LEARNING SERVICES

Optical Network 2011
Training Programs

Catalog of Course Descriptions

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Catalog of Course Descriptions

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Introduction

Ericsson has developed a comprehensive Training Programs service to satisfy the competence needs of our customers, from exploring new business opportunities to expertise required for operating a network. The Training Programs service is delineated into packages that have been developed to offer clearly defined, yet flexible training to target system and technology areas. Each package is divided into flows, to target specific functional areas within your organization for optimal benefits.

Service delivery is supported using various delivery methods including:

Icon	Delivery Method
	Instructor Led Training (ILT)
	Virtual Classroom Training (VCT)
	eLearning (WBL)
	Workshop (WS)
	Short Article (SA)
	Structured Knowledge Transfer (SKT)
	mLearning
	Job duty analysis (JDA)
	Competence GAP Analysis (CGA)

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Optical Networks Overview

LZU1088333 R1A

Description

This course is designed for people who need an introduction the Broadband network, its architecture, and main characteristics.

Learning objectives

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

1 Examine the Optical Network architecture and equipment applications.
1.1 Identify the types of Network Elements composing the Optical Network.
1.2 Describe the hierarchy in the Optical Network architecture: access, metro and core layers.

2 Illustrate the features and the functions of the Network Elements.
2.1 Describe the Network Elements composing the access layer.
2.2 Describe the Network Elements composing the metro layer.
2.3 Describe the Network Elements composing the core layer.
2.4 Discuss the ASTN / WSON solution.
2.5 Describe the services the Optical Network offers.

3 Discuss the Network Management.
3.1 Identify the main functions of the Operations Support System.

Target audience

The target audience for this course is:

Network Design Engineer; Network Deployment Engineer.

Prerequisites

Successful completion of the following courses:

PDH & SDH Technologies Tutorial; WDM overview

Duration and class size

The length of the course 1.5 hours.

Learning situation

WBL

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Examine the Optical Network architecture and equipment applications	1 hour
	Illustrate the features and the functions of the Network Elements	1 hour
	Discuss the Network Management	1 hour

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Optical Networks System Survey

LZU1086951 R2A

Description

This course is designed for people who need an introduction to the SDH and DWDM transport equipment families and the relevant network design. This includes the equipment role in a telecommunication network, their main characteristics and design criteria. Moreover, an introduction to the main tasks and solutions for the Network Management Systems applications will be covered.

Learning objectives

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

1 Examine the Optical Network architecture and equipment applications.
1.1 Identify the types of Network Elements composing the Optical Network.
1.2 Describe the hierarchy in the Optical Network architecture: access, metro and core layers.

2 Identify the main optical fiber characteristics.
2.1 Describe the characteristics of single-mode and multimode fibers.
2.2 Discuss about linear and non linear effects of the optical propagation.

3 Define the main characteristics of the involved telecommunication technologies.
3.1 Explain the basics of PDH/SDH.
3.2 Explain the basics of DWDM.
3.3 Explain the basics of Ethernet
3.4 Explain the basics of Ethernet over SDH.
3.5 Discuss about the supported Network Element and traffic protections.
3.6 Explain the basics of routing and signaling protocols in the ASTN.

4 Illustrate features, functions and composition of the Network Elements.
4.1 Describe the Network Elements composing the access layer.
4.2 Describe the Network Elements composing the metro layer.
4.3 Describe the Network Elements composing the core layer.
4.4 Discuss about the ASTN solution and ASTN Planner.

5 Explore the main network design criteria and Network Element interoperability.
5.1 Discuss the span length.
5.2 Discuss the optical elements characteristics and Interworking.
5.3 Describe network dimensioning criteria.

6 Identify the main functions of the Operations Support System.

6.1 Illustrate the characteristics of the ServiceON Element Manager.
6.2 Illustrate the characteristics of the ServiceON network management layer.
6.3 Illustrate the characteristics of the ServiceON Interfaces.

Target audience

The target audience for this course is:

Network Design Engineer, Network Deployment Engineer.

Prerequisites

Successful completion of the following courses:

SDH, DWDM and Ethernet principles.

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical instructor-led lessons given in a classroom environment.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Optical Network architecture	1 hour
	Optical fiber characteristics	1 hour
	Optical Network Technologies	4 hours
2	Network Elements features and functions	6 hours
	Network Elements features and functions	2 hours
	Optical Network design overview	2 hours
	OSS features and functions	2 hours

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SPO 1400 (OMS 1400) R3 Fundamentals

LZU1088335 R1A

Description

The SPO 1400 (OMS 1400) R3 Fundamentals is a web based learning module describing the SPO 1400 family and features and architectures.

Learning objectives

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

1 Describe the SPO 1400 family and features.
1.1 Illustrate the use of the equipment in the network.
1.2 Demonstrate the main services the SPO 1400 offers.
1.3 Explain the equipment composition.
1.4 Identify the front panel devices.

2 Explain the main system architectures.
2.1 Identify the management and control system architecture.
2.2 Discuss the switching system architecture.
2.3 Explain the Power Supply architecture.
2.4 Understand the meaning of the alarms.

3 Explain the protection schemes that the equipment supports.
3.1 Describe the equipment protections.
3.2 Describe the TDM traffic protections.
3.3 Describe the Ethernet traffic protections.

Target audience

The target audience for this course is:

Network Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians

Prerequisites

Successful completion of the following courses:

Optical Networks Overview (LZU 108 8333) - or have an equivalent knowledge.
The participants should be familiar with the Ethernet, MPLS and SDH principles

Duration and class size

The length of the course is 2 hours.

Learning situation

Web Base Learning

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the SPO 1400 family and features	1 hour
	Explain the main system architectures	0.5 hours
	Explain the protection schemes that the equipment supports	0.5 hours

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Marconi OMS 800 Operation and Maintenance

LZU1086952 R4A

Description

This course covers the OMS800 product family.
It is designed for people who have to configure, operate and maintain the OMS 800 family equipment in the transport network.
The course contents provide full information about the OMS 870, OMS 860 and OMS 846 features and architectures and the differences between the various NE models will be highlighted.
The basic procedures to configure operate and maintain the equipment will be explained and demonstrated, together with the procedures for setting-up of the main services.

Learning objectives

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

1 Describe the main features of the OMS 800
1.1 Describe the OMS 800 family equipment characteristics
1.2 Illustrate the main OMS 800 family equipment features
1.3 Discuss the OMS 800 family equipment management
1.4 Illustrate the use of the OMS 800 family equipment in the telecommunication network

2 Describe the OMS 800 Layout and Versions
2.1 Illustrate the equipment main system areas
2.2 Discuss the composition rules

3 Illustrate the OMS 800 Architecture
3.1 Describe the types of matrices
3.2 Describe the main system architecture and the distribution of the internal and external streams

4 Discuss the OMS 800 Access Devices
4.1 Identify the OMS 800 family equipment access devices
4.2 the equipment connectors functions

5 Explain the OMS 800 Protection Schemes
5.1 Explain the supported SDH network and traffic protection schemes supported
5.2 Discuss the Ethernet features allowing protection on the Ethernet paths
5.3 Describe the optical protection devices

6 Explore the OMS 800 Local Craft Interface
6.1 Install the LCT and connect it to the equipment

6.2 Individuate the Local Craft Terminal interface and the working areas
6.3 Navigate the functions of the LCT menus

7 Operate the OMS 800 Basic System Set-up
7.1 Provide the basic system set-up using the CLI
7.2 Configure the equipment basic parameters using the LCT
7.3 Configure the communication parameters – DCN/IP

8 Manage Cross-connections and SNCP
8.1 Create, add and remove cross connections and SNCP
8.2 Operate manual and forced SNCP Switching

9 Manage Protection & Diagnostics
9.1 Configure and manage the MSP protection
9.2 Run the diagnostic tools offered by NE
9.3 Configure and manage the optical protection

10 Operate the Ethernet Domain features
10.1 Understand the Ethernet Domain features
10.2 Set-up L1 Ethernet Connections
10.3 Set-up UNI and Ethernet services
10.4 Set-up L2 Ethernet Connections
10.5 Set-up the Rapid Spanning Tree

11 Manage Faults & Events Reporting
11.1 Use Fault & Events Reporting features
11.2 Discuss the alarm reporting and history records
11.3 Configure alarms and events

12 Manage Database and Software
12.1 Describe the Maintenance Wizard
12.2 Perform back-up and restore of the equipment database
12.3 Describe the software download principles
12.4 Describe the Installation of the optional Licenses

13 Operate the main troubleshooting procedures
13.1 Perform the traffic module replacement
13.2 Use the alarm help functions offered by the LCT for troubleshooting

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers.

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Prerequisites

Successful completion of the following courses:

SDH and the Ethernet principles or have equivalent knowledge

Duration and class size

The length of the course is 4 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment. This course can be conducted at the Customer premises.

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Main System Features	1.5 hours
	Equipment Layout and Versions	1 hour
	Main System Architecture	0.5 hours
	Access Devices	0.5 hours
	Protection Schemes	1.5 hours
	Local Craft Terminal Interface	1 hour
2	Basic System Set-up (CLI)	1 hour
	Basic System Set-up (LCT)	1.5 hours
	Cross-connections and SNCP	2 hours
	Protection & Diagnostics	1.5 hours
3	Ethernet Domain (L1)	2 hours
	Ethernet Domain (L2)	4.0 hours
4	Managing Faults & Events Reporting	1.5 hours
	Database and Software Management	1.5 hours
	Main Troubleshooting Guidelines	1.5 hours
	Summary, Q&A	1.5 hours

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Marconi OMS 1200 Operation and Maintenance

LZU 108 6680 R2B

Description

This course is designed for people who have to configure, operate and maintain the OMS 1200 equipment in the transport network.
The course contents will provide the full information about the equipment features and system architecture. The basic procedures for operation and maintenance and for the configuration of the main services will be explained

Learning objectives

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

1 Describe the main system features.
1.1 Describe the equipment.
1.2 Discuss about the supported interfaces.
1.3 Illustrate the use of the equipment in the network.

2 Illustrate the equipment composition.
2.1 Identify the composition rules.

3 Illustrate the main system architectures.
3.1 Discuss the control system architecture.
3.2 Discuss the switching system architecture.
3.3 Discuss the synchronization sub-system architecture.
3.4 Discuss the alarm management.
3.5 Discuss the quality data management.

4 Describe the unit function and layout.
4.1 Describe the unit functions and front panel devices.

5 Illustrate the protection schemes.
5.1 Describe the equipment protections.
5.2 Describe the network protections.

6 Start the Local Craft Terminal interface.
6.1 Install the LCT and connect it to the equipment.
6.2 Recognize the LCT configuration steps.
6.3 Describe the LCT working areas.

7 Provide basic system set up.
7.1 Complete the Initial Commissioning Procedure.
7.2 Configure the communication parameters.

7.3 Configure the synchronization parameters.

8 Create the connections and provide the protection schemes.
8.1 Manage the cross connections.
8.2 Manage the equipment protections.
8.3 Manage the network protections.
8.4 Perform data services set up.

9 Analyze the performance data.
9.1 Monitor the performance data collection.

10 Manage the faults and events reporting.
10.1 Identify the fault condition and events reporting.

11 Manage the equipment database and software.
11.1 Perform the back-up and restore of the system database.
11.2 Describe the software upgrade principles.

12 Operate the main troubleshooting procedures.
12.1 Perform the card and LTU replacement.
12.2 Perform the Compact Flash replacement

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers

Prerequisites

Successful completion of the following courses:

The participants should be familiar with the SDH and Ethernet principles

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Main system features	1.0 hour
	Equipment composition	2.0 hours
	Main system architectures	1.0 hours
	Unit functions and layout	2.0 hours
2	Protection schemes	1.0 hour
	Local Craft Terminal	1.0 hour
	Provide basic system set up	2.0 hours
	Create connections and provide protection schemes	2.0 hours
3	Analyze the performance data	1.0 hour
	Managing faults and events reporting	1.0 hour
	Manage the equipment database and software	2.0 hours
	Main troubleshooting guidelines	2.0 hours

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Layer 2 Data Cards on OMS1200

LZU 108 7324 R1A

Description

This course is designed for people who have to configure, operate and maintain the Layer 2 Cards in the OMS 1200 equipment in the transport network.
The course contents will provide the full information about the card functionalities and features. The basic procedures for operation and maintenance and for the configuration of the main services will be explained

Learning objectives

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

1 Describe the system overview and applications
1.1 Brief review of the basic concepts of the involved technologies
1.2 Illustrate the main data services

2 Illustrate the system architecture
2.1 Describe the card layout
2.2 Describe the functional blocks
2.3 Discuss the traffic management
2.4 Discuss the technical characteristics

3 Provide the system set-up
3.1 Configure the SDH domain
3.2 Configure the EPL service
3.3 Configure the EVPL service
3.4 Configure the EPLAN \ EVPLAN service

4 Operate the main maintenance procedures
4.1 Analyze the performance data

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

OMS 1200 Operation and Maintenance LZU 108 6680

Duration and class size

The length of the course is 2 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the system overview and applications	2.0 hour
	Illustrate the system architecture	2.0 hour
	Provide the system set-up (part 1)	2.0 hours
2	Provide the system set-up (part 2)	5.0 hours
	Operate the main maintenance procedures	1.0 hours

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SPO 1400 (OMS 1400) R3 Commissioning and Basic Operation

LZU1088348 R1A

Description

Operating the first commissioning and the configuration of the Ericsson SPO 1400 equipment can be a complex and resource-consuming task, if your personnel don't have the appropriate tools and knowledge

This course is designed for people who have to perform Commissioning and Basic Operation of the Ericsson SPO 1400 equipment in the network.
The course contents will provide the full information about the equipment features and system architecture. The basic procedures for equipment start up and configuration of the main services will be explained.

Learning objectives

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

1 Use the SPO1400 Local Terminal interface.
1.1 Install the LCT and connect it to the equipment.
1.2 Navigate the LCT working areas.

2 Operate the initial system set-up.
2.1 Configure and analyze the communication parameters.
2.2 Configure the unit's parameters.
2.3 Configure the ports' parameters.
2.4 Configure TDM synchronization.

3 Configure TDM traffic and protection schemes.
3.1 Operate the provisioning of the traffic services according to the protection scheme.
3.2 Set-up and manage the protections mechanisms: MSP and SNCP

4 Configure Ethernet traffic and protection schemes.
4.1 Operate the provisioning of Ethernet Line and LAN services.
4.2 Set-up and manage the protections mechanisms: RSTP/MSTP and LAG.

5 Analyze the performance data.
5.1 Set-up the performance data collection.
5.2 Analyze the performance data and the optical measurement.

6 Set-up the performance data collection.

Target audience

The target audience for this course is:

Network Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians.

Prerequisites

Successful completion of the following courses:

SPO 1400 Fundamentals, LZU 108 8335
The participants should be familiar with the Ethernet, MPLS and SDH principles.

Duration and class size

The length of the course is 2 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in both classroom and in technical environment using equipment and tools which can be optionally accessed remotely. This course can be conducted at the Customer premises.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Starting the SPO1400 Local Terminal interface	1.0 hours
	Initial system set-up	2.0 hours
	Configuration of the traffic and protection schemes	3.0 hours
2	Configuration of the traffic and protection schemes	5.0 hours
	Configuration of the performance data collection	1 .0 hours

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SPO 1400 (OMS 1400) R3 Advanced Ethernet Operations

LZU1088349 R1A

Description

This course is designed for people who have to perform Advanced Ethernet Operation on the Ericsson SPO 1400 Equipment.
The course contents will provide full information about the equipment Ethernet features and will explain the steps for equipment configuration and operations.

Learning objectives

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

1 Configure Ethernet Advanced Features.
1.1 Operate the provisioning of Ethernet Ring Protection.
1.2 Perform activation of Connectivity Fault Management.
1.3 Analyze results from Y.1731 performances.

2 Configure Circuit Emulation Services
2.1 Describe the Synchronization modes for PTP.
2.2 Operate provisioning of CES services.

3 Configure MPLS-TP Services.
3.1 Set-up LSP and tunnels
3.2 Perform activation of VPLS, VPWS and E-TREE.

Target audience

The target audience for this course is:

Network Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians.

Prerequisites

Successful completion of the following courses:

SPO 1400 (OMS1400) R3 Commissioning and Basic Operations (LZU 108 8348) course or have an equivalent knowledge.
The participants should be familiar with the Ethernet, MPLS and SDH principles

Duration and class size

The length of the course is 2 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in both classroom and in technical environment using equipment and tools which can be optionally accessed remotely. This course can be conducted at the Customer premises.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Advanced Ethernet Features Configuration	4.0 hours
	Synchronization and Circuit Emulation Services	2.0 hours
2	Synchronization and Circuit Emulation Services	2.0 hours
	MPLS-TP Services	4.0 hours

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SPO 1400 (OMS 1400) R3 Maintenance

LZU1088350 R1A

Description

Maintenance of equipment could be a complex and resource-consuming task if your personnel do not have the appropriate skills and knowledge. This course will provide to your operators the full information on how to maintain the SPO1400 in the most efficient way.

Learning objectives

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

1 Use the SPO1400 Local Terminal interface.
1.1 Install the LCT and connect it to the equipment.
1.2 Navigate the LCT working areas.

2 Manage fault reporting.
2.1 Manage the alarm attributes and OSPF traps.
2.2 Recognize the fault condition and find the alarm cause.

3 Manage the equipment database and software.
3.1 Perform the backup and restore of the equipment database.
3.2 Describe the software download principles.
3.3 Perform the Software Licenses Update.

4 Operate main maintenance procedures.
4.1 Use common tools for troubleshooting.
4.2 Perform the card replacement.
4.3 Identify and manage some emergency conditions.

Target audience

The target audience for this course is:

Field Technicians.

Prerequisites

Successful completion of the following courses:

SPO 1400 R3 Commissioning and Basic Operation, LZU 108 8348
SPO 1400 R3 Advanced Ethernet Operation, LZU 108 8349
The participants should be familiar with the Ethernet, MPLS and SDH principles.

Duration and class size

The length of the course is 1 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in both classroom and in technical environment using equipment and tools which can be optionally accessed remotely. This course can be conducted at the Customer premises.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Starting the Marconi OMS1400 Local Terminal interface	1.0 hours
	Management of the fault reporting	1.0 hours
	Management of the equipment database and software	2.0 hours
	Operate main maintenance procedures	2.0 hours

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OMS 1600 R4 Operation and Maintenance

LZU1088050 R1A

Description

This course is designed for people who have to configure, operate and maintain the Marconi OMS 1600 equipment in the transport network.
The course contents will provide the full information about the equipment features and system architecture. The basic procedures for operation and maintenance and for the configuration of the main services will be explained.

Learning objectives

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

1 Describe the Marconi OMS 1600 family and features.
1.1 Illustrate the use of the equipment in the network.
1.2 Demonstrate the main services the Marconi OMS 1600 offers.

2 Explain the equipment composition.
2.1 Identify the composition rules.

3 Explain the main system architectures.
3.1 Discuss the control system architecture.
3.2 Discuss the switching system architecture.
3.3 Discuss the synchronization sub-system architecture.
3.4 Understand the alarm management.
3.5 Discuss the quality data management.

4 Describe the unit function and layout.
4.1 Understand the unit functions and identify the front panel devices.

5 Understand the unit functions and identify the front panel devices.
5.1 Describe the equipment protections.
5.2 Describe the network protections.

6 Illustrate the protection schemes.
6.1 Install the LCT and connect it to the equipment.
6.2 Operate the LCT configuration steps.
6.3 Navigate the LCT working areas.

7 Start the Local Craft Terminal interface.
7.1 Complete the Initial Commissioning Procedure.
7.2 Configure the communication parameters.
7.3 Configure the synchronization parameters.

8 Operate the basic system set up.
8.1 Set-up the cross connections.
8.2 Configure the equipment protections.
8.3 Configure the network protections.
8.4 Perform the data services set-up.

9 Create the connections and provide the protection schemes.
9.1 Monitor the performance data collection.

10 Retrieve and analyze the performance data.
10.1 Identify the fault condition and events reporting.

11 Manage the faults and events reporting.
11.1 Perform the back-up and restore of the system database.
11.2 Describe the software upgrade principles.

12 Manage the equipment database and software.
12.1 Perform the card and LTU replacement.
12.2 Operate the Compact Flash replacement.

13 Operate the main troubleshooting procedures.

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

Optical Networks System Survey (LZU 108 6951).
The participants should be familiar with the SDH and Ethernet principles.

Duration and class size

The length of the course is 4 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment. This course can be conducted at the Customer premises.

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Main system features	1.0 hour
	Equipment composition	3.0 hours
	Main system architectures	2.0 hours
2	Unit functions and layout	2.0 hours
	Protection schemes	1.0 hour
	Local Craft Terminal	1.0 hour
	Provide basic system set up	2.0 hours
3	Create connections and provide protection schemes	4.0 hours
	Analyze the performance data	1.0 hour
	Managing faults and events reporting	1.0 hour
4	Manage the equipment database and software	2.0 hours
	Main troubleshooting guidelines	4.0 hours

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Layer 2 Data Cards on OMS1600 R4

LZU1088051 R1A

Description

Operation and maintenance of equipment could be a complex and resource-consuming task if your personnel do not have the appropriate skills and knowledge. Furthermore, the transport of the Ethernet traffic in the SDH network is a technology in continuous evolution that needs to be well known in order to improve the network performance and efficiency.
This course is designed for people who have to configure, operate and maintain the Layer 2 Cards in the OMS 1600 equipment in the transport network.
The course contents will provide the full information about the card functionalities and features. The basic procedures for operation and maintenance and for the configuration of the main services will be explained.

Learning objectives

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

1 Describe the Layer 2 Cards and their applications.
1.1 Explain the basic concepts of the involved technologies.
1.2 Demonstrate the main equipment services.

2 Explain the system architecture.
2.1 Describe the card layout.
2.2 Describe the functional blocks.
2.3 Explain the management of the Ethernet traffic.
2.4 Describe the system technical characteristics.

3 Operate the system set-up.
3.1 Configure the SDH domain.
3.2 Configure the EPL service.
3.3 Configure the EVPL service.
3.4 Configure the EPLAN \ EVPLAN service.

4 Operate the main maintenance procedures.
4.1 Use common tools for troubleshooting.
4.2 Configure the performance data collection and analyze the result.

Target audience

The target audience for this course is:

Network Deployment Engineers, Service Deployment Engineers, System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

Marconi OMS 1600 R4 Operation and Maintenance, LZU1086682
The participants should be familiar with the Ethernet and SDH principles.

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment. This course can be conducted at the Customer premises.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the system overview and applications	2.0 hours
	Illustrate the system architecture	4.0 hours
2	Provide the system set-up (part 1)	6.0 hours
3	Provide the system set-up (part 2)	5.0 hours
	Operate the main maintenance procedures	1.0 hour

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Marconi OMS 2400 Operation and Maintenance

LZU 108 6717 R2A

Description

Operating and maintaining equipment could be a complex and resource-consuming task if your personnel don't have the appropriate skills and knowledge. This course will provide to your operators the full information on the OMS2430/2450 equipment structure and features. Furthermore the training documentation will give an essential guideline to operate and maintain the equipment in the most efficient way

Learning objectives

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

1 Describe the Marconi OMS2400 family and features.
1.1 Discuss the basic concepts of the involved technologies.
1.2 Explain the main characteristics of the OMS2400 variants.
1.3 Describe how the system security is granted for OMS2400 family.
1.4 Illustrate the use of the equipment in the network.
1.5 Demonstrate the main services the Marconi OMS 2400 offers.

2 Explain the equipment composition.
2.1 Identify the main system areas.
2.2 Discuss the supported units.
2.3 Identify the unit's front panel devices.

3 Explain the main system architectures.
3.1 Identify the management and control system architecture.
3.2 Discuss the switching and synchronization system architecture.
3.3 Discuss the alarm management.
3.4 Explain the Power Supply architecture.

4 Explain the protection schemes that the equipment supports.
4.1 Describe the equipment protections.
4.2 Describe the traffic protections.

5 Use the Marconi OMS2400 Local Terminal interface.
5.1 Install the LCT and connect it to the equipment.
5.2 Navigate the LCT working areas.

6 Operate the basic system set-up.
6.1 Install the software licenses.
6.2 Configure and analyze the communication parameters.

6.3 Configure the units' parameters.
6.4 Configure the ports' parameters.
6.5 Configure synchronization parameters.
6.6 Save the Equipment configuration in the Back-up MIB.
6.7 Configure the Equipment using ENEA.

7 Provision traffic and protection schemes.
7.1 Operate the provisioning of the traffic services according to the protection scheme.
7.2 Set-up and manage the protections mechanisms.

8 Analyze the performance data.
8.1 Set-up the performance data collection.
8.2 Analyze the performance data and the optical measurement.

9 Manage fault reporting.
9.1 Manage the alarm attributes and OSPF traps.
9.2 Recognize the fault condition and find the alarm cause.

10 Manage the equipment database and software.
10.1 Perform the backup and restore of the equipment database.
10.2 Describe the software download.

11 Operate main maintenance procedures.
11.1 Use common tools for troubleshooting.
11.2 Perform the card replacement.
11.3 Perform the Compact Flash replacement.
11.4 Perform the Software Licenses update.
11.5 Perform a system recovery in case of Warning State and Safe Mode

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

The participants should be familiar with the Ethernet, MPLS and SDH principles and have attended the Optical Networks System Survey (LZU 108 6951) course or have an equivalent knowledge

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Duration and class size

The length of the course is 4 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	System overview and applications	1.0 hours
	Equipment composition	3.0 hours
	System architecture	2.0 hours
2	System architecture	2.0 hours
	Protection schemes	1.0 hours
	Local Craft Terminal interface	1.0 hours
	Basic System Set-Up	2.0 hours
3	Traffic and protection schemes	2 .0 hours
	Performance data	2.0 hours
	Fault reporting	2.0 hours
4	Equipment database and software	2.0 hours
	Main troubleshooting procedures	4.0 hours

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Marconi OMS3200 R5 Operation and Maintenance

LZU 108 8052 R1A

Description

This course is designed for people who configure, operate and maintain the OMS 3240/3250/3255 equipment in the transport network.
The course contents will provide complete information about the equipment features and system architecture. The basic procedures for operation and maintenance and for the configuration of the main services will be explained

Learning objectives

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

1 Describe the main system features
1.1 Describe the equipment
1.2 Discuss the supported interfaces
1.3 Illustrate the use of the equipment in the SDH network

2 Illustrate the equipment composition
2.1 Identify the main system areas
2.2 Discuss the supported units and the relevant interfaces

3 Illustrate the main system architectures
3.1 Discuss the communication and control system architecture
3.2 Discuss the switching system architecture
3.3 Discuss the synchronization sub-system architecture
3.4 Discuss the equipment management
3.5 Discuss the alarm management
3.6 Discuss the quality data management

4 Describe the unit functions and layout
4.1 Identify the units front panel
4.2 Describe the units functions

5 Illustrate the protection schemes supported by the systems
5.1 Describe the common units protections supported
5.2 Describe the traffic protections schemes supported

6 Start the Local Craft Terminal interface
6.1 Install the LCT and connect it to the equipment
6.2 Recognize the LCT configuration steps
6.3 Recognize the LCT working areas

7 Provide basic system set-up
7.1 Configure the communication parameters
7.2 Configure the units parameters
7.3 Configure the ports parameters
7.4 Configure the synchronization scheme

8 Create connections and provide protection schemes
8.1 Manage the cross connections
8.2 Manage the equipment protections
8.3 Manage the network protections

9 Analyze the performance data
9.1 Start the performance data collection
9.2 Discuss performance data collection results

10 Manage fault reporting
10.1 Recognize fault condition and alarm cause
10.2 Manage the alarms attributes and the system log
10.3 Acknowledge the alarms

11 Manage the equipment database and software
11.1 Perform the back-up and restore of the system database
11.2 Describe the software download principles

12 Operate main troubleshooting procedures
12.1 Perform the card replacement
12.2 Perform the Compact Flash replacement

Target audience

The target audience for this course is:

Network Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians

Prerequisites

Successful completion of the following courses:

The participants should be familiar with the SDH and Ethernet principles

Duration and class size

The length of the course is 4 days and the maximum number of participants is 8.

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Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Main system features	1.0 hour
	Equipment composition	2.0 hours
	Main system architectures	3.0 hours
2	Unit functions and layout	2.0 hours
	Protection schemes	1.0 hour
	Local Craft Terminal interface	1.0 hour
	Basic system set-up	2.0 hours
3	Cross-connection and Protection Schemes	4.0 hours
	Analyze the Performance Data	1.0 hour
	Manage fault reporting	1.0 hour
4	Database and software management	2.0 hours
	Main troubleshooting guidelines	4.0 hours

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Layer 2 Data Cards on OMS3200 R5

LZU 108 8049 R1A

Description

Operation and maintenance of equipment could be a complex and resource-consuming task if your personnel do not have the appropriate skills and knowledge. Furthermore, the transport of the Ethernet traffic in the SDH network is a technology in continuous evolution that needs to be well known in order to improve the network performance and efficiency.
This course is designed for people who have to configure, operate and maintain the Layer 2 Cards in the OMS 3200 equipment in the transport network.
The course contents will provide the full information about the card functionalities and features. The basic procedures for operation and maintenance and for the configuration of the main services will be explained

Learning objectives

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

1 Describe the Layer 2 Cards and their applications.
1.1 Explain the basic concepts of the involved technologies.
1.2 Demonstrate the main equipment services.

2 Explain the system architecture.
2.1 Describe the card layout.
2.2 Describe the functional blocks.
2.3 Explain the management of the Ethernet traffic.
2.4 Describe the system technical characteristics.

3 Operate the system set-up.
3.1 Configure the SDH domain.
3.2 Configure the EPL service.
3.3 Configure the EVPL service.
3.4 Configure the EPLAN \ EVPLAN service.

4 Operate the main maintenance procedures.
4.1 Use common tools for troubleshooting.
4.2 Configure the performance data collection and analyze the result.

Target audience

The target audience for this course is:

Network Deployment Engineers, Service Deployment Engineers, System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

Marconi OMS 3200 R5 Operation and Maintenance LZU 108 8052

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the system overview and applications	2.0 hour
	Illustrate the system architecture	4.0 hour
2	Provide the system set-up (part 1)	6.0 hours
3	Provide the system set-up (part 2)	5.0 hours
	Operate the main maintenance procedures	1.0 hours

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MHL 3000 R5 Operation and Maintenance

LZU1088015 R2A

Description

This course is designed for people who have to configure, operate and maintain the MHL 3000 equipment in the transport network.
The course contents will provide the full information about the equipment features and system architecture. The basic procedures for operation and maintenance and for the configuration of the main services will be explained.

Learning objectives

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

1 Describe the main system features
1.1 Describe the equipment
1.2 Discuss about the supported interfaces
1.3 Illustrate the use of the equipment in the DWDM network

2 Illustrate the equipment composition
2.1 Identify the main system areas
2.2 Discuss about composition rules

3 Illustrate the main system architectures
3.1 Discuss about the communication and control system architecture
3.2 Discuss about the equipment management
3.3 Discuss about alarm management
3.4 Discuss about quality data management

4 Describe the unit functions and layout
4.1 Unit Functions and Layout

5 Illustrate the protection schemes supported by the systems
5.1 Describe the common parts units protections supported
5.2 Describe the traffic protections schemes supported
5.3 Describe the supported WSON protection

6 Start the Local Craft Terminal interface
6.1 Install the LCT and connect it to the equipment
6.2 Recognize the LCT configuration steps
6.3 Recognize the LCT working areas

7 Perform the hardware configuration updating
7.1 Configure the communication parameters

7.2 Configure the addresses for WSON management
7.3 Configure the units parameters
7.4 Analyze the link equalization

8 Create connections and provide protection schemes
8.1 Manage the equipment protections
8.2 Manage the network protections

9 Analyze the performance data
9.1 Start the performance data collection
9.2 Discuss about performance data collection results

10 Manage fault reporting
10.1 Identify the fault condition and events reporting

11 Operate main troubleshooting procedures
11.1 Perform the card replacement

Target audience

The target audience for this course is:

System Technicians, Field Technicians, System Engineers.

Prerequisites

Successful completion of the following courses:

SDH principles , WDM principles and OTN principles or have equivalent knowledge

Duration and class size

The length of the course is 4 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment. This course can be conducted at the Customer premises.

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	System overview and applications	1 hour
	Equipment composition	2 hours
	Main system architectures	3 hours
2	Unit functions and layout	2 hours
	Protection schemes supported by the systems	1 hour
	Local Craft Terminal interface	1 hour
	Hardware configuration updating	2 hours
3	Hardware configuration updating	2 hours
	Connections and protection schemes	2 hours
	Performance data	1 hour
	Fault reporting	1 hour
4	Equipment database and software	2 hours
	Main troubleshooting procedures	4 hours

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ASTN Planner

LZU 108 7323 R1A

Description

This course is designed for people who have to plan the transport network and to implement the most suitable configuration. The course contents will provide the full information about the ASTN Planner functionalities

Learning objectives

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

1 Architecture of ASTN Networks
1.1 Describe the main ASTN technology features.
1.2 Describe the difference between a traditional network and an ASTN network.
1.3 Illustrate the most important benefits it is possible to achieve using ASTN technology.
1.4 Discuss the new ASTN protections mechanisms.

2 ASTN Planner Features and Data Model
2.1 Describe the ASTN Planner features.
2.2 Describe the ASTN Planner data model.
2.3 Illustrate the steps to define Domains, Network Elements, Link Components, Link Clusters and the network parameters in the Planner.

3 ASTN Planner Architecture
3.1 Describe the main ASTN technology features.
3.2 Describe the differences between Windows version and HP-UX version.
3.3 Illustrate the licensing mechanism.
3.4 Discuss about the routing algorithm used by the ASTN Planner.

4 General Configuration
4.1 Describe all possible settings available in ASTN Planner.
4.2 Describe the meaning of the parameters it is possible to set.

5 Topology Files Organization.
5.1 Describe the topology files organization.
5.2 Describe where the report and export files are located and their format.

6 Data Entry and Browsing
6.1 Describe the data entry features.
6.2 Describe the traffic matrix and circuit data entry
6.3 Discuss the general simulation network behavior.

6.4 Discuss the graphical fault simulation

7 Network Analysis Tools
7.1 Describe the bottleneck analysis tool.
7.2 Describe the capacity planning tool.
7.3 Describe the fault analysis tool.
7.4 Discuss the availability analysis tool.
7.5 Discuss the network inventory.

8 Case study
8.1 Implement a Network Capacity Planning from scratch.
8.2 Perform a Fault Analysis.
8.3 Perform an Availability Analysis.
8.4 Perform a Bottleneck Analysis.
8.5 Generate GMPLS parameters

Target audience

The target audience for this course is:

Network Design Engineer

Prerequisites

Successful completion of the following courses:

The participants should be familiar with the SDH, Ethernet, IP principles. The participants should be expert with the SDH planning concepts

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the main ASTN network features	2 hours
	ASTN Planner Features and Data Model	1 hour
	ASTN Planner Architecture	1 hour
	General Configuration	1 hour
	Topology Files Organization	1 hour
2	Data Entry and Browsing	3 hours
	Network Analysis Tools	3 hours
3	Case Study	6 hours

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On Planner R1 Operations

LZU1087611 R2A

Description

Operation and network planning can be a complex and resource-consuming task, if your personnel don't have the appropriate tools and knowledge. This course is designed for people who have to plan the transport network and to implement the most suitable configuration. The course contents will provide information on the ON Planner network planning tool, for the part related to the SDH and DWDM, and will show how to implement its functionalities.

Learning objectives

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

1 Describe the general architecture of ASTN and ASON/WSON networks.
1.1 Describe the main ASTN and ASON/WSON technology features.
1.2 Describe the difference between a traditional network and an ASTN or ASON/WSON network.
1.3 Illustrate the most important benefits it is possible to achieve using ASTN and ASON/WSON technology.
1.4 Discuss the new ASTN ASON/WSON protections mechanisms.

2 Illustrate the features of the ON Planner and its Data Model.
2.1 Describe the main ON Planner features.
2.2 Illustrate the prerequisite, the installation and the configuration of the ON Planner software.
2.3 Describe the ON Planner Data Model: Domains, Network Elements, Link Components, Link Clusters, TE-Links, Control Channels, GMPLS Labels, LSP's, Terminated Circuits, and Traffic Matrix.
2.4 Describe the Network Analysis tools: Availability Analysis, Bottleneck Analysis, Fault Analysis Capacity Planning, Routing and Wavelength Assignment, DCN Planning, Create BoM, Network Inventory.

3 Create and simulate an SDH and ASTN network.
3.1 Create an SDH / ASTN network.
3.2 Generate GMPLS parameters.
3.3 Create a circuit.
3.4 Perform a Capacity Planning
3.5 Perform a Fault Analysis
3.6 Perform a Bottleneck Analysis

3.7 Perform an Availability Analysis
3.8 Create a BoM
3.9 Perform the planning of a DCN Network

4 Create, validate and simulate a DWDM ASON/WSON network.
4.1 Describe the main issues related to the planning of a DWDM Network
4.2 Create a DWDM Network.
4.3 Generate the ASON / WSON Parameters.
4.4 Define a Traffic Matrix.
4.5 Perform the Optical Routes validation.
4.6 Perform a Routing and Wavelength Assignment (RWA)
4.7 Perform the validation of the Traffic.

Target audience

The target audience for this course is:

Network Design Engineers.

Prerequisites

Successful completion of the following courses:

SDH, DWDM, IP principles. The participants should be expert with the planning concepts.

Duration and class size

The length of the course is 5 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment. This course can be conducted at the Customer premises.

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the main ASTN and ASON / WSON technology features.	1
	Describe the difference between a traditional network and an ASTN or ASON / WSON network.	1
	Illustrate the most important benefits it is possible to achieve using ASTN and ASON / WSON technology.	1
	Discuss the new ASTN and ASON / WSON protections mechanisms	3
2	Describe the main ON Planner features.	1
	Illustrate the prerequisite, the installation and the configuration of the ON Planner software.	1
	Describe the ON Planner Data Model: Domains, Network Elements, Link Components, Link Clusters, TE-links, Control Channels, GMPLS Labels, LSP's, and Traffic Matrix.	1
	Describe the Network Analysis tools: Availability Analysis, Bottleneck Analysis, Fault Analysis, Capacity Planning, Routing and Wavelength Assignment, DCN Planning, Bill of Material, Network Inventory.	3
3	Create an SDH /ASTN network.	1.5
	Generate GMPLS parameters.	0.5
	Create a circuit.	0.5
	Perform a Capacity Planning.	0.5
	Perform a Fault Analysis.	0.5
	Perform a Bottleneck Analysis.	0.5
	Perform an Availability Analysis.	0.5
	Create a Bill of Material.	0.5
	Perform the planning of a DCN Network.	1.0
4	Describe the main issues related to the planning of a DWDM Network.	1.5

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	Create a DWDM Network.	1.0
	Generate the ASON / WSON parameters.	0.5
	Define a Traffic Matrix	0.5
	Perform the validation of the optical routes.	0.5
	Perform a Routing and Wavelength Assignment (RWA).	1
	Perform the validation of the Traffic.	1
5	Exercises on SDH, ASTN and DWDM	6

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Optical Networks DCN Design

LZU1086953 R2A

Description

In order to manage the transport network from a centralized point of view, it is necessary to set up a management network to reach all the involved network elements.
This course is intended for people who have to plan, implement and analyze the Data Communication Network (DCN) for the remote management of the transport network via the Network Management System.
The course contents will provide basic information on how to plan, maintain and monitor the Data Communication Network. The participants will have the opportunity to set-up a small training DCN, to check the configuration and to monitor it. Moreover one real network plan case study will be analyzed.

Learning objectives

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

1 The ISO/OSI and TCP/IP models.
1.1 Describe the ISO/OSI and the TCP/IP stacks.
1.2 Explain the differences between each layer of the stacks.

2 The DCN requirements.
2.1 Plan the requirements of the DCN for a transport network.

3 The available Technologies (LAN, WAN, embedded SDH).
3.1 Clarify the different available technologies.
3.2 Determine the different feature of each technology.
3.3 Evaluate the interoperability of each technology.

4 The OSI and TCP/IP routing protocols.
4.1 Understand the TCP/IP routing protocols (OSPF, BGP, RIP, etc.).
4.2 Describe the IS-IS routing protocol.
4.3 Understand the differences in the usage of the different routing protocols.

5 The OSI or IP protocol in the network element.
5.1 Examine the communications between the Network Elements.

6 Some functions of the router configuration.
6.1 Execute the router configuration to set-up the training network.
6.2 Implement different architectures by using the training network.

7 With OSI or IP protocols.
7.1 Evaluate the different network architectures and the interoperability between them.

7.2 Monitor the network components in the DCN Network.
7.3 Test the DCN protection scheme.

8 The OSI tunneling over IP.
8.1 Set the OSI tunneling pass through the IP network.

9 The network design limitations.
9.1 Detect the prospective limitations.
9.2 Evaluate the possible limitations of the DCN network design.

Target audience

The target audience for this course is:

Network Design Engineers
Network Deployment Engineers
System Administrators

Prerequisites

Successful completion one of the following courses:

LZU 108 8039 - ServiceOn R10 Sys Admin on SUSE Linux or
LZU 108 8040 - ServiceOn R10 for HP-UX System Administration
Moreover they should have a basic knowledge on telecommunications and data networks, the managed Network Elements (SDH or DWDM equipments) and the Network Management System.

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course consists of instructor-lead learning using slide presentations and demonstrations. Practical exercises will be carried out by all participants to apply and explore the course work.

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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	The ISO/OSI and TCP/IP models	2 hours
	The DCN requirements	1 hour
	The DCN technologies	1.5 hours
	Routing protocols	1.5 hours
2	Routing protocols	2 hours
	Network element protocols configuration	1 hour
	Router configuration	3 hours
3	OSI/IP protocols configurations	2 hours
	OSI tunneling	2 hours
	DCN design limitations	2 hours

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DCN (IP/OSI) Interworking & Configuration for OMS nodes

LZU 108 7855 R1A

Description

DCN (Data Communication Network) denotes the network (usually physically or logically separated from the traffic - or customer – network) that transports management information between a management station and remote NEs.
This course is designed for people having the need to understand how integration of DCN can be obtained, among different types of OMS series equipment.
The course contents provide full information on how different pieces of OSI IS-IS and IP OSPF managed equipment can be set for Interworking, for the purpose of making them reachable from a “Q-Interface” gateway and using the Data Communication Channels (DCCs).
Theoretical introductory explanations introduce the practical work on a “living network”, on which the procedures to configure the various DCN features will be explained and demonstrated, with at least 80% of the course time devoted to practice

Learning objectives

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

1 Understand IS-IS and OSPF management Interworking features

2 Identify the IS-IS and OSPF management areas in the model network
2.1 Discuss the tunneling of IP management packets over OSI
2.2 Discuss on how to partition the DCN model network

3 Manage OSI Settings, Level 1 and Level 2, IS-IS
3.1 Configure OSI parameters in OMS 1600
3.2 Configure OSI parameters in OMS 1200
3.3 Configure OSI parameters in OMS 1410
3.4 Configure OSI parameters in OMS 800

4 Manage IP Settings, IP over OSI Tunneling and OSPF
4.1 Configure IP parameters in OMS 1600
4.2 Configure IP parameters in OMS 1200
4.3 Configure IP parameters in OMS 1410
4.4 Configure IP parameters in OMS 800

5 Perform checking of DCN Operation
5.1 Setting Routes
5.2 Testing DCN Communications
5.3 Connecting Model Network to ServiceOn

Target audience

The target audience for this course is:

System Technicians, System Engineers and Network Deployment Engineers

Prerequisites

Successful completion of the following courses:

Optical Networks DCN Design, LZU108 6953
The participants should be familiar with the DCN Routing Protocols (OSPF, IS-IS), should have attended the O&M equipment courses, or have an equivalent knowledge

Duration and class size

The length of the course is 3 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

Ericsson AB
Global Services
SE-164 80 Stockholm
Telephone: +46 10 719 0000
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Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	IS-IS and OSPF management Interworking features	1.0 hour
	IS-IS and OSPF management areas in the model network	1.0 hour
	Tunneling of IP management packets over OSI	1.0 hour
	Partitioning the DCN model network	1.0 hour
	OSI Settings, Level 1 and Level 2, IS-IS	2.0 hours
2	OSI parameters Configuration - OMS 1600, OMS 1200, OMS 1410, OMS 800	4.0 hours
	IP Settings, IP over OSI Tunneling and OSPF	2.0 hours
3	IP parameters Configuration - OMS 1600, OMS 1200, OMS 1410, OMS 800	4.0 hours
	Perform checking of DCN Operation	0.5 hour
	Setting Routes	0.5 hour
	Testing DCN Communications	0.5 hour
	Connecting Model Network to ServiceOn	0.5 hour

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ServiceOn DCN Analyzer R3, Analysis and Handling

LZU 108 7336 R1B

Description

In today's complex networks, communications within the network is key to being able to manage the network efficiently. The ServiceOn DCN Analyzer is designed to provide monitoring and analysis of the Data Communication Network (DCN) used to transport the O&M information in the operators infrastructure.
With the aid of this training, the trainee will understand the efficient use of the ServiceOn DCN Analyzer in order to be able to perform efficient monitoring and analysis of the DCN infrastructure

Learning objectives

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

1 Illustrate the ServiceOn DCN architecture and features
1.1 Discuss about the benefit of the DCN Analyzer
1.2 Clarify the ServiceOn DCN Analyzer interfaces
1.3 Describe the graphical view of the Layer 3 DCN topology

2 Operate the visualization of the network topology
2.1 Illustrate how to perform the automatic and manual customization of the node attributes
2.2 Retrieve the network information

3 Explore the network analysis features
3.1 Outline the data post processing of the captured information
3.2 Describe the track of the actual path(s) between any resources
3.3 Operate the processing of the network routing announcements/network changes notification

4 Operate some fault management procedures
4.1 Outline the event and fault management of the DCN resources
4.2 Retrieve the network operation after maintenance activities

5 Manage the DCN implementation analysis
5.1 Describe the management of the stored historical layer 3 network topologies / activities
5.2 Operate the processing of the historical data to analyze the topologies modifications

Target audience

The target audience for this course is:

Network Design Engineers and System Administrators.

Prerequisites

Successful completion of the following courses:

DCN (IP/OSI) Interworking and Configuration for OMS nodes, LZU 108 7855
The participants should be familiar with the DCN principles and should have completed the course Optical Networks DCN Design or they should have an equivalent knowledge on OSI and IP protocols, OSPF and ISIS routing protocols

Duration and class size

The length of the course is 2 days and the maximum number of participants is 8.

Learning situation

This course is based on theoretical and practical instructor-led lessons given in a classroom environment

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Illustrate the ServiceOn DCN architecture and features	2 hours
	Operate the visualization of the network topology	2 hours
	Explore the network analysis features	2 hours
2	Operate some fault management procedures	3 hours
	Manage the DCN implementation analysis	3 hours

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Marconi MHL 3000 R4 to R5 Delta

LZU 108 8017 R1A

Description

The Marconi MHL 3000 DWDM system has evolved in time and has introduced new cards and features.
IMPORTANT: This Virtual Classroom Training covers the differences introduced in the latest releases 5.0 and 5.1 respect to R4.3.2

Learning objectives

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

1 Describe the differences of R 5.0/R 5.1 respect to R4.3.2 equipment release
1.1 Describe the Multi-reach DWDM Core - 80chs ROADM
1.2 Describe the new hardware and relevant features
1.3 Describe the 80chs Directionless and Colorless ROADM solution
1.4 Discuss the 1+1 OSNCP protection on 40G transponders
1.5 Discuss the 1+1 OSNCP independent port protection on 10G Muxponders
1.6 Describe the new 40G transponders functionalities

2 Describe the Multi-reach DWDM Core - 80chs ROADM

3 Describe the new hardware and relevant features

4 Describe the 80chs Directionless and Colorless ROADM solution

5 Discuss the 1+1 OSNCP protection on 40G transponders

6 Discuss the 1+1 OSNCP independent port protection on 10G Muxponders

7 Describe the new 40G transponders functionalities

Target audience

The target audience for this course is:

Service Planning Engineers, Network Deployment Engineers, Service Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians

Prerequisites

Successful completion of the following courses:

MHL 3000 R4 Operation and Maintenance, LZU 108 6688

Duration and class size

The length of the course is 4 hours and the maximum number of participants is 8.

Learning situation

This is a theoretical course given in a virtual classroom over the net by an instructor. The course contains modules like slide presentations, exercises, self-paced studies and tests given both over the net and asynchronous.

Time schedule

The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

Day	Topics in the course	Estimated Time (hours)
1	Describe the differences respect to R4.3.2 equipment release	3 hours

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