

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2, RDT&E,N Budget Item Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N  
 PROGRAM ELEMENT TITLE: Tactical Command System

(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	COST TO COMPLETE	TOTAL PROGRAM
E2213 Mission Planning	5,855	13,222	11,169	14,173	10,932	11,495	12,113	12,366	CONT.	CONT.
R2295 JDISS	2,442	0	0	0	0	0	0	0	0	2,442
X0486 GCCS-M Tactical/Mobile (formerly JMCIS Tactical/Mobile)	2,717	2,107	1,396	1,549	1,632	1,806	1,895	1,811	CONT.	CONT.
X0709 GCCS-M Maritime Apps (formerly JMCIS Afloat)	6,117	10,725	6,715	8,848	8,885	10,767	12,961	12,821	CONT.	CONT.
X2009 JMCIS OED	1,932	1,934	2,134	2,207	2,106	1,987	2,204	2,355	CONT.	CONT.
X2041 JMCIS Ashore (funding transferred to GCCS-M Maritime Apps and GCCS-M Common Apps beginning FY00)	5,966	0	0	0	0	0	0	0	0	5,966
X0521 GCCS-I Intelligence Apps (formerly Shipboard Tactical Intelligence Processing (STIP))	5,307	6,717	6,737	7,037	6,877	7,665	7,492	7,923	CONT.	CONT.
X2215 Joint Interoperability	0	0	0	0	0	0	0	0	0	0
X2216 C4I for Joint Littoral Warfare (JLW)	0	0	0	0	0	0	0	0	0	0
X2305 GCCS-M Common Apps (formerly Navy Common Operating Environment (COE))	1,681	12,987	13,448	15,090	17,381	18,791	18,923	19,063	CONT.	CONT.
X2306 Naval Simulation System	2,342	1,741	0	0	0	0	0	0	0	4,083
X2307 Shipboard LAN/WAN	478	434	0	467	416	459	539	551	CONT.	CONT.
X2418 JSTARS Integration	4,663	0	0	0	0	0	0	0	0	4,663
<b>TOTALS</b>	<b>39,500</b>	<b>49,867</b>	<b>41,599</b>	<b>49,371</b>	<b>48,229</b>	<b>52,970</b>	<b>56,127</b>	<b>56,890</b>	<b>CONT.</b>	<b>CONT.</b>

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Exhibit R-2a, RDT&E,N Project Justification (E2213)

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EXHIBIT R-2, RDT&E,N Budget Item Justification

DATE: February 1999

BUDGET ACTIVITY: 5            PROGRAM ELEMENT:            0604231N  
PROGRAM ELEMENT TITLE:    Tactical Command System

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Command System (TCS) upgrades the Navy's Command Control, Computer and Intelligence (C<sup>3</sup>I) systems and processes C<sup>3</sup>I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises. A major component of the TCS is the Global Command and Control System - Maritime (GCCS-M). GCCS-M is the Navy's fielded Command and Control system, a key component of the *Copernicus ... Forward* C4I strategy, and is the Navy's tactical implementation of the Global Command and Control System (GCCS). GCCS-M has aggressively pursued an evolutionary acquisition strategy in rapidly developing and fielding new C4I capabilities for GCCS-M Afloat, GCCS-M Ashore, GCCS-M Tactical /Mobile and GCCS-M OED users. GCCS-M latest phase includes migration to the Defense Information Infrastructure (DII), incorporation of Fleet requirements for merging tactical and non-tactical networks, and application of mature Web and Personal Computer (PC) technologies to provide required information/capabilities. This phase will provide, in the short term, deployment of a PC/COTS based Naval implementation of GCCS-M which will provide the warfighter with a cost-effective, user-friendly, comprehensive C4I solution and, in the long-term, a continuous, integrated command and control link from sensor to shooter, including full-range real-time or near-real-time information to weapon systems for decision makers.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

B. (U) PROGRAM CHANGE SUMMARY: See individual projects.

C. OTHER PROGRAM FUNDING SUMMARY: See individual projects.

D. ACQUISITION STRATEGY: See individual projects.

E. SCHEDULE PROFILE: See paragraph D.

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT:                      0604231N                      PROJECT NUMBER: E2213  
PROGRAM ELEMENT TITLE:                      Tactical Command System                      PROJECT TITLE: Mission Planning

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</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>Total</u>
	<u>Budget</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>						
E2213 Mission Planning	5,855	13,222	11,169	14,173	10,932	11,495	12,113	12,366	CONT.	CONT.
TOTAL	5,855	13,222	11,169	14,173	10,932	11,495	12,113	12,366	CONT.	CONT.

Quantity of RDT&E Articles

( U ) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Automated Mission Planning System (TAMPS) is the Naval standard unit level aircraft mission planning system. It loads data for the following aviation platforms and subsystems: F/A-18, F-14, E-2C, V-22, C-2, KC-130, AH-1, SH-60, MH-53, HH-60, UH-1, VH-1, P-3C, High-speed Anti-Radiation Missile (HARM), Joint Stand-Off Weapon (JSOW), Joint Direct Attack Munitions (JDAM), Stand-off Land Attack Missile (SLAM), Joint Tactical Information and Distribution System (JTIDS), Global Positioning System (GPS), ARC-210, and Forward Area Minefield Planner (FAMP). TAMPS loads the F/A-18 Data Storage Unit (DSU) with route of flight data identification files. The Data Storage Unit (DSU) in turn provides this TAMPS information to the F/A-18 flight software. Without the TAMPS load of "independent overlays" for the aircraft software and bulk files for missile software, weapons such as SLAM, JSOW and JDAM will be unusable. TAMPS currently is the primary means of loading JTIDS data for the F-14D/E-2C. Future systems such as Tactical Aircraft Moving Map Capability (TAMMAC) are planning to use TAMPS for mission planning and data loads. In keeping with the Assistant Secretary of Defense (C3I) direction, TAMPS has been identified as a migration system. Various platform specific aircraft mission planning systems (e.g., Tactical EA-6B Mission Support System (TEAMS), Map Operator and Maintenance Station (MOMS), Common Helicopter Aviation Mission Planning System (CHAMPS), MOMS/AV-8B Maintenance Data System, Tactical Electronic Reconnaissance Processing Evaluation System (TERPES) are planned to neck down into TAMPS. TAMPS is interoperable with and uses the Global Command and Control System -- Maritime (GCCS-M) for data feeds.

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N                      PROJECT NUMBER: E2213  
PROGRAM ELEMENT TITLE: Tactical Command System                      PROJECT TITLE: Mission Planning

### U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$5,855) TAMPS version 6.2 continues development and integration to include the following modules and functionalities: TAMMAC, H-1 mission planning module, Joint Service Imagery Processing System (JSIPS) interface and Tactical Operational Scene (TOPSCENE). Release 6.2 includes improvements to the following modules and functionalities: E-2C and SLAM modules; full duplex security; Local Area Network (LAN); Commercial Off-the-Shelf Software (COTS) and operating system upgrades; port to a new hardware suite; intelligence data base in standard extract format and update. TAMPS version 6.2 goes through T&E (OPEVAL). Development and integration of the Tactical Strike Coordination Manager (TSCM) with TAMPS version 6.2 began. TSCM version 4.0 released. With the development and initial deployment of version 3.0 of the Navy Flight Planning System (N-PFPS), a joint USAF program, the USN mission planning system started to transition from a UNIX based system to a PC based environment. For JMPS, System Engineering requirement studies were conducted for various platform specific aircraft mission planning systems (e.g. CHAMPS, MOMS, H-60, and Anti-Submarine Warfare (ASW) to continue with the execution of the migration plan. The initial phase of JMPS development begins with RFP release and contract award.

#### 2. (U) FY 1999 PLAN:

- (U) (\$13,222) TAMPS version 6.2 deploys. Year 2000 compliant software is fielded. Start development of TAMPS version 6.2.1. Add new functionality to TSCM and release version 5.0 to the Fleet after OPEVAL. Development and deployment of N-PFPS continues with the release of version 3.1. The JMPS development begins with Milestone II approval and follow on contract award. The conduct of JMPS System Engineering requirements definition conclude. JMPS begins development on Defense Information Infrastructuring-Common Operating Environment (DII-COE) complaint architecture.

#### 3, (U) FY 2000 PLAN:

- (U) (\$11,169) Complete development, integration and deployments of TAMPS version 6.2.1. Continue JMPS development effort.

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N                      PROJECT NUMBER: E2213  
PROGRAM ELEMENT TITLE: Tactical Command System                      PROJECT TITLE: Mission Planning

(U) PROGRAM CHANGE SUMMARY:

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998: reflects a decrease of \$-249K for SBIR reduction, \$+1K increase for BTR issue.

(U) B. PROGRAM CHANGE SUMMARY

	FY 1998	FY 1999	FY 2000
(U) FY 1999 President's Budget:	9,478	13,637	11,330
(U) Appropriated Value:			2,412
(U) Adjustments from President's Budget:	-3,623	-415	-161
(U) FY 2000/2001 President's Budget Submit:	5,855	13,222	11,169

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 net decrease of -\$3,623 thousand reflects a decrease of: -\$249 thousand for FY98 SBIR Reduction, decrease of -\$3,503 thousand for pending reprogramming, an increase of +\$1 thousand for BTR Issue, and an increase of +\$128 thousand for FY 1998 Update.

FY 1999 net decrease of -\$415 thousand reflects a decrease of -\$31 thousand for Revised Economic Ass., and decrease of -\$384 thousand for Contract Advisory.

FY 2000 decrease of -\$161 thousand for PBD 604: Non Pay Inflation.

(U) Schedule: The 6.2 release planned for FY1998 moves to FY 1999 due to increased scope.

(U) Technical: NOT APPLICABLE

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: E2213

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Mission Planning

### (U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1998 Budget	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	to Complete
OPN	15,280	23,529	20,769	15,480	19,078	13,621	13,336	14,342	CONT.
O&MN	2,063	4,288	5,868	7,273	6,939	7,022	7,088	7,301	CONT.
Air Force (total)		5,420	10,800	12,900	13,600	18,000			

### Related RDT&E

(U) P.E. 0204229N (TOMAHAWK)

(U) P.E. 0604215N (Standards Development)

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                    PROGRAM ELEMENT:                    0604231N                    PROJECT NUMBER: E2213  
PROGRAM ELEMENT TITLE:            Tactical Command System            PROJECT TITLE: Mission Planning

(U) C. ACQUISITION STRATEGY: The JMPS Acquisition strategy will evolve as the program matures but initially will cover the Engineering and Manufacturing Development (EMD) effort. The strategy entails a two phased evolutionary approach to acquire the initial JMPS development effort. The combined USAF/USN Phase I of this effort will obtain various technical studies, segment architect concept, design to cost estimate, and an architecture development statement of work. Phase I was added to the program to determine reduced cost strategies through software reuse from both USN TAMPS and USAF AFMSS programs. Additionally, this phase is to provide a risk reduction plan for the most effective migration of existing mission planning systems. The results of Phase I will influence future participation by USAF. Phase I was awarded to two contractors. Following Phase I, one of the two contractors selected to participate in Phase I will be selected to develop the JMPS framework, and selected mission planning components, as well as to be the JMPS system integrator under Phase II.

### (U) D. SCHEDULE PROFILE

	FY 1998	FY 1999	FY 2000	FY 2001
(U) Program Milestones				
Version 6.2		1 <sup>st</sup> Qtr Release		
Version 6.2K		1 <sup>st</sup> Qtr Release		
Version 6.2.1			3 <sup>rd</sup> Qtr Release	
JMPS		JMPS Milestone II		
PFPS	2 <sup>nd</sup> Qtr 3.0 Release	2 <sup>nd</sup> Qtr 3.1 Release		2 <sup>nd</sup> Qtr 4.1 Release
(U) Engineering Milestones				
(U) T&E Milestones		1 <sup>st</sup> Qtr 6.2K DT 4 <sup>th</sup> Qtr 6.2 OPEVAL	1 <sup>st</sup> Qtr 6.2.1 OPEVAL	
(U) Contract Milestones	4 <sup>th</sup> Qtr JMPS Phase I Contract Award		3 <sup>rd</sup> Qtr JMPS Phase II Contract Award	

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Exhibit R-2a, RDT&E,N Project Justification (E2213)

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## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N  
 PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: E2213  
 PROJECT TITLE: Mission Planning

<u>Cost Categories:</u>	<u>Contract</u>	<u>Performing</u>	<u>Total</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>	<u>Cost to</u>	<u>Total</u>	<u>Target</u>
	<u>Method</u>	<u>Activity &amp;</u>	<u>Prior Yrs</u>	<u>FY 1999</u>	<u>Award</u>	<u>FY 2000</u>	<u>Award</u>	<u>FY 2001</u>			
	<u>&amp; Type</u>	<u>Location</u>	<u>Cost</u>	<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Complete</u>	<u>Cost</u>	<u>Value of</u>
Software Development	C/CPIF	TBD		4,600	10/98	6,550	10/99		Cont.	Cont.	
Software Development	WX	NAWC Pt. Mugu NSWC		4,036	10/98	3,704	10/99		Cont.	Cont.	
Software Development	WX	Dahlgren		2,025	10/98				Cont.	Cont.	
Misc.	WX	Various		1,550		836	10/99		Cont.	Cont.	
Government Engineering Support	WX	NAVAIR		100							
<b>Subtotal Project Development</b>				<b>12,311</b>		<b>11,090,</b>			<b>Cont.</b>	<b>Cont.</b>	

Remarks

Government Engineering Support	WX	NAVAIR		100		0			Cont.	Cont.	
<b>Subtotal Support</b>				<b>0</b>	<b>100</b>	<b>0</b>			<b>Cont.</b>	<b>Cont.</b>	

Remarks

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Exhibit R-3, RDT&E,N Project Cost Analysis

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## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N  
 PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: E2213  
 PROJECT TITLE: Mission Planning

Cost Categories:	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; 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>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<b>Subtotal Test &amp; Evaluation</b>			0	0		0				0	0	
Remarks												
Misc.	WX	Various		332	10/98	79	10/99			Cont.		Cont.
Travel	WX	NAVAIR		230								
Program Management Support	WX	Various		199								
<b>Subtotal Management</b>			0	761		79				Cont.		Cont.
Remarks												
<b>Total Cost</b>			0	13,222		11,169				Cont.		Cont.

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Exhibit R-3, RDT&E,N Project Cost Analysis

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                    PROGRAM ELEMENT:                    0604231N                    PROJECT NUMBER: X0486  
PROGRAM ELEMENT TITLE:            Tactical Command System            PROJECT TITLE: GCCS-M TAC/MOBILE

(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	COST TO COMPLETE	TOTAL PROGRAM
GCCS-M Tactical/Mobile (GCCS-M Tac/Mobile) (formerly JMCIS Tactical/Mobile) X0486	2,717	2,107	1,396	1,549	1,632	1,806	1,895	1,811	CONT.	CONT.

- A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The GCCS-M Tactical/Mobile (GCCS-M Tac/Mobile) Systems include both fixed sites (Tactical Support Centers (TSCs)) and mobile components (Mobile Operations Control Centers (MOCCs), Mobile Ashore Support Terminals (MASTs) and Mobile Integrated Command Facilities (MICFACs)). These centers provide the Navy Component Commander, the Maritime Sector Commander (Ashore), the Theater Commander (Ashore) or the Naval Liaison Element Commander (Ashore) with the capability to plan, direct and control the tactical operations of Joint and Naval Expeditionary Forces and other assigned units within his respective area of responsibility. These operations include littoral and open ocean surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, and special operations. TSCs consist of C<sup>4</sup>I systems (based on the Joint Maritime Command Information System (JMCIS) common architecture) which is evolving to the GCCS-Maritime architecture based upon NT personal computers, and in compliance with the implementation of the Defense Information Infrastructure (DII) Common Operating Environment (COE); air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MOCC is a rapidly-deployable, self-contained, take-what-you-need C<sup>4</sup>I system which can be transported in two fleet-configured P-3 aircraft for contingency operations. For example, a MOCC has been deployed to Bosnia for support of P-3 operations and to provide an on-site C4I capability. MAST and MICFAC are miniaturized mobile facilities designed to support a theater commander or naval liaison element ashore. MAST provides a deployable (in a C-130 aircraft) basic C4I capability for rapid deployment to remote locations. Support of the Liberian contingency operations is an example. The MICFAC is a robust C4I system deployable (in a C-5 / C-17 class aircraft) that can support a numbered fleet commander's staff ashore. MICFAC Bahrain has acted as the C4I command center when the hard site was undergoing upgrades. This program assures that existing TSC's, MOCC's, MAST's and MICFAC's remain interoperable with other GCCS-Maritime platforms, Joint, NATO and allied forces. JTM systems leverage other JMCIS systems while following the Copernicus Forward Architecture. TSC/MOCC's will continue to support P-3C/S-3B updates to sensors and weapons systems, such as the Anti-Surface Warfare Improvement Program (AIP). GCCS-M Tac/Mobile funding for C2 efforts will transfer to the GCCS-M Maritime Applications Program beginning with FY 00. This transfer of C2 efforts was partially implemented in FY 00.

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M TAC/MOBILE

The TSC/MOCC R&D efforts are developed in agreement with and in mutual support of both N62 and N88. These efforts are required to provide support for the N88 platforms.

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: x0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$1,312) Complete JMCIS 3.1 system integration with an objective of an Operational Test 2nd Qtr 1998 and a Milestone IIIC review 2nd Qtr 1998. JMCIS software will continue to implement DII compliant software, P-3C AIP support systems and the initial introduction of NT-PC servers and workstations to act as TSC workstations. The Tactical Mobile Variants (TMV) (MOCC, MAST, MICFAC), will also receive C4I upgrades and undergo a concurrent Operational Test with the TSC.
- (U) (\$296) Support an OT IIC (Q2) leading to a Milestone IIIC decision (Q3) for fleet release and installation of GCCS-Maritime 3.1.
- (U) (\$847) Provide support for new aircraft sensor capabilities associated with the P-3C AIP, and upgrades to support EER, high resolution Synthetic Aperture Radar (SAR), shallow water acoustic analysis and advanced ESM systems. Evaluate support for new acoustic sensors on P-3/S-3 aircraft such as Broadband and digital uplinks with the ADAR sonobuoy. Continue transition from TAC UNIX based to NT-PC workstations. Develop communications interfaces with required security features to take advantage of NCCS connectivity to SIPRNET and available WAN/WEB technology for insertion into fixed sites (TSC) and MOCC.
- (U) (\$210) Upgrade the communications of TSC and mobile variants to improve compliance with Defense Message System (DMS) and with appropriate Joint Maritime Communications (JMCOMS) standards.
- (U) (\$52) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.

#### 2. (U) FY 1999 PLAN:

- (U) (\$776) Continue development in support of P-3C AIP and P-3C Counter Drug Upgrade (CDU) improvements in sensors and communication systems such as the P-3 Communications Improvement Program (CIP).

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: x0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

- (U) (\$806) Support P-3C AIP and pre-planned product improvements in open system architecture and sensor integration. Provide improved Tactical Data Insertion for increased sensor effectiveness and automated post-flight analysis for rapid information dissemination via the SIPRNET.
- (U) (\$260) Develop multi-TADIL interfaces to provide two-way TADIL support for TSC and MOCC.
- (U) (\$265) Continue development of communications interfaces with required security features to take advantage of higher capacity connectivity to SIPRNET and available WAN/WEB technology for insertion into fixed and mobile TSC variants.

### 3. (U) FY 2000 PLAN:

- (U) (\$222) Port additional functions to NT. Develop interface for emerging aircraft data transport devices, such as RDSS. Move drivers, redesign HMI for windows, re-host applications on NT.
- (U) (\$290) Develop capability to process information from new sensors such as SAR and high resolution ISAR. Investigate processing I&Q data from APS 137 B(V)5 radar.
- (U) (\$150) Develop expanded interface for new weapons and sensors such as SLAM, Pioneer and LIDAR.
- (U) (\$240) Develop capability to process information from new sensors, IEER/AEER.
- (U) (\$294) Develop lightweight FTAS. Cut weight/volume by minimum of fifty percent. Investigate COTS signal processing products to replace proprietary hardware and software. Will allow FTAS to take advantage of software developed for Common Acoustic Processor.
- (U) (\$200) Develop interfaces and incorporate emerging joint and coalition SATCOM and line of sight radios, cryptographic units and antenna technology. Ensure interoperability in a land, sea, air, and mobile environment.

(U) PROGRAM CHANGE SUMMARY: FY 1998: SBIR reduction of (\$-65K), DD1002: April 1998 update (\$-134K), FY1998 June BTR update (\$-2K), FY 98 update (\$-6). Net change was (\$-207K).

R-1 Shopping List-Item No. 89-13 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0486)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: x0486  
 PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: GCCS-M Tac/Mobile

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	COST TO TOTAL COMPLETE PROGRAM
(U) OMN	10,241	8,335	8,963	9,409	10,685	11,204	11,403	11,690	CONT.    CONT.

(U) RELATED RDT&E:

- (U) PE 0604261N: (Acoustic Search Sensors): TSC maintains interoperability with S-3 weapon systems and future improvements.
- (U) PE 0604221N: (P-3 Modernization): TSC maintains interoperability with, and fully supports P-3 system changes and enhancements.

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲												▲	
			MS III												MS IIIA	
Engineering Milestones						▲									▲	
						GCCS-M 4.x Drop									GCCS-M 5.x Drop	
T&E Milestones		▲													▲	
Contract Milestones		DT/OT III													DT/OT IIIA	

D. SCHEDULE PROFILE: See paragraph C.

R-1 Shopping List-Item No. 89-14 of 89-69

# UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	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
Software Development	Various	Various	28,868	1,314	Var.	702	Var.			CONT.	CONT.	
Subtotal Product Development	Various	Various	28,868	1,314	Var.	702	Var.			CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	18,068	423	Var.	430	Var.			CONT.	CONT.	
Subtotal Support	Various	Various	18,068	423	Var.	430	Var.			CONT.	CONT.	
Remarks:												

R-1 Shopping List-Item No. 89-15 of 89-69

# UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	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
Operational Test & Evaluation	Various	Various	2,891	75	Var.	65	Var.			CONT.	CONT.	
Subtotal T&E	Various	Various	2,891	75	Var.	65	Var.			CONT.	CONT.	
Remarks												
Project Management	Various	Various	9,204	295	Var.	199	Var.			CONT.	CONT.	
Subtotal Management	Various	Various	9,204	295	Var.	199	Var.			CONT.	CONT.	
Remarks												
Total Cost	Various	Various	59,031	2,107	Var.	1,396	Var.			CONT.	CONT.	
Remarks												

R-1 Shopping List-Item No. 89-16 of 89-69

# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: X0709  
PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: GCCS-M Maritime Apps

(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	COST TO COMPLETE	TOTAL PROGRAM
X0709 GCCS-M Maritime Apps (formerly JMCIS Afloat)	6,117	10,725	6,715	8,848	8,885	10,767	12,961	12,821	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Global Command and Control System - Maritime (GCCS-M) is the maritime component of the Global Command and Control System (GCCS) architecture. GCCS-M Maritime Apps meets the mission applications requirements of the tactical commander for a near real-time, fused common tactical picture with integrated intelligence services and databases. GCCS-M supports the Command, Control, Communication, Computers and Intelligence (C4I) mission requirements of the Fleet Commanders, Type Commanders, Navy Command Center, Numbered Fleet Commanders (NFC), Officer in Tactical Command/Composite Warfare Commander (OTC/CWC), Commander Amphibious Task Force (CATF), Commander Landing Force (CLF), Ship's Commanding Officer/Tactical Action Officer (CO/TAO), and Joint Task Force (JTF) Commanders, as well as other functional commanders such as the Command and Control Warfare Commander (C2WC). It also integrates both joint and service-unique command and control projects in order to support joint task force and Navy requirements. Efforts include design, integration, and test of Tactical Decision Aids (TDAs) and integration of GCCS-M Afloat, Ashore, and Tac/Mobile baselines with weapons systems and Combat Direction Systems to provide the Battle Group/Force Commanders with the information needed to enhance their warfighting capabilities. GCCS-M is also initiating a transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology.

R-1 Shopping List-Item No. 89-17 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$801) Develop, integrate and test FY 1998 software segment enhancements. Continue to integrate and test Fleet software releases to meet Increment III ORD requirements. Continue to incorporate Fleet requirements for merging tactical and non-tactical networks and application of Web and PC technologies.
- (U) (\$550) Continue development of TDAs and COTS tactical analysis tools for incorporation into GENSER and SCI Software for analyst workstations, EWCS, and supporting the C2WC.
- (U) (\$1,243) Continue development and testing of segment applications software in a GCCS/DII compliant open system architecture, including transition to COTS PC technology to provide a COP to the warfighter. Initiate development of the interfaces between JMCIS Afloat baselines and weapons systems, two way Link 16 and Combat Direction Systems.
- (U) (\$349) Continue development of DNS which will allow GCCS-M Afloat connection to the JWICS, SIPRNET and other information networks.
- (U) (\$640) Implement and test required upgraded Joint mission application hardware and software interfaces (using the CDBS with the Joint Targeting Tools and Target Nomination modules) with GCCS-M Afloat including 3-D visualization capability in support of situation awareness, mission/strike planning, terrain analysis and C2 support.
- (U) (\$699) Continue integration and test of implemented Internet related security capabilities.
- (U) (\$871) Continue to develop the architecture to support world wide data base access to all fleet users to fully support the GCCS/DII COE and the Copernicus Architecture to operate with USMC, USCG and other Joint Command, Control, Intelligence and Imagery systems interface with GCCS-M Afloat.
- (U) (\$336) Procure development hardware and COTS software to support hardware evaluation and software development.
- (U) (\$508) Develop approaches to integrate GCCS-M Afloat LANs, WANs and transition JMCIS Afloat legacy application segments to GCCS-M Afloat.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$120) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.
  
- 2. (U) FY 1999 PLAN:
  - (U) (\$826) Continue to develop, integrate and test FY 1998 software segment enhancements. Continue to integrate and test Fleet software releases to meet Increment III ORD requirements. Continue to incorporate Fleet requirements for merging tactical and non-tactical networks and application of Web and PC technologies..
  - (U) (\$900) Continue development of TDAs and COTS tactical analysis tools for incorporation into GENSER and SCI Software for analyst workstations, EWCS, and supporting the C2WC.
  - (U) (\$2,461) Continue development/implementation and begin integration/testing of segment applications software in a GCCS/DII compliant open system architecture to include continued transition to COTS PC technology, working toward a COP including interfaces for the JSIPS-N, JBS/GBS, two-way LINK 16, and IPL/IPA.
  - (U) (\$504) Continue development of DNS which will allow GCCS-M Afloat connection to the JWICS, SIPRNET and other information networks.
  - (U) (\$445) Integrate and test upgraded JFACC/CTAPS hardware and software interfaces (using the CDBS with the RAAP and Target Nomination modules) with GCCS-M Afloat including 3-D visualization capability in support of situation awareness, mission/strike planning, terrain analysis and C2 support.
  - (U) (\$830) Continue integration and test of Internet security capability in GCCS-M Afloat. Investigate and evaluate COTS multi-level secure (MLS) software packages for possible inclusion in the GCCS-M Afloat architecture.
  - (U) (\$700) Continue to develop the architecture to support world wide data base access to all fleet users to fully support the GCCS/DII COE and the Copernicus Architecture to operate with USMC, USCG and other Joint Command, Control, Intelligence and Imagery systems interface with GCCS-M Afloat.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$629) Procure development hardware and COTS software to support hardware evaluation and software development.
  - (U) (\$733) Continue to develop approaches to integrate GCCS-M Afloat LANs, WANs and transition JMCIS Afloat, JMCIS Ashore, and JMCIS Tac/Mobile legacy application segments to GCCS-M Afloat.
  - (U) (\$500) Initiate development and implementation of collaborative planning capability in GCCS-M Afloat.
  - (U) (\$503) Implement technology upgrade to TAC-X computer including, porting and integration of application/segment software.
  - (U) (\$623) Initiate system development integration, testing, documentation and training for GCCS-M 4.X software. Continue DII compliance implementation. Continue development to replace client workstations with NT's.
  - (U) (\$666) Incorporate decision aids, data elements, and message formats and reports to support Non-Combatant Evacuation Operations (NEO). Incorporate current FLTCINC, TYCOM and numbered Fleet Commander Logistics planning and support tools in support of Fleet operations (Personnel, fuel, ammunition, supplies, medical, etc).
  - (U) (\$225) Complete development, testing and fielding of Shore Targeting functionality (near real-time weapons targeting data to submarines) to GCCS-M Ashore.
  - (U) (\$180) Continue to integrate and make interoperable GCCS-M Ashore ASW capability with Joint ASW functionality.
3. (U) FY 2000 PLAN:
- (U) (\$500) Develop new functionality and enhance existing functionality to meet the high priority requirements specified at the CRWG '99. Includes building the ability to merge and display all source TIBS and TRAP data with TADIL tracks, desktop classified video teleconferencing, and distant learning tools.
  - (U) (\$718) Develop employment scheduling and decision support tools to maximize use of native NT environment. Extend functionality of scheduling tools to support creation of scenario-based calculations for fuel burn rates,

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

review of maritime aviation readiness, and calculation of combined/joint exercise training readiness. Develop an integrated data display and dissemination tool to provide multiple echelons (ISICs, TYCOMs, and CINCs) a singular view of force scheduling data.

- (U) (\$550) Provide interface to process raw readiness data input from lower echelons and incorporate into validated readiness data repositories at fleet command centers. Integrate Navy readiness data with joint GSORTS databases and applications to facilitate joint operation preparation. Continue developing Force Planning tools to support Navy Mission Essential Task List (NMETL and Navy/Joint Universal Task List (MUTL/JUTL). Provide an integrated product that enables users to develop scheduling data based upon input on force readiness.
- (U) (\$150) Port WSM to PC and provide capability to advance WSM display to time periods specified by the operator. Provide capability to incorporate three dimensional WSM deconfliction processing.
- (U) (\$150) Develop AAW HCI & Situational Awareness (SA) tactical decision aids to support USN AAW missions in a joint/coalition environment. Interface/Utilize TADIL capabilities to provide AAW SA to non-CDS equipped units that are not equipped with intelligence repositories.
- (U) (\$500) Provide an integrated solution for providing all services that support the generation of pre-flight mission objective briefs, interface with inflight aircraft to transmit and receive imagery and Link data, and fuse completed mission data to provide post-mission analysis and review. The aircraft support suite will maximize use of COTS PC tools to interface with legacy databases and provide easy-to-use processing tools for brief generation. Mission status board applications will interface directly with remote mission event databases to enable online electronic editing during mission. Imagery and data transfer tools will be built using commercial protocols to enable TSCs to interoperate with NATO and Joint platforms. Pre and Post-Flight analysis tools will integrate with web technologies to permit remote queries from disadvantaged sites.
- (U) (\$360) Enhance the C2WC decision aid & tools to take advantage of new/emerging sensors (organic & national). Develop and implement C2WC capabilities to exploit national and theater EW/OOB databases (MIDB, EPL, etc.). Investigate providing C2WC capabilities to selected surface combatants.
- (U) (\$150) Enhance pre-flight capabilities to enable analysis of environmental data, threat and force data, sensors, and target motion data to be performed on the joint intelligence database (MIDB). Enhance current implementation to support improvement of joint sensor data based on post-mission analysis.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$150) Develop architecture to integrate COTS Enterprise Management tools in GCCS-M Maritime Applications to support remote system diagnostics, LAN inventory, and remote software distribution and installation. Implementation will support low-bandwidth users and poorly connected sites.
- (U) (\$200) Develop a FLTCAST product that provides web-based "info-cast" subscription capabilities for the fleet to access GCCS-M data using commercial web technology. Framework would provide plug-in capabilities so that external programs could interface with GCCS-M and re-use the existing framework to distribute data, documentation, and training.
- (U) (\$250) Design parsers that interface with the DII COE messaging products to populate tactical databases for GCCS-M Maritime Applications. Provide plug-in parsers that maximize integration between the track database and relational analysis databases, and are interoperable with the USMTF message format certification and DMS.
- (U) (\$300) Provides funding to cover Operational Test Planning and Execution by COTF OTD's during planned OPEVAL (OT), Operational Assessment (OA) and Follow-on Test and Evaluation (FOT&E),
- (U) (\$1,600) Provides funding to cover Development Test phases in lab and operational sites for GCCS-M segments. Also covers any certification, compliancy (DII COE), and functional testing for each segment. Acceptance and development testing includes joint certifications, compliancy with the DII COE and security policies, and functional testing for each segment. Funding will also be used to support the Test IPT and TPWG process used by program.
- (U) (\$150) Continue integration of GCCS SW in shore and shipboard environments, including incorporation of Navy specific functionality. Fielding of the Maritime variant would be interoperable with the joint GCCS system on the same network enabling seamless exchange of tactical data between platforms.
- (U) (\$100) Continue development of an automated mechanism to register and catalogue software submissions for all GCCS-M development, integration and test software builds.
- (U) (\$90) Provide an interface with the NAVSSI system to display navigation data on the common tactical picture. Integration includes designing and application that enables GCCS-M to utilize a shared digital map server.
- (U) (\$400) Development of a common GCCS-M infrastructure to support the network-centric warfare concept. Design would maximize processing power of current server applications while enabling clients powered with minimal COTS

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N                      PROJECT NUMBER: X0709  
 PROGRAM ELEMENT TITLE: Tactical Command System                      PROJECT TITLE: GCCS-M Maritime Apps

tools to access data in a traditional 3-tier architecture. Focus will include portable capability to support disembarked operations for Expeditionary Warfare.

- (U) (\$297) Combat Systems Integration: Develop and Implement integration with GCCS-M and Aegis/non-Aegis combat systems to achieve intra and inter ship interoperability with the common operational picture, including systems such as a ATWCS, TTWCS, and AADC.
- (U) (\$100) Provide engineering and integration testing to the IT-21 Integration Test Facility to ensure that GCCS-M Maritime Applications applications operate effectively in the IT-21 ARM LAND and System environment.

(U) PROGRAM CHANGE SUMMARY: FY 1998: SBIR reduction of (\$-133K), DD1002: April 1998 update (\$-73K), FY1998 June BTR update (\$-9K), FY 98 update (\$-12). Net change was (\$-227K).

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
(U) OMN	9,562	15,542	12,839	17,435	16,515	17,297	17,823	17,896	CONT.	CONT.

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) Shipboard Tactical Intelligence Processing

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲										▲			
			MS III										MS IIIA			
Engineering Milestones					▲								▲			
					GCCS-M	4.x	Drop						GCCS-M	5.x	Drop	
T&E	▲												▲			

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# UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Milestones DT/OT III

DT/OT IIIA

Contract  
Milestones

D. (U) SCHEDULE PROFILE: See paragraph C.

R-1 Shopping List-Item No. 89-24 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0709)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	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
Software Development	Various	Various	18,122	7,825	Var.	4,335	Var.			CONT.	CONT.	
Subtotal Product Development	Various	Various	18,122	7,825	Var.	4,335	Var.			CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	6,514	2,175	Var.	1,630	Var.			CONT.	CONT.	
Subtotal Support	Various	Various	6,514	2,175	Var.	1,630	Var.			CONT.	CONT.	
Remarks												

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# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	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
Operational Test & Evaluation	PD	OPTEVFOR	1,015	75	10/98	75	10/99			CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	1,015	75	10/98	75	10/99			CONT.	CONT.	
Remarks												
Program Management	Various	Various	6,015	650	Var.	675	Var.			CONT.	CONT.	
Subtotal Management	Various	Various	6,015	650	Var.	675	Var.			CONT.	CONT.	
Remarks												
Total Cost	Various	Various	31,666	10,725	Var.	6,715	Var.			CONT.	CONT.	

R-1 Shopping List-Item No. 89-26 of 89-69

# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS OED

(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	COST TO COMPLETE	TOTAL PROGRAM
X2009 JMCIS OBU Evolutionary Development	1,932	1,934	2,134	2,207	2,106	1,987	2,204	2,355	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The JMCIS OBU Evolutionary Development (JMCIS OED), formerly Ocean Surveillance Information System (OSIS) Baseline Upgrade (OBU) development, is a subsystem of the Navy Command and Control System (NCCS) Ashore. It is a designated migration system. JMCIS OED provides for the analysis of intelligence information from multiple sources to produce a comprehensive report of foreign forces and potential hostile activity. The system is required to be able to generate multiple, automated near-real-time event-by-event (NRT EBE) data streams at various classification/releasability levels, tailorable to unique customer requirements and capable of being transmitted over multiple communications paths (including DSNET) simultaneously. In addition, it is required to provide near-real-time (NRT) all-source fusion, correlation and analysis tools (including robust graphics presentation and geospatial analysis capabilities), directly feeding automated reporting capabilities. OSIS provides positional data and operational intelligence to commanders at all levels. It consists of three Joint Intelligence Centers, and one Joint Intelligence Center Detachment, a software support activity, and a training site. JMCIS OED functions encompass establishing and maintaining characteristics and performance data on hostile weapons platforms systems, collecting non-organic data from ashore and afloat sensors, developing an all-source tactical picture, and analyzing intelligence information. The data derived from this process is disseminated as an Operation Intelligence (OPINTEL) product to the operating forces for tactical threat warnings, decision making support, and support of Over-the-Horizon-Targeting.

(U) JMCIS OED uses the Joint Logistics Commander's Guidance of March 1987 on Evolutionary Acquisition (EA) as the strategy for future software development which includes a plan for incremental achievement of desired capability building on the core system provided by OBU Phases I and II. The JMCIS OED Phase III EA strategy will provide a mechanism for adding future capabilities including the incorporation of proven fleet initiated prototypes.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$387) Integrate key JMCIS warfare components (EW segments) into OED MLS software baseline.

R-1 Shopping List-Item No. 89-27 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2009)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS OED

- (U) (\$604) Improve/revise JMCIS/OED tactical decision aids and database architecture to work with large scale national level databases (>10,000 tracks); implement JMCIS 3.10 or later baseline into MLS baseline software.
  - (U) (\$261) Full implementation of user-selectable NATO and US symbology.
  - (U) (\$338) Implement classified NRTI interface (with MLS support) at all operational sites; ensure analyst display tools meet NRTI performance requirements.
  - (U) (\$309) Implement and deploy user/site-defined functional requirements within MLS environment.
  - (U) (\$33) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.
2. (U) FY 1999 PLAN:
- (U) (\$285) Implement, accredit and deploy MLS changes needed to support email-based and DMS record message traffic.
  - (U) (\$439) Develop and deploy wide area imagery, site, and characteristics databases using an object-oriented MLS commercial database package.
  - (U) (\$754) Automated, real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
  - (U) (\$121) Upgrade system capabilities for providing tailored MLS support.
  - (U) (\$335) Incorporate current state of art data correlation and data fusion software and hardware technology.
3. (U) FY 2000 PLAN:

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2009)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: X2009  
PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: JMCIS OED

- (U) (\$285) Implement, accredit and deploy MLS changes needed to support email-based and DMS record message traffic.
- (U) (\$439) Update message encoders, decoders and correlation algorithms as required to meet formatted MSG standards and changes in sensor data feeds.
- (U) (\$761) Automated, real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
- (U) (\$313) Upgrade system interface capabilities as required for current releases for record communications systems, (e.g., CSP, NEWSDEALER) with in an accreditable MLS baseline.
- (U) (\$336) Implement improved tactical decision aids, and system alerting capabilities

(U) PROGRAM CHANGE SUMMARY: FY 1998: SBIR reduction of (\$-32K), DD1002: April 1998 update (\$-23K), FY1998 June BTR update (\$-4K),FY 98 update (\$-4K). Net change was (\$-63K).

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	COST TO	TOTAL
	ACTUAL	ESTIMATE	COMPLETE	PROGRAM						
OMN 1C1C/4B7N										
	1,789	1,233	1,207	1,161	1,351	1,321	1,325	1,359	CONT.	CONT.

(U) RELATED RDT&E: Not applicable.

R-1 Shopping List-Item No. 89-29 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2009)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS OED

### C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones						▲										▲
						PDM										PDM
Engineering Milestones																
T&E Milestones			▲				▲				▲				▲	
			DT-IIE				OT-IIE				DT-IIF				OT-IIF	
Contract Milestones																

Note: Dates reflect proposed APB Milestones.

D. (U) SCHEDULE PROFILE: See paragraph C.

R-1 Shopping List-Item No. 89-30 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2009)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS OED

Cost Categories	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
Software/Product Development	Radius	NAVSUP	26,652	1,500	Var.	1,518	Var.			CONT.	CONT.	
Software/Product Development	Various	Various	3,990	100	Var.	211	Var.			CONT.	CONT.	
Subtotal Product Development	Various	Various	30,642	1,600	Var.	1,729	Var.			CONT.	CONT.	
Remarks:												
System Engineering	WX	Various	7,750	229	Var.	300	Var.			CONT.	CONT.	
Subtotal Support	Various	Various	7,750	229	Var.	300	Var.			CONT.	CONT.	
Remarks:												

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Exhibit R-3, RDT&E,N Project Cost Analysis (X2009)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS OED

Cost Categories	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
Operational Test & Evaluation	PD	OPTEVFOR	570	30	Var.	30	Var.			CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	570	30	Var.	30	Var.			CONT.	CONT.	
Remarks												
Project Management	Various	Various	1,795	75	Var.	75	Var.			CONT.	CONT.	
Subtotal Management	Various	Various	1,795	75	Var.	75	Var.			CONT.	CONT.	
Remarks												
Total Cost	Various	Various	40,757	1,934	Var.	2,134	Var.			CONT.	CONT.	
Remarks												

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# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis (X2009)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N                      PROJECT NUMBER: X2041  
PROGRAM ELEMENT TITLE: Tactical Command System                      PROJECT TITLE: JMCIS Ashore

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	COST TO COMPLETE	TOTAL PROGRAM
X2041 JMCIS Ashore	5,966	0	0	0	0	0	0	0	0	5,966

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Chief of Naval Operations (CNO), Fleet Commanders in Chief (FLTCINCs), Unified Commanders (USCINCLANT and USCINCPAC), and Type Commanders (SUBLANT, SUBPAC, SURFLANT, SURFPAC, AIRLANT, and AIRPAC) require a single, integrated command and control system at the Navy Command Center (NCC), Fleet Command Centers (FCC), Unified Command Centers, and TYCOM Command Centers, respectively to receive, process, display, and assess the readiness and disposition of own, neutral, and potentially hostile forces. The JMCIS Ashore Program uses the Joint Logistics Commanders Guidance of March 1987 on Evolutionary Acquisition (EA) as the strategy for development. The EA concept includes a plan for incremental achievement of desired capability, early fielding of initial incremental operational capability and continual feedback from users.

OSS (designated JMCIS Ashore) Increment I integrated existing prototype command center support systems on a Local Area Network (LAN) and provided a baseline command center support capability to designated OSS sites.

Increment II developed an integrated, logistically supportable, and cost effective single system, which utilizes the latest state-of-the-art Commercial Off The Shelf (COTS) technologies to support both local and remote users. Specifically, Increment II incorporated an Ocean Surveillance Information System (OSIS) Baseline Upgrade (OBU) interface, replaced the Navy Worldwide Military Command and Control System (WWMCCS) Software Standardization (NWSS), and improved the initially fielded Naval Status of Forces (NSOF) functionality.

Increment III incorporated initial capabilities for Anti-Submarine Warfare (ASW) at former Force High Level Terminal (FHLT) sites, Shore Targeting (STOSS) at former Shore Targeting Terminal (STT) sites, Water Space Management (WSM) at selected sites, Employment Scheduling System (ESS) at TYCOM sites, and Information Presentation and Distribution System (IPDS) at selected JMCIS Ashore sites. Increment III continues to incorporate initial Global Command and Control System (GCCS) interfaces for Joint inter-operability, to achieve initial DII COE compliance, and to begin porting JMCIS Ashore software to PCs. Increment III will continue to improve employment planning and scheduling capabilities by replacing ESS and PC EMPSKD, and incorporating TYCOM required databases and decision aids.

JMCIS Programs (including JMCIS Ashore) will combine into a single GCCS-M Program. JMCIS Ashore Increment III will be followed by GCCS-M Increment I. JMCIS Ashore funding will transfer to the GCCS-M Program beginning with FY 99.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2041)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2041

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS Ashore

GCCS-M Increment I will incorporate Multi-Level Security features as they become commercially available, Information Technology for the 21st Century (IT-21) network centric warfare, continue GCCS inter-operability improvements, and increase the level of DII COE compliance.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$357) Continue to integrate/analyze JMCIS Ashore sites in conjunction with COTS hardware upgrades, and state-of-the art displays, video distribution systems and briefing aids (including multimedia, 3-D visualization and very high resolution images).
- (U) (\$180) Continue interfacing/integrating with readiness data from other Navy sources.
- (U) (\$376) Plan, conduct systems engineering and prototype development of object oriented/design solution into JMCIS Ashore to improve system performance.
- (U) (\$459) Develop database modules to support WAN access by JMCIS Ashore remote users, i.e., distributed databases and data standardization. Develop integrated interface using a common architecture. Continue to incorporate state-of-the-art technologies such as distributed data bases and WEB technology.
- (U) (\$356) Update JMCIS Ashore software and databases to accommodate Navy unique and Joint message format changes.
- (U) (\$520) Maintain architectural compatibility with DoD mandated standards (i.e., Defense Information Infrastructure (DII)).
- (U) (\$180) Plan, develop, and begin implementation of Human Computer Interface Standards for software development and data retrieval.
- (U) (\$270) Incorporate unique decision aids, data elements, message text types and report formats required by Type Commanders (TYCOMs).

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2041)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2041

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS Ashore

- (U) (\$405) Conduct developmental testing and beta testing on JMCIS Ashore software.
- (U) (\$135) Modify JMCIS Ashore system and configuration to accommodate TENCAP sanitization products and support evolutionary software upgrades. Implement commercially available MLS.
- (U) (\$450) Begin extension of full JMCIS Ashore access and functionality into PC domain consistent with FLTCINC and TYCOM requirements. Evolve JMCIS Ashore LANs to take advantage of current networking technology (e.g., Asynchronous Transfer Mode (ATM) in conjunction with IPDS.
- (U) (\$483) Port JMCIS Ashore software to run on current GCCS, Navy TAC-series computer platforms, and PC's. Integrate JMCIS Ashore/GCCS LANs.
- (U) (\$450) Complete migration of SORTS, CASREP, MOVREP, and EMPSKD to USMTF format.
- (U) (\$405) Continue Cooperative Development of NACCIS with SAACLANT, implement NATO message parsing and editing features, expand JMCIS Ashore database to reflect NATO/Allied units, and continue to support Joint, Allied (NATO and other), coalition efforts, collaborative planning, and Foreign (FMS) users to ensure interoperability among users.
- (U) (\$425) Incorporate current FLTCINC, TYCOM and numbered Fleet Commander Logistics planning and support tools in support of Fleet operations (Personnel, fuel, ammunition, supplies, medical, etc).
- (U) (\$100) Maintain compatibility with Defense Messaging System (DMS)/Automated Message Handling System software requirements.
- (U) (\$119) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.
- (U) (\$277) Continue transition/integration of Shore Targeting functionality (near real-time weapons targeting data to submarines) to JMCIS Ashore.
- (U) (\$19) Integrate and make interoperable JMCIS Ashore ASW capability with Joint ASW functionality.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2041)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT: 0604231N                      PROJECT NUMBER: X2041  
 PROGRAM ELEMENT TITLE: Tactical Command System                      PROJECT TITLE: JMCIS Ashore

2. (U) FY 1999 PLAN: JMCIS Ashore funding will transfer to the GCCS-M Program beginning with FY 99.

(U) PROGRAM CHANGE SUMMARY: FY 1998: SBIR reduction of (\$-161K), DD1002: April 1998 update (\$-172K), FY1998 June BTR update (\$-6K), FY 98 update (\$-13K). Net change was (\$-352K).

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	COST TO TOTAL COMPLETE PROGRAM
(U) OMN	13,230	10,302	10,950	10,024	11,308	12,341	12,693	13,029	CONT. CONT.

(U) RELATED RDT&E:

(U) PE 0604231N: JMCIS OED, JMCIS Tactical/Mobile, GCCS-M Maritime Applications, and GCCS-M Common Applications

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲													
			MS	III												
Engineering Milestones																
T&E Milestones		▲														
	DT/OT															III
Contract Milestones																

*Funding Transferred to GCCS-M in  
FY 1999*

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2041

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: JMCIS Ashore

D. (U) SCHEDULE PROFILE: See paragraph C.

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Exhibit R-2a, RDT&E,N Project Justification (X2041)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

(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	COST TO COMPLETE	TOTAL PROGRAM
X0521 GCCS-M I Intelligence Apps (formerly Shipboard Tactical Intelligence Processing (STIP))	5,307	6,717	6,737	7,037	6,877	7,665	7,492	7,923	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Tactical Intelligence Processing (STIP) system is an integrated tactical intelligence shipboard processing system which is the central database server for GCCS-M, the Command and Control Warfare Commander (C2WC) and tactical mission planning systems. Development of this integrated data base server provides for data distribution, dynamic update of Naval Warfare Tactical Database (NWTDB) and military integration with digital map and imagery systems. STIP began interface development with the Joint Services Imagery Processing - Navy (JSIPS) in FY 1990. STIP also includes providing intelligence data distribution to multiple shipboard warfighters via an analog video distribution system. Efforts are being initiated in FY 98/99 to develop a digital video distribution system to take advantage of latest LAN technology. STIP will integrate Radiant Mercury (RM) into the JMCIS Afloat architecture to meet downgrading and releasability requirements. STIP is also initiating a transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology. STIP is part of the Tactical Intelligence and Related Activities (TIARA) program, managed by the Secretary of Defense through the Assistant Secretary of Defense for C4I.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$1,055) Continue developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based CDBS (GENSER and SCI) and associated intel applications in accordance with the JMCIS COTS/PC hardware and software initiative/GCCS ("MIG") evolutionary directions and in conjunction with Cryptologic/C2W developments.
- (U) (\$961) Continue developing, integrating and testing advanced digital imagery server(s) and Navy-Marine Team unique client applications to keep pace with evolving CIO, DARO and NRO imagery architectures.
- (U) (\$225) Begin development of enhanced GENSER-SCI LAN and JMCIS-"RelX" data exchange capabilities based on MIDB 2.0 "filter" approach, and emerging MLS technologies for both alpha-numeric data and imagery.
- (U) (\$414) Continue development and integration of multi-media data capture, storage and display technologies into the IVS including 3-D visualization capability in support of situation awareness, mission/strike planning, STRED improvements, UAV data integration, terrain analysis and intelligence support.
- (U) (\$725) Continue evolving Navy-USMC Team unique intel and intel-related data base support for JMCIS and Marine Air Ground Task Force C4I (MAGTFC4I)/Expeditionary Warfare applications as required outside MIDB capability.
- (U) (\$668) Continue object-oriented database exploratory development.
- (U) (\$379) Continue investigating and developing USAF, Army and other Joint intel/imagery system interfaces.
- (U) (\$338) Investigate enhancements to unit level JMCIS Afloat intel capabilities including access to imagery recognition and associated data (Characteristics and Performance (C&P)); e.g., SEALINK connection via JDISS.
- (U) (\$100) Begin to converge JMCIS OED intel capability with JMCIS development; provide OED-unique intel tools afloat.
- (U) (\$350) Initiate development to transfer digital video data/information among workstations on the same platform and among workstations on multiple platforms.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-I Intel Apps

- (U) (\$92) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.
  
- 2. (U) FY 1999 PLAN: (JMCIS transitioned to GCCS-M in FY98)
  - (U) (\$1,228) Continue developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based CDBS (GENSER and SCI) and associated intel applications in accordance with GCCS ("MIG") evolutionary directions and in conjunction with Cryptologic/C2W and other Warfare Commander developments
  - (U) (\$1,072) Continue developing, integrating and testing advanced digital imagery server(s) and Navy-Marine Team unique client applications to keep pace with evolving CIO, DARO and NRO imagery architectures.
  - (U) (\$250) Continue to develop enhancements to the GENSER-SCI LAN and GCCS-M -"RelX" data exchange capabilities based on MIDB "filter" approach, and emerging MLS technologies for both alpha-numeric data and imagery.
  - (U) (\$266) Continue development and integration of multi-media data capture, storage and display technologies into the IVS including 3-D visualization capability in support of situation awareness, mission/strike planning, STRED improvements, UAV data integration, terrain analysis and intelligence support.
  - (U) (\$788) Continue evolving Navy-USMC Team unique intel and intel-related data base support for GCCS-M and MAGTFC4I/Expeditionary Warfare applications as required outside MIDB capability.
  - (U) (\$733) Continue object-oriented database exploratory development.
  - (U) (\$445) Continue investigating and developing USAF, Army and other Joint intel/imagery system interfaces.
  - (U) (\$409) Develop and test enhancements to unit level GCCS-M Afloat intel capabilities including access to imagery recognition and associated support data; e.g., C&P.
  - (U) (\$261) Initiate convergence and testing of OBU/OED intel capability with JMCIS development; provide OED-unique intel tools afloat.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-I Intel Apps

- (U) (\$515) Integrate Radiant Mercury (RM) capability into JMCIS to meet the high priority Fleet requirement of C4 data downgrading and releasability for coalition interoperability. RM is a certified, accreditable, automated method to downgrade highly sensitive data over security levels.
  - (U) (\$400) Implement the Modernized Integrated Database (MIDB) replication in GCCS-M to meet the validated Fleet requirements to generate and maintain a consistent intelligence picture among general purpose C2 systems, mission planning systems, and combat direction systems while reducing numbers of databases which have to be maintained.
  - (U) (\$350) Continue development to transfer digital video data/information among workstations on the same platform and among workstations on multiple platforms.
3. (U) FY 2000 PLAN:
- (U) (\$350) Continue migration of Intelligence Correlation Tools (e.g. Gale Lite, NRTI/Binocular) into GCCS-M, conforming to DII COE and to meet validated fleet requirements.
  - (U) (\$240) Continue migration of JDISS stand-alone intelligence system tools into a GCCS-M application, which will create an integrated afloat intelligence architecture.
  - (U) (\$515) Continue integration of Radiant Mercury (RM) capability into GCCS-M to meet the high priority Fleet requirement of C4 data downgrading and releasability for coalition interoperability. RM is a certified, accreditable, automated method to downgrade highly sensitive data over security levels.
  - (U) (\$788) Continue evolving Navy-USMC Team unique intelligence and intelligence-related database support for GCCS-M and MAGTFC4I/Expeditionary Warfare applications as required outside MIDB capability.
  - (U) (\$1,012) Continue developing, integrating and testing advanced digital imagery server and Navy-Marine Team unique client applications to keep pace with evolving CIO, DARO and NRO imagery architectures.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-I Intel Apps

- (U) (\$1,185) Continue developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based CDBS (GENSER and SCI) and associated intelligence applications in accordance with GCCS-I3 evolutionary directions and in conjunction with Cryptologic/C2W and other Warfare Commander developments.
- (U) (\$500) Continue development of the Modernized Integrated Database (MIDB) replication in GCCS-M to meet the validated Fleet requirements to generate and maintain a consistent intelligence picture among general purpose C2 systems, mission planning systems, and combat direction systems while reducing numbers of databases which have to be maintained.
- (U) (\$300) Continue migration development of Intelligence and Imagery segments to meet fleet IT21 requirements (PC/NT) and DII COE.
- (U) (\$400) Implement new fleet validated GCCS-I<sup>3</sup> Intelligence Functional Working Group and Copernicus Requirements Working Group (CRWG) requirements. Develop an automated mechanism to register and catalogue software submissions for all GCCS-I<sup>3</sup> development, integration and test software builds.
- (U) (\$526) Develop Navy Portion for imagery access and manipulation components of the Joint Targeting Toolbox, a proposed uniform set of targeting applications validated by all Services.
- (U) (\$409) Continue development and test enhancements to unit level GCCS-M Afloat intelligence capabilities including access to imagery and associated support data; e.g., C&P.
- (U) (\$262) Continue testing of OBU/OED intelligence capability with GCCS-M development; provide OED-unique intelligence tools afloat.
- (U) (\$250) Develop Prototype Rapid Targeting Technologies for GCCS-I<sup>3</sup>.

(U) PROGRAM CHANGE SUMMARY: FY 1998: SBIR reduction of (\$-87K), DD1002: April 1998 update (\$+485K), FY 98 update (\$-10K). Net change was (\$+388K).

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: X0521  
 PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: GCCS-I Intel Apps

	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
(U) OMN	9,562	15,542	12,839	17,435	16,515	17,297	17,823	17,896	CONT.	CONT.

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) JMCIS Afloat (formerly Navy Tactical Command System-Afloat (NTCS-A))

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲										▲			
			MS III										MS IIIA			
Engineering Milestones						▲								▲		
						GCCS-M 4.x Drop								GCCS-M 5.x Drop		
T&E Milestones		▲											▲			
		DT/OT III											DT/OT IIIA			
Contract Milestones																

D. (U) SCHEDULE PROFILE: See paragraph C.

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# UNCLASSIFIED

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## FY 2000 President's Budget Estimates

EXHIBIT R-3 RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Cost Categories	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
Software/Product Development	Various	Various	4,745	4,224	12/98.	3,684	12/99			CONT.	CONT.	
Subtotal Product Development	Various	Various	4,745	4,224	12/98.	3,684	12/99			CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	9,810	2,368	12/98	2,923	12/99			CONT.	CONT.	
Subtotal Support	Various	Various	9,810	2,368	12/98.	2,923	12/99			CONT.	CONT.	
Remarks:												

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# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis (X0521)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-I Intel Apps

Cost Categories	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
Operational Test & Evaluation	PD	OPTEVFOR	1,981	75	12/98	75	12/99.			CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	1,981	75	12/98	75	12/99			CONT.	CONT.	
Remarks												
Project Management	CPFF	Various	569	15	Var.	19	Var.			CONT.	CONT.	
Travel	WR	HQ	1,340	35	Var.	36	Var.			CONT.	CONT.	
Subtotal Management	Various	Various	1,909	50	Var.	55	Var.			CONT.	CONT.	
Remarks												
Total Cost	Various	Various	18,445	6,717	Var.	6,737	Var.			CONT.	CONT.	
Remarks												

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# UNCLASSIFIED

Exhibit R-3, RDT&E,N Project Cost Analysis

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT:                      0604231N                      PROJECT NUMBER: X2215  
PROGRAM ELEMENT TITLE:                      Tactical Command System                      PROJECT TITLE: Joint Interoperability

(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	COST TO COMPLETE	TOTAL PROGRAM
X2215    Joint Interoperability	0	0	0	0	0	0	0	0	0	0

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Joint Interoperability. This program will develop common services for the Naval Services implementation of GCCS and GCSS joint interoperability requirements for sharing of C4I data and for software application reuse by Joint forces. It will provide and implement applications algorithms and interfaces updated for Joint interoperability, saving considerable time and resources that would need to be expended if new/additional software applications were required to be developed. It will produce Naval software products compliant with DII COE software engineering standards and conventions and perform integration with components and mission applications of GCCS, GCSS, TBMCS, JDP, AADC, and ABCS. Approaches to exchange digital video data/information between Joint forces using the latest COTS software will be reviewed, tested and deployed as prototypes. The Joint Interoperability program will ensure compatibility of Navy C2, USMC MAGTAF, and USCG C4I systems with other DII COE based systems to provide common reference and tactical data for afloat, ashore, amphibious and ground based tactical components. COTS licenses for common services to support interoperability with Joint systems will be procured. Joint Interoperability funding will transfer to the GCCS-M Program beginning with FY 99.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2215)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X2215

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: Joint Interoperability

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) Not Applicable.

2. (U) FY 1999 PLAN:

- (U) Joint Interoperability funding will transfer to the GCCS-M Program beginning with FY 99.

(U) PROGRAM CHANGE SUMMARY: Not Applicable

A. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) Not Applicable.

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲													
			MS III													
Engineering Milestones																
T&E Milestones			▲													
			DT/OT III													
Contract Milestones																

*Funding Transferred to GCCS-M in  
FY 1999*

D. (U) SCHEDULE PROFILE: See paragraph C.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2215)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2216  
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: C4I For Joint Littoral Warfare

(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	COST TO COMPLETE	TOTAL PROGRAM
X2216 C4I for Joint Littoral Warfare (JLW)	0	0	0	0	0	0	0	0	0	0

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The C4I for Joint Littoral Warfare (JLW) program supports Joint Service and Navy commanders ashore and afloat, including a wide range of command echelons from the CINC to Joint Task Force to the tactical command level by integrating the components of a JLW evolution. JLW systems will be developed by applying new technology to reduce life-cycle costs and platform independence and will be scaleable to each application. JLW software products will operate on a family of tactical computer configurations, including stand alone single processor configurations, man-portable units, and local area network configurations. JLW capabilities include: (1) a gateway for wide area C4I network communications and interfaces for tactical and common user communications; (2) a common tactical picture based upon intelligence data exploitation and fusion and own force data processing; (3) a common view of battle space area(s) including graphical presentation of environmental, navigational, and mapping data; (4) tactical support data base management and manipulation. The program will use and build upon the Defense Information Infrastructure (DII) Software Development Environment (SDE) and core software developed for NTCS-A and JMCIS Ashore programs. Through a series of evolutionary builds, JLW capabilities will add and/or enhance JMCIS in the areas of mine warfare and mine countermeasures, Theater Air Traffic Defense, Intelligence data exploitation (traditional and non-traditional sources), Theater Ballistic Missile Defense, improved environmental and navigational data for tactical decision areas, coastal ASW and amphibious assault, Tactical Data Link (TADIL) improvements, improved Navy and Joint system interfaces and interoperability. JLW will also introduce Artificial Intelligence to provide counter-proliferation alerts and tactical intelligence. JLW products will be initially deployed at JMCIS Afloat sites and will become part of the JMCIS software re-use library available to all programs using the JMCIS architecture. C4I for Joint Littoral Warfare (JLW) funding will transfer to the GCCS-M Program beginning with FY 99.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2216)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: X2216  
PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: C4I For Joint Littoral Warfare

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1.(U) FY 1998 ACCOMPLISHMENTS:

- (U) Not Applicable.

2. (U) FY 1999 PLAN:

(U) C4I for Joint Littoral Warfare (JLW) funding will transfer to the GCCS-M Program beginning with FY 99.

(U) PROGRAM CHANGE SUMMARY: Not Applicable

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) Not Applicable.

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲													
			MS III													
Engineering Milestones																
T&E Milestones			▲													
			DT/OT III													
Contract Milestones																

*Funding Transferred to GCCS-M in  
FY 1999*

D. (U) SCHEDULE PROFILE: See paragraph C.

R-1 Shopping List-Item No. 89-49 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2216)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT:                      0604231N                      PROJECT NUMBER: X2305  
PROGRAM ELEMENT TITLE:                      Tactical Command System                      PROJECT TITLE: GCCS-M Common Apps

(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	FY2005 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X2305    GCCS-M Common Apps (formerly Navy COE)	1,681	12,987	13,448	15,090	17,381	18,791	18,923	19,063	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Design, develop, update, integrate, test, configuration manage, support and evolve the Navy utilization and system implementation of the Defense Information Infrastructure Common Operating Environment (DII COE), based on the Joint Defense Information Infrastructure (DII) COE, for all Naval C4I Systems. The GCCS-M Common Apps program contains the fundamental building blocks and common applications for all of our fielded Global Command and Control System (Maritime) C4I systems in Navy, Marine Corps, and Coast Guard. It is the Navy's tactical implementation of the Global Command and Control System (GCCS) and the Global Combat Support System (GCSS) which provides the warfighter: (1) timely access to battlefield information, and (2) state-of-the-art information processing capability to support the command and control of maritime forces through a combination of communications, intelligence and combat system interfaces.

The Navy COE program is a core function of the GCCS-M Common Apps in that it serves as the system integration point for command and control systems in the Naval services. The program has the responsibility of working with developers throughout the Navy to incorporate the requirements of their users so that they might quickly and efficiently integrate and transform present stovepipe capabilities into an interoperable C4I architecture. As the number of legacy systems migrating to the DII COE continues to grow, resources for rapidly folding them into the service extensions must keep pace as the complexity and size of the COE grows. As a product of evolutionary acquisition, the Navy COE will continue to evolve with the DII COE, new technology, and Commercial Off-the-shelf products.

Beginning in FY 99 and continuing in FY 00, this line is renamed GCCS-M Common Applications and incorporates previously separate Joint Interoperability (604231N X2215), C4I for Joint Littoral Warfare (604231N X2216), JMCIS Ashore (604231N X2041) and portions of JMCIS Afloat (604231N X0709) which were common across GCCS-M variants). Under these functions, GCCS-M Common Apps expands to include all C4I applications required to fully support Navy joint interoperability in the littoral environment, and includes all common functions such as track database management, message processing, display implementation, correlation and system architecture migration in order to ensure a coherent and consistent implementation of C4I architectures in the Fleet.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$200) Improve processes for integrating to the COE and develop supporting program documentation. Maintain the on-line software library that supports the Naval and DII COE and naval warfare applications for integration and configuration control. Provide on-line distribution of documentation and help desk. Conduct problem reporting and tracking of Naval COE components.
- (U) (\$1,099) Integrate and transform Naval core services to be interoperable extensions of the DII COE. Develop tools for integration. Develop updates to keep pace with new technology and commercial-off-the-shelf products. Obtain and manage COTS licenses. Upgrade Application Programmer Interfaces to improve the JMCIS systems integration process. Distribute COE software and provide engineering support for developers to the COE.
- (U) (\$350) Conduct compliance and functional level testing and Naval COE component certification testing. Conduct development test and evaluation and certification of evolutionary COE products.
- (U) (\$32) Develop and update Naval Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) implementation guidance. Develop and update Naval C4ISR mission to incorporate an overarching operational, systems, technical and information architectures. Conduct associated C4ISR analyses and studies.

2. (U) FY 1999 PLAN:

- (U) (\$189) Continue development of program documents and data.
- (U) (\$1,327) Integrate and transform Naval core services to be interoperable extensions of the DII COE. Develop tools for integration. Develop updates to keep pace with new technology and commercial-off-the-shelf products. Obtain and manage COTS licenses. Upgrade Application Programmer Interfaces to improve the GCCS-M systems integration process. Distribute COE software and provide engineering support for developers to the COE.
- (U) (\$340) Continue compliance and functional level testing and Naval COE component certification testing. Conduct development test and evaluation and certification of evolutionary COE products.

R-1 Shopping List-Item No. 89-51 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

- (U) (\$345) Support developmental testing leading to an OT IIA leading to a Milestone IIIA decision (FY00) for fleet release and installation of GCCS-M 4.X.
- (U) (\$450) Continue to integrate/analyze GCCS-M Ashore sites in conjunction with COTS hardware upgrades, and state-of-the art displays, video distribution systems and briefing aids (including multimedia, 3-D visualization and very high resolution images).
- (U) (\$483) Continue to incorporate state-of-the-art technologies such as distributed data bases and WEB technology.
- (U) (\$180) Continue interfacing/integrating with readiness data from other Navy sources.
- (U) (\$300) Continue development of object oriented/design solution into GCCS-M Ashore to improve system performance.
- (U) (\$270) Continue development of database modules to support WAN access by GCCS-M Ashore remote users, i.e., distributed databases and data standardization.
- (U) (\$225) Update GCCS-M Ashore software and databases to accommodate Navy unique and Joint message format changes.
- (U) (\$520) Maintain architectural compatibility with DoD mandated standards (i.e., Defense Information Infrastructure (DII)).
- (U) (\$282) Continue implementation of appropriate security features and documentation. Continue security engineering efforts, Certification Test and Evaluation (CT&E), Security Test and Evaluation (ST&E), documents (e.g., Computer Security Accreditation Plan (CSAP), operating procedures, safeguards and site accreditation.
- (U) (\$85) Continue development and implementation of Human Computer Interface Standards for software development and data retrieval.
- (U) (\$405) Conduct developmental testing and beta testing on GCCS-M Ashore software.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

- (U) (\$475) Continue extension of full GCCS-M Ashore access and functionality into PC domain consistent with FLTCINC and TYCOM requirements.
- (U) (\$225) Port GCCS-M Ashore software to run on current GCCS and Navy TAC and PC computer platforms.
- (U) (\$460) Continue Cooperative Development of NACCIS with SACLANT, implement NATO message parsing and editing features, expand GCCS-M Ashore database to reflect NATO/Allied units, and continue to support Joint, Allied (NATO and other) and Foreign (FMS) users to ensure interoperability among users.
- (U) (\$345) Incorporate decision aids, data elements, and message formats and reports to support Navy blockage enforcement, choke point, port evacuation Navy Control of Shipping (NCS) operations, and other Navy missions associated with Operations other than War.
- (U) (\$208) Maintain compatibility with Defense Messaging System (DMS)/Automated Message Handling System software requirements.
- (U) (\$253) Revise JMCIS architecture to be compatible with DoD requirements in DII. Produce requirements engineering data and documentation.
- (U) (\$620) Port Navy JMCIS applications to Joint standard hardware platforms and update for compliance with DII requirements. Update algorithms, data and display formats for Joint interoperability.
- (U) (\$250) Implement plan for migration of data to common data link.
- (U) (\$259) Procure Joint standard hardware for developers and testers of common services.
- (U) (\$100) Develop and implement processes to support development and integration of Joint warfare applications.
- (U) (\$200) Provide training and technical services for developers of common services and mission applications.
- (U) (\$225) Plan and conduct integration and development testing of common services.
- (U) (\$99) Develop program documentation and data for joint interoperability.

R-1 Shopping List-Item No. 89-53 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

- (U) (\$200) Develop improvements to two-way data exchange capabilities to ensure system interoperability.
  - (U) (\$250) Develop approach to exchange digital video data/information among Joint forces.
  - (U) (\$385) Perform system requirements analysis and systems design.
  - (U) (\$166) Develop program documentation and data for JLW.
  - (U) (\$350) Transition to latest technologies to achieve a field deployable JLW capability.
  - (U) (\$450) Develop new Application Program Interfaces (APIs) to support new JLW mission capabilities.
  - (U) (\$600) Update GCCS-M C4I systems architecture and update/integrate GCCS-M software segments to provide Tactical Data Link (TADIL) improvement, improved navigational and environmental data for Tactical Decision Aids and Theater Ballistic Missile Defense.
  - (U) (\$300) Procure components of the DII Software Development Environment for use by GCCS-M/DII developers.
  - (U) (\$411) Develop/integrate JLW Application Software Segments supporting mine warfare and countermeasures, and amphibious assault.
  - (U) (\$255) Complete initial phase of JLW/GCCS-M Systems Integration.
  - (U) (\$300) Conduct JLW Developmental Testing.
  - (U) (\$200) Complete an JLW initial OA.
3. (U) FY 2000 PLAN:
- (U) (\$450) Implementation of Real-time capabilities into DII COE in order to support migration of high performance systems to GCCS-M architecture.

R-1 Shopping List-Item No. 89-54 of 89-69

# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

- (U) (\$100) Continue development of program documents and data.
- (U) (\$400) Evolve the USN C4I messaging architecture to incorporate emerging DII-COE based messaging components (e.g. CMP, DMS, etc.)
- (U) (\$750) Define and establish the PC/NT Common Operating Environment, Initiate the migration of Unix based segments and applications to the NT COE.
- (U) (\$475) Define and develop the system architecture and products to evolve USN C4I systems from a FOTC/OTCIXS/BGBDM based network towards one that takes advantage of TCP/IP, LANs, and WANs (JMCOMS/ADNS, and SIPRNET)
- (U) (\$200) Implement INFOSEC products into the C4I software architecture
- (U) (\$350) Investigate DII-COE compliant multi-source and multi-sensor correlation and fusion software segment development to Navy, Joint, and coalition COPS
- (U) (\$300) Development and implementation of integrated shipboard architectures which utilize common set of NIMA product services / servers
- (U) (\$350) Development and implementation of core capabilities associated with strategic and tactical C4I management of TBM data and tools for decision making and COP fusion of TBMD data
- (U) (\$175) Development and implementation of Mil-std-2525A and supplemental symbology to support COP fusion and display
- (U) (\$350) Development and implementation of interoperable architectures for integration of PLI data in the COP
- (U) (\$2,500) Implementation of DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development and application of maritime extensions of SW fixes, and implementation of Navy-unique ECP's in DII COE

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

- (U) (\$500) Develop the 3-tier architecture (Data Servers, application servers, display & presentation) to support the transition of the USN C4I from the current client/server model. This will streamline the data maintenance function to data centers, and improve timeliness and accuracy of data to the warfighter.
- (U) (\$200) Enhance MTI autotrack generation capabilities for JSTARS data.
- (U) (\$1,300) Complete 2-way TADIL J and incorporate Multi-tadil correlation.
- (U) (\$200) Incorporate TBMCS aboard USN Flagships (LCC, AGF, CV/CVN) and develop the required interfaces, procedures to interoperate with GCCS-M.
- (U) (\$100) Develop/Enhance Interface support for Mission Planning Systems
- (U) (\$250) Incorporate USMC MAGTF C4I based systems aboard USN amphibious and command ships (LCC, AGF, etc.). Develop Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corp. elements
- (U) (\$250) Develop/Enhance/Incorporate tools and functionality that supports joint and coalition C4I warfare. Develop Conops/procedures/tests/exercises that implement coalition interoperability.
- (U) (\$250) Develop interfaces/Conops/procedures to take advantage of the LAN/WAN commonizations provided by JMCMS/ADNS. Perform land and sea based testing of the integrated C4I architecture.
- (U) (\$100) Develop capability for automatic interface and update with SIIP and METOC.
- (U) (\$175) Investigate latest COTS H/W and S/W to implement a digital video system solution to accomplish full motion video transmission intra-ship, inter-ship, and ship to shore.
- (U) (\$250) Design/Develop Security Architecture for Naval C4I systems
- (U) (\$125) Continue hardware design & development, including investigation of space saving COTS available GCCS-M compatible hardware for use in confined spaces on board submarines, and investigation of latest COTS display and large screen projector technology for use in GCCS-M C3I system.

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# UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (X2305)

# UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$1,177) Semi-annual testing of each DII COE build received from DISA, documentation and CM of required STR processes, and distribution to Navy DII COE customers
- (U) (\$325) Support the proof of concept testing in exercise environments of emerging technology in the C4I arena.
- (U) (\$300) Develop and Implement modeling and simulation in support of testing/exercises
- (U) (\$900) Perform systems testing on the integrated components of the Naval C4I architecture
- (U) (\$646) Design and develop systems documentation to support test, evaluation, and fielding of C4I systems

(U) PROGRAM CHANGE SUMMARY: FY 1998: DD1002: April 1998 update (\$-22K), FY1998 June BTR update (\$-200K), FY 98 update (\$-22K). Net change was (\$-244K).

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) Not Applicable

C. (U) ACQUISITION STRATEGY:

	FY 1998				FY 1999				FY 2000				FY 2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones			▲										▲			
			MS III										MS IIIA			
Engineering Milestones					▲								▲			
					GCCS-M 4.x Drop								GCCS-M 5.x Drop			
T&E Milestones		▲											▲			
		DT/OT III											DT/OT IIIA			
Contract Milestones																

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

D. (U) SCHEDULE PROFILE: See paragraph C.

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Exhibit R-2a, RDT&E,N Project Justification (X2305)

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## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	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
Software/Product Development	CPFF	INRI, Reston, VA	1,843	1,810.	10/98	3,900	10/99			CONT.	CONT	
Software/Product Development	WX	SSC-San Diego	0	0		1,116	10/99			CONT.	CONT	
Software/Product Development	CPFF	Delfin	0	0		1,400	10/99			CONT.	CONT	
Software/Product Development	Various	Various	0	9,100	10/98	2,082	10/99			CONT.	CONT	
Subtotal Product Development	Various	Various	1,865	10,910.	10/98	8,498	Var.			CONT.	CONT	
Remarks:												
System Engineering	WX	SSC-San Diego	0	0		800	10/99			CONT.	CONT	
System Engineering	CPFF	INRI, Reston, VA	0	0		670	10/99			CONT.	CONT	
System Engineering	Various	Various	0	2,027	10/98	850	10/99			CONT.	CONT	
Subtotal Support	Various	Various	0	2,027		2,320	10/99			CONT.	CONT	
Remarks:												

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Exhibit R-3, RDT&E,N Project Cost Analysis (X2305)

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## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Common Apps

Cost Categories	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
Operational Test & Evaluation	PD	OPTEVFOR				120	10/99			CONT.	CONT	
Operational Test & Evaluation	Various	NTCSI				60	10/99			CONT.	CONT	
Developmental Test & Eval.	WX	SSC-SD				1,700	10/99			CONT.	CONT	
Developmental Test & Eval.	Various	Various				100	10/99			CONT.	CONT	
Subtotal T&E						1,980	10/99			CONT.	CONT	
Remarks												
Project Management	Various	Various	60	50	Var.	450	Var.			CONT.	CONT	
Travel	Various	Various				200	Var.			CONT.	CONT	
Subtotal Management			60	50	Var.	650	Var.			CONT.	CONT	
Remarks												
Total Cost	Various	Various	1,903	12,987	Var.	13,448	Var.			CONT.	CONT	
Remarks												

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Exhibit R-3, RDT&E,N Project Cost Analysis (X2305)

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## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2306  
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Naval Simulation System

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	COST TO ESTIMATE	TOTAL COMPLETE	PROGRAM
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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	COST TO COMPLETE	TOTAL PROGRAM
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X2306 Naval Simulation System	2,342	1,741	0	0	0	0	0	0	0	4,083
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A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Simulation System (NSS) provides a capability to simulate the execution of Naval Warfare and Operations Other Than War to be used for a number of related purposes. Fleet Command Centers, both ashore and afloat will use this capability for Course of Action Assessment; that is, to assess the effectiveness of operational plans with respect to measures defined by the fleet planner. NSS also supports fleet operations by providing a capability to inject simulated platform, system, or commander level entities into real world Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems, and by providing automated tools for conducting post-exercise analyses. Acquisition Planners in OPNAV will use this capability to conduct requirements analysis and cost effectiveness analysis for new Naval systems. NSS provides a comprehensive ability to simulate and assess Naval and joint CONOPS and system/platform/force level capabilities. NSS explicitly accounts for C4ISR interactions among all Warfare Mission Areas (WMAs). In each of these applications, NSS provides detailed analyses of performance including traceability of the warfighting outcome to specific components of the "sensor to decision-maker to shooter" architecture.

The Naval Simulation System will also support Command Level training for operational forces at the Task Force or Battlegroup level. To be accessible to fleet planners, the Naval Simulation System will be integrated into the Joint Maritime Command Information System (JMCIS), both afloat and ashore configurations, in such a way as to be compliant with the Global Command and Control System (GCCS). In addition, the Naval Simulation System will support distributed computing on multiple High Performance Computers connected together on a network such as the Defense Information Infrastructure and Fleet Operational Communication Links at multiple classification levels. The same networks that are used to provide access to distributed computing will also be used for Distributed Collaborative Planning by means of which planners at different sites with responsibility for different aspects of the plan can work together collaboratively to produce a single coherent plan. This collaborative planning capability will be used to support Joint Planning between different service components. The Naval Simulation System will undergo Verification and Validation during its design and implementations phases, and will be Accredited for each intended major application. This effort funds the development and maintenance of the Naval Simulation System and the infrastructure of subject matter experts needed for ongoing Verification, Validation, and

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Exhibit R-3, RDT&E,N Project Cost Analysis (X2306)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Naval Simulation System

Accreditation (VV&A) and Configuration Control Management. In FY 2000 - FY2005, funding was withdrawn by Sponsor during POM.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$75) Develop an NSS Analyst Human Computer interface (HCI) Requirements Document and an NSS Analyst HCI Design and Implementation Plan.
- (U) (\$150) Develop an NSS Web-based Fleet HCI and Engine Requirements Document and an NSS Web-based Fleet HCI and Model Engine Design and Implementation Plan.
- (U) (\$320) Implement, test, and document the NSS analyst HCI and Model Engine. Provide for training and maintenance.
- (U) (\$677) Implement, test, and document the Fleet HCI and Model Engine for Fleet Strike/C4ISR applications and JFACC support operations. Become JMCIS'98 and DII-COE compliant. Provide for training and maintenance. Integrate with the Target Information Management System (TMS).
- (U) (\$220) Design, implement, and test a Personal Computer (PC-based) NSS Strike/C4ISR demonstration system illustrating the unique C4ISR capabilities of NSS for strike applications. Provide for training and maintenance.
- (U) (\$250) Implement, test, and document the Fleet HCI and Model Engine for Fleet Theater Ballistic Missile Defense (TBMD) applications. Provide for training and maintenance.
- (U) (\$300) Support the necessary subject matter expert review to provide VV&A and Configuration Control Management.
- (U) (\$350) Provide analysis support to JTFEX 98-1 and 98-2. Implement required NSS software modifications.

#### 2. (U) FY 1999 PLAN:

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Exhibit R-2a, RDT&E,N Project Justification (X2306)

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Naval Simulation System

- (U) (\$100) Develop a Web-based Common NSS Analyst/Fleet Human Computer interface (HCI) Requirements Document and an NSS Common HCI Design and Implementation Plan.
- (U) (\$100) Implement, test, and document the Common HCI and Model Engine. Provide for Training and Maintenance.
- (U) (\$400) Add/Improve Warfare Area representations (AMW, MIW, ASW, Kinematic Strike, C4ISR and Logistics) in NSS as specified by the NSS Requirements Working Group and directed by the NSS Configuration Control Board.
- (U) (\$76) Identify and import the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.
- (U) (\$250) Add/improve the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.
- (U) (\$220) Add/Improve the NSS functionality supported by NSS in the JMCIS/GCCS environment as specified by the JMCIS Requirements Working Group and directed by the NSS Configuration Control Board.
- (U) (\$300) Provide analysis support to JTFEX 99-1 and 99-2. Implement required NSS software modifications.
- (U) (\$295) Support the necessary subject matter expert review to provide VV&A and Configuration Control Management.

### 3. (U) FY 2000 PLAN:

- (U) Not Applicable
- 

### A. (U) PROGRAM CHANGE SUMMARY:

FY-1998 Minor Navy program adjustment of (\$-37K), FA-18 fix of (\$-13K)

FY-1999 Revised Economic Assumptions (\$-4K), Civilian Personnel Underexecution (\$-1K)

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Exhibit R-2a, RDT&E,N Project Justification (X2306)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Naval Simulation System

- B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) Not Applicable
- C. (U) ACQUISITION STRATEGY: Not Applicable
- D. (U) SCHEDULE PROFILE: Not Applicable

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Exhibit R-2a, RDT&E,N Project Justification (X2306)

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EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5                      PROGRAM ELEMENT:                      0604231N                      PROJECT NUMBER: X2307  
PROGRAM ELEMENT TITLE:                      Tactical Command System                      PROJECT TITLE: Shipboard LAN/WAN

(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	COST TO COMPLETE	TOTAL PROGRAM
X2307    Shipboard LAN/WAN	478	434	0	467	416	459	539	551	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard LAN/WAN project is a component of the Naval Tactical Command Support System (NTCSS), which is a multi-function program designed to provide standard tactical support information systems to various afloat and associated shore-based fleet activities. The NTCSS mission is to provide the full range of responsive tactical support ADP hardware and software in support of the management of information, personnel, material and funds required to maintain and operate ships, submarines, and aircraft. NTCSS is to provide an efficient management of afloat tactical support data, through the use of standardized hardware and software, to meet the mission support information management requirements for force sustainment in support of the new direction of the Navy and Marine Corps. On 6 June 1995, NTCSS and its component subsystems, discussed below, were selected as Command and Control migration systems under the auspices of ASD(C3I).

NTCSS incorporates the functionality of the Shipboard Non-Tactical ADP Processing (SNAP) systems, the Naval Aviation Logistics Command Management Information System (NALCOMIS), and the Maintenance Resource Management System (MRMS).

SNAP is an automated information system that supports organizational level maintenance, supply, financial and administrative functions on afloat units, at Marine Aviation Logistic Squadrons (MALS), and at associated shore activities. Due to the age and obsolescence of SNAP I, which is currently deployed on the larger ships and at the MALS, and SNAP II, which is currently deployed on the smaller ships and submarines, these systems are being replaced with SNAP III in the 1994 through 2000 time frame. SNAP improves equipment supportability and maintainability and thus readiness through: the improvement in the accuracy of the maintenance, supply, financial and related support data maintained and reported by the ship; and the acceleration of management report preparation and data transmission.

NALCOMIS is an automated, real time, interactive, management information system that provides a modern management tool for day-to-day management of aircraft maintenance at the organizational and intermediate levels. NALCOMIS automates the management of the aviation repairables inventory providing nose-to-tail tracking through the repair and operations cycles. The scope of NALCOMIS includes 71 intermediate maintenance activities located afloat (CV/LHA/LHD) and ashore at MALS and Naval Air Stations (NAS's), and approximately 359 Navy and Marine squadrons.

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Exhibit R-2a, RDT&E,N Project Justification (X2307))

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Shipboard LAN/WAN

MRMS is an automated information system that supports ship intermediate maintenance management of the Atlantic and Pacific Fleets. MRMS supports Type Commands, Group Commanders, Area Coordinators, Readiness Support Groups, Submarine Squadrons, Ship Repair Facilities, and various intermediate Maintenance Activities, both afloat and ashore, for budgeting, planning, production and analysis of ship maintenance. MRMS improves ship readiness through improved maintenance and ship repair management, information resource management, and maintenance data processing. FY 98 is the first year of RDT&E funds for this project.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$366) Developed proof of concept plan for NTCSS data base replication, as it would be used in a production environment. Developed implementation plan for proof of concept.
- (U) (\$112) Demonstrated the tactical and tactical support applications of commercial wireless and cellular communications technology. Developed Naval strategy to utilize the opportunities offered by mobile computing.

#### 2. (U) FY 1999 PLAN:

- (U) (\$434) Continue to incorporate state-of-the-art technologies and business process improvements into interfaces with tactical systems.

#### 3. (U) FY 2000 PLAN: Not Applicable. Funds withdrawn during NAVCOMPT review.

### (U) PROGRAM CHANGE SUMMARY:

### B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

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Exhibit R-2a, RDT&E,N Project Justification (X2307)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Shipboard LAN/WAN

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	COST TO	TOTAL
	ESTIMATE	COMPLETE	PROGRAM							
(U) OPN	38,440	35,228	143,769	96,998	117,450	96,907	58,198	40,903	CONT.	CONT.
(U) O&MN	382	4,661	4,805	2,915	980	687	706	723	CONT.	CONT.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: See paragraph C.

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Exhibit R-2a, RDT&E,N Project Justification (X2307)

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604231N      PROJECT NUMBER: X2418  
PROGRAM ELEMENT TITLE: Tactical Command System      PROJECT TITLE: JSTARS

(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	COST TO COMPLETE	TOTAL PROGRAM
X2418    Joint Surveillance Target Attack Radar System (Joint STARS)	4,663	0	0	0	0	0	0	0	0	4,663

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Joint Surveillance Target Attack Radar System (JSTARS) is an airborne surveillance and target acquisition system that provides real-time accurate information for peacekeeping or decision-making on the battlefield. JSTARS detects, locates, classifies, tracks and targets potentially hostile ground movement in all weather. The Navy and Marine Corps aviation forces, future variants of the Tomahawk missile, shore fire support systems, and amphibious forces will require highly capable moving target indicator (MTI) radar support for situational assessment and targeting. Thus, the Navy and Marine Corps have a requirement for Joint STARS data that goes beyond the capability that has been demonstrated to date of simply putting a stand alone DGSS terminal on board ship. The requirement for this data is specified in the S-3 and P-3 Operational Requirements Documents, the Marine Corps' Operational Requirements Document for Joint STARS connectivity and concept of employment. The data must be made available via existing communications paths and within existing command and control and weapons control systems to augment both the common operational picture and the targeting solution. These flexibility and interoperability requirements lead to the conclusion that the core capability to receive, process, display and store Joint STARS data must be integrated within the DII COE in order to maximize utilization of existing naval technical and operational resources and provide a path for future migration of user systems to the DII COE.

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Exhibit R-2a, RDT&E,N Project Justification (X2418))

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## FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X2418

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: JSTARS

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (4,663) Provide Navy and Marine Corp. units JSTARS data to support situational awareness and targeting.

#### 2. (U) FY 1999 ACCOMPLISHMENTS:

- Not Applicable

#### 3. (U) FY 2000 ACCOMPLISHMENTS:

- Not Applicable

#### 4. (U) FY 2001 ACCOMPLISHMENTS:

- Not Applicable

(U) PROGRAM CHANGE SUMMARY: FY 1998: Reflects SBIR reduction of \$-134K, FY 98 update (\$-55K).

C. (U) ACQUISITION STRATEGY: Not Applicable

D. (U) SCHEDULE PROFILE: See paragraph C.

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Exhibit R-2a, RDT&E,N Project Justification (X2418))