

UNCLASSIFIED

EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROGRAM ELEMENT TITLE: Consolidated Training Systems Development

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
21427 Surface Tactical Team Trainer (STTT)	10,392	11,931*	4,361	4,660	5,855	5,953	6,571	7,220	CONT.	CONT.
21823 Training and Modeling Systems (TMS)	8,217	0	0	0	0	0	0	0	0	CONT.**
W0431 Tactical Aircrew Combat Training System (TACTS)	3,267	2,934	2,747	1,714	0	0	0	0	0	57,256***
W0604 Training Range and Instrumentation Development (TRID)	4,056	2,113	1,635	3,425	4,389	3,636	3,644	3,645	CONT.	CONT.
W1998 Joint Tactical Combat Training System (JTCTS)	31,277	9,412****	7,871	7,933	6,048	5,115	5,244	5,363	CONT.	CONT.
W2124 Air Warfare Training Development (AWTD)	1,719	1,847	2,131	2,192	1,961	2,189	2,246	2,298	CONT.	CONT.
X1823 Training and Training Devices Systems (TTDS)	840	0	0	0	0	0	0	0	0	13,619*****
X1823 Training and Modeling Systems (TMS)	0	9,989	8,209	10,565	9,063	8,601	7,437	7,610	0	61,474
TOTAL	59,768	38,226	26,954	30,489	27,316	25,494	25,142	26,136	CONT.	CONT.

Quantity of RDT&E Articles

* Controls reflect a FY99 \$6.0M Congressional add for Battle Force Tactical Training (BFTT) executed under 22449.

** Program transferred to SPAWAR (X1823).

*** This amount includes FY90-FY01.

**** Controls reflect a FY99 \$2.5M Congressional add for Large Area Tracking Range (LATR)/Kadena Interim Training System (KITS) integration technical evaluation to be executed under project unit W2660.

***** This amount includes FY94-FY98.

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Exhibit R-2 RDT&E Budget Item Justification
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EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROGRAM ELEMENT TITLE: Consolidated Training Systems Development

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The STTT will develop the Battle Force Tactical Training (BFTT) System to provide realistic joint warfare training including a means to link ships together for coordinated Combat System team training using Distributed Interactive Simulation (DIS) protocols. The TMS encompasses the requirements analysis and software development associated with the Navy's Maritime Development Agent function as part of the Joint Simulation System (JSIMS). The BFTT will develop the BFTT Electronic Warfare Trainer (BEWT) and applicable BFTT system software to provide EW operator and team training for Fleet EW Systems. TACTS provides real-time monitoring and post-exercise debrief of aircrews flying on instrumented training ranges. This system is the primary training tool used by the Naval Strike and Air Warfare Center and the Marine Aviation Weapons and Tactics Squadron. The TRID program provides development of many range systems including range electronic warfare simulator, advanced weapons training systems, laser training systems, Large Area Tracking Range (LATR), and shallow water range technology. JTCTS is planned to provide U.S. Navy fleet deployable instrumentation for at sea surface, subsurface, and air training and tactics development and fixed/transportable air range instrumentation for U.S. Navy and U.S. Air Force air training and tactics development. JTCTS incorporates the Defense Modeling and Simulation Office sponsored Distributed Interactive Simulation Protocol Data Unit for interoperability with Navy and other service live, virtual (simulators), and constructive (war games) simulations. JTCTS will initially deliver prototype hardware/software for a mobile/rangeless capability for a Carrier Air Wing 5 (CAG-5) after undergoing development/operational testing. It will further develop test and field fixed air range and fixed fleet range hardware/software in subsequent phases of the program. This summary reflects only the USN funding component of the JTCTS. The AWTD program provides development of many aviation training systems including, mission rehearsal simulation technologies and the Aviation Training Technology Integration Facility (ATTIF). TTDS provides a geographically distributed wargaming system for littoral operations training which supports objectives of Fleet Commanders, Naval War College, Joint Warfare Center, and Tactical Training Groups in wargaming, tactical decision making training, and tactics development and evaluation.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

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Exhibit R-2 RDT&E Budget Item Justification
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Exhibit R-2a, RDT&E Project Justification		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E/BA7	Program Element Name & No. 0204571N/ Consolidated Training Systems Development	Project Name and Number. Surface Tactical Team Trainer (STTT)/21427

Cost (\$ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost	10.392	5.945	4.361	4.660	5.855	5.953	6.571	7.220	CONT.	CONT.
RDT&E Articles Qty	N/A	N/A								

A. **Mission Description and Budget Item Justification.** The Battle Force Tactical Training (BFTT) Program provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) protocols, with planned migration to High Level Architecture (HLA). BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system team training as an integral part of the Afloat Training Organization. BFTT provides a baseline capability/system that meets the Operational Requirements Document (ORD). The Mine Warfare Model (MW Model) will provide integration of the Minefield Environmental Server (Mine Warfare) capability into BFTT. Stimulator/Simulators (STIM/SIM) provides standardized Radio Frequency (RF), Intermediate Frequency (IF), and/or Digital injection into surface ship radars and fire control systems for training of shipboard operators/teams as part of the BFTT System. The Cryptologic Systems Trainer (CST)/BFTT Electronic Warfare Trainer (BEWT) development effort will provide embedded operator and team electronic emissions recognition training capability, integrated into BFTT.

FY 1998 ACCOMPLISHMENTS:

- (\$2.859) BFTT B/L 1 - Developed software required as a result of lessons learned/additional Fleet requirements since BFTT IOC to include the rehosted AEGIS Combat Training System (ACTS), completed software development of the modifications required to incorporate amphibious/littoral functionality into BFTT software, and initiated HLA system engineering requirements/development.
- (\$.328) Mine Warfare - Completed development of the software modifications required to integrate the Mine Warfare capability.
- (\$1.589) STIM/SIM - Continued development of the MK 91 NATO Sea Sparrow Missile System Stimulator.
- (\$.900) CST/BEWT - Continued development of the BFTT Electronic Warfare Trainer (BEWT) and software integration with BFTT.
- (\$4.716) BEWT - Continued development of the BEWT capability and installed/demonstrated Engineering Development Models on Fleet directed surface ships.

FY 1999 PLANS:

- (\$1.257) BFTT - Develop software required as a result of lessons learned/additional Fleet requirements since BFTT IOC to include SG&C, Display & Debrief, Entity Motioning and Modeling (EM&M) improvements and the initial interface to the Generic Navy Stimulator/Simulator (GNSS).
- (\$.500) BFTT/HLA - Initiate conversion of the DIS protocol based software to the HLA mandated architecture for the Performance Monitoring portion of the BFTT software in accordance with DoD directives.
- (\$1.688) STIM/SIM - Complete development of the MK 91 NATO Sea Sparrow Missile System Stimulator.
- (\$2.500) - BEWT - Integrate the BEWT into BFTT.

FY 2000 PLANS:

- (\$1.861) BFTT - Develop tactical link interface/simulation software and integrate Semi Automated Forces (SAF) software into BFTT. Develop stand-alone objective based training software for scenario development.

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Exhibit R-2a, RDT&E Project Justification		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E/BA7	Program Element Name & No. 0204571N/ Consolidated Training Systems Development	Project Name and Number. Surface Tactical Team Trainer (STTT)/21427

- (\$2.500) HLA - Continue conversion of the DIS protocol based software to the HLA mandated architecture for the Scenario Generation and Control portion of the BFTT software in accordance with DoD directives.

B. Program Change Summary:

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
FY 1999 President's Budget:	10.624	5.964	1.165
Appropriated Value:	9.948		
Adjustment to FY 1998 Appropriated Value/ FY 1999 President's Budget			
(a) Undistributed Reductions	- .013		
(b) SBIR	- .219		
(c) Training Initiatives			+2.500
(d) Outsourcing Adjustment			- .006
(e) NWCF Rates			+ .049
(f) Revised Economic Assumptions		- .014	
(g) Civilian Personnel Underexecution		- .005	
(h) Civilian Pay Rates			+ .706
(i) Non Pay Inflation			- .053
FY 2000/01 PRES Budget Submit:	10.392	5.945	4.361

Funding: The FY 1998 net decrease of +\$.232M is a result of undistributed reductions (\$.013M) and a Small Business Innovative Research (SBIR) reduction of (\$.219M). The FY 1999 net decrease of (\$.019M) is a result of revised economic assumptions (\$.014M) and a civilian personnel underexecution cut of (\$.005M). The FY 2000 net increase of +\$.196M is a result of +\$.2500M provided for Training Initiatives, a (\$.006M) Outsourcing Adjustment, a +.049M NWCF Rate increase, a civilian pay rate increase of +.706M, and a non pay inflation decrease of (\$.053M). Note: Training Initiatives address the conversion of the BFTT DIS software to the DoD mandated HLA.

Schedule: Not Applicable.

Technical: Not Applicable.

C. Other Program Funding Summary:

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To FY 2004</u>	<u>Total FY 2005</u>	<u>Complete</u>	<u>Cost</u>
OPN Line 276200	20.029	24.099	31.615	17.544	38.174	24.709	25.252	25.661	CONT.	CONT.
O&MN Line 3B4K	8.057	9.809	9.083	9.969	9.590	9.463	9.704	9.952	CONT.	CONT.

Related RDT&E: Not Applicable.

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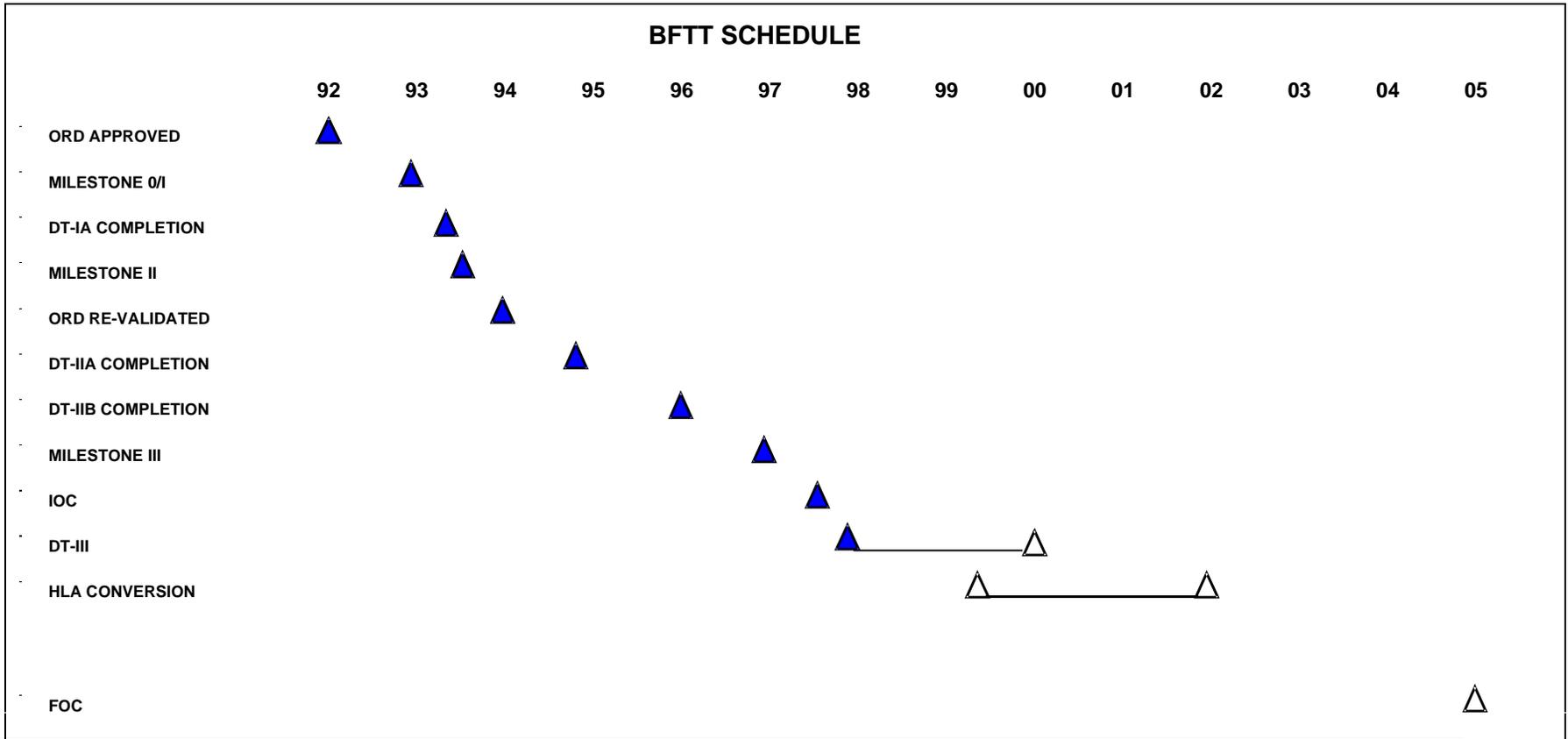
D. Acquisition Strategy: The BFTT Program is designated as an ACAT IV-M Program consisting of four (4) phases - Concept Exploration and Definition, Demonstration and Validation, Engineering and Manufacturing Development, and Production and Deployment.

E. Schedule Profile:

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APPROPRIATION/BUDGET ACTIVITY RDT&E/BA7	Program Element Name & No. 0204571N/ Consolidated Training Systems Development	Project Name and Number. Surface Tactical Team Trainer (STTT)/21427



Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	**	AAI/MD, EWA/WV	10.024	1.490	**	0					11.514	11.514
Ancillary Hardware Development												
Systems Engineering	WR/RCP	MULTIPLE	11.101	.695		.650				CONT	CONT	N/A
Licenses	WR/RCP	MULTIPLE	1.950	.062		.025				CONT	CONT	N/A

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Exhibit R-2a, RDT&E Project Justification							Date: February 1999					
APPROPRIATION/BUDGET ACTIVITY RDT&E/BA7	Program Element Name & No. 0204571N/ Consolidated Training Systems Development					Project Name and Number. Surface Tactical Team Trainer (STTT)/21427						

Tooling												
GFE												
Award Fees												
Subtotal Product Development												
Remarks:												
* PY total also includes NSWC PHD and NSWC DD ** AAI Contract Award 3/98 CPIF, EWA Contract Award 6/98 CPFF												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												

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Program Management Personnel												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			1.583	.100		0				0	1.629	N/A
Remarks:												
Total Cost			51.730	5.945		4.361				CONT	CONT	N/A
Remarks:												

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0431

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Tactical Aircrew Combat Training
System (TACTS)

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0431 Tactical Aircrew Combat Training System (TACTS)	3,267	2,934	2,747	1,714	0	0	0	0	0	57,256*
TOTAL	3,267	2,934	2,747	1,714	0	0	0	0	0	57,256*

Quantity of RDT&E Articles

* This amount includes FY90-FY01.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops new TACTS capabilities primarily through the integration of additional types of aircraft and weapons. This requires development of new aircraft interfaces, weapons and countermeasures simulations, and modifications to displays. Software is also developed to produce computer generated Electronic Warfare (EW) threats to enhance the system's ability to provide training in a realistic EW environment. Various other system performance improvements are also developed to make the system more effective and reliable.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$ 755) Weapons Integration - Completed the development of the Phoenix training capability for the F-14. Resumed development of a Joint Stand-Off Weapon (JSOW) training capability.
- (U) (\$2,379) System Upgrades - Continued development of block 5.2 (formerly referred to as 6.0) software for the Control and Computation Subsystem (CCS) and A10 software for the P4A Aircraft Instrumentation Subsystem (AIS). Completed development of the Advanced Message Oriented Data Security Module (AMODSM).
- (U) (\$ 133) Studies/Analysis/T&E - Developed test procedures for testing block 5.2 and A10 software.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0431

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Tactical Aircrew Combat Training
System (TACTS)

2. FY 1999 PLAN:

- (U) (\$1,000) Weapons Integration - Continue development of a training capability for JSOW.
- (U) (\$1,649) System Upgrades - Continue development of block 5.2 (formerly referred to as 6.0) software for CCS and A10 software for P4A AIS.
- (U) (\$ 240) Studies/Analysis/T&E - Test block 5.2 CCS and A10 software.
- (U) (\$ 45) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. FY 2000 PLAN:

- (U) (\$ 827) Weapons Integration - Complete development of the JSOW training capability for the F/A-18. Develop a similar training capability for the Joint Direct Attack Munitions (JDAM) weapon.
- (U) (\$1,645) System Upgrades- Complete the development of block 5.2 CCS software and A10 P4A AIS software. Develop software modifications to enable the system to use F/A-18 and AV-8B navigation data to improve the TACTS tracking solution in areas of marginal range coverage. Develop block 6.0 software for the CCS and Advance Display and Debriefing Subsystem (ADDS), and block A05 and K05 software for the two variants of the AIS Internal (AISI).
- (U) (\$ 275) Studies/Analysis/T&E - Complete any follow-up testing of the block 5.2 CCS software and block A10 P4A AIS software. Develop test procedures for testing block 6.0 CCS/ADDS software and A05/K05.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0431

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Tactical Aircrew Combat Training
System (TACTS)

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	3,367	3,069	4,934
(U) Appropriated Value:	3,512	3,069	
(U) Adjustments from President's Budget:	-100	-135	-2,187
(U) FY 2000 President's Budget Submit:	3,267	2,934	2,747

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY98 decrease of -\$100 thousand is based on a \$65 thousand reduction for Small Business Innovative Research (SBIR) Assessment, a \$38 thousand reduction for a Navy reprioritization of requirements and a \$3 thousand increase for minor pricing adjustments. The FY99 decrease of -\$135 thousand reflects Congressional undistributed reductions. The FY00 decrease of -\$2,187 thousand is based on a \$133 thousand reduction for Full Institutional Funding for Major Range Test Facility Base (MRTFB) indirect cost, a \$2,012 thousand realignment in support of the Joint Tactical Combat Training System (JTCTS) and the Training Range and Instrumentation Development (TRID) programs and a \$42 thousand reduction due to Congressional undistributed reductions.

(U) Schedule: The following milestones have been changed due to program restructure:

From	To
A10 DT-II 1Q-4Q/99	A10 DT-II 4Q99/1Q00
Blk 6.0 DT II 1Q-4Q/99	Blk 5.2 DT-II 4Q99/1Q00

"Block 6.0" has been changed to "Block 5.2" to reflect the revised version number for the next CCS software build.

The following milestones have been added: A05/K05 DT-II 2Q-3Q/01
Blk 6.0 DT-II 2Q/3Q/01

(U) Technical: Not Applicable.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0431

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Tactical Aircrew Combat Training
System (TACTS)

(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A

Related RDT&E

(U) P.E. PE 0604735F (Range Improvement) - Includes funding for joint efforts with USAF.

(U) C. ACQUISITION STRATEGY: The TACTS program is a non-ACAT program. The integrated program teams that develop new TACTS capabilities include contractors whose products and services are obtained by means of competitive award, indefinite deliveries/indefinite quantity (IDIQ), and cost-type contracts. Individual delivery orders are awarded for specific development efforts.

(U) D. SCHEDULE PROFILE

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>To Complete</u>
(U) Program Milestones				
(U) Engineering Milestones				
(U) T&E Milestones	1Q/2Q AMODSM DT-II	4Q99/1Q00 A10 DT-II 4Q99/1Q00 Blk 5.2 DT-II		2Q/3Q-01 A05/K05 DT-II 2Q/3Q-01 Blk 6.0 DT-II
(U) Contract Milestones				

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0431

PROJECT TITLE: TACTS

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>*Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Miscellaneous	Various	Various	31,474	2,549	1Q/99	2,297	1Q/00	1,389	37,709	N/A
Subtotal Project Development			31,474	2,549	1Q/99	2,297	1Q/00	1,389	37,709	N/A
Remarks										
Miscellaneous	Various	Various	14,742	290	1Q/99	400	1Q/00	225	15,657	
Subtotal Support			14,742	290		400		225	15,657	
Remarks										
Miscellaneous	Various	Various	3,645	50	1Q/99	50	1Q/00	100	3,845	N/A
Subtotal Test & Evaluation			3,645	50		50		100	3,845	
Remarks										
Subtotal Management SBIR Assessment			0	0		0		0	0	
				45					45	
Remarks										
Total Cost			49,861	2,934		2,747		1,714	57,256	

* This amount includes FY90-FY98.

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0604

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Training Range and Instrumentation Development (TRID)

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0604 Training Range and Instrumentation Development (TRID)	4,056	2,113	1,635	3,425	4,389	3,636	3,644	3,645	CONT.	CONT.
TOTAL	4,056	2,113	1,635	3,425	4,389	3,636	3,644	3,645	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops specialized instrumentation systems for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: electronic warfare simulators and associated subsystems, target control systems, Large Area Tracking Range (LATR) improvements, underwater technology, ranges interoperability and information architecture, shallow water range activity which includes establishment of capability at Pacific Missile Range Facility (PMRF SWTR) (Phase I) and in the Maui basin (Phase II) at Hawaii Island Shallow Water Training Range (HI SWTR), and assorted Advanced Weapons Training Systems (AWTS), such as Imaging Weapons Training Systems (IWTS), Weapons Impact Scoring Set (WISS), Remote Strafe Scoring System (RSSS), and weapon and countermeasure simulations for use with various range training systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$ 873) Completed development and testing of RSSS Product Improvement Program (PIP). Continued development of IWTS P³1.
- (U) (\$ 248) Completed support development and testing of Next Generation Target Control System (NGTCS).
- (U) (\$2,363) Continued technology development for CONUS shallow water ranges. Completed development and began installation of PMRF SWTR and continued development of HI SWTR.

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BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0604

PROGRAM ELEMENT TITLE: Consolidated Training Systems

**PROJECT TITLE: Training Range and
Instrumentation Development
(TRID)**

- (U) (\$572) Continued systems definitions, development of specifications, analysis of concepts, and systems engineering for developing improved interoperability among various projects. Continued systems engineering efforts for range integration using Defense Information Infrastructure standards (DIS) technology, continued development of common range architecture that meets High Level Architecture (HLA) standards, and conducted analyses of design data to ensure that Tactical Training Range (TTR) programs are logistically supportable.

2. FY 1999 PLAN:

- (U) (\$800) Complete development of IWTS P³I. Conduct testing and obtain MS III of RSSS PIP.
- (U) (\$495) Continue technology development for CONUS Shallow Water Ranges. Complete test and evaluation of PMRF SWTR.
- (U) (\$298) Continue systems definitions, development of specifications, analysis of concepts, and systems engineering for various projects. Continue systems engineering efforts for range integration and continue development of common range architecture that meets HLA standards. Conduct analyses of design data to ensure that TTR programs are logistically supportable.
- (U) (\$500) Commence development of Block 3.0 software upgrade LATR display system and LATR hardware/software capabilities for existing training systems.
- (U) (\$ 20) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. FY 2000 PLAN:

- (U) (\$527) Commence development of a singular display and debrief capability for all tactical training ranges systems to provide a common operating environment (COE) for the efficient life cycle support. This singular display and debrief capability will support the real-time and post exercise capability, as well as the Information Technology of 21st Century (IT-21) initiative. The capability will be based on machine independent code that can be hosted on personal computers.
- (U) (\$100) Commence development of the HLA and the Test and Training Enabling Network Architecture (TENA) for the tactical training ranges systems. The Architecture will provide for integration of the tactical training systems into a configuration which will establish the infrastructure for inter-service systems interoperability.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0604

PROGRAM ELEMENT TITLE: Consolidated Training Systems

**PROJECT TITLE: Training Range and
Instrumentation Development
(TRID)**

- (U) (\$150) Begin the development of the modeling and simulation of the training ranges systems communications systems. Collect information and input this into the model to baseline the east coast and west coast communications systems.
- (U) (\$125) Conduct the operational research and systems engineering required to develop the transition plans necessary to integrate and transition legacy systems to the future systems.
- (U) (\$ 75) Commence development and integration of the tactical training ranges systems with the Command, Control, Communication, Computers and Information (C4I) Global Command and Control System (GCCS). This will provide the integration of information from all services into a command and control level depiction of the exercises/operations.
- (U) (\$ 75) Research integration of embedded instrumentation.
- (U) (\$583) Complete development of Block 3.0 software upgrade and commence development of Block 4.0 software upgrade for the LATR display debriefing system and LATR hardware/software capabilities for existing training systems.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0604

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Training Range and
Instrumentation Development
(TRID)

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	9,133	2,195	1,734
(U) Appropriated Value:	9,315	2,195	
(U) Adjustments from President's Budget:	-5,077	-82	-99
(U) FY 2000 President's Budget Submit:	4,056	2,113	1,635

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY98 decrease of \$5,077 thousand reflects a \$5,000 thousand reduction for the PMRF Optical Sensors project that was transferred to program element 0603868C, a \$15 thousand reduction for Small Business Innovative Research (SBIR) assessment, and a reduction of \$62 thousand for minor program and pricing adjustments. The FY99 decrease of \$82 thousand reflects Congressional undistributed reductions. The FY00 decrease of \$99 thousand reflects minor pricing adjustments.

(U) Schedule: The following milestones have changed due to program restructure.

From	To
RSSS PIP MSIII 1Q/99 IWTS P ³ I DT-II 3Q/00-4Q/00	RSSS PIP MSIII 2Q/99 IWTS P ³ I DT-II 4Q/99-1Q/00

The following milestones have been added:

SWR Phase I IOC 1Q/99	
Block 3.0 LATR upgrade DT III 4Q/99	Block 3.0 LATR upgrade IOC 1Q/00
Block 4.0 LATR upgrade DT III 4Q/00	Block 4.0 LATR upgrade IOC 1Q/01

(U) Technical: Not Applicable.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W0604

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Training Range and Instrumentation Development (TRID)

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1998 Budget	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
(U) OPN/P-1 Weapons Range Support Equipment	3,348	1,227	6,319	4,519	24,023	22,965	16,563	17,365	CONT.

Related RDT&E: Not Applicable.

(U) C. ACQUISITION STRATEGY: The TRID program is a non-ACT program. The integrated program teams that develop new TRID capabilities include contractors whose products and services are obtained by means of competitive award, indefinite deliveries/indefinite quantity (IDIQ), and cost-type contracts. Individual delivery orders are awarded for specific development efforts.

(U) D. SCHEDULE PROFILE

	<u>FY 1998</u>	<u>FY1999</u>	<u>FY 2000</u>	<u>To Complete</u>
(U) Program Milestones		1Q SWR Phase I IOC		
(U) Engineering Milestones		2Q RSSS PIP MS III	1Q Block3.0 LATR Upgrade IOC	1Q-01 Block4.0 LATR Upgrade IOC
(U) T&E Milestones	1Q/98-4Q/98 RSSS PIP DT-II	4Q/99-1Q/00 P ³ I DT-II 4Q Block 3.0 LATR Upgrade DT III	4Q Block 4.0 LATR Upgrade DT III	
(U) Contract Milestones				

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BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER:

W0604

PROJECT TITLE:

TRID

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Miscellaneous	Various	Various	78,591	1,191	1Q/99	1,285	1Q/00	CONT.	CONT.	N/A
Development of Simulations	C/CPFF	TBD	0	0		0		5,000	5,000	5,000
Subtotal Project Development			78,591	1,191		1,285		CONT.	CONT.	
Remarks										
Miscellaneous	Various	Various	10,288	217	1Q/99	250	1Q/00	CONT.	CONT.	N/A
Subtotal Support			10,288	217		250		CONT.	CONT.	
Remarks										
Miscellaneous	Various	Various	0	685	1Q/99	100	1Q/00	CONT.	CONT.	N/A
Subtotal Test & Evaluation			0	685		100		CONT.	CONT.	
Remarks										
Subtotal Management			0	0		0		0	0	
SBIR Assessment				20					20	
Remarks										
Total Cost			88,879	2,113		1,635		CONT.	CONT.	

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W1998

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Joint Tactical Combat Training System (JTCTS)

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W1998 Joint Tactical Combat Training System (JTCTS)	31,277	9,412*	7,871	7,933	6,048	5,115	5,244	5,363	CONT.	CONT.
TOTAL	31,277	9,412	7,871	7,933	6,048	5,115	5,244	5,363	CONT.	CONT.
Quantity of RDT&E Articles	12	0	0	1	0	7	7	0	CONT.	CONT.

* Controls reflect a \$2.5M Congressional add for LATR/KITS integration technical evaluation to be executed under project unit W2660.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Tactical Combat Training System (JTCTS) is planned to provide fixed, transportable, and mobile range instrumentation equipment for the USN and USAF for both shore-based and deployable applications. The fixed application provides shore-based tactical aircrew training while the mobile application will provide deployable at-sea single platform to multi-platform (surface ship, submarine and aircraft) and Naval Expeditionary Force multi-warfare training. To accomplish this, the JTCTS instrumentation is being designed to develop and transmit exercise scenarios; simulate/stimulate all exercise participants sensors/weapons with the exercise scenario, track all exercise participants and events, e.g., weapons engagements; and provide accurate, realistic, and timely exercise feedback. JTCTS is building on technology developed for existing Tactical Training Ranges Systems including the Tactical Aircrew Combat Training System, Mobile Sea Range, Large Area Tracking Range, and the capabilities developed for the in-port Battle Force Tactical Training Program. JTCTS incorporates the Defense Modeling and Simulation Office sponsored Distributed Interactive Simulation protocol data unit and the Higher Level Architecture for interoperability with Navy and other service live, virtual (simulators), and constructive (war games) simulations.

Based on the reduced funding profile that has occurred since the FY98 President's Budget, the JTCTS program has been restructured. The program schedule has been restructured to a more evolutionary approach which develops/fields a mobile, rangeless capability first; followed by the development/fielding of a fixed air range capability and finally the development/fielding of a fleet battle group capability. The first part of the approach additionally will meet an urgent fleet requirement for a mobile rangeless air combat capability delivered to Carrier Air Wing Five (CVW-5) in FY00. The CVW-5 requirement will be met by leaving in

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PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Joint Tactical Combat Training System (JTCTS)

place the JTCTS development prototype after operational testing with CVW-5, thus providing an interim training capability to CVW-5 after fully testing the system within a robust operational environment. The mobile rangeless engineering and manufacturing development (E&MD) system consists of a "core" for mission control and debrief capability and 12 participant instrumentation packages (PIPs).

The fixed range phase will begin development in FY01 and continue into FY03. The fixed range "core" will build upon the mobile "core" resulting in a greatly enhanced version that will interface with existing training range systems such as the Integrated Air Defense system. The fixed range phase will culminate in the testing and development of the E&MD core to the Naval Strike Air Warfare Center, NAS Fallon NV. The "core" and interfaces will be supplemented by 115 PIPs procured with Aircraft Procurement Navy (APN) funding. This E&MD system will be left in place to satisfy fleet requirements to replace the aging TACTS system at NSAWC Fallon.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$26,387) Continued contract for engineering and manufacturing development (E&MD) for the mobile rangeless capability to include, software/hardware development, site/platform integration, development testing and hardware manufacturing. Supported government testing.
- (U) (\$ 4,890) Monitored contractor software development, hardware/software integration, development testing and hardware manufacturing. Began government development testing. Prepared platform site for integration development testing.

2. FY 1999 PLAN:

- (U) (\$3,115) Continue the E&MD portion of the contract for the mobile rangeless capability to include software/hardware development and contractor acceptance testing.
- (U) (\$2,707) Conduct system platform integration testing. Continue government development operational testing.
- (U) (\$1,000) Monitor contractor progress and coordinate subsystem development/test.
- (U) (\$ 96) Portion of extramural program reserved for Small Business Innovation Research Assessment in accordance with 15 USC 638.
- (U) (\$2,494) Conduct a LATR/KITS integration technical evaluation (project unit W2660).

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W1998

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT TITLE: Joint Tactical Combat Training System (JTCTS)

3. FY 2000 PLAN:

- (U) (\$3,900) Deliver and install mobile rangeless system on CV-63/CVW-5.
- (U) (\$3,971) Complete government development operational testing. Monitor contractor hardware/software development and hardware/software integration. Leave prototype JTCTS system in place for fleet use.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	32,365	6,942	7,910
(U) Appropriated Value:	33,967	9,442	
(U) Adjustments from President's Budget:	-1,088	+2,470	-39
(U) FY 2000 President's Budget Submit:	31,277	9,412	7,871

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY98 decrease of -\$1,088 thousand is based on a \$720 thousand reduction for Small Business Innovative Research Assessment, a \$364 thousand reduction for Navy's reprioritization of requirements and a \$4 thousand reduction for a minor pricing adjustment. The FY99 increase of \$2,470 thousand reflects a Congressional add of \$2,500 thousand for LATR/KITS integration executed under W2660. This increase is partially offset by a -\$24 thousand decrease for Congressional undistributed reductions and -\$6 thousand for minor pricing adjustments under W2660. The FY00 decrease of -\$39 thousand reflects pricing adjustments.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT NUMBER: W1998

PROJECT TITLE: Joint Tactical Combat Training System (JTCTS)

CHANGE SUMMARY EXPLANATION CONT.:

(U) Schedule: The following milestones have been changed due to program restructure.

From	To
MS III 1Q/02	MS III 4Q/00
SW PDR 3Q/98	SW PDR 4Q/98
SW CDR 4Q/98	SW CDR 1Q/99

The following milestone has been added:

FRP Contract Award 1Q/01

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1998 Budget	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
(U) OPN/P-1 Weapons Range Support Equipment	0	0	0	0	4,400	2,900	3,906	2,898	CONT.
(U) APN/P-1 Other Production Charges	0	0	16,269	17,339	14,776	15,387	15,764	16,099	CONT.

Related RDT&E

(U) P.E.: Joint program with USAF Program Element 0604735F

(U) C. ACQUISITION STRATEGY: Due to the restructured acquisition program, we plan on maintaining a cost plus award fee (CPAF) contract for the E&MD and FOT&E efforts through each phase of JTCTS development. Final strategy is pending finalization of program restructure.

(U) D. SCHEDULE PROFILE: See attached milestone chart.

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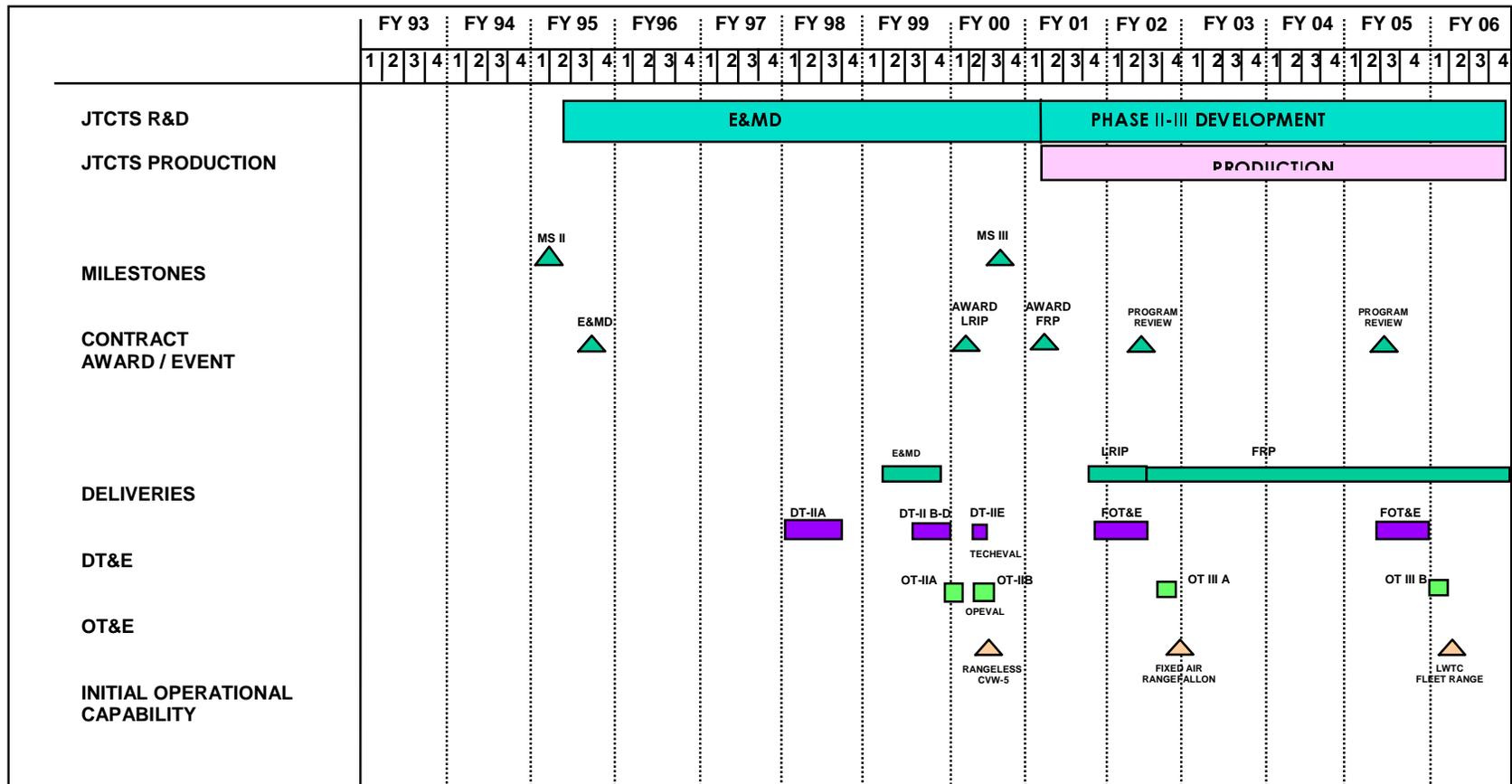
DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N
PROGRAM ELEMENT TITLE: Consolidated Training Systems

PROJECT NUMBER: W1998
PROJECT TITLE: Joint Tactical Combat Training

JTCTS PROGRAM SCHEDULE



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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER:

W1998

PROJECT TITLE:

JTCTS

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Mobile Rangeless EDM Development	CPAF	Raytheon	78,278	3,115	1Q/99	3,500	1Q/00	0	84,893	84,893
Award Fee	CPAF	Raytheon	5,714	0	N/A	0	N/A	0	5,714	5,714
Fixed Range EDM Development	CPAF	Raytheon	0	0	0	0	N/A	CONT.	CONT.	
Award Fee	CPAF	Raytheon	0	0	0	0	N/A	CONT.	CONT.	
Miscellaneous	Various	Various	24,863	1,864	1Q/99	2,751	1Q/00	CONT.	CONT.	N/A
LATR/KITS Integration	TBD	TBD	0	2,494	TBD					
Subtotal Project Development			108,855	7,473		6,251		CONT.	CONT.	
Remarks										
Percent of award fee that was actually awarded in prior years is 54% (3.1M).										
Miscellaneous	Various	Various	8,290	1,000	1Q/99	484	1Q/00	CONT.	CONT.	N/A
Subtotal Support			8,290	1,000		484		CONT.	CONT.	
Remarks										
Miscellaneous	WX	NAWC AD PAX	1,361	843	1Q/99	1,136	1Q/00	CONT.	CONT.	N/A
Subtotal Test & Evaluation			1,361	843		1,136		CONT.	CONT.	
Remarks										
Subtotal Management			0	0		0		0	0	
SBIR Assessment				96					96	
Remarks										
Total Cost			118,506	9,412		7,871		CONT.	CONT.	

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W2124

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Air Warfare Training Development

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2124 Air Warfare Training Development	1,719	1,847	2,131	2,192	1,961	2,189	2,246	2,298	CONT.	CONT.
TOTAL	1,719	1,847	2,131	2,192	1,961	2,189	2,246	2,298	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project develops new training system technologies for use in naval aviation training. Products from this effort directly support the Marine Corps Aviation Simulation Master Plan and will support the development and design of future naval aviation training/mission rehearsal systems. Tasks include: 1) Advanced training systems development to provide for transportable, modular, High Level Architecture (HLA) compliant, high fidelity mission rehearsal capabilities. Mission rehearsal is defined as the practice of planned tasks and functions critical to mission success using a true-to-life, interactive representation of the expected operating environment. Technologies to be developed and integrated include helmet mounted and/or flat panel displays, photographic quality image generation, advanced environmental effects models, radar/infra-red/electro-optic and acoustic sensor simulations; and 2) the Aviation Training Technology Integration Facility (ATTIF) which is a man-in-the-loop testbed for the integration of software, hardware, and networked systems. ATTIF will include a HLA node for participation in fleet exercise synthetic battlespace. This ATTIF capability provides a window to fleet aviators for critical comment, evaluation, and fine tuning of new and innovative technology before it is fielded.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W2124

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Air Warfare Training Development

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$384) Developed initial performance level specification for Mission Rehearsal image generators.
- (U) (\$568) Determined core sensor, environmental, and threat modeling performance level specifications.
- (U) (\$215) Achieved preliminary integration of display, image generator, and effects modeling systems (ATTIF).
- (U) (\$552) Increased operational capability of ATTIF for networking/HLA test node.

2. FY 1999 PLAN:

- (U) (\$525) Develop Image Generator performance specifications for rehearsal, training, and networkable PCs.
- (U) (\$320) Develop baseline night vision device (NVD) simulation performance specifications.
- (U) (\$886) Reach IOC for ATTIF networkable, reconfigurable mission rehearsal device.
- (U) (\$110) Determine specification-level database attributes for IR, environmental, and special effects modeling.
- (U) (\$ 6) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. FY 2000 PLAN:

- (U) (\$505) Develop NVD simulation performance specifications for legacy systems integration.
- (U) (\$282) Demonstrate/evaluate combat special effects modeling (ATTIF).
- (U) (\$120) Develop draft performance specifications for combat special effects modeling.
- (U) (\$624) Demonstrate low-cost, networkable, PC-based IGs with photo-realistic databases (ATTIF).
- (U) (\$600) Develop initial performance specifications for modular weapons systems simulation.

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W2124

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Air Warfare Training Development

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	1,972	2,053	2,167
(U) Appropriated Value:	2,106	2,053	
(U) Adjustments from President's Budget:	-253	-206	-36
(U) FY 2000 President's Budget Submit:	1,719	1,847	2,131

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY98 adjustment of -\$253 thousand reflects a reprogramming of \$222 thousand for other Navy priorities and a Small Business Innovative Research (SBIR) assessment of -\$31 thousand. The FY99 adjustment of -\$206 thousand reflects Congressional undistributed reductions. The FY00 adjustment of -\$36 thousand reflects minor pricing adjustments.

(U) Schedule: N/A

(U) Technical: N/A

(U) C. OTHER PROGRAM FUNDING SUMMARY (Dollars in Thousands)

<u>Appn</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
APN Line 51 COMMON GROUND EQUIPMENT (USMC Aviation Simulation Master Plan)	0	0	31,373	10,592	42,871	22,784	10,264	0	117,184

Related RDT&E

(U) P.E. 0603707N, Project # R1773, Sub-Project Title: Transportable Strike Assault Rehearsal System (T-STARS)

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DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W2124

PROGRAM ELEMENT TITLE: Consolidated Training Systems
Development

PROJECT TITLE: Air Warfare Training Development

(U) D. ACQUISITION STRATEGY:

This is a non-acquisition program with no specific acquisition strategies.

(U) E. SCHEDULE PROFILE

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) Program Milestones			1Q Implement integration plan
(U) Engineering Milestones	4Q Perf Spec Sensors & FOV	3Q PC IG Sensor Sim	2Q PC IG Perf Spec
(U) T&E Milestones	4Q Prelim ATTIF capability	4Q IOC ATTIF network PC IG demo	3Q PC IG photo-realistic Db
() Contract Milestones			

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: W2124

PROJECT TITLE: Air Warfare Training Development

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
	MIPR/WX	Miscellaneous	7186	895	11/98	1259	11/99	CONT.	CONT.	
Subtotal Product Development			7,186	895		1,259		CONT	CONT	
Remarks:										
	RC	GenPhysics Fairfax, VA	749	100	11/98	110	11/99	CONT.	CONT.	
Subtotal Support			749	100		110		CONT.	CONT	
Remarks:										
	WX	Misc/ATTIF	1,154	815	11/98	731	11/99	CONT	CONT	
Subtotal Test & Evaluation			1,154	815		731		CONT	CONT	
Remarks:										
	WX	NAWC-AD	710	31	11/98	31	11/99	CONT	CONT	
Subtotal Management			710	31		31		CONT	CONT	
Remarks:										
SBIR Assessment				6					6	
Total Cost			9,799	1,847		2,131		CONT	CONT	

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: X1823

PROGRAM ELEMENT TITLE: Consolidated Training Systems Development
Gaming Systems (ENWGS), Training, Modeling

PROJECT TITLE: Enhanced Naval Warfare,
Systems (TMS)

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X1823 <u>Training and Training Devices Systems (TTDS)</u>	840	0	0	0	0	0	0	0	0	13,619
*										
X1823 <u>Training and Modeling Systems (TMS)</u>	0	9,989	8,209	10,565	9,063	8,601	7,437	7,610		61,474

A (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The employment of naval forces in a multi-dimensional warfare environment is a complex operational problem. To counter the threat expected in hostile environments, naval officer training must be provided for all mission areas on a real-time basis at the Battle Force/Group level. This training must focus on tactical decision-making, tactics development/evaluation, and operational planning/execution. Shore-based classroom training and at-sea exercises have historically satisfied the Battle Group tactical training requirement. However, the effectiveness of this approach to training was reduced by the lack of a real-time decision-making environment during shore-based training and the reduction in number and scope of at-sea exercises. Training and Training Devices Systems is fulfilled by the Enhanced Naval Warfare Gaming System (ENWGS). Training and Modeling Systems is fulfilled by the Joint Simulation System (JSIMS), which will replace ENWGS.

ENWGS, with development ending in FY98, is a legacy modeling system for Navy Tier II and III training. It is in catastrophic maintenance mode pending replacement by JSIMS provides the decision-making environment and is a critical portion of the training that Battle Group Commanders and their supporting Warfare Commanders receive prior to deployment. ENWGS provides development of an enhanced wargaming/simulation capability to provide training to Battle Group Commanders and associated Warfare Commanders. ENWGS is a geographically distributed wargaming system that supports the needs and objectives of the Fleet Commanders. Through computer simulation, ENWGS assists tactical commanders in planning, executing, and evaluating Fleet operations and exercises. ENWGS also provides the ability to test the Battle Groups Operation Orders, providing the essential supplement to at-sea operations, prior to deployment. During FYs 95-98, ENWGS completed its conversion to an open systems architecture to provide software portability (Release 5.0).

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0204571N

PROJECT NUMBER: X1823

PROGRAM ELEMENT TITLE: Consolidated Training Systems Development
Gaming Systems (ENWGS), Training, Modeling

PROJECT TITLE: Enhanced Naval Warfare,

Systems (TMS)

* This amount include FY-94 - FY-98.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Simulation System (JSIMS) will replace ENWGS and provide expanded functionality. The mission of JSIMS is to provide a readily available, operationally valid synthetic environment for the Commanders-in-Chief (CINCs), their components, other Joint organizations and the Services to: jointly train, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, define operational requirements, and provide operational inputs to the acquisition process. In short, JSIMS will provide not only an improved certified capability for inter-Service operability but also an enhanced Joint Battle Staff training capability for the warfighting CINCs. All service Executive Agents (EAs) and Development Agents (DAs) are required to contribute to the initial population of the JSIMS architecture with facilities, services and tools, to meet an Initial Operational Capability (IOC) for Joint Task Force (JTF) training of no later than April 2001, and of Full Operational Capability (FOC) for all service applications no later than 2003. In keeping with the premise that the Services/components are best able to define their own capabilities and functionality, the JPO is working in concert with the Services to import Service-provided functionality such as land, air, naval and littoral warfare to JSIMS. The JPO will integrate these functionalities for use by Joint Army/Marine/Navy/Air Force exercise. JSIMS development is incremental. In June 1994 the Services and Director Joint Program Office signed a Memorandum Of Agreement (MOA) to establish JSIMS; a critical next-generation Modeling and Simulation (M&S) system. The long term goal of the agreement is to integrate the range of missions of the Armed Forces within a common framework. That framework provides a balanced melding of live, virtual and constructive M&S representations, with Command, Control, Communications, Computers and Intelligence (C4I) fully supported, and interfaces using real-world equipment. As the Maritime Warfare EA, OPNAV N7, on 29 Aug 1995, assigned NAVSEA as the JSIMS Maritime Development Agent (DA). The objective of the JSIMS Maritime portion of the JSIMS Program is to train at all levels of command, in all warfare areas, including joint and service specific training. JSIMS Maritime is developing the Maritime Mission Space Objects for the JSIMS Program, as well as selected portions of the core infrastructure and services to be determined when the Joint Object Model is partitioned. PROGRAM WAS TRANSITIONED FROM NAVSEA TO SPAWAR IN FY99.

1. (U) FY 1998 ACCOMPLISHMENTS:

- (\$840) ENWGS completed and fielded R5.0 Build 2 (TAC-4 Workstation Game Play and Game Preparation). Completed and fielded R5.0, Build 3 (Operational Interface Design (Link 11, OTH-Gold and Post Game Analysis).

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2. (U) FY 1999 PLAN:

- (\$8134) - Complete Build N1 Engineering & Development and T&E; complete Build N2 Engineering & Development. Build N3: Continue work on Domain Design, Domain Analysis, and Software Construction; initiate Database Development and Integration and Test. Initiate Version 1.1 Development.
- (\$1855) - Model/software development required to support Joint Training Federation (JTF) HQ Staff training for electro-optic sensors, Combat DF/OUTBOARD, acoustic comms, countermeasures, tactical control devices, Command and Control Warfare, littoral representation, strike warfare ops, Theater Missile Defense Command and Control, amphibious logistics, in-port replenishment, and logistics operations.

3. (U) FY 2000 PLAN:

- (\$8209) - Complete Build N1, which includes all the models and functionality required to fully meet the JSIMS ORD for IOC and conduct demonstration of functionality. Database Development, Software Construction, and Integration and Test. Continue work on Version 1.1 Development. Initiate Version 1.0 Development and Version 1.2 Development. Complete Build N1, which includes all the models and functionality required to fully meet the JSIMS-M ORD for IOC and conduct demonstration of functionality.

B. (U) PROGRAM CHANGE SUMMARY: FY-98 was decreased (-\$22K) for SBIR reduction and (-\$10K) for DD1002:April 1998 Update. Net decrease of (-\$32K). FY-99 : Baseline Issue (+\$8,167M); Additional JSIMS Development (BTR) (+\$1,855M); Sec. 8108 Revised Economic Assumptions (-\$19K); Civilian Personnel Underexecution (-\$14K)

C. (U) OTHER PROGRAM FUNDING SUMMARY; (Dollars in thousands)

	<u>FY98</u>	<u>FY99</u>	<u>FY2000</u>
OPN (TMS)		0	1,011
O&MN (TMS)		0	236
OPN (TTDS)	911	1,036	0
O&MN (TTDS)	1669	1,872	1,889

D. (U) SCHEDULE PROFILE: Not Applicable

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FY 2000 President's Budget Estimate

Exhibit R-3 Cost Analysis		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDTE/BA 7	PROGRAM ELEMENT NAME AND NUMBER Consolidated Training Systems Development - 0204571N	PROJECT NAME AND NUMBER Training & Modeling Systems (TMS) X1823

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	WR/RCP	Various	2,035	1,225	11/98	1,205	TBD			CONT	CONT	N/A
Licenses	WR/RCP	SSCSD, CA		408	11/98	412	TBD			CONT	CONT	N/A
Tooling												
GFE												
Award Fees												
Subtotal Product Development			2,035	1,633		1,617				CONT	CONT	N/A
Remarks:												
* PY Total also includes Multiple Contractors under Performing Activity												
Development Support Equipment												
Software Development	WR/RCP	SSCSD, CA	9,964	2,965	11/98	2,108	TBD			CONT	CONT	N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data	WR/RCP	SSCSD, CA*		2,543	11/98	1,636	TBD			CONT	CONT	N/A
GFE												
Subtotal Support			9,964	5,508		3,744				CONT	CONT	N/A

Remarks:												
*PY includes Multiple Contractor under Performing Activity												

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FY 2000 President's Budget Estimate

Exhibit R-3 Cost Analysis		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY RDTE/BA 7	PROGRAM ELEMENT NAME AND NUMBER Consolidated Training Systems Development - 0204571N	PROJECT NAME AND NUMBER Training & Modeling Systems (TMS) X1823

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	Fy00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/RCP	Various	1,620	408	11/98	412	TBD			CONT	CONT	N/A
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			1,620	408		412				CONT	CONT	N/A
Remarks:												
*PY includes NSWC PHD under Performing Activity												
Contractor Engineering Support	WR/RCP	SSCSD, CA*		1,111	11/98	1,161	TBD			CONT	CONT	N/A
Government Engineering Support	WR/RCP	SSCSD, CA		1,214	11/98	1,154	TBD			CONT	CONT	N/A
Program Management Support												
Program Management Personnel												
Travel	WR/RCP	SSCSD, CA		115	11/98	121	TBD			CONT	CONT	N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management				2,440		2,436				CONT	CONT	N/A
Remarks:												
* PY includes Multiple Contractors under Performing Activity												
Total Cost			13,619	9,989		8,209				CONT	CONT	N/A
Remarks:												

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