



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, DC 20380-0001

MCO 3093.1C
C2I
15 Jun 89

MARINE CORPS ORDER 3093.1C

From: Commandant of the Marine Corps
To: Distribution List

Subj: INTRAOPERABILITY AND INTEROPERABILITY OF MARINE CORPS
TACTICAL C4I SYSTEMS

Ref: (a) Joint Chiefs of Staff Memorandum of Policy No. 160
(JCSMOP 160); Compatibility and Interoperability of
Tactical Command, Control, Communications, and
Intelligence Systems, 7 January 1986 (NOTAL)
(b) MCO P5231.1A, Life Cycle Management for Automated
Information Systems Projects
(c) MCO 5200.23A, Management of Mission-Critical
Computer Resources in the Marine Corps
(d) U.S. Marine Corps Technical Interface Concepts (TIC)
(e) Technical Interface Design Plan for Marine Tactical
Systems (MTS TIDP)
(f) Marine Corps Interoperability Management Plan (IMP)
(g) Marine Corps Interoperability Configuration
Management Plan (MCICMP)
(h) MCO P5000.10B, Systems Acquisition Management Manual
(i) MCO 3900.4C, USMC Program Initiation and
Operational Requirement Documents
(j) MCO P4130.8, Marine Corps Configuration Management
Manual
(k) MCO 4855.10A, Quality Deficiency Report

Encl: (1) Definitions
(2) Marine Corps Intra/Interoperability Relationships
(3) Interoperability Policy Board Membership

1. Purpose. This Order implements interoperability policies as directed by the Secretary of Defense (SecDef) and Joint Chiefs of Staff (JCS) (reference (a)). It establishes policies and management procedures within the Marine Corps necessary to ensure that both Marine Corps intraoperability and joint/combined interoperability standards are implemented in Marine Corps tactical command and control, communications, computer and intelligence (C4I) systems.

2. Cancellation. MCO 3093.1B.

3. Applicability. The policies contained in this Order apply to the development, production, operation, and maintenance of all C4I systems which support tactical operations. Tactical

C4I systems include automated information systems (AIS) developed under the provisions of references (b) and (c) which interface with tactical C4I systems.

4. Definitions. See enclosure (1). Unless specifically stated otherwise, interoperability refers to requirements and standards for information exchange between the Marine Corps and other services, external agencies, or allies. In contrast, intraoperability is used to explicitly distinguish requirements or standards that are inside of or within the Marine Corps.

5. Background. The SecDef has established policies and procedures to ensure that tactical C4I systems possess the compatibility and interoperability essential for joint and combined military operations. The Marine Corps is directly involved in joint efforts to develop, test, and approve data exchange standards that provide for interoperability. These standards form the basis of Marine Corps policy concerning intraoperability and are incorporated in the design of appropriate Marine Corps tactical C4I systems that have joint interface requirements. The following organizational functions describe the relationships for Marine Corps C4I systems inter/intraoperability (a graphic depiction is included in enclosure (2)).

a. The Commandant of the Marine Corps, through the Assistant Chief of Staff for Command, Control, Communications and Computer, Intelligence and Interoperability Department (CMC (C4I2)), establishes Marine Corps C4I systems inter- and intraoperability policy. Marine Corps policy requires compliance with Department of Defense (DoD), joint and combined policy.

b. CG MCCDC defines, validates, and publishes tactical C4I systems operational inter/intraoperability requirements.

c. CG MCRDAC defines technical intraoperability standards and develops technical solutions for approved requirements.

6. Discussion. The Marine Corps Technical Interface Concepts (TIC), reference (d), establishes inter/intraoperability requirements for Marine Corps tactical C4I systems as defined in enclosure (1). The Technical Interface Design Plan for Marine Tactical Systems (MTS TIDP), reference (e), specifies all applicable standards to achieve tactical C4I systems interoperability. Furthermore the MTS TIDP contains the detailed specifications for Marine Corps unique intraoperability standards for data elements, messages, and communications protocols which apply to tactical data systems (TDS's). Data elements for automated information systems (AIS's) are contained in the data dictionary for the subject system. Other (lead) service C4I systems, adopted for Marine Corps use, normally include bilateral (see definition in enclosure (1)) data,

message, and protocol standards that are documented separately and configuration controlled by the lead service (with Marine Corps participation). Adoption of a bilateral standard is an interoperability policy decision and must be approved in advance by the CMC (C4I2). Upon approval for adoption they are considered a Marine Corps standard for a specific implementation and are referenced in the MTS TIDP.

a. The Assistant Chief of Staff for Command, Control, Communications and Computer, Intelligence and Interoperability (CMC (C4I2)) promulgates Marine Corps interoperability policy and management processes through the publication of this Order, the Interoperability Management Plan (IMP), reference (f), and Marine Corps Interoperability Configuration Management Plan (MCICMP), reference (g).

b. The Commanding General, Marine Corps Combat Development Command (CG MCCDC) publishes interoperability requirements in the TIC. These requirements are stated in terms of the information exchanged between command and control facilities (C2FAC) and between systems which support warfighting. The Fleet Marine Forces (FMF) participate in the establishment of interoperability requirements by providing recommendations for the establishment of required capabilities to CG MCCDC.

c. The Commanding General, Marine Corps Research, Development and Acquisition Command (CG MCRDAC) catalogs and describes approved Marine Corps intraoperability standards for messages, data elements, and communications protocols in the MTS TIDP. During the system development process, specified in reference (h), only these standards, which include previously approved bilateral or joint standards, will be incorporated into design specifications for tactical C4I systems in order to satisfy interoperability requirements. The CG MCRDAC will maintain the TIC interoperability requirements in the Marine Corps Interoperability Data Base System (IDBS).

7. Policy

a. Marine Corps tactical C4I systems shall be interoperable and intraoperable to the degree required to fulfill Department of Defense (DoD) and Joint Chiefs of Staff (JCS) guidance and Marine Corps operational requirements.

b. Marine Corps unique intraoperability requirements and standards, as well as jointly approved interoperability requirements and standards, will be stated in appropriate requirements documents and specifications for Marine Corps tactical C4I systems.

c. Requirements documents (such as Required Operational Capabilities, Multi-command Required Operational Capabilities) for tactical C4I system will reflect applicable portions of the TIC including the C2FAC's served, the C2FAC tasks performed, and the system interfaces. The process of developing the appropriate requirements document as defined in reference (i) may indicate a needed change to the TIC. These proposed changes will be submitted to CG MCCDC for action in accordance with reference (g). Approval of the new requirements document includes updating reference (d), if that course of action is required.

d. In cases where the approved tactical C4I systems intraoperability standards are inappropriate or inadequate, MCCDC system proponents, MCRDAC program managers, and/or AIS Functional Managers will request a waiver from CMC (C4I2) through the Interoperability Policy Board (IPB). Interoperability requirements will not be waived. A waiver may allow for a deferment of the implementation of an interoperability requirement, but the waiver will include a timeline or scheme for requirement implementation. Requirements will be modified or changed only through the configuration management (CM) process. A waiver may be requested for a proposed new standard or modification of an existing standard to be used during system development. The waiver request must be evaluated by all affected system proponents and program managers for its impact on other Marine Corps and/or joint/combined C4I systems. Any proposed new standards or changes must be submitted for, and receive, JCS or Marine Corps approval prior to a system or equipment production decision. For specific guidance on submission of waivers, refer to reference (g). Software and hardware changes which may be required as a result of changes to intraoperability standards must be implemented in accordance with guidance provided by references (j), (k), and other applicable orders.

e. Acquisition considerations will often dictate the procurement of a system that has been developed by another military service. In such cases, either the system will be modified to use approved standards or non-standard characteristics of the system must receive joint or Marine Corps approval. Marine Corps approval will be based on the establishment of adequate controls to ensure that the impact on Marine Corps systems does not adversely affect other elements of the Marine Corps command and control (C2) architecture. The use of buffering, translative, or similar devices to accomplish interoperability will be minimized.

f. Tactical C4I systems to be used in the Marine Corps shall undergo appropriate interoperability certification testing as outlined in this Order. Tactical C4I systems interoperability must be reviewed and evaluated at each program decision milestone. An interoperability certification recommendation and

decision must be made by CMC (AC/S C4I2) prior to production and/or procurement.

8. Responsibilities

a. Assistant Chief of Staff, Command, Control, Communications and Computer, Intelligence and Interoperability (C4I2) Department (CMC (C4I2)). The Assistant Chief of Staff C4I2 will:

(1) Act, for the Commandant, on all matters pertaining to C4I systems interoperability policy.

(2) Establish policies and procedures for assuring required intra- and interoperability of Marine Corps C4I systems.

(3) Establish the Marine Corps Interoperability Policy Board (IPB). The IPB shall develop recommendations for the Director, C4I2 Department regarding interoperability policy for the Marine Corps. The IPB membership is outlined in enclosure (3). Representatives will be at the Deputy Director/Executive Assistant level. The IMP and MCICMP outline the IPB processes. In cases in which the IPB cannot arrive at a consensus, the CMC (C4I2) will coordinate with the appropriate staff section to attempt to resolve the differences. Unresolved issues will be referred to the Assistant Commandant of the Marine Corps and Chief of Staff for resolution.

(4) Establish guidance for Marine Corps participation in DoD, joint and allied interoperability efforts.

(5) Provide Marine Corps representation in policy level Joint Chiefs of Staff (JCS), Department of Defense (DoD), and Department of the Navy (DON) directed interoperability boards and committees, including the DoD C3 Review Council and the Tactical C3I Interoperability Improvement Program.

(6) Provide Marine Corps representation on the Military Communications-Electronics Board (MCEB) and its panels. Coordinate with CG MCCDC and CG MCRDAC, as needed, in developing responses to MCEB actions regarding interoperability issues and guidance packages for US delegates to NATO interoperability meetings.

(7) Provide guidance to CG MCCDC on policy issues considered at joint interoperability requirements boards and groups.

(8) Provide guidance to CG MCRDAC on policy issues considered at joint interoperability standards boards and groups.

(9) Provide final approval of interoperability waivers recommended by the IPB.

(10) Resolve interoperability issues between CG MCCDC, CG MCRDAC, and Functional Managers.

(11) Act as the Marine Corps point of contact for interoperability related actions required by the Secretary of Defense. Advise all concerned DoD components of that designation.

(12) Evaluate the degree of interoperability incorporated into each tactical C4I system at program decision milestones and certify that interoperability requirements have been met.

(13) After consideration by the ICCB and IPB, the CMC (C4I2) approves/disapproves requests from Program Managers for implementation of bilateral standards for specific applications.

b. Commanding General, Marine Corps Combat Development Command (CG MCCDC). The Commanding General, Marine Corps Combat Development Command (CG MCCDC) will:

(1) Develop operational requirements with the FMF.

(2) Publish and update the Technical Interface Concepts (TIC) through the configuration management processes outlined in reference (g).

(3) Provide representation to the Interoperability Configuration Control Board (ICCB) which shall make recommendations to CG MCCDC regarding proposed changes to Marine Corps intraoperability requirements, and joint and allied interoperability requirements. The ICCB will function as outlined in references (f) and (g).

(4) Ensure that tactical C4I systems' required operational capabilities (ROC's) reflect interoperability requirements as published in the TIC. In coordination with CG MCRDAC, specify interfaces and standards in these documents, incorporating, when necessary, joint and combined requirements and standards. If operational requirements necessitate changes to the TIC, incorporate such changes through the interoperability configuration management process as appropriate.

(5) Coordinate with CG MCRDAC to ensure that the TIC, MTS TIDP, bilateral standards, and appropriate AIS standards are in consonance with Marine Corps doctrine and warfighting publications.

(6) Ensure that documents relating to unique Marine Corps requirements contain a statement, with justification, that there are no known existing, planned, or potential joint or combined uses for those requirements.

(7) Assure that developed tactical C4I systems meet required capabilities.

(8) Verify that incorporated intra- and interoperability standards satisfy operational requirements. Recommend modifications to these standards as operational requirements change.

(9) Provide a copy of each requirement involving development, acquisition, or modification of tactical C4I systems to CINC's, services and other DoD agencies for review and comment.

(10) Evaluate requirements from other DoD components for Marine Corps interest, developmental and interoperability impact, and potential program consolidation.

(11) Provide a copy of each approved requirement involving development, acquisition, or modification of tactical C4I systems to the Director, Joint Tactical Command, Control and Communications Agency (JTC3A) for review and inclusion in the joint tactical C3 interoperability database.

(12) Determine which Marine Corps tactical C4I systems require JCS certification for use in joint/combined operations.

(13) Advise other DoD components when changes are proposed during the life cycle of any tactical C4I system that affect identified joint or combined interoperability requirements and standards.

(14) Represent the Marine Corps on appropriate joint interoperability operational requirements boards and groups.

(15) Provide support to the CMC (C4I2) on operational issues considered at joint/combined/allied interoperability policy boards and groups.

(16) Provide support to CG MCRDAC on operational issues considered at joint interoperability standards boards and groups.

(17) Participate in configuration management of C4I systems from the operational perspective; i.e., additional capability requirements, procedural changes, etc.

(18) In coordination with the appropriate functional managers, specify interoperability requirements for AIS's used by the FMF.

c. Commanding General, Marine Corps Research, Development and Acquisition Command (CG MCRDAC). The Commanding General,

Marine Corps Research, Development and Acquisition Command
(CG MCRDAC) will:

- (1) Establish Marine Corps intraoperability standards.
- (2) Publish and maintain the Marine Tactical Systems Technical Interface Design Plan (MTS TIDP) through the configuration management processes outlined in reference (g).
- (3) Verify that tactical C4I systems specifications adequately define C4I system technical and operational requirements. Ensure that tactical C4I systems interoperability and compatibility requirements are included in related program, budget, and funding documents.
- (4) Ensure that approved interoperability requirements and standards are implemented in tactical C4I systems under development unless waived in accordance with this Order.
- (5) Provide funding to satisfy tactical C4I system interoperability requirements and to execute interoperability programs.
- (6) Represent the Marine Corps on joint interoperability standards boards and groups.
- (7) Provide technical support to the CMC (C4I2) on standards and systems issues considered at joint/combined/allied interoperability policy boards and groups.
- (8) Provide technical support to CG MCCDC on standards and systems issues considered at joint interoperability requirements boards and groups.
- (9) Establish and provide a chairman for an Interoperability Configuration Control Board (ICCB) which shall make recommendations to the CG MCRDAC regarding proposed changes to Marine Corps intraoperability standards, and joint and allied interoperability standards. The ICCB will function as outlined in references (f) and (g).
- (10) Ensure the configuration management of fielded, tactical C4I systems hardware and software developed under the provisions of reference (h). Coordinate the implementation of new, changed and deferred standards, as required.
- (11) Develop and implement interoperability testing procedures, and conduct interoperability testing of tactical C4I systems.

(12) Provide copies of Test and Evaluation Master Plans (TEMPS) and system fielding schedules to other services and defense agencies.

(13) Coordinate joint and combined interoperability testing of Marine Corps tactical C4I systems with the JTC3A.

(14) Provide a copy of interoperability test results to the Director JTC3A; CMC (C4I2); CG MCCDC; and Director, Marine Corps Operational Test and Evaluation Activity (MCOTEA).

(15) Develop and maintain the Marine Corps Interoperability Data Base System (IDBS) to support the tactical interoperability program and configuration management of interoperability requirements and standards.

(16) Ensure that other military service, agency, and allied capabilities are properly and thoroughly considered before new developmental efforts begin.

(17) Coordinate, as needed, with other developmental agencies to effect Marine Corps intraoperability and joint/combined interoperability requirements and standards for tactical systems.

(18) Program, schedule, and coordinate resources to support tactical C4I systems interoperability testing.

(19) Ensure interoperability efforts occurring during the acquisition cycle for tactical systems are consistent with established policies for integrated logistical support and for configuration management.

(20) Provide Marine Corps representation on other service configuration management boards and committees for other service tactical C4I systems acquired.

(21) Ensure that Automated Information Systems which interface with tactical C4I systems are interoperable.

d. Other Headquarters staff agencies and departments will provide support to the CMC (C4I2) in the development and interpretation of interoperability policy within their functional authority and fields of expertise.

e. Director, Marine Corps Operational Test and Evaluation Activity (MCOTEA). The Director, MCOTEA shall:

(1) Ensure, in coordination with CG MCCDC and CG MCRDAC, that interoperability requirements are included in all operational testing, test plans, and test documents.

(2) Include in all test reports an evaluation of the degree of interoperability achieved during operational tests and evaluations.

(3) Include a statement which indicates the degree of interoperability incorporated in tactical C4I systems in all Independent Evaluation Reports.

f. Commanding Generals, Fleet Marine Forces

(1) Provide resources to support Marine Corps, joint and combined tactical C4I systems interoperability testing.

(2) Identify C4I interoperability requirements to CG MCCDC.

g. Functional Managers for Automated Information Systems (AIS's) Under Development. Functional managers for AIS's that will interface with tactical forces will:

(1) In coordination with CG MCRDAC and CG MCCDC, specify interfaces and standards in requirements documents (such as Mission Needs Statement), incorporating, when necessary, joint and combined requirements and standards.

(2) In coordination with CG MCRDAC and CG MCCDC, specify communication requirements for AIS that operate on C4I systems.

(3) Ensure that requirements documents reflect interoperability requirements published in the TIC, or recommend changes as appropriate.

(4) Ensure that documents relating to unique Marine Corps requirements contain a statement, with justification, that there are no known existing, planned, or potential joint or combined uses for those requirements.

(5) Ensure that approved interoperability requirements and standards are implemented in AIS's developed under the provisions of reference (b) which interface with tactical C4I systems unless waived in accordance with this Order.

(6) Verify that incorporated interoperability standards satisfy requirements and recommend modifications to interoperability standards as appropriate.

(7) Ensure interoperability and compatibility are considered in all support plans and cost analyses.

15 Jun 89

(8) Ensure interoperability and compatibility are considered in related programs, budget requests, and funding documents.

(9) Ensure that other military service, agency, and allied capabilities are properly and thoroughly considered before new development efforts are begun.

(10) Advise other DoD components when changes are proposed during the life cycle of any AIS which interfaces with tactical C4I systems that affect identified joint or combined interoperability requirements and standards.

(11) In coordination with MCOTEA, program, schedule, and coordinate resources to support interoperability testing for AIS's that interface with tactical C4I systems.

(12) Indicate the degree of interoperability incorporated by specifying interfaces and standards that have been planned for, or incorporated in, AIS's that interface with tactical C4I systems at each decision milestone.

(13) Obtain interoperability certification before new or modified systems are employed. This certification should be achieved through a formal testing process that has been evaluated by MCOTEA.

(14) Ensure interoperability efforts occurring during the development life cycle are consistent with established policies for intergrated logistical support and for configuration management (CM).

(15) Place AIS's and specifications that interface with tactical systems under approved configuration management. Participate in CM from the operational perspective; i.e., additional capability requirements, procedural changes, etc. Coordinate the implementation of new, changed or deferred standards, as required.

(16) Carry out life cycle responsibilities for AIS's that interface with tactical C4I systems maintenance and modification under the provisions of reference (b).

(17) Provide support to CG MCRDAC on operational issues considered at joint interoperability standards and boards and groups.

MCO 3093.1C
15 Jun 89

9. Reserve Applicability. This Order is applicable to the Marine Corps Reserve.



A. M. GRAY

Commandant of the
Marine Corps

DISTRIBUTION: EI plus 7000035 (20)
7230005 (Attn: C20I) (10)
7000006, 007, 012, 015, 017, 032, 034,
041, 050, 062, 070, 142, 167 (1)
7225074/7256162/9006004/9501110/9507042/
9508038/9508210/9509016 (1)

Copy to: OSD(C3I)/JCS (J-6) (J-7)/DA (SAIS-ADO)/HQ USAF
(SCTI)/DCA WASHINGTON DC/JTC3A WASHINGTON DC
(C3A-IAP), (C3A-ARM), (D), (ADW-S)/JTC3A
FT MONMOUTH NJ/COMSPAWARSYSCOM (003-44) (2),
8145001 (1)

DEFINITIONS

1. Automated Information System (AIS). A combination of information, computer, and telecommunications resources, and other information technology and personnel resources which collects, records, processes, stores, communicates, retrieves, and displays information.
2. Bilateral Standard. The data element, message, and/or communications protocol standards developed by another service and implemented in a Marine Corps system upon approval of the CMC (C4I2). To be considered a Marine Corps approved bilateral standard, the following conditions must be met: The system proponent/program manager must propose the implementation to the ICCB and IPB and must receive approval of the CMC (C4I2); the system proponent/program manager must provide adequate justification that adoption of the bilateral standard is economically justified and state how all interoperability concerns will be addressed; the Marine Corps must have formal approval from the lead service stating that it will be allowed to participate in configuration control; and the bilateral standard must only be implemented in the specific approved application.
3. Command and Control Facility (C2FAC). A C2FAC is an organizational element that needs to communicate with another to perform its tasks.
4. C2 Systems. Command and Control (C2) systems are the facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned forces pursuant to the missions assigned (JCS Pub 0-1).
5. Certification. A statement, resulting from verification, that a tactical C4I system has implemented the contents of its specification.
6. Compatibility. Capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference (JCS Pub 0-1).
7. Configuration Control. The systematic evaluation, coordination, approval or disapproval, and implementation of all approved changes in the configuration of a configuration item after formal establishment of its configuration identification.
8. Configuration Item (CI). An aggregation of hardware, software, or any of its discrete portions, which satisfies an end use function and is designated by the Government for

configuration management (CM). CI's may vary widely in complexity, size, and type from an aircraft, electronic, or ship system to a test meter or a round of ammunition. During development and initial production, CI's are only those specification items that are referenced directly in a contract (or an equivalent in-house agreement). During the operation and maintenance period, any repairable item designated for separate procurement is a CI. When applied to the CM of interoperability standards, the CI's are TIDP's, Message Element Dictionaries (MED's), Data Element Dictionaries (DED's), North Atlantic Treaty Organization (NATO) Standardization Agreements (STANAG's), Allied Data Publications (ADatP's) Interface Design Handbooks, and Interface Operating Procedures.

9. Configuration Management (CM). Configuration Management is a discipline that applies technical and administrative direction and surveillance to (a) identify and document the functional and physical characteristics of a configuration item; (b) control changes to those characteristics; and, (c) record and report change processing and implementation status (MIL-STD-483A).

10. Data Element Standards. A dictionary of common data items prescribing the manner in which these items of data are represented when specified in tactical C4I message and communication protocol standards. Data element standards are contained in NATO ADatP's, MED's, DED's, JCS publications, DoD/Mil standards, and interface specifications.

11. Functional Manager. The functional manager is a staff agency whose mission includes the management responsibility for a specific functional area such as: personnel, intelligence, operations, logistics, aviation, training or fiscal (MCO P5231.1). Specific Functional Managers include: DC/S M&RA; Dir, Intel; DC/S PP&O; DC/S I&L; DC/S Avn; CG MCCDC and FDMC.

12. Information System (IS). An IS is a collection of functional and technical personnel, procedures, and equipment which is designed, built, operated and maintained to collect, record, process, store, retrieve, and display information. IS's are developed under the provisions of MCO 5200.23 or MCO P5231.1.

13. Interface. A boundary or point common to two or more similar or dissimilar command and control systems, subsystems, or other entities against which or at which necessary information flow takes place (JCS Pub 0-1).

ENCLOSURE (1)

14. Interoperability

a. The ability of systems, units, or forces to provide services to, and accept services from other systems, units, or forces, and to use the services so exchanged to enable them to operate effectively together (JCS Pub 0-1).

b. The condition achieved among communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases (JCS Pub 0-1).

c. A general term referring collectively to both interoperability and intraoperability when a distinction between the two is unnecessary.

15. Interoperability Testing. Testing conducted to verify that a tactical C4I system meets the interoperability standards for form, fit, and function requirements. It will verify the implementation of required Marine Corps and joint standards for Marine Corps and joint interfaces and the achievement of required interoperability.

16. Intraoperability. Interoperability among Marine Corps systems. May be used when internal Marine Corps information exchange requirements are being differentiated from external or joint/combined requirements.

17. Message Standards. Message standards are message formats, formatting rules and conventions, and acknowledgment instructions supported by data element standards. Message standards are defined in Marine Corps, other military service and joint TIDP's, JCS publications, and various NATO STANAG's.

18. Protocol Standards. Protocol standards are the procedural rules that allow tactical C4I systems to exchange information. They provide conventions for establishing physical transmission paths, activation and control of data links, recovery from errors, procedures for interchange of information between networks, and rules for users to interface with a data communications network. Protocol standards are those conventions and procedures that can be applied to the design and development of TDS's and interconnecting equipment to ensure their interoperability. Protocol standards are documented in DoD/MIL standards, the MTS TIDP, TRI-TAC performance specifications and, for Marine Corps unique equipment, functional or product specifications, per MIL-STD-490A.

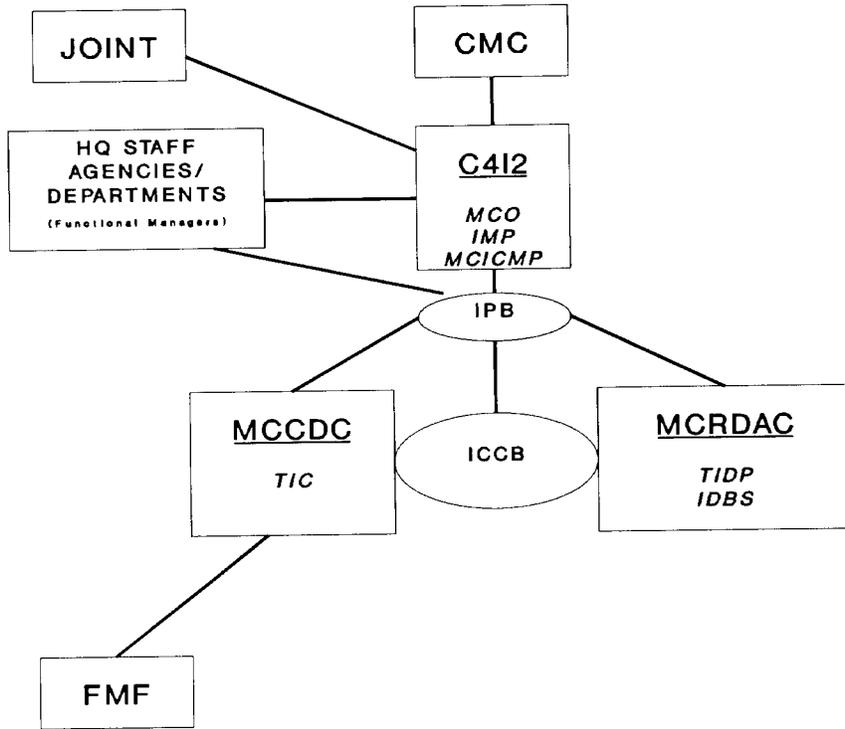
ENCLOSURE (1)

19. Tactical C4I Systems. An interacting assembly of procedures, system processes, and methods that includes equipment specifically designed to collect, display, evaluate, and disseminate data for the purpose of supporting the command and control of military forces. The term specifically includes, but is not limited to:

- a. Tactical command and control systems.
- b. Tactical data systems and equipment.
- c. Intelligence systems.
- d. Sensor systems and equipment.
- e. Communications systems and equipment.
- f. Tactical Command, Control, Communications and Intelligence (C3I) Systems.
- g. MAGTF Automated information systems that interface with tactical systems.
- h. Weapons or weapon systems using tactical C4I systems.

ENCLOSURE (1)

MARINE CORPS INTRA/INTEROPERABILITY RELATIONSHIPS



LEGEND

PUBLICATION RESPONSIBILITY



ENCLOSURE (2)

INTEROPERABILITY POLICY BOARD MEMBERSHIP

1. Deputy Director, Interoperability (C2I) Division, Command, Control, Communications and Computer, Intelligence and Interoperability Department (CMC (C4I2)) (chair)
2. Permanent members are Deputy Director/Executive Assistant representatives of:
 - a. Commanding General, Marine Corps Combat Development Command (CG MCCDC)
 - b. Commanding General, Marine Corps Research, Development and Acquisition Command (CG MCRDAC)
 - c. Deputy Chief of Staff for Aviation (CMC (A))
 - d. Deputy Chief of Staff for Plans, Policies and Operations (CMC (P))
 - e. Deputy Chief of Staff for Installations and Logistics (CMC (L))
 - f. Director of Intelligence (CMC (INT))
 - g. Deputy Chief of Staff for Requirements and Programs (CMC (RP))
3. Invited members are representatives of:
 - a. Deputy Chief of Staff for Manpower and Reserve Affairs (CMC (M&RA))
 - b. Fiscal Director of the Marine Corps (CMC (FD))
4. Other participants: Because of the variety of potential agenda subjects, including programmatic, fiscal, and technical issues, participation may be required of representatives of other agencies, such as those shown below. These participants will be invited by the Chairman, as requested by any IPB permanent member.
 - a. Fleet Marine Force
 - b. Software Support Activity
 - c. Principal Development Activities
 - d. Interoperability Technical Review Groups

ENCLOSURE (3)

MCO 3093.1C
15 Jun 89

e. Interface Control Working Groups

5. CG MCRDAC will provide technical support and recommendations to the IPB through the configuration management process as outlined in this Order.

ENCLOSURE (3)