



UNITED STATES MARINE CORPS

MARINE CORPS SYSTEMS COMMAND
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MARCORSSYSCOMO 3093.2
C4ISR
22 Jun 01

MARINE CORPS SYSTEMS COMMAND ORDER 3093.2

From: Commander
To: Distribution List
Subj: MARINE CORPS VARIABLE MESSAGE FORMAT (VMF) IMPLEMENTATION POLICY
Ref: (a) Variable Message Format (VMF) Technical Interface Design Plan (TIDP)(Reissue 4, 7 Jul 00)
(b) DoD C4I Joint Tactical Data Link Management Plan of 16 Jun 00
(c) USMC Program Managers MAGTF C4ISR Interoperability Handbook, Coordination Draft (Jan 99)
Encl: (1) Request for Exemption
(2) Variable Message Format (VMF) Description

1. Purpose. To establish Marine Corps VMF Implementation Policy for all Marine Corps Tactical Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems.

2. Background

a. The Assistant Secretary of Defense Policy for DoD Fire Support Standards for Tactical Communications systems (9 December 1991) established the VMF message as a common standard for fire support digital entry device information exchange over Tactical Broadcast Communications systems. In 1994, the Marine Corps submitted an interface change proposal (ICP) to reference (a) to the Joint Multi-Tactical Digital Information Link (TADIL) Configuration Control Board (CCB) expanding VMF for use in additional functional areas. This ICP was approved.

b. Reference (b) was published on 16 June 2000 to standardize Command, Control, Communications, Computers, and Intelligence (C4I) messaging and data elements and provide a seamless, flexible data link environment. The Joint Tactical **Data Link (TDL) Management Plan (JTDLMP) recognizes that no** single TDL supports every C4I system, nor that any one link

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is able to operate in all battlefield environments. It established the "J-Series" family (TADIL J, Link 22, VMF) of TDL's. The JTDLMP mandates the use of the J-Series TDL's on C4I systems.

c. The Commanding General, Marine Corps Combat Development Command issued a requirement letter entitled Implementation of Variable Messaae Format (VMF) in the USMC on 9 June 1995. This letter established the Joint VMF message standard as the replacement for the Marine Corps' unique Marine Tactical System message standard for information exchange on Tactical C4I systems. This letter directed all Marine Corps Command and Control (C2) Facilities (C2FAC) to implement VMF messages.

d. VMF messages will provide a digital data exchange capability to replace selected existing voice radio nets. They will be used to fill the void that exists between TADIL's that support air control and air defense C2FAC's and man-readable United States Message Text Format messages that support other C2FAC's in the Marine Air Ground Task Force (MAGTF).

3. Action

a. Marine Corps Tactical C4ISR systems, including Tactical Data systems, are required to implement VMF messages to provide a digital data exchange capability to replace selected existing voice radio nets. All Tactical C4ISR systems must implement all of the messages identified in the VMF Core Message Set. This set of messages is considered the minimum VMF message capability required to support common information exchange between MAGTF operational facilities (OPFAC), nodes, and individual Marines on the battlefield. Additional VMF messages shall be implemented as data exchange requirements are identified.

b. Program managers for C4ISR systems must submit a Request for Exemption (RFE) (enclosure 1) to the Systems Engineering and Integration (SE&I) Division, MARCORSYSCOM to request a waiver from the VMF Core Message Set requirement. The RFE must be specific, provide justification outlining the major reasons the system cannot implement the VMF Core Message Set message(s), and identify interoperability and operational impacts. The RFE format is provided as enclosure (2). The Marine Corps Interoperability Working Group (IWG) will evaluate the request and make an appropriate recommendation. The MAGTF C4I CCB

(MCCB), chaired by the Deputy Commander, C4ISR, MARCORSYSCOM, will be the final approval authority for granting waivers.

c. The VMF Core Message Set identifies those messages required for information exchange between Marine Corps systems regardless of the warfighting function(s) the system supports. The Core Message Set, shown in table 1, consists of the following messages:

K01.1	Free Text
K01.2	Unit Reference Query/Response
K02.1	Check Fire
K02.4	Call for Fire
K02.14	Message to Observer
K02.15	Fire Support Coordination
K02.16	End of Mission and Surveillance
K02.22	Subsequent Adjust
K02.25	End of Mission Notification
K02.27	Close Air Support Request
K04.1	Spot/SALUTE
K04.13	Basic Weather Report
K05.1	Position Report
K05.2	NBC 1 Report
K05.13	Threat Warning Message
K05.14	Situation Report
K05.15	Field Orders
K05.17	Overlay Message
K07.1	MEDEVAC
K07.3	Logistics Report
K07.4	Personnel Report
K07.10	Emergency Resupply Request

Table 1. --Marine Corps VMF Core Message Set.

4. Implementation

a. By VMF rules, where there are multiple purposes for a message (indicated by multiple cases), only the cases designated minimum implementation must be implemented.

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b. All fields designated mandatory (M) must be implemented. Fields designated (X) are required to meet the information exchange requirements (IER) and must be processed if received.

c. By VMF implementation rules, when a data use identifier (DUI) is implemented, then all data items for that DUI must be included.

5. Message Creation/Modification Procedures. To create new messages or modify existing ones, the program manager shall use the following methodology:

a. Use the VMF Technical Interface Design Plan (TIDP) as the basic source document for message development. Check with Joint Interoperability and Standards (JIS) Team Leader, SE&I Division, C4ISR Directorate, MARCORSYSCOM to be sure the most recent reissue with all approved ICP's is referenced, and for additional assistance with VMF message development. A brief description of the VMF and the VMF functional area designations is included in enclosure (2).

b. Determine the IER for the OPFAC's and C2 nodes.

c. Identify the specific C4ISR system(s) or equipment that support the IER's.

d. Determine the joint IER's. Reference (c) delineates Marine Corps, as well as, program manager-specific interoperability responsibilities.

e. Select the VMF messages, if available, that convey the information required by the supported OPFAC(s) and node(s). Modify existing messages if practicable; develop new messages if none exist.

f. Review the message format, rules and conventions, and data elements to ensure that IER's are satisfied.

g. Develop an ICP for each VMF message addition or change and submit to the SE&I Division, C4ISR Directorate, MARCORSYSCOM for review and forwarding to the IWG.

6. Joint Approval Process

a. Following IWG evaluation and MCCB approval, the ICP will be forwarded to the VMF Subgroup (SG) for technical review and verification of Joint requirements.

b. Upon VMF SG approval, the ICP will be forwarded to the Joint Multi-TADIL CCB.

c. Upon Joint Multi-TADIL CCB approval, the ICP will be incorporated into the VMF TIDP.

d. Approval of a new VMF message or changes to an existing message can take more than a year, depending on the complexity of th'e message/change and the meeting schedule of approving groups. Table 2 shows approximate times to complete the steps involved to effect a change to the VMF TIDP:

Develop ICP for a new VMF message or to change an existing message.	1 - 12 months, depending on program requirements and complexity.
Review by SE&I Division.	Additional 1 month.
IWG evaluation/approval.	Additional 1/2 - 3 months.
VMF SG evaluation/ approval.	Additional 4 - 8 months, may require 2 meetings.
Joint Multi-TADIL CCB evaluation/ approval.	Additional 3 - 8 months, may require 2 meetings.

Table 2.--Time Required to Change VMF TIDP.

e. Program managers, project officers, developers, or operators may request assistance from the JIS Team Leader in their evaluation of system message requirements, the development of new VMF messages, or the modification of existing messages.

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7. Applicability. This Order is applicable to MCTSSA.



W. D. JOHNSON
Chief of Staff

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VARIABLE MESSAGE FORMAT (VMF) DESCRIPTION

VMF is a bit-oriented digital information standard consisting of variable length messages. VMF is not man-readable. It is designed as a common means of exchanging data between combat units at varied organizational levels, with varying requirements for volume and detail of information. VMF provides the user with the flexibility to send only required information on demand. This is particularly significant when operating in a bandwidth-constrained environment.

VMF is media-independent and can operate over any digital-capable radio frequency, broadcast, or point-to-point system. The Marine Corps plans to implement VMF messages across point-to-point circuits and a tactical data network.

The messages used to exchange information over a VMF interface are known as the K-series messages. *Kn.m* is the numbering convention for a VMF message where *n* is the functional area designator (FAD) and *m* is the message number assigned consecutively. Therefore, *Kn.1* is the first defined message of all currently defined messages within a functional area. For example, *K02.1* is the numbering convention for the Fire Support functional area Check **Fire** message. The table below contains the FAD's defined in the VMF Technical Interface Design Plan-Test Edition.

FAD	
K00	- NETWORK CONTROL
K01	- GENERAL INFORMATION EXCHANGE
K02	- FIRE SUPPORT OPERATIONS
K03	- AIR OPERATIONS
K04	- INTELLIGENCE OPERATIONS
K05	- LAND COMBAT OPERATIONS
K06	- MARITIME OPERATIONS
K07	COMBAT SERVICE SUPPORT
K08	- SPECIAL OPERATIONS
K09	- JOINT TASK FORCE OPERATIONS CONTROL
K10	AIR DEFENSE/AIR SPACE CONTROL

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VMF message processing rules provide for consistent message construct implementations across multiple systems. They include cases for each use of a message and the inter-element conditions within messages for basic processing. Message processing rules also include defaults, service restrictions, expected responses, special considerations, and case level minimum implementation. Structured, natural language using established logical operators rigorously and unambiguously defines the construction rules for VMF messages.

ENCLOSURE (2)

REQUEST FOR EXEMPTION

REQUEST FOR EXEMPTION (RFE)	
RFE Title: <i>The originator fills in a short title for the RFE, which is descriptive of the content.</i>	RFE Number: <i>Unique ID entered by Systems Engineering and Integration.</i>
Originator & Address: <i>Originator's activity title, address, and phone number.</i>	Affected Systems: <i>Originator lists all systems affected by this RFE.</i>
Precedence: <i>Indicate desired processing.</i>	References: <i>List all pertinent references.</i>
Exception: <i>Originator provides a specific description of the requested exception.</i>	
Justification for RFE: <i>Along with a brief statement of the problem, the originator provides specific justification for requesting the RFE. This justification will include exactly when and how the system deviates from an implementation requirement.</i>	
Impact on System: <i>The originator shall state the anticipated impact of approval/disapproval on this particular system.</i>	
Impact on Interoperability/Operations: <i>The Originator shall state the anticipated impact of approval/disapproval on other affected systems.</i>	
Other Considerations: <i>Provide any other additional supporting information that is not provided elsewhere in the RFE.</i>	

ENCLOSURE (1)