

# MCTSSA INTEROPERABILITY BRANCH



Prepared for APBI  
6 Feb 2019

Interoperability Branch,  
Test & Certification Group  
Marine Corps Tactical Systems Support Activity



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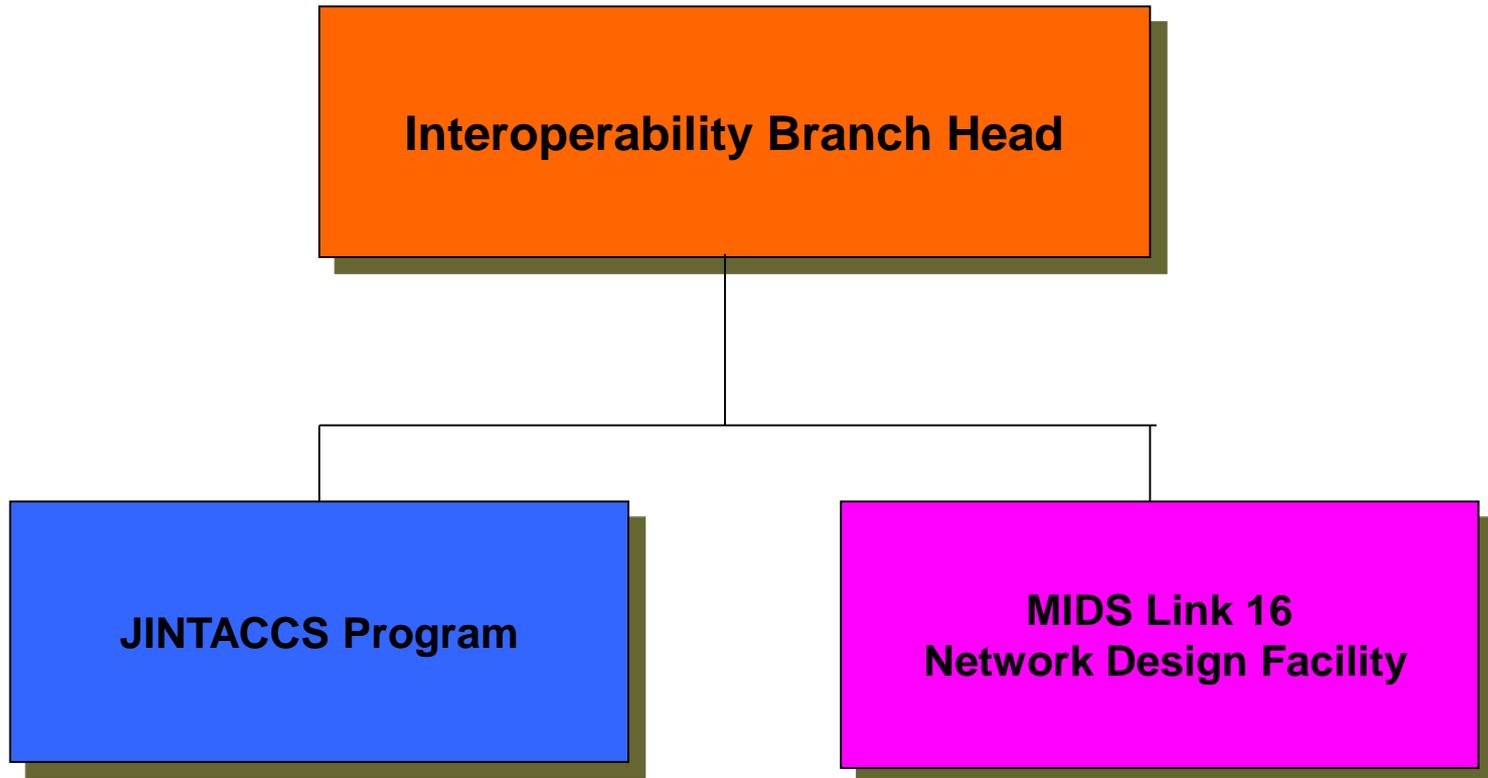
## Agenda

- IOB Organization
- JINTACCS Program/Effort
- Procedural & Technical Standards
- Interoperability Standards Representation/CM
- Summary



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# MCTSSA Interoperability Branch





## Joint Interoperability of Tactical Command and Control Systems

- JINTACCS is a Joint Chiefs of Staff mandated research, development, test, and evaluation program designed to ensure interoperability among tactical C2 systems used in Joint and Coalition military operations
- CJCSI 6610.01E, CJCSI 6241.04C
- MCO 3093.1D, MCSCO 3093.2A



## JINTACCS Program

- Directs the development and maintenance of tactical information exchange configuration items (Mil Stds) and operational procedures.
- MCTSSA is USMC's sole representative for JINTACCS, and works with various USMC, Joint, and Allied boards to change and advance interoperability standards.
- Insures USMC equities are addressed throughout the interoperability standards development process.



## USMC JINTACCS Effort

- **Tactical Data Exchange Standards (Joint/Allied)**
  - Provide the primary data communications link between USMC, Joint and Allied C2 systems and aircraft.
  - Link 16, Link 11/11B, Link 22, JRE, IBS, etc.
  - Variable Message Format (VMF)
    - Combat Net Radio Working Group (CNRWG)
  - US Message Text Format (USMTF)/NATO MTF
- **Joint Interoperability Testing (JIT)**
  - Mandatory interface certification testing required before a C2 system or aircraft can be fielded.



## USMC JINTACCS Effort

- **Net Centric Tactical Data Standards (XML)**
  - Being developed to enable point-to-point data exchange and publish-subscribe data sharing of tactical information in a net enabled environment.
  - National Information Exchange Model (NIEM) Military Operations (MilOps) Domain
  - Marine Corps Tactical Service Oriented Architecture (TSOA)
  - Tactical Standards XML Development (TDL-XML, VMF-XML, MTF-XML)
  - Joint Communities of Interest (e.g. Air Ops, CBRN)



## USMC JINTACCS Effort

- **Technical Interoperability Standards Working Group (TISWG)**
  - Technical/Procedural standards expertise provides necessary coordination of tactical data link (TDL) issues across PORs
  - Engineering support to PMs & engineers for TDL implementations in C2 systems and aircraft to support development and integration of MAGTF C2 systems.



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## USMC C2 Programs Supported

### Aviation

CAC2S  
AMANPADS  
JRE  
UGCS/UAS  
JTAC/HH-L16  
MADIS

### Ground

AFATDS  
JBC-P  
JTCW  
TSOA  
JC2/GCCS  
MCH  
TCS  
JWARN  
THS  
UGCS/UAS

### Aircraft

JSF  
AV-8B  
FA-18 A+/C/D  
AH-1Z  
UH-1Y  
MV-22  
CH-53K  
KC-130



## Interoperability

- **Procedural Standard**

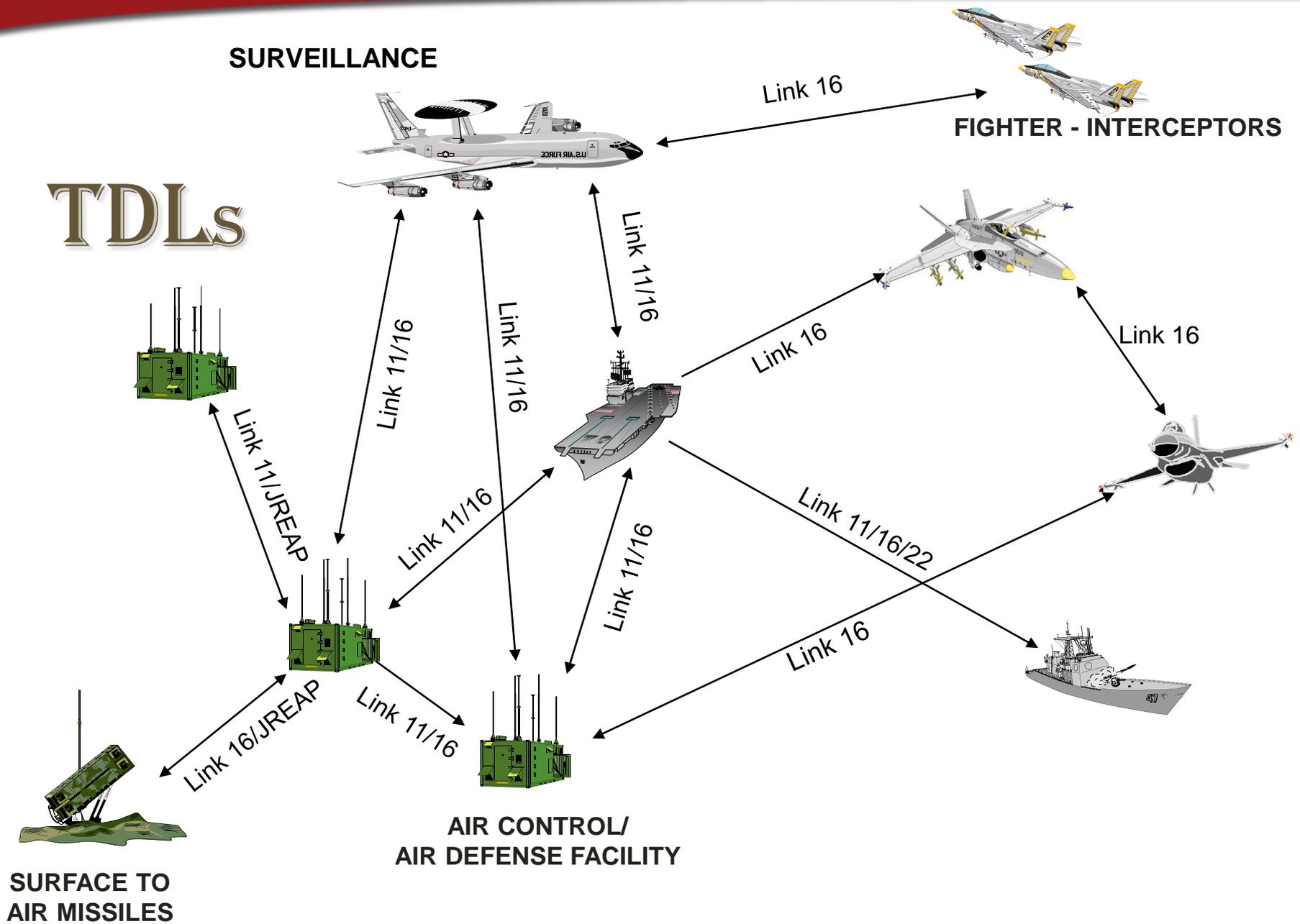
- A collection of data elements, defined by doctrinal uses, that are standardized for the purpose of full understanding of information shared between users.
- Captures data in a standard format (binary or character) that provides context to the information and allows for automated processing of the content (e.g. Mil Stds for Link 16, VMF, MTF)
- **The content of a postal letter (message)**



## Procedural (Message) Standards

- **Tactical Digital Information Links**
  - MIL STD 6011 (Link 11)
  - MIL STD 6016 (Link 16)
  - MIL STD 6018 (Integrated Broadcast Service (IBS))
  - MIL STD 6020 (TDL Forwarding)
  - MIL STD 3011 (JREAP)
  - ATDLP 5.22 (Link 22)

# TDLs





## Procedural (Message) Standards

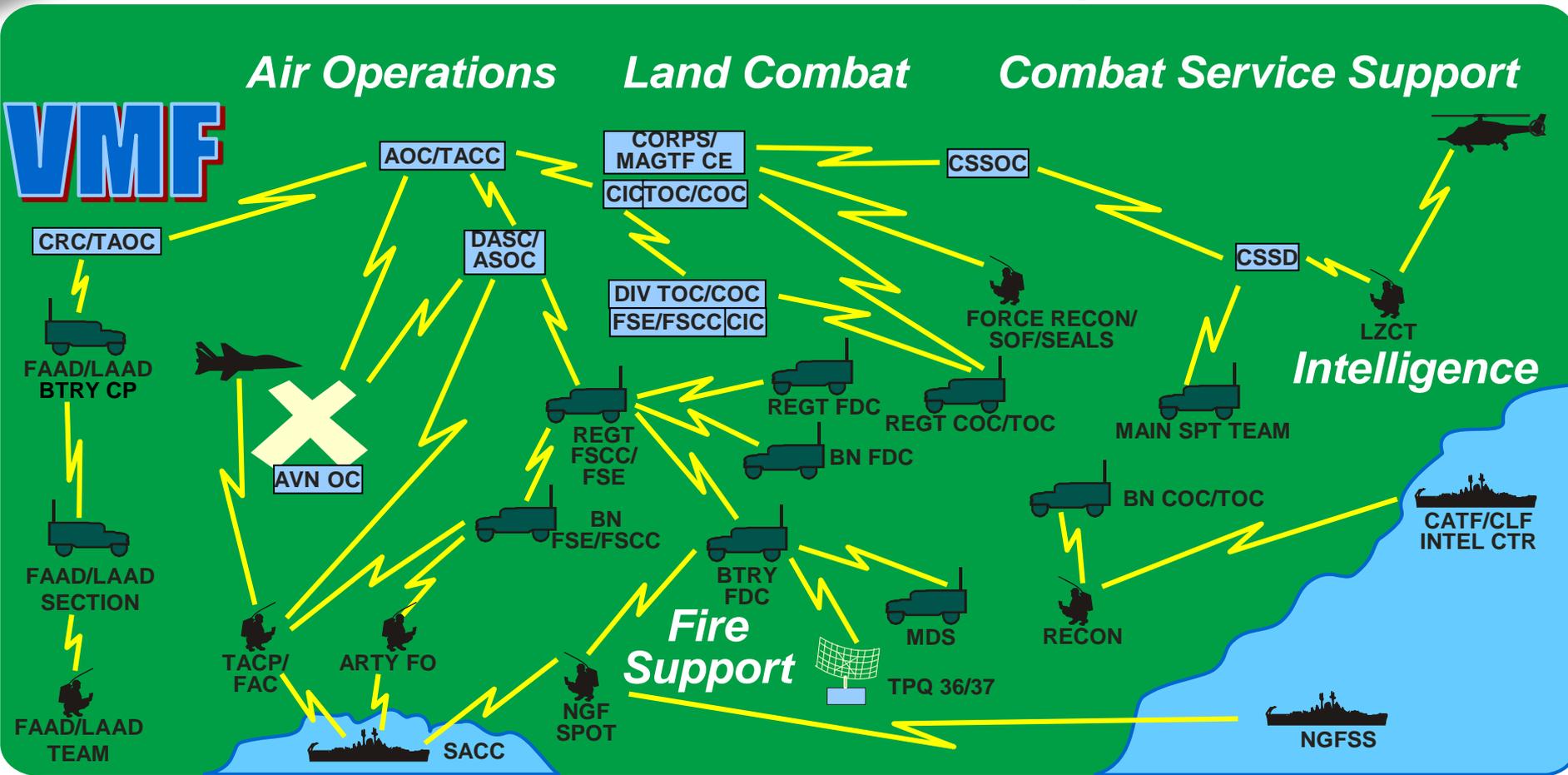
- **Variable Message Format (VMF)**
  - MIL-STD-6017 (STANAG 5519)
  - 130+ messages covering five primary functional areas
- **MIL STD 2525 Symbology**
  - Allied Procedural Publication-6 (APP-6)
- **MIL STD 6020 Data Forwarding**

# MARINE CORPS TACTICAL SYSTEMS SUPPORT ACTIVITY

Technical Excellence...Tactical Value



## Functional Areas Using VMF



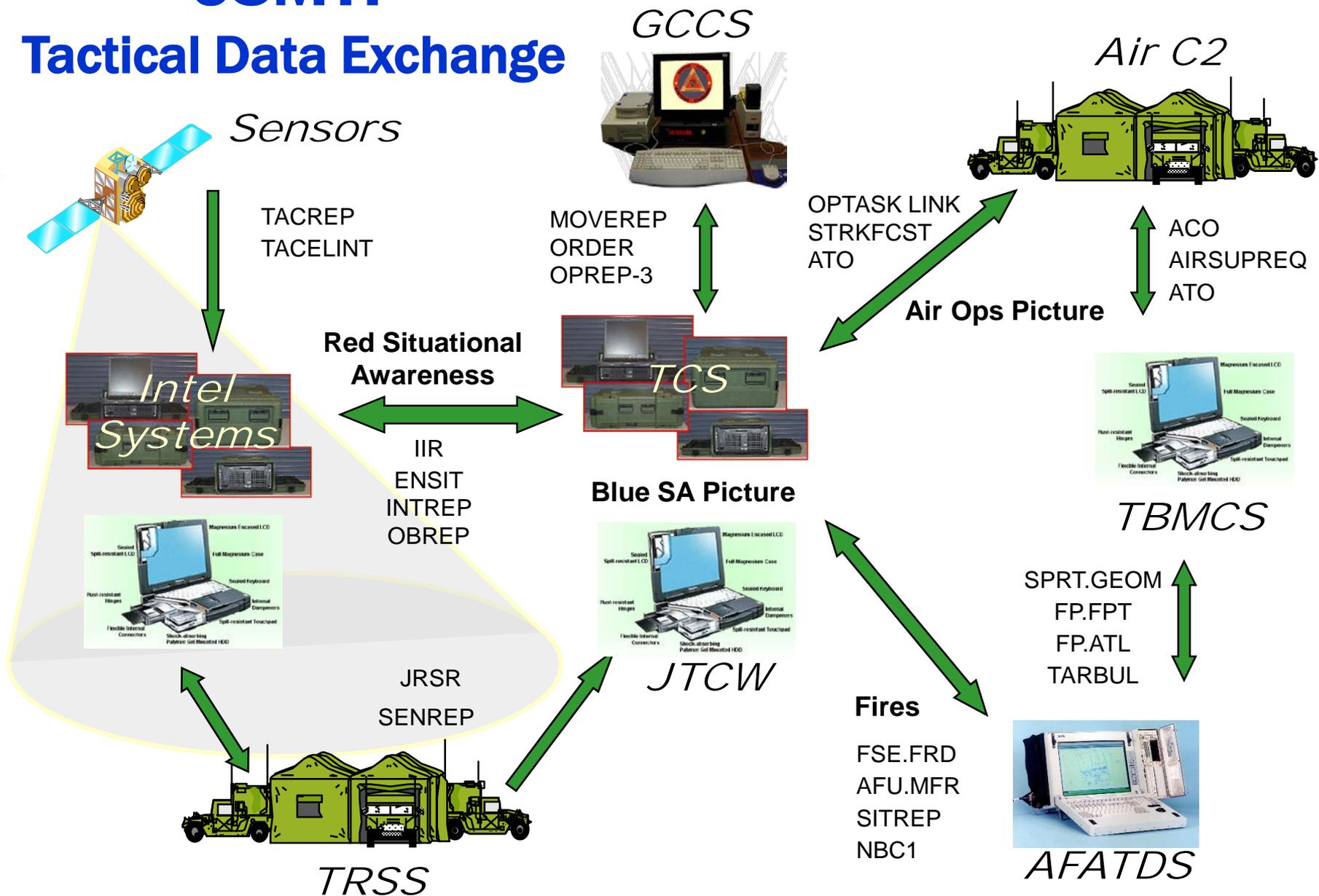
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## Procedural (Message) Standards

- **Message Text Format (MTF)**
  - MIL-STD-6040 (USMTF)
  - Allied Data Publication-3 (FORMETS)
  - APP-11 NATO Message Catalog
  - 350+ messages addressing Joint, Air, Land, Maritime, Intelligence and more...

# USMTF Tactical Data Exchange





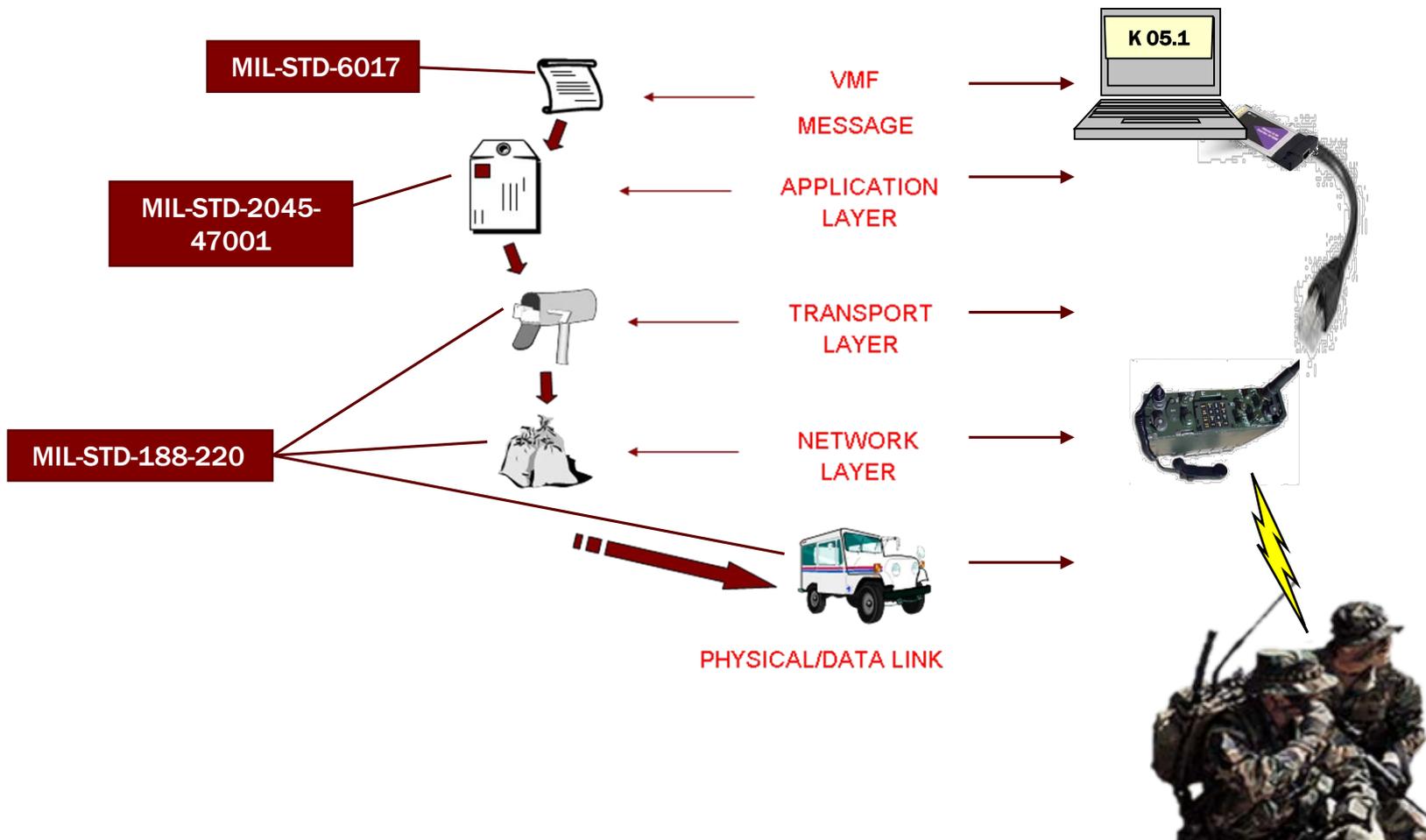
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## Interoperability

- **Technical Standard**
  - A collection of communication protocols (rules) that allow for and direct the flow of data from one point to another. (e.g. Mil Std 188-220/ Mil Std 2045-47001)
  - Provides the envelope for the letter (message)



## Layers of a VMF Transfer





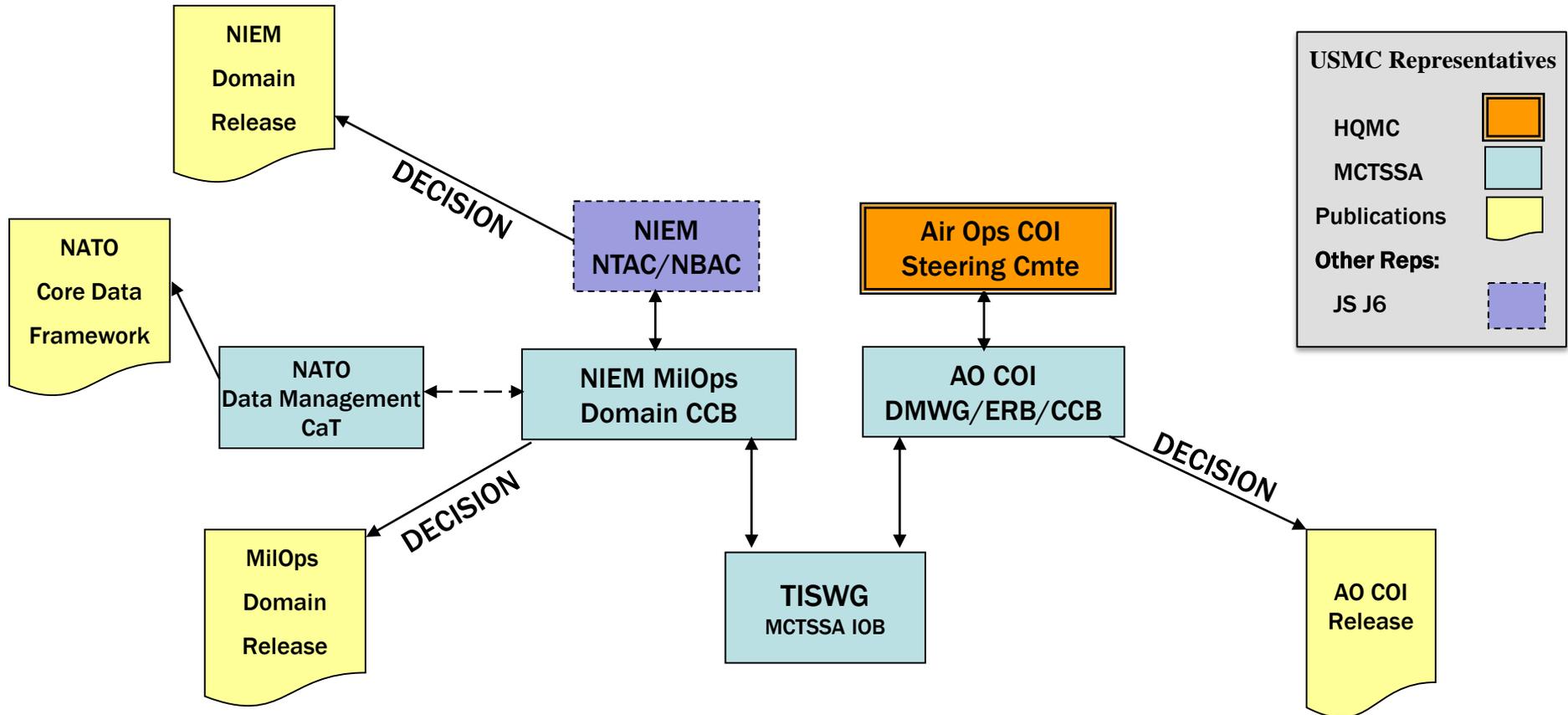
## Technical Standards

- Provide for technical representation at Combat Net Radio Working Group (Joint/Allied).
  - MIL-STD-188-220 Digital Message Transfer Devices
  - MIL-STD-2045-47001 Connectionless Data Transfer Application Layer
- Provide technical support to DoD/USMC COI data management working groups.
  - Air Operations COI, TSOA, CBRN COI, etc.
- Provide technical support to XML transformational efforts on Joint and Allied tactical data standards.
  - NATO Core Data Framework (NCDF), LINKs, VMF, USMTF





# Net Centric Standards CM



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## Summary

- **JINTACCS personnel at MCTSSA are the Marine Corps' experts at Joint and Allied forums for tactical data exchange standards.**
- **JINTACCS supports the development and net centric transformation of Tactical Data Exchange Standards.**



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# INTEROPERABILITY

# QUESTIONS ?