CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: **February 2008**		
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy BA 06**			R-1 ITEM NOMENCLATURE **Service Support To JFCOM, JNTC - 0804758N**				
Cost ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost 0804758N	**5.049**	**4.970**	**5.148**	**5.258**	**5.353**	**5.458**	**5.567**
OBJECT # 3152 Service Support to JFCOM	**5.049**	**4.970**	**5.148**	**5.258**	**5.353**	**5.458**	**5.567**

(U) A. Mission Description and Budget Item Justification:

In accordance with the FY 2005 National Defense Authorization Act, a portion of the JNTC RDT&E funding that was centrally managed by Joint Forces Command (JFCOM) will transfer from Navy P/E 0804758N to Defense-Wide P/E 0804758D in FY 2008. Related to this, in FY 2007 Fleet Forces Command (FFC) assumed execution control for Navy's Service Support to JFCOM, JNTC. This management change reflects the decentralized execution of JNTC RDT&E from JFCOM to FFC. In FY 2008, these funds will continue to be managed and executed by FFC's Fleet Training and Technology Branch Code N71.

The Navy's focus in FY 2008 is on advancing joint training technologies that will play a crucial role in Navy's ability to address current and future joint operational training requirements. Navy program activities for FY 2008 include conducting research, development, test and evaluation and cross-service architecture certification on Navy capable systems, developing architectures and roadmaps to ensure that service instrumentation follows a common standard, and researching and assessing Navy mission rehearsal, Remote Interface Control, Sim Aware Software Router Support, Virtual Communications Multi-Modal Interface, OASES Environmental Support and Coalition / Inter-Agency integration requirements.

Continuing in FY 2008 Navy will further develop capabilities that integrate live, virtual, and constructive elements into a seamless joint training environment. Using a scientific and phased approach, Navy will leverage and research new technologies and methods, based upon focused joint operational training requirements, that provide a crucial technology-based foundation supporting all current and "to be Navy joint training capabilities. Available commercial-off-the-shelf (COTS) and government -off-the-shelf (GOTS) networked information technologies and collaborative planning tools will be leveraged to provide improved net-centric joint training capability. Navy will lead the collaboration process to identify, collect and validate the requirements in order to design and develop the modeling and simulation capabilities that address the shortfalls in current abilities to support Joint Task training to standards.

The Navy JNTC RDT&E Program efforts directly support the Unified Command Plan (UCP) series and is aligned with the DoD Information Operations (IO) Roadmap

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2008**
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy BA 06**	R-1 ITEM NOMENCLATURE
OBJECT # 3152 Service Support to JFCOM **BA# 6**	**Service Support To JFCOM, JNTC - 0804758N**

(U) B. Program Change Summary:

(U) Funding:	FY 2007	FY 2008	FY 2009	FY 2009
Previous DON Budget	$ 12.750	$ 5.078	$ 5.183	$ 5.292
Current PREBUD Budget	$ 5.049	$ 4.970	$ 5.148	$ 5.258
Total Adjustments	$ (7.701)	$ (0.108)	$ (0.035)	$ (0.034)
Summary of Adjustments				
Sec. 8097 Contractor Effiencie	$ -	$ (0.008)	$ -	$ -
Sec. 8104 Revised Economic Assum		$ (0.024)		
PBD 610 Purchase Inflation Adjustment			$ (0.035)	$ (0.034)
Reprogramming	$ (7.571)			
SBIR Tax	$ (0.130)	$ (0.076)	$ -	$ -
	$ (7.701)	$ (0.108)	$ (0.035)	$ (0.034)

Schedule: N/A
Technical: N/A

(U) C. Other Program Funding Summary: **FY 2007 Congressional Plus Up reprogrammed outside of Navy.**

(U) D. Acquisition Strategy: **N/A**

(U) E. Performance Metrics:

1) Provide Joint Semi-Automated Forces (JSAF) software with a focus on stability and robustness improvements to JSAF as well as interfaces to other Live-Virtual- Constructive components. Support Mitigation of Training Program shortfalls through architectural and model development targeting identified enhancements that support training at unit, strike force and staff levels. Support Architecture and Data Standards development through collaborative engineering between Navy, service and joint training activities for common LVC architecture and data standards. Research Multilevel Security (MLS) and Multinational Information Sharing (MNIS) solutions through architectural development to identify cost-effective MLS and MNIS solutions through extending existing NCTE interfaces, including Radiant Mercury Guard. Support Joint Training Environment Network (JTEN) Expansion and Migration through architectural development to the expansion and migration of the NCTE and JTEN by improving the use of wide area networking resources through reductions in bandwidth and throughput required to support simulation interest management.

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:	
EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2008**
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy BA 06**	R-1 ITEM NOMENCLATURE **Service Support To JFCOM, JNTC - 0804758N**

(U) E. Performance Metrics:

2) Facilitate integration by providing dedicated support to the effort, improving the quality of participation and documentation of Navy efforts in the JNTC. Refine and mature the Navy Training Federation Object Model (NTF), it is improving interoperability and integration with other services and the Joint community. Provides a standardized Federation Object Model (FOM) for integration across the Navy training simulations.

3) The multi-tiered technology approach currently implemented in Joint distributed exercises presents challenges to asset control and monitoring. collective system control is sparse at best. Emerging research in the area of global control architectures and mechanisms is advancing the state of the art in communication network/system control. A current advanced research initiative, Remote Interface Control (RIC), has established an architecture capable of controlling the five layers of the communications network infrastructure that must be addressed as Joint and multi-national events continue to expand: (1) live and virtual radio control, (2) Internet Protocol network control, (3) security administration and control, (4) system health, and (5) support services.

4) Current Joint Live-Virtual-Constructive (JLVC) and other federation simulation distribution is accomplished by tying simulation data to multicast groups. This is neither a scalable solution nor is it an effective one as federates are not able to publish and subscribe with fine enough precision. The Simulation Aware Software Router will address this shortcoming, and additionally provide a flexible solution for federating heterogeneous networks and on-the-wire protocols without forcing all federates onto a single, uniform, lowest common denominator solution for each training event. Ultimately, a simulation aware router will allow simulation users to optimize the network for both simulation scalable traffic and for voice and Command, Control, Communications, (Computers), Intelligence (C4I) traffic.

5) Naval aviation training components will require the ability to transport multi-modal (e.g. secure, non-secure, coalition, etc.) voice communication simultaneously on the Navy Continuous Training Environment (NCTE) and other networks during Joint fleet exercises. As the Navy Aviation Simulation Master Plan (NASMP) integrates within the NCTE and other Joint training environments, multi-modal virtual communication technology is required for Naval aviation components to participate in multi-national, multi-service, and fleet coalition training events.

6) Work with the Naval Meteorology and Oceanography Command (NMOC) to integrate real world ocean data into the NCTE. It will operate in a super computer environment and will be integrated into JSAF software to provide an improved environment for anti submarine warfare operations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: **February 2008**		
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy BA 06**			Project Name and Number **JSAF Improvement Program (JIP) / 00060-07-RD-898** **OBJECT # 3152 Service Support to JFCOM 0804758N**				
Cost ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
JSAF Improvement Program (JIP) / 00060-07-RD-898	**$ 3.084**	**$ 3.144**	**$ 3.291**	**$ 3.368**	**$ 3.439**	**$ 3.518**	**$ 3.598**
	n/a	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**

(U) A. Mission Description and Budget Item Justification:

Navy Warfare Development Command (NWDC) provided dedicated software development, configuration management, verification and validation and engineering management support to ensure that Fleet and Joint requirements were incorporated into Joint Semi-Automated Forces (JSAF) software through the JSAF configuration management and requirements process managed by the Navy. NWDC managed evolving requirements submitted by Joint and Fleet representatives to develop new capabilities and improve reliability and maintainability of the JSAF software simulation. NWDC defined, developed and chaired the JSAF Users Group to work on technical issues related to JSAF such as identifying root-causes and recommending and applying corrective actions to multiple issues. NWDC managed and performed regression testing for and accomplished the release of Navy JSAF 3.1, Patches 1 through 8. In FY 2007, NWDC supported user acceptance testing and opchecks in four major Navy exercises (ENT FST-J 07-1, Virtual flag 07-11, HST FST-WC and FST-J 07-02).

In FY 2008 the Navy focus is to ensure that Fleet and Joint requirements for maintenance and stability are incorporated into JSAF software through the JSAF configuration management and requirements process managed by the Navy. The NWDC team will manage evolving requirements submitted by Joint and Fleet representatives to develop new capabilities and improve reliability and maintainability of the software simulation. Continue in the development, configuration management, and operational support of the JSAF Modeling and Simulation (M&S) application, used for training purposes, which currently servers as the primary modeling and simulation engine for the Naval Continuous Training Environment (NCTE). NWDC NCTE activities for FY 2008 include two JSAF software releases and coordination and facilitation of Navy JSAF Users Group Meetings during the year.

FY 2009 Plan: FY 2009 is the beginning of the fruition of efforts from FY 2007 and FY 2008. In this year of effort, the JSAF development effort focus is incorporating changes required within JSAF to begin incorporating the program of records that the JNTC/Navy Training FOM effort below has focused upon. FY 2009 sees major federations efforts, and therefore change, with JSAF and the high level testing required to ensure interoperable systems that yield validated results in a sophisticated and distributed Navy and Joint Training system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2008**
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy**	**BA 0 6 0804758N**	Project Name and Number **JSAF Improvement Program (JIP) / 00060-07-RD-898**

(U) B. Accomplishments / Planned Program:

	FY 2007	FY 2008	FY 2009
Accomplishment / Effort / Subtotal Cost	**$ 3.084**	**$ 3.144**	**$ 3.291**
RDT&E Articles Quantity - N/A	n/a	n/a	n/a

Accomplishments include the stability and robustness improvements to support Fleet Synthetic Training. Improved capability of Automated Status Boards and Link 16 Information Display for the Tactical Training Group Schoolhouses. Improved capability of Class III and V Logistics, TBMCS mission support interface, and Intel fidelity (ELINT) in support of JNTC and NTF/PACOM requirements. Improved capability in support of virtual and constructive users such as: Manned Flight Systems' H-60R and H-60S trainers, JLVC, and NWDC.

(U) C. Other Program Funding Summary:

P1 Procurement Line: N/A
C-1 MILCON Project Number: N/A
Related RDT&E: N/A

(U) D. Acquisition Strategy: N/A

(U) E. Major Performers:

1) Alion Science and Technology Corporation, McClean Virginia Description of Work: Provide Joint Semi-Automated Forces (JSAF) Improvement Program (JIP) support via software design & development, requirements analysis, configuration management, integration and test, verification and validation model manager support to Naval Continuous Training Environment (NCTE) and Joint National Training Capability Advanced Technologies Training (JNTC/ATT).

2) BMH Associates, Inc., Norfolk, Virginia Description of Work: Provide technical services in completing issue analysis, timeline development, strategic plans, technical roadmap design, and follow-on task planning in support of NWDC, NCTE and as Navy JSAF Program Manager. Execution of the Navy JSAF Requirements Management and Software Engineering Management processes.

3) Lockheed Martin Corporation, Bethesda, Maryland Description of Work: Provide JSAF development of Tactical Air Support to expand JSAF capabilities for joint training.

4) L3 Titan Group, Reston, Virginia Description of Work: Provide JSAF Improvement software development, documentation, technical training on JSAF implementation. Perform requirements analysis, system design, quality documentation, module design, implementation, unit and system test of JSAF and NCTE.

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2008**				
APPROPRIATION/BUDGET ACTIVITY			Project Name and Number **JNTC/JLVC Navy Training FOM Support / 00060-07-RD-900**				
Research Development Test & Evaluation, Navy	**BA 0 6**	**0804758N**	OBJECT # 3152 Service Support to JFCOM				
Cost ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
JNTC/JLVC Navy Training FOM Support / 00060-07-RD-900	**$ 1.965**	**$ 1.826**	**$ 1.857**	**$ 1.890**	**$ 1.914**	**$ 1.940**	**$ 1.969**
RDT&E Articles Quantity - N/A	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**

(U) A. Mission Description and Budget Item Justification:

Naval Warfare Development Command (NWDC) continued to support the development of standards in networking, simulation federation, and tactical system interfaces for Fleet Synthetic Training interoperability to meet training objectives. NWDC managed collaborative engineering of new and existing Navy Continuous Training Environment (NCTE) federates to meet training objectives and NCTE engineering standards. NWDC drafted and released Navy Training Federation Object Model (NTF) 2.2 releases 8 and 9 and 2.3 in conjunction with Navy Aviation Simulation Master Plan (NASMP), Joint Live Virtual and Constructive (JLVC), and Submarine Multi-Mission Tactical Trainer (SMMTT) inputs. The NCTE Interoperability Guide was published and distributed to the NCTE Integrated Product Team (IPT) members.

NWDC conducted several NCTE Interoperability Working Group meetings which focused on immediate interoperability issues as well as long-term architectural standards development and accomplished the enhancments of team training capabilities. These new capabilities included Air Warfare team training between pierside ships, virtual United States Air Force Airborne Warning and Control System (AWACS) trainer, the E-2C Deployable Readiness Trainer, and F/A-18C cockpit trainers, facilitated by simulation role players using tactical system interfaces. Additionally, Anti-Submarine Warfare (ASW) team training capabilities were enhanced by the additon of Mission Readiness Tactical Team Trainer (MRT3) based SH-60B and SH-60F deployable trainers used in concert with pierside ships and simulation role-players. This dedicated support improved the quality of participation and documentation of the Navy efforts in the Joint National Training Capability (JNTC), specifically improving Navy Training integration in the Joint Live-Virtual-Constructive (JLVC).

FY 2008 JNTC-JLVC/NAVY Training FOM Plan: NWDC will continue to provide Navy/NCTE software developer and systems engineering, interoperability support and architectural development support of the Navy Training Federation Object Model (FOM) and NCTE specifically focusing on the JNTC LVC Federation. Specific goals for FY 2008 include the addition of team training capabilities in ASW and Undersea Warfare (USW) trainers (MH-60R trainer, P-3C TORT, SH-60B/F WST) and AAW/MI (E-2C WST, EA-6B).

FY 2009 JNTC-JLVC/NAVY TRAINING FOM Plan: FY 2009 work continues across the warfighting spectrum of simulator integration into NCTE and JSAF. Naval Aviation assets begin significant integration test and validation efforts as well as the test of significant enhancements to ASW integrated training capabilities as a result of the foundation work accomplished in FY 2007 and FY 2008 and the maturation of the process beginning in '09.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2008**
APPROPRIATION/BUDGET ACTIVITY **Research Development Test & Evaluation, Navy**	**BA 0 6 0804758N**	Project Name and Number **JNTC/JLVC Navy Training FOM Support / 00060-07-RD-900** **OBJECT # 3152 Service Support to JFCOM**

(U) B. Accomplishments / Planned Program:

	FY 2007	FY 2008	FY 2009
Accomplishment / Effort / Subtotal Cost	**$ 1.965**	**$ 1.826**	**$ 1.857**
RDT&E Articles Quantity -	n/a	n/a	n/a

Accomplishments include the management of the Federation Object Model (FOM) to synchronize the following programs such as: JNTC/JLVC, NASMP, and Virtual ASTAC. Maintained and enhanced system and model interoperability with legacy trainers such as: BMD flyouts for USA Patriot (FMS-D), EW support for non-BFTT ships via BEWT/SLQ-32a, new AEGIS baseline 7.1.1.1; UK, German and Australian interfaces; MAST EP-3E, and SQQ-89 OBT interface development (ILAU). Added or enhanced system and model interoperability with the following programs such as: Navy: MRT3 SH-60B/SH-60F, Virtual ASTAC, F/A-18C Distributed Mission Trainer, E-2 Deployable Readiness Trainer, SMMTT and the Joint Arena such as JACTS, AWSIM, NWARGS-NG, JDLM, JLOD, ACE-IOS and TACSIM.

(U) C. Other Program Funding Summary:

P1 Procurement Line: N/A
C-1 MILCON Project Number: N/A
Related RDT&E: N/A

(U) D. Acquisition Strategy: N/A

(U) E. Major Performers:

1) BMH Associates, Inc., Norfolk, Virginia Description of Work: Provide software developer and systems engineering, interoperability support and architecture development support of the Navy Training Federation Object Model (FOM) and Navy Continuous Training Environment (NCTE) specifically focusing on the Joint National Training Center's Joint Live Virtual Constructive (JLVC) Federation. Provide architecture and standards support essential in supporting integration of the NCTE into the Joint National Training Capability's (JNTC) infrastructure. The work will facilitate integration by providing dedicated support to the effort, improving the quality of participation and documentation of Navy efforts in the JNTC. Perform integration support for NCTE and Navy Aviation Simulation Master Plan (NASMP) to include Run Time Infrastructure (RTI) selection, Navy Training Federation Object Model (NTF) 2.0 compliance, engineering process for comprehensive model interoperability, Link 16 representation compatibility, and FOM representation and simulation interoperability for countermeasures.

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:

EXHIBIT R-3, RDT&E Project Cost Analysis | DATE: **February 2008**

APPROPRIATION/BUDGET ACTIVITY: **Research Development Test & Evaluation, Navy / BA 0 6 0804758N**

Project Name and Number: **OBJECT # 3152 Service Support to JFCOM**

Cost Categories (Taylor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2007	FY 2007 Award Date	FY 2008	FY 2008 Award Date	FY 2009	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development											
Primary Hardware Development			$ -		$ -		$ -		$ -	$ -	$ -
Ancillary Hardware Development			$ -		$ -		$ -		$ -	$ -	$ -
Systems Engineering *	Various	Various	$ 5.049	Dec-06	$ 4.970	Oct-07	$ 5.148	Oct-08	Continuing	Continuing	Various
Licenses			$ -		$ -		$ -		$ -	$ -	$ -
Tooling			$ -		$ -		$ -		$ -	$ -	$ -
GFE			$ -		$ -		$ -		$ -	$ -	$ -
Award Fees			$ -		$ -		$ -		$ -	$ -	$ -
Sub-Total:			**$ 5.049**		**$ 4.970**		**$ 5.148**		**$ -**	**$ -**	**$ -**

Remarks

* Training Systems Integration

** Beginning FY 2007 and beyond, Commander Fleet Forces Command manages the execution of Navy JNTC RDT&E funding.

Support											
Development Support			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Software Development			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Training Development			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Integrated Logistics Support			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Configuration Management			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Technical Data			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
GFE			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sub-Total:			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Remarks

Exhibit R-3, RDTEN Project Cost Analysis

CLASSIFICATION:

EXHIBIT R-3, RDT&E Project Cost Analysis (Page 2) | DATE: **February 2008**

APPROPRIATION/BUDGET ACTIVITY: **Research Development Test & Evaluation, Navy** **BA 0 6 0804758N** | Project Name and Number: **OBJECT # 3152 Service Support to JFCOM**

Cost Categories (Taylor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2007	FY 2007 Award Date	FY 2008	FY 2008 Award Date	FY 2009	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation											
Developmental Test & Evaluation			$ -		$ -		$ -		$ -	$ -	$ -
Operational Test & Evaluation			$ -		$ -		$ -		$ -	$ -	$ -
Tooling			$ -		$ -		$ -		$ -	$ -	$ -
GFE			$ -		$ -		$ -		$ -	$ -	$ -
Sub-Total:			**$ -**		**$ -**		**$ -**		**$ -**	**$ -**	**$ -**
Remarks											
Management Services											
Contractor Engineering Services			$ -		$ -		$ -		$ -	$ -	$ -
Government Engineering Services			$ -		$ -		$ -		$ -	$ -	$ -
Program Management Support			$ -		$ -		$ -		$ -	$ -	$ -
Program Management Personnel			$ -		$ -		$ -		$ -	$ -	$ -
Travel			$ -		$ -		$ -		$ -	$ -	$ -
Labor (Research Personnel)			$ -		$ -		$ -		$ -	$ -	$ -
Overhead			$ -		$ -		$ -		$ -	$ -	$ -
Sub-Total:			**$ -**		**$ -**		**$ -**		**$ -**	**$ -**	**$ -**
Remarks											
Total Cost											
Grand Total:			**$ 5.049**	**Dec-06**	**$ 5.078**	**Oct-07**	**$ 5.183**	**Oct-08**	Continuing	Continuing	Various

Remarks

* Beginning FY 2007 and beyond, Commander Fleet Forces Command manages the execution of Navy JNTC RDT&E funding.

Exhibit R-3, RDTEN Project Cost Analysis