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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Navy **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604759N / <i>Major T&amp;E Investment</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	0.000	121.108	61.234	42.109	-	42.109	42.969	45.243	43.476	49.744	Continuing	Continuing
2195: <i>T &amp; E Investment</i>	0.000	121.108	61.234	42.109	-	42.109	42.969	45.243	43.476	49.744	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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	123.993	61.234	45.729	-	45.729
Current President's Budget	121.108	61.234	42.109	-	42.109
Total Adjustments	-2.885	0.000	-3.620	-	-3.620
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.885	0.000			
• Program Adjustments	0.000	0.000	-0.187	-	-0.187
• Rate/Misc Adjustments	0.000	0.000	-3.433	-	-3.433

**Change Summary Explanation**

The FY 2017 request was reduced by -\$3.4 million as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Technical: Not applicable.

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Schedule: Not applicable.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 1319 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0604759N / Major T&E Investment				<b>Project (Number/Name)</b> 2195 / T & E Investment			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2195: T & E Investment	0.000	121.108	61.234	42.109	-	42.109	42.969	45.243	43.476	49.744	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)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<b>Title:</b> UNDERSEA RANGE INVESTMENTS	9.975	4.927	6.255	0.000	6.255
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> 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.					
The decrease in funding from FY15 to FY16 reflects the completion of the range noise monitoring project and the T&E Target upgrades at the Nanoose and Dabob ranges. The decrease also reflects the purchase of the majority of the materials needed for the Nanoose and Dabob range craft service life extension.					
The funding increase from FY16 to FY17 reflects the material purchase for the tracking radar replacement at AUTEC, as well as the initiation of multiple projects at the Nanoose and Dabob ranges.					
<b>FY 2015 Accomplishments:</b>					
- Continue the minor upgrade and modernization of test capabilities at AUTEC, Nanoose and Dabob.					
- Continue the development of Information Operations T&E capability at AUTEC.					
- Continue range data information assurance project at Nanoose and Dabob.					
- Continue range radar obsolescence project at Nanoose and Dabob.					



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**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p>The funding decreased from FY15 to FY16 because the Range Support Aircraft (RSA) was purchased in FY15.</p> <p>The funding decreased from FY16 to FY17 because the avionics systems for the RSA were purchased in FY16. RSA will provide range clearance and Beyond Line-of-Sight Telemetry and Flight Termination Services on Navy sea ranges - primarily Pt. Mugu, CA and Pacific Missile Range Facility, HI. The current telemetry equipped P-3 aircraft must be replaced because the airframe is not supportable beyond FY19.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- 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).</li> <li>- Continue Sea Range telemetry antenna servo upgrades.</li> <li>- Continue procurement of new aircraft position tracking system.</li> <li>- Continue the upgrade to the airborne separation video system at NAWCAD.</li> <li>- Continue the modernization of the Kineto Tracking Mounts at NAWCAD.</li> <li>- Continue the modernization of the telemetry system at PMRF.</li> <li>- Complete upgrade to the Land Range communications infrastructure.</li> <li>- Complete cultural resources surveys at NAWCWD.</li> <li>- Continue the purchase of secure network system for the aircraft prototyping facility.</li> <li>- Complete the replacement of the voice switch at NAWCAD.</li> <li>- Continue the modernization of the imaging radar at PMRF.</li> <li>- Initiate the modernization of the moving target scoring system at NAWCWD.</li> <li>- Initiate video microwave link replacement at NAWCWD.</li> <li>- Initiate target vessel modernization at NAWCWD.</li> <li>- Initiate procurement of Range Support Aircraft.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue the minor upgrade and modernization of test capabilities at NAWCAD, NAWCWD and PMRF.</li> <li>- Continue procurement of new aircraft position tracking system.</li> <li>- Continue the modernization of the imaging radar at PMRF.</li> <li>- Complete Sea Range telemetry antenna servo upgrades.</li> <li>- Continue target vessel modernization at NAWCWD.</li> <li>- Continue procurement of Range Support Aircraft.</li> <li>- Complete the upgrade to the airborne separation video system at NAWCAD.</li> </ul>					

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**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<ul style="list-style-type: none"> <li>- Complete the modernization of the Kineto Tracking Mounts at NAWCAD.</li> <li>- Complete the modernization of the telemetry system at Pacific Missile Range Facility (PMRF).</li> <li>- Complete the purchase of secure network system for the aircraft prototyping facility.</li> <li>- Complete the modernization of the moving target scoring system at Naval Air Warfare Center Weapons Division (NAWCWD).</li> <li>- Complete video microwave link replacement at NAWCWD.</li> <li>- Initiate and complete the installation and instrumentation of a quad launcher at NAWCWD.</li> <li>- Initiate the upgrade of the telemetry processing system at Naval Air Warfare Center Aircraft Division (NAWCAD).</li> <li>- Initiate the purchase and installation of communication, IT and video equipment in P-155 at NAWCAD.</li> <li>- Initiate the modernization of the Land Range telemetry receivers at NAWCWD.</li> <li>- Initiate a study for the replacement of the FOCUS cable at NAWCWD.</li> </ul> <p><b>FY 2017 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue the minor upgrade and modernization of test capabilities at NAWCAD, NAWCWD and PMRF.</li> <li>- Continue procurement of new aircraft position tracking system.</li> <li>- Complete the modernization of the imaging radar at PMRF.</li> <li>- Continue target vessel modernization at NAWCWD.</li> <li>- Continue procurement of Range Support Aircraft.</li> <li>- Complete the upgrade of the telemetry processing system at NAWCAD.</li> <li>- Complete the purchase and installation of communication, IT and video equipment in P-155 at NAWCAD.</li> <li>- Complete the modernization of the Land Range telemetry receivers at NAWCWD.</li> <li>- Complete a study for the replacement of the FOCUS cable at NAWCWD.</li> <li>-Initiate the modernization of the InfraRed measurement capability at NAWCAD.</li> <li>-Initiate the modernization of the video tracking mounts at PMRF.</li> <li>-Initiate the modernization of the telemetry antenna controllers and data processors at PMRF.</li> <li>-Initiate the modernization of the Land Range timing and instrumentation control system at NAWCWD.</li> <li>-Initiate the modernization of the Land Range and Sea Range voice switch at NAWCWD.</li> </ul> <p><b>FY 2017 OCO Plans:</b> N/A</p>					

<b>Title:</b> TEST FACILITIES INVESTMENTS	1.232	3.100	2.713	0.000	2.713
<b>Articles:</b>	-	-	-	-	-

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**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p><b>Description:</b> This effort funds the modernization and upgrades of existing capabilities and the development of new Test &amp; 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.</p> <p>Funding increases from FY15 to FY16 are due to the helicopter propulsion data acquisition system project moving from the design phase in FY15 to the implementation phase in FY16. The materials, which are the major expense for the project, will be purchased during the implementation phase in FY16.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD.</li> <li>- Continue the upgrade to general instrumentation and equipment.</li> <li>- Initiate the modernization of the helicopter propulsion data acquisition system.</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD.</li> <li>- Continue the upgrade to general instrumentation and equipment.</li> <li>- Continue the modernization of the helicopter propulsion data acquisition system.</li> </ul> <p><b>FY 2017 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue the minor upgrade and modernization of test capabilities at NAWCAD and NAWCWD.</li> <li>- Continue the upgrade to general instrumentation and equipment.</li> <li>- Continue the modernization of the helicopter propulsion data acquisition system.</li> </ul> <p><b>FY 2017 OCO Plans:</b> N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	121.108	61.234	42.109	0.000	42.109

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Not Applicable.

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**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.