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 0604279N *I (U)ASE Self Protection Optimization*							
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	17.911	8.995	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.906
3308: *Technology Development*	2.902	2.438	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.340
3309: *Assault Survivability Optimization*	15.009	6.557	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.566

Note

PE 0604279N consolidated to PE 0604270N beginning in FY 2017.

A. Mission Description and Budget Item Justification

This element includes development of Aircraft Survivability Equipment (ASE) and Electronic Warfare (EW)/countermeasures solutions for the United States Navy, United States Marine Corps and Coalition Aircraft to include studies and evaluations of current and future aircraft threats, modeling and simulation for improved countermeasure capabilities and development and testing to address new and emerging threats.

JUSTIFICATION FOR BUDGET ACTIVITY: 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	7.874	0.000	0.000	-	0.000
Current President's Budget	8.995	0.000	0.000	-	0.000
Total Adjustments	1.121	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.200	0.000			
• SBIR/STTR Transfer	-0.080	0.000			
• Rate/Misc Adjustments	0.001	0.000	0.000	-	0.000

Change Summary Explanation

Cost:

Project Unit 3309 / Assault Survivability Optimization:

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 0604279N *I (U)ASE Self Protection Optimization*

FY 2015 Reprogramming Action - Prior Approval (PA), DoD Serial Number FY 15-28 PA signed 27 August 2015 to address Joint Urgent Operational Need (JUON) (JUONS SO-0010) to improve the current system-of-systems detect, declare and defeat solution against newly proliferated advanced Man-portable Air Defense Systems (MANPADS). Overseas Contingency Operations (OCO) Issue Sheet #15-401-R dated 15 October 2015 for $1.2 million. Additional $1.2 million baseline funding received May 2016 for JUONS SO-0010.

Schedule:
Project Unit 3308 / Technology Development:
Software Release 15 added to 1Q FY16. Software Release 16 moved from 3Q FY16 to 1Q FY17 to better align with Program Related Engineering (PRE) software releases; this is reflected in the budget PE 0604270N. Software Technique Development completion moved from 4Q FY16 to 3Q FY15 to annualize effort. FY16 Software Technique Development 1Q FY16 through 3Q FY16 added to schedule. FY15 Integrated Evaluation (IE) moved from 2Q FY15 through 4Q FY15 to 1Q FY16, and reduced to a 1Q event. FY16 IE moved from 2Q FY16 through 4Q FY16 to 4Q FY16 as a 1Q event.

Project Unit 3309 / Assault Survivability Optimization:
FY15 CH-53E flight test delayed until August 2016 due to test range schedule (other available test ranges could not accommodate required flight test profiles). Schedule revised to include efforts to support JUONS SO-0010. P-8A effectiveness flight test postponed due to aircraft availability. MJU-67 contract award delayed from 2Q FY16 to 4Q FY16. Test articles quantity increased from 1,500 to 1,552 to accommodated testing requirements based on FY17 test schedule. MV-22 and UH-1Y JUONS Operational MDF delay until 3rd Quarter FY17 due to test results data review and approval process.

Technical: N/A

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 0604279N / *(U)ASE Self Protection Optimization*	Project (Number/Name) 3308 / *Technology Development*	

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
3308: *Technology Development*	2.902	2.438	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.340
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project Unit (PU) 3308 / Technology Development: Funds efforts that focus on the quick reaction prototyping of tactical Electronic Warfare (EW) / countermeasures solutions for increased survivability providing friendly forces the self-protection necessary for successful mission accomplishment. This program directly addresses the operational requirement of strike platforms for optimization of EW/countermeasure solutions across the Department of the Navy. Improved countermeasure capabilities and techniques through modeling and simulation, validated in subsequent field testing to address new and emerging threats, capitalize upon upgrades to Aircraft Survivability Equipment systems capabilities for strike platforms and evaluate new radio frequency countermeasure and infra red countermeasure technologies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Technology Development	2.438	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Continued EW vulnerability studies/analysis, product development and test conducted for strike aircraft.					
FY 2017 Plans: N/A					
FY 2018 Base Plans: N/A					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.438	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

EW vulnerability studies/analysis, product development and test conducted for strike aircraft across the Future Years Defense Program (FYDP).

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 0604279N / *(U)ASE Self Protection Optimization*	**Project (Number/Name)** 3308 / *Technology Development*

E. Performance Metrics

Electronic Warfare (EW) vulnerability studies/analysis, product development and test conducted for strike aircraft across the Future Years Defense Program (FYDP).

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 0604279N / *(U)ASE Self Protection Optimization*	Project (Number/Name) 3309 / *Assault Survivability Optimization*	

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
3309: *Assault Survivability Optimization*	15.009	6.557	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.566
Quantity of RDT&E Articles	625	1,552	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the development, testing and rapid fielding of advanced countermeasures and enhanced employment techniques needed to support current and future operations for United States Navy and United States Marine Corps aircraft. Incorporates capability advancements in Aircraft Survivability Equipment (ASE) and expendable countermeasures to develop and deploy countermeasure responses resulting in increased platform survivability. Resources will be applied to the following areas: 1) studies and evaluations to optimize current countermeasures and ASE capabilities, 2) development and demonstration of advanced expendable countermeasures and countermeasure techniques, 3) testing and evaluation of advanced countermeasures, 4) development of system software for the testing and deployment of advanced countermeasure techniques, and 5) development of and upgrades to modeling tools and specialized equipment required to conduct evaluation of advanced countermeasures.

FY 2016 flight test effectiveness testing to be conducted using Non-Combat Expenditure Allowance (NCEA) of current countermeasures. Advanced countermeasures procured in FY 2016 and delivered within 12 months will support flight test for optimized/advanced countermeasures techniques in FY 2017. The identified countermeasure quantity is required by Air Expendable Countermeasures Test and Evaluation Master Plan #1480 to complete the flight testing for test Mission Data Files (MDF) and optimized/advanced countermeasures techniques (RDT&E Articles are advanced air expendable countermeasures).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Analysis and Development of Advanced Countermeasures and Countermeasure Techniques	6.557	0.000	0.000	0.000	0.000
Articles:	1,552	-	-	-	-
FY 2016 Accomplishments: Conducted modeling and simulation to develop enhanced countermeasure techniques for the P-8A platform. Continued development advanced countermeasure techniques on MV-22, MH-60S and UH-1Y platforms in support of FY 2016 flight test evaluations in support of JUONS SO-0010. 1,552 test articles procured in FY 2016 are advanced expendable countermeasures for flight effectiveness testing/optimization flight tests in FY 2017. Completed engineering and evaluation for advanced countermeasures for future threats and technology insertion into manned-flight simulator. Established radio frequency countermeasure modeling and simulation capability to address advanced threats.					
FY 2017 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 0604279N / *(U)ASE Self Protection Optimization*	**Project (Number/Name)** 3309 / *Assault Survivability Optimization*

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 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	6.557	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Acquisition strategy is to leverage improvements in air expendable countermeasures technology and in Aircraft Survivability Equipment (ASE) integration to enhance platform survivability on United States Navy and United States Marine Corps platforms through more effective dispense techniques, investing in enhancements in modeling and simulation tools to better evaluate countermeasure effectiveness, upgrading test and evaluation equipment to incorporate current and future threats for effectiveness tests and developing and demonstrating advanced concept countermeasures for future threats. Advanced countermeasures procured in FY 2016 and delivered within 12 months will support flight test for optimized/advanced countermeasure techniques in FY 2017. New advanced countermeasures are then transitioned to the Procurement of Ammunition Navy and Marine Corps appropriation for procurement and fielding. New optimized and advanced countermeasure techniques are delivered to government software support activities for fleet release to increase aircraft/aircrew survivability.

E. Performance Metrics

Maintain Air Expendable Countermeasures (AECM) ORD: #512-88-89 dated 28 May 99 requirement to provide operationally effective mixture of countermeasures that can be employed to degrade and/or neutralize the effectiveness of current and projected threats at or above threshold levels for key performance parameters for aircraft survivability. Countermeasure Techniques developed for improved survivability are further supported by Statement of Functionality for Aircraft Survivability Equipment Smart Dispense, dated 19 January 2012. Project Unit 3309 efforts will continue to change in response to this requirement when similar threat proliferation, advances in countermeasures technology and integrated ASE capability advancements are accomplished.