



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.

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 Exercise

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

Lesson 7 – Network Initialisation

- **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

