

# Variable Message Format (VMF)

## Training Course

### VMF Course

**The aim of this 2.5-day course is to provide students with both technical and operational instruction on Variable Message Format (VMF) over a Combat Net Radio (CNR) bearer.**

The course has referenced both United States (US) Military Standards (MIL-STDs), UK documentation and Allied Tactical Data Link Publications (ATDLPs). In particular, the course includes the VMF Message set as described in MIL-STD-6017, the Application Header defined in MIL-STD-2045-47001, and the CNR Bearer protocols identified in MIL-STD-188-220. Interoperability between systems is discussed in depth, as well as the operational use of VMF. Furthermore, the course has utilised operator procedures detailed within Joint Multi-TADIL Operating Procedures (JMTOP) (Chairman Joint Chiefs of Staff Manual CJCSM 6120.01).

### What you will Learn

On successfully completing the course, students will be able to:

- Discuss the history of VMF and describe the benefits of employing VMF over other Data Links
- Explore all three US MIL-STDs documentation with attention on the construction of K-Series messages and the US/UK mandated header
- Recognise and identify the various reference numbers to include Entity Identity Serial Number (EISN) & Entity Identity Reference Number (EIRN)
- Identify how the data stream is composed and decomposed as it passes through the layers of the OSI 7-Layer model as implemented by the US MIL-STD
- Explain how the four Types of Service are operated
- Distinguish between Random Network Access Delay (R-NAD) & Deterministic Adaptable Priority-NAD (DAP-NAD). Use of the Bump Slot within DAP-NAD and the need for Frequency of Access Ranking (FOAR)
- Distinguish the fields within the Transmission Header and Data Link frame with detailed insight into the Data Link Field and what it is composed of
- Summarise what contributes to the planning process and the key VMF planning parameters, and an introduction to data forwarding between VMF and MIDS Link 16
- Interpret the Operational Tasking signal (OPTASK) Link and discuss the sets and fields within Segment 12.1
- Recall DACAS Block 1 Engineering Change Proposal (ECP) 1–4 and how ECP# 4 Exchange Network Parameters (XNP) is performed and the associated messages involved

### At a Glance

Acquire comprehensive knowledge of VMF and how it operates over CNR

Reference both US MIL-STDs, NATO and UK Documentation

Receive a copy of both the VMF and CNR Handbooks

### Who Benefits

Both Operational and Engineering personnel

Air, Land and Naval personnel who operate VMF

Data Link Management Cell (DLMC) personnel, station or squadron TDL personnel

Military and Civilian Engineers

Personnel involved with Multi-TDL Evaluation

Persons involved in TDL Procurement and/or TDL Sustainment

DATASHEET



## Course

Day 1	Day 2	Day 3
<ul style="list-style-type: none"> <li>Introduction to VMF</li> <li>Documentation</li> <li>FAD &amp; Messages</li> <li>Message &amp; Header Syntax</li> <li>Application Header</li> <li>Unit &amp; Entity Reporting</li> <li>VMF Protocol Stack</li> </ul>	<ul style="list-style-type: none"> <li>Review of Day 1</li> <li>Network Layer</li> <li>Type of Service (TOS)</li> <li>Network Access Control (NAC)</li> <li>Addressing</li> <li>Data Link Field</li> <li>Planning &amp; Design</li> <li>OPTASK Link CNR</li> </ul>	<ul style="list-style-type: none"> <li>Review of Day 2</li> <li>Digitally Aided Close Air Support (DACAS) Block 1 ECP #1, 2 &amp; 3</li> <li>Digitally Aided Close Air Support (DACAS) Block1 ECP #4 – Exchange Network Parameters (XNP)</li> </ul>

## Course Format

The course has used ATDLP-5.55 for NATO Qualification Levels for Tactical Data Link (TDL) training in an attempt to align potential future training requirements. SyntheSys has developed this course to meet the knowledge requirements of Levels 1 through 4 of North Atlantic Treaty Organisation (NATO) Qualifications Levels for TDL training described within ATDLP-5.55.

There are no theory examinations during the course. However, SyntheSys holds a multi-choice question bank covering the theory lessons, that can be provided upon request.

The VMF course is a standalone course. Students who attend do not require any prerequisite knowledge of TDLs.

The course can be delivered globally, on customer premises, or at an approved training venue.

For more information about the course, including the full syllabus, contact: [training@synthesys.co.uk](mailto:training@synthesys.co.uk)

## About SyntheSys

SyntheSys provides defence systems, training, systems and software engineering and technical management services over a spectrum of different industry sectors. Along with distinct support and consultancy services, our innovative product range makes us first choice provider for both large and small organisations. Established in 1988, the company focus is on fusing technical expertise with intuitive software applications to solve common industry challenges.

