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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603261N *I Tactical Airborne Reconnaissance*

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	69.871	8.391	3.274	3.707	-	3.707	3.635	3.610	3.683	3.756	Continuing	Continuing
2467: *UAV Conops*	69.871	3.080	3.274	3.707	-	3.707	3.635	3.610	3.683	3.756	Continuing	Continuing
9999: *Congressional Adds*	0.000	5.311	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.311

A. Mission Description and Budget Item Justification

This program element funds efforts to develop Concept of Operations in support of the Navy's overall Unmanned Aircraft Systems (UAS) Strategy integrating UAS into the Chief of Naval Operations Navy Vision of Sea Power 21 (Sea Shield, Sea Strike, Sea Basing and FORCEnet).

This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	3.080	3.274	3.675	-	3.675
Current President's Budget	8.391	3.274	3.707	-	3.707
Total Adjustments	5.311	0.000	0.032	-	0.032
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	0.032	-	0.032
• Congressional Add Adjustments	5.311	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2016	FY 2017
Project: 9999: *Congressional Adds*		
Congressional Add: *Unmanned System Integration*	5.311	0.000
Congressional Add Subtotals for Project: 9999	5.311	0.000
Congressional Add Totals for all Projects	5.311	0.000

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603261N *I Tactical Airborne Reconnaissance*

Change Summary Explanation

Technical: Not applicable to baseline.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603261N / *Tactical Airborne Reconnaissance*	Project (Number/Name) 2467 / *UAV Conops*	

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
2467: *UAV Conops*	69.871	3.080	3.274	3.707	-	3.707	3.635	3.610	3.683	3.756	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Naval Unmanned Aircraft Systems (UAS) Strategy employs a family of UAS to perform tactical, persistent and penetrating Intelligence, Surveillance, and Reconnaissance in support of Naval and Joint missions from forward bases/platforms and naval ships.

In support of the Navy's overall UAS strategy, this program develops Concept of Operations (CONOPS) that integrate UAS into the Chief of Naval Operations Navy Vision of Sea Power 21 (Sea Shield, Sea Strike, Sea Basing and FORCEnet). By providing fleet input based on current operations with UAS in a simulated combat environment, this CONOPS development investment is the foundation of how the Carrier Strike Group and the Expeditionary Strike Group will operate a combined Manned and Unmanned Naval Air Force. This program establishes the common architecture, including Command & Control, for all unmanned systems to support and inform CONOPS development. This effort provides for a cross-program view of Naval Unmanned Systems and is the entry point for Office of the Secretary of the Defense (OSD) and other services for commonality and interoperability. Specifically:
- Provides studies and demonstrations in support of the Naval UAS Family of Systems (FoS) CONOPS development.
- Horizontally integrates across the Naval UAS FoS for the Naval Aviation Enterprise through interoperability and common system solutions.
- Develops the Naval UAS FoS Architecture to support integration into the Integrated Warfighter Capability Process.
- Provides Naval support for development of Standards across Department of Defense (DoD) UAS and North Atlantic Treaty Organization, emphasizing standardization and interoperability.
- Conducts CONOPS studies, demonstrations, advanced development/prototyping, and exercises for Vehicle Control, Targeting, and Weapons, Sensor and Payload Employment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Studies and Demonstrations	1.523	1.666	1.760	0.000	1.760
Articles:	-	-	-	-	-
Description: Studies and demonstrations to develop CONOPS for manned-unmanned integration of UAS and aircraft systems. Build a UAS simulation environment for Modeling and Simulation of common UAS components in representative battlespace architectures.					
FY 2016 Accomplishments: Conducted a Trident Warrior 16 Fleet exercise to demonstrate Fleet Concept of Operations and Manned/ Unmanned interoperability. Specifically the real-time flow of Visual Information from tactical to enterprise					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603261N / *Tactical Airborne Reconnaissance*	**Project (Number/Name)** 2467 / *UAV Conops*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
users using the GEOINT UNIFIED NAVAL STREAMING SYSTEM (GUNSS). Continued development of the Unmanned Aircraft Systems (UAS) modeling and simulation of Fleet Concept of Operations scenarios. Continued to Demonstrate Manned/Unmanned Interoperability. Provided government engineering support, program office travel, and contract support services. ***FY 2017 Plans:*** Continue development of the Unmanned Aircraft Systems (UAS) modeling and simulation of Fleet Concept of Operations scenarios. Demonstrate Manned/Unmanned Interoperability. Provide government engineering support, program office travel, and contract support services. ***FY 2018 Base Plans:*** Continue development of the Unmanned Aircraft Systems (UAS) modeling and simulation of Fleet Concept of Operations scenarios. Demonstrate Manned/Unmanned Interoperability. Provide government engineering support, program office travel, and contract support services. ***FY 2018 OCO Plans:*** N/A					
Title: Naval Interoperability & Standardization	1.557	1.608	1.947	0.000	1.947
Articles:	-	-	-	-	-
Description: Increase Naval Unmanned Systems interoperability emphasizing Naval, Joint Service, and international standardization. ***FY 2016 Accomplishments:*** Developed and released the following Unmanned Systems Interoperability Profiles and Navy implementation conventions: Advanced Command and Control, Navy Wide Area Network, and Standard Command and Control. Continued to Support OSD Joint Service and NATO coalition interoperability efforts. Provided government engineering support, program office travel, and contract support services. ***FY 2017 Plans:*** Continue to develop Unmanned Systems Naval Interoperability Profiles in support of Integrated Warfare Capability Packages. Support OSD Joint Service and NATO coalition interoperability efforts. Provide government engineering support, program office travel, and contract support services. ***FY 2018 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603261N / *Tactical Airborne Reconnaissance*	**Project (Number/Name)** 2467 / *UAV Conops*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Continue to develop Unmanned Systems Naval Interoperability Profiles in support of Integrated Warfare Capability Packages. Support OSD Joint Service and NATO coalition interoperability efforts. Provide government engineering support, program office travel, and contract support services. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.080	3.274	3.707	0.000	3.707

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The program office will leverage existing Government facilities (e.g., Joint Technology Center/System Integration Laboratory and Naval Unmanned Aircraft Systems (UAS) Program of Record assets as available) to develop and demonstrate Naval UAS Concept of Operations. Government engineering support will be used for Standards Development, Architectural Analysis, Modeling and Simulation efforts and testing.

E. Performance Metrics

UAS operations and interoperability for systems delivered to the warfighter are continually improved upon increasing the level of integration, standardization and effective employment in maritime battle space dominance.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603261N / *Tactical Airborne Reconnaissance*	Project (Number/Name) 9999 / *Congressional Adds*	

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
9999: *Congressional Adds*	0.000	5.311	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.311
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Naval Unmanned Aircraft Systems (UAS) Strategy employs a family of UAS to perform tactical, persistent and penetrating Intelligence, Surveillance, and Reconnaissance in support of Naval and Joint missions from forward bases/platforms and naval ships.

In support of the Navy's overall UAS strategy, this program develops Concept of Operations (CONOPS) that integrate UAS into the Chief of Naval Operations Navy Vision of Sea Power 21 (Sea Shield, Sea Strike, Sea Basing and FORCEnet). By providing fleet input based on current operations with UAS in a simulated combat environment, this CONOPS development investment is the foundation of how the Carrier Strike Group and the Expeditionary Strike Group will operate a combined Manned and Unmanned Naval Air Force. This program establishes the common architecture, including Command & Control, for all unmanned systems to support and inform CONOPS development. This effort provides for a cross-program view of Naval Unmanned Systems and is the entry point for Office of the Secretary of the Defense (OSD) and other services for commonality and interoperability. Specifically:
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- Provides Naval support for development of Standards across Department of Defense (DoD) UAS and North Atlantic Treaty Organization, emphasizing standardization and interoperability.
- Conducts CONOPS studies, demonstrations, advanced development/prototyping, and exercises for Vehicle Control, Targeting, and Weapons, Sensor and Payload Employment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017
Congressional Add: Unmanned System Integration	5.311	0.000
FY 2016 Accomplishments: Develop and document an Airspace Integration Architecture that will include all sizes of UAS and all types of airspace volumes which will establish a common architecture that can be used to validate UAS airspace access CONOPS and facilitate the development of performance standards for sense and avoid capabilities for a given platform operating in a given environment. Build an environment to host the airspace integration architecture.		

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603261N / *Tactical Airborne Reconnaissance*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017
Conduct an assessment of the performance required form technologies that could be incorporated into small UAS to enable a certifiable sense and avoid (SAA) capability. ***FY 2017 Plans:*** Develop Integrated Separation Concepts, Airspace Integration Safety Case/Assessment; DAA and Fusion, Separation Algorithms, Safe and Efficient Terminal Airspace Surface Operations and Traffic/ Airspace Information displays. Assess Availability/Quality of Surveillance Data, Human-Automation Interaction; and Predictability/Contingency Management.		
Congressional Adds Subtotals	5.311	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A