Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
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 0604707N / *SEW Architecture/Eng Support*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	249.014	30.378	18.749	29.581	-	29.581	34.251	34.764	33.693	34.393	Continuing	Continuing
0798: *Allied/Coalition Interoperability and Information Dominance (ACIID)*	30.466	0.770	0.737	0.651	-	0.651	0.810	0.806	0.787	0.804	Continuing	Continuing
2140: *CNO Rapid Innovation Cell (CRIC)*	0.000	-	-	4.335	-	4.335	4.421	4.516	4.614	4.710	Continuing	Continuing
2144: *Space & Elec Warfare Engineering*	180.418	7.943	7.508	7.341	-	7.341	8.942	8.954	7.972	8.135	Continuing	Continuing
2356: *Maritime Concept Generation & Development*	4.191	9.789	5.346	8.390	-	8.390	8.668	8.829	9.012	9.200	Continuing	Continuing
3319: *Fleet Experimentation*	33.939	11.876	5.158	8.864	-	8.864	11.410	11.659	11.308	11.544	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) contains four projects: Maritime Concept Generation and Development (CGCD), Fleet Experimentation , Allied/Coalition Interoperability and Information Dominance (ACIID), and Space and Electronic Warfare (SEW) Engineering.

The CGCD project (2356) focuses on the generation, development and validation of warfighting concepts, Concept of Operations (CONOPS) and doctrine in order to eliminate war fighting gaps. Beginning in FY 2014, the CGCD project also includes funding for the CNO's Rapid Innovation Cell (CRIC), a small group of disruptive thinkers managed by the Navy Warfare Development Command (NWDC) to identify and quickly test in an operational environment, innovative ideas and technologies that are outside the traditional development and acquisition processes. NWDC also manages the Fleet Experimentation program (formerly Sea Trial) under the guidance of Commander USFF and COMPACFLT.

The FLEX project (3319) (formerly Sea Trial) develops new or improved warfighter capabilities through the experimentation of high payoff initiatives, technologies and concepts, Fleet Concepts of Operations (CONOPS), doctrine, and new tactics, techniques and procedures (TTP). The objective of FLEX is to produce recommended changes in doctrine, organization, training, materiel, leadership development, personnel, facilities, and policy (DOTMLPF-P) actions, with an emphasis on non-materiel solutions. Focusing on war fighting capability improvement through experimentation aimed at delivering potential solutions in support of current Operations Plans (OPLANs), FLEX spans both operational and tactical levels of warfare and reaches across the full range of military operations to enhance war fighting capabilities or fill current or future capability gaps.

The ACIID and SEW Engineering projects (0798 and 2144 respectively) are systems engineering non-acquisition programs to develop, test, implement technical authority, and validate naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures to support naval missions in the Joint and Coalition Theater. The mission of these projects are carried out by multiple tasks that are used to ensure naval C4ISR Command and Control

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
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 0604707N / *SEW Architecture/Eng Support*

Warfare (C2W) components of SEW are effectively integrated into service-oriented architecture delivering net-centric warfare capability. Additionally, these projects ensure that (1) the composite operational capabilities of SEW systems (not the individual component systems) conform to the naval C4ISR architecture and enhance war fighting capability as related to the objectives of National Defense Strategy, evolving joint visions and direction, such as net centric capability, and are guided by warfighter requirements; (2) that SEW systems and systems integration efforts involve leading-edge technology transfer of information processing technologies primarily through integration of government and commercial off-the-shelf (GOTS/COTS) products to enhance the Navy's operational capability, interoperability, warfighter effectiveness, flexible reconfiguration, as well as reduce costs; and (3) that SEW systems integration efforts promote the delivery of Information Dominance and the Navy's contribution to the Global Information Grid (GIG).

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	31.256	22.393	27.558	-	27.558
Current President's Budget	30.378	18.749	29.581	-	29.581
Total Adjustments	-0.878	-3.644	2.023	-	2.023
• Congressional General Reductions	-	-0.049			
• Congressional Directed Reductions	-	-3.595			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.008	-			
• SBIR/STTR Transfer	-0.871	-			
• Program Adjustments	-	-	-9.205	-	-9.205
• Rate/Misc Adjustments	0.001	-	11.228	-	11.228

Change Summary Explanation

The FY 2016 funding request was reduced by $2.9 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / *SEW Architecture/Eng Support*	Project (Number/Name) 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0798: *Allied/Coalition Interoperability and Information Dominance (ACIID)*	30.466	0.770	0.737	0.651	-	0.651	0.810	0.806	0.787	0.804	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Allied/Coalition Interoperability and Information Dominance (ACIID) program advances Information Warfare (IW) (to include Command, Control, Communications, Computers; Intelligence, Surveillance and Reconnaissance (C4ISR); Electronic Warfare (EW); and Cyber Warfare), interoperability with Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS), North Atlantic Treaty Organization (NATO) and other Allied and Coalition partners. The program determines maritime operational gaps with our allies, identifies Doctrine, Organization, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) solutions with the potential to fill those gaps, and assesses these solutions and associated concepts of operation in laboratory and at-sea environments. The ACIID program includes integration and testing in support of joint and Allied war fighting capabilities, including interoperability testing of IW equipment. Allied and joint interoperability is critical for future maritime operations, especially as the United States Navy expands Internet Protocol (IP) networking throughout the fleet via Consolidated Afloat Networks and Enterprise Services (CANES), Next Generation Networks (NGEN), Multi-National Information Sharing (MNIS) and with the Global Information Grid (GiG). Currently, IP connectivity with AUSCANNZUKUS and other Allied/Coalition forces are limited, requiring extensive backhaul through ashore infrastructure. Higher bandwidth solutions suitable for use over tactical networks require development and assessment for emerging coalition and joint interoperability requirements, such as Network Operations Without Shore (NOWS), Maritime Domain Awareness (MDA), and the defeat of Anti-Access Area Denial (A2/AD). Increases in data throughput are required for the effective exchange of rich Information Dominance (ID) data sets and services via Service Oriented Architectures (SOA) within the limitations of High Frequency (HF), Ultra-High Frequency (UHF) and other portions of the radio frequency spectrum, coupled with appropriate Information Assurance and Computer Network Defense (IA/CND) mechanisms. Development and assessment of potential solutions will integrate improved IP capabilities with the Advanced Digital Network Systems (ADNS) and existing international standards (e.g. Allied Communications Publication 200, NATO Standardization Agreements 5066 and 4691). The continued development and refinement of advanced tactical networking technologies and protocols, as well as automatic link establishment (ALE) standards, will provide for a significant improvement in data sharing within, and between, coalition maritime elements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Advanced Relay Capabilities	0.770	0.737	0.651	-	0.651
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued the development and refinement of advanced networking and communication capabilities that promote Allied interoperability, task group-centric operations in Satellite Communications (SATCOM)-Restricted					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
and SATCOM-Denied environments, NOWS, and support the defeat of A2/AD. Solutions addressed higher bandwidth technologies, such as wide-band HF, UHF and 3G/4G wireless. -Secured routing architectures incorporating High Assurance Internet Protocol Encryptor (HAIPE) devices that support tactical networking and Anti-Access Area Denial (A2/AD) were developed along with distributed Service Oriented Architectures (SOA) applications and services architectures and advanced Information Assurance and Computer Network Defense (IA/CND) solutions. The overarching goal was to maximize interoperability and network efficiency using multiple, dissimilar bearers and integrate these advanced solutions into a task group-centric Allied/Coalition tactical networking environment that would defeat A2/AD and include capabilities such as Network Operations Without Shore (NOWS) and tactical data links, such as Link-22. -Assessed Information Warfare interoperability gaps with Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS) nations, to include Intelligence, Surveillance and Reconnaissance (ISR), Electronic Warfare (EW) and Cyber, in appropriate venues. -Continued to progress North Atlantic Treaty Organization (NATO) standardization of Maritime Relayed Line of Sight Network Standardization Agreements (STANAG 4691) and High Frequency Internet Protocol (STANAG 5066 Edition 3). -Progressed Allied Information Warfare (IW) interoperability with other joint and maritime multi-national forums, such as the Combined Communications Electronics Board (CCEB), Multinational Maritime Internet Protocol (IP) Interoperability Steering Group (M2I2) and the Multinational Information Sharing program (MNIS). -Venues of opportunity, such as Fleet Experimentation (FLEX), were exploited to assess and validate the individual technologies, integrated solutions, and associated Doctrine, Organization, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) through experimentation, trials and demonstrations with AUSCANNZUKUS and other Allied/Coalition partners.					
FY 2015 Plans: -Continue the development and refinement of advanced networking and communication capabilities that promote Allied interoperability and support the defeat of A2/AD via task group-centric tactical networking in Satellite Communications (SATCOM)-Restricted and SATCOM-Denied environments and NOWS. Solutions will address higher bandwidth technologies across the Radio Frequency (RF) and Optical spectrum, such as wide-band High Frequency (HF), High Data Rate Ultra-High Frequency (UHF) and other high-data rate wireless technologies. -Develop and assess secure and interoperable multi-bearer routing, distributed application and service architectures and advanced IA/CND solutions that support tactical networking and A2/AD requirements. The overarching goal is to maximize interoperability and network efficiency using multiple, dissimilar bearers and					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
integrate these advanced solutions into an A2/AD/NOWS Allied/Coalition tactical networking environment that can also include tactical data links, such as Link-22. -Assess Information Warfare interoperability gaps with AUSCANNZUKUS nations, to include ISR, Position, Navigation and Timing (PNT), EW and Cyber, in appropriate venues. This will include assured PNT and Unmanned aerial vehicle (UAV) interoperability and IA/CND Blue/Red Teaming in SATCOM-Denied environments. -Continue to progress the standardization and operationalization of North Atlantic Treaty Organization (NATO) Maritime Relayed Line of Sight Network Standardization Agreements (STANAG 4691) and High Frequency Internet Protocol (STANAG 5066 Edition 3). -Progress Allied Information Warfare (IW) interoperability with other joint and maritime multi-national forums, such as the Combined Communications Electronics Board (CCEB), Multinational Maritime Information-system Interoperability Steering Group (M2I2), and the Multinational Information Sharing program (MNIS). -Venues of opportunity, such as Fleet Experimentation (FLEX), will be exploited to assess and validate the individual technologies, integrated solutions, and associated Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) through experimentation, trials and demonstrations with Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS) and other Allied/Coalition partners.					
FY 2016 Base Plans: -Continue the development and refinement of advanced networking and communication capabilities that promote Allied interoperability, task group-centric operations in Satellite Communications (SATCOM)-Restricted and SATCOM-Denied environments, and support the defeat of Anti-Access Area Denial (A2/AD). Solutions will address higher bandwidth technologies across the Radio Frequency (RF) and Optical spectrum, such as wide-band High Frequency (HF), High Data Rate Ultra-High Frequency (UHF) and other high-data rate wireless technologies. -Develop and assess secure and interoperable multi-bearer routing, distributed application and service architectures and advanced Information Assurance and Computer Network Defense (IA/CND) solutions that support tactical networking and A2/AD requirements. The overarching goal is to maximize interoperability and network efficiency using multiple, dissimilar bearers and integrate these advanced solutions into an Allied/ Coalition tactical networking environment that will defeat A2/AD. -Continue to progress the standardization and operationalization of NATO Maritime Relayed Line of Sight Network Standardization Agreements (STANAG 4691) and High Frequency Internet Protocol (STANAG 5066 Edition 3).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Progress Allied IW interoperability with other joint and maritime multi-national forums, such as the CCEB, M2I2, and the MNIS. -Venues of opportunity, such as FLEX, will be exploited to assess and validate the individual technologies, integrated solutions, and associated DOTMLPF through limited experimentation, trials and demonstrations with AUSCANNZUKUS and other Allied/Coalition partners. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.770	0.737	0.651	-	0.651

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Allied/Coalition Interoperability and Information Dominance (ACIID) is a non-acquisition program that promotes United States Navy (USN) interoperability with allied and coalition forces to achieve the Chief of Naval Operations (CNO) vision by facilitating maritime interoperability in both processes and communications systems, including emerging capabilities, to counter growing high-end asymmetric threats, and is a key enabler of the force multiplying benefits achieved through cooperation among the Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS), North Atlantic Treaty Organization (NATO) and other partner nations. Activities include acquiring intellectual capital in emerging technical areas through contracts providing technical engineering expertise and surge capacity for emerging tasks.

E. Performance Metrics

Advanced Relay Capabilities: The ACIID program will employ laboratory testing and at-sea demonstrations to assess specific technologies, operational concepts, and integrated Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) solutions pertaining to Anti-Access Area Denial (A2/AD), Network Operations Without Shore (NOWS), Maritime Domain Awareness (MDA) and other aspects of Information Dominance (ID). These assessments will report on identified capability gaps, link capability gaps to technology/DOTMLPF gaps, identify technologies and DOTMLPF solutions considered ready for deployment, transition to a program of record to enhance Fleet war fighting capability and enhance Allied interoperability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Relay Capabilities	Various	Various : Various	12.129	0.097	Jan 2014	0.092	Jan 2015	0.081	Jan 2016	-		0.081	Continuing	Continuing	Continuing
Advanced Relay Capabilities	WR	SSC PAC : San Diego	2.312	0.583	Jan 2014	0.560	Jan 2015	0.495	Jan 2016	-		0.495	Continuing	Continuing	Continuing
Advanced Relay Capabilities	C/CPFF	SAIC : McLean, VA	0.000	0.090	Jan 2014	0.085	Jan 2015	0.075	Jan 2016	-		0.075	Continuing	Continuing	Continuing
Interoperability Requirements	Various	Various : Various	3.266	-		-		-		-		-	-	3.266	-
T & E Tools Development	Various	Various : Various	0.429	-		-		-		-		-	-	0.429	-
Systems Int. & Interop. Testing (LBTN)	Various	Various : Various	3.862	-		-		-		-		-	-	3.862	-
Interoperability Validation	Various	Various : Various	2.748	-		-		-		-		-	-	2.748	-
Joint Interoperability	Various	Various : Various	1.174	-		-		-		-		-	-	1.174	-
Testing OTH-T Systems	Various	Various : Various	3.069	-		-		-		-		-	-	3.069	-
		Subtotal	28.989	0.770		0.737		0.651		-		0.651	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	1.468	-		-		-		-		-	-	1.468	-
ACQ Workforce Fund	Various	Various : Various	0.009	-		-		-		-		-	-	0.009	-
		Subtotal	1.477	-		-		-		-		-	-	1.477	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	30.466	0.770		0.737		0.651		-		0.651	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

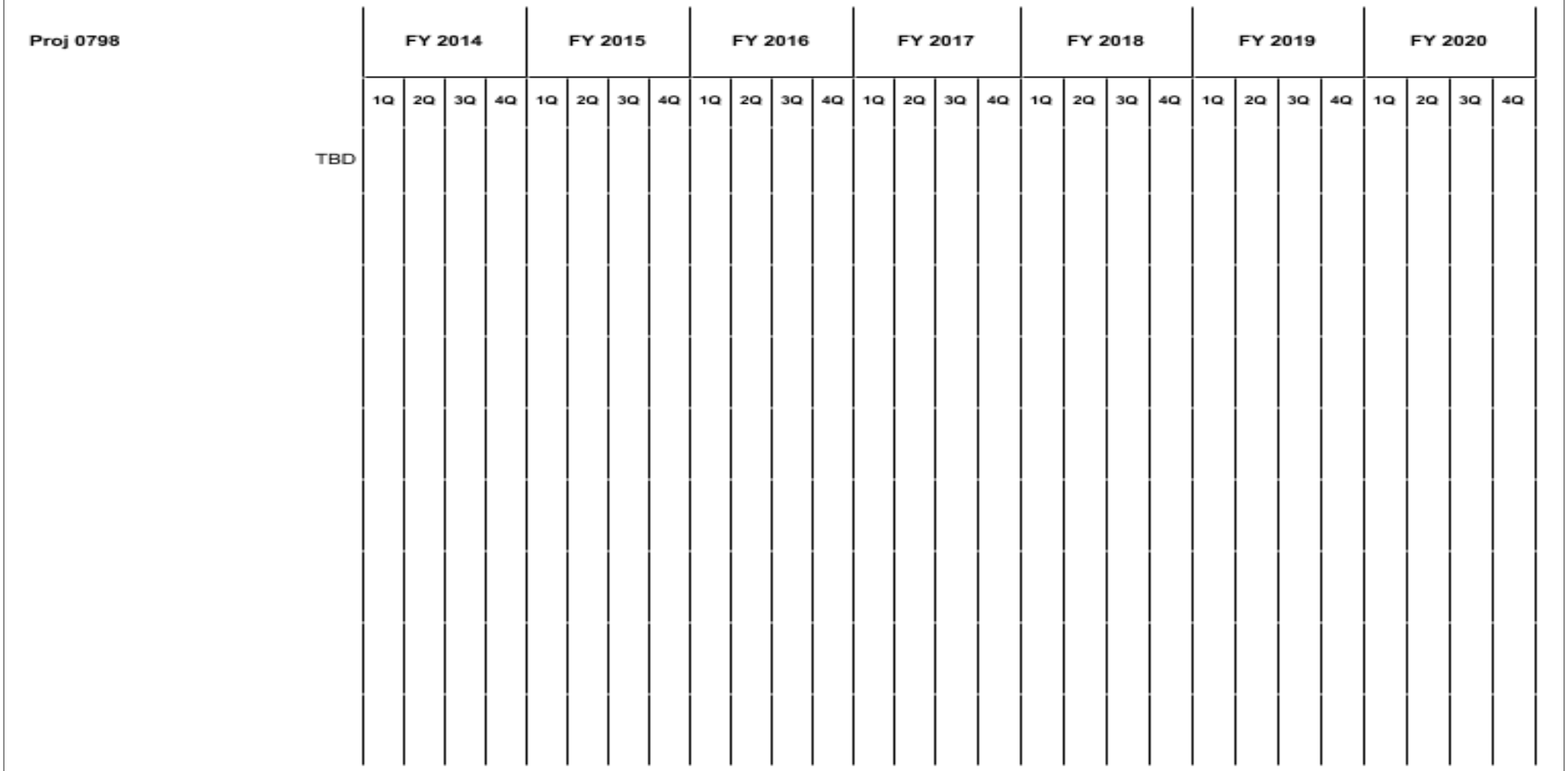

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 0798 / *Allied/Coalition Interoperability and Information Dominance (ACIID)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0798				
Allied/Coalition Interoperability and Information Dominance (ACIID): TBD	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / *SEW Architecture/Eng Support*	Project (Number/Name) 2140 / *CNO Rapid Innovation Cell (CRIC)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2140: *CNO Rapid Innovation Cell (CRIC)*	-	-	-	4.335	-	4.335	4.421	4.516	4.614	4.710	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2016 funding for the CNO's Rapid Innovation Cell (CRIC) is being moved from Project 2356 (Maritime Concept Generation and Concept Development) to Project 2140.

A. Mission Description and Budget Item Justification

The CNO's Rapid Innovation Cell (CRIC), created at the CNO's direction in 2013, is a group of junior officers and mid-grade enlisted personnel charged with identifying and developing disruptive and innovative solutions to warfighting problems, and to spread a culture of deckplate innovation througout the Fleet. The intent is to look for innovative ideas, technologies or opportunities outside the normal development and acquisition areas. The CRIC is not a full-time job for these young innovators but a collateral duty in addition to their normally assigned duties. There are no orders detailing them to the CRIC - just an informal agreement between themselves, their Commanding Officers and the Commander Navy Warfare Development Command (NWDC) that allows them to spend a portion of their time working on their innovative project. NWDC manages the CRIC for the CNO and reports directly to the CNO on CRIC issues.

Interested junior officers/mid-grade enlisted personnel who are passionate about a particular idea/technology/opportunity apply to the program in Q2 for membership the following FY. Their application package identifies their proposed project and how they think it should be approached. The application packages are reviewed and 8-10 are selected for further consideration based on the background/experience of the individual and the potential of the proposed project. The basic criteria for project selection is something that can be brought to a prototype stage within 12-18 months with a small amount of seed money. The average project will have a total cost in the $800K to $1.2M range (spread over two FYs), with an upper limit of $2M. Potential projects are reviewed for technical feasibility by Office of Naval Research (ONR) scientists and engineers during Q3, briefed by the CRIC member to a Flag Officer panel (CNWDC, CNR, and OPNAV N81) for interim approval and prioritization, and then approved by the CNO in Q4. The funding plan for the following FY starts to take shape during the Q3 feasibility review and Flag Officer interim approval. Approved projects are developed and executed in partnership with other Navy organizations, labs, academic institutions, and industry, typically within that 12-18 month timeframe. CRIC projects are not focused on addressing today's capability gaps (although some do) but rather to investigate potential solutions or opportunities outside the typical development/acquisition process. The CNO's guidance was that CRIC members not work from a list of "gaps to address" but rather use their imaginations to work on something of interest to them that could possibly provide value to the Navy. This process does not allow for building spend plans years in advance - it very much reacts to the interests of the junior officers/mid-grade enlisted personnel chosen for their innovative spirit and ability to "sell" flag officers on their ideas.

An example of one of the early projects is 3 dimensional(3D) printing, which has the potential to dramatically alter afloat maintenance and logistics by providing the ability to fabricate some types of spare parts on board vice waiting weeks for them to be shipped from a warehouse. Another is Suspended Underwater Raw Fiber (SURF), a very thin fiber-optic cable suspended beneath the surface of the water that can be deployed from a ship and used for high speed transport of data over tens or hundreds of miles.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

Some future projects under consideration address issues such as energy conservation, maintenance cost reduction, and unmanned systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: New Accomplishment/Planned Program Entry	-	-	4.335	-	4.335
Articles:	-	-	-	-	-

Description: Funding for the CNO's Rapid Innovation Cell (CRIC) was added to Project 2356 (Maritime Concept Generation and Concept Development) in FY 2014 and FY 2015. In FY 2016 through the FYDP CRIC funding is realigned to Project Code 2140. The CRIC, managed by NWDC and supported by the ONR, is intended to identify new, innovative ideas and technologies outside the mainstream Navy development and acquisition process, and get them to the Fleet for rapid testing and evaluation.

FY 2014 Accomplishments:
During FY 2014 and FY 2015 the CNO's Rapid Innovation Cell (CRIC) was funded under Project 2356 - for FY 2016 and beyond Project 2140 has been created for CRIC funding. For traceability purposes this data appears under both projects.
FY 2014 CRIC accomplishments included:
* Completed the Additive Manufacturing (3D Printing) project started in FY 2013 and transitioned it to OPNAV N4. This project placed a 3D printer at Dam Neck and another on board a forward deployed amphibious ship where data was gathered on the various ways sailors were able to use it to make themselves more productive and their jobs easier. 3D printing has the potential to dramatically alter afloat maintenance and logistics by providing the ability to fabricate some types of spare parts on board vice waiting weeks for them to be shipped from a warehouse.
* Completed the Electronic Warfare Battle Management (EWBM) project that was kick-started in FY 2013 with a small amount of internally re-prioritized NWDC funding. This project attempted to integrate meteorological data into an EW battlefield visualization system being developed by ONR. It showed promise but more work is required beyond the capability of the CRIC, and the project has been picked up by the ONR team.
* Reached a decision point on the development of the SURF project, a high-speed payout, expendable underwater fiber-optic cable suspended beneath the surface that can be deployed from a ship and used for high speed transport of data over tens or hundreds of miles. The decision was made to suspend funding on the project pending the resolution of the "connector" issue.
* Completed initial development of the Ocean Augmented Reality project, a next generation "heads-up" display using commercial off-the-shelf technology. The initial tests showed great potential for use in maintenance applications - future work in FY 2015 and possibly 2016 will explore more uses both ashore and afloat.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Continued development of the Hyper Agile Model Driven Development (HAMMD) project, a way to more rapidly/cheaply develop software solutions. The USAF was originally providing a significant amount of funding but it was lost during USAF budget drills. The result was a suspension of work pending the availability of additional funding from another source. * Continued development of the Battle School project (kick-started in late FY 2013 with internally re-prioritized NWDC funding), a simulation driven tactical crowd-sourced wargame with potential uses in training and education environments. Initial response was good, resulting in some modifications that will continue into FY 2015. * Began development of the B++ project and transitioned it to NAVCYBERCOM (classified). The initial demonstration of the project was successful and generated the CNO's comment that "if the CRIC produces nothing more than B++ it has been a success." Some residual follow-up work to complete the CRIC portion of the project remains to be done with FY 2015 CRIC funding. * Began development of the Silent Nemo project, a small, autonomous, biomimetic UUV with potential for use in ISR missions. Development will continue with some FY 2015 funding with the potential of some carry-over into FY 2016. * Began initial planning of the Waste to Watts project, a solid state anerobic digester to convert waste to energy and help reduce energy requirements. The prototype is being installed at the U.S. Naval Academy.					
FY 2015 Plans: During FY 2014 and FY 2015 the CNO's Rapid Innovation Cell (CRIC) was funded under Project 2356 - for FY 2016 and beyond Project 2140 has been created for CRIC funding. For traceability purposes this data appears under both projects. * Continue work on Silent Nemo, a small, autonomous, biomimetic UUV with a multitude of possible ISR related issues. * Continue to work on Waste to Watts, a solid state anerobic digester to convert waste to energy. The prototype is being installed and tested at the U.S. Naval Academy and is turning the waste products from the galley into electricity returned to the USNA power grid. If successful there are applications for this product at numerous shore installations around the world. * Continue advanced development of the Ocean Augmented Reality project, a next generation "heads-up" displays using commercial off-the-shelf technology. Work in FY 2015 will focus on the development of additional "apps" in response to various fleet identified uses. * Continue development of the Hyper Agile Model Driven Development project, a way to more rapidly/cheaply develop specialized software applications (dependent on available funding).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Continue advanced development of the Battle School project, a simulation driven tactical crowd-sourced wargame. * Begin work on the Acoustic Jammer project, an idea to use off-the-shelf technology to overload adversary sonar systems (may be delayed until FY 2016 start due to separation from the Navy of the project lead and delay with identifying a replacement). * Begin work on the Littoral Operations Center project, an idea to combine existing off-the-systems to create small operations centers suitable for use on small platforms and ashore. * Begin work on the Statistically driven Maintenance Analysis and Reporting Technology (SMART) model which uses existing data to better predict maintenance needs. It builds on existing work done within the F/A-18 maintenance community. * Begin work on the Cosmo Gator project, an alternative navigation capability when GPS is not available (may be delayed until FY 2016 start due to rotation of the project lead to a deployed sea tour and delay with identifying a replacement).					
FY 2016 Base Plans: * Complete any residual or follow-on work on Waste to Watts, a solid state anerobic digester to convert waste to energy. The prototype is being installed and tested at the U.S. Naval Academy and is turning the waste products from the galley into electricity returned to the USNA power grid. If successful there are applications for this product at numerous shore installations around the world. * Complete any residual or follow-on work on the Silent Nemo project, a small, autonomous, biomimetic UUV with a multitude of possible ISR related issues. * Begin (or continue if started in FY 2015) work on the Acoustic Jammer project, an idea to use off-the-shelf technology to overload adversary sonar systems. * Continue work on the Littoral Operations Center project, an idea to combine existing off-the-shelf systems to create small operations centers suitable for use on small platforms and ashore. * Continue work on the Statistically driven Maintenance Analysis and Reporting Technology (SMART) model which uses existing data to better predict maintenance needs. It builds on existing work done within the F/A-18 maintenance community. * Begin (or continue if started in FY 2015) work on the Cosmo Gator project, an alternative navigation capability when GPS is not available. * Begin development of up to four new CRIC projects to be selected from the 3rd generation of inputs (will be approved by the CNO during Q4 FY 2015 for FY 2016 new starts).					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	-	-	4.335	-	4.335

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This funding is used to develop technology-related projects to the prototype stage for Fleet evaluation and feedback, or to develop disruptive ideas to the point of evaluation (generally wargaming) in an operational environment.

E. Performance Metrics

- Harvest innovative ideas or technologies with potential to significantly increase warfighting capabilities.
- Develop selected ideas or technologies to the prototype or test-ready phase.
- Provide Fleet feedback on selected ideas or technologies.
- Transition those selected technologies to program offices or other organizations for continued development.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	C/CPFF	DTIC : Ft Belvoir VA	0.000	-		-		1.715	Oct 2015	-		1.715	Continuing	Continuing	Continuing
System Test and Evaluation	C/FFP	NAVSEA : Washington DC	0.000	-		-		0.750	Oct 2015	-		0.750	-	0.750	-
System Test and Evaluation	C/CPFF	NUWC : Newport RI	0.000	-		-		0.500	Oct 2015	-		0.500	-	0.500	-
System Test and Evaluation	C/CPFF	NAVSUP : Mechanicsburg PA	0.000	-		-		0.750	Oct 2015	-		0.750	-	0.750	-
		Subtotal	0.000	-		-		3.715		-		3.715	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	DTIC : FT Belvoir VA	0.000	-		-		0.620	Oct 2015	-		0.620	-	0.620	-
		Subtotal	0.000	-		-		0.620		-		0.620	-	0.620	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		4.335		-		4.335	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

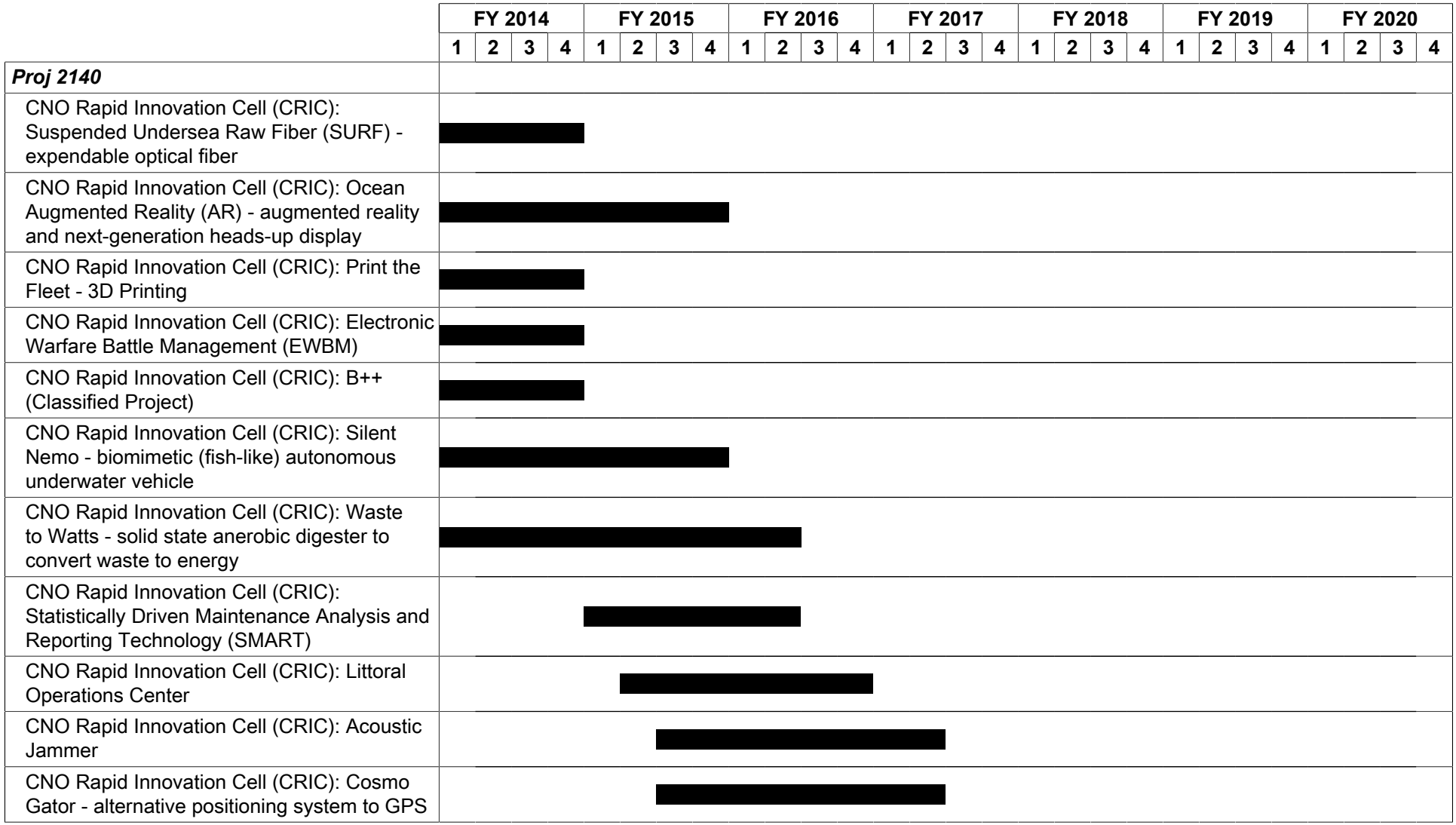

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

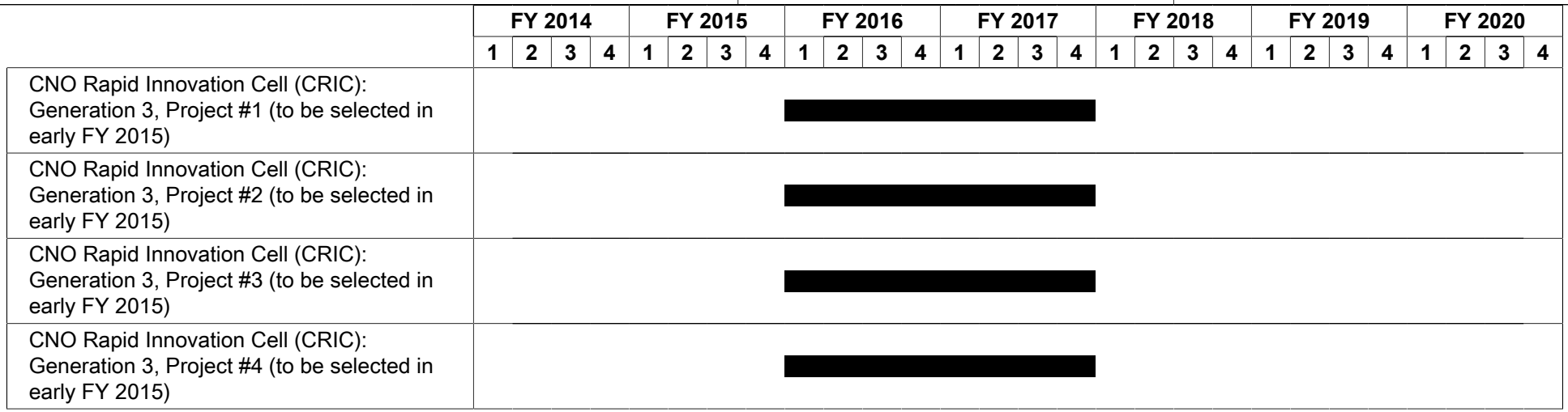

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2140 / *CNO Rapid Innovation Cell (CRIC)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2140				
CNO Rapid Innovation Cell (CRIC): Suspended Undersea Raw Fiber (SURF) - expendable optical fiber	1	2014	4	2014
CNO Rapid Innovation Cell (CRIC): Ocean Augmented Reality (AR) - augmented reality and next-generation heads-up display	1	2014	4	2015
CNO Rapid Innovation Cell (CRIC): Print the Fleet - 3D Printing	1	2014	4	2014
CNO Rapid Innovation Cell (CRIC): Electronic Warfare Battle Management (EWBM)	1	2014	4	2014
CNO Rapid Innovation Cell (CRIC): B++ (Classified Project)	1	2014	4	2014
CNO Rapid Innovation Cell (CRIC): Silent Nemo - biomimetic (fish-like) autonomous underwater vehicle	1	2014	4	2015
CNO Rapid Innovation Cell (CRIC): Waste to Watts - solid state anerobic digester to convert waste to energy	1	2014	2	2016
CNO Rapid Innovation Cell (CRIC): Statistically Driven Maintenance Analysis and Reporting Technology (SMART)	1	2015	2	2016
CNO Rapid Innovation Cell (CRIC): Littoral Operations Center	2	2015	4	2016
CNO Rapid Innovation Cell (CRIC): Acoustic Jammer	3	2015	2	2017
CNO Rapid Innovation Cell (CRIC): Cosmo Gator - alternative positioning system to GPS	3	2015	2	2017
CNO Rapid Innovation Cell (CRIC): Generation 3, Project #1 (to be selected in early FY 2015)	1	2016	4	2017
CNO Rapid Innovation Cell (CRIC): Generation 3, Project #2 (to be selected in early FY 2015)	1	2016	4	2017
CNO Rapid Innovation Cell (CRIC): Generation 3, Project #3 (to be selected in early FY 2015)	1	2016	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CNO Rapid Innovation Cell (CRIC): Generation 3, Project #4 (to be selected in early FY 2015)	1	2016	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604707N / *SEW Architecture/Eng Support*				Project (Number/Name) 2144 / *Space & Elec Warfare Engineering*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2144: *Space & Elec Warfare Engineering*	180.418	7.943	7.508	7.341	-	7.341	8.942	8.954	7.972	8.135	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

As of FY 2014, the Coalition Warrior Interoperability Demonstration (CWID) effort is referred to as Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX).

A. Mission Description and Budget Item Justification

OPNAVINST 3050.25 outlines the policy to use Warfighting Capability, Capacity, and Wholeness assessments to support the Navy's Planning Programming Budgeting and Execution (PPBE) process. Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) integrated architectures serve as key components in assessing capability and capacity gaps, enabling analysis of individual platforms and System of Systems (SoS) capabilities in order to achieve the desired warfighting effect.

Office of the Secretary of Defense (OSD) has defined several key programs, initiatives and policies that drive Navy requirements prioritization and impact Navy programs of record. Major such efforts include Joint Information Environment (JIE), Intelligence Community Information Technology Environment (IC ITE), and the Department of Defense (DoD) Risk Management Framework (RMF). Space and Naval Warfare Systems Command (SPAWAR) responsibilities for Information Technology (IT) Technical Authority (TA), Information Assurance (IA) TA, and the Information Dominance Enterprise Architecture (IDEA) will guide Navy's alignment with and implementation of these key, external requirements.

Additionally, Office of the Chief of Naval Operations (OPNAV) N2/N6 Information Dominance (ID) objectives for Assured Command and Control (C2), Battlespace Awareness, and Integrated Fires capabilities require significant changes and improvements to the Navy's approach for managing its information infrastructure, content, and effects. Potential adversaries will exploit perceived U.S. space and cyberspace vulnerabilities which could impact United States information-handling capabilities and wartime readiness. To realize the ID vision, SPAWAR as the Navy's ID Systems Command, will need to support and enforce implementation of IT and IA TA architectures, specifications, standards and profiles to ensure Navy cyber capabilities are a warfighting asset, not a liability.

The Space and Electronic Warfare provides three main functions:
1) Perform SoS and platform technical evaluations to establish the alignment with the OPNAV N2/N6 ID vision for the Navy and identify performance and operational risks associated with the integration of multiple systems to provide a robust, mission based capability; 2) Develop C4ISR/IT/ID integrated architecture products; and 3) Support development of and compliance with C4ISR/IT/ID systems engineering processes and standards. The integrated architecture products are used to support the Navy's budget process by providing a current baseline and a target end state to inform decision-making and prioritization for how the acquisition system will deliver new capabilities to the war fighter. The systems engineering processes and standards provide the construct for Assured C2, Battlespace Awareness and Integrated Fires interoperability requirements analyses to identify capability shortfalls/gaps and to compare/test alternatives in a joint end-to end environment while identifying associated

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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Navy-wide C4ISR/IT/ID implications. Processes include developing and applying criteria for use in Systems Engineering Technical Reviews (SETRs) and Gate Reviews, and providing technical inputs and assessments to governance bodies. This includes Human Systems Integration (HSI) to provide a mission-centered orientation to ensure effective operational employment of fielded capability. As joint concepts and OSD efforts/programs are defined and matured, the Navy's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) integrated architectures are refined in-turn, and the supporting C4ISR systems engineering processes and standards work to engineer and enact C4ISR implementations Navy-wide across all C4ISR mission areas.

Products provided:
1) C4ISR, Information Technology (IT), Information Assurance (IA) and Information Dominance (ID) integrated architectures to reflect current, as-programmed and future, target states
-Fit for Purpose/Department of Defense Architecture Framework (DoDAF) compliant architecture views
-Systems Command (SYSCOM) Technical Authority (TA) specifications, standards and profiles
-Common processes and tools
2) Supporting C4ISR/IT/ID systems engineering processes
- Technical standards, architectures, design guidance tools, and policies support to SYSCOMs developing IT systems and connecting to the Navy Enterprise Network afloat, ashore & aloft
-Technical analysis to Command 10th Fleet (C10F) and Office of the Chief of Naval Operations (OPNAV) utilizing an IA Risk Management Framework (RMF)
-Documentation of IT interfaces to Navy Networks
-Certifications of systems and applications connected to the Navy Enterprise Network
-Distributed Command and Control (C2) Interoperability Requirement Analysis - Gaps Analysis, Overlap Analysis, System Priority Lists, C4ISR Metrics and Models, Analysis of Alternatives, Requirements Database, Assessment Repository, Resource Implications Studies, Baseline Performance Models, Mission Task Analysis, Human Systems Integration (HSI) assessments
-End-to-End Systems Engineering and Integrated Design - Operational feasibility studies, technical feasibility studies, technical roadmap engineering validations, architectures and assessment traceability matrices
-Joint and Coalition interoperability trials - Joint end-to-end prototyping trials; joint/coalition interoperability demonstrations; interoperability assessments and metrics; and interoperability studies via the Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) formerly Coalition Warrior Interoperability Demonstration (CWID). United States Navy (USN) provides funding to the general CWID operating budget and participates by operating a USN demonstration site
-Technical analyses for Navy cloud computing options, including cloud deployment models (utility/data), mission context, warfighting and cost implications and possible implementation options for ashore and afloat capabilities
-Integration and Interoperability (I&I) - Support Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)) and OPNAV I&I initiatives to ensure integration and interoperability across Assured C2, Battlespace Awareness and Integrated Fires to deliver ID to Navy warfighters. Conduct analyses and engineering activities that provide an operational, mission-driven context to the assessment of capability gaps and interoperability seams between Navy System of Systems (SoS) capabilities that better enable acquisition programs to deliver fully integrated and interoperable warfighting capabilities. Provide I&I support in Systems Engineering Technical Reviews (SETRs) and provide recommendations for updates to acquisition policies and guidance
-Information Technology Procurement Request (ITPR) - Review of Navy ITPRs for developing systems to ensure adherence to Navy IT Standards
3) Compliance and alignment reports with Navy Enterprise Architecture/Data Strategy and ASN(RDA) system engineering policies generated during SETRs

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: C4ISR Systems Engineering	3.206	3.050	2.646	-	2.646
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) and Information Dominance (ID) Transformation/Strategic Planning within Navy/Joint/Department of Defense (DoD) Framework: Assessed existing and emerging capabilities; developed and evaluated Navy-wide policies, plans, requirements, and compliance; developed integration and investment strategies; and accelerated innovation, testing, assessment and fielding of material and non-material solutions for enhanced operational capability, joint/allied/coalition interoperability and application/enforcement of enterprise requirements/ architectures/standards toward greater Net-Centric Operations/Warfare and ID capability. -Continued to establish, develop, and validate interoperability requirements: Continued to perform Systems Engineering Technical Reviews (SETRs) utilizing validated assessment tools, system engineering methodologies and SETR checklists tracing system design to standards and requirements (e.g., Information Assurance (IA), data strategy, architecture, modeling, Open Architecture, Configuration Management (CM), Service Oriented Architecture (SOA) development, Anti-tamper, etc.) ensuring interoperability compliance to statutory and regulatory directives and guidance. -Continued to ensure continuous improvement of SETR Checklists by incorporating the latest policy, guidance, standards, and specifications. -Continued to perform System of Systems (SoS) and platform technical evaluations to integrate the alignment with the N2/N6 ID vision and identify performance and operational risks associated with the integration of multiple systems to provide a robust, mission based capability. -Continued to conduct document reviews (of Acquisition Strategies, Systems Engineering Plans, Information Support Plans, Information Assurance (IA) Strategies, Initial Capabilities Documents, Capabilities Development Documents, Capabilities Production Documents, Enterprise Architectures, etc.) for Office of the Chief of Naval Operations (CNO), Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RDA)), and the Program Executive Offices (PEOs), and other services to ensure sound systems engineering analysis and design principles have been applied to system planning requirements, design, testing, and supportability. -Continued to perform engineering evaluation and provide buy/no-buy decisions for proposed Deviations from Specification for afloat platforms to determine performance and operational impacts of the proposed changes and their effects on the platform's mission.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued to provide engineering evaluation and validation of Business Information Technology (IT) applications and IT infrastructure in order to combine, consolidate, and eliminate unnecessary or underutilized business systems for the Naval Enterprise. -Continued to provide engineering evaluation and validation of programs and ensure adherence to technical standards in the following technical domains-communications, networks, Information Storage and Retrieval/ Information Surveillance Reconnaissance/Information Operations, afloat platforms (both large and small decks), submarines, shore and Maintenance Operations Center capability, command and control, and space systems. -Continued to conduct Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Certifications through design and testing analysis ensuring C4ISR delivery to the platform (shore, surface ship, submarine) is validated to meet the operational need and is interoperable with platform, force level, joint/allied/coalition forces. -Provided technical support to the Department of the Navy Chief Information Office (DoN CIO) assessment of compliance with Department of Navy Enterprise Architecture (DoN EA) as part of Title 40/Clinger-Cohen Act confirmation process.					
FY 2015 Plans: -Continue C4ISR and Information Dominance (ID) Transformation/Strategic Planning within Navy/Joint/ Department of Defense (DoD) Framework: Assess existing and emerging capabilities; develop and evaluate Navy-wide policies, plans, requirements, and compliance; develop integration and investment strategies; and accelerate innovation, testing, assessment and fielding of material and non-material solutions for enhanced operational capability, joint/allied/coalition interoperability and application/enforcement of enterprise requirements/architectures/standards toward greater Net-Centric Operations/Warfare and ID capability. -Continue to establish, develop, and validate interoperability requirements: Continue to perform Systems Engineering Technical Reviews (SETRs) utilizing validated assessment tools, system engineering methodologies and SETR checklists tracing system design to standards and requirements (e.g., Information Assurance (IA), data strategy, architecture, modeling, Open Architecture, Configuration Management (CM), Service Oriented Architecture (SOA) development, Anti-tamper, etc.) ensuring interoperability compliance to statutory and regulatory directives and guidance. -Continue to ensure continuous improvement of SETR Checklists by incorporating the latest policy, guidance, standards, and specifications. -Continue to perform System of Systems (SoS) and platform technical evaluations to integrate the alignment with the N2/N6 ID vision and identify performance, interoperability, and operational risks associated with the integration of multiple systems to provide a robust, mission based capability.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to conduct document reviews (of Acquisition Strategies, Systems Engineering Plans, Information Support Plans, IA Strategies, Initial Capabilities Documents, Capabilities Development Documents, Capabilities Production Documents, Enterprise Architectures, etc.) for Office of the Chief of Naval Operations (CNO), Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RDA)), and the Program Executive Offices (PEOs), and other services to ensure sound systems engineering analysis and design principles have been applied to system planning requirements, design, testing, and supportability. -Continue to perform engineering evaluation and provide buy/no-buy decisions for proposed Deviations from Specification for afloat platforms to determine performance and operational impacts of the proposed changes and their effects on the platform's mission. -Continue to provide engineering evaluation and validation of Business Information Technology (IT) applications and IT infrastructure in order to combine, consolidate, and eliminate unnecessary or underutilized business systems for the Naval Enterprise. -Continue to provide engineering evaluation and validation of programs and ensure adherence to technical standards in the following technical domains-communications, networks, Information Storage and Retrieval/ Information Surveillance Reconnaissance/Information Operations, afloat platforms (both large and small decks), submarines, shore and Maintenance Operations Center capability, command and control, and space systems. -Continue to conduct Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Certifications through design and testing analysis ensuring C4ISR delivery to the platform (shore, surface ship, submarine) is validated to meet the operational need and is interoperable with platform, force level, joint/allied/coalition forces. -Continue to provide technical support to the Department of the Navy Chief Information Office (DoN CIO) assessment of compliance with Department of Navy Enterprise Architecture (DoN EA) as part of Title 40/Clinger-Cohen Act confirmation process.					
FY 2016 Base Plans: -Continue C4ISR and Information Dominance (ID) Transformation/Strategic Planning within Navy/Joint/ Department of Defense (DoD) Framework: Assess existing and emerging capabilities; develop and evaluate Navy-wide policies, plans, requirements, and compliance; develop integration and investment strategies; and accelerate innovation, testing, assessment and fielding of materiel and non-materiel solutions for enhanced operational capability, joint/allied/coalition interoperability and application/enforcement of enterprise requirements/architectures/standards toward greater Net-Centric Operations/Warfare and ID capability. -Continue to establish, develop, and validate interoperability requirements: Continue to perform Systems Engineering Technical Reviews (SETRs) on Acquisition Category (ACAT) I,II, and III programs utilizing validated					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
assessment tools, system engineering methodologies and SETR checklists tracing system design to standards and requirements (e.g., Information Assurance (IA), data strategy, architecture, modeling, Open Architecture, Configuration Management (CM), Service Oriented Architecture (SOA) development, Anti-tamper, etc.) ensuring interoperability compliance to statutory and regulatory directives and guidance. -Ensure continuous improvement on SETR Checklists for Acquisition Category (ACAT) I,II, and III programs by incorporating the latest policy, guidance, standards, and specifications, including specific criteria for effective implementation of and compliance with Information Technology (IT) and Information Assurance (IA) Technical Authority (TA) architectures, specifications, standards and profiles. -Continue to perform System of Systems (SoS) and platform technical evaluations to assess alignment with Office of the Chief of Naval Operations (OPNAV) N2/N6 Information Dominance (ID) vision, and identify technical performance, interoperability, and operational risks associated with the integration of capabilities across multiple systems to provide a robust, mission-based capability. -Continue to conduct document reviews (of Acquisition Strategies, Systems Engineering Plans, Information Support Plans, IA Strategies, Initial Capabilities Documents, Capabilities Development Documents, Capabilities Production Documents, Enterprise Architectures, etc.) for Office of the Chief of Naval Operations (CNO), Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)), Program Executive Offices (PEOs), and other Services to ensure the application of sound systems engineering analysis and design principles to system planning requirements, design, testing, and supportability. -Continue to perform engineering evaluations for afloat platforms to determine performance and operational impacts of proposed deviations from specification and provide buy/no-buy recommendations. -Continue to conduct engineering evaluations and validation of Business IT applications and IT infrastructure in order to combine, consolidate, and eliminate unnecessary or underutilized business systems for the Naval Enterprise Network. -Continue to provide engineering evaluations and validation of programs and ensure adherence to technical standards in the following technical domains: communications, networks, Information Storage and Retrieval/ Information Surveillance Reconnaissance/Information Operations, afloat platforms (both large and small decks), submarines, shore and Maintenance Operations Center capability, command and control, and space systems. -Continue to conduct Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Certifications through design and testing analysis ensuring C4ISR delivery to the platform (shore, surface ship, submarine) is validated to meet the operational need and is interoperable with platform, force level, joint/allied/coalition forces.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to provide technical support to the Department of the Navy Chief Information Office (DoN CIO) assessment of compliance with Department of Navy Enterprise Architecture (DoN EA) as part of Title 40/Clinger-Cohen Act certification process. ***FY 2016 OCO Plans:*** N/A					
Title: Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) (Formerly known as CWID)	0.971	0.878	0.837	-	0.837
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Developed coalition and interagency interoperability and information sharing through coalition engagement, technology, demonstrations, and assessments leading to improvements of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems within the Navy and in conjunction with Joint Services and Coalition efforts. -Leveraged Coalition Interoperability and Assurance Validate (CIAV) Future Mission Network (FMN) efforts in order to develop operationally relevant experiments focused on Navy mission enhancement in a Coalition environment. -Developed experiments integrated with North Atlantic Treaty Organization (NATO) and Troop Contributing Nation (TCN) partners in conjunction with the Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) infrastructure (formerly Coalition Warrior Interoperability Demonstration (CWID)). -Enhanced integration and engagement with Pacific Rim Coalition partners by leveraging existing experimentation and exercise venues in order to develop operationally relevant experiments focused on enhancing Navy missions. -Demonstrated cutting-edge technologies and transition them to the end-user, including Coalition Partners, and the Joint Services. -Continued to provide interoperability between existing and cutting-edge C4ISR systems. Integrated directly with Navy Program Managers (i.e. Program Executive Office Command, Control, Communications, Computers, Intelligence (PEO C4I) and the combatant commanders at the Technical Director, Acquisition Program Manager, and Science Advisor levels.) -Validated technology selection, experimental objective design, and execution to influence and direct design efforts and to satisfy warfighter capability gaps in a Coalition setting.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2144 / *Space & Elec Warfare Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued to develop operationally relevant classified laboratory environments for Joint/Coalition war fighter technology experiments. Year-round connectivity will be continued with end-users in order to provide a distributed Coalition experimentation environment focused enhancement of Navy missions.					
FY 2015 Plans: -Develop interoperability and information sharing through coalition engagement, technology, demonstrations, and assessments leading to improvements of C4ISR systems within the Navy and in conjunction with Joint Services and Coalition efforts. -Leverage CIAV Mission Partner Environment (MPE) efforts in order to develop operationally relevant experiments and assessments focused on Navy mission enhancement in a Coalition environment. -Continue development of a Navy experimentation environment that can be leveraged to provide Navy focused Assurance and Validation support to the CIAV community. -Develop experiments integrated with NATO and TCN partners in conjunction with CWIX infrastructure. -Enhance integration and engagement with Pacific Rim (PACOM AO) Coalition partners by leveraging existing experimentation and exercise venues (such as Rim of the Pacific (RIMPAC), Cooperation Afloat Readiness and Training (CARAT), Foal Eagle, and Cobra Gold) in order to develop operationally relevant experiments focused on enhancing Navy missions. -Demonstrate and evaluate cutting-edge technologies and transition them to the end-user, including Coalition Partners, and the Joint Services. -Continue to provide interoperability between existing and cutting-edge Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems. Integrate directly with Navy Acquisition Programs (i.e. Program Executive Office Command, Control, Communications, Computers, Intelligence (PEO C4I) and the Component/ Combatant Commanders at the Technical Director and Science Advisor levels). -Validate technology selection, experimental objective design, and execution to influence and direct design efforts and to satisfy warfighter capability gaps in a Coalition setting. -Continue to develop operationally relevant classified laboratory environments for Joint/Coalition war fighter technology experiments. Year-round connectivity will be continued with end-users in order to provide a distributed Coalition experimentation environment focused enhancement of Navy missions.					
FY 2016 Base Plans: -Develop interoperability and information sharing through coalition engagement, technology, demonstrations, and assessments leading to improvements of C4ISR systems within the Navy and in conjunction with Joint Services and Coalition efforts.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Further enhance integration and engagement with Pacific Rim (PACOM AO) Coalition partners as well as Coalition partners in the Southern Command Area of Operation (SOUTHCOM AO) by fostering a connected, distributed experimentation environment suitable for expanded experimentation in those areas. -Seek enhanced interoperability with North Atlantic Treaty Organization (NATO) Coalition partners through the Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) infrastructure. -Utilize existing events such as Coalition Interoperability Assurance and Validation (CIAV) and CWIX to expose interoperability issues between US and Coalition Partner systems and report issues and possible workarounds to relevant entities. -Leverage CIAV infrastructure to enhance US maritime interoperability within the Joint Information Environment (JIE) Mission Partner Environment (MPE). -Coordinate experimentation with applicable acquisition and operational entities (i.e. PEO C4I, Component/ Combatant Commanders at the Technical Director and Science Advisor levels) in order to assess interoperability between existing and cutting-edge C4ISR systems. -Continue development of suitable environments for Joint/Coalition war fighter technology experiments. Periodic connectivity will be continued with end-users in order to provide a distributed Coalition experimentation environment focused enhancement of Navy missions. ***FY 2016 OCO Plans:*** N/A					
Title: Systems Engineering and Integration Revitalization	1.046	0.995	0.862	-	0.862
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Developed Integration and Interoperability (I&I) Systems Engineering Technical Reviews (SETR) checklist in support of Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)). -Conducted I&I SETR events to validate and refine I&I checklist items. -Reviewed all Navy Information Technology Procurement Requests (ITPR) for developing systems to ensure adherence to Navy Information Technology (IT) standards and capture and report metric information to support moving to bulk IT procurement to take advantage of economies of scale across the Department of the Navy (DoN). ***FY 2015 Plans:*** -Continue to refine the I&I SETR checklist in support of ASN(RDA). -Continue to conduct I&I SETR events to validate and refine I&I checklist items.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to review all Navy ITPR for developing systems to ensure adherence to Navy IT standards and capture and report metric information to support moving to bulk IT procurement to take advantage of economies of scale across the DoN. -Provide Command, Control, Communications, Computers, Intelligence (C4I) and Information Assurance (IA) Certifications (Naval Warfare Systems Certification (NWSCP)) and Department of Defense Information Assurance Certification and Accreditation Process (DIACAP)). ***FY 2016 Base Plans:*** -Continue to develop and refine the I&I Integrated Capability Framework's (ICF) Mission Technical Baselines aligned to Required Operational Capability (ROC)/Platform Operational Environment (POE) mission areas to capture and decompose operational requirements and define System of System (SoS) interoperability requirements. Use these SoS baselines to develop Integrated Capability Technical Baselines to support analysis of capability gaps and engineering trades to inform investment decisions. -Continue to evolve Assured Command and Control (C2), Battlespace Awareness and Integrated Fires Integrated Capability Technical Baselines to ensure Information Dominance (ID) capabilities align to mission-specific kill chains to reduce interoperability seams across the supporting SoS. -Establish robust, foundational mission engineering tools (e.g., executable architecture models) to support Integration and Interoperability (I&I) technical performance gap analysis and trade recommendations. -Review impact on Acquisition Category (ACAT) I,II, and III programs of I&I Systems Engineering Technical Reviews (SETR) checklist items on SETR outcomes and acquisition system improvements to deliver fully integrated and interoperable warfighting capability. -Provide Command, Control, Communications, Computers, Intelligence (C4I) and Information Assurance Certifications (Naval Warfare Systems Certification (NWSCP) and Department of Defense Risk Management Framework (RMF)). ***FY 2016 OCO Plans:*** N/A					
Title: Systems Engineering Standards and Processes	2.720	2.585	2.996	-	2.996
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to develop processes to integrate System of System (SoS) engineering technical assessments to identify cross system dependencies.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued to incorporate lessons learned from prior year system engineering efforts to ensure multi-systems processes were intuitive and met the mission of the Navy. -Developed Joint cloud-enabled, secure domain environment using virtual desktop technology that allow secure and cost effective operations at the point of need, creating improved efficiencies, enhanced cyber operations and improved capabilities across a range of military operations. -Developed Utility Cloud, Storage Cloud and planned and executed risk reduction for UNCLASSIFIED/SECRET/ TOPSECRET/Sensitive Compartmented Information (SCI) Data Cloud providing secure access to other users. -Developed mission effectiveness of a data centric architecture. -Developed secure thin client (enterprise applications) device capability integration with the current Navy enterprise. -Developed the future Navy cloud architecture to inform Navy acquisition programs on cloud technologies. -Developed Continental United States (CONUS)/Outside Continental United States (OCONUS) cloud-based capabilities.					
FY 2015 Plans: -Continue to develop/refine processes to integrate SoS engineering technical assessments to identify cross system dependencies and potential interoperability and integration issues. -Continue to incorporate lessons learned from prior year system engineering efforts to ensure multi-systems processes are intuitive and meet the mission of the Navy. -Continue efforts to develop Joint cloud-enabled, secure domain environment using virtual desktop technology that allow secure and cost effective operations at the point of need, creating improved efficiencies, enhanced cyber operations and improved capabilities across a range of military operations. -Develop Information Technology (IT) and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) requirements and interface specifications and standards. -Develop Information Assurance (IA) requirements and interface specifications and standards. -Develop/refine processes for IT and C4ISR Technical Authority (TA) implementation. -Develop/refine processes for IA TA implementation. -Establish an online repository of System of System (SoS) IT and IA Engineering Policies, Requirements, Standards, and Best Practices to facilitate consistent SoS Engineering across all Navy activities. -Update the future Navy cloud architecture to inform Navy acquisition programs on cloud technologies.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Reduce cyber variance through the standardization of afloat, ashore and aloft infrastructure. Continue IT and IA TA efforts to define, place under configuration control, and manage physical and logical interface requirements and IA controls for systems that connect to the Navy Enterprise Network. -Sustain actions to develop platform as-programmed and target architectures to support continued progress toward reducing the number of unique interfaces and variance across platform configurations. -Continue to develop and promulgate specifications, standards and profiles under IT TA. -Develop and promulgate cybersecurity standards under IA TA to ensure consistent implementation of IA controls across Navy systems. -Develop Navy Cybersecurity Situational Awareness (NCSA) requirements and interface specifications and standards to reduce variance across the Navy cyber environment and enable integration and interoperation across multiple tools and technologies. -Ensure compliance with NCSA requirements and standards across Navy networks and systems, to include C4ISR systems as well as tactical control systems such as combat, Hull Mechanical & Electrical (HM&E), and navigation systems. -Perform risk assessments to improve NCSA decision-making regarding the protection, detection, and response to cyber events on Navy networks and systems. -Develop and maintain enterprise-level cybersecurity target architectures to support Navy transition to a holistic cybersecurity strategy that enables implementation of a common, layered, Defense-in-Depth approach that improves the Navy's cyber security posture. Develop and support implementation of the Defense-in-Depth Functional Implementation Architecture (DFIA) to define IA boundaries, IA and logical attributes, controlling parameters, and inheritable security controls. -Support Navy's continued implementation of Department of Defense (DoD) Risk Management Framework (RMF), to include development and maintenance of guidance for Navy RMF implementation, including Continuous Monitoring and Risk Scoring (CMRS). Carry out activities as Navy's Security Controls Assessor (SCA). -Carry forward efforts to modify existing processes on Acquisition Category (ACAT) I,II, and III programs (e.g., Systems Engineering Technical Reviews (SETR), Gate Reviews, etc.) to ensure compliance with Information Technology (IT) and Information Assurance (IA) Technical Authority (TA) specifications, standards and profiles early in the acquisition lifecycle. Mature IT and IA Configuration Management and Waiver processes to ensure implementation and compliance determinations are based on enterprise-level risk management assessments. -Maintain the Information Dominance Enterprise Architecture (IDEA) to serve as the Navy Enterprise Network target end state that supports alignment with the Joint Information Environment (JIE), Intelligence Community Information Technology Environment (IC ITE), and enables integration of Navy Tactical Cloud capabilities.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Establish the IDEA-Repository (IDEA-R) to serve as the authoritative source of IT and IA TA architectures, specifications, standards and profiles. Sustain efforts to include Integration and Interoperability (I&I) outputs (e.g., Mission Technical Baselines, Integrated Capability Technical Baselines) and vignette descriptions within the IDEA-R to support mission-/capability-driven and System of Systems assessments that support Program Objective Memorandum (POM) inputs and ensure IDEA-related products support objectives for Assured Command & Control, Battlespace Awareness and Integrated Fires. -Use IDEA to update the future Navy cloud architecture to inform Navy acquisition program investments on cloud technologies. -Certify applications and systems connected to the Naval Enterprise Network for compliance to IT/IA standards and best practices and assure cyber resilience. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	7.943	7.508	7.341	-	7.341

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Space and Electronic Warfare (SEW) Engineering is a non-acquisition program that develops, tests, implements technical authority, and validates naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR); provides integrated architecture products and supports C4ISR systems engineering processes and standards. Activities include acquiring intellectual capital in emerging technical areas through contracts providing technical engineering expertise and surge capacity for emerging tasks.

E. Performance Metrics

The Space and Electronic Warfare (SEW) engineering program will employ rigorous and consistent system engineering practices in an evolving value model to support development and deployment of shipboard, undersea, and land based capabilities based on mission and performance requirements, integrated enterprise architectures, model-validated solutions, and sustainment and supportability needs for the Command and Control, Intelligence, Networks, Communications, Space, and Business Information Technology domains.

Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) Performance Metrics: Three key metrics: (1) Interoperability and compliance with Naval, joint, coalition and other non-governmental organization architectures, systems and equipment; (2) Compliance with Defense Information

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Services Agency (DISA), National Security Agency (NSA), and other joint and coalition information assurance and security standards; and (3) war fighter utility assessment across the joint and coalition spectrum. Specific metrics validate performance of individual technologies participating in Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	4.554	-		-		-		-		-	-	4.554	-
SEW/C4I Technology Integration	Various	Various : Various	12.985	-		-		-		-		-	-	12.985	-
MDA Prototype SE Support	Various	Various : Various	17.376	-		-		-		-		-	-	17.376	-
Systems Engineering & Integration Revitalization	Various	Various : Various	2.174	-		-		-		-		-	-	2.174	-
Systems Engineering & Integration Revitalization	C/CPFF	ComGlobal : San Diego, CA	0.565	-		-		-		-		-	-	0.565	-
Systems Engineering & Integration Revitalization	C/CPFF	AUSGAR : San Diego, CA	0.496	0.470	Mar 2014	0.448	Mar 2015	0.317	Mar 2016	-		0.317	Continuing	Continuing	Continuing
Systems Engineering & Integration Revitalization	C/CPFF	METRON : Reston, VA	0.316	-		-		-		-		-	-	0.316	-
Systems Engineering & Integration Revitalization	C/CPFF	SAIC : McLean, VA	0.316	-		-		-		-		-	-	0.316	-
Systems Engineering & Integration Revitalization	WR	SSC LANT : Charleston, NC	0.479	0.158	Feb 2014	0.149	Feb 2015	0.149	Feb 2016	-		0.149	Continuing	Continuing	Continuing
Systems Engineering & Integration Revitalization	WR	SSC PAC : San Diego, CA	1.226	0.418	Feb 2014	0.398	Feb 2015	0.396	Feb 2016	-		0.396	Continuing	Continuing	Continuing
Systems Engineering Standards & Processes	Various	Various : Various	5.588	-		-		-		-		-	-	5.588	-
Systems Engineering Standards & Processes	C/CPFF	ComGlobal : San Diego, CA	1.454	-		-		-		-		-	-	1.454	-
Systems Engineering Standards & Processes	C/CPFF	AUSGAR : San Diego, CA	1.264	1.224	Mar 2014	1.164	Mar 2015	0.817	Mar 2016	-		0.817	Continuing	Continuing	Continuing
Systems Engineering Standards & Processes	C/CPFF	METRON : Reston, VA	0.813	-		-		-		-		-	-	0.813	-
Systems Engineering Standards & Processes	C/CPFF	SAIC : McLean, VA	0.812	-		-		-		-		-	-	0.812	-
Systems Engineering Standards & Processes	WR	SSC LANT : Charleston, NC	1.236	0.408	Feb 2014	0.388	Feb 2015	0.379	Feb 2016	-		0.379	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Standards & Processes	WR	SSC PAC : San Diego, CA	3.210	1.088	Feb 2014	1.034	Feb 2015	1.020	Feb 2016	-		1.020	Continuing	Continuing	Continuing
Systems Engineering Standards & Processes	C/CPFF	BAH : McLean, VA	0.000	-		-		0.780	Dec 2015	-		0.780	Continuing	Continuing	Continuing
Systems A&E and Validation	Various	Various : Various	13.188	-		-		-		-		-	-	13.188	-
Distributed C2 Interoperability Requirement analysis	Various	Various : Various	16.583	-		-		-		-		-	-	16.583	-
C4ISR Architecture and Standards	Various	Various : Various	14.268	-		-		-		-		-	-	14.268	-
End-to-End System Engineering and Integrated Design	Various	Various : Various	10.994	-		-		-		-		-	-	10.994	-
Info. Repository/Naval Architecture	Various	Various : Various	4.000	-		-		-		-		-	-	4.000	-
C4ISR Systems Engineering	Various	Various : Various	5.157	-		-		-		-		-	-	5.157	-
C4ISR Systems Engineering	WR	NSWC Dahlgren : Dahlgren, MD	0.590	0.289	Feb 2014	-		-		-		-	-	0.879	-
C4ISR Systems Engineering	MIPR	DISA : Pensacola, FL	0.169	0.097	Feb 2014	-		-		-		-	-	0.266	-
C4ISR Systems Engineering	C/CPFF	ComGlobal : San Diego, CA	5.746	1.890	Oct 2013	-		-		-		-	-	7.636	-
C4ISR Systems Engineering	C/CPFF	AUSGAR : San Diego, CA	0.000	-		1.800	Mar 2015	1.401	Mar 2016	-		1.401	Continuing	Continuing	Continuing
C4ISR Systems Engineering	WR	SSC LANT : Charleston, NC	0.440	-		-		-		-		-	-	0.440	-
C4ISR Systems Engineering	WR	SSC PAC : San Diego, CA	3.025	0.930	Feb 2014	0.885	Feb 2015	0.882	Feb 2016	-		0.882	Continuing	Continuing	Continuing
C4ISR Systems Engineering	C/CPFF	SAIC : McLean, VA	0.000	-		0.364	Jan 2015	0.363	Jan 2016	-		0.363	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C4ISR Systems Engineering	WR	NAVAIR : Patuxent River, MD	0.088	-		-		-		-		-	-	0.088	-
C4ISR Systems Engineering	MIPR	CECOM : Fort Monmouth, NJ	0.264	-		-		-		-		-	-	0.264	-
C4ISR Systems Engineering	MIPR	AF : Hill AFB, UT	0.220	-		-		-		-		-	-	0.220	-
		Subtotal	129.596	6.972		6.630		6.504		-		6.504	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SEW Eng/CWIX	Various	Various : Various	30.171	-		-		-		-		-	-	30.171	-
SEW Eng/CWIX	MIPR	Defense Information Systems Agency : Arlington, VA	0.234	0.109	Apr 2014	0.098	Apr 2015	0.093	Apr 2016	-		0.093	Continuing	Continuing	Continuing
SEW Eng/CWIX	WR	Joint Interoperability Test Command : Fort Huachuca, AZ	1.846	0.358	Mar 2014	-		-		-		-	-	2.204	-
SEW Eng/CWIX	WR	SSC Pacific : San Diego, CA	2.190	0.504	Dec 2013	0.490	Dec 2014	0.467	Dec 2015	-		0.467	Continuing	Continuing	Continuing
SEW Eng/CWIX	MIPR	US Northern Command : Peterson AFB, CO	0.332	-		-		-		-		-	-	0.332	-
SEW Eng/JRAE	Various	Various : Various	15.978	-		-		-		-		-	-	15.978	-
SEW Eng/CWIX	C/CPFF	SAIC : McLean, VA	0.000	-		0.190	Jan 2015	0.182	Jan 2016	-		0.182	Continuing	Continuing	Continuing
SEW Eng/CWIX	C/CPFF	AUSGAR : San Diego, CA	0.000	-		0.100	Mar 2015	0.095	Mar 2016	-		0.095	Continuing	Continuing	Continuing
		Subtotal	50.751	0.971		0.878		0.837		-		0.837	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ACQ Workforce Fund	Various	Various : Various	0.071	-		-		-		-		-	-	0.071	-
		Subtotal	0.071	-		-		-		-		-	-	0.071	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.418	7.943		7.508		7.341		-		7.341	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2144																												
Coalition Warrior Interoperability Demonstration/Coalition Warrior Interoperability Experiment (CWID/CWIX): Schedule as directed by the Joint Management Office (JMO) during execution year.																												

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2144				
Coalition Warrior Interoperability Demonstration/Coalition Warrior Interoperability Experiment (CWID/CWIX): Schedule as directed by the Joint Management Office (JMO) during execution year.	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2356: *Maritime Concept Generation & Development*	4.191	9.789	5.346	8.390	-	8.390	8.668	8.829	9.012	9.200	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

In FY 2014 and FY 2015 the Maritime Concept Generation and Development project also included funding for the CNO's Rapid Innovation Cell (CRIC). Beginning in FY 2016 funding for the CNO's Rapid Innovation Cell (CRIC) is in Project 2140.

A. Mission Description and Budget Item Justification

In "A Cooperative Strategy for 21st Century Seapower" then CNO, ADM Gary Roughead, reiterated the importance of fleet experimentation "Specific initiatives in support of this strategy must be vetted and tested over time through experimentation, wargaming, and continued operational experience..."

The "Naval Operations Concept of 2010 (NOC 10)" included direct references to experimentation: "The ideas in NOC 10 will be refined over time through wargaming, experimentation, operational analysis and practical experience - ultimately resulting in changes to the way naval forces are employed."

In a June 2013 Proceedings article entitled "A New Naval Era", the current CNO and the Commandant of the Marine Corps discussed the importance of a Navy-Marine Corps team dedicated to redefining the contours of tomorrow's naval force today through innovation and experimentation.

The Maritime Concept Generation and Concept Development project funds four main efforts:
(1) Experimentation in support of the Concept Generation/Concept Development (CG/CD) program. The priorities for the CG/CD program are to explore near/far-term technological and non-technological solutions to war fighting gaps across all naval warfare areas. The associated experimentation efforts include planning, systems engineering and integration, modeling and simulation support, event execution, data collection, analysis, and assessment for a wide-range of experiment venues, such as workshops, seminars, war games, limited objective experiments, limited technical experiments, and live force events.
(2) Provides planning, execution and analysis support to the Fleet Experimentation (FLEX) program, a joint U.S. Fleet Forces/Pacific Fleet effort managed by NWDC, and the only program. NWDC provides planning, systems engineering and integration, execution, data collection, and analysis support for FLEX events to address identified warfighting gaps prioritized in the CUSFF/CPF Commander's Guidance for Fleet Experimentation. The FLEX program and efforts of the FLEX team support the "last tactical mile" of many other Navy Science and Technology (S&T) programs by supporting those programs when the technology is mature enough and requires evaluation on or by a "fleet asset" - ships, airplanes, submarines, sailors. Reductions in FLEX program support cause many other innovative/S&T programs to also suffer the consequences through the loss of the expertise resident in the FLEX program/team.
(3) Provides Modeling and Simulation (M&S) support to FLEX and NWDC experimentation efforts. Where practical M&S is used to stimulate decision making during wargaming and experimentation vice the more expensive and difficult use of live forces.

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(4) Provides for the Navy's Tactical Development and Evaluation (TAC D&E) program, managed by NWDC. This program, focused on providing near-term solutions to address specific fleet-identified tactical issues. Proposed projects are submitted by fleet units, prioritized against Commander's Guidance issued by Commander US Fleet Forces and Commander Pacific Fleet, and then funded to the extent of the available funding.

Products produced include:
- Concepts signed by the CNO that influence future funding and technological development
- White papers (think pieces) intended to generate further discussion within Navy leadership
- Experimentation final reports (including analysis and recommendations)
- FLEX event Analysis Reports
- FLEX event DOTMLPF change recommendations
- New/revised doctrinal and Tactics/Techniques/Procedures publications
- Tactical Memorandum (TACMEMOs)(draft doctrine)
- Concepts of Operation (CONOPS)
- Tactical Decision Aids (TACAIDS)

Specific products are listed in the Accomplishments/Plans section of this exhibit.

Tis project shows an increase from FY 2015 to FY 2016 even though the CRIC is funded from its own project in FY 2016. The FY 2015 funding, however, did not adequately cover the CRIC projects approved for execution by the CNO (approximately $3M shortfall) nor did it adequately cover experimentation support costs (reduction of contractor support resulted in down-scoping of some experimentation efforts). The lack of adequate FY 2015 funding has put NWDC in a position where FY 2016 funding will be required during October 2015 to avoid a work stoppage.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Maritime Concept Generation and Development	9.789	5.346	8.390	-	8.390
Articles:	-	-	-	-	-
Description: In FY 2014 and FY 2015 this project funded: - portions of the CNO's Concept Generation/Concept Development program. - NWDC management, planning and execution support to the Fleet Experimentation (FLEX) program. - Modeling and Simulation support to the FLEX program. - CNO's Rapid Innovation Cell (CRIC). - Navy's Tactical Development and Evaluation (TAC D&E) program. In FY 2016 funding for the CNO's Rapid Innovation Cell (CRIC) moves to a new project, 2140.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Concept Generation/Concept Development * Completed the Undersea Domain Operating Concept, an idea of how to maintain and maximize our advantages in the undersea environment, which was signed by the CNO along with a POA&M assigning actions to appropriate stakeholders. One of those actions included developing an Undersea Domain Operating Concept experimentation campaign to assist in turning the conceptual ideas into reality. * Completed development of the Information Dominance Enabling Concept: Assured C2 (IDEC) which was signed by the CNO in Dec 2014. This concept focused on how we prevail in an A2/AD environment. * Completed the Counter-Intelligence, Surveillance, Reconnaissance (C-ISR) concept which is awaiting VCNO endorsement. This concept is focused on creating a temporary window of access in a robust A2/AD environment. * Completed work on the Joint Concept for Rapid Aggregation (JCRA), a Joint Staff concept that will improve speed of response to global crises given the future operating environment. The draft is currently being reviewed by the Service N3/5s. * Started development of the Agile Forward Presence concept which is focused on a different way of deploying forces and providing presence. The first draft is being circulated to numerous stakeholders for feedback. * Started development of the Distributed Naval Air Operations concept which is focused on a way of spreading air strike capabilities across multiple platforms. The first draft is being circulated to numerous stakeholders for feedback. * Completed a White Paper for a prospective concept on Operational Logistics (OPLOG). The concept will focus on ways to mitigate challenges to sustainment in the future operating environment. This White Paper is at CUSFF//CPF for approval. * Completed a White Paper for a prospective concept on Electro-Magnetic Maneuver Warfare (EMW). The concept will focus on methods to enable friendly forces to maneuver within a contested electromagnetic environment. this White Paper is at CUSFF/CPF for approval. * Began work on an update to the 2006 Operating Concept for the Rail Gun. NWDC is managing the project with NAVSEA 405 as the customer. First draft is due in Mar 2015. * Worked with the Combined Joint Operations from the Sea Center for Excellence (CJOS COE), a NATO command, on the Allied Maritime ISR concept to improve allied interoperability with ISR capabilities. Allied Command for Transformation (ACT) has placed this concept on hold.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
NWDC provides design, planning, systems engineering and integration, modeling and simulation support, event execution, data collection, analysis, and assessment support for a wide-range of Fleet Experimentation (FLEX) program experiment venues, such as workshops, seminars, war games, limited objective experiments, limited technical experiments, and live force events. Following is information on some of the FLEX events supported in FY 2014: * Completed the Fleet Battle Experiment 13 (FBX 13) as part of the FLEX 2013 Execution Plan. The execution event, done in conjunction with a fleet training/certification event was delayed to Nov 2013 due to ship scheduling issues. FBX 13, the culminating event of a three year Counter-Intelligence, Surveillance and Reconnaissance (C-ISR) campaign evaluated the tactical use and integration of several classified technologies in an operational environment. As a result of FBX 13 four new tactical publications have been produced. * The Naval Integrated Fire Control - Counter Air (NIFC-CA) is a complex system of systems capability being deployed on Carrier Strike Groups beginning in 2016. A multi-year campaign plan was developed to aid in the integration,tactics development, and employment of this complex system. The FY-14 portion of the multi-year plan included all of the planning and preliminary events leading up to Wargame #2 that was held in Dec 2014. Those preliminary events included a series of six workshops that developed/examined NIFC-CA tactics and system capabilities/limitations. The Assessment Report (due in Jan 2015) will inform updates to the NIFC-CA CONOPS, other air warfare related doctrinal publications, and fleet training programs and exercises. * The Laser Weapon System (LAWS) Experimentation Campaign is a multi-year effort that began in 2012 with BLACK DART 2012 with the first successful engagement of an unmanned aerial vehicle with a laser weapon system from a US warship (USA DEWEY, DDG 105). As a result of this experiment the CNO directed the installation and deployment of a laser prototype on USS PONCE (AFSB-1) in FY 2014. An operational demonstration of that system against operationally representative targets in a realistic environment was accomplished in Nov 2014. That effort, part of the FLEX 2014 plan, is producing a Final Report (including analysis and recommendations) as well as a Solid State Laser Tactical Memorandum (TACMEMO), draft tactics for the safe and effective utilization of this new system. * The Aegis Ashore Wargame, conducted as part of the FLEX 2014 Execution Plan, was an examination by Navy stakeholders of the operational, training, and logistics requirements to effectively sustain and operate the Aegis Ashore system as a critical part of the European Phased Adaptive Approach - the President's plan to provide Ballistic Missile Defense of Europe. This effort produced a QuickLook Report, Final Experiment Report, and an Analysis Report - all of which identified "wholeness" gaps (operational, employment, training, logistics and sustainment) as well as an evaluation of the adequacy of the Aegis Ashore Platform Wholeness CONOPS. * The JHSV Campaign Plan was conducted in two parts - SPEARHEAD's (JHSV-1) maiden deployment to COMSIXTHFLT and operations in the COMFOURTHFLT area. The purpose of the campaign, which will					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
continue into FY-15, is to examine other missions for which the JHSV is suitable with little to no modification to the existing sea frame. The C6F efforts looked at the use of the JHSV in Theater Security Cooperation, Maritime Command and Control, and Afloat Forward Staging Base missions; while the primary focus of the C4F efforts looked at its use in Counter-Illicit Trafficking operations. A follow-on JHSV/MLP wargame examined interoperability issues associated with the MLP and the JHSV, LMSR, LCS, and other ship-to-shore connectors. The major products of the FY-14 efforts include a Final Experiment Report which will inform key OPNAV investment decisions; and revisions to the JHSV Platform Wholeness CONOPS, JHSV Warfighting CONOPS and AFP Fleet CONOPS. * Executed the Obscurants Campaign, a three phased experiment focused on assessing the potential of Naval Obscurants to reduce the vulnerability of U.S. platforms to detection and targeting, and identifying the potential detrimental effects on own-ship systems including radar, communications, machinery and human health. A great deal of existing data from previous Army and Navy obscurants efforts was utilized in building the campaign plan. The plan consisted of a Modeling & Simulation event (Phase I), a shore based event (Phase II), and an at-sea event in the COMSEVENTHFLT (C7F) area. Phases I and II provided risk-mitigation, increased the knowledge base, and aided in the design and planning for Phase III. Products included a Final Experiment Report and a draft Obscurants Employment Manual. * Executed Trident Warrior (TW) 14 in conjunction with RIMPAC, a large multi-national exercise. Trident Warrior is an annual at-sea warfighting event that in 2014 evaluated the potential military utility of 37 new and emerging capabilities (including eight initiatives sponsored by the AUSCANNZUKUS experimentation alliance) and involved 7 USN ships, 3 allied ships, and 11 US and allied shore installations. Integrating this experiment into RIMPAC 14 leveraged planned steaming days, flight hours, and the operational environment to conduct a cost-effective large-scale at-sea experimentation event. The three specific functions of TW were to: (1) identify and capture innovative solutions that addressed prioritized fleet warfighting gaps; (2) refine systems interfaces and interoperability using fleet operator input in an operational environment; and (3) develop and deliver documents that inform operations and key investment decisions. In addition to the Final Experiment Report (which will include DOTMLPF recommendations), products include changes to seven existing tactical publications, inputs to four tactical publications currently in draft, and the input to five original tactical publications. Of interest, one of the key initiatives evaluated was the CNO Speed to Fleet Transportable EW Module (TEWM) with the immediate benefit being the accelerated deployment of that system on ships deployed to the C6F area. * Continued work on the multi-year Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) campaign plan by identifying and testing near-term (within 12 months) capability improvements to the fleet. The Final Experiment Report will provide recommended changes to current FAC/FIAC doctrine as well as DOTMLPF recommendations to inform acquisition decisions.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Executed Undersea Warfare Employment of Emerging Technologies (USWEET) 14, an experiment focused on evaluating emerging technologies with the potential to close anti-submarine and mine warfare capability gaps. The focus of USWEET 14 was on shallow water surveillance and several systems were examined. The Experiment Final Report includes DOTMLPF recommendations that will inform acquisition investment decisions. * Executed experimentation phase of Valiant Shield 2014 (VS14), a bi-annual exercise focused on at-sea training in the Pacific area of operations. The VS14 experimentation phase included 21 experiments and demonstrations examined C-ISR tactics, joint interoperability of selected forces, theater-wide strategic communications, ASW in a multi-threat environment, electronic attack, and distributed basing. In addition to the VS14 Final Experiment Report (DOTMLPF recommendations), the Unmanned Aircraft Systems Third Party Targeting TACMEMO and the Employment of surface Warfare Tactical Tomahawk TACBUL (Tactical Bulletin) were validated. * Executed the Joint Standoff Weapon - C (JSOW-C) employment Limited Objective Experiment (LOE). The focus was to evaluate live JSOW-C employment tactics using a simulated artillery bunker as a target. The result were two updates to the TOPGUN manual - one describing JSOW-C employment in a complex tactical environment and the other describing JSOW-C employment in an Electronic Attack environment. * Executed the F-35B and LHA/D Integration Wargame, the focus of which was to inform development of a Fleet Warfighting CONOPS on F-35B employment as part of a large Naval Force beyond the traditional ACE-MEU/ ARG configuration. This event brought together a large number of subject matter experts to evaluate three different F-35B/MV-22 embarkation options in a variety of different scenarios postulated in the HQMC LHA/D and F-35B Integration White Paper and determine the advantages/disadvantages of each. In addition to the Final Experiment Report which included the findings and recommendations, this effort informed the development of a F-35B and LHA/D Fleet Warfighting CONOPS, and recommended changes to the Amphibious Assault Ship and F-35B Aircraft Integration Platform Wholeness CONOPS. Preliminary planning work was started on the following events in the FLEX Execution Plan for 2015: * Continued work on the Trident Warrior experimentation campaign with advance planning for Trident Warrior 15, to be done in conjunction with C7F. * Continued planning for the FY15 events in the NIFC-CA Experimentation Campaign. * Started advance planning for the FY15 Rail Gun Wargame. * Started advance planning for the FY15 Counter FAC/FIAC At-Sea Experiment. * Started advance planning for the Netted Sensors At-Sea Experiment. * Continued planning for the COMFOURTHFLT JHSV At-Sea Experiment that was postponed from FY-14 to FY-15 due to equipment casualties.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Started advance planning for the 5 Eyes UUV Operations Wargames. * Started advance planning for the LPD-17 Wargame. * Started advance planning for the Alternative Platforms with Payloads Wargame. During FY 2014 and FY 2015 the CNO's Rapid Innovation Cell (CRIC) was funded under Project 2356 - for FY 2016 and beyond Project 2140 has been created for CRIC funding. For traceability purposes this data appears under both projects. FY 2014 CRIC accomplishments included: * Completed the Additive Manufacturing (3D Printing) project started in FY 2013 and transitioned it to OPNAV N4. This project placed a 3D printer at Dam Neck and another on board a forward deployed amphibious ship where data was gathered on the various ways sailors were able to use it to make themselves more productive and their jobs easier. 3D printing has the potential to dramatically alter afloat maintenance and logistics by providing the ability to fabricate some types of spare parts on board vice waiting weeks for them to be shipped from a warehouse. * Completed the Electronic Warfare Battle Management (EWBM) project that was kick-started in FY 2013 with a small amount of internally re-prioritized NWDC funding. This project attempted to integrate meteorological data into an EW battlefield visualization system being developed by ONR. It showed promise but more work is required beyond the capability of the CRIC, and the project has been picked up by the ONR team. * Reached a decision point on the development of the SURF project, a high-speed payout, expendable underwater fiber-optic cable suspended beneath the surface that can be deployed from a ship and used for high speed transport of data over tens or hundreds of miles. The decision was made to suspend funding on the project pending the resolution of the "connector" issue. * Completed initial development of the Ocean Augmented Reality project, a next generation "heads-up" display using commercial off-the-shelf technology. The initial tests showed great potential for use in maintenance applications - future work in FY 2015 and possibly 2016 will explore more uses both ashore and afloat. * Continued development of the Hyper Agile Model Driven Development (HAMMD) project, a way to more rapidly/cheaply develop software solutions. The USAF was originally providing a significant amount of funding but it was lost during USAF budget drills. The result was a suspension of work pending the availability of additional funding from another source. * Continued development of the Battle School project (kick-started in late FY 2013 with internally re-prioritized NWDC funding), a simulation driven tactical crowd-sourced wargame with potential uses in training and education environments. Initial response was good, resulting in some modifications that will continue into FY 2015.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Began development of the B++ project and transitioned it to NAVCYBERCOM (classified). The initial demonstration of the project was successful and generated the CNO's comment that "if the CRIC produces nothing more than B++ it has been a success." Some residual follow-up work to complete the CRIC portion of the project remains to be done with FY 2015 CRIC funding. * Began development of the Silent Nemo project, a small, autonomous, biomimetic UUV with potential for use in ISR missions. Development will continue with some FY 2015 funding with the possibility of some spill-over into FY 2016. * Began initial planning of the Waste to Watts project, a solid state anerobic digester to convert waste to energy and help reduce energy requirements. The prototype is being installed at the U.S. Naval Academy.					
FY 2015 Plans: Continue all FY 2014 Concept Generation/Concept Development efforts that were not completed in FY14 and begin development of new concepts resulting from the idea harvesting/Four Star approval of previous years. * Continue development of the Agile Forward Presence concept which is focused on a different way of deploying forces and providing presence. Produce an updated draft based on stakeholder feedback. * Continue development of the Distributed Naval Air Operations concept which is focused on a way of spreading air strike capabilities across multiple platforms. Produce an updated draft based on stakeholder feedback. * After White Paper approval by CUSFF/CPF, begin development of an Operational Logistics (OPLOG) concept focused on ways to mitigate challenges to sustainment in the future operating environment. * After White Paper approval by CUSFF/CPF, begin development of an Electro-Magnetic Maneuver Warfare (EMW) concept focused on methods to enable friendly forces to maneuver within a contested electromagnetic environment. * Continue work on an update to the 2006 Operating Concept for the Rail Gun. NWDC is managing the project with NAVSEA 405 as the customer. First draft is due in Mar 2015. * Continue to work with the Combined Joint Operations from the Sea Center for Excellence (CJOS COE), a NATO command, on the Allied Maritime ISR concept to improve allied interoperability with ISR capabilities. * Complete development of a White Paper on a Navy Concept for Sea Denial Operations and forward to CUSFF/CPF for approval. After White Paper approval begin development of the concept. * Complete development of a White Paper on a Cross Domain Operations concept and forward to CUSFF/CPF for approval. After White Paper approval begin development of the concept. * Provide the completed White Paper on Sowing Chaos/Harvesting Advantages to stakeholders for feedback prior to CUSFF/CPF approval.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Begin development of a White Paper on a Navy Capstone Concept for Operations for possible CUSFF/CPF approval. Complete remaining events from the FY 2014 FLEX Execution Plan, continue work on the multi-year campaign plans, and execute the FY 2015 FLEX Execution Plan: * Complete Bold Alligator 14 (Oct-Nov 14), an event focused on Navy-Marine Corps integration and Command and Control, and provide Final Report containing DOTMLPF recommendations to Navy and Marine Corps stakeholders. * Complete any hold-over tasking originating from the Dec 2014 NIFC-CA wargame. * Continue to work on items from the Undersea Domain Operating Concept experimentation campaign which is focused on ways to maintain and maximize our advantages in the undersea environment. * Continue to work on items from the Naval Integrated Fire Control - Counter Air (NIFC-CA) experimentation campaign which is focused on the integration of advanced air defense capabilities. * Continue to work on items from the Counter-Intelligence, Surveillance, Reconnaissance (C-ISR) experimentation campaign which is focused on tactics and technologies to counter the adversary's ISR systems. * Continue to work on items from the Command and Control in a Denied/Degraded Environment (C2D2E) experimentation campaign which is focused on tactics to ensure connectivity when communication systems are attacked. * Continue planning and execution of Trident Warrior 15, an annual event that looks at the integration and use of emerging technologies. TW15 will be executed in the C7F area and will focus on the needs of the forward deployed forces. * Plan and execute the Alternate Platforms with Payloads Wargame focused on how USNS platforms can be used for selected missions generally accomplished with gray-hull platforms. Products will inform future investment decisions and CONOPS for the use of these USNS platforms. * Continue the planning and execute the JHSV LOE 2 in the C4F area, an event that was postponed from FY-14 to FY-15 due to equipment casualties. The FY-15 efforts will look at the capability of the JHSV to support several Adaptive Force Packages, specifically Mine Warfare, Counter-Trafficking Afloat Forward Staging Base, and organic Unmanned Aerial Systems support. The products of this event will inform investment decisions and CONOPS for the use of these Adaptive Force Packages and the JHSV. * Plan and execute the Netted Sensors At-Sea Experiment, an event that will look at eight different initiatives that will fuze data from multiple sensors into a single picture, greatly improving situational awareness.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Plan and execute the Electromagnetic Maneuver Warfare (EMW) experimentation initiatives scheduled for several different events during FY-15 including two different wargames and an at-sea event. This will be the first year of an extended multi-year EMW experimentation looking at ways to increase our ability to utilize the electromagnetic spectrum while limited our adversaries' ability to do the same. The products of the FY-15 events will inform future investment decisions as well as provide updates to six different tactics and doctrinal publications. * Plan and execute the Counter FAC/FIAC At-Sea element of the 2015 FLEX Execution Plan. This FY-15 event will focus on the use of small armed UAVs against hostile boats, and will inform investment decisions and updated tactics. * Plan and execute the 5 Eyes Unmanned Undersea Vehicles (UUV) Operations Wargame. This will be a two phased wargame focused on the employment of integrated UUVs operating in a coalition environment. The product of this experiment will be a 5 Eyes releasable Tactical Memorandum (TACMEMO). * Plan and execute the LPD-17 Wargame, an event that will focus on the feasibility of using the LPD-17 class to perform additional missions as a Regional/Sector Air Defense Coordinator, and as an alternate Command and Control platform. The results of this wargame will inform changes to various LPD-17 documents including the Class Tactical Manual and the LPD-17 manning plan. * Complete the planning and execute the Rail Gun Wargame, the purpose of which is to inform the update of the Rail Gun Operating Concept. During FY 2014 and FY 2015 the CNO's Rapid Innovation Cell (CRIC) was funded under Project 2356 - for FY 2016 and beyond Project 2140 has been created for CRIC funding. For traceability purposes this data appears under both projects. * Continue work on Silent Nemo, a small, autonomous, biomimetic UUV with a multitude of possible ISR related issues. * Continue to work on Waste to Watts, a solid state anerobic digester to convert waste to energy. The prototype is being installed and tested at the U.S. Naval Academy and is turning the waste products from the galley into electricity returned to the USNA power grid. If successful there are applications for this product at numerous shore installations around the world. * Continue advanced development of the Ocean Augmented Reality project, a next generation "heads-up" displays using commercial off-the-shelf technology. Work in FY 2015 will focus on the development of additional "apps" in response to various fleet identified uses.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Continue development of the Hyper Agile Model Driven Development project, a way to more rapidly/cheaply develop specialized software applications (dependent on available funding). * Continue advanced development of the Battle School project, a simulation driven tactical crowd-sourced wargame. * Begin work on the Acoustic Jammer project, an idea to use off-the-shelf technology to overload adversary sonar systems (may be delayed until FY 2016 start due to separation from the Navy of the project lead and delay in identifying a replacement). * Begin work on the Littoral Operations Center project, an idea to combine existing off-the-systems to create small operations centers suitable for use on small platforms and ashore. * Begin work on the Statistically driven Maintenance Analysis and Reporting Technology (SMART) model which uses existing data to better predict maintenance needs. It builds on existing work done within the F/A-18 maintenance community. * Begin work on the Cosmo Gator project, an alternative navigation capability when GPS is not available (may be delayed until FY 2016 start due to rotation of the project lead to a deployed sea tour and delay in identifying a replacement).					
FY 2016 Base Plans: Continue CG/CD development efforts that carry-over from FY 2014 and FY 2015. * Begin development of new concepts resulting from the idea harvesting/Four Star approval from previous years. The Fleet Experimentation (FLEX) FY 2016 Execution Plan is based on two sets of inputs. The first is the FY 2016 events from the multi-year campaign plans developed to address major capability gaps. The second is based on recently identified fleet capability gaps that can be addressed within a single event. The experimentation for those recently identified capability gaps is proposed during the FY 2016 Execution Plan Development Conference scheduled for 1-2 Apr 2015. At that conference numbered fleets, warfare centers, Navy labs and other stakeholders present their plans and needs for FY 2016. Those needs are then prioritized based on the Commander USFF/Commander Pacific Fleet guidance message, combined with the FY 2016 events from the multi-year campaign plans, and developed into a proposed execution plan that will be refined during Q3 FY 2015 and approved by the two Fleet Commanders in early Q4 FY 2015. At that point the available FY 2016 funding is applied to the execution plan to form a FY 2016 spend plan and advance planning begins on the FY 2016 experimentation events. Following that we should have a much firmer picture of the actual events, contract costs, etc.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Execute FY 2016 events of the following Experimentation campaigns: * Undersea Domain Operating Concept (UDOC) experimentation campaign (experimentation on ways to maintain and maximize our advantages in the undersea environment). * Naval Integrated Fire Control - Counter Air (NIFC-CA) experimentation campaign (integration of advanced air defense capabilities). * Counter-Intelligence, Surveillance, Reconnaissance (C-ISR) experimentation campaign (tactics and technologies to counter the adversary's ISR systems). * Command and Control in a Denied/Degraded Environment (C2D2E) experimentation campaign (tactics when communication systems are attacked). * Trident Warrior experimentation campaign with the planning and execution of Trident Warrior 16 (use of the new/improved N2/N6 related technologies and tactics selected for examination in FY 2016). Trident Warrior 16 will be conducted in conjunction with RIMPAC 2016, a multi-national Pacific area training exercise. * F-35/LHD Integration experimentation campaign. * Multi-mission strike group operations in a complex electromagnetic spectrum environment (how to best maximize use and minimize mutual interference). Complete execution of the following FY 2015 experiments that carry over into FY 2016: * Joint Assured Access (integration of joint capabilities to assure access when needed). * Unmanned Systems Utilization (integrate and maximize existing and developing unmanned systems). * Introduction of Adaptive Force Packages for LCS, JHSV and Mobile Landing Platforms (MLP) * Introduction of DDG-1000 (integration of new platform). * Electromagnetic Maneuver Warfare (maximize our advantage in the electromagnetic environment). Begin development of experimentation campaigns as laid out in the CUSFF/CPF "Commander's Guidance for Fleet Experimentation" for FY 2016 and FY 2017 which will be released in Q2 2015. There has been no funding available for Tactical Development and Evaluation (TAC D&E) projects since FY 2012 which has resulted in a backlog of proposed projects with tactical utility. Some of have incorporated into existing or planned experimentation events when practical but most have been deferred. The TAC D&E program, a CNO directed NWDC responsibility with no dedicated funding line, provides a way for the fleet to identify potential solutions to narrowly defined tactical issues, generally in the form of a Tactical Memorandum (TACMEMO). Based on current projected FY 2016 funding NWDC expects to dedicate $2-3M across multiple projects drawn from the backlog and new proposals. Since the purpose of the program is to respond to today's					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
fleet issues, the projects to be funded will be determined in early Q3 2015. Among those that will be considered are: * Tactical usage of small Unmanned Aerial Vehicles (UAVs) from small platforms such as patrol craft (PCs) and riverine boats. * Tactical usage of small UAVs from Military Sealift Command platforms being used in non-traditional missions. * Tactical usage of small, armed UAVs in a SOF support role. * Tactical usage of small, armed UAVs in a counter FAC/FIAC role. * Tactical usage of small UAVs in a communications relay role. * Tactical usage of small Unmanned Surface Vessels (USVs) in a counter FAC/FIAC role. * Revised drop points for light-weight torpedoes against new adversary undersea platforms. * Tactical usage of non-traditional weapons against bottomed submarines. * Tactical usage of non-traditional weapons against shallow-water mines. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	9.789	5.346	8.390	-	8.390

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This funding is generally used to buy people to generate/develop/validate concepts, or to build and analyze the results of experiments focused on improved processes and tactics/techniques/procedures to mitigate identified war fighting gaps. The majority of this funding buys a core group of contractors who provide experiment design, execution and analysis support while the remainder is used to buy specific skill sets that are not part of the core group, and also cover some of the engineering and integration costs associated with certain experiments.

E. Performance Metrics

Maritime Concept Generation and Development/Related Experimentation:
- Refine concepts and identify key performance levels necessary for implementation.
- Demonstrate feasibility and discriminate among competing concepts and implementation alternatives.
- Understand potential military effectiveness and risk.
- Evaluate how much of the new capability and attendant force structure is needed.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

- Learn how to operate the new force and combine it with the legacy force.
- Develop recommended Doctrine, Organization, Training, Materiel, Leadership, and Personnel (DOTMLP) changes.
- Develop fleet war fighting requirements for submission to the OPNAV Navy Capabilities Development Process (NCDP) to inform Navy acquisition decisions.
- Integrate emergent concepts and technologies, leading to rapid introduction of needed war fighting capabilities in the fleet.
- Rapidly mature concepts, technologies, and doctrine.
- Focus on near, mid and long term war fighting challenges to realize increased war fighting effectiveness.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	C/CPFF	Defense Technical Information Center : Ft Belvoir VA	3.000	4.000	Oct 2013	2.000	Feb 2015	2.400	Nov 2015	-		2.400	Continuing	Continuing	Continuing
System Test and Evaluation	Various	SPAWARSYSCEN Atlantic : San Diego CA	0.250	1.600	Jan 2014	0.562	Jan 2015	-		-		-	Continuing	Continuing	Continuing
System Test and Evaluation	Various	ONR : Washington DC	0.200	0.920	Mar 2014	0.250	Mar 2015	0.990	Dec 2015	-		0.990	Continuing	Continuing	Continuing
System Test and Evaluation	Various	NAVSEA : Washington DC	0.000	0.800	Feb 2014	0.534	Jan 2015	0.500	Dec 2015	-		0.500	-	1.834	-
System Test and Evaluation	C/CPFF	NAVSUP : Norfolk VA	0.000	0.500	May 2014	1.500	May 2015	4.000	Dec 2015	-		4.000	-	6.000	-
System Test and Evaluation	WR	Naval Underwater Warfare Center : Newport RI	0.000	0.500	Jan 2014	-		-		-		-	-	0.500	-
		Subtotal	3.450	8.320		4.846		7.890		-		7.890	-	-	-

Remarks

The vast majority of the contract costs are for people, primarily on two large Multi-Award contracts, one through DTIC (Defense Services MAC) and one through NAVSUP (Joint Staff J-7 MAC). Task orders on the DS MAC contract provide the majority of the Modeling & Simulation support for experimentation and some of the experiment planner support. Task orders on the JS J-7 MAC provide the majority of the experiment design, planner, and execution support provided by NWDC to the Fleet Experimentation program. With the planned availability of $2-3M FY-16 funding for the Navy's Tactical Development and Evaluation (TAC D&E) program after three years of zero funding, it is anticipated that the TAC D&E projects selected for FY-16 funding will be executed under JS J-7 MAC task orders, thus explaining the dramatic increase. The remaining money is spread across several smaller contracts through NAVSEA, SPAWAR and ONR for CRIC projects and technical support for experimentation and modeling & simulation efforts. The fluctuation from year to year is the result of the expiration of existing contracts and the award from other contracting offices, and the movement of government support between various organizations based on the need of a specific experiment or project.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/FFP	Navy Warfare Development	0.741	1.469	Oct 2013	0.500	Feb 2015	0.500	Feb 2016	-		0.500	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Command : Norfolk VA													
		Subtotal	0.741	1.469		0.500		0.500		-		0.500	-	-	-

Remarks

The majority of management costs is in CIVPERS salaries and not reflected in this exhibit. The difference between FY 2014 and FY 2015 was a re-alignment of responsibilities.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.191	9.789		5.346		8.390		-		8.390	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2356																												
Maritime Concept Generation and Development Efforts: Undersea Domain Operating Concept development efforts																												
Maritime Concept Generation and Development Efforts: Agile Forward Presence Concept																												
Maritime Concept Generation and Development Efforts: Distributed Naval Air Operations Concept																												
Maritime Concept Generation and Development Efforts: Information Dominance Enabling Concept: Assured C2 Concept																												
Maritime Concept Generation and Development Efforts: Counter-Intelligence, Surveillance, Reconnaissance (C-ISR) Concept																												
Maritime Concept Generation and Development Efforts: Operational Logistics White Paper																												
Maritime Concept Generation and Development Efforts: Rail Gun Operating Concept Update																												
Maritime Concept Generation and Development Efforts: Electro-Magnetic Maneuver Warfare White Paper																												
Experimentation Efforts: Aegis Ashore Wargame																									[redacted]			
Experimentation Efforts: JHSV LOE 1 (C6F)																												

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Experimentation Efforts: JHSV LOE 2 (C4F)																												
Experimentation Efforts: Trident Warrior 14 (RIMPAC)																												
Experimentation Efforts: Valiant Shield 14																												
Experimentation Efforts: Counter-Intelligence,Surveillance, Reconnaissance (C-ISR) Experimentation Campaign																												
Experimentation Efforts: Command and Control in a Denied, Degraded Environment (C2D2E)Experimentation Campaign																												
Experimentation Efforts: Naval Integrated Fires - Counter Air (NIFC-CA) Experimentation Campaign																												
Experimentation Efforts: Laser Weapon System																												
Experimentation Efforts: Trident Warrior Experimentation Campaign																												
Experimentation Efforts: Obscurants Campaign																												
Experimentation Efforts: Netted Sensors At-Sea Experiment																												
Experimentation Efforts: Joint Standoff Weapon - C (JSOW-C)																												
Experimentation Efforts: Undersea Warfare Employment of Emerging Technologies (USWEET) 14																												
Experimentation Efforts: F-35/LHD Integration Wargame																												

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Experimentation Efforts: 5 Eyes UUV Operations Wargame																												
Experimentation Efforts: Rail Gun Wargame																												
Experimentation Efforts: LPD-17 Wargame																												
Experimentation Efforts: Alternative Platforms with Payloads Wargame																												
Experimentation Efforts: Electromagnetic Maneuver Warfare Experimentation Campaign																												
Experimentation Efforts: Counter FAC/FIAC At-Sea Experiment																												
Experimentation Efforts: Trident Warrior 15 (w/C7F)																												
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-01 (to be selected in mid FY 2015)																												
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-02 (to be selected in mid FY 2015)																												
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-03 (to be selected in mid FY 1015)																												
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-04 (to be selected in mid FY 2015)																												

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

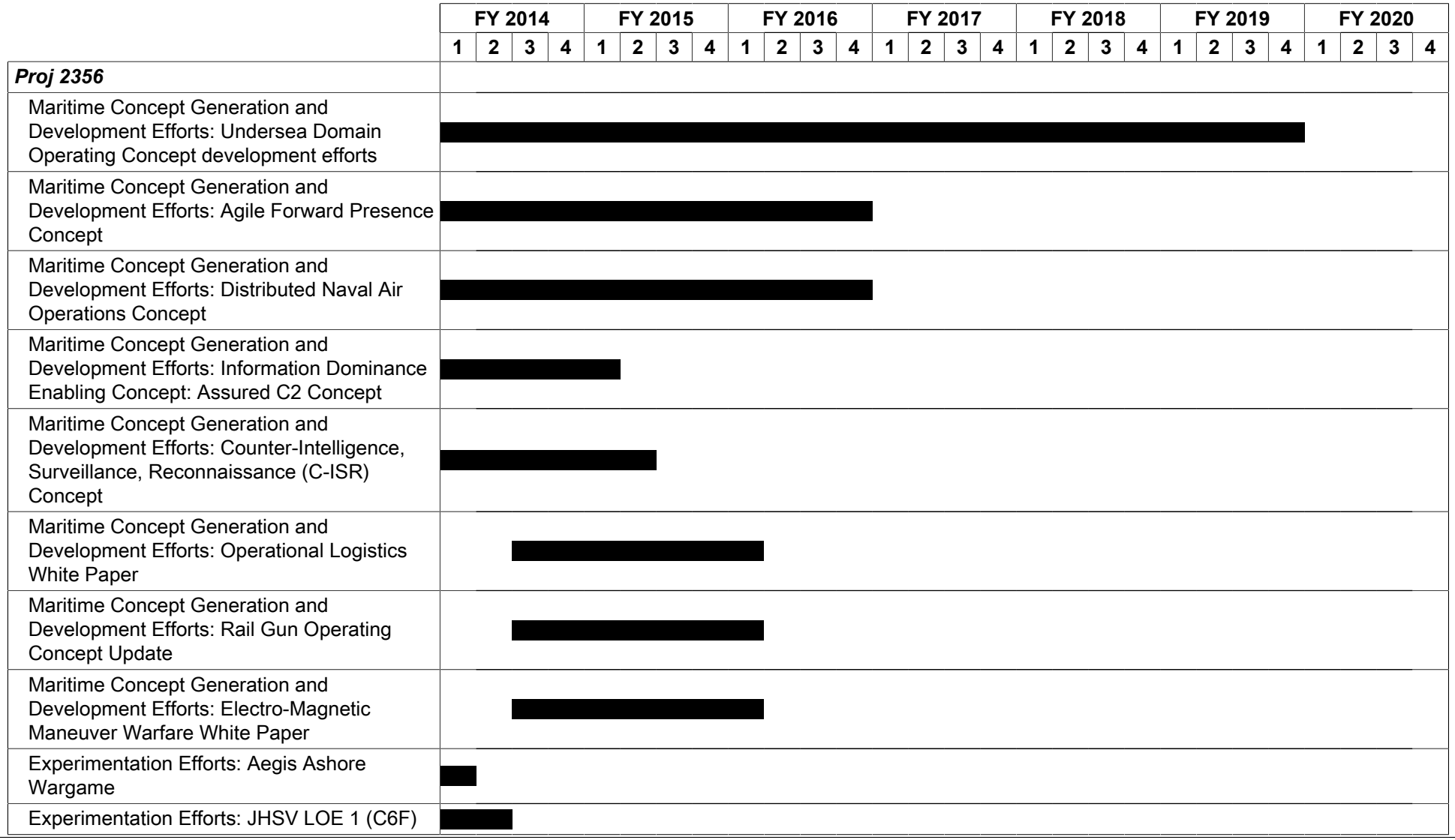

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

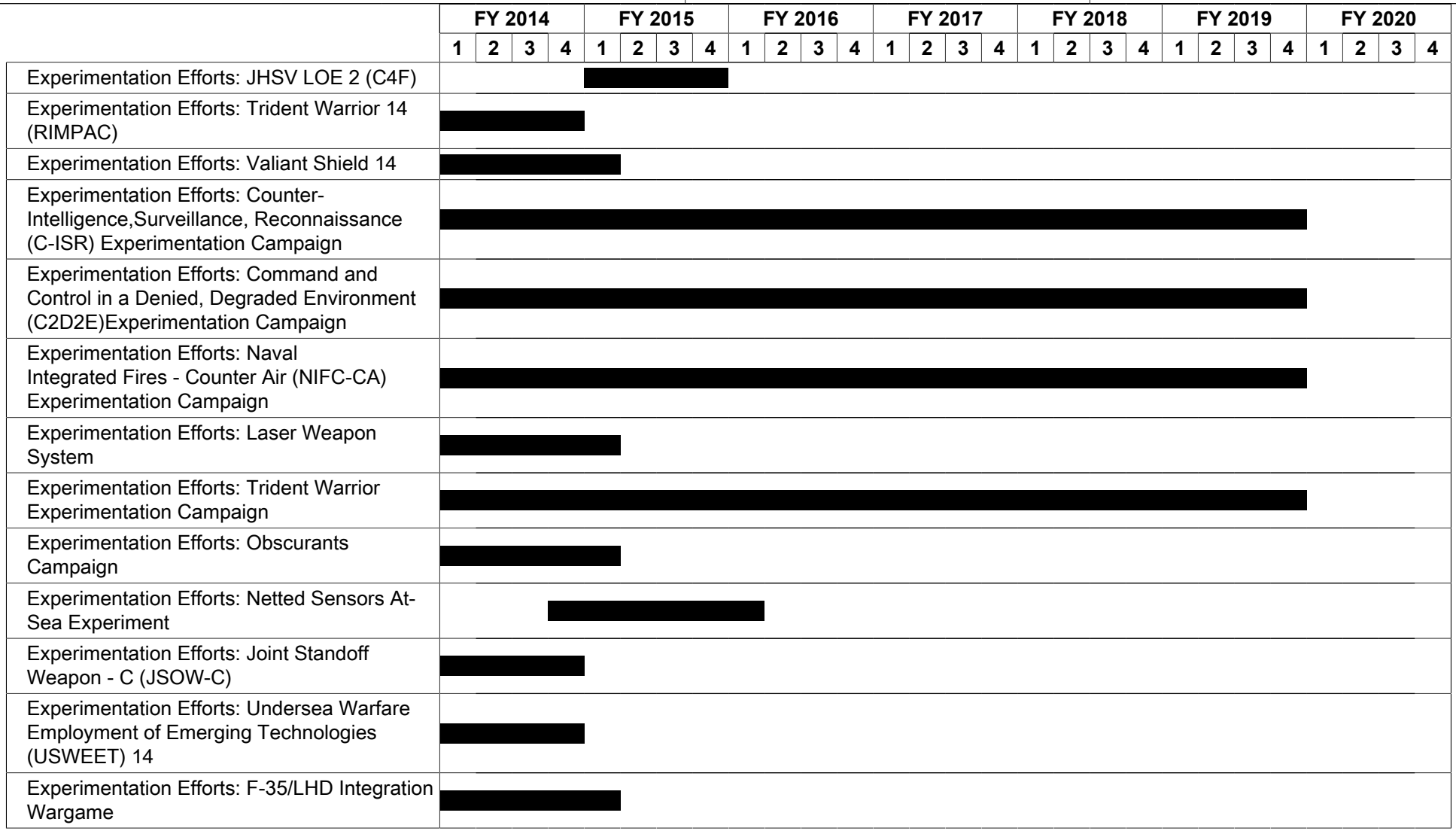

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

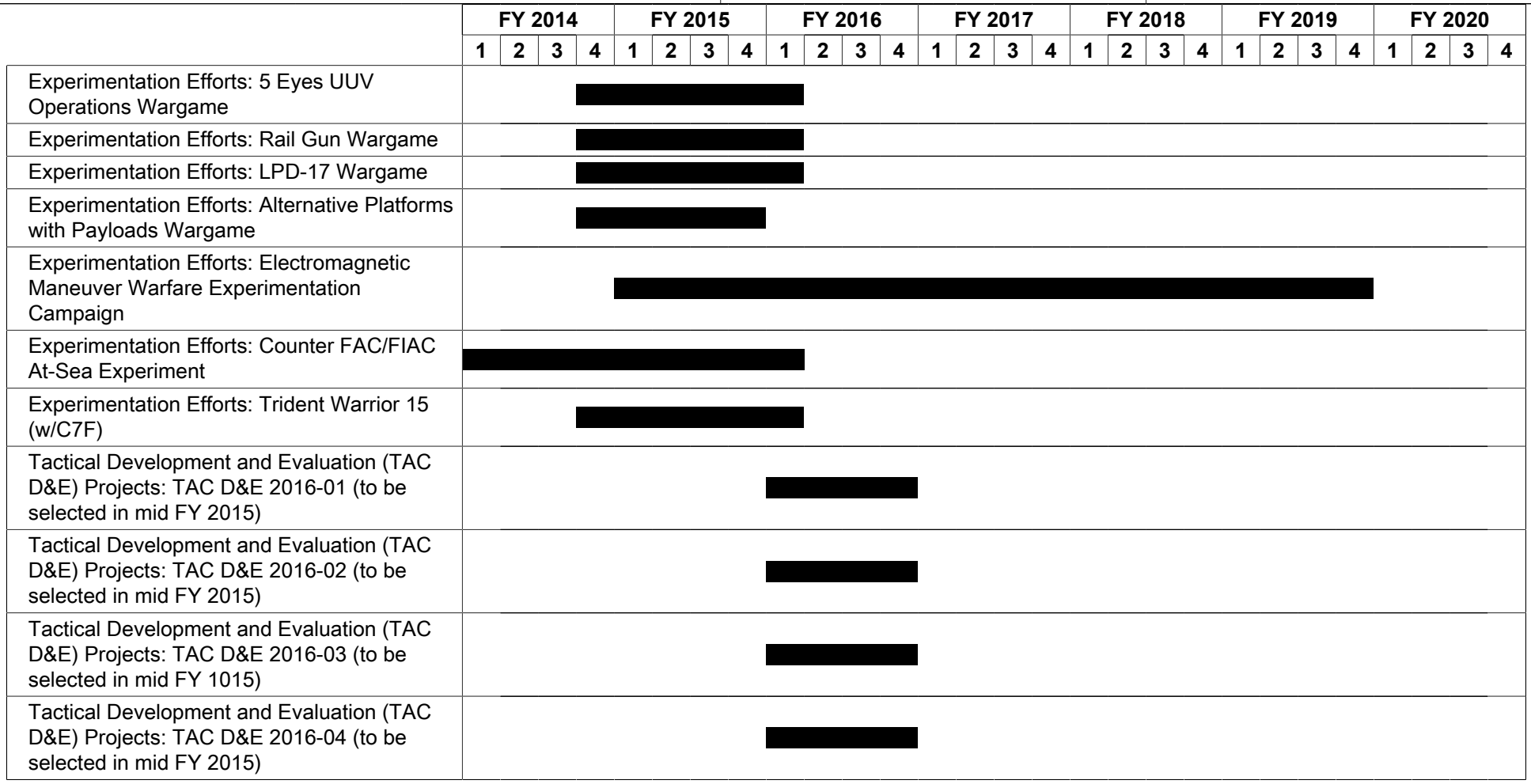

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2356				
Maritime Concept Generation and Development Efforts: Undersea Domain Operating Concept development efforts	1	2014	4	2019
Maritime Concept Generation and Development Efforts: Agile Forward Presence Concept	1	2014	4	2016
Maritime Concept Generation and Development Efforts: Distributed Naval Air Operations Concept	1	2014	4	2016
Maritime Concept Generation and Development Efforts: Information Dominance Enabling Concept: Assured C2 Concept	1	2014	1	2015
Maritime Concept Generation and Development Efforts: Counter-Intelligence, Surveillance, Reconnaissance (C-ISR) Concept	1	2014	2	2015
Maritime Concept Generation and Development Efforts: Operational Logistics White Paper	3	2014	1	2016
Maritime Concept Generation and Development Efforts: Rail Gun Operating Concept Update	3	2014	1	2016
Maritime Concept Generation and Development Efforts: Electro-Magnetic Maneuver Warfare White Paper	3	2014	1	2016
Experimentation Efforts: Aegis Ashore Wargame	4	2012	1	2014
Experimentation Efforts: JHSV LOE 1 (C6F)	1	2014	2	2014
Experimentation Efforts: JHSV LOE 2 (C4F)	1	2015	4	2015
Experimentation Efforts: Trident Warrior 14 (RIMPAC)	4	2012	4	2014
Experimentation Efforts: Valiant Shield 14	4	2012	1	2015
Experimentation Efforts: Counter-Intelligence,Surveillance, Reconnaissance (C-ISR) Experimentation Campaign	1	2014	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Experimentation Efforts: Command and Control in a Denied, Degraded Environment (C2D2E)Experimentation Campaign	1	2014	4	2019
Experimentation Efforts: Naval Integrated Fires - Counter Air (NIFC-CA) Experimentation Campaign	1	2014	4	2019
Experimentation Efforts: Laser Weapon System	1	2014	1	2015
Experimentation Efforts: Trident Warrior Experimentation Campaign	1	2014	4	2019
Experimentation Efforts: Obscurants Campaign	1	2014	1	2015
Experimentation Efforts: Netted Sensors At-Sea Experiment	4	2014	1	2016
Experimentation Efforts: Joint Standoff Weapon - C (JSOW-C)	1	2014	4	2014
Experimentation Efforts: Undersea Warfare Employment of Emerging Technologies (USWEET) 14	1	2014	4	2014
Experimentation Efforts: F-35/LHD Integration Wargame	1	2014	1	2015
Experimentation Efforts: 5 Eyes UUV Operations Wargame	4	2014	1	2016
Experimentation Efforts: Rail Gun Wargame	4	2014	1	2016
Experimentation Efforts: LPD-17 Wargame	4	2014	1	2016
Experimentation Efforts: Alternative Platforms with Payloads Wargame	4	2014	4	2015
Experimentation Efforts: Electromagnetic Maneuver Warfare Experimentation Campaign	1	2015	4	2019
Experimentation Efforts: Counter FAC/FIAC At-Sea Experiment	1	2014	1	2016
Experimentation Efforts: Trident Warrior 15 (w/C7F)	4	2014	1	2016
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-01 (to be selected in mid FY 2015)	1	2016	4	2016
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-02 (to be selected in mid FY 2015)	1	2016	4	2016
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-03 (to be selected in mid FY 1015)	1	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 2356 / *Maritime Concept Generation & Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Tactical Development and Evaluation (TAC D&E) Projects: TAC D&E 2016-04 (to be selected in mid FY 2015)	1	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / *SEW Architecture/Eng Support*	Project (Number/Name) 3319 / *Fleet Experimentation*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3319: *Fleet Experimentation*	33.939	11.876	5.158	8.864	-	8.864	11.410	11.659	11.308	11.544	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Fleet Experimentation (FLEX) program (formerly Sea Trial) develops new or improved warfighter capabilities through the experimentation of high payoff initiatives, technologies and concepts, Fleet Concepts of Operations (CONOPS), doctrine, and new tactics, techniques and procedures (TTP). The objective of the CUSFF/CPF directed FLEX program is to produce recommended changes in doctrine, organization, training, materiel, leadership development, personnel, facilities, and policy (DOTMLPF-P) actions, with an emphasis on non-materiel solutions. Implementation is aimed at delivering potential solutions in support of Operations Plans (OPLANS). FLEX is dedicated to providing solutions to near term (within the Fiscal Year Defense Plan) prioritized warfighting gaps as defined by the Commander, U.S. Fleet Forces (CUSFF)/Commander, Pacific Fleet (CPF) FLEX annual guidance.

FLEX exists today because CNOs (past and present) believe experimentation is vital to continuously improving naval warfighting capabilities. The FLEX program considers those warfighting gaps identified in: Integrated Prioritized Capability Lists (IPCL) generated by Warfighting Development Centers (WDC) through the warfare improvement program; the USFF/CPF Integrated Priorities Letter (IPL) delivered annually to the CNO; USFF/CPF Commanders' FLEX Guidance; and Navy and Joint Urgent Operational Needs Statements (UONS and JUONS). Of critical importance to understand is the fact that the FLEX program and associated efforts of the FLEX team support the "last tactical mile" of Navy and science and technology (S&T) programs. This "last tactical mile" support is delivered through "at sea" or "salt-water" testing and experimentation at a time when the technology is mature enough and requires evaluation on or by a fleet asset - ships, airplanes, submarines, networks, and/or sailors. In accordance with the joint CUSFF and CPF FLEX instruction, the FLEX program is the only authorized conduit to conduct experimentation using operational fleet assets.

FLEX runs the gamut from multi-year campaigns (experimentation of complex DOTMLPF capability), wargames (seminar and systems, workshops, limited objective/ technical experiments and advanced war fighting experiments. The campaigns involve all facets of experimentation including design, planning, systems engineering and integration, execution, data collection, analysis, assessment, and the delivery of tangible products for the fleet. While Navy-centric, FLEX efforts include joint and coalition partners when appropriate.

Experimentation is vital to the Navy's future. It helps inform acquisition decisions and the development of emerging tactics, and it provides unique training opportunities for today's warfare commander, air, surface, subsurface and information dominance assets.

Further reducing or diminishing support of the FLEX program will cause innovative and S&T programs to suffer consequences through the loss of expertise resident in the FLEX program and team. FLEX faces additional challenges as efforts are becoming increasingly more complex and are being conducted at higher classification levels. These challenges prevent CUSFF/CPF from publicizing successes via mainstream channels thereby giving an incomplete impression of FLEX program contributions to the USFF/CPF organize, train, equip and capability requirements mission.

We had to reduce the planned funding for several contracts in FY15 due to the reduction of the FY15 budget from $6.9M to $5.1M. In addition, planned new contracts/ solicitations for FY15 had to be put on hold or cancelled due to the budget cuts.

The contract cost increase for FY16 is based on an assumption that FLEX will receive $8.8M, and can initiate new contract solicitations to replace expiring contracts, and replace contracts using First In First Out accounting system.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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FY16 has only 10 planned experiments because of the varying degrees of complexity for several of the planned events, specifically the EMW campaign. Highly complex threat and introduction of capability take years to experiment with in order to deliver TTP/TACMEMOs/Doctrine/Material capability for the Fleet to train to and use.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Fleet Experimentation	11.876	5.158	8.864	-	8.864
Articles:	-	-	-	-	-
Description: - FLEX is a USFF/CPF collaborative effort to address fleet prioritized capability gaps, led by USFF N8/N9, supported by Navy Warfare Development Command (NWDC), and coordinated with Naval Component Commands (NCC)/Numbered Fleets, Type Commanders (TYCOM), Systems Commands (SYSCOM), OPNAV, Services, Coalition, and Science & Technology (S&T) community. The Fleet Experimentation program objective is to produce recommended changes in doctrine, organization, training, materiel, leadership development, personnel, facilities, and policy (DOTMLPF-P) actions, with an emphasis on non-materiel solutions. Deliverables are focused on operational and tactical warfighting capability in the near term (within the Fiscal Year Defense Plan), and prioritized by the Commander, U.S. Fleet Forces (USFF)/Commander, Pacific Fleet (CPF) Fleet Experimentation annual guidance. NWDC plans and executes USFF/CPF approved multi-year Fleet experimentation campaigns and final reports. USFF/CPF staff manage the follow-on DOTMLPF-P actions with OPNAV, SYSCOMs, TYCOMs and Warfighter Development Command (WDC) staffs to establish or enhance warfighting capability in Integrated Air and Missile Defense (IAMD), Amphibious Warfare (AMW), Surface Warfare (SUW), Strike Warfare (STW), Anti-Submarine Warfare(ASW),Expeditionary Warfare (EXW), Information Dominance (ID), Mine Warfare (MIW) and Anti-Terrorism/Force Protection (AT/FP). - Operational venue to experiment, demonstrate, assess warfighting CONOPS development, doctrine/training development, techniques and procedures (TTPs), and technologies - Multi-year experiment campaigns focused on warfighting capability per CPF/CUSFFC guidance to evaluate and transition to DOTMLPF-Policy change recommendations: - The intent of FLEX is to rapidly deploy/transition - New tactics, TTPs, and training - Emerging technologies - Fleet Concepts of Operations (CONOPS) - Innovative concepts and applications of existing systems - Trident Warrior is the component of FLEX that specifically targets C4I systems					
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- In FY14, NWDC, through the FLEX program, executed over 20 significant experiment events encompassing 103 individual experiment initiatives. Those events ranged from single initiative experiments, such as the live-fire evaluation of JSOW-C employment against a hardened target, to TRIDENT WARRIOR 2014, a large-scale at-sea experiment involving 37 Coalition initiatives conducted in conjunction with exercise RIMPAC 2014, to the NFIC-CA multi-year campaign to incrementally enhance the Fleet's Integrated Air and Missile Defense capability. - Every FLEX initiative is evaluated and selected for execution during a FLEX event based on several metrics. The two primary metrics are (1) whether or not the initiative can potentially provide a solution or make a significant contribution to resolving an identified warfighting capability gap, and (2) whether the initiative can be implemented or have an impact in the near term (next 1-3 years). - Of the more than 20 campaigns completed in FY14, the following 12 campaigns are described in detail to demonstrate specific campaign focus, function, deliverables, and accomplishments. - Campaign: Naval Integrated Fire Control - Counter Air (NIFC-CA) - Focus: NIFC-CA is a complex system- of-systems capability representing a significant investment by the Navy. FLEX program/team efforts in 2013 and 2014 support CUSFF's direction to conduct a phased, campaign-style approach to capabilities integration and implementation to improve understanding of NIFC-CA Increment I capability and its employment by Carrier Strike Groups (CSGs) in the 2016 time frame. Planned and executed throughout multiple events (workshops, systems and seminar wargames) the FY-14 work to develop appropriate TTP/SOP/CONOPS culminated in a fully-informed environment in a December CY 2014 Wargame 2 event. Wargame 2 consisted of the main Modeling and Simulation (M&S)-stimulated operator-in-the-loop (OITL) event, and supporting pre-wargame workshops and Limited Objective Events (LOE) - EMW/Counter-ISR/T, Combat ID (CID), Blue Force Laydown/Stationing, Tactics, Techniques and Procedures (TTP), and Commander's Conference for Command and Control (C2)/Composite Warfare Commander (CWC)/Rules of Engagement (ROE). NIFC-CA Wargame 2 support was provided in the following areas: - 3.1 Wargame Planning and Design - 3.2 Wargame Execution - 3.3 Wargame Data Collection and Analysis - 3.4 Wargame Reporting Outcome and Results - Functions: Support USFFC in planning, designing, executing, data collection and analysis, and reporting on Wargame 2 results as part of the NIFC-CA Wargame campaign plan. The intent was to ensure all wargame					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
initiatives were provided end-to-end consistent methodologies resulting in an independent, objective verification of results. Decision-makers are assured results are reliable and unbiased. - Deliverables: Data Collection and Analysis Plan (DCAP) for the NIFC-CA Wargame, EMW/C-ISR/T, CID, Blue Force Laydown/Stationing, TTP, and Compiled Assessment Report - Accomplishments: Preparations for the wargame included support to six major workshops that developed/ examined draft NIFC-CA tactics, techniques, and procedures (TTP) and system capabilities and limitations. The results/deliverables of this wargame informs the NIFC-CA Fleet Warfighting CONOPS and other air warfare related NWPs and NTTPs - and will inform changes to fleet training programs from the classroom to CSG-level COMPTUEXs and JTFEXs. The result is a more capable integrated air and missile defense CSG. - Campaign: Laser Weapon System (LaWS) - Focus: In August 2012, during BLACK DART 2012 (a FY12 FLEX event), the Navy Air and Missile Defense Command, with support from NWDC, led the execution of a fleet experiment which resulted in the first successful engagement of an unmanned aerial vehicle - with a laser weapon system - from U.S. Navy Destroyer USS DEWEY (DDG 105). As a result, CNO directed installation and deployment of a high-energy solid-state laser prototype on USS PONCE [AFSB(I)]. The system is projected to operate for approximately one year starting late-FY14 with a two-fold purpose: - Fill an immediate capability gap associated with platform and theater - Provide an opportunity to answer questions to support formal development and operational fielding of high energy laser weapons - Functions: - Conduct an operational demonstration in support of Solid State Laser Quick Reaction Capability (SSL-QRC) deployment onboard USS PONCE. - Successfully demonstrate SSL operations against operationally representative targets in a realistic environment. - Inform development of SSL TACMEMO in support of SSL continued operations onboard USS PONCE. - Inform development of high-energy laser for system-of-record deployment on surface combatants.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Deliverables: Solid State Laser TACMEMO that provides crucial guidance for the crew of PONCE (and future platforms) to safely and effectively employ this new weapon system, the Analysis Report, and LaWS Final Report. - Accomplishments: Without the FLEX program, LaWS, the Navy's most revolutionary weapon of the 21st century, would not have been employed on a surface combatant nor would it be installed and in use today on USS PONCE. - First "shoot down" of representative UAV in an operational environment - First destruction of ordnance in an operational environment - Effective interface between CIWS and LaWS - LaWs embarked and engaged air targets: - Destroyed all three threat representative UAVs - Demonstrated High Energy Laze (HEL) reversible jamming of an Intelligence Surveillance and Reconnaissance (ISR) sensor on a UAV - Conducted scoring runs with HEL radiation on a UAV airborne target - Campaign: Aegis Ashore - Focus: The Navy's first Aegis ashore site is scheduled to meet full operational capability in FY 2015. The establishment and follow-on operation of Aegis Ashore presents unique challenges to include: for the entirety of Aegis Ashore. - The Aegis ashore CONEMP and MER institutes two commanding officers. - Navy BMD Enterprise is the forum for coordination but not execution. - No single Navy representative can independently assure performance of the Combat System without support functions outside their authority. - In light of these challenges, CNO designated USFFC Executive Agent for European Phased Adaptive Approach (EPAA) phase II, responsible for Aegis Ashore wholeness. To support this effort, USFFC directed a Wargame be conducted involving cognizant navy stakeholders to validate operational, training, and logistics planning in order to ensure the achievement of initial operational capability with proper mission wholeness. - Functions: Wargame Objectives:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Identify gaps in procedures, resources, manpower, and interoperability of civilian, contractor, and military personnel base-wide at varying readiness states. - Identify gaps in training and qualification for AAMDS and AAMDF personnel. - Identify gaps in the logistical support, functional roles, responsibilities, and processes. - Deliverables: - Quicklook and final report documented risks, gaps, and mitigation options for the forward basing, sustainment, and operational employment of Aegis Ashore. - Wargame Analysis Report identifying wholeness gaps in order to influence contract and budgetary requirements including: - A list of identified operational, employment, training, logistics, and sustainment challenges, and gaps and seams for Aegis Ashore. - A list of actionable stakeholder items, based on findings, that will lead to revising CONOPS and governing documents. - Recommended revisions to the following: host nation agreements, host tenant agreements, emergency action plan, Force Protection plan, development of other security procedures, development of damage control and other emergency procedures, logistics concept of operations, training plan for facility personnel, maintenance procedure development, and medical concept of operations. - Accomplishments: In addition to producing the quicklook report, final experiment report, and analysis report, the effort evaluated the adequacy of the Aegis Ashore Platform Wholeness Fleet Concept of Operations (CONOPS). Installation of the first Aegis Ashore system in Romania in 2015 represents phase 2 of the U.S's EPAA designed to provide ballistic missile defense to portions of the European continent. The FLEX program provided direct support to a key national strategic imperative. - Campaign: Joint High Speed Vehicle (JHSV) - Focus: Conducted at the direction of CUSFF and in direct support of the OPNAV-led LCS/JHSV Council, the 2014 JHSV campaign evaluated new missions capable of being supported by the JHSV, with an initial focus on mission options involving little or no modification to the existing sea frame. Completed in two phases during USNS SPEARHEAD's (JHSV-1) maiden deployment to COMSIXTHFLT (C6F) and COMFOURTHFLT (C4F) AORs from Jan-Oct 2014, the effort explored the effectiveness of using various Adaptive Force Packages (AFPs) to expand JHSV platform employment options.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Functions: Tasks: - Aerostar was tasked by NWDC/C4F to provide a turnkey Persistent Surveillance Solution (PSS) on JHSV SPEARHEAD. The PSS solution consisted of a Tethered Aerostat System and an EO/IR Sensor and Radar System. - Installation, integration, and initial operational readiness review on the SPEARHEAD - Provided labor, travel and Per Diem for all Aerostar support staff - TIF-25K Aerostat, SSRS-F50 Radar and General Dynamics V9 Camera or equivalent EO/IR Sensor and required support equipment - Provided shipping for product to CONUS departure point - Provided Helium for initial fill of aerostat - Provided sensor feeds to the SPEARHEAD network - Month-to-month operations on the SPEARHEAD - Provided (1) Flight Director, (2) Operators and (1) Radar specialist for oversight of daily operations, supplemented with the ship's crew for sensor operation, recoveries and deployments - Provided Helium for required top-offs - Deflation and pack-out of the PSS System when operations concluded - Personnel return travel and Per Diem - Deliverables: - Successful inflation and integration on the SPEARHEAD - Radar and EO/IR imagery successfully transmitted to JIATF-S and/or SOUTHCOM during underway operations - In addition to a final experiment report, the products of this effort include revisions to the JHSV Platform Wholeness, JHSV Warfighting, and AFP Fleet CONOPS. - More importantly, the results will informs key investment decisions being made by OPNAV regarding the employment of adaptable sensor, communication, and support payloads to enable JHSV to conduct a range of missions beyond those it was originally built to perform. - Accomplishments: Through a series of LOEs spanning the full deployment, this effort assessed the ability of the JHSV platform to support multiple missions such as Maritime C2, Theater Security Cooperation, Counter Illicit Trafficking, Afloat Forward Staging Base, etc. A follow-on JHSV/MLP wargame examined interoperability issues					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
associated with MLP and JHSV, Large Medium Speed Roll-On/Roll-Off (LMSR), Littoral Combat Ship (LCS), and other ship-to-shore connectors. - Campaign: Fast Attack Craft/Fast Incoming Attack Craft (FAC FIAC) - Focus: - Evaluate surface and air weapon effectiveness against FAC/FIAC-representative targets. - Evaluate the effectiveness of non-lethal technology to disable small boat engines - Evaluate the effectiveness of employing an armed Switchblade UAS against FAC/FIAC target - Functions: - FLEX resources were used to manage and coordinate Navy stakeholder's efforts in this mission area in order to identify warfighting capability solutions, validate results, and deliver results to the Fleet over the next 12 months. - Deliverables: - Integrated, validated DOTMLPF-P solution set - Near Term Focus - New/revised TTPs - Training & Readiness input - Accomplishments: In addition to a final experiment report, this effort provided DOTMLPF-P recommendations to inform acquisition investment decisions and also provided recommended revisions to current counter FAC/ FIAC doctrine. - Campaign: Undersea Warfare Employment of Emerging Technologies (USWEET) - Focus: USWEET investigated emerging technologies having potential to close warfighting gaps identified in the anti-submarine warfare (ASW) and mine warfare (MIW) IPCLs. Planned and executed by C3F, NMAWC, STDG, and NWDC, the event was conducted on the Southern California Operating Area (SCORE) Range, Mine Training Areas, and other SOCAL areas to meet technology objectives. - Functions:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Building on lessons learned from USWEET '13, for each exercise a small array (2-3) of small form-factor, low power, passive sensors mounted to surface buoys were employed in shallow and deep water marine environments to detect contacts of interest and output an assessment of the size, speed, and bearing of the detected contact. - FLEX supported core services funding for Shallow Water Surveillance System (SWSS) experimentation to include SWSS test planning, testing specific hardware fixtures, personnel travel, support watch standers, diver services, crane services, small craft transportation and support for testing, data collection, and post experiment data analysis leading to delivery of performance analysis. - During USWEET 14 SSC PAC tested SWSS components in a production representative/form factor node enclosure with the acoustic array to ascertain end-to-end autonomous processing in a production ready integration of hardware and software. - Deliverables: - A report of SWSS experimental observed results and detailed analysis of performance capabilities within 120 days following completion of the event. - Planning meeting minutes and an updated action item register - within one week following all planning meetings. - Operation order and data collection and analysis plan 45 days prior to event start. - After action overview summary within 10 working days following receipt of all data. - Flag level briefings within 90 days of the event - A final report informing acquisition investment decisions within 6 months following completion of the event. - Accomplishments: Autonomous deployment, detection, and reporting of an undersea contact. Evaluated several emerging technologies showing potential to close warfighting gaps identified in the ASW and MIW IPCLs. - Campaign: Valiant Shield - Focus: Valiant Shield 2014 (VS14) is a bi-annual exercise focusing on at-sea training and experimentation for critical maritime initiatives. - VS14 is directed by U.S. Pacific Command (PACOM), and NWDC is responsible for experiment design, data collection, and analysis for initiatives participating in this at-sea experimentation event.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Participants include Space and Naval Warfare Systems Command (SPAWAR), ships and aircraft from the Navy and Air Force, program executive offices (PEO), coalition and allied partners, and multiple Navy commands. - Strict experimental design and controlled data collection efforts, including both quantitative and qualitative metrics, make VS14 a robust venue for the evaluation of technologies in an operational setting. The complexity of this experiment requires a skilled, highly experienced staff for planning, experiment design, data analysis, and reporting. Pacific Science & Engineering Group (PSE), having resident experience in the past 11 Trident Warrior experiments and in VS13, is considered uniquely and distinctly qualified to perform these tasks. - Functions: PSE provided human-system integration (HSI) analytical, experimental, and human factors engineering services to support NWDC during experimental design, execution, analysis, and reporting of VS14. PSE completed the following tasks in support of VS14: - Developed Experimental Design and Test Plan - Advised Focus Area Leads and other subject matter experts (SME) on matters related to qualitative data collection. - Reviewed Experiment Plans contained in the FLEX Information Management System (FIMS) database and input plans for qualitative components. - Execution and Data Collection. - Developed items for data collection instruments to measure attributes of interest to answer VS14 critical questions. - Developed data collection instruments (surveys, observation logs, and interviews). - Provided data collection instruments in on-line, paper and pencil, and other formats as required. - Assisted in the development of Data Collector training and materials. - Analyzed Results and Outcomes. - Collaborated with active duty and Naval Reserve personnel and NWDC staff to ensure all data was accounted for. - Analyzed data and developed data summaries by attributes. Entered summary results into the appropriate results databases. - Reporting Findings - Represented assigned data types at assessment workshops and assisted with formulation of answers to critical questions. - Deliverables: - Data collection instruments					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Data summaries at critical questions level in a form suitable for input into FIMS database - Accomplishments: - VS14 included 21 experiments and demonstrations, with 19 successfully completed, 1 partially accomplished, and 1 not executed with the following objectives completed: - Improve tactical readiness of selected forward deployed forces while mitigating exposure of tactics, techniques and procedures (TTPs) to adversary collection efforts. - Improve and advance joint interoperability of selected theater forces - Support and assess USPACOM theater-wide strategic communication - Assess Anti-Submarine Warfare in a multi-threat environment. - Assess distributed basing (Expeditionary Airfield Operations) to include ashore logistics and sustainment operations. - Validation of Unmanned Aircraft Systems (UAS) third party targeting TACMEMO completed. - Validation of Employment of Surface Warfare (SUW) Tactical Tomahawk TACBUL completed. - Additionally, sufficient data was collected to be analyzed over the coming months to determine the effects of electronic attacks. - Campaign: Naval Obscurants - Focus: Conduct a three-phased naval obscurants experiment. - Phase I, a modeling and simulation (M&S) event, was paramount to the safe completion of the phase III at-sea experiment. Serving as risk mitigation for Phase III, Phase I answered critical questions for shaping the experiment design and removed challenges for completing the Naval obscurants campaign in the C7F AOR. - The M&S and the Phase II shore-based events provided risk mitigation, fostered experiment design, and increased the knowledge base. Additionally, M&S and shore-based phases benefitted NWDC and the Navy beyond the Naval obscurants campaign by providing a capability that will be useful for training, and developing larger form tactics, techniques, and procedures. - Functions: Assessed the potential of Naval Obscurants to reduce the vulnerability of U.S. platforms to detection and explored the potential detrimental effects on own-ship systems including radar, communications, human health, and machinery. - Study relied heavily upon existing information, including Naval Obscurant test data, ship system radio frequency (RF) performance information, published health studies, and other literature (open and classified).					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Deliverables: - Draft USV/Obscurants Concept of Employment - Final Experiment Report - Phase 1 (M&S validation event) - Phase 2 (Shore based effects testing) - Phase 3 (At-sea ASBM experiment) - In addition to a final experiment report, this effort provided a draft obscurants employment document. - Accomplishments: - Established studies on: - Effectiveness against threat - Effect on Own Radar Performance - Effect on Own Communications Performance - Effect on Own Countermeasures Performance - Effect on Own Crew Health - Effect on Own Machinery - Informed USFF/CPF endorsement of Speed to Fleet program - Campaign: CSG 360 (CDRs Intent) - Focus:The Commanders Intent Wargame was based on the SG-360 Wargame format, a two-sided, open ended, real world, tabletop wargame designed to provide a learning opportunity to Carrier Strike Group and Expeditionary Strike Group staffs to invigorate tactical planning and thought versus an agile, thinking opposition force. - Provided learning opportunities to CSG staffs meant to "invigorate their tactical DNA" playing against an agile, thinking OPFOR. - The critical skills required to gain and hold the advantage at sea against a robust, high-technology foe must be developed, practiced, and honed in order to maintain "sufficient maritime superiority". - Functions: Responsibilities and tasks included working with USFF N7 to develop goals and objectives, and scenario and MSEL's, and to execute the Commanders Intent Wargame. NWDC served as the lead Action					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Officer for the Commander's Intent Wargame and worked under the supervision of the Strike Group 360 Game director. NWDC tasks included: - Define Commander's Intent Wargame format - DevelopCommander's Intent Wargame Scenario - Plan and executeCommander's Intent Wargame - Deliverables: - Execute Commander's Intent Wargame - Over multiple games, provide data for analysis to determine if certain tactics, techniques, procedures, technology or the combinations thereof result in a better likelihood of establishing "sufficient maritime superiority" - Accomplishments: Data collected over several games will be analyzed to evaluate effectiveness of existing tactics, techniques, and procedures (TTP). - Campaign: Joint Standoff Weapon-C (JSOW-C) Employment LOE - Focus: Using two AGM-154C JSOWs with live warheads, telemetry, and flight terminations systems, evaluate live JSOW-C employment TTPs versus using a simulated artillery bunker recessed into a mountain with an opposing slope. - Functions: Conducted two instrumented JSOW-C releases on the China Lake range in an EA environment. Objectives were: - Assess JSOW-C survivability in an EA environment. - Assess JSOW-C guidance performance in an EA environment. - Assess JSOW-C mission planning support. - Assess supporting systems for JSOW-C BDA - Deliverables: - JSOW-C mission planning standard operating procedure (SOP) was developed and evaluated - and an evaluation was made of the P-3C LSRS's ability to conduct battle damage assessment. - Recommendations to pursue BDA capability, if the results are favorable, 30 days after test. - Validated procedures for producing imagery templates from Distributed Common Ground System - Navy (DCGS-N). Expect 60 days after test.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Draft an update to the TOPGUN manual describing JSOW-C employment in a complex tactical environment with specific support capabilities, including tactical considerations (subject to restriction SEPCOR) 180 days after test. - Draft an update to the TOPGUN manual describing employment procedures in an EA environment. Associated recommendations posted on NSAWC website within 6 months of test; requires completion of TOPGUN standardization board process. - Accomplishments: - Shortened kill chain with greater targeting confidence. - Greater weapon-target pairing flexibility for Offensive ASuW. - Allows E-2D automatic PGM update of target location (Non-contracted precision cue). - Allows E-2D control of JSOW for attack. - Frees F/A-18 for post-weapons launch re-tasking. - Additionally, three key points to note regarding the effort: - Prior to this event, there had been only one JSOW-C release since it reached IOC in 2004. - The event was primarily planned and executed by the instructors stationed at NSAWC. - Total cost for the event was $75K - all of which went to pay for the services of the China Lake range - all other services were provided by various organizations (PMA-201, VX-9, VP-40, etc.) at no cost to the FLEX program. - Campaign: RIMPAC (Trident Warrior) - Focus: TW is an annual experimentation event alternating yearly between east and west coast AORs. TW14 was co-led by C3F and CNWDC as part of the Fleet Experimentation (FLEX) program. This advanced at-sea warfighting experiment evaluated the potential military utility of 37 new and emerging capabilities involving 7 USN ships, 3 allied ships, and 11 shore locations. - TW14 was held in conjunction with RIMPAC 14 and leveraged planned steaming days to conduct at-sea experimentation. - TW14 encompassed all U.S. Navy experimentation during RIMPAC and consolidated efforts as a cost effective means to experiment with multiple initiatives in an operational environment. - TW14 was fully integrated into RIMPAC, further expanding the exercise's training environment. - Functions: - Identified and captured innovative solutions addressing prioritized fleet warfighting gaps.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Refined systems interfaces and interoperability using fleet operator input in an operational environment. - Developed and delivered products (doctrine, TTP, and Final Reports with findings and recommendations informing key acquisition investment decisions). - Deliverables: - Final experiment report - Assessment report for Fleet stakeholders containing DOTMLPF recommendations - Analysis feedback for initiative sponsors - Doctrine deliverables - In addition to a final experiment report, expected TW14 products include: - Change recommendations to 7 existing doctrine publications - Recommended input into 4 publications currently being drafted - Development of 5 original publications. - Accomplishments: - Key initiatives evaluated included the CNO Speed to Fleet's Transportable EW Module (TEWM) project, ONR's EW Battle Management project, and 8 initiatives sponsored by the AUSCANNZUKUS experimentation alliance. - FLEX leveraged RIMPAC, the world's largest international maritime exercise, to provide a unique training opportunity that strengthens international maritime partnerships, enhances interoperability, and improves readiness of participating forces for a wide range of potential operations. - RIMPAC demonstrates the value of maritime forces, improves international naval cooperation, and provides a unique training opportunity. - Campaign: F-35B and LHA/D Integration Wargame - Focus: Inform development of Fleet Warfighting CONOPS on F-35B employment as part of a large Naval Force beyond traditional ACE - MEU/ARG configuration. - Examined expeditionary operations employing an F-35B-equipped Expeditionary Strike Group (ESG) across aircraft embarkation option two (16 F-35B and 6-8 MV-22) and option three (20 F-35B), to include the use of expeditionary basing ashore. - Identified how proposed F-35B force mixes aboard LHA/D and contributes to the capability of a larger amphibious force or other Naval Task Force (NTF).					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Identified DOTMLPF-P gaps and unique mission requirements associated with proposed F-35B force aboard LHA/D assigned to a larger amphibious force or other NTF. - Examined feasibility and overall supportability of concepts described in the HQMC CD&I LHA/D and F-35B Integration White Paper. - Functions: Provided stakeholders with: - Refined descriptions of integrated capabilities and employment options for inclusion in Fleet Warfighting CONOPS - Unique mission requirements and operational considerations required to achieve capabilities described in Fleet Warfighting CONOPS. - Other relevant information discovered through the course of the wargame (e.g. Platform Wholeness information) - Deliverables: - Provided F-35B and LHD/A Integration War Game Final Experiment Report including results, findings, and recommendations for initiative sponsors and the Navy and Marine Corps communities at large. - In addition to a final experiment report, this effort informed development of an F-35B and LHA/D Warfighting Fleet CONOPS and made recommendations regarding changes to the Amphibious Assault Ship and F-35B Aircraft Integration Platform Wholeness CONOPS. - Accomplishments: The wargame generated more than 1200 observations collected via a number of different methodologies. These observations will be combined with other information gleaned from document review, site visits, and planning conferences to generate CONOPS-relevant information in support of game objectives.					
FY 2015 Plans: Execute experimentation as laid out in the FLEX Execution Plan for 2015 including: 1. Campaign Naval Integrated Fire Control-Counter Air (NIFC-CA) Wargame 2 Focus Executed NIFC-CA Wargame 2 in Dec 2014. Navy leadership requires awareness and understanding of the NIFC-CA capability in order to protect its "game changing" capabilities and key programs. A comprehensive methodology is required to synchronize delivery of all NIFC-CA doctrine, organization, training, materiel, leadership, personnel, facilities, and policy (DOTMLPF-					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
P) actions, and Navy leadership requires insight into challenges and limitations associated with NIFC-CA in operational scenarios. Throughout FY15, conduct a series of events including modeling and simulation (M&S) development leading up to NIFC-CA system wargame 3 planned for Dec 2016. Examine how NIFC-CA increment 1 capabilities, circa 2017, contribute to air warfare in an operationally representative environment. Objectives - Inform decisions on - Concepts of Operation (CONOPS), tactics, techniques, and procedures (TTP), and Operational Task (OPTASK) modifications - Training requirements and future experimentation - NIFC-CA pillar program investments - Investigate - C2 flow/decision making - Battlespace management and deconfliction in a joint engagement zone (JEZ) - Combat ID (CID) with National Technical Means (NTM) and 5th-4th Generation - Operations in an electronic attack (EA) environment - Counter-intelligence, surveillance, reconnaissance (C-ISR)/counter-targeting (CTTG) impact on red force response (post-wargame) Functions USFFC proposes continued Fleet - OPNAV NIFC-CA partnership. Support a United States Fleet Forces Command (USFFC)-led multi-year NIFC-CA campaign plan to explore NIFC-CA capabilities, C2 decision-making, training, CONOPS, and TTP. Inform development/refinement of NIFC-CA Fleet CONOPS, Integrated Air and Missile Defense (IAMD) TTPs, and OPTASKs. Inform the Fleet training continuum from schoolhouse to Fleet Synthetic Training (FST) to Composite Training Unit Exercise (COMPTUEX). Costing Data - NIFC-CA workshops, fleet participant travel, and Senior Leadership Seminar ($0.7M) - Workshop CID, TTP, Air Defense Commander (ADC)/Composite Warfare Commander (CWC)/Rules of Engagement (ROE), CTTG/Electromagnetic Warfare (EMW), SLS - Wargame execution IT weeks, TTP execution check, and final execution weeks - Wargame data analysis support - Core wargame cost using wargame 1 as baseline (BL) ($2.5M)					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Increased to three BL-9 - Modeling and simulation, technical support, and venue - F-22/F-15 Integration ($0.2M) - Manned F-22s and constructive F-15s - Leverages combination of NTM, Info Gateway for 5th-4th Gen FTRs/L16 - Blue EA (EA-18G) ($0.25M) - Explicit effect modeling of jammers - Improves capability to support Growler employment/contribution to integrated fire control (IFC) - Dynamic Red Team ($0.2M) - Manned threat fighters, enemy Operator in the Loop (OITL) reaction to Blue actions Participants - Subject Matter Experts (SMEs) from fleet, training, doctrine, acquisition, and test communities - Future generations of NIFC-CA stakeholders Deliverables - Wargame Glideslope - Preliminary workshops (CID, Blue Force Laydown, TTP Development, Air Defense Syndicate) - Wargame planning, scenario and Data Collection and Analysis Plan (DCAP) development, IT testing and M&S engineering - Dry runs/TTP week/wargame execution - Post-wargame workshop (C-ISR/T) - Wargame 2 - Counter ISR/C-Targeting - Understand how EMW and C-ISR/T techniques can be applied to achieve desired results to counter Red's ability to target Blue's location, and/or disrupt Red's ability to conduct coordinated attacks (ex. simultaneous Time on Target (TOT), threat axes, etc.) based on results of AC-14C. - NIFC-CA wargame 2 Senior Leader Seminar (SLS) Accomplishments - Evaluate potential kill chains for desirability, relevancy - Create ideal and realistic wargame 2 mission plan 2. Campaign Alternative Platforms with Payloads Seminar (APPS) Wargame					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Focus Combatant Commander (CCDR) steady-state requirements are straining naval Cruiser-Destroyer (CRUDES) and Amphibious capacities to source and sustain Phase 0/1 missions. This USFFC N85 led FY14/15 Fleet Experimentation (FLEX) effort will identify mission payloads with enablers to allow designated USNS vessels to support selected Navy Component Command (NCC) steady state missions. Functions The experiment was comprised of two events - a workshop in September 2014 and a tabletop in November 2014. This study's objectives included 1. Define NCC identified mission set 2. Define platform baseline 3. Identify required payloads to support mission sets 4. Identify disparity between platform's baseline and mission payload 5. Identify enablers to integrate platform and mission payload The results of this study will be used to inform the USFF/CPF 2017 POM input to OPNAV. Key Participants - HQMC DC CD&I SID - OPNAV (N2/6, N3/5, N95, N8/N81M, N42, 931) - BUMED CD&I, - NCCs - SURFLANT - NECC (N5, N3, N43) - NEMSCOM - USFF Fleet Surgeon - MARFORCOM - Fleet CYBERCOM - PACFLT (N3/5, N4, N7) - USCG - NWDC - MSC (N02M, PM4A1, PM5, PM3, PM4A2, N4, Counsel) - NAVAIR IWC - NAVSEA - PEO SHIPS - NAVELSG					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Deliverables Quicklook and final experiment report with findings and mission payloads with enabler recommendations - Define NCC selected missions and associated mission tasks - Define platform baseline - Identify required payloads to support mission sets - Identify disparities between platform's baseline and mission payloads - Identify enablers required to integrate platform and mission payloads Accomplishments - Reviewed task - Developed draft problem and response statements - Identified key participants - Refined the deliverable list - Established follow-on action items 3. Campaign EMW Experiment Campaign Focus The EMW experiment campaign represents a series of coordinated 2015 events designed to explore innovative TTP and/or technologies to "operationalize" EMW across the Fleet. Functions - A seminar wargame in Q4 FY15 to examine EMW functionality at the Operational Level of War (OLW) - Several at-sea experiments to examine EMW-related initiatives Deliverables - Training - Develop coherent EMW education/training requirements for individuals - Develop clearly defined Maritime Operations Center (MOC)/Carrier Strike Group (CSG)/Amphibious Readiness Group (ARG)/unit EMW Fleet Readiness Training Plan (FRTP) training/certification requirements across all warfare areas - Develop EM Operating Force (OPFOR) capability to challenge/train in contested EM environment - Experimentation and Doctrine/TTP Development - EMW-related functions aligned to Warfare Commander that is properly manned, trained, and qualified - Develop EMW Navy Mission Essential Task Lists (NMETL) - EMW-related experiments prioritized in FLEX program - Communications - Aligned EMW message across Fleet and in public forums including Congress					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Regular drumbeat to maintain internal EMW awareness - Develop standard EMW priorities to align internal USN audiences at all levels - Future Capabilities - Develop and resource EMW Workforce Man, Train, and Equip (MT&E) - Implement governance to integrate efforts of multiple resource sponsors and Systems Commands (SYSCOMs) similar to NIFC-CA - Develop and resource EMW Integrated Capability Packages to support Fleet EMW operations Accomplishments - Evaluated Threat Assessment trends (Intelligence Preparation of the Operational Environment (IPOE) provided by Office of Naval Intelligence (ONI)) - Collected inputs from Type Commanders (TYCOMS), numbered Fleets, Stakeholders - Analyzed current capabilities - Understand and group by EMW facets - Compare capabilities to threats to identify gaps - Extracted key takeaways 4. Campaign Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS) 5 Eyes Unmanned Undersea Vehicle (UUV) Operations Focus Execute a seminar wargame followed by a system wargame to develop common tactics and procedures for employment of integrated UUVs operating in a 5 Eyes environment. Currently each member of the 5 Eyes community is developing, in isolation, TTPs for UUV operations which limits information exchange regarding use of similar UUV systems. Develop a 5 Eyes releasable TACMEMO addressing UUV operations in a shared battle space. Functions Develop common tactics and procedures for employment of integrated UUVs operating in a 5 eyes environment. Participants - NWDC - STDG - NECC - Maritime Warfighting Center Forum Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- 5 Eyes releasable TACMEMO addressing UUV operations Accomplishments TBD 5. Campaign Counter Fast Attack Craft (FAC) & Fast Incoming Attack Craft (FIAC) Weapons Evaluation At-Sea Experiment Focus Conduct an at-sea experiment to evaluate the effectiveness of alternative munitions vs. representative FAC and/or FIAC targets - specifically - Armed Switchblade Unmanned Air System (UAS) - MK47 40mm grenade launcher - US Army 20mm frangible Close-In Weapon System (CIWS) round Functions Manage and coordinate the efforts of Navy stakeholders in this mission area to identify warfighting capability solutions, validate results, and deliver to the fleet over the next 12 months. Support continuing efforts to give the Fleet capable and cost-effective weapons to engage the FAC & FIAC threat Stakeholders - STDG - NWDC - CNSF Deliverables - Integrated, validated DOTMLPF-P solution set - near term focus - Updated/new TTPs - Training & readiness input Accomplishments TBD 6. Campaign Rail Gun Seminar Wargame Focus Conduct a seminar wargame to examine a revised Rail Gun Operating Concept. Functions					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Evaluate new platforms and weapon systems prior to Fleet introduction. First at-sea Rail Gun demonstration planned for FY16 aboard Joint High Speed Vehicle (JHSV) platform. Support NAVSEA Rail Gun program office request to update the current Rail Gun Operating Concept to encompass new missions and target sets envisioned for the rail gun and associated hyper-velocity projectile. Participants - NWDC - NAVSEA - USFF - MSC - ONR Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Revised Rail Gun Operating Concept Accomplishments - Operational Impact - Wide Area Coverage - Increased speed to target@ 100+ nautical miles (NM) - Faster response to Call-for-Fire - More Time-Critical-Strike missions - Accelerates operational tempo - Faster attrition of enemy personnel and equipment - Operation timeline shifts left - Saves Lives - Faster attrition of enemy reduces threat - Reduced friendly casualties - No unexploded ordnance on battlefield - Enhances Safety - No risk of sympathetic detonation - Simplified storage, transportation, and replenishment - Reduces Logistics - Reduced ammo and fuel usage by ground force - Shifts logistics load to seabase					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Reduces Cost per Kill - Lower Unit Cost - Lower handling cost 7. Campaign Undersea Domain Operating Concept (UDOC) Experimentation Campaign Focus The FY15 UDOC experimentation campaign consists of several events/efforts supporting Commander, Submarine Force (COMSUBFOR) as they develop and implement a plan in support of the UDOC. Functions Conduct seminar workshops in Q1 & Q2 FY15 to explore how innovative technologies, such as those within the COMSUBFOR Undersea Rapid Capability Initiative (URCI), might be employed by the Fleet to - Exploit use of the undersea - Deny the adversary's use of the undersea - Provide war-winning cross domain effects Conduct an additional Theater Undersea Warfare (USW) C2 seminar workshop in Q3 FY15 to address questions/topics not previously considered to feed Theater Undersea Warfare (TUSW) C2 CONOPS development Conduct a seminar workshop to develop Periscope Detection & Discrimination (PDD) TTP Conduct an at-sea experiment event in Q4 FY15 to examine the employment of prototype technologies (including the COMSUBFOR URCI projects) Stakeholders - COMSUBFOR - NWDC - NMAWC - STDG - NUWC - ONR - NRL - CNMOC - OPNAV - NAVSEA Deliverables					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Periscope Detection & Discrimination (PDD) TTP - Training and Readiness input Accomplishments TBD 8. Campaign LPD-17 Seminar Wargame Focus Conduct a seminar wargame to examine the feasibility of using the LPD-17 class to perform additional missions as a Regional/Sector Air Defense Coordinator and/or an alternate Command and Control platform. Functions During the KEARSARGE ARG/26 Marine Expeditionary Unit (MEU) Post Deployment Brief (PDB), CUSFFC directed the identification of potential employment areas that differ from traditional LPD employment. Inform changes to LPD-17 Class Required Operational Capabilities (ROC)/Projected Operational Environment (POE), LPD-17 Class Tactical Manual, LPD-17 manning plan, and other related documents. Participants - NWDC - ESG-2 - USFF - CPF - CNSL - CNAL - C4F - C5F - C6F Deliverables - Training and Readiness input - Recommended changes to - LPD-17 Class Required Operational Capabilities (ROC)/Projected Operational Environment (POE) - LPD-17 Class Tactical Manual - LPD-17 manning plan and other related documents. Accomplishments					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
TBD 9. Campaign Netted Sensors At-Sea Experiment Focus Explore multiple initiatives focused on technologies and TTP that will improve Navy capability to passively find, fix, track, target, and ID surface and air contacts at extended ranges largely in support of long range Surface Warfare (SUW). Functions Supports efforts to shorten timelines to geo-locate short-duration emitters and enhance CID capability through networked sensors. Stakeholders - NWDC - PMA 231 - PMA 265 - VX-23 Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input Accomplishments TBD 10. Campaign Trident Warrior 2015 At-Sea Experiment Focus Conduct a 5-phase at-sea experiment from March through July 2015 in C7F Area of Responsibility (AOR) to include participation in PACOM/PACFLT exercise TALISMAN SABRE 2015. Evaluate multiple technologies and/or TTP initiatives to close warfighting gaps focused on C2 of EMW assets in a contested environment, assured communications (Pandarra Net), Air Sea Battle concepts, long range SUW, and C-ISR. Functions Support OPNAV, SPAWAR, program offices, ONR, NRL, and others in the spiral development of prototype capabilities - at sea and in the hands of warfighters. Address warfighting gaps identified across multiple POM-16 Integrated Priority Capability Lists (IPCLs) Support/leverage C7F experimentation (to include Pandarra and Silent Banshee series)					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Stakeholders - C7F - NWDC - CPF - OPNAV N2/N6E/F - ONR - NRL - NCWDG - SPAWAR Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input - Develop new/revise TTPs - Spiral development of prototype capabilities Accomplishments TBD 11. Campaign C4F JHSV At-Sea Experiment Focus Conduct an at-sea experiment in the Jun-Aug 2015 timeframe during JHSV C4F Southern Partnership Station deployment. Evaluate multiple technologies to enhance JHSV capability to serve as an Afloat Forward Staging Base (AFSB) and to improve JHSV surface surveillance capability - specifically - A small-boat docking facility - A parasail to host elevated sensors - A telescoping mast to extend radar horizon - Small Unmanned Air Systems (UAS) operations - Temporary armory and holding cell facilities Complete FY14 FLEX Mine Warfare-related at-sea experiment Functions Continue to evaluate the capability of the JHSV platform to perform missions for which it was not originally designed					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Evaluate the JHSV as a Counter-tracking AFSB and its ability to support Unmanned Mine Counter Measures (UMCM) operations Inform changes to JHSV Fleet Warfighting CONOPS and inform acquisition investment decisions Stakeholders - C4F - NWDC - USFF Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input - Revised CONOPS/TTPs Accomplishments TBD					
FY 2016 Base Plans: 1. Campaign Naval Integrated Fire Control-Counter Air (NIFC-CA) Wargame 2 Focus Will executed NIFC-CA Wargame 3 in Dec 2015. Navy leadership requires awareness and understanding of the NIFC-CA capability in order to protect its "game changing" capabilities and key programs. A comprehensive methodology is required to synchronize delivery of all NIFC-CA doctrine, organization, training, materiel, leadership, personnel, facilities, and policy (DOTMLPF-P) actions, and Navy leadership requires insight into challenges and limitations associated with NIFC-CA in operational scenarios. Throughout FY15, conduct a series of events including modeling and simulation (M&S) development leading up to NIFC-CA system wargame 3 planned for Dec 2016. Examine how NIFC-CA increment 1 capabilities, circa 2017, contribute to air warfare in an operationally representative environment. There are repeats in the work as campaigns such as NIFC-CA are multi-year events based on additions of capability also known as increments. The highly complex threat and introduction of capability take years to experiment with in order to deliver TTP/ TACMEMOs/Doctrine/Material capability for the Fleet to train to and use. While the number of campaigns may decrease, the complexity will increase. For instance, EMW is ramping up in complexity and scope as the operators get smarter on what they need to experiment on in order to deliver capability. Same can be said for NIFC-CA as the increment comes on line.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Objectives - Inform decisions on - Concepts of Operation (CONOPS), tactics, techniques, and procedures (TTP), and Operational Task (OPTASK) modifications - Training requirements and future experimentation - NIFC-CA pillar program investments - Investigate - C2 flow/decision making - Battlespace management and deconfliction in a joint engagement zone (JEZ) - Combat ID (CID) with National Technical Means (NTM) and 5th-4th Generation - Operations in an electronic attack (EA) environment - Counter-intelligence, surveillance, reconnaissance (C-ISR)/counter-targeting (CTTG) impact on red force response (post-wargame) Functions USFFC proposes continued Fleet - OPNAV NIFC-CA partnership. Support a United States Fleet Forces Command (USFFC)-led multi-year NIFC-CA campaign plan to explore NIFC-CA capabilities, C2 decision-making, training, CONOPS, and TTP. Inform development/refinement of NIFC-CA Fleet CONOPS, Integrated Air and Missile Defense (IAMD) TTPs, and OPTASKs. Inform the Fleet training continuum from schoolhouse to Fleet Synthetic Training (FST) to Composite Training Unit Exercise (COMPTUEX). Deliverables - Wargame Glideslope - Preliminary workshops (CID, Blue Force Laydown, TTP Development, Air Defense Syndicate) - Wargame planning, scenario and Data Collection and Analysis Plan (DCAP) development, IT testing and M&S engineering - Dry runs/TTP week/wargame execution - Post-wargame workshop (C-ISR/T) - Wargame 2 - Counter ISR/C-Targeting					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Understand how EMW and C-ISR/T techniques can be applied to achieve desired results to counter Red's ability to target Blue's location, and/or disrupt Red's ability to conduct coordinated attacks (ex. simultaneous Time on Target (TOT), threat axes, etc.) based on results of AC-14C. - NIFC-CA wargame 2 Senior Leader Seminar (SLS) Accomplishments - Evaluate potential kill chains for desirability, relevancy - Create ideal and realistic wargame 2 mission plan 2. Campaign Alternative Platforms with Payloads Seminar (APPS) Wargame Focus Combatant Commander (CCDR) steady-state requirements are straining naval Cruiser-Destroyer (CRUDES) and Amphibious capacities to source and sustain Phase 0/1 missions. This USFFC N85 led FY14/15 Fleet Experimentation (FLEX) effort will identify mission payloads with enablers to allow designated USNS vessels to support selected Navy Component Command (NCC) steady state missions. Functions The experiment was comprised of two events. This study's objectives included 1. Define NCC identified mission set 2. Define platform baseline 3. Identify required payloads to support mission sets 4. Identify disparity between platform's baseline and mission payload 5. Identify enablers to integrate platform and mission payload The results of this study will be used to inform the USFF/CPF 2017 POM input to OPNAV. Deliverables Quicklook and final experiment report with findings and mission payloads with enabler recommendations - Define NCC selected missions and associated mission tasks - Define platform baseline - Identify required payloads to support mission sets - Identify disparities between platform's baseline and mission payloads - Identify enablers required to integrate platform and mission payloads 3. Campaign EMW Experiment Campaign Focus The EMW experiment campaign represents a series of coordinated 2015 events designed to explore innovative TTP and/or technologies to "operationalize" EMW across the Fleet.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Functions - A seminar wargame in Q4 FY16 to examine EMW functionality at the Operational Level of War (OLW) - Several at-sea experiments to examine EMW-related initiatives Deliverables - Training - Develop coherent EMW education/training requirements for individuals - Develop clearly defined Maritime Operations Center (MOC)/Carrier Strike Group (CSG)/Amphibious Readiness Group (ARG)/unit EMW Fleet Readiness Training Plan (FRTP) training/certification requirements across all warfare areas - Develop EM Operating Force (OPFOR) capability to challenge/train in contested EM environment - Experimentation and Doctrine/TTP Development - EMW-related functions aligned to Warfare Commander that is properly manned, trained, and qualified - Develop EMW Navy Mission Essential Task Lists (NMETL) - EMW-related experiments prioritized in FLEX program - Communications - Aligned EMW message across Fleet and in public forums including Congress - Regular drumbeat to maintain internal EMW awareness - Develop standard EMW priorities to align internal USN audiences at all levels - Future Capabilities - Develop and resource EMW Workforce Man, Train, and Equip (MT&E) - Implement governance to integrate efforts of multiple resource sponsors and Systems Commands (SYSCOMs) similar to NIFC-CA - Develop and resource EMW Integrated Capability Packages to support Fleet EMW operations Accomplishments - Evaluated Threat Assessment trends (Intelligence Preparation of the Operational Environment (IPOE) provided by Office of Naval Intelligence (ONI)) - Collected inputs from Type Commanders (TYCOMS), numbered Fleets, Stakeholders - Analyzed current capabilities - Understand and group by EMW facets - Compare capabilities to threats to identify gaps - Extracted key takeaways -					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
4. Campaign Australia, Canada, New Zealand, United Kingdom, United States (AUSCANNZUKUS) 5 Eyes Unmanned Undersea Vehicle (UUV) Operations Focus Execute a seminar wargame followed by a system wargame to develop common tactics and procedures for employment of integrated UUVs operating in a 5 Eyes environment. Currently each member of the 5 Eyes community is developing, in isolation, TTPs for UUV operations which limits information exchange regarding use of similar UUV systems. Develop a 5 Eyes releasable TACMEMO addressing UUV operations in a shared battle space. Functions Develop common tactics and procedures for employment of integrated UUVs operating in a 5 Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - 5 Eyes releasable TACMEMO addressing UUV operations 5. Campaign Counter Fast Attack Craft (FAC) & Fast Incoming Attack Craft (FIAC) Weapons Evaluation At-Sea Experiment Focus Conduct an at-sea experiment to evaluate the effectiveness of alternative munitions vs. representative FAC and/or FIAC targets - specifically - Armed Switchblade Unmanned Air System (UAS) - MK47 40mm grenade launcher - US Army 20mm frangible Close-In Weapon System (CIWS) round Functions Manage and coordinate the efforts of Navy stakeholders in this mission area to identify warfighting capability solutions, validate results, and deliver to the fleet over the next 12 months. Support continuing efforts to give the Fleet capable and cost-effective weapons to engage the FAC & FIAC threat Deliverables - Integrated, validated DOTMLPF-P solution set - near term focus - Updated/new TTPs - Training & readiness input 6. Campaign Rail Gun Seminar Wargame					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Focus Conduct a seminar wargame to examine a revised Rail Gun Operating Concept. Functions Evaluate new platforms and weapon systems prior to Fleet introduction. First at-sea Rail Gun demonstration planned for FY16 aboard Joint High Speed Vehicle (JHSV) platform. Support NAVSEA Rail Gun program office request to update the current Rail Gun Operating Concept to encompass new missions and target sets envisioned for the rail gun and associated hyper-velocity projectile. Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Revised Rail Gun Operating Concept Accomplishments - Operational Impact - Wide Area Coverage - Increased speed to target@ 100+ nautical miles (NM) - Faster response to Call-for-Fire - More Time-Critical-Strike missions - Accelerates operational tempo - Faster attrition of enemy personnel and equipment - Operation timeline shifts left - Saves Lives - Faster attrition of enemy reduces threat - Reduced friendly casualties - No unexploded ordnance on battlefield - Enhances Safety - No risk of sympathetic detonation - Simplified storage, transportation, and replenishment - Reduces Logistics - Reduced ammo and fuel usage by ground force - Shifts logistics load to seabase - Reduces Cost per Kill - Lower Unit Cost - Lower handling cost					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
7. Campaign Undersea Domain Operating Concept (UDOC) Experimentation Campaign Focus The FY16 UDOC experimentation campaign consists of several events/efforts supporting Commander, Submarine Force (COMSUBFOR) as they develop and implement a plan in support of the UDOC. Functions Conduct seminar workshops in Q1 & Q2 FY16 to explore how innovative technologies, such as those within the COMSUBFOR Undersea Rapid Capability Initiative (URCI), might be employed by the Fleet to - Exploit use of the undersea - Deny the adversary's use of the undersea - Provide war-winning cross domain effects Conduct an additional Theater Undersea Warfare (USW) C2 seminar workshop in Q3 FY16 to address questions/topics not previously considered to feed Theater Undersea Warfare (TUSW) C2 CONOPS development Conduct a seminar workshop to develop Periscope Detection & Discrimination (PDD) TTP Conduct an at-sea experiment event in Q4 FY16 to examine the employment of prototype technologies (including the COMSUBFOR URCI projects) Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Periscope Detection & Discrimination (PDD) TTP - Training and Readiness input 8. Campaign LPD-17 Seminar Wargame Focus Conduct a seminar wargame to examine the feasibility of using the LPD-17 class to perform additional missions as a Regional/Sector Air Defense Coordinator and/or an alternate Command and Control platform. Functions During the KEARSARGE ARG/26 Marine Expeditionary Unit (MEU) Post Deployment Brief (PDB), CUSFFC directed the identification of potential employment areas that differ from traditional LPD employment. Inform changes to LPD-17 Class Required Operational Capabilities (ROC)/Projected Operational Environment (POE), LPD-17 Class Tactical Manual, LPD-17 manning plan, and other related documents. Deliverables - Training and Readiness input - Recommended changes to - LPD-17 Class Required Operational Capabilities (ROC)/Projected Operational Environment (POE)					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- LPD-17 Class Tactical Manual - LPD-17 manning plan and other related documents. 9. Campaign Netted Sensors At-Sea Experiment Focus Explore multiple initiatives focused on technologies and TTP that will improve Navy capability to passively find, fix, track, target, and ID surface and air contacts at extended ranges largely in support of long range Surface Warfare (SUW). Functions Supports efforts to shorten timelines to geo-locate short-duration emitters and enhance CID capability through networked sensors. Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input 10. Campaign Trident Warrior 2015 At-Sea Experiment Focus Conduct a 5-phase at-sea experiment from March through July 2015 in C7F Area of Responsibility (AOR) to include participation in PACOM/PACFLT exercise TALISMAN SABRE 2015. Evaluate multiple technologies and/or TTP initiatives to close warfighting gaps focused on C2 of EMW assets in a contested environment, assured communications (Pandarra Net), Air Sea Battle concepts, long range SUW, and C-ISR. Functions Support OPNAV, SPAWAR, program offices, ONR, NRL, and others in the spiral development of prototype capabilities - at sea and in the hands of warfighters. Address warfighting gaps identified across multiple POM-16 Integrated Priority Capability Lists (IPCLs) Support/leverage C7F experimentation (to include Pandarra and Silent Banshee series) Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input - Develop new/revise TTPs - Spiral development of prototype capabilities Campaign C4F JHSV At-Sea Experiment Focus					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Conduct an at-sea experiment in the Jun-Aug 2016 timeframe during JHSV C4F Southern Partnership Station deployment. Evaluate multiple technologies to enhance JHSV capability to serve as an Afloat Forward Staging Base (AFSB) and to improve JHSV surface surveillance capability - specifically - A small-boat docking facility - A parasail to host elevated sensors - A telescoping mast to extend radar horizon - Small Unmanned Air Systems (UAS) operations - Temporary armory and holding cell facilities Complete FY15 FLEX Mine Warfare-related at-sea experiment Functions Continue to evaluate the capability of the JHSV platform to perform missions for which it was not originally designed Evaluate the JHSV as a Counter-tracking AFSB and its ability to support Unmanned Mine Counter Measures (UMCM) operations Inform changes to JHSV Fleet Warfighting CONOPS and inform acquisition investment decisions Deliverables - Quicklook and final experiment report with findings and DOTMLPF-P recommendations - Training and Readiness input - Revised CONOPS/TTPs ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	11.876	5.158	8.864	-	8.864

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This funding is used for 20 to 30 significant experiment campaigns/events encompassing up to 103 individual experiment initiative annually. These campaigns/events focused on addressing fleet identified capability gaps. The majority of this funding is used to acquire intellectual capital in emerging technical areas through contracts

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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providing engineering expertise, experiment design, execution and analysis support, and also used to purchase some engineering and integration costs associated with certain experiments.

E. Performance Metrics

Fleet Experimentation:
- Refine concepts and identify key performance levels necessary for implementation.
- Demonstrate feasibility and discriminate among competing concepts and implementation alternatives.
- Understand potential military effectiveness and risk.
- Evaluate how much of the new capability and attendant force structure is needed.
- Learn how to operate the new force and combine it with the legacy force.
- Develop recommended Doctrine, Organization, Training, Materiel, Leadership, and Personnel (DOTMLP) changes.
- Develop fleet war fighting requirements for submission to the OPNAV Navy Capabilities Development Process (NCDP) to inform Navy acquisition decisions.
- Integrate emergent concepts and technologies, leading to rapid introduction of needed war fighting capabilities in the fleet.
- Rapidly mature concepts, technologies, and doctrine.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Test and Evaluation	MIPR	Defense Technical Information Center : Ft Belvoir VA	2.100	2.036	Mar 2014	1.400	Apr 2015	1.700	Dec 2015	-		1.700	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	NAVSEA : Washington DC	2.714	0.800	Oct 2013	0.300	Mar 2015	0.400	Mar 2016	-		0.400	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	SPAWAR : San Diego CA	3.334	1.657	Aug 2014	0.700	Jul 2015	1.600	Mar 2016	-		1.600	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	SPAWARSYSCEN Atlantic : Charleston SC	2.723	0.600	Feb 2014	0.200	Mar 2015	0.200	Mar 2016	-		0.200	Continuing	Continuing	Continuing
Systems Test and Evaluation	Various	SPAWARSYSCEN Pacific : San Diego CA	2.583	0.394	Oct 2013	0.200	Mar 2015	0.400	Mar 2016	-		0.400	Continuing	Continuing	Continuing
Systems Test and Evaluation	Various	Naval Undersea Warfare Center : Newport RI	0.658	0.741	Mar 2014	0.400	Mar 2015	0.400	Feb 2016	-		0.400	Continuing	Continuing	Continuing
Systems Test and Evaluation	Various	Naval Surface Warfare Center : CA, IN, MD, VA	2.143	0.827	Nov 2013	0.500	Jul 2015	0.600	Jul 2016	-		0.600	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	Naval Postgraduate School : Monterey CA	1.500	0.095	Aug 2014	-		-		-		-	-	1.595	-
Systems Test and Evaluation	C/FFP	Navy Warfare Development Command : Norfolk VA	0.713	0.500	Oct 2013	-		-		-		-	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	Naval Research Laboratory : Washington DC	0.100	0.150	Jan 2014	0.200	May 2015	0.500	Jun 2016	-		0.500	Continuing	Continuing	Continuing
System Test and Evaluation	C/FFP	Naval Air Warfare Center : Point Mugu CA	0.491	0.200	Jan 2014	0.200	Oct 2014	0.400	Jun 2016	-		0.400	Continuing	Continuing	Continuing
Systems Test and Evaluation	C/FFP	Fleet Industrial Supply : Norfolk VA	0.130	0.599	Aug 2014	0.158	Apr 2015	0.464	Mar 2016	-		0.464	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Test and Evaluation	C/FFP	Naval Air Warfare Center Aircraft Division : Patuxent River MD	6.909	0.400	Feb 2014	0.200	Mar 2015	0.500	Mar 2016	-		0.500	Continuing	Continuing	Continuing
System Test and Evaluation	MIPR	Air Force Research Lab : Wright Patterson AFB OH	0.950	0.300	Dec 2013	0.200	Apr 2015	0.400	Mar 2016	-		0.400	Continuing	Continuing	Continuing
System Test and Evaluation	C/FFP	Navy System Management Activity : Washington DC	0.316	0.800	Aug 2014	0.300	Jun 2015	0.800	Jun 2016	-		0.800	Continuing	Continuing	Continuing
System Test and Evaluation	C/FFP	Naval Surface Warfare Center : Corona CA	0.246	-	Feb 2014	-		-		-		-	Continuing	Continuing	Continuing
System Test and Evaluation	C/FFP	CECOM : Aberdeen Proving Grounds MD	0.150	-		-		-		-		-	-	0.150	-
System Test and Evaluation	C/FFP	DMEA : Sacramento CA	0.400	0.135	Dec 2013	-		-		-		-	-	0.535	-
System Test and Evaluation	Various	Naval Surface Warfare Command : Dahlgren VA	0.000	0.201	Dec 2013	0.200	May 2015	0.200	Jun 2016	-		0.200	Continuing	Continuing	Continuing
System Test and Evaluation	Various	APG-Army : Natick	0.000	0.467	Mar 2014	-		-		-		-	-	0.467	-
System Test and Evaluation	Various	Naval air Warfare Center : CA, NJ	0.000	0.514	Aug 2014	-		0.300	Aug 2016	-		0.300	-	0.814	-
System Test and Evaluation	Various	BTR per DCNO N2N6 : To Project 3311	0.000	0.460	Oct 2014	-		-		-		-	-	0.460	-
		Subtotal	28.160	11.876		5.158		8.864		-		8.864	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/FFP	SPAWAR : San Diego CA	3.190	-		-		-		-		-	-	3.190	-
Program Management	C/FFP	Naval Postgraduate School : Montery CA	0.700	-		-		-		-		-	-	0.700	1.450
Program Management	C/FFP	Naval Air Warfare Center Aircraft Division : Patuxent River MD	0.250	-		-		-		-		-	-	0.250	-
Program Management	C/FFP	Naval Surface Warfare Command : DahlgrenVA	0.000	-		-		-		-		-	-	-	-
Program Management	Various	Naval Surface Warfare Center : Corona CA	0.000	-		-		-		-		-	-	-	-
Program Management	MIPR	Defense Technical Information Center: VA : Ft Belvoir VA	1.639	-		-		-		-		-	-	1.639	-
		Subtotal	5.779	-		-		-		-		-	-	5.779	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.939	11.876		5.158		8.864		-		8.864	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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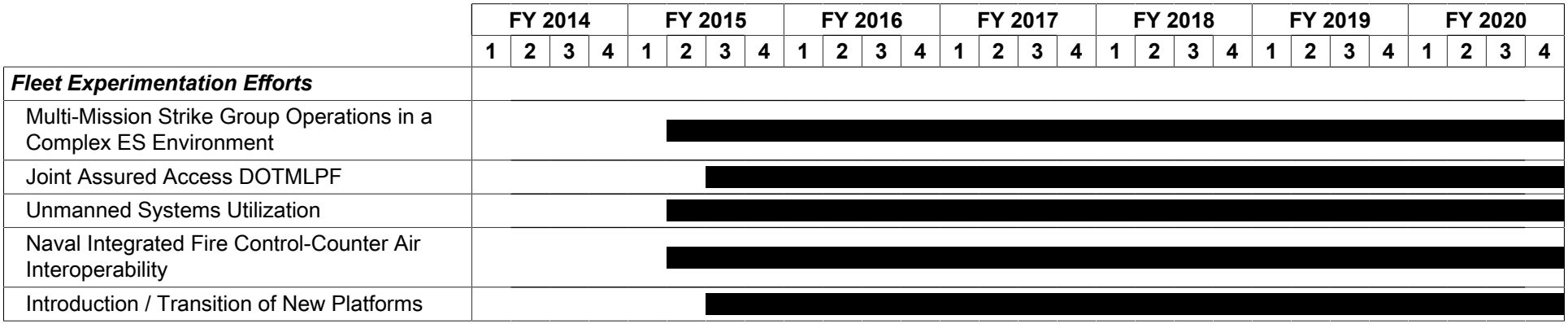

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604707N / *SEW Architecture/Eng Support*	**Project (Number/Name)** 3319 / *Fleet Experimentation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Fleet Experimentation Efforts				
Multi-Mission Strike Group Operations in a Complex ES Environment	2	2015	4	2020
Joint Assured Access DOTMLPF	3	2015	4	2020
Unmanned Systems Utilization	2	2015	4	2020
Naval Integrated Fire Control-Counter Air Interoperability	2	2015	4	2020
Introduction / Transition of New Platforms	3	2015	4	2020