DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

OPNAVINST 9410.5B
N6
28 Feb 08

OPNAV INSTRUCTON 9410.5B

From: Deputy Chief of Naval Operations (Communication Networks) (N6)

Subj: NAVY INTEROPERABILITY REQUIREMENTS, CERTIFICATION AND TESTING OF NAVY TACTICAL C4ISR SYSTEMS IMPLEMENTING PROCEDURAL INTERFACE STANDARDS

Ref: (a) DOD Directive 4630.5, Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS) of 5 May 04
(b) DOD Instruction 4630.8, Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS), of 30 Jun 04
(c) CJCS Instruction 6212.01D, Interoperability and Supportability of Information Technology and National Security Systems of 8 Mar 06 (NOTAL)
(d) CJCS Instruction 3170.01E, Joint Capabilities Integration and Development System of 1 May 07 (NOTAL)
(e) IEEE/EIA 12207, Software Life Cycle Processes (NOTAL)
(f) MIL-STD 973, Configuration Management
(g) SECNAV Instruction 5000.2C

Encl: (1) List of terms and acronyms

1. Purpose. To provide guidance to Echelon I-III commands related to maintaining interoperability, certification of, and testing for naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems which implement procedural interface standards.

2. Cancellation. OPNAVINST 9410.5A

3. Scope and Applicability. Per references (a) through (c), this guidance applies to all naval C4ISR systems which implement TDL, Over-The-Horizon Targeting GOLD (OS-OTG), Variable Message Format (VMF), Message Text Format (MTF), and other procedural interface standards to fulfill tactical data exchange

requirements, to include those systems acquired via rapid prototyping and fleet initiative programs.

4. Acronyms. Terms used in this instruction are listed in enclosure (1).

5. Background. Interoperability requires that all systems involved in warfare support (command, sensor, intelligence, electronic warfare, weapons, mission planning, logistics, administrative, and training) be able to exchange information.

6. Guidance. Joint C4ISR interoperability is paramount. The process of establishing Joint C4ISR requirements, implementing Joint standards, configuration management of C4ISR standards, and certifying C4ISR systems for standards conformance supports Joint interoperability. References (a) through (c) mandate C4ISR systems achieve Joint certification prior to Full Rate Production (FRP), or prior to Joint operational use.

a. New Navy systems and changes to existing systems that must interact with or be integrated into the DOD C4ISR infrastructure will use Joint information technology standards. Navy unique standards will be used only when no other standards satisfy C4ISR systems Information Technology (IT) requirement and when approved through the requirements review process in accordance with references (b) through (d).

b. Generally, Joint certification will require new or updated systems to satisfactorily comply with standards baselines existing during the development phase in order to achieve certification to go to Milestone C and/or field operational systems. When establishing the acquisition baseline, program offices should consider the evolving standards environment as well as the need to interoperate with legacy systems. Legacy system programs must implement current baselines with each software and hardware upgrade. Legacy systems that cannot or will not be upgraded, or systems that will be fielded in advance of Joint Interoperability Test Command (JITC) certification must request and be granted an Interim Certificate to Operate (ICTO). Legacy systems upgrades which do not affect a system's joint interfaces or interoperability will not require a JITC recertification.

c. Due to the complexity of interoperability certification, the U.S. Military Communications Electronics Board Interoperability Test Panel (USMCEB-ITP) may grant an ICTO to enable an evolutionary system to demonstrate concepts and train operators in support of operational testing. New equipment must be laboratory tested, at a minimum, to preclude degradation of operational nets during interim operations. An ICTO shall not be construed as approval for unrestricted fleet release of equipment or software.

d. Software Trouble Reports (TR) must be submitted in accordance with reference (e). Software problems are evaluated based on the system's mission and how the problem impacts other systems in the naval and Joint C4ISR architecture. The focus is not on TR priorities but on which TRs must be fixed. A TR which prevents accomplishment of an operational or mission essential capability will result in a non-certification.

7. Responsibilities

a. Deputy Chief of Naval Operations (Communication Networks) (N6):

(1) Coordinate Navy position and submit recommendations to JCS (J6), USMCEB, DISA, and National Security Agency (NSA) regarding C4ISR interoperability standards.

(2) Certify system compliance with Joint interoperability standards upon completion of interoperability testing by the Navy Center for Tactical Systems Interoperability (NCTSI).

(3) Program and budget adequate resources for NCTSI configuration management, certification test support, Fleet Support, and Network Design Facility functional requirements.

b. Deputy Chief of Naval Operations for Integration of Capabilities and Resources (N8) will submit approved requirements documents for C4ISR systems covered by this instruction to the Joint Staff for interoperability certification.

c. OPNAV Resource and Program Sponsors:

(1) Plan, program, and budget adequate resources to transition legacy C4ISR systems implementing procedural interface standards to approved Joint or Navy information standards during major upgrades, or as feasible.

(2) Address information interoperability requirements in programmatic requirement documents.

(3) Ensure resources are available for funding testing support per reference (g).

d. Commander, Naval Network Warfare Command (COMNAVNETWARCOM)

(1) Ensure NCTSI annual test plan and schedule aligns with Navy and Joint certification priorities. Ensure Joint testing and certification annual test schedules are funded for coordination with JITC per reference (g).

(2) Represent fleet issues and requirements in standards and interoperability working groups. Groups include: Joint Multi-TDL CCB, USMTF CCB, Technical Interoperability Standards Group (TISG), Operational Interoperability Requirements Group (OIRG), and Joint Multi-TDL Standards Working Group (JMSWG).

(3) Represent NCTSI funding requirements to CNO (N6).

(4) Upon recommendation from NCTSI, authorize C4ISR Message Implementation Plan (MIP) for platform TDL program implementation by the appropriate Program Executive Office.

e. Systems Development Managers (Systems Commanders (SYSCOMs), Program Executive Officers (PEOs), and Direct Reporting Program Managers (DRPMs):

(1) Ensure applicable C4ISR systems comply with this instruction.

(2) Ensure applicable Joint and Navy information specifications, standards, and formats together with CNO approved information processing and information transfer specifications and standards are incorporated in the design of naval C4ISR systems as appropriate.

(3) In each applicable programmatic document and design review specify what other C4ISR systems the system under consideration is expected to interface with, and which interoperability standards have been planned for or incorporated. Request a waiver of this requirement from OPNAV N6 when compliance cannot be accomplished within programmatic constraints.

(4) Place subject systems and specifications under approved configuration management. Ensure the impact of systems on interfacing systems or equipment is documented and agreed upon with the other acquisition program managers, prior to executing the acquisition programs.

(5) Ensure programmatic requirements document address compatibility and interoperability with Joint and combined communication security, and Defense Communications Systems (DCS), or other non-tactical data systems or equipment per reference (c).

(6) Ensure interoperability and compatibility are considered in program budgets. Include in fiscal planning, the implementation of information standards throughout the life cycle of the system.

(7) Ensure agreed Joint, interagency and allied/coalition capabilities are considered before new development efforts begin per reference (g).

(8) Coordinate with NCTSI for identification of interoperability requirements.

(9) Ensure standards compliance prior to Milestone B for Navy systems. Program and schedule resources to support Navy and Joint interoperability certification testing must be planned for prior to OPEVAL. Due to development delays or constraints, Program Managers must apply for ICTO to the Navy ITP representative.

(10) Incorporate interface testing issues and criteria for Navy, and Joint testing early in programmatic requirements documentation drafting and Developmental Testing/Operational Testing (DT/OT) plan formulation phases. Review test and evaluation master plans (TEMPs), programmatic requirements documents, and developmental test plans as appropriate.

(11) Obtain re-certification of interoperability from NCTSI when software versions are updated that impact interoperability or when initial certification or re-certification has not been accomplished within the preceding 36 months.

f. Fleet Commanders:

(1) Ensure C4ISR systems developed under rapid prototyping and fleet initiative programs incorporate approved technical and procedural interface standards and data standards or are granted a waiver from appropriate authority.

(2) Ensure rapid prototype and fleet initiative systems are not integrated with other C4ISR systems without being properly tested by NCTSI and certified by JITC.

(3) Advise OPNAV N6 and NCTSI of all Navy C4ISR systems being developed under rapid prototyping and fleet initiative programs.

g. Commander, Operational Test and Evaluation Force (COMOPTEVFOR):

(1) Ensure Joint interoperability is included for evaluation as critical issues in all operational test and evaluation plans and documents. Cite operational test results in the Evaluation Report (ER) (OPNAV REPORT SYMBOL 3960-12), and provided to CNO, COMNAVNETWARCOM, the Program Manager, SPAWAR, and NCTSI upon completion of each operational test phase and database fill requirements.

(2) Address interoperability at appropriate Navy Program Decision Meetings (NPDM).

(3) Ensure technical standards testing and NCTSI procedural standards interoperability certification testing are completed prior to OPEVAL and Follow-on Test and Evaluation (FOT&E).

h. Navy Center for Tactical System Interoperability (NCTSI):

(1) Act as the primary Navy activity responsible for technical support to CNO for configuration control of Navy and Joint interoperability documentation and interoperability testing criteria for Navy systems under this instruction.

(2) Represent Navy equities in the appropriate forums that address TDL, OS-OTG, symbology, and MTF standards.

(3) Coordinate with the fleet and the systems commands, Navy C4ISR systems procedural interface and information standards for approval and issuance by CNO.

(4) Establish, operate, and maintain the Navy Link 16 Network Design Facility (NDF). The NDF is the primary Navy activity for designing, testing, managing, and distributing Link 16 networks and description documents supporting all Navy Link 16 capable ground, air, and maritime combatants. Link 16 network design support will also be provided to the Navy's test, research, and development facilities as well as Joint and allied forces as appropriate.

(5) Act as a voting member of the U.S. Network Management Sub-Group (NMSG); act as voting member of the Joint Network Design Aid (JNDA) design tool Integrated Product Team (IPT) and JNDA Configuration Control Board (CCB). Provide representation for the U.S. Joint Network Design Team (JNDT) as a member of the Joint Engineering Response Team (JERT) organization per reference (v). Provide U.S. Navy NDF representation to the NATO NMSG that may entail a term of duty as the U.S. Head of Delegation (HOD) on an alternating basis with other Joint service NDF representatives. Additionally, chair the TISG and participate in the OIRG.

(6) Develop for CNO publication, the Navy Interoperability Configuration Management Plan for Procedural Interface Standards (NICMP-P). The NICMP-P details the initiation, processing analysis, testing approval, implementation and status process needed to control and maintain the Multi-TDL and USMTF message standard baselines and operating procedures within the Navy.

(7) Establish the organization and criteria necessary to certify Navy C4ISR program compliance with Navy and Joint procedural interface standards. Apply the iSMART process, when applicable, to Navy implementation of these standards.

(8) Conduct interoperability testing of CNO approved procedural standards. This testing shall be requested by the acquisition program manager or Navy programming center, and will not interfere with certification testing. Test results are provided directly to the program manager or Navy program center. Associated developmental testing costs are the responsibility of the program manger or Navy programming center.

(9) Conduct certification testing of Navy C4ISR system required implementation of established procedural interface standards and certify interoperability of such systems to CNO and COMNETWARCOM prior to OPEVAL. Coordinate this effort with acquisition program managers and Navy programming centers. Interoperability certification will be conducted in Navy C4ISR system configurations intended for operational use.

(10) Re-certify that Navy C4ISR systems correctly implement TDL and USMTF procedural interface information standards prior to fleet introduction of modified/enhanced system software, especially system software which is modified due to message standard updates, increased functionality, or when the system has not been certified within the previous 36 months.

(11) Coordinate with SYSCOMs, PEOs, DRPM, JITC, and other DOD organizations to conduct parallel or mutual testing of systems, if feasible, to reduce the laboratory testing lead time for programs to reach operational testing.

(12) Act as the Navy Participating Test Unit Coordinator (PTUC) for Joint interoperability certification for Navy systems implementing TDL, OS-OTG, and MTF standards. Coordinate the Navy's participation in the Joint certification test program for procedural interfaces as described in reference (c). Act as the Navy voting representative to the Joint Analysis Review Panel (JARP).

(13) Represent the CNO (as specifically assigned by CNO N6) in Joint and allied forums for establishment and maintenance of procedural interface standards.

(14) Act as the Navy voting representative to the Joint Multi-TDL and USMTF CCBs, and the Joint Symbology Standards Management Committee (SSMC).

(15) Conduct testing of allied systems for compliance to allied standards when requested by allied governments provided an International Program Office (IPO)-approved Foreign Military Sales (FMS) contract is in place.

(16) Perform assigned additional duty (ADDU) for COMOPTEVFOR as interoperability testing agent for OT&E of Navy C4ISR systems implementing TDL, OS-OTG, and MTF standards. Comply with COMOPTEVFOR guidelines relating to independent operational testing.

(17) Coordinate with appropriate DOD organizations to include non-Navy systems in Navy or Joint interoperability testing as required.

(18) Conduct software checks and hardware checks of fielded TDL system shipboard ships and aircraft (as stated in references (Surface Forces Training Manual) and the (Aircraft Carrier Training Manual). Identify TDL software problems and equipment malfunctions before units deploy.

(19) Serve as the Software Support Activity (SSA) and In-Service Engineering Agent (ISEA) for the Navy program of record test tool for Navy C4ISR systems.

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LIST OF TERMS AND ACRONYMS

ADDU	Additional Duty
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CCB	Configuration Control Board
CJCSI	Chairman Joint Chiefs of Staff Instruction
CJCSM	Chairman Joint Chiefs of Staff Memorandum
CNO	Chief of Naval Operations
COMNAVNETWARCOM	Commander, Naval Network Warfare Command
COMOPTEVFOR	Commander, Operational Test and Evaluation Force
DCS	Defense Communications System
DISA	Defense Information Systems Agency
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DRPM	Direct Reporting Program Manager
DT	Developmental Testing
EIA	Electronic Industries Association
FMS	Foreign Military Sales

LIST OF TERMS AND ACRONYMS

FOT&E	Follow-on Test and Evaluation
FRP	Full Rate Production
HOD	Head of Delegation
ICTO	Interim Certificate to Operate
IEEE	Institute of Electrical and Electronics Engineers
IPO	International Program Office
IPT	Integrated Product Team
ISEA	In Service Engineering Agent
ISMART	Interoperable Standards Management and Requirements Transformation
IT	Information Technology
JITC	Joint Interoperability Test Command
ITP	Interoperability Test Panel
JARP	Joint Analysis Review Panel
JERT	Joint Engineering Response Team
JMSWG	Joint Multi-TDL Standards Working Group
JNDA	Joint Network Design Aid
JNDT	Joint Network Design Team
MIL-STD	Military Standard
MTF	Message Text Format
NATO	North Atlantic Treaty Organization
NCTSI	Navy Center for Tactical Systems Interoperability

LIST OF TERMS AND ACRONYMS

NDF	Network Design Facility
NICMP-P	Navy Interoperability Configuration Management Plan for Procedural Interface Standards
NMSG	Network Management Sub-Group
NPDM	Navy Program Decision Meeting
OIRG	Operational Interoperability Requirements Group
OPEVAL	Operational Evaluation
OS-OTG	Operation Specification-Other-the-Horizon-Targeting Gold
OT	Operational Test
OTH-T	Over-the-Horizon-Targeting
PEO	Program Executive Officer
POM	Program Objective Memorandum
PTUC	Participating Test Unit Coordinator
SOP	Standard Operating Procedure
SPAWAR	Space and Naval Warfare Systems Command
SSA	Software Support Activity
SSMC	Joint Symbology Standards Management Committee
SYSCOM	Systems Command
TDL	Tactical Data Link
TEMP	Test and Evaluation Master Plan

LIST OF TERMS AND ACRONYMS

TISG	Technical Interoperability Standards Group
USMCEB	United States Military Communications-Electronics Board
USMTF	United States Message Text Format