

## MINI-LINK System Planning



LZU108 8064 R1A

### Description

A transmission network of today employ a variety of techniques, for example traditional PDH and SDH, ATM and Ethernet. With all offered possibilities it can be a challenging task to configure the transmission equipment in a complex transport network.

By lectures, classroom discussions, and configuration exercises this course will help the planner in how to configure MINI-LINK systems to meet different transmission challenges.

This course focuses on System configuration for different traffic cases of;  
 PDH and Super PDH traffic,  
 SDH traffic including ADM functionality,  
 Ethernet traffic directly over radio (Native Ethernet) and over PDH and SDH  
 Ethernet traffic handling in the embedded Layer 2 Switch, VLAN and priority functionality  
 ATM cross connect and transport of ATM over PDH.  
 Synchronization issues.

Traffic dimensioning and network topology examples are taken from GSM and WCDMA Radio Access Networks.

This course covers and concentrates on functionality for MINI-LINK TN R4. To a minor extent it also covers MINI-LINK CN products and MINI-LINK E.

For detailed knowledge in Management Network Design please refer to the training course: Microwave Networks DCN Design, LZU 108 6146.

For detailed knowledge in designing the microwave radio network please refer to the training course: Short-haul Microwave Radio Network Design, LZU 108 6842.

### Learning objectives

On completion of this course the participants will be able to:

- 1 Understand and describe how MINI-LINK TN R4 can be used for transport of PDH, SDH, ATM and Ethernet
  - 1.1 ETSI and ANSI PDH transport and Traffic Routing
  - 1.2 SDH regenerator, Add-drop multiplexer, Cross-connector
  - 1.3 ATM over E1 and ATM Cross-connect.
  - 1.4 Ethernet over radio, PDH and SDH, Ethernet switching.



- 2 From given network topology, traffic capacities and traffic types describe configuration possibilities and requirements for MINI-LINK TN, CN and E equipment
  - 2.1 Traffic related indoor equipment and configurations
  - 2.2 Feature licenses.
  - 2.3 DC power requirement
- 3 Understand how to estimate needed transmission capacity in cellular radio access networks.
  - 3.1 GSM RAN built on TDM technology
  - 3.2 WCDMA RAN over ATM
  - 3.3 WCDMA RAN over Ethernet
- 4 Give examples of network topologies and be able to judge where a certain topology is suitable from a traffic point of view
- 5 Describe how to estimate needed number of spare units

### **Target audience**

The target audience for this course is: Network Design Engineers, Network Deployment Engineers.

### **Prerequisites**

Successful completion of the following courses: Microwave Networks Overview, LZU 108 7348 R3A.

### **Duration and class size**

The length of the course is 3 days and the maximum number of participants is 16.

### **Learning situation**

This course is based on theoretical instructor-led lessons given in a classroom environment. It holds network and equipment configuration exercises on paper to let the students practice knowledge gained from the theoretical lessons.