Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0606355N *I (U)Warfare Innovation Management*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	0.000	21.123	28.841	-	28.841	19.529	13.817	14.093	14.375	Continuing	Continuing
3319: *Fleet Experimentation*	0.000	0.000	18.954	11.572	-	11.572	11.219	11.453	11.682	11.916	Continuing	Continuing
3320: *TRIDENT Warrior*	0.000	0.000	2.169	2.269	-	2.269	2.310	2.364	2.411	2.459	Continuing	Continuing
3420: *Expeditionary Submarine Fiber Optic Cable (SFOC)*	0.000	0.000	0.000	15.000	-	15.000	6.000	0.000	0.000	0.000	0.000	21.000

A. Mission Description and Budget Item Justification

FLEX Project 3319:
The Fleet Experimentation (FLEX) project advances/augments operational and tactical 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.
FLEX was previously funded under PE 0604707N.

TW Project 3320:
TW enables early delivery of capabilities to the warfighter via Fleet-directed Trident Warrior operational events with an emphasis on USFF/CPF directed focus areas.
Trident Warrior (TW) was transferred from 0604231N (Tactical Command Systems) to 0606355N (Warfare Innovation Management)in FY17.

SFOC Project 3420
Classified Project Expeditionary Submarine Fiber Optic Cable (SFOC) Communications is not a new start. Funding was realigned from project 3319 FLEX in FY18.
The Expeditionary Submarine Fiber Optic Cable (SFOC) Communications is developing and experimenting innovative concepts designed to validate both material and non-material methodologies to provide resilient command and control within the maritime domain. Identified previous work done within OSD channels, and will leverage lessons learned.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy					Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0606355N *I (U)Warfare Innovation Management*			
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	0.000	21.123	34.938	-	34.938
Current President's Budget	0.000	21.123	28.841	-	28.841
Total Adjustments	0.000	0.000	-6.097	-	-6.097
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-6.104	-	-6.104
• Rate/Misc Adjustments	0.000	0.000	0.007	-	0.007

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0606355N / *(U)Warfare Innovation Management*	Project (Number/Name) 3319 / *Fleet Experimentation*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3319: *Fleet Experimentation*	0.000	0.000	18.954	11.572	-	11.572	11.219	11.453	11.682	11.916	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Fleet Experimentation (FLEX) program examines the doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) solutions to identified warfighter capability gaps within the Future Years Defense Program (FYDP). The FLEX program considers warfighting gaps identified in: Integrated Prioritized Capability Lists (IPCL) generated by Warfighting Development Centers (WDC); USFF/CPF's Integrated Priorities Letter (IPL) delivered annually to the CNO; USFF/CPF's Commanders' FLEX Guidance; and Navy and Joint Urgent Operational Needs Statements. In addition, FLEX addresses innovative concepts, and tactics, techniques, and procedures (TTP), and Fleet Concepts of Operation (CONOPS) that collectively mitigate Fleet-identified warfighting capability gaps as defined by annual FLEX guidance. Through experimentation activities such as workshops, system or seminar war simulations, live at-sea events, and experimentation campaigns, the FLEX program examines potential materiel and non-materiel tangible solutions that will enhance the Fleet's ability to execute assigned missions. FLEX events and campaigns are comprised of all facets of experimentation including design, planning, systems engineering and integration, execution, data collection, analysis, assessment, and the delivery of tangible products to the fleet. While Naval-centric, FLEX efforts include joint, coalition, Science and Technology (S&T), academia, and industry partners.

Experimentation is vital to continuously improving naval warfighting capabilities. As such, the FLEX program directly supports four of the five elements outlined in the Secretary of the Navy's Innovation Vision: Build the Naval Innovation Network, Improve the Use of DON Information, Accelerate Emerging Operational Capabilities to the Fleet, and Develop Game-Changing Warfighting Concepts.

Expeditionary SFOC Communications (Classified Project) will transfer from Project 3319 (FLEX) to Project 3420 (Expeditionary SFOC Communications) in FY18.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Fleet Experimentation	0.000	18.954	11.572	0.000	11.572
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. Deliverables are focused on operational and tactical warfighting capability in the near term (within the Future Years Defense Program), and prioritized by the					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3319 / *Fleet Experimentation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
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 Center (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). FLEX supports Operational/Tactical venues to experiment, demonstrate, assess warfighting CONOPS development, concepts, doctrine/training development, techniques and procedures (TTPs), and technologies Multi-year experiment campaigns focus on warfighting capability per CPF/CUSFFC guidance to evaluate and transition to DOTMLPF-Policy change recommendations. ***FY 2016 Accomplishments:*** FLEX project was previously funded in PE 0604707N SEW ARCHITECTURE/ENG SUPPORT in FY16 ***FY 2017 Plans:*** The FY17 FLEX EXPLAN is based on four USFF/CPF directed focus areas to include, in very broad terms, Multi-mission Electromagnetic Maneuver Warfare, Naval Integrated Fires, Full Spectrum Mine Warfare, and Unmanned Systems. FLEX will also be leveraged to support new platform introduction capabilities. The FLEX Execution Plan supports the following events: a. Fleet Battle Experiment 2017 At-Sea b. Spectral Tsunami 2017 Seminar War Simulation c. USFF Independent Deployments At-Sea (Three ships) d. Emerging Concepts War Simulation e. Netted Sensors At-Sea f. Trident Warrior 2017 At-Sea g. Bold Alligator 2017 At-Sea h. Red Nitrum At-Sea I. Navy Integrated Fire Control - Counter Air System (NIFC-CA) System War Simulation j. MIW At-Sea k. Counter Unmanned Systems (UxS) At-Sea					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3319 / *Fleet Experimentation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
I. Office of Naval Research (ONR) Technology Innovation Games (TIGs) Additionally, this project to provide funds for technical and subject matter expertise support throughout the experiment planning, execution, and analysis process in support of the draft FLEX ExPlan for FY 2017 At-Sea events and War simulations with the outcomes to advance or augment warfighting capabilities. ***FY 2018 Base Plans:*** The FY18 FLEX program aligns to the "Fleet Design" end state of fleet centric fighting power, enabled by integration, distribution and maneuver for a Fleet Level simultaneous employment across multiple domains with integrated kinetic and non-kinetic mission execution. The FY18 FLEX program campaign areas comprise Multi-mission Electromagnetic Maneuver Warfare, Naval Integrated Fires, Full Spectrum Mine Warfare, Operational/ Tactical integration (new), Assured Logistics (new) and Unmanned Systems. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	18.954	11.572	0.000	11.572

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

FLEX is a non-acquisition program.

E. Performance Metrics

Fleet Experimentation MOP:

FLEX funding is used for approximately 100 experimental initiatives annually, focused on addressing Fleet- identified capability gaps. The majority of this funding is used to acquire intellectual capital in emerging technical areas through contracts providing engineering expertise, experiment design, execution and analysis support, and also used to fund select engineering and integration costs associated with certain experiments.

Fleet Experimentation MOE:

- CNO/CUSFF/CPF directed experiment for emerging future capability
- Mitigate critical capability gaps
- Inform Doctrine TTP, and training

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3319 / *Fleet Experimentation*

- Inform Fleet Platform Wholeness or Warfighter CONOPS validation
- Impact to Fleet Warfighting within the FYDP

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0606355N / *(U)Warfare Innovation Management*	Project (Number/Name) 3320 / *TRIDENT Warrior*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3320: *TRIDENT Warrior*	0.000	0.000	2.169	2.269	-	2.269	2.310	2.364	2.411	2.459	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Trident Warrior (TW) was transferred from 0604231N (Tactical Command Systems) to 0606355N (Warfare Innovation Management) in FY17.

A. Mission Description and Budget Item Justification

TW enables early delivery of Information Warfare (IW) capabilities to the warfighter via Fleet-directed TW operational events. Integrates stand-alone systems and efforts to achieve substantially enhanced capability, demonstrates/tests these capabilities in both laboratory and operational environments, and evaluates their effectiveness. Develops supporting concepts and Concept of Operations to improve warfighting effectiveness. Coordinates IW efforts with other Service/Joint/Department of Defense/ National efforts to ensure Joint/Interagency/Allied/Coalition applicability and interoperability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Trident Warrior	0.000	2.169	2.269	0.000	2.269
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Trident Warrior was funded under PE 0604231N (Tactical Command Systems) in FY16.					
FY 2017 Plans: - Evaluate TW16 executed experiments and recommend next steps for Naval Warfare Development Command (NWDC). - In accordance with standardized procedures, lead TW participant efforts with the following: specific goal identification; risk identification; experiment plans (to include data requirements and collection); and required installation and security certifications, accreditations, and approvals. - Provide subject matter experts (SMEs) for core ship services during the experimentation period. Provide independent experts to ensure compliance with experiment plans, lead analysis effort, and deliver unbiased assessments. - Provide results to government sponsors to support the program's engineering recommendations. - Plan and execute TW17 experiments to accelerate the transition of IW capability to the Fleet. - Begin TW18 planning, taking into consideration identified Naval Capability Gaps.					
FY 2018 Base Plans: - Evaluate TW17 executed experiments and recommend next steps for NWDC.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3320 / *TRIDENT Warrior*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Promote broad participation in TW by researching advanced technology solution candidates, in conjunction with other services, commercial entities and academic research in order to fill IW technology gaps. - In accordance with standardized procedures, lead Trident Warrior (TW) participant efforts with the following: specific goal identification; risk identification; experiment plans (to include data requirements and collection); and required installation and security certifications, accreditations, and approvals. - Provide subject matter experts (SMEs) for core ship services during the experimentation period. Provide independent experts to ensure compliance with experiment plans, lead analysis effort, and deliver unbiased assessments. - Provide results to government sponsors to support the program's engineering recommendations. - Plan and execute TW18 experiments to accelerate the transition of Information Warfare (IW) capability to the Fleet. - Begin TW19 planning, taking into consideration identified Naval Capability Gaps. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	2.169	2.269	0.000	2.269

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Confirmation of Fleet and Joint Interoperability with technology candidates, Information Assurance Certification and Accreditation, and alignment with United States Fleet Forces (USFF) Commander's Guidance, as well as related Program Executive Office (PEO) objectives and projected architectures.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0606355N / *(U)Warfare Innovation Management*	Project (Number/Name) 3420 / *Expeditionary Submarine Fiber Optic Cable (SFOC)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3420: *Expeditionary Submarine Fiber Optic Cable (SFOC)*	0.000	0.000	0.000	15.000	-	15.000	6.000	0.000	0.000	0.000	0.000	21.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Expeditionary Submarine Fiber Optic Cable (SFOC) Communications project is a classified program responsible for developing and experimenting innovative concepts designed to validate both material and non-material methodologies to provide resilient command and control within the maritime domain. The project focus is to demonstrate capabilities that leverage existing DOD investments and infrastructure using non-traditional means to move data and information. The key deliverable will be a demonstration using maritime assets, experimental methodologies, and current backhaul architecture to validate C2 data movement in the maritime domain. Continue the development and refinement of advanced networking and communication capabilities in a maritime environment that promote C2 interoperability in Satellite Communications (SATCOM) - Restricted and SATCOM - Denied environments, and support the defeat Anti-Access Area Denial (A2/AD). Solutions will address higher bandwidth technologies across the Radio Frequency (RF) and Optical spectrum.

This is not a new start. $7.54M of funding was transferred from project 3319 FLEX and moved to 3420 Expeditionary Submarine Fiber Optic Cable (SFOC) Communications for transparency.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Expeditionary Submarine fiber Optic Cable (SFOC)	0.000	0.000	15.000	0.000	15.000
Articles:	-	-	-	-	-
Description: Classified Project: The Expeditionary Submarine Fiber Optic Cable (SFOC) Communications project is developing and experimenting innovative concepts designed to validate both material and non-material methodologies to provide resilient command and control within the maritime and littoral domains. The project focus is to demonstrate capabilities that leverage existing industry and DOD investments and infrastructure using non-traditional means to move data and information. The key deliverable will be a demonstration using maritime assets, experimental methodologies, and current backhaul architecture to validate C2 data movement across the maritime domain. Continue the development and refinement of advanced networking and communication capabilities in a maritime environment that promote C2 interoperability in Satellite Communications (SATCOM) - Restricted and SATCOM - Denied environments, and support the defeat Anti-Access Area Denial (A2/AD). Solutions will address higher bandwidth technologies across the Radio Frequency (RF) and Optical spectrum.					
FY 2016 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3420 / *Expeditionary Submarine Fiber Optic Cable (SFOC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A ***FY 2017 Plans:*** Funding was in project 3319 of this PE in FY17. ***FY 2018 Base Plans:*** FY 2018 Base Plans: This project will continue to provide funds for the development and refinement of advance networking and communication capabilities in a maritime environment that promote C2 interoperability in Satellite Communications (SATCOM) - Restricted and SATCOM - Denied environments, and support the defeat of Anti-Access Area Denial(A2/AD). Final demonstration will show ability to use submarine fiber optic cable to establish beyond line of sight communications in a tactically relevant timeline. - Acquire maritime vessel as test article IAW objectives - Modify vessel as required to meet demonstration objectives - Remote Operated Vehicle/ crew lease - Communication suite build - Cable engine procurement - SFOC, repeater procurement - Communication architecture integration ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	15.000	0.000	15.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Expeditionary SFOC Communications is a non-acquisition program that promotes DoD interoperability to achieve resilient C2 data flows by facilitating maritime architectures in both processes and communications systems, including emerging capabilities, to counter growing high-end asymmetric threats, and is a key enabler of the Combatant Commanders C2 functionality.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0606355N / *(U)Warfare Innovation Management*	**Project (Number/Name)** 3420 / *Expeditionary Submarine Fiber Optic Cable (SFOC)*

E. Performance Metrics

Expeditionary SFOC Communications 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 C2 communications and other aspects of Information Dominance (ID). These assessments will report on identified capability gaps, link capability gaps to technology/DOTMLPF gaps, and identify technologies and DOTMLPF solutions considered ready for deployment to enhance war fighting capability and enhance interoperability.