

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-6						R-1 ITEM NOMENCLATURE 0604759N Major T & E Investment					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost		45.267	45.227	41.804						Continuing	Continuing
W2195 Test and Evaluation Investment		41.305	45.227	41.804						Continuing	Continuing
W2799 NAWC, PAX River Tracking Systems Upgrades		1.981									1.981
W2800 Advanced Virtual Environment		1.981									1.981
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility of Test and Evaluation (T&E) resources across the Services 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 support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTEC), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point Mugu, CA and China Lake, CA; and Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.</p>											

R-1 SHOPPING LIST - Item No. 153

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 8)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA: 6	0604759N Major T&E Investment					W2195 T&E Investment					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		41.305	45.227	41.804						Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility 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 support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTECE), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point MUGU, CA and China Lake, CA; and the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$6.875) NAVUNSEAWARCEN DET AUTECE. Continued the Tracking Hydrophone Replacement Project. Continued Instrumentation Component Replacement (ICR) efforts. Initiated Radar Systems Improvement Project. Initiated Off-Board Advanced Systems Stimulator Project (OASYS). Initiated the Underwater Range Data Communication Project.
- (U) (\$19.223) NAVAIRWARCENWPNSDIV. Continued to modernize core instrumentation capability. Completed six and initiated upgrade of an additional six version "B" Kineto tracking mounts with video tracker, Infrared (IR) cameras and telescopes, and microwave transmission capability. Completed upgrade to all Weapons Division ranges data presentation and display systems. Continued high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Continued the refurbishment and installation of the Air Reconnaissance Search Radar (ARSR-3) radar at the Sea Range. Initiated the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Initiated an Integrated Target Control System Keep Alive Project. Initiated modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Initiated modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Initiated a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers. Initiated replacement of obsolete GPS receivers and operating software with commercial off-the shelf receivers and inertial reference units. Continued Environmental Impact Studies at China Lake and Point Mugu. Initiated moving target launch capability/instrumentation from C130A to C130F.
- (U) (\$2.850) Network Centric Warfare (NCW) Implemented. This project is identified as a consolidated Test and Evaluation modernization effort on behalf of NAVAIRWARCENWPNDIV and NAVAIRWARCENACDIV that refocuses investments towards interconnection of existing facilities. Initiated the establishment of an enterprise federation of interconnected facilities that will utilize a common scheduling tool, interoperable models and a common network. NCW integrates Research, Development, Test and Evaluation facilities to optimize support for air combat systems integration into future joint warfare systems. Used existing communications infrastructure Defense Research Engineering Network. Procured hardware and software to improve facility connectivity, establish software capabilities such as Distributed Interactive Simulation and High Level Architecture to support interoperability testing, and develop needed collaborative tools to operate the federation.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-6	PROGRAM ELEMENT NUMBER AND NAME 0604759N Major T&E Investement	PROJECT NUMBER AND NAME W2195 T&E Investment
<p>1. FY 2000 ACCOMPLISHMENTS: (continued)</p> <p style="margin-left: 40px;">- (U) (\$11.257) NAVAIRWARCENACDIV. Continued to modernize core instrumentation capability. Modernized RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Initiated replacement of aging Telemetry acquisition and processing equipment. Initiated the replacement and upgrade of visual image generators and video display systems at the Manned Flight Simulator facility. Initiated development of full-spectrum dynamic avionics and aircraft signature measurement system. Procured Common Avionics Instrumentation System (CAIS) hardware suites. Provided fiber optic connectivity between multiple sites and range facilities. Corrected deficiency in the tactical electronic warfare simulators. Developed and installed radio frequency to fiber optic interface system.</p> <p style="margin-left: 40px;">- (U) (\$1.100) Joint Modeling and Simulation System (JMASS). Initiated efforts to develop a tri-service simulation infrastructure that will assist model developers, engineers, and analysts in the development of digital models, configuration and execution of simulations and analysis of simulation capabilities.</p> <p>2. FY 2001 PLANS:</p> <p style="margin-left: 40px;">- (U) (\$5.406) NAVUNSEAWARCEN DET AUTC. Complete Tracking Hydrophone Replacement Project. Continue Instrumentation Component Replacements (ICR) efforts. Continue Radar Systems Improvement efforts. Continue the Off-Board Advanced Systems Stimulator Project (OASYS). Continue the Underwater Range Data Communication Project.</p> <p style="margin-left: 40px;">- (U) (\$14.549) NAVAIRWARCENWPNSDIV. Continue to modernize core instrumentation capability. Complete high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Continue the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Continue the Integrated Target Control System Keep Alive Project. Continue modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Continue modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Continue a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers. Continue Kineto tracking mounts with video tracker, Infrared (IR) cameras and telescopes, and microwave transmission capability. Continue replacement of obsolete GPS receivers and operating software. Complete Air Reconnaissance Search Radar (ARSR-3) radar integration at San Nicholas Island. Complete Environmental Impact Studies at China Lake and Point Mugu. Continue removal of target launch capability/instrumentation from C130A to C130F.</p> <p style="margin-left: 40px;">- (U) (\$3.100) Complete Network Centric Warfare (NCW) Implementation. Complete the consolidated Test and Evaluation effort on behalf of NAVAIRWARCENWPNSDIV and NAVAIRWARCENACDIV that refocuses investments towards interconnection of existing facilities. Complete the establishment of an enterprise federation of interconnected facilities that will utilize a common scheduling tool, interoperable models and a common network. Complete integration Research, Development, Test and Evaluation facilities to optimize support for air combat systems integration into future joint warfare systems. Complete using existing communications infrastructure Defense Research Engineering Network and Defense Information Systems Network. Complete the procurement of hardware and software to improve facility connectivity, establish software capabilities such as Distributed Interactive Simulation and High Level Architecture to support interoperability testing, and develop needed collaborative tools to operate the federation.</p>		

R-1 SHOPPING LIST - Item No. 153

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 8)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-6	0604759N Major T&E Investement	W2195 T&E Investment
<p>2. FY 2001 PLANS: (continued)</p> <ul style="list-style-type: none">- (U) (\$15.025) NAVAIRWARCENACDIV. Continue to modernize core instrumentation capability. Continue to modernize RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Continue to replace aging Telemetry acquisition and processing equipment. Continue to replace and upgrade obsolescent image generators and video display systems at the Manned Flight Simulator facility. Continue to develop full-spectrum dynamic avionics and aircraft signature measurement system. Continue procurement of Common Avionics Instrumentation System (CAIS) hardware suites. Complete correction of deficiencies in the tactical electronic warfare simulators. Complete radio frequency to fiber optic interface project. Complete fiber optic connectivity between multiple sites and range facilities.- (U) (\$2.100) Joint Modeling and Simulation System (JMASS). Continue efforts to develop a tri-service simulation infrastructure that will assist model developers, engineers, and analysts in the development of digital models, configuration and execution of simulations and analysis of simulation capabilities.- (U) (\$2.000) Fleet Air Training. Congress appropriated \$2M to augment and enhance the test and evaluation resources and capabilities (video scoring, laser evaluation, mobile command and control communications , portable emitters) of the Atlantic Test Range to support naval fleet aviation readiness training.- (U) (\$3.000) Acquisition/Install SPS-48E. Congress appropriated \$3M to fund the acquisition and installation of a fleet-standard AN/SPS-48E shipboard air surveillance radar in support of the Airspace Management System at Naval Air Station (NAS) Patuxent River.- (U) (\$.047) Portion of extramural program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 68.		

R-1 SHOPPING LIST - Item No. 153

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 4 of 8)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-6	PROGRAM ELEMENT NUMBER AND NAME 0604759N Major T&E Investement	PROJECT NUMBER AND NAME W2195 T&E Investment
<p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$9.530) NAVUNSEAWARCEN DET AUTE C. Continue Instrumentation Component Replacement (ICR) efforts. Continue Radar Systems Improvement efforts. Continue the Off-Board Advanced Systems Stimulator Project. Continue the Underwater Range Data Communications Project. Initiate Range Ware Improvement Project. - (U) (\$16.929) NAVAIRWARCENWPNSDIV. Continue to modernize core instrumentation capability. Complete the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Complete the Integrated Target Control System Keep Alive project. Continue modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Complete modernizing deteriorated copper cables proving data, video and communications within the Sea Range complexes. Continue a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers. Complete Kineto tracking mounts with video tracker, Infrared (IR) cameras and telescopes, and microwave transmission capability. Complete replacement of obsolete GPS receivers and operating software. Initiate and complete upgrade of the site Command Transmitter System equipment. Develop a capability to test and evaluate effects and performance of hypersonic penetrators. Initiate replacement of aging cinesextant mount laser trackers with laser tracker kits. Initiate replacement of aging remote van equipment, vintage tracking antennas and allow multiple participant operations coverage at San Nicolas Island. Modernize frequency monitoring capabilities at Electronic Combat Range, Land Range, and Sea Range. Initiate replacement of obsolete data acquisition and electronic equipment at Skytop facility. Continue moving target launch capability/instrumentation from C130A to C130F. - (U) (\$13.245) NAVAIRWARCENACDIV. Continue to modernize core instrumentation capability. Complete modernization of RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Continue to replace aging Telemetry acquisition and processing equipment. Continue to replace and upgrade obsolescent image generators and video display systems at the Manned Flight Simulator facility. Continue to develop full-spectrum dynamic avionics and aircraft signature measurement system. Complete procurement of Common Airborne Instrumentation System (CAIS) hardware suites. Initiate replacement of obsolete data collection system with new collection and distribution system. Initiate and complete increased fuel filtration testing capabilities. Modernize the Range Control Center display systems. Initiate procurement of hardware to monitor radio frequency (RF) environment and responses in real-time for installed test facility. Integrate and support replacement of high-speed film cameras with Airborne Separation Video System. Initiate replacement of analog National Television Systems Committee (NTSC) video with digital systems based on industry and Advanced Television Systems Committee formats. Initiate upgrade universal radar moving target transponder to support all Navy radar systems. Initiate upgrade mechanical/machining capabilities. - (U) (\$2.100) Joint Modeling and Simulation System (JMASS). Continue efforts to develop a tri-service simulation infrastructure that will assist model developers, engineers, and analysis in the development of digital models, configuration and execution of simulations and analysis of simulation capabilities. 		

R-1 SHOPPING LIST - Item No. 153

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 8)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-6	PROGRAM ELEMENT NUMBER AND NAME 0604759N Major T&E Investment	PROJECT NUMBER AND NAME W2195 T&E Investment																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">42.386</td> <td style="text-align: right;">40.707</td> <td style="text-align: right;">42.159</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-1.081</td> <td style="text-align: right;">4.52</td> <td style="text-align: right;">-0.355</td> </tr> <tr> <td>(U) FY2002 President's Budget Submit:</td> <td style="text-align: right;">41.305</td> <td style="text-align: right;">45.227</td> <td style="text-align: right;">41.804</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$1.081 million consists of a \$.466 million decrease for a Small Business Innovative Research (SBIR) assessment, a \$.837 million decrease for reprioritization of requirements within the Navy and a \$.166 million decrease for a Congressional Recission; offset by \$.388 million increase for Below Threshold Reprogramming for Joint Modeling and Simulation System requirement and support of NAVAIR's Network Centric Warfare network development and improve range surveillance capabilities. FY2001 net increase of \$4.52 million consists of a \$.061 million decrease for reprioritization of requirements within the Navy, a \$.320 million decrease for a Congressional Reduction and a \$.099 million decrease for a Congressional Recission; offset by Congressional increases of \$3.000 million for Acquisition/Installation Refurbished SPS-48E shipboard air surveillance radar system and a \$2.000 million for Fleet Air Training. FY 2002 net decrease of \$.250 million consists of a \$.175 million decrease for reprioritization of requirements within the Navy, and a \$.075 million decrease for economic assumptions.</p> <p>(U) Schedule: Not Applicable.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.</p> <p><u>Related RDT&E</u></p> <p>(U) PE 0605807F: Test and Evaluation (Air Force) (U) PE 0605864N: Test and Evaluation (Navy)</p> <p>(U) D. ACQUISITION STRATEGY: Not Applicable.</p> <p>(U) E. SCHEDULE PROFILE: Not Applicable.</p>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	42.386	40.707	42.159	(U) Adjustments from the President's Budget:	-1.081	4.52	-0.355	(U) FY2002 President's Budget Submit:	41.305	45.227	41.804
	FY2000	FY2001	FY2002															
(U) FY 2001 President's Budget:	42.386	40.707	42.159															
(U) Adjustments from the President's Budget:	-1.081	4.52	-0.355															
(U) FY2002 President's Budget Submit:	41.305	45.227	41.804															

R-1 SHOPPING LIST - Item No. 153

UNCLASSIFIED

Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 6 of 8)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-6			0604759N Major T&E Investment			W2195 T&E Investment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Network Centric Warfare Implement	WX	NAWCWD, Point Mugu, CA	2.850	3.100	10/00						5.950	
Tracking Hydrophone Replacement	WX	AUTEC, Newport, RI	17.242	1.457	10/00						18.699	
Tracking Mounts	WX	NAWCWD, Point Mugu, CA	11.363	1.103	10/00						12.466	
Range Telemetry Systems	WX	NAWCWD, Point Mugu, CA	8.526	0.800	10/00						9.326	
Air Surveillance Radar	WX	NAWCWD, Point Mugu, CA	3.252	0.700	10/00						3.952	
Slep FPS-16 (3&4)	WX	NAWCWD, Point Mugu, CA	2.600	1.620	10/00	1.720	10/01				5.940	
Radar Sys Improvements	WX	AUTEC, Newport, RI	0.200	0.200	01/01	2.900	10/01			1.300	4.600	
CATS-Radars	WX	NAWCAD, Pax River, MD	1.100	0.400	10/00	1.225	10/01				2.725	
Test Monitoring and processing	WX	NAWCAD, Pax River, MD	1.700	2.300	10/00	2.000	10/01			2.000	8.000	
Target Control System	WX	NAWCWD, Point Mugu, CA	1.138	0.535	10/00	0.325	10/01				1.998	
Off-Board Advanced Sys Stimulator	WX	AUTEC, Newport, RI	2.848	2.489	10/00	3.395	10/01			3.300	12.032	
Manned Flight Simulator Upgrades	WX	NAWCAD, Pax River, MD	0.800	3.850	10/00	1.300	10/01				5.950	
MRTFB Surveillance	WX	NAWCWD, Point Mugu, CA	0.160	1.300	10/00	1.000	10/01			6.000	8.460	
Dynamic Multi-spectral Avionics Measure	WX	NAWCAD, Pax River, MD	1.345	2.700	10/00	2.700	10/01			2.100	8.845	
CAIS Equipment	WX	NAWCAD, Pax River, MD	2.100	3.400	10/00	1.200	10/01				6.700	
Cable Plant Phase II	WX	NAWCWD, Point Mugu, CA	2.045	2.890	01/01	2.500	01/02				7.435	
Fiber Optic Network Connectivity	WX	NAWCAD, Pax River, MD	0.640	0.294	10/00						0.934	
ATEWES Generator Upgrade	WX	NAWCAD, Pax River, MD	0.686	0.804	10/00						1.490	
ARDS Receiver Upgrade	WX	NAWCWD, Point Mugu, CA	1.800	1.803	10/00	0.750	10/01				4.353	
RF to Fiber Transmission Interface	WX	NAWCAD, Pax River, MD	1.500	0.310	10/00						1.810	
Remote TM Stations	WX	NAWCWD, Point Mugu, CA	1.206	1.292	10/00	2.455	10/01			1.645	6.598	
Investment Items Less Than \$1M	WX	Various		3.983	10/00	6.661	10/01			Continuing	Continuing	
Underwater Range Data Comm	WX	AUTEC, Newport, RI	0.650	0.750	10/00	1.710	10/01			2.649	5.759	
JMASS	MP	USAF, WPAFB, OH	1.100	2.100	10/00	2.100	10/01			1.400	6.700	
Remarks:												

