Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604759N / *Major T&E Investment*

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	66.538	42.109	52.634	-	52.634	52.694	45.232	50.696	44.838	Continuing	Continuing
2195: *T & E Investment*	0.000	66.538	42.109	52.634	-	52.634	52.694	45.232	50.696	44.838	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project corrects major deficiencies, improves Test & Evaluation (T&E) capabilities, and increases T&E support effectiveness at Navy Major Range and Test Facility Base. The T&E Investment project provides improved test capabilities at the following test facilities: the Naval Undersea Warfare Center Division Newport Atlantic Undersea Test and Evaluation Center, Andros Island, Bahamas; the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport, Keyport, WA; the Sea Range, Land Ranges, Targets, Ordnance T&E Facility, Test Wing Pacific, and the Air Vehicle Modification and Instrumentation facility located at the Naval Air Warfare Center Weapons Division, Point Mugu, CA and China Lake, CA; and the Atlantic Test Range, Air Combat Environment T&E Facility, Electromagnetic Environmental Effects, Air Vehicle Modification and Instrumentation facility, Test Wing Atlantic, Targets, and the Propulsion Systems Evaluation Facility located at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD and the test and evaluation capabilities located at the Pacific Missile Range Facility, Kauai, HI.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RESEARCH, DEVELOPMENT, TEST and EVALUATION MANAGEMENT SUPPORT because it supports efforts directed toward sustaining or modernizing installations or operations required for general research, development, test and evaluation.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	61.234	42.109	42.969	-	42.969
Current President's Budget	66.538	42.109	52.634	-	52.634
Total Adjustments	5.304	0.000	9.665	-	9.665
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.987	0.000			
• SBIR/STTR Transfer	-0.683	0.000			
• Program Adjustments	0.000	0.000	9.668	-	9.668
• Rate/Misc Adjustments	0.000	0.000	-0.003	-	-0.003

Change Summary Explanation

The funding increase from FY 2017 to FY 2018 supports material procurements for the replacement of in-water sensors at AUTEC, additional equipment purchases for the Range Support aircraft, and the purchase of Radio Frequency (RF) signal generation and distribution equipment.

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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 0604759N / *Major T&E Investment*	**Project (Number/Name)** 2195 / *T & E Investment*	

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
2195: *T & E Investment*	0.000	66.538	42.109	52.634	-	52.634	52.694	45.232	50.696	44.838	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project corrects major deficiencies, improves Test & Evaluation (T&E) capabilities, and increases T&E support effectiveness at Navy Major Range and Test Facility Base. The T&E Investment project provides improved test capabilities at the following test facilities: the Naval Undersea Warfare Center Division Newport Atlantic Undersea Test and Evaluation Center (AUTEC), Andros Island, Bahamas; the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport, Keyport, WA; the Sea Range, Land Ranges, Targets, Ordnance T&E Facility, Test Wing Pacific, and the Air Vehicle Modification and Instrumentation facility located at the Naval Air Warfare Center Weapons Division, Point Mugu, CA and China Lake, CA; and the Atlantic Test Range, Air Combat Environment T&E Facility, Electromagnetic Environmental Effects, Air Vehicle Modification and Instrumentation facility, Test Wing Atlantic, Targets, and the Propulsion Systems Evaluation Facility located at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD and the test and evaluation capabilities located at the Pacific Missile Range Facility, Kauai, HI.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: UNDERSEA RANGE INVESTMENTS	6.546	6.255	8.624	0.000	8.624
Articles:	-	-	-	-	-

Description: This effort funds the modernization, upgrades, and new test and evaluation capabilities required at the Navy's Major Range Test Facility Base undersea ranges, to include AUTEC, Andros Island, Bahamas and the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport, Keyport, WA.

Funding increases from FY17 to FY18 due to material procurements for the replacement of in-water sensors at AUTEC.

FY 2016 Accomplishments:
- Continue the minor upgrade and modernization of test capabilities at AUTEC, Nanoose and Dabob.
- Continue replacement of in-water sensors at AUTEC.
- Continue range craft service life extension at Nanoose and Dabob.
- Complete the development of Information Operations T&E capability at AUTEC.
- Complete range data information assurance project at Nanoose and Dabob.
- Continue range radar obsolescence project at Nanoose and Dabob.
- Initiate replace of range tracking radar at AUTEC.

FY 2017 Plans:

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 0604759N / *Major T&E Investment*	**Project (Number/Name)** 2195 / *T & E Investment*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Continue the minor upgrade and modernization of test capabilities at AUTEC, Nanoose and Dabob. - Continue replacement of in-water sensors at AUTEC. - Continue range craft service life extension at Nanoose and Dabob. - Continue replace of range tracking radar at Atlantic Undersea Test and Evaluation Center (AUTEC). - Complete range radar obsolescence project at Nanoose and Dabob. - Initiate tracking system modernization at Nanoose and Dabob. - Initiate launch system modernization at Nanoose and Dabob. - Initiate recovery system improvement at Nanoose and Dabob. - Initiate operating system upgrade at Nanoose and Dabob. ***FY 2018 Base Plans:*** - Continue the minor upgrade and modernization of test capabilities at AUTEC, Nanoose and Dabob. - Continue replacement of in-water sensors at AUTEC. - Continue replace of range tracking radar at AUTEC. - Continue range radar obsolescence project at Nanoose and Dabob. - Continue tracking system modernization at Nanoose and Dabob. - Continue recovery system improvement at Nanoose and Dabob. - Continue operating system upgrade at Nanoose and Dabob. - Complete range craft service life extension at Nanoose and Dabob. - Complete launch system modernization at Nanoose and Dabob. ***FY 2018 OCO Plans:*** N/A					
Title: OPEN AIR RANGE INVESTMENTS	58.592	33.141	38.610	0.000	38.610
Articles:	-	-	-	-	-
Description: This effort funds the modernization and upgrades of existing capabilities and the development of new T&E capabilities required at the Navy's Major Range Test Facility Base open air ranges at the Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, MD, Naval Air Warfare Center Weapons Division (NAWCWD), Point Mugu, CA and China Lake, CA and Pacific Missile Range Facility (PMRF), Kauai, HI. Funding decreases from FY16 to FY17 due to FY16 BTR funding for fiber connection from Wallops Island to NAWCAD, and the completion of the quad launcher, telemetry antenna servo upgrades at NAWCWD and the completion of the telemetry system at PMRF.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Funding increases from FY17 to FY18 due to additional equipment purchases for the Range Support Aircraft.					
FY 2016 Accomplishments: - Continue the minor upgrade and modernization of test capabilities at Naval Air Warfare Center Aircraft Division (NAWCAD), Naval Air Warfare Center Weapons Division (NAWCWD) and Pacific Missile Range Facility (PMRF). - Continue procurement of new aircraft position tracking system. - Continue the modernization of the imaging radar at PMRF. - Complete Sea Range telemetry antenna servo upgrades. - Continue target vessel modernization at NAWCWD. - Continue procurement of Range Support Aircraft. - Complete the upgrade to the airborne separation video system at NAWCAD. - Complete the modernization of the Kineto Tracking Mounts at NAWCAD. - Complete the modernization of the telemetry system at PMRF. - Complete the purchase of secure network system for the aircraft prototyping facility. - Complete the modernization of the moving target scoring system at NAWCWD. - Complete video microwave link replacement at NAWCWD. - Initiate and complete the installation and instrumentation of a quad launcher at NAWCWD. - Initiate the upgrade of the telemetry processing system at NAWCAD. - Initiate the purchase and installation of communication, IT and video equipment in P-155 at NAWCAD. - Initiate the modernization of the Land Range telemetry receivers at NAWCWD. - Initiate a study for the replacement of the FOCUS cable at NAWCWD. - Initiate the completion of the fiber connection from Wallops Island to NAWCAD.					
FY 2017 Plans: - Continue the minor upgrade and modernization of test capabilities at NAWCAD, NAWCWD and PMRF. - Continue procurement of new aircraft position tracking system. - Complete the modernization of the imaging radar at PMRF. - Continue target vessel modernization at NAWCWD. - Continue procurement of Range Support Aircraft. - Complete the upgrade of the telemetry processing system at NAWCAD. - Complete the purchase and installation of communication, IT and video equipment in P-155 at NAWCAD. - Complete the modernization of the Land Range telemetry receivers at NAWCWD. - Complete a study for the replacement of the FOCUS cable at NAWCWD.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Initiate the modernization of the InfraRed measurement capability at NAWCAD. - Initiate the modernization of the video tracking mounts at PMRF. - Initiate the modernization of the telemetry antenna controllers and data processors at Pacific Missile Range Facility (PMRF). - Initiate the modernization of the Land Range timing and instrumentation control system at Naval Air Warfare Center Weapons Division (NAWCWD). - Initiate the modernization of the Land Range and Sea Range voice switch at NAWCWD. ***FY 2018 Base Plans:*** - Continue the minor upgrade and modernization of test capabilities at Naval Air Warfare Center Aircraft Division (NAWCAD), NAWCWD and PMRF. - Continue procurement of Range Support Aircraft (RSA). - Continue the modernization of the telemetry antenna controllers and data processors at PMRF. - Continue the modernization of the imaging radar at PMRF. - Complete procurement of new aircraft position tracking system. - Complete target vessel modernization at NAWCWD. - Complete the upgrade of the telemetry processing system at NAWCAD. - Complete the modernization of the InfraRed measurement capability at NAWCAD. - Complete the modernization of the video tracking mounts at PMRF. - Complete the modernization of the Land Range timing and instrumentation control system at NAWCWD. - Complete the modernization of the Land Range and Sea Range voice switch at NAWCWD. - Initiate the acquisition of tactical data link capability at NAWCAD. - Initiate the upgrade of the avionic data processing and display system at NAWCAD. - Initiate modernization of the imaging radar mechanical assemblies at PMRF. - Initiate the acquisition of new Infrared and Ultraviolet measurement capability at NAWCAD. - Initiate the development of Environmental Impact Statements at NAWCAD and NAWCWD. - Initiate the replacement of the FOCUS cable at NAWCWD. - Initiate the development and integration of Telemetry and optics equipment on the RSA. - Initiate the site preparation and integration of radars and emitters at NAWCWD. ***FY 2018 OCO Plans:*** N/A					
Title: TEST FACILITIES INVESTMENTS	1.400	2.713	5.400	0.000	5.400
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Description: This effort funds the modernization and upgrades of existing capabilities and the development of new Test & Evaluation capabilities required at the Navy's Major Range Test Facility Base ground test facilities at Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, MD, and Naval Air Warfare Center Weapons Division (NAWCWD), Point Mugu, CA and China Lake, CA. Funding increases from FY16 to FY17 due to equipment purchases for the Helicopter Propulsion Data Acquisition system. Funding increases from FY17 to FY18 due the purchase of Radio Frequency (RF) signal generation and distribution equipment. ***FY 2016 Accomplishments:*** - Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD. - Continue the upgrade to general instrumentation and equipment. - Continue the modernization of the helicopter propulsion data acquisition system. ***FY 2017 Plans:*** - Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD. - Continue the upgrade to general instrumentation and equipment. - Continue the modernization of the helicopter propulsion data acquisition system. ***FY 2018 Base Plans:*** - Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD. - Continue the upgrade to general instrumentation and equipment. - Continue the modernization of the helicopter propulsion data acquisition system. - Initiate the procurement of time precision RF signal generation and distribution equipment. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	66.538	42.109	52.634	0.000	52.634

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

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D. Acquisition Strategy

Not Applicable.

E. Performance Metrics

Successfully achieve Initial Operational Capability of 8-15 Improvement and Modernization projects per year and have 90% of test capabilities scheduled in support of Navy acquisition test programs within 180 days.