

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-6						0604759N, MAJOR T&E INVESTMENT			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Total PE Cost	39.746	75.908	37.614	44.602	48.135	50.350	51.157	52.248	
2195 T & E INVESTMENT	38.366	67.092	37.614	44.602	48.135	50.350	51.157	52.248	
9999 CONGRESSIONAL ADDS	1.380	8.816							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility and commonality of Test and Evaluation (T&E) resources across the Service for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides improved test capabilities at the following test facilities: the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTECE), Andros Island, Bahamas; the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport (NAVUNSEAWARCENDIV Keyport), Keyport, WA; the Sea Range, Land Range, Electronic Combat Range, 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 (NAVAIRWARCENWPNDIV), Point Mugu, CA and China Lake, CA; and the Atlantic Test Range, Air Combat Environment T&E Facility, Electromagnetic Environmental Effects, Test Wing Atlantic, Targets, and the Propulsion Systems Evaluation Facility (PSEF) located at the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD; and the test capabilities located at the Pacific Missile Range Facility, Kauai, HI.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
FY 2007 President's Budget:	40.486	39.750	41.938	44.053
FY 2008/2009 President's Budget:	39.746	75.908	37.614	44.602
Total Adjustments	-0.740	36.158	-4.324	0.549

Summary of Adjustments	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Adjustments	0.010	8.666		
Economic Assumptions			-0.024	1.015
Program Adjustments	-0.750		-4.300	-0.466
Spectrum Relocation		27.492		
Subtotal	-0.740	36.158	-4.324	0.549

Schedule:

Project Unit 2195. Not Applicable.
 Project Unit 9999. Not Applicable.

Technical:

Project Unit 2195. Not Applicable.
 Project Unit 9999. Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-6			PROGRAM ELEMENT NUMBER AND NAME 0604759N, MAJOR T&E INVESTMENT			PROJECT NUMBER AND NAME 2195, T & E INVESTMENT				
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
2195 T & E INVESTMENT			38.366	67.092	37.614	44.602	48.135	50.350	51.157	52.248
RDT&E Articles Qty			Not Applicable.							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project improves visibility and commonality of Test and Evaluation (T&E) resources across the Service for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides improved test capabilities at the following test facilities: the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTE C), Andros Island, Bahamas; the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport (NAVUNSEAWARCENDIV Keyport), Keyport, WA; the Sea Range, Land Range, Electronic Combat Range, 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 (NAVAIRWARCENWPNDIV), Point Mugu, CA and China Lake, CA; and the Atlantic Test Range, Air Combat Environment T&E Facility, Electromagnetic Environmental Effects, Test Wing Atlantic, Targets, and the Propulsion Systems Evaluation Facility (PSEF) located at the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD and the test capabilities located at the Pacific Missile Range Facility, Kauai, HI.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Undersea Range Investments	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	6.178	4.050	7.794	12.923
RDT&E Articles Qty				

Undersea Range Investments - This effort funds the modernization, upgrades, and new test capabilities required at the Navy's Major Range Test Facility Base (MRTFB) undersea ranges (Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTE C), Andros Island, Bahamas; the Nanoose and Dabob ranges of the Naval Undersea Warfare Center Division Keyport (NAVUNSEAWARCENDIV Keyport), Keyport, WA.

AUTE C - The development of new range control center software and modernized hardware; the installation of improved lightning protection and grounding systems at the AUTE C main sites and downrange sites one and two; the replacement and extension of the AUTE C range classified and unclassified local area networks; the installation and integration a hydrophone string to regain 90 square nautical miles of the AUTE C deep water range; the modernization of the deep water hydrophone acoustic signal processors; the modernization of communication links from AUTE C's main site to its downrange sites two, three and four; the modernization and upgrade of voice and data communications links to submarines on the range; the development of new range post-processing software and modernized hardware; the upgrade of shallow water range voice communications and procurement/integration of data communications links; and the upgrade of aircraft sonobuoy simulation/stimulation radio frequency emission capability.

Nanoose and Dabob - The procurement and integration of additional hydrophone arrays; the addition of broadband capable bottom mounted targets to the Nanoose and Dabob ranges; the upgrade and addition of countermeasure threat emulator units; the modernization of acoustic acquisition and processing systems; the replacement of acoustic data acquisition recorders; and the upgrade of Nanoose and Dabob range microwave communications

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-6		PROGRAM ELEMENT NUMBER AND NAME 0604759N, MAJOR T&E INVESTMENT				PROJECT NUMBER AND NAME 2195, T & E INVESTMENT
Open Air Range Investments	FY 2006	FY 2007	FY 2008	FY 2009		
Accomplishments / Effort / Sub-total Cost	25.128	28.978	25.871	23.747		
RDT&E Articles Qty						

Open Air Range Investments - This effort funds the modernization and upgrades of existing capabilities and the development of new test capabilities required at the MRTFB open air ranges :

Sea Range - The modernization of the fifth tracking radar; the development of target launch, airborne telemetry, optics, flight termination capabilities for the range support aircraft; the upgrade of video capabilities; the replacement of Very High Frequency (VHF), Ultra High Frequency (UHF), and High Frequency (HF) radio transmitters; the modernization of the mobile radio communications system; the modernization of range timing and sensor interface; the addition of enhanced flight termination system; the modernization of the telemetry antenna systems; the modernization of the post flight analysis system; the upgrade of telemetry instrumentation recorders; the modernization of Global Positional System (GPS) tracking systems; the replacement of Link-16 tactical data link terminal; development of a Range Condition Assessment (RCA) report; the development of a Range Capabilities Master Plan (RCMP); the replacement of fiber terminal equipment to upgrade communications links from San Nicolas Island to the mainland; the procurement of a doppler radar system; and the modernization of sea surface surveillance radars.

Land Range - The upgrade of video capabilities; the replacement of VHF and UHF radio transmitters; the modernization of the mobile radio communications system; the modernization of range timing and sensor interface; the addition of enhanced flight termination system; the modernization of the telemetry antenna systems; the modernization of the post flight analysis system; the upgrade of the Infra-Red camera capability; the upgrade of telemetry instrumentation recorders; the modernization of Global Positional System (GPS) tracking systems; the replacement of Link-16 tactical data link terminal; the development of a Range Condition Assessment (RCA) report; and the development of a Range Capabilities Master Plan (RCMP).

Electronic Combat Range -The upgrade of video capabilities; the replacement of VHF and UHF radio transmitters; the modernization of the mobile radio communications system; the modernization of range timing and threat system interface; the modernization of the Post Test Data Warehouse system; the modernization of two tracking radars; the modernization of the telemetry processing system; the replacement and upgrade of telemetry instrumentation recorders; the modernization of Global Positional System (GPS) tracking systems; the upgrade of voice and data communications links; development of a Range Condition Assessment (RCA) report; the development of a Range Capabilities Master Plan (RCMP);

Air Vehicle Modification and Instrumentation - The procurement of solid state recorders; the procurement and integration of Advanced Range Telemetry (ARTM) spectrum efficient transmission and reception equipment; and the procurement of aircraft machining equipment.

Atlantic Test Range - The modernization of the radar cross section emitters pedestals; the modernization and addition of telemetry antennas; the upgrade of the Infra-Red signature measurement system; the replacement and upgrade of telemetry instrumentation recorders; the modernization of Global Positional System (GPS) tracking systems; the development and integration of new range computation and control system the replacement of a microwave voice, data and video communications link from the Atlantic Test Range to the Wallops facility ; the modernization and upgrade of the Multiple Target Tracking Radar ("MIR"); the development of a Range Condition Assessment (RCA) report; and the development of a Range Capabilities Master Plan (RCMP);

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-6		PROGRAM ELEMENT NUMBER AND NAME 0604759N, MAJOR T&E INVESTMENT				PROJECT NUMBER AND NAME 2195, T & E INVESTMENT	
Test Facilities Investments	FY 2006	FY 2007	FY 2008	FY 2009			
Accomplishments / Effort / Sub-total Cost	7.060	6.572	3.949	7.932			
RDT&E Articles Qty							

Test Facilities Investments - This effort funds the modernization and upgrades of existing capabilities and the development of new test capabilities required at the MRTFB test facilities (Air Combat Environment Test and Evaluation Facility (ACETEF), Electromagnetic Environmental Effects (E3), Propulsion Systems Evaluation Facility (PSEF), Ordnance T&E Facility).

ACETEF - The development and integration of an advanced radar environment stimulator; the procurement of fiber channel bus monitoring and stimulation capability; the modernization of threat simulation transmitters; the modernization of manned flight simulator computer systems and software; the upgrade of identification friend/foe (IFF) test set capability to include Mode 5 and Mode S simulations; the development of a simulation environment visualization and debriefing system and software; the procurement of new Internet Protocol Version 6 (IPV6) network routing and security boundary equipment; the development, installation, and certification of carts to amplify and radiate high power radio frequency electronic warfare simulation signals in the anechoic chambers; the upgrade of manned flight simulator cockpit simulation stations' image generators, projectors, projection screens and software.

E3 - The modernization of the tempest certification systems; the modernization of Electromagnetic Environmental Effects (E3) laboratory test equipment; and the procurement and integration of wide pulse microwave source E3 generating systems.

PSEF - The upgrade of the Helicopter Transmission Test Facility (HTTF) to support greater horsepower/torque and provide quicker setup time; and the upgrade of the drive turbines, thermal gradient system, crack detection system, data acquisition and command and control systems of the Rotor Spin Facility.

Ordnance T&E - The procurement and integration of camera pads, power lines, and data acquisition and firing lines as part of developing an ordnance test arena at the Desert Duck area, and upgrading the CT-1, CT-4 and Burro Canyon sites; site preparation of the Desert Duck site; and installation of a secure miniature magazine in the Skytop complex.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-6		PROGRAM ELEMENT NUMBER AND NAME 0604759N, MAJOR T&E INVESTMENT			PROJECT NUMBER AND NAME 2195, T & E INVESTMENT
Spectrum Relocation	FY 2006	FY 2007	FY 2008	FY 2009	
Accomplishments / Effort / Sub-total Cost		27.492			
RDT&E Articles Qty					

Spectrum Relocation - This effort funds the modification or replacement of range instrumentation in order to vacate the 1710-1755 magahertz band recently auctioned off for commercial use.

Patuxent River, MD - Procurement and integration of transmitter and receiver systems for all land and airborne video, telemetry, and microwave systems.

Point Mugu and China lake, CA - Procurement and integration of transmitter and receiver systems for all land and airborne video and telemetry systems.

Keyport, WA - Procurement and integration of transmitter and receiver systems for the land based microwave systems.

Panama City, FL - Procurement and integration of transmitter and receiver systems for the land based video and telemetry systems.

Kittery, ME - Procurement and integration of transmitter and receiver systems for the land based microwave systems.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable										

D. ACQUISITION STRATEGY: Not Applicable.

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APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E,N / BA-6		0604759N, MAJOR T&E INVESTMENT			9999, CONGRESSIONAL ADDS				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost		1.380	8.816						
RDT&E Articles Qty		Not Applicable.							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

2195C, Upgrade Range Instrumentation to Support Network Centric Operations	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		2.590		
RDT&E Articles Qty				

This project will upgrade the tactical data links, communication networks, tracking systems, and electronic warfare system at the Atlantic Test Range to provide more realistic test and training for the Navy's warfighters and their systems.

9776N, Integrating Navy RDT&E and Training Resources	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.380			
RDT&E Articles Qty				

This project augments and improves existing Test and Evaluation instrumentation located at Naval Warfare Center Aircraft Division, Patuxent River, MD in order to better support fleet training requirements. The project will acquire and upgrade both mobile capabilities and fixed capabilities at the Atlantic Test Range including: the upgrade of portable surface threat emitter capabilities and those installed aboard Training Support Vessel (TSV) Prevail; the development of new prototype plastic model molds (Stryker, HUMVEE weapons (Avenger and 50 Cal), and SA-5 Missile Shape) with multi-spectral cue capabilities; the replacement of the remote emitter system pedestal at Point Lookout; the procurement of a threat representative XM-18 Portable Air Defense System Integrated Threat Simulator/Stimulator (MANPADS, MITSS); the procurement of a high power L-band traveling wave tube transmitter; and a radio frequency environment monitor/measurement system and an emitter positioning remote control system for the Fleet Mobile Sea Range (MSR) Vessel.

9A60N, Low Cost Coyote Ramjet Demonstration	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		.996		
RDT&E Articles Qty				

Research design options to lower the production cost for the Coyote Ramjet Engine.

9A61N, Network Expansion & Integration of Navy/NASA RDT&E Ranges and Facilities	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		3.238		
RDT&E Articles Qty				

This project designs and develops (including environmental permits) fiber optic replacement of some of the existing microwave links between NASA instrumentation and the Atlantic Test Range.

9A62N, Network Expansion of RDT&E Ranges	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		1.992		
RDT&E Articles Qty				

This project modernizes and extends existing microwave and fiber optic networks between the Atlantic Test Range, Pt. Lookout, St. Inigoes (Webster Field), and other test facilities on Naval Center Aircraft Division.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable										

D. ACQUISITION STRATEGY: Not applicable