

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204571N Consolidated Training Systems Development			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		25.974	22.460	21.644	25.920	18.605	21.643	14.108
1427								
Surface Tactical Team Trainer (STTT)		8.223	14.507	8.266	5.825	5.606	5.799	6.039
2449								
Distributed Shipboard Trainer			0.988					
3087								
NSS Training System			0.290	0.391	0.293			
W0604/ Training Range and Instrumentation Development Systems (TRIDS)		3.126	2.216	2.050	2.128	2.616	2.665	2.716
W3093								
Tactical Combat Training System (TCTS)			2.819	9.461	16.165	8.563	11.324	3.461
W2124								
Air Warfare Training Development (AWTD)		1.987	1.640	1.476	1.509	1.820	1.855	1.892
X1823								
Training & Modeling Systems (TMS)		10.355						
E9271								
Integrated Training for TACAIR Fleet*		2.283						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
<p>The STTT will develop the Battle Force Tactical Training (BFTT) System to provide realistic Combat System level team training including a means to link surface ships together for coordinated Unit and Battle Group level training using Distributed Interactive Simulation (DIS) . The migration of selected modules of the BFTT software to Windows NT from UNIX OS is underway. The Congressional adds initiate the development of the Distributed Shipboard Classroom which provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. The Navigation Seamanship and Shiphandling (NSS) Training System effort develops integrated COTS based navigation and shiphandling trainers to support navigation team training in Fleet Concentration Areas, as well as developing and integrating shipboard virtual reality shiphandling trainers for use onboard surface ships.</p> <p>The Training Range and Instrumentation Development Systems (TRIDS) program provides development of many range systems including range electronic warfare simulator, advanced weapons training systems, laser training systems, Tactical Aircrew Combat Training System (TACTS), Large Area Tracking Range (LATR), combat training system improvements and shallow water range technology.</p>								

R-1 SHOPPING LIST - Item No.

172

UNCLASSIFIED

 Exhibit R-2, RDTEN Budget Item Justification
 (Exhibit R-2, page 1 of 37)

UNCLASSIFIED

CLASSIFICATION:

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<p>The AWTD program provides development of many aviation training systems including mission rehearsal simulation technologies, and the Aviation Training Technology Integration Facility (ATTIF).</p> <p>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.</p> <p>The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) system. TCTS will also provide fleet deployable instrumentation for at sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a Non-Developmental Item (NDI) Pod system is planned at NAS Key West. The program incorporates an evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure datalink.</p>		

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 37)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		8.223	15.785	8.657	6.118	5.606	5.799	6.039
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>*Includes Congressional Plus up funding for: 2449 DSC; **Includes Re-Engineering Funds Alignment 3087.</p> <p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>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. BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization. BFTT provides a baseline capability/system that meets the Operational Requirements Document (ORD). Stimulators/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. BFTT software modules are being migrated from UNIX/TAC to a Windows-NT/PC Operating System (OS). The Distributed Shipboard Classroom provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. It initiates development of the active electronic countermeasures training capability to BEWT and to the BFTT software. NSS Training System effort develops integrated COTS based navigation and shiphandling trainers to support navigation team training in Fleet Concentration Areas, as well as developing and integrating shipboard virtual reality shiphandling trainers for use onboard surface ships.</p>								

R-1 SHOPPING LIST - Item No.

172

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B. Accomplishments/Planned Program															
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <th style="width: 30%;"></th> <th style="width: 20%;">FY 03</th> <th style="width: 20%;">FY 04</th> <th style="width: 30%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">8.171</td> <td style="text-align: center;">9.196</td> <td style="text-align: center;">5.714</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> </table> <div style="border: 1px solid black; padding: 10px; min-height: 150px;"> <p>Continue to develop BFTT Link simulation software; develop/integrate new s/w capabilities and system interfaces; develop BG level Display and Debrief software; NTMF integration; BFTT Shore s/w development; Training I/F development for CG47-58 (AEGIS B/L 1 & 2); shock test; debrief s/w development and Fleet Battle Experiments; develop BFTT AIC training for AEGIS; Develop BFTT/TSSS Training on FFG CORTS; CMTpc Integration; Database Architecture & Content Improvements; Common Operating Procedure (COP) for Over The Horizon (OTH) Maritime Data; Common Operating Picture for LAWEX; Fleet Generated Requirements for B/L 2.0/2.1 and Improvements to B/L 2.2 and 2/3; Objective Based Training (Integrated Phase I/II); Readiness Measurement; JSAF Integration into BFTT (1st phase): BFTT-to-Sea (multi-ship demo); database Architecture & Content Improvements; JSAF Modifications for EW (2nd Phase); Database Improvements; AEGIS B/L 7 phase 1C; SQQ-89 Weapons Control; Scenario/Data Management via SIPRNET; Remote Reset of OBTs from BOPC; Improved Data Collection; Integrate Shore Based Aviation Trainers (E-2C, SH-60B, and P3-C). Embedded TBMD Training and JSIMS Integration/engineering will be developed after FY05. All shore based combat system team trainer funding was curtailed in FY94, therefore, BFTT is the Fleets only combat system level team training capability.</p> </div>					FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	8.171	9.196	5.714	RDT&E Articles Quantity	N/A	N/A	N/A
	FY 03	FY 04	FY 05												
Accomplishments/Effort/Subtotal Cost	8.171	9.196	5.714												
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	FY 03	FY 04	FY 05												
Accomplishments/Effort/Subtotal Cost	0.052	1.680	1.562												
RDT&E Articles Quantity	N/A	N/A	N/A												

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

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B. Accomplishments/Planned Program (Cont.)			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.988	0.000
RDT&E Articles Quantity	N/A	N/A	N/A
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"> <p>Congress appropriated and authorized funding for development of the Distributed Shipboard Classroom in conjunction with the Battle Force Tactical Training Improvement Program. The Distributed Shipboard Classroom provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. The pilot project will provide an opportunity to assess the acceptance of Sailors and shipboard instructors to utilizing multimedia communications technology to accomplish individual and group training in the 24X7 work day at sea.</p> </div>			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.991	0.990
RDT&E Articles Quantity	N/A	N/A	NA
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"> <p>Funding is being provided specifically for TOMAHAWK operator and team training development and integration into BFTT.</p> </div>			

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

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	FY 03	FY 04	FY 05																								
Accomplishments/Effort/Subtotal Cost	0.000	2.640	0.000																								
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R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

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C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	8.414	14.969	8.766
Current BES/President's Budget:	8.223	15.785	8.657
Total Adjustments	-0.191	0.816	-0.109

Summary of Adjustments

FY03 SBIR	-0.170		
BSO Adjustments	-0.021		
Management Improvements		-0.043	
FFRDC Reduction		-0.005	
NWCF Rates - NSWC Rates			-0.117
NWCF Rates - NUWC Rates			-0.004
WCF - NSWC			0.017
Rates - NSWC			0.027
Inflation			-0.028
Technical Adjustments			-0.004
Distributed Shipboard Classroom		1.000	
Sec 8126: Efficiencies/Revis		-0.136	
Subtotal	-0.191	0.816	-0.109

Schedule:
Not Applicable.

Technical:
Not Applicable.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/2449/3087)			

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 276200 (Surface BFTT portion only)	15.77	39.244	35.789	13.13	2.244	0	0	0	106.177

E. ACQUISITION STRATEGY:

The BFTT acquisition strategy for system development utilizes the spiral development model, as mandated by OSD. Incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible, is in accordance with the BFTT ACAT IVM Milestone III approved documentation.

F. MAJOR PERFORMERS:

NSWC Crane, Crane, IN - BFTT System Engineering, Integration, and Testing -Award Dates 01/03
 CDSA Dam Neck, Dam Neck, VA - BFTT Software Development Activity Award Dates 01/04
 Department of Interior, Minerals Management, Govworks - Contracting Office Award Dates 01/05

R-1 SHOPPING LIST - Item No. 172

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S3087)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	*	AAI/MD & EWA/WV/ Govworks	11.498							0.000	11.498	11.498
Ancillary Hardware Development	WR	NSWC Crane/ Govworks	0.999							0.000	0.999	0.999
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	**	CDSA/NSWC Crane/ Govworks	19.551	1.244	01/03	2.736	01/04	1.135	01/05	Continuing	Continuing	N/A
Training Development						0.000		0.000			0.000	
Licenses	WR/RCP	CDSA/NSWC Crane/ Govworks	2.169	0.173	01/03	1.321	01/04	0.142	01/05	Continuing	Continuing	N/A
Tooling											0.000	
GFE			2.497							0.000	2.497	2.497
Award Fees			0.357							0.000	0.357	0.357
Subtotal Product Development			37.070	1.417		4.057		1.277		Continuing	Continuing	
Remarks: * AAI Contract Award 3/98 CPIF; EWA Contract Award 6/98 CPFF ** WR/RCP/MIPR/IPR												
Development Support											0.000	
Software Development	*	NAWC TSD/CDSA/Govworks	37.011	4.687	01/03	8.142	01/04	5.488	01/05	Continuing	Continuing	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	*	NAWC TSD/NSWC Crane/Govworks	8.807	0.850	01/03	1.415	01/04	0.946	01/05	Continuing	Continuing	N/A
GFE											0.000	
Award Fees											0.000	
Subtotal Support			45.818	5.537		9.557		6.434		0.000	67.347	
Remarks: *WR/RCP/MIPR/IPR												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0204571N Consolidated Training Systems Development				1427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S3087)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	*	NSWC Crane/NAWC TSD/ CDSA/Govworks	3.702	0.540	01/03	1.227	01/04	0.426	01/05	Continuing	Continuing	N/A
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			3.702	0.540		1.227		0.426		Continuing	Continuing	N/A
Remarks: *WR/RCP/MIPR/IPR												
Contractor Engineering Support											0.000	
Government Engineering Support	*	CDSA/NSWC Crane/ Govworks	2.679	0.729	01/03	0.944	01/04	0.520	01/05	Continuing	Continuing	N/A
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.679	0.729		0.944		0.520		Continuing	Continuing	N/A
Remarks: *WR/RCP/MIPR/IPR												
Total Cost			89.269	8.223		15.785		8.657		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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RDT&E, N / BA-7		0204571N Consolidated Training Systems Development			W0604 Training Range and Instrumentation Development (TRID)				
COST (\$ in Millions)			FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			3.126	2.216	2.050	2.128	2.616	2.665	2.716
RDT&E Articles Qty									
<p>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, Tactical Aircrew Combat Training System (TACTS), Large Area Tracking Range (LATR) improvements, combat training systems improvements, underwater technology, ranges interoperability and information architecture, and assorted Advanced Weapons Training Systems (AWTS), such as Imaging Weapons Training System (IWTS), Remote Strafe Scoring System (RSSS), and weapon and countermeasure simulations for use with various range training systems.</p>									

R-1 SHOPPING LIST - Item No.

172

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 11 of 37)

UNCLASSIFIED

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W0604 Training Range and Instrumentation Development (TRID)		
(U) B. Accomplishments/Planned Program				
Large Area Tracking Range (LATR)		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.442	1.059	0.598
RDT&E Articles Quantity				
<p>Developed Block 4.0 software upgrade, analyzed range integration requirements, and developed hardware upgrades. Redesigned, integrated and tested modules to eliminate obsolete components on the LATR power conditioner. Complete operational test and evaluation and integration of Block 4.0 software upgrade. Complete design, integration, and test of participant instrumentation packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conduct and complete vulnerability testing of the Ground System Rehost. Conduct and complete security testing and assessment for LATR system certification and accreditation for Ground System Rehost. Initiate and complete development, test and integration of software and hardware modifications to system test sets.</p>				
Combat Training Systems Development		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.684	1.157	1.452
RDT&E Articles Quantity				
<p>Developed additional training capabilities for the Control and Computational Subsystem (CCS), Personal Computer Based Joint Display Subsystem (JDS), and developed a formalized interface between the CCS and Large Area Tracking Range (LATR). Complete Semi-annual CCS Block upgrades. Complete Test Set Upgrade and system rehost. Complete formalization of CCS/LATR integration.</p>				

R-1 SHOPPING LIST - Item No. 172

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(U) C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
(U) Funding:			
Previous President's Budget:	3.065	2.241	2.057
Current President's Budget	3.126	2.216	2.050
Total Adjustments	0.061	-0.025	-0.007
Summary of Adjustments			
SBIR/STTR	-0.038	-0.025	
Reprogrammings	0.099		
Economic Assumptions			
Reprioritization			-0.007
Subtotal	0.061	-0.025	-0.007

(U) Schedule: The following milestones have changed and deleted to better reflect program status:

CHANGED:	From: PCADDS (JDS) IOC 4Q/02 Block Upgrade 6.0 IOC 1Q/04 LATR/TACTS Interface 1Q/04	To: PCBJDS IOC 2Q/04 Semi-Annual Block Upgrades IOC 3Q/06 LATR/TACTS Interface 3Q/04
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DELETED:

(U) Technical:	N/A Common Advanced Display Market Survey 3Q/04 Spec Development 2Q/05 Contract 3Q/05 IOC 1Q/07
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R-1 SHOPPING LIST - Item No. 172

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME W0604 Training Range and Instrumentation Development (TRID)				
(U) D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Related OPN:	0.047	0	0	0	0	0	0	Cont.	
Related RDT&E: Not Applicable									
 (U) E. ACQUISITION STRATEGY:									
<p>The Training Range and Instrumentation Development (TRID) program is a non-ACAT program. The integrated program teams that develop new TRID capabilities include contractors whose products and services are obtained by means of competitive awards, Indefinite Deliveries/Indefinite Quantity (IDIQ), and cost-type contracts. Individual delivery orders are awarded for specific development efforts.</p>									

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CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Trai		W0604 Training Range and Instrumentation Development (TRID)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering and Software Development (Misc. < \$1M)	Various	Various	81.066							0.000	81.066	
Primary Hdw Dev. Electronics	Various	Various	0.450	0.598	1Q/03	0.256	1Q/04	0.078	1Q/05	Continuing	Continuing	
Aircraft Integration	Various	Various	0.107	0.085	1Q/03	0.072	1Q/04	0.036	1Q/05	Continuing	Continuing	
Systems Engineering	Various	Various	0.177	0.096	1Q/03	0.084	1Q/04	0.098	1Q/05	Continuing	Continuing	
Licenses	Various	Various	0.004	0.004	1Q/03					Continuing	Continuing	
Subtotal Product Development			81.804	0.783		0.412		0.212		Continuing	Continuing	
Remarks:												
Development Support (Misc. <\$1M)	Various	Various	6.759	0.338	1Q/03	0.200	1Q/04	0.289	1Q/05	Continuing	Continuing	
Software Dev. Electronics	Various	Various	1.044	0.637	1Q/03	0.429	1Q/04	0.575	1Q/05	Continuing	Continuing	
Integrated Logistics Support	Various	Various	0.070	0.070	1Q/03	0.067	1Q/04	0.070	1Q/05	Continuing	Continuing	
Configuration Management	Various	Various	0.080	0.085	1Q/03	0.054	1Q/04	0.080	1Q/05	Continuing	Continuing	
Technical Data	Various	Various	0.010		1Q/03	0.075	1Q/04			Continuing	Continuing	
Studies & Analysis	Various	Various		0.359	1Q/03	0.100	1Q/04	0.150	1Q/05	Continuing	Continuing	
Subtotal Support			7.963	1.489		0.925		1.164		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-3, Project Cost Justification
(Exhibit R-3, Page 15 of 37)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204571N Consolidated Trai		PROJECT NUMBER AND NAME W0604 Training Range and Instrumentation Development (TRID)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (Misc. <\$1M)	Various	Various	3.918	0.187	1Q/03	0.192	1Q/04	0.160	1Q/05	Continuing	Continuing	
Operational Test & Evaluation	Various	Various	0.212	0.168	1Q/03	0.314	1Q/04	0.239	1Q/05	Continuing	Continuing	
Test Assets	Various	Various	0.022	0.076	1Q/03	0.056	1Q/04	0.006	1Q/05	Continuing	Continuing	
Subtotal T&E			4.152	0.431		0.562		0.405		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various	0.125	0.100	1Q/03	0.077	1Q/04	0.076	1Q/05	Continuing	Continuing	
Government Eningeering Support	Various	Various	0.265	0.172	1Q/03	0.124	1Q/04	0.093	1Q/05	Continuing	Continuing	
Program Mangement Support	Various	Various	1.773	0.088	1Q/03	0.091	1Q/04	0.080	1Q/05	Continuing	Continuing	
Travel	Various	Various	0.020	0.025	1Q/03	0.025	1Q/04	0.020	1Q/05	Continuing	Continuing	
SBIR Assessment				0.038								
Subtotal Management			2.183	0.423		0.317		0.269		Continuing	Continuing	
Remarks:												
Total Cost			96.102	3.126		2.216		2.050		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 16 of 37)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE:								
Large Area Tracking Range (LATR)																				February 2004								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
RDT&E, N / BA-7					0204571N Consolidated Training Systems Development										W0604 (TRID) Large Area Tracking Range													
Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																												
Block 4.0 LATR Upgrade																												
Block 4.0 LATR Upgrade DT-III																												
LATR Power Conditioner OT&E																												
LATR Multi-GIS OT&E																												
LATR GPS REC OT&E																												
LATR ADIU OT&E																												
LATR Recertification																												
Block 5.0 LATR Upgrade																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 172

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
(Exhibit R-4, page 17 of 37)

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CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 18 of 37)

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 172

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
(Exhibit R-4, page 19 of 37)

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 20 of 37)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			2.819	9.461	16.165	8.563	11.324	3.461
RDT&E Articles Qty			4	2	1			
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Combat Training System will provide the Navy a replacement for major portions of the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) system. TCTS will also provide fleet deployable training for at sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a Non-Developmental Item (NDI) Pod system is planned at NAS Key West. The program incorporates an evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure data link.</p>								

R-1 SHOPPING LIST - Item No.

172

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 21 of 37)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)																
B. Accomplishments/Planned Program																		
<table border="1"><tr><td>Tactical Combat Training System</td><td></td><td>FY 03</td><td>FY 04</td><td>FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.000</td><td>2.819</td><td>9.461</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td>4</td><td>2</td></tr></table>				Tactical Combat Training System		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.000	2.819	9.461	RDT&E Articles Quantity			4	2
Tactical Combat Training System		FY 03	FY 04	FY 05														
Accomplishments/Effort/Subtotal Cost		0.000	2.819	9.461														
RDT&E Articles Quantity			4	2														
<p>Qualify and complete the NDI Rangeless Pod system for use at small range. Develop and deliver Integrated Logistics products for fielding the NDI pod at NAS Key West. Develop F/A-18 (C/D/E/F) Internal Subsystem (IS). Initiate testing of TCTS system for deployed airwing training. Initiate development of instrumentation package for rotary wing and transport aircraft. Develop and implement track exchange interface between TCTS live monitor and TACTS Control and Computation Subsystem (CCS). Define Test and Training Enabling Architecture (TENA) compliant interface between TCTS and an Advance Display System. Develop and deliver Integrated Logistics products for the IS and for fielding the TCTS system aboard deployed carriers.</p>																		

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 22 of 37)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)

C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
Funding:			
Previous President's Budget:	0.000	2.851	7.862
Current President's Budget:	0.000	2.819	9.461
Total Adjustments	0.000	-0.032	1.599
Summary of Adjustments			
Congressional Undistributed Reductions		-0.032	
Economic Adjustments			0.023
Reprioritization			1.576
Subtotal	-0.032	1.599	

Schedule: The following milestones have changed to better reflect program status:

To:	From:
Phase 1 NDI Transportable (TGS, AS) FY04 1Q/4Q	Phase 1 NDI Transportable (TGS, AS) FY04 2Q/4Q
Phase 2 Shipboard (SGS, IS) FY04 1Q/4Q	Phase 2 Shipboard (SGS, IS) FY04 2Q/4Q

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 172

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)				
D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u>	Total <u>Cost</u>
Related OPN:	0	1.188	2.291	3.780	8.402	6.450	7.525	Cont.	
Related APN:	0	7.217	8.505	15.002	19.311	22.609	28.072	Cont.	
 E. ACQUISITION STRATEGY:									
TCTS will employ an evolutionary acquisition strategy to procure a base Non-Developmental Item System and evolutionary development of the system to meet the full Ord requirements. TCTS will be a cooperative program with the USAF P5 CTS program. The USAF awarded a 10 year contract in June 2003. This contract includes development options for the TCTS projects listed above.									

R-1 SHOPPING LIST - Item No. 172

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CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Trail		W3093 Tactical Combat Training System (TCTS)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hdw Dev. Electronics	CPIF	Cubic, San Diego				1.783	1Q/04	2.415	1Q/05	6.841	11.039	11.039
Subtotal Product Development						1.783		2.415		6.841	11.039	
Remarks:												
Software Dev. Electronics	CPIF	Cubic, San Diego						3.411	1Q/05	34.661	38.072	38.072
Integrated Logistics Support	Various	Various				0.230	1Q/04	0.579	1Q/05	Continuing	Continuing	
Subtotal Support						0.230		3.990		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-3, Project Cost Justification
(Exhibit R-3, Page 25 of 37)

UNCLASSIFIED

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)							DATE: February 2004					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT PROJECT NUMBER AND NAME									
RDT&E, N / BA-7			0204571N Consolidated Trail W3093 Tactical Combat Training System (TCTS)									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (Misc. <\$1M)	WX	NAWC-AD PR				0.082	1Q/04	0.833	1Q/05	Continuing	Continuing	
Test Assets												
Subtotal T&E						0.082		0.833				
Remarks:												
Contractor Engineering Support	CPIF	Cubic, San Diego				0.040	1Q/4Q	0.518	1Q/05	0.562	1.120	1.120
Government Engineering Support	WX	NAWC-AD PR				0.384	1Q/04	1.300	1Q/05	Continuing	Continuing	
Program Mangement Support	WX	NAWC-AD PR				0.240	1Q/04	0.310	1Q/05	Continuing	Continuing	
Travel	WR	NAWC-AD PR				0.060	1Q/04	0.095	1Q/05	Continuing	Continuing	
Subtotal Management						0.724		2.223		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		2.819		9.461		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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EXHIBIT R4, Schedule Profile

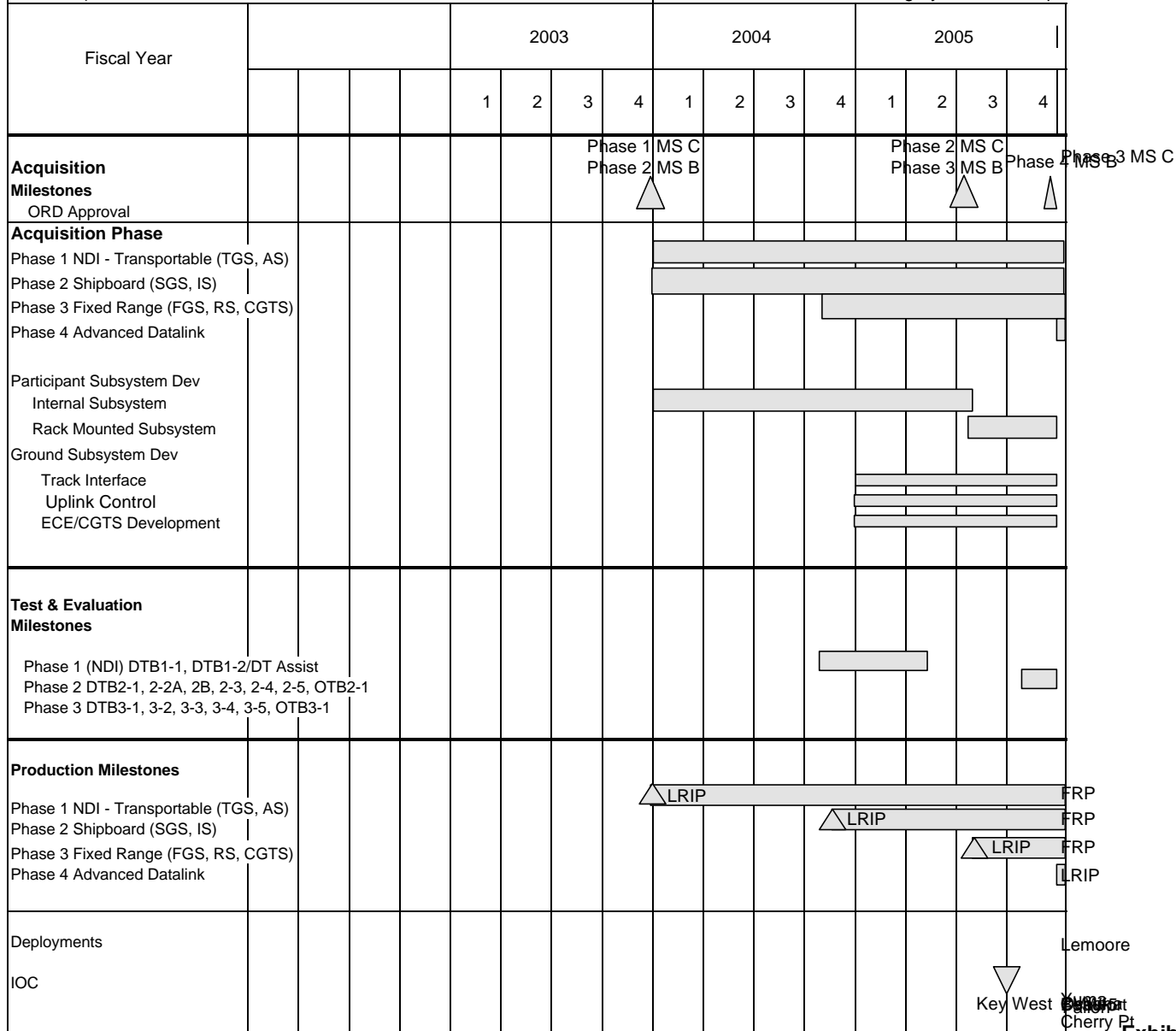
APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

RDT&E, N /

BA-7

0204571N Consolidated Training Systems Development



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R-1 SHOPPING LIST - Item No. 172

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 27 of 37)

* Not required for Budget Activities 1, 2, 3, and 6

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[illegible]

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 28 of 37)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME W2124/Air Warfare Training Development			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		1.987	1.640	1.476	1.509	1.820	1.855	1.892
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project transitions new training system technologies for use in naval aviation training. Products from this effort are directly tied to the Navy and Marine Corps Aviation Simulation Master Plans (\$479M), the MH-60R/S master plan, the Multi-Mission Maritime Aircraft (MMA) program, and will support the development and design of future naval aviation training/mission rehearsal systems. Tasks include: 1) Advanced training systems specification development to provide for modular, High Level Architecture (HLA) compliant, high fidelity Distributed Mission Training (DMT) and mission rehearsal capabilities, ashore and afloat. 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: 1) DMT weapons server, weather server, common mission training stations, high resolution helmet mounted, and/or flat panel displays, photographic quality image generation, portable source initiative (PSI) database reuse, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, physics-based IR stimulations; and 2) the Aviation Training Technology Integration Facility (ATTIF), which is a man-in-the-loop test bed for the integration of software, hardware, and networked systems. New technologies will include intelligent computer generated forces (CGFs) as virtual and constructive entities for threat or friendly interaction. Additionally, "man-in-the-loop" intelligent agents will be integrated to the ATTIF, including an HLA node for participation and benchmarking fleet exercises in the synthetic battle space. This ATTIF capability provides a window to fleet aviators for critical comment, evaluation, and fine tuning of new and innovative technologies before final transition to the Fleet. Debrief/AAR and intelligent training support tools are focused on human performance enhancements for Fleet readiness exercises.

Metrics - These technology transitions will both lower total ownership costs (TOC) of the training systems (life-cycle visual system database re-use, reduced instructor manning profiles, software-based fidelity enhancements), and increase fleet readiness by enhancing overall system fidelity to the projected operating environments. NASMP/MCSMP readiness improvements are conservatively forecast at 14-28% following associated technology upgrades to stand alone, or networked simulators.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development		
B. Accomplishments/Planned Program				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.860	0.623	0.372
RDT&E Articles Quantity				
<p>Develop and integrate (ATTIF) modular architecture components for Navy DMT, deployable E-2C crew station, intelligent synthetic forces, and tactical scenario control. Demonstrate low-cost DMT configurations, while maintaining or increasing fidelity. Demonstrate low cost training and mission rehearsal configurations and evaluate variable fidelity cockpits. Demonstrate instructor support technology including advanced scenario generation, multi-SAF control, automated measures of performance (MOP), and debrief/AAR products for NASMP. Analyze GOTS/COTS alternatives for network centric warfare connectivity in the simulated battlespace, while reducing training system life cycle costs.</p>				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.519	0.476	0.527
RDT&E Articles Quantity				
<p>Integrate IR (NVG & Forward Looking Infra-Red (FLIR) sensor simulation)) with Sensor Host government software. Perform risk reduction, integration and productization of Sensor host for Navy DMT and legacy devices. Demonstrate GOTS capability for cost-effective database materialization, and develop PSI/RSD specifications for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Develop texture storage, PSI material reference processes/standards, and automated applications for R/T publishing, R/T shadows, R/T combat effects, and very high resolution visuals.</p>				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.408	0.344	0.275
RDT&E Articles Quantity				
<p>Develop/specify and evaluate intelligent training support tools (ITST) for application to NASMP, MH-60R, MMA, and large scale coalition-level battle exercises. Specify, test and integrate human performance-centered design into NASMP common components, the ATTIF/DMT testbed, and deployable systems. Develop automated performance measurement and after-action review (AAR) specifications and products that increase instructor efficiency and training efficacy in a reduced instructor manning environment.</p>				

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 30 of 37)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development		
B. Accomplishments/Planned Program (Cont.)				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.200	0.197	0.302
RDT&E Articles Quantity				
<p>Provide for upgraded and modular Mission Training Station (MTS) designs to lower NASMP/platform simulator life-cycle costs, improve instructor effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate (ATTIF) modular architecture components for F/A-18 cockpit avionics, MH-60R avionics, intelligent instructor operator agents, small footprint E-2C, TACAIR/MMA common GUI initiatives, and intelligent synthetic forces. Upgrade common IOS/MTS human interface to be Joint Mission Planning System (JMPS) compatible, next generation threat system (NGTS) compatible, MCSMP TEN compatible, and JSAF compatible, thereby maximizing ROI for mission training station-related technology investments for multi-platform exercises.</p>				

R-1 SHOPPING LIST - Item No. 172

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.065	1.658	1.499
Current BES/President's Budget	1.987	1.640	1.476
Total Adjustments	-0.078	-0.018	-0.023
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions			
SBIR/STTR Transfer	-0.031		
Economic Assumptions			-0.004
Sponsor/FMB/NAVAIR Adj.			
Reprogrammings	-0.047		
Congressional increases			
Reprioritization		-0.018	-0.019
Subtotal	-0.078	-0.018	-0.023

Schedule:

Planned return on investment negatively impacted. MTS/Common Instructor Operator Station specifications will slip from FY04 to FY05. Visual display solutions for deployed simulation will slip from FY06 to FY07.

Technical: Not applicable.

R-1 SHOPPING LIST - Item No. 172

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME W2124/Air Warfare Training Development			

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN Line 33. BA-7 (47C2) Commond Ground Equi Equipment (USMC Federation Simulators)	21.109	3.027	0.000	19.841	24.386	15.183	22.359		105.905
APN Line 23. BA-7 (47C2) Commond Ground Equipment (Fleet Aircrew Simulator Training (FAST))	54.423	30.749	64.312	95.502	55.658	58.264	59.017		417.925

Related RDT&E
(U) P.E. 0604245N, Project # H2279, Sub-Project Title: USMC H-1 Upgrades

E. ACQUISITION STRATEGY:

Air Warfare Training Development (AWTD) is a joint 6.4 R&D technology transition team, tied closely to the Navy and Marine Corps Aviation Simulation Master Plans. A true, multidisciplinary, joint Integrated Product Team (IPT) approach is utilized through a combination of reimbursable and direct cite/MIPR contract processes to accomplish the IPT's principal objectives. These technology transitions continue to successfully target improvements in fleet readiness, and reductions in total system life cycle costs.

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204571N/Consolidated Training Systems Development			W2124/Air Warfare Training Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	Air Force Research Lab	1.905	0.407	11/02	0.460	11/03	0.457	11/04	Continuing	Continuing	
Systems Engineering	WX&PID	NAWCTSD, NAMRL	3.818	0.746	03/03	0.540	03/04	0.350	03/05	Continuing	Continuing	
Systems Engineering	MIPR	ONR	0.120	0.000		0.000		0.000		0.000	0.120	
Systems Engineering	WX	NAWCWD	0.753	0.000		0.000		0.000		0.000	0.753	
Systems Engineering	MIPR	USAF ACADEMY	0.040	0.000		0.000		0.000		0.000	0.040	
Systems Engineering	WR	NPGS	0.090							Continuing	Continuing	
Subtotal Product Development			6.726	1.153		1.000		0.807		Continuing	Continuing	
Remarks:												
Trainer Development Support	RX/PID	NAWCAD	0.539	0.163	11/02	0.155	11/03	0.157	11/04	Continuing	Continuing	
Subtotal Support			0.539	0.163		0.155		0.157		Continuing	Continuing	
Remarks: N/A												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME W2124/Air Warfare Training Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD	3.165	0.639	11/02	0.465	11/03	0.492	11/04	Continuing	Continuing	
Developmental Test & Evaluation	WX	NCTAMSLANT	0.564								0.564	
Subtotal T&E			3.729	0.639		0.465		0.492		Continuing	Continuing	
Remarks:												
Travel	WX	NAWCAD	0.112	0.032	11/02	0.020	11/03	0.020	11/04	Continuing	Continuing	
Subtotal Management			0.112	0.032		0.020		0.020		Continuing	Continuing	
Remarks:												
Total Cost			11.106	1.987		1.640		1.476		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 35 of 37)

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Exhibit R-4, Schedule Profile
(Exhibit R-4, page 36 of 37)

* Not required for Budget Activities 1, 2, 3, and 6

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R-1 SHOPPING LIST - Item No. 172

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 37 of 37)