



JTIDS/MIDS Link 16 Network Design & Management – Course Content

Duration – 4 days

This course is aimed at personnel with existing JTIDS / MIDS Link 16 experience. Therefore no time is allocated for explanations of basic JTIDS / MIDS Link 16 principles. However, any questions relating to basic functions will be fielded by the instructor.

The course has the option of dynamic Network Management demonstrations using the Thales NMS. Please contact us for details.

Lesson 1 – Introduction

- **Definitions.** Definition of Network Management
- **The need for Network Management (NM).** The need, demonstrated with the aid of operational examples
- **NM Principles.** The principles of total NM explained and compared with the NATO definitions
- **NM Lifecycle.** Explanation of the whole life cycle process

Lesson 2 – Network Planning

- **Information Exchange Requirements (IERs).** Definition and explanation of IERs used in JTIDS / MIDS Network Design
- **Network Request & Planning Considerations.** Detailed explanation of the Network Request form, incorporating inputs from an example scenario

Lesson 3 – Network Design Introduction

- **Definitions.** Definition of a Network Design
- **Aims.** Explanation of the aims of the Network Design process
- **Libraries.** The functions and duties involved with the maintenance of a Network Library
- **Design Process.** An overview of the processes involved in Network Design acting as an introduction for the next lesson

Lesson 4 – Network Design Process

- **Naming the Design.** Explanation of the naming protocol
- **Define the Network Wide Parameters.** Allocation of the network global parameters including terminal communications mode, EMC feature selection, Frequency Clearance agreements and Time Slot Duty Factor (TSDF)
- **Network Participation Considerations.** Capabilities and limitations of network participants. Combined Network Design Guide
- **Satisfy Information Exchange Requirements.** Ensure IERs identified in planning are met. NPGs, Access modes, Crypto requirements, Packing structures, Connectivity matrix, Voice
- **Connectivity.** Synchronisation, Relay, Data Forwarding
- **Allocation of TS.** Allocation of individual Time Slots, Time Slot map
- **Load File Generation.** Creation of the platform load files
- **Network Description Documentation.** Executive Summary, Connectivity Matrix, TS Allocation Table or Map, Network Time Line, Crypto Load Map, TSDF Table
- **Network Validation.** Levels of network validation
- **Network Distribution.** The process of network distribution, JDLMO website



- **Configuration Management.** Configuration management of published networks
- **Introduction to Network Design Tool.** Brief introduction preceding next lesson

Lesson 5 – Network Design Tool Demonstration

- Demonstration Using Example Scenario Parameters
- Production of Associated Documentation

Lesson 6 – Network Design Exercises

- Connectivity Matrix
- Simple – Using Time Slot Map
- More Complicated – Using the Design Tool

Lesson 7 – Network Initialisation

- **OPTASK Link Exercise**
- **Pre Mission Preparation.** Selection of an appropriate network to meet the IERs and identify the associated parameters
- **Preparation of the Network for Platform Load.** Allocation of network roles, OPTASK LINK, Introduction of Platform, Network and Mission Specific Parameters, Transmission Modes, ETRN and STRN
- **Terminal Initialisation.** Various methods of platform initialisation
- **Network Entry.** Individual platform entry into a network

Lesson 8 – Control (Operational Network Management)

- **Network Monitoring and Analysis.** Online monitoring of performance
- **Monitoring of Platform Parameters.** Ensuring platform parameters create optimal performance
- **Reassignment of Network Functions.** Reallocation of parameters to ensure optimal performance, and the associated procedures and J-Series messages
- **Reassignment of Time Slots.** Time Slot reassignment and associated J-Series messages The process includes the following functional areas:
 - Network plan maintenance
 - Synchronisation and time maintenance
 - RelNav maintenance
 - Network participation status monitoring
- **Possible Problems and Rectification.** Theory of problems (Multiple STRN, FCA infringements etc.) and their rectification

Lesson 9 – Network Management System Demonstration

- **Demonstration of NM Tool Capabilities.** Practical demonstration of tool capabilities
- **Problem Identification and Rectification Demonstration.** Demonstration of problem rectification as identified in the previous lesson. Demonstration of monitoring and reassignment functions, Demonstration of Synchronisation, Time maintenance, RelNav maintenance, NPG Status monitoring

Lesson 10 – Analysis

- **Online Analysis.** Detection, diagnosis, and reaction to problems which occur during network operations
- **Post-operations Analysis.** Performance assessment, diagnosis, and response to problems that cannot be resolved online