS (S351 prototype)	C/Various	Submergence Group : Chester, CT	23.075	9.638	Sep 2015	0.953	Dec 2015	-		-		-	0.000	33.666	-
DCS Technologies (Government Furnished Equipment)	C/Various	Various : Various	19.552	7.907	Nov 2015	4.003	Feb 2016	7.377	Jun 2017	-		7.377	Continuing	Continuing	-
DCS (Engineering & Manufacturing Development)	C/Various	MacDill AFB : Tampa, FL	-	-		22.300	Jun 2016	25.723	Jun 2017	-		25.723	0.000	48.023	-
DCS Engineering Changes	C/Various	Various : Various	0.000	-		-		3.100	Jun 2017	-		3.100	Continuing	Continuing	-
Dry Deck Shelter (DDS) Modernization	SS/CPFF	Oceaneering International Inc. Marine Services Division : Chesapeake, VA	-	-		9.650	Nov 2015	8.197	Jan 2017	-		8.197	Continuing	Continuing	-
SOF-Peculiar Diving Technologies	Various	Various : Various	-	-		0.500	Mar 2016	1.500	Nov 2016	-		1.500	Continuing	Continuing	-
Prior Year Funding	Various	Various : Various	59.896	-		-		-		-		-	0.000	59.896	-
		Subtotal	187.202	36.204		47.283		46.847		-		46.847	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Funding	Various	Various : Various	9.094	-		-		-		-		-	0.000	9.094	-
		Subtotal	9.094	-		-		-		-		-	0.000	9.094	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 United States Special Operations Command			Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S0417 / *Underwater Systems*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SWCS	Various	Puget Sound Naval Shipyard : Seattle, Washington	0.240	0.368	Jan 2015	0.596	Jan 2016	-		-		-	0.000	1.204	-
DCS	C/Various	NAVSEA / CRANE : Panama City, FL	1.700	7.307	Nov 2014	1.299	Nov 2015	-		-		-	0.000	10.306	-
SOF Combat Diving	Various	Various : Various	-	-		-		0.500	Nov 2017	-		0.500	Continuing	Continuing	-
Prior Year Funding	Various	Various : Various	9.320	-		-		-		-		-	0.000	9.320	-
		Subtotal	11.260	7.675		1.895		0.500		-		0.500	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SWCS	Various	John Hopkins University : Columbia, MD	-	1.589	Mar 2015	-		-		-		-	0.000	1.589	-
DCS	Various	SRA : Tampa, FL	6.698	2.618	Nov 2015	2.800	Jun 2016	2.500	Jun 2017	-		2.500	Continuing	Continuing	-
DDS	MIPR	NAVSEA : Washington, DC	0.757	-		0.350	Jan 2016	0.303	Jan 2017	-		0.303	0.700	2.110	-
Prior Year Funding	Various	John Hopkins University : Columbia, MD	6.200	-		-		-		-		-	0.000	6.200	-
		Subtotal	13.655	4.207		3.150		2.803		-		2.803	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	221.211	48.086		52.328		50.150		-		50.150	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

SWCS Schedule

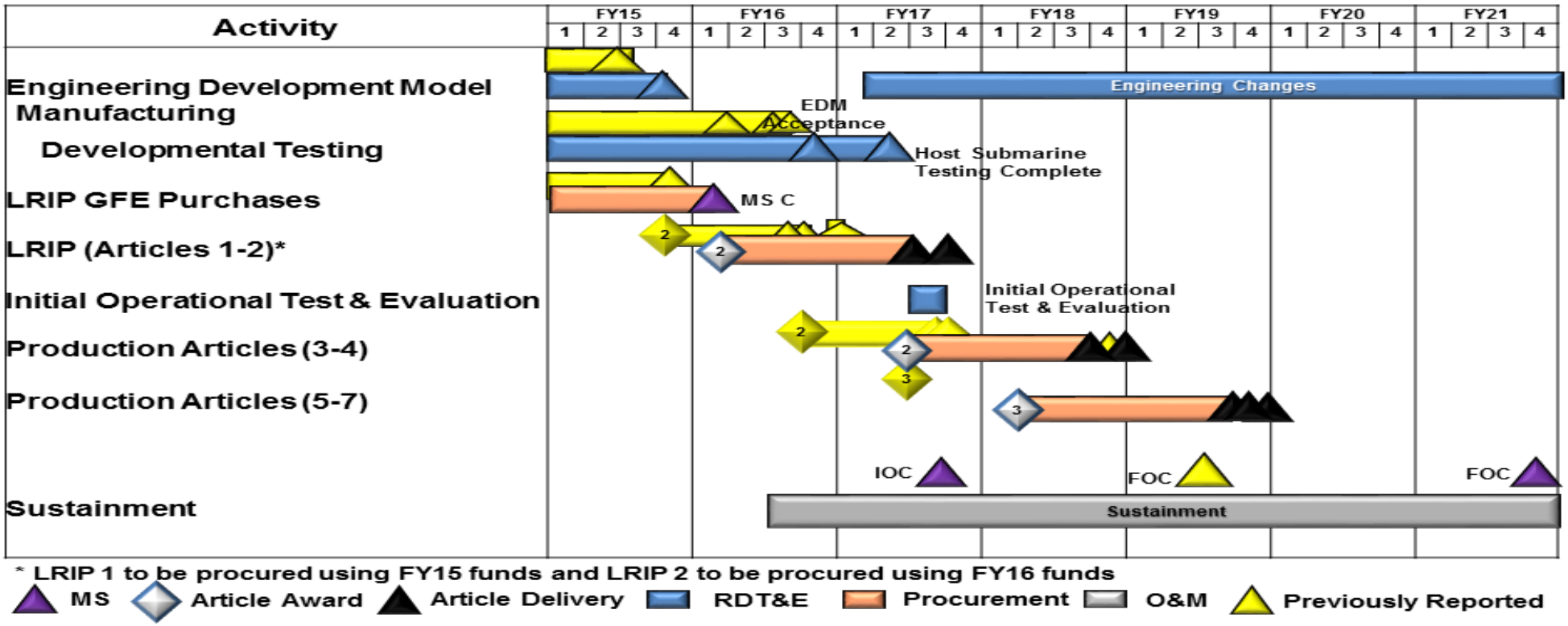


Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

Dry Combat Submersibles

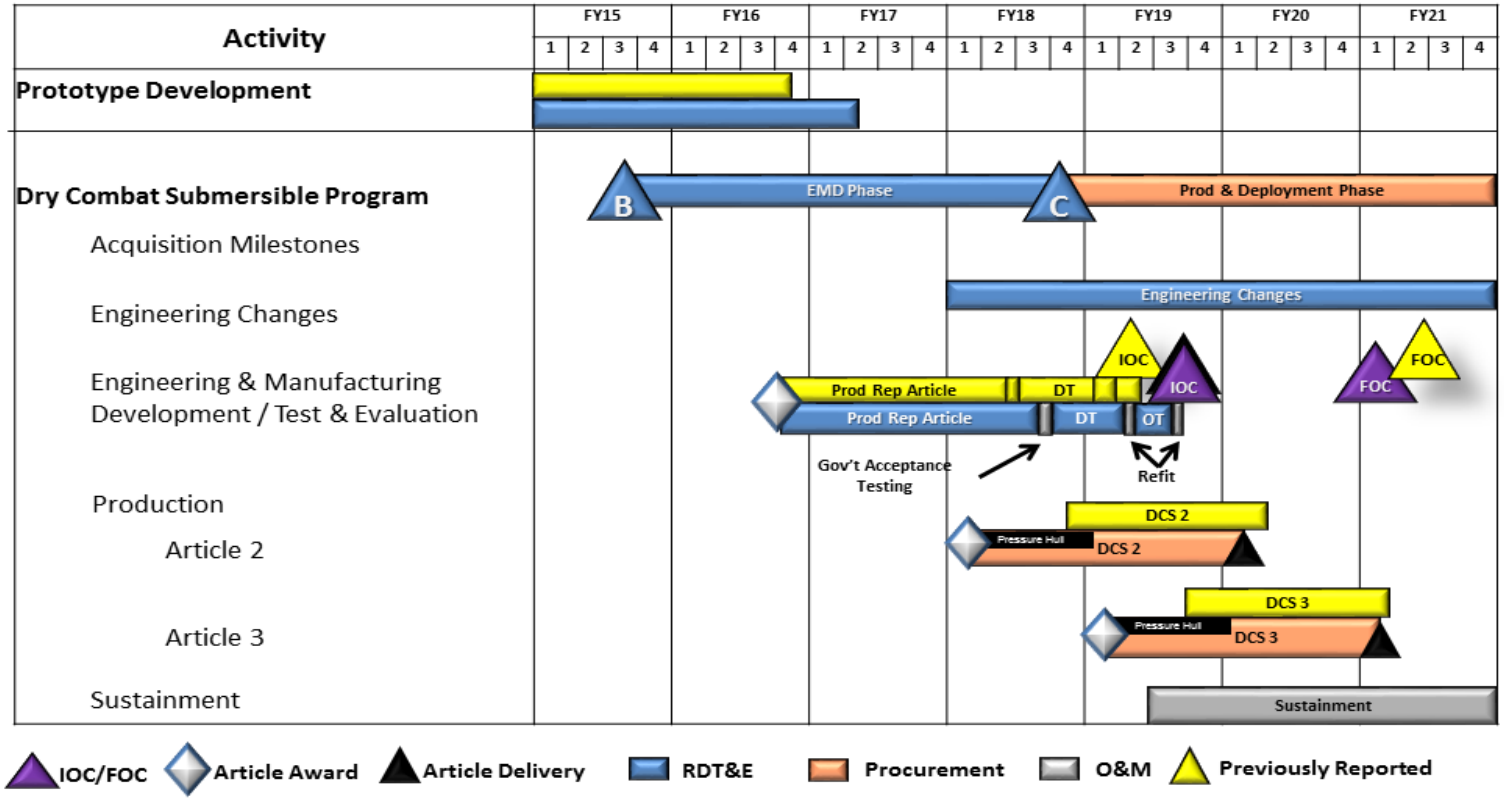
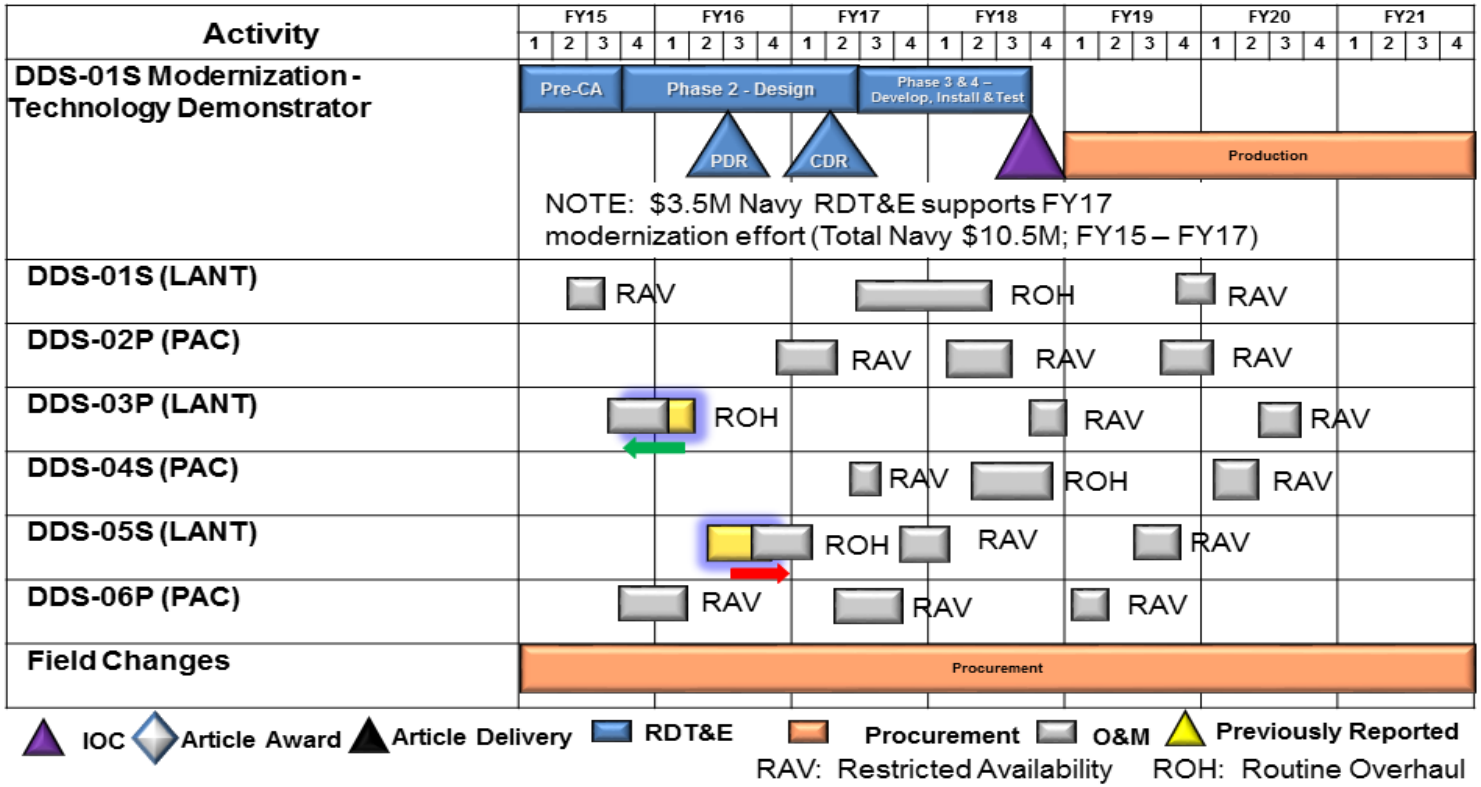


Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

DDS Schedule



1

Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

SOF Combat Diving

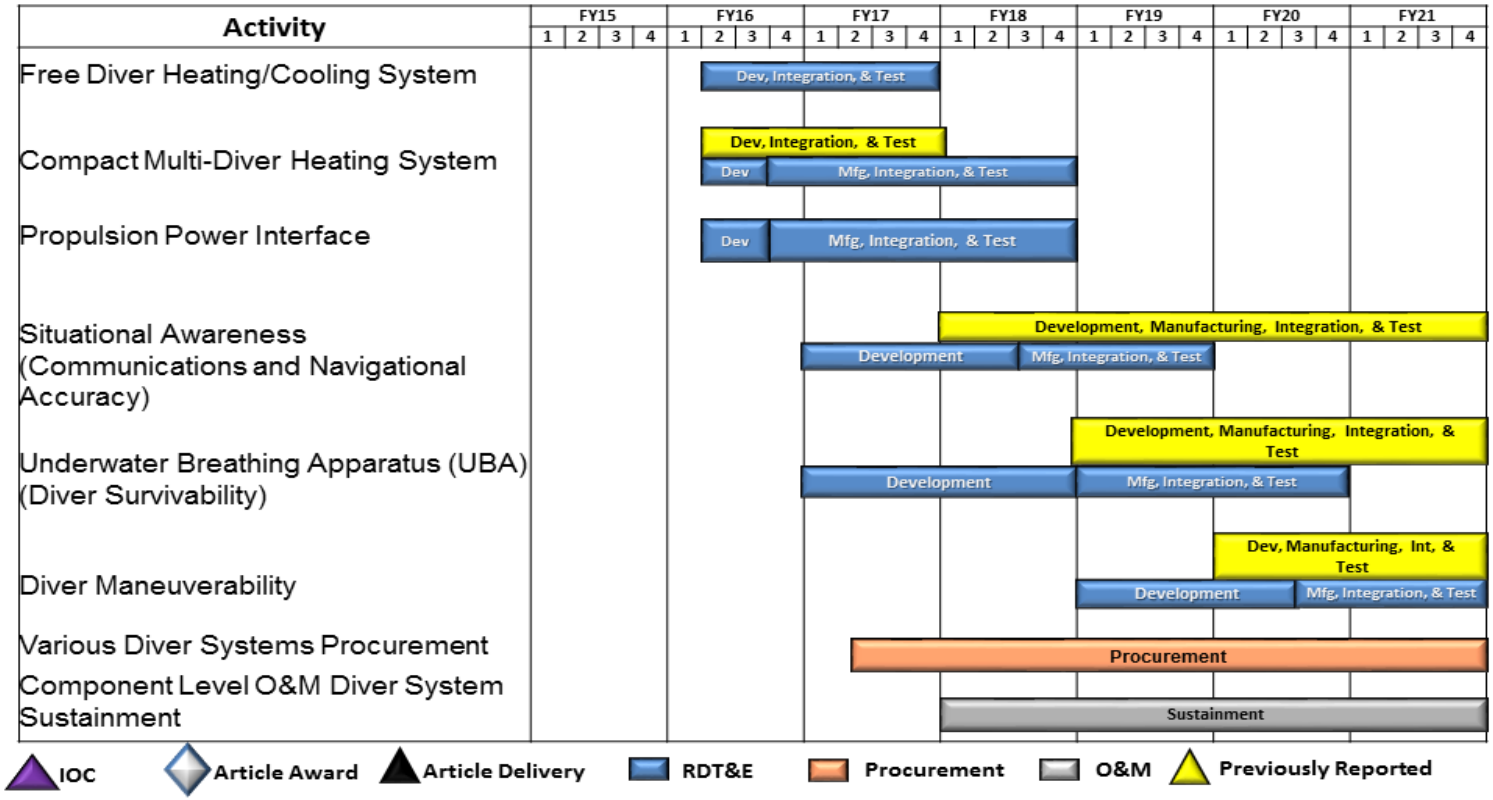


Exhibit R-4A, RDT&E Schedule Details: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Shallow Water Combat Submersible				
Engineering & Manufacturing Development	1	2015	4	2015
Developmental Test	1	2015	2	2017
Milestone C	1	2016	1	2016
Engineering Changes	1	2017	4	2021
Dry Combat Submersibles				
Analysis, Component and Prototype Development, and Testing	1	2015	2	2017
Training Vessel	2	2017	2	2018
Milestone B	3	2015	3	2015
Acquisition Planning, Request for Proposals, and Source Selection	3	2015	3	2016
Engineering and Manufacturing Development Phase	3	2015	4	2018
Engineering Changes	1	2018	4	2021
Milestone C	4	2018	4	2018
Developmental and Operational Test and Evaluation	4	2018	3	2019
Dry Deck Shelter Modernization				
Preliminary Design Review	2	2016	2	2016
Critical Design Review	2	2017	2	2017
SOF Combat Diving				
Free Diver Heating / Cooling System Development / Manufacturing / Test / Integration	2	2016	4	2017
Compact Multi-Diver Heating System Development / Manufacturing / Test / Integration	2	2016	4	2018
Propulsion Power Interface Development / Manufacturing / Test / Integration	2	2016	4	2018
Communications and Navigational Accuracy Development / Manufacturing / Test / Integration	1	2017	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S0417 / *Underwater Systems*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Diver Survivability Development / Manufacturing / Test / Integration	1	2017	4	2020
Maneuverability Development / Manufacturing / Test / Integration	1	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command			Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S1684 / *Surface Craft*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S1684: *Surface Craft*	7.072	10.570	7.269	4.427	-	4.427	4.156	4.666	6.794	6.916	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for engineering and manufacturing development of medium and heavy surface combatant craft, combatant craft mission equipment, and pre-planned product improvement and technology insertion engineering changes to meet the unique requirements of Special Operations Forces (SOF). This project also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to quickly respond to new requirements for maritime craft and subsystems. The craft capabilities and unique equipment provide small, highly trained forces the ability to successfully engage the enemy and conduct operations associated with SOF maritime missions. Sub-projects include:

• Combatant Craft Medium Mk 1 (CCM): This sub-project is a semi-enclosed, low-observable, multi-mission combatant craft for platoon-size maritime mobility in maritime denied environments. It is multi-mission capable, including Maritime Interdiction, Insert / Extract, and Visit, Board, Search, and Seizure (VBSS) Operations. CCM is Naval Special Warfare's (NSW) craft-of-choice for long-range, high-payload SOF mobility operations in denied environments up to high threat. CCM has NSW's best Iron Triangle: 40 knot (kt) speed; 4 crew + 19 passengers (pax) / 10,000 pound (lb) payload; and 600 nautical miles (nm) range. CCM Mk 1 payload capacity enables inclusion of shock mitigating seats, which is critical for ride quality, operator tactical readiness, and operator health. At 60 feet long CCM is C-17 / C5 transportable and can launch/recover by well deck or shore based trailer.

• Combatant Craft Heavy (CCH): This sub-project represents a family of solutions that provides platoon-size maritime surface mobility. The current CCH is the Sea, Air, Land Insertion, Observation, and Neutralization (SEALION) craft. SEALION is a fully-enclosed, climate-controlled, low-observable, semi-submersible craft that operates in denied environments up to high-threat. SEALION is NSW's most versatile and survivable combatant craft and the craft-of-choice for sensitive maritime intelligence, surveillance, and reconnaissance missions and those missions requiring a prolonged presence in denied environments. Its clandestine mobility capability is only exceeded by an undersea craft. Iron Triangle: 40 kt speed; 7 crew + 12 pax / 3,300 lb payload; and 400 nm range. SEALION payload capacity enables inclusion of shock mitigating seats, which is critical for ride quality, operator tactical readiness, and operator health. At 77+ feet long, SEALION is C-17/C-5 transportable and can launch/recover by well deck or shore based mobile travel lift or crane.

• Next Generation Combatant Craft Forward Looking Infrared Radar (NG CCFLIR): This sub-project consists of a legacy CCFLIR and the NG CCFLIR. The CCFLIR capability provides SOF with a multi-sensor, electro-optic system that enhances SOF effectiveness by improving their ability to detect, recognize, identify, range, track, and highlight objects of interest in a maritime environment. The legacy CCFLIR is under sustainment, it is currently used on all Naval Special Warfare Combatant Craft. The NG CCFLIR will use technological advancements to gain significant improvements in capability such as operational range, image fusion, net-centric data sharing, information assurance, and seamless craft and combat systems integration.

• Combatant Craft Mission Equipment (CCME) (previously Next Generation Surface Systems): This sub-project provides a rapid response capability to support SOF Combatant Craft Systems and subsystems. The CCME will explore and provide solutions to support emerging requirements in support of SOF missions. It provides technology refresh efforts to correct system deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies,

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

analyses of alternatives, pre-developmental risk reduction, and engineering analyses. Demonstrations and modifications may be made to support emerging capability enhancements such as but not limited to conformal antennas, identification Friend-or-Foe capabilities, enhanced communications, weapon integration, software efresh, and navigation subsystems in support of future missions. Solutions may be Commercial-Off-The-Shelf (COTS) solutions, leveraged from other agency solutions, or new solutions.

• Combatant Craft Assault (CCA) (previously High Speed Assault Craft): This sub-project is a National-to-Theater transition. The CCA is the theater version of the High Speed Assault Craft. The CCA is a low-observable combatant craft for squad-size maritime mobility operations in maritime denied environments. CCA is NSW's best craft for VBSS in maritime denied environments up to and including medium threat. It is the craft-of-choice for maritime interdiction and boarding operations because of the open deck space, maneuverability, and interoperability with an Afloat Forward Staging Base. Iron Triangle: 40 kt speed; 3 crew + 12 pax / 5,000 lb payload; and 300 nm range. At 41 feet long, CCA is air transportable by C-130 / C-17 / C-5 and can launch/recover by crane, davit, well deck, or shore based trailer.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: CCM	4.572	1.308	1.659
FY 2015 Accomplishments: Completed Operational Testing and continued development and integration of sub-systems including weapons and situational awareness systems. Refurbished test article to production craft configuration.			
FY 2016 Plans: Continue development and integration of advanced technologies including situational awareness, survivability, weapons, navigation, and communication.			
FY 2017 Plans: Develops conceptual, preliminary, and detail design drawings necessary to integrate and conduct initial testing of a remote weapon system on the CCM test article. Begins integration of NG CCFLIR and applicable CCME technology onto CCM crafts.			
Title: CCH	1.872	2.245	0.887
FY 2015 Accomplishments: Completed SEALION III design study and began tactical computer system upgrades. Installed dynamic positioning system.			
FY 2016 Plans: Continue development and integration of advanced technologies including situational awareness, survivability, weapons, navigation, and communication. Initiate studies and analysis for upgraded CCH craft.			
FY 2017 Plans: Completes tactical computer system upgrades. Continues pre-planned product improvement and technology insertion. Begins integration of NG CCFLIR and applicable CCME technology onto CCH crafts.			
Title: NG CCFLIR	2.247	1.500	-
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Completed source selection for prototype units for development testing. Began development and testing of NG CCFLIR. ***FY 2016 Plans:*** Complete testing and integration with combatant craft systems.			
Title: CCME ***FY 2015 Accomplishments:*** Tested and analyzed combatant crafts survivability characteristics. Performed analysis of alternatives tests for obsolete intercom system. Performed baseline test and assessment for a remote weapon system. ***FY 2016 Plans:*** Identify and evaluate candidate solutions for capability enhancements and insertion across Combatant Craft Systems. Technology development include, but not limited to, conformal antennas, communications, weapons integration, survivability, shock and vibration systems, and situational awareness. ***FY 2017 Plans:*** Evaluates candidate solutions for technology development to include, but not limited to, MK50 SOF improvements (i.e., accuracy and increased rounds), Vehicular Intercommunications-3 intercom control integration tests, active ride control integration tests, craft survivability painting studies and verification, and situational awareness studies.	1.879	2.216	1.381
Title: CCA ***FY 2017 Plans:*** Begins integration of NG CCFLIR and applicable CCME technology onto CCA crafts.	-	-	0.500
Accomplishments/Planned Programs Subtotals	10.570	7.269	4.427

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PROC/0204SCCS: *Combatant Craft Systems*	50.337	63.362	55.820	-	55.820	27.110	13.149	38.342	38.081	Continuing	Continuing

Remarks

N/A

D. Acquisition Strategy

• CCM acquisition strategy was a competition using a two-phase source selection process. Phase I involved a Small Business Set-Aside competition for two vendors to design, build and deliver test articles. Phase II selected a single vendor to provide a fully integrated baseline craft system for test and evaluation with options for production, engineering support and contractor logistic support.

Exhibit R-2A, RDT&E Project Justification: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

• CCH: SEALION I & II were transitioned from United States Navy advanced technology demonstrator craft to USSOCOM. Sustainment for SEALION I & II is conducted via Special Operations Forces Support Activity (SOFSA). Based on market research completed in December 2015; currently pursuing a Sole Source award for SEALION III in order to take advantage of previous Government investments in manufacturing infrastructure for SEALION I & II.

• NG CCFLIR: Current fleet of legacy CCFLIR was procured via full and open competition. Procurement for legacy CCFLIR is complete. Legacy CCFLIR will continue to be utilized on the Rigid-hull Inflatable Boat (RIB) and Special Operations Craft Riverine (SOCR). The Combatant Craft Medium (CCM), Combatant Craft Heavy (CCH), and High Speed Assault Craft (HSAC) will transition from legacy CCFLIR to NG CCFLIR. NG CCFLIR completed a full and open competition in Sep 15. An Engineering Manufacturing Development contract was awarded to FLIR Systems Incorporated, which included production and sustainment options.

• CCME acquisition strategy plans include the full spectrum of contracting activities, using existing contracts where appropriate, and other Government agencies to leverage, marinize, commonize, and advance Technology Readiness Level 6 leap ahead technology from Services and USSOCOM SOF AT&L S&T. Procurement of items will be from the Combatant Craft Systems procurement program element.

• CCA originated as National-to-Theater transition. The CCA is the theater version of the High Speed Assault Craft and will use various contracting and better buying power practices to develop, test, and integrate capability enhancements required to increase the craft's current performance envelope.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 United States Special Operations Command			Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S1684 / *Surface Craft*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combatant Craft Medium (CCM)	C/Various	Vigor Works : Clackamas, OR	4.374	1.426	Jan 2015	1.308	Jan 2016	1.659	Jan 2017	-		1.659	Continuing	Continuing	-
Combatant Craft Heavy (CCH)	C/Various	Various : Various	0.225	1.872	Nov 2014	2.245	Apr 2016	0.887	Nov 2017	-		0.887	Continuing	Continuing	-
Next Generation Combatant Craft Forward Looking Infrared (NG CCFLIR)	C/Various	FLIR Systems : Billerica, MA	0.691	2.247	Sep 2015	0.600	Nov 2016	-		-		-	0.000	3.538	-
Combatant Craft Mission Equipment (CCME)	C/Various	Various : Various	0.311	1.642	Apr 2015	1.891	Jan 2016	1.156	Jan 2017	-		1.156	Continuing	Continuing	-
CCA	C/Various	Various : Various	-	-		-		0.280	Jan 2017	-		0.280	Continuing	Continuing	-
		Subtotal	5.601	7.187		6.044		3.982		-		3.982	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CCM	MIPR	NSWC : Norfolk, VA	0.281	0.800	Dec 2014	-		-		-		-	0.000	1.081	-
NG CCFLIR	C/Various	NSWC : Crane, IN	-	-		0.900	Apr 2016	-		-		-	0.000	0.900	-
CCME	C/Various	Various : Various	-	0.237	Jan 2015	0.325	Apr 2016	0.225	Jan 2017	-		0.225	0.000	0.787	-
CCA	C/Various	Various : Various	-	-		-		0.220	Jan 2017	-		0.220	Continuing	Continuing	-
		Subtotal	0.281	1.037		1.225		0.445		-		0.445	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CCM	C/Various	NSWC : Norfolk, VA; Crane, IN	-	0.937	Mar 2015	-		-		-		-	0.000	0.937	-
CCM	C/Various	SRA : Tampa, FL	0.625	1.409	May 2015	-		-		-		-	0.000	2.034	-
Prior Years	C/Various	NSWC : Crane, IN	0.565	-		-		-		-		-	0.000	0.565	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / *Maritime Systems*	Project (Number/Name) S1684 / *Surface Craft*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			1.190	2.346		-		-		-		-	0.000	3.536	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.072	10.570		7.269		4.427		-		4.427	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Combatant Craft Medium

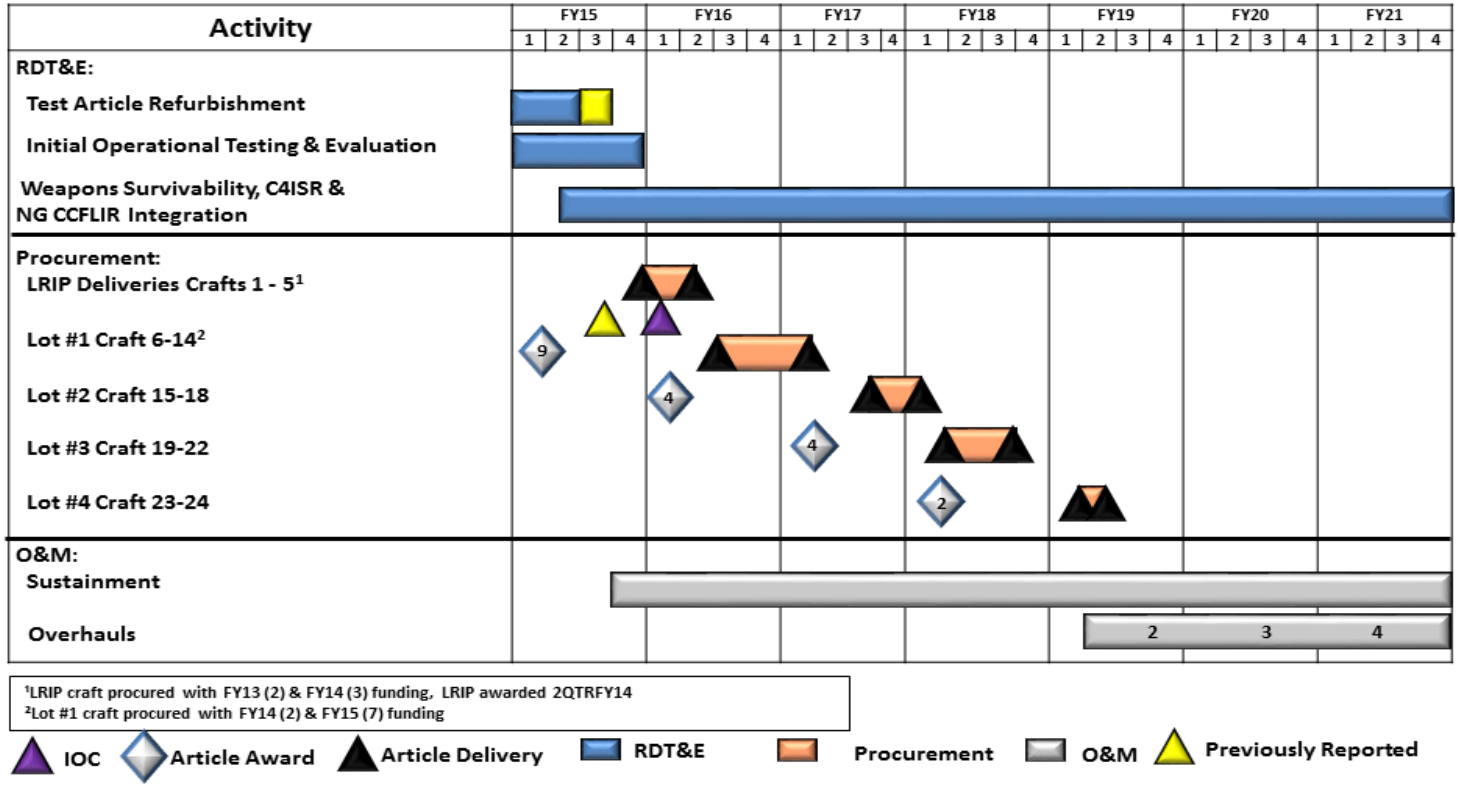


Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Combatant Craft Heavy

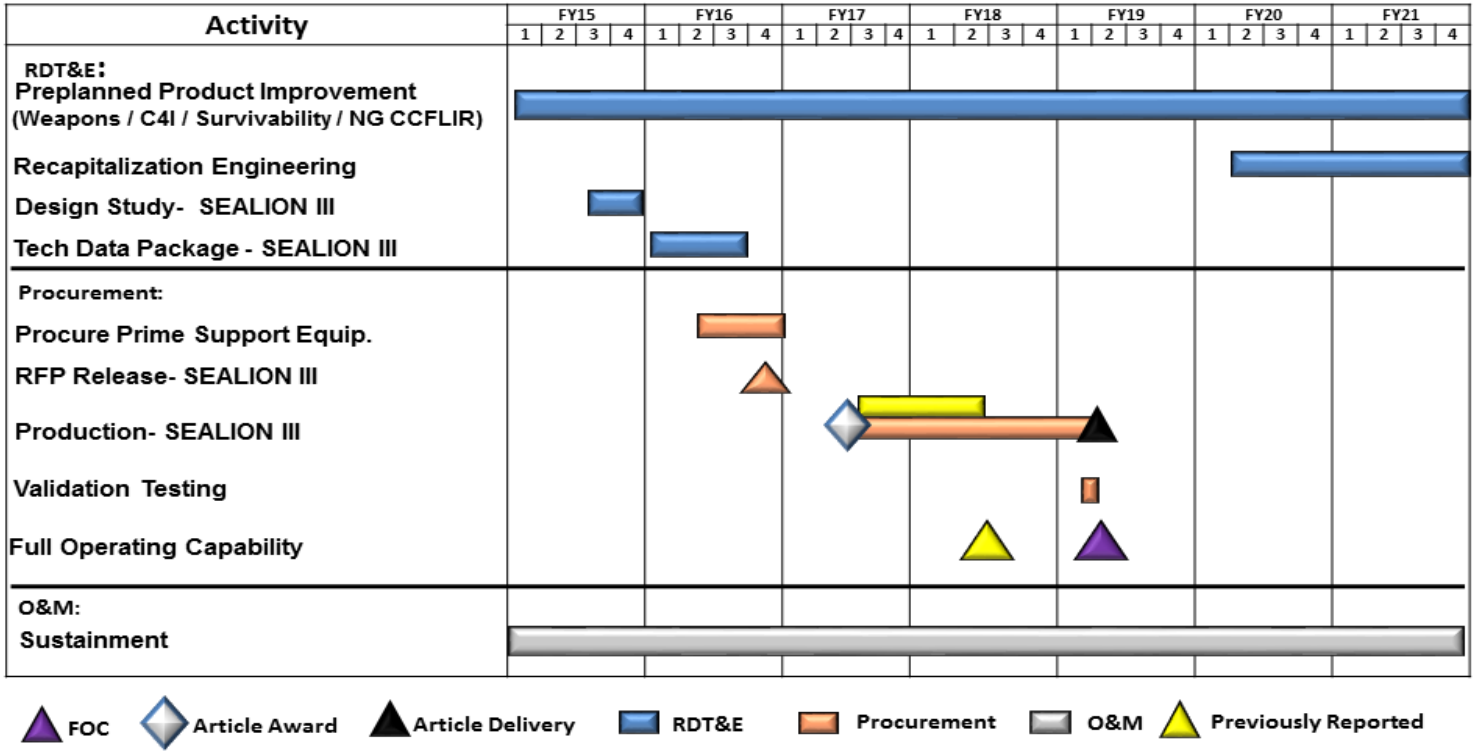


Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Next Generation Combatant Craft
Forward Looking Infrared Radar

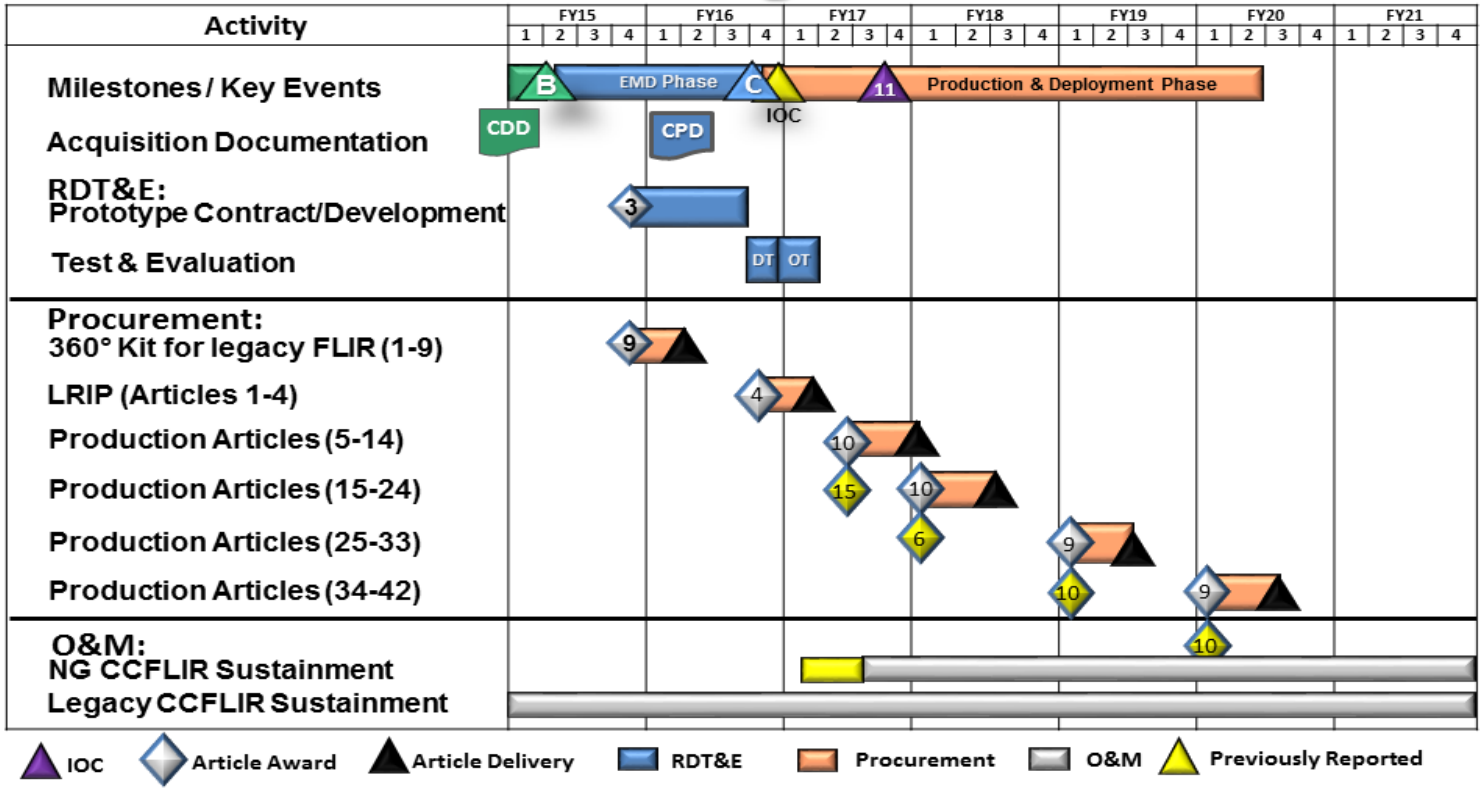
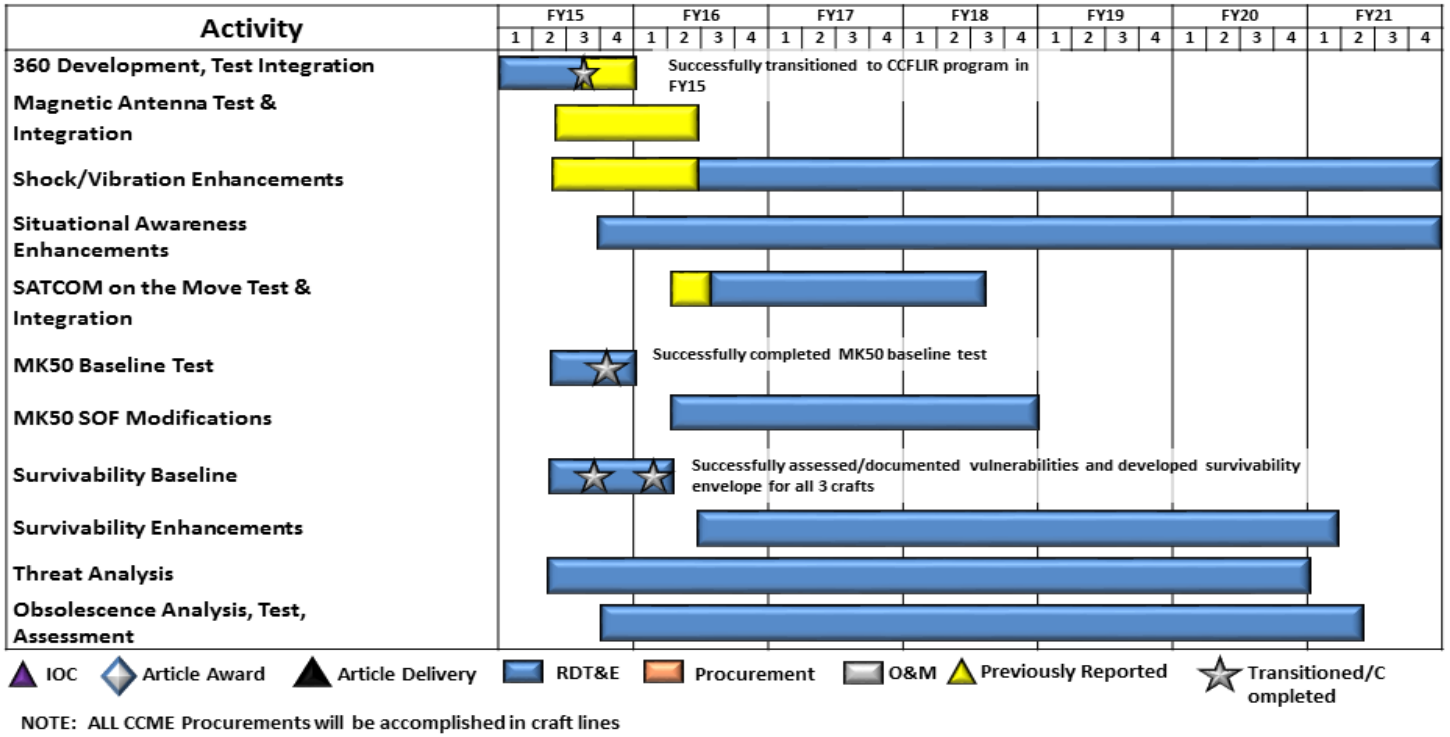


Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Combatant Craft Mission Equipment



NOTE: ALL CCME Procurements will be accomplished in craft lines

Exhibit R-4, RDT&E Schedule Profile: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Combatant Craft Assault

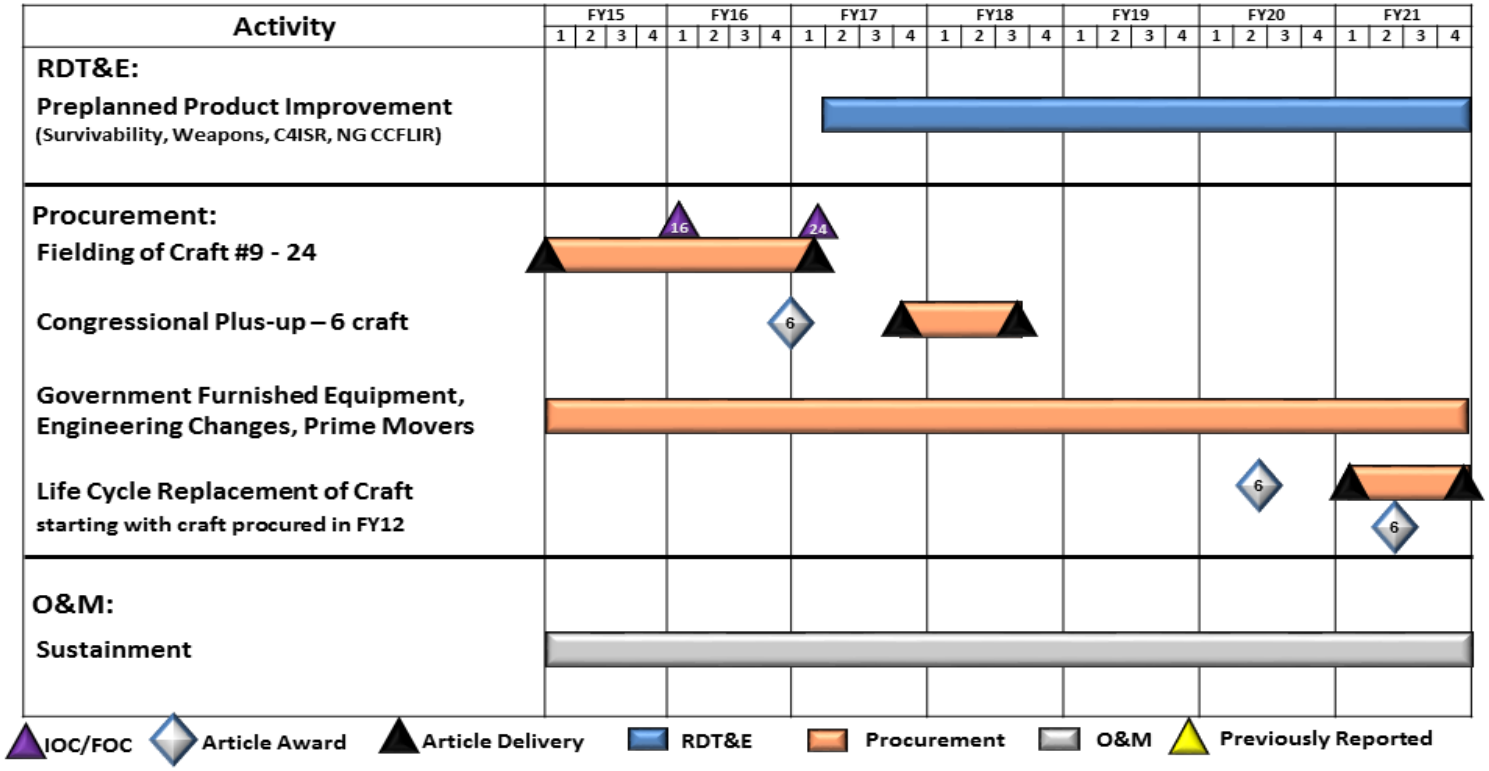


Exhibit R-4A, RDT&E Schedule Details: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combatant Craft Medium				
Test Article Refurbishment	1	2015	2	2015
Acceptance and Operational Testing	1	2015	4	2015
Weapons, Survivability, C4ISR Integration	2	2015	4	2021
Combatant Craft Heavy				
Preplanned Product Improvement (Weapons / C4I / Survivability)	1	2015	4	2021
Design Study - SEALION III	3	2015	4	2015
Tech Data Package - SEALION III	1	2016	3	2016
Next Generation Combatant Craft Forward Looking Infrared Radar				
Prototype Contract	4	2015	4	2015
Prototype Development	4	2015	3	2016
Developmental Test	3	2016	4	2016
Milestone C Decision	4	2016	4	2016
Operational Testing	4	2016	1	2017
Combatant Craft Mission Equipment				
360 Development, Test, Integration	1	2015	3	2015
Shock/Vibration	2	2016	4	2021
Situational Awareness	3	2015	4	2021
SATCOM on the Move Test, Integration	3	2016	3	2018
Weapons Integration	3	2015	4	2018
Survivability	2	2015	1	2021
Threat Analysis	2	2015	4	2020
Obsolescence Analysis, Test, Analysis	4	2015	2	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2017 United States Special Operations Command		Date: February 2016
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 1160483BB / *Maritime Systems*	**Project (Number/Name)** S1684 / *Surface Craft*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combatant Craft Assault				
Preplanned Product Improvement (Survivability, Weapons, C4ISR)	2	2017	4	2021

THIS PAGE INTENTIONALLY LEFT BLANK