



Introduction to Variable Message Format (VMF) – Course Content

Duration – 2½ days

The course is based around the latest US MIL-STDs (i.e. MIL-STD-188-220D Change 1, MIL-STD-2045-47001D Change 1 and MIL-STD-6017A). However, differences between these and previous versions of the standards will be detailed during the course.

Lesson 1 – Introduction

- A short history of VMF
- System Overview
- Combat Net Radios (CNR)

Lesson 2 – Open Systems Interconnection (OSI) 7 Layer Model

- 7 Layer Model Composition
- Data Frame Compilation
- Ethernet Principles
- System Performance

Lesson 3 – MIL-STD-188-220 Frames

- Frame Content
- Types of Frame
- System Overheads

Lesson 4 – Types of Service

- Type of Service Description
- Data Link Acknowledgements
- Duplicate Detection
- Window Method
- Station Classes

Lesson 5 – Network Access Control

- Network Access Delay (NAD)
- Probabilistic and Deterministic NAD
- NAD Types
- Frequency of Access Ranking

Lesson 6 – Net Joining Procedures

- Exchange Network Parameters (XNP)
- XNP Messages
- Network Controller
- Static and Dynamic Stations

Lesson 7 – Message and Header Syntax

- Message Numbering
- Cases and Conditions



- Data Field Classification
- Presence and Recurrence Indicators

Lesson 8 – Application Header (MIL-STD-2045-47001)

- Application Header Fields
- Future Use Groups
- Receipt/Compliance
- Segmentation Reassembly
- Interoperability

Lesson 9 – Functional Area Designators (FADs) and K-Series Messages

- Functional Area Designators
- VMF K-Series Messages
- Message Use Scenario

Lesson 10 – Unit and Entity Reporting

- Unit Reference Number (URN)
- Unit Name (UN)
- URN Look Up Table
- Entity Identity Serial Number (EISN)
- Entity Identity Reference Number (EIRN)

Lesson 11 – Radios and Modems

- VMF Capable Radios and Modems
- Compliance

Lesson 12 – Inter/Intranet Protocols

- Internet Protocol (IP)
- IP and ip Addresses
- Transmission Control Protocol (TCP)
- User Data Protocol (UDP)
- N-Layer Pass-Through
- Topology Update
- Intranet Relay

Lesson 13 – Data Forwarding

- Message Translation
- Forwarding – TDL differences
- Gateways

Lesson 14 – Network Management

- NM Responsibility
- Initialisation Data
- VMF NM
- Management and Test Tools

Lesson 15 Interoperability (IO)

- Interoperability Issues
- DSPICS
- Possible Solutions





Lesson 16 - XML-VMF

- XML Usage
- XML Schemas

Lesson 17 – Close Air Support

- CAS Definition
- Message Implementation
- CAS Procedures

