



Global Services

RBS 6000 Training Programs

Catalog of Course Descriptions





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)
	Web Based Learning/eLearning (WBL)





GSM Radio Network Overview



LZU 108 6235 R2A

Description

For those that need a basic introduction to the Radio Access part of GSM, this is the course for you. Upon completion of this course, you will be able to describe the Radio Network components, their functions, features and required specifications.

Learning objectives

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

- 1 Describe the Radio Network components, their functions, features and required specifications
- 2 Explain that the BSC controls the radio resources for the RBS
- 3 Outline the main working functions of a BSC, TRC and RBS
- 4 List the different versions of RBS's
- 5 Outline that an RBS contains a transmitter and a receiver and is the interface towards the MS
- 6 Explain the influence of EDGE to the Radio Network in terms of infrastructure requirements, Air Interface and end-user service enhancements.
- 7 Describe briefly the 3 different positioning methods available

Target audience

The target audience for this course is: Service Planning Engineers, Service Design Engineers, Network Design Engineers, Network Deployment Engineers, Service Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians, System Administrators, Application Developers.

Prerequisites

A general knowledge in cellular systems and radio technology.

Duration and class size

The length of the course is 3 hours.



Learning situation

This is a web-based interactive training course with multimedia content.

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
1	<ul style="list-style-type: none">• Lesson 1: GSM Overview, Sub-network Descriptions, Traffic Case	45 min
	<ul style="list-style-type: none">• Lesson 2: BSS Overview, RBS, GSM BSS Transport network	45 min
	<ul style="list-style-type: none">• Lesson 3: GSM Radio Access Interface, ABIS Interface, UM Interface	45 min
	<ul style="list-style-type: none">• Lesson 4: Introduction to the Cell, Idle and Busy Mode Behavior	45 min

WCDMA Radio Access Network Overview



LZU 108 5202 R3A

Description

This course provides the students with an overview of the WCDMA Radio Access Network, its components and functions.

Learning objectives

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

- 1 Outline the difference between FDMA, TDMA and WCDMA technologies
- 2 Explain the purpose and principles of WCDMA technology
- 3 Outline the WCDMA Radio Access Network (WCDMA RAN) nodes and network structure

Target audience

The target audience for this course is: Service Planning Engineers, Service Design Engineers, Network Design Engineers, Network Deployment Engineers, Service Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians, System Administrators.

Prerequisites

A general knowledge in cellular systems and radio technology.

Duration and class size

The length of the course is 3 hours.

Learning situation

This is a web-based interactive training course with multimedia content.



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
1	<ul style="list-style-type: none">• WCDMA Introduction• WCDMA Functionality• WCDMA RAN Nodes• WCDMA RAN Protocols	<p>30 mins</p> <p>1 hour</p> <p>1 hour</p> <p>30 mins</p>

WCDMA RBS 6601 Field Maintenance



LZU 108 7675 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6601 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6601 type on P7 FP level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Element Manager and NCLI (Node Command line Interface).

Learning objectives

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

- 1 Explain on overview level the WCDMA RAN Site Concept for RBS
 - 1.1 Explain the basic WCDMA Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify WCDMA Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify and locate Remote Electrical Tilt (RET)
 - 1.6 Identify the Antenna System Controller (ASC)

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Element Manager

- 3 Connect to a node using CLI and also using NCLI.
 - 3.1 Understand basic commands using CLI and using NCLI.
 - 3.2 Have a basic understanding of the functionality and technology used in CLI and NCLI.
 - 3.3 Understand the basic principles behind the Managed Object Model (MOM).

- 4 Use the Element manager and understand the concepts behind Object Explorer
 - 4.1 Download and start the Element Manager.
 - 4.2 Access and use the different "Views"; Containment, ATM, Equipment, IP, Licensing, Radio Network and the Software.
 - 4.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 4.4 Access the property help feature from each window.
 - 4.5 Create a Customized View (User Defined) in Element Manager.



- 5 Perform maintenance and configuration tasks on the RBS 6601 nodes
- 5.1 Trace the uplink and downlink traffic paths through the RBS 6601 hardware
- 5.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6601 site
- 5.3 Power up/down the RBS 6601 and connect a thin client to the node
- 5.4 Perform preventative maintenance on the RBS 6601
- 5.5 Find Faulty Hardware units and replace them
- 5.6 Perform Configuration tasks on the RBS 6601
- 5.7 Perform configuration version backup and restore on RBS 6601

Target audience

The target audience for this course is: Field Technician.

Prerequisites

Successful completion of the following courses:

Ericsson WCDMA System Overview	LZU1085418
RBS 6000 Overview	LZU1087503

Or

WCDMA RAN Overview (WBL)	LZU1085202
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	15 min
	WCDMA RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	15 min
	Command Line Interface/Node Command Line Interface	1 hour
	Element Management	1 hour
	WCDMA RBS 6601 Maintenance	3 hours

LTE/SAE– System Overview



LZU 108 7020 R3A

Description

If you want to know what LTE/SAE (Long Term Evolution / System Architecture Evolution) is, this course will give you an overview of the new radio technology and protocols involved in the E-UTRAN (Evolved UTRAN, also referred to as LTE) and the architecture behind EPC (Evolved Packet Core, also referred to as SAE – System Architecture Evolution).

The course also provides descriptions of operation and maintenance and RBS hardware.

Learning objectives

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

- 1 Explain the background and architecture of E-UTRAN and EPC
 - 1.1 Describe the evolution of cellular networks
 - 1.2 Summarize the evolution of 3GPP releases, from release 99 to release 8
 - 1.3 Explain the logical architecture of EPS (E-UTRAN and EPC)
 - 1.4 Give an overview of the QoS framework

- 2 Describe the EPC Architecture
 - 2.1 Describe the interfaces in EPS
 - 2.2 Describe the Evolved Packet Core (EPC)
 - 2.3 Describe the role of the MME, S-GW and PDN-GW
 - 2.4 Describe the S1 (and X2) protocol stacks
 - 2.5 Explain the interaction with IMS on an overview level

- 3 Describe the E-UTRAN principles
 - 3.1 List the radio interface protocols
 - 3.2 Describe the radio interface techniques used in uplink and downlink
 - 3.3 Describe the channel structure of the radio interface
 - 3.4 Explain the OFDM principle and benefits
 - 3.5 Detail the reference symbols in DL
 - 3.6 Describe MIMO
 - 3.7 Explain the SC-FDMA principle and benefits

- 4 Describe on an overview level the RBS HW and O&M (Operation and Maintenance)
 - 4.1 Describe the RBS hardware in LTE
 - 4.2 Explain the concepts related to Smart Simplicity, Self Organizing Networks (SON), Automated Provisioning of RBS (APR), Automated Neighbor Relations (ANR)
 - 4.3 Describe the overall role and function of OSS-RC



Target audience

The target audience for this course is:

- Network Engineer
- Service Engineer
- Service Design Engineer
- Network Design Engineer

Prerequisites

A general knowledge in cellular systems and radio technology.

Duration and class size

The length of the course is 2 days and the maximum number of participants is 16.

Learning situation

This course is based on theoretical instructor-led lessons and theoretical exercises 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
1	<ul style="list-style-type: none">• Course Introduction, LTE/SAE Introduction	3 hours
	<ul style="list-style-type: none">• EPC Architecture	3 hours
2	<ul style="list-style-type: none">• Radio Interface principles	3 hours
	<ul style="list-style-type: none">• Operation and Maintenance and RBS HW	3 hours

GSM System Survey



LZU 108 852 R9A

Description


Are you lost when discussing GSM network basic concepts? If you are starting working in different areas of GSM system and need a general concept this is the course you were looking for. It will provide you with knowledge about Ericsson's GSM based systems and GSM 800/900/1800/1900. It will focus on GSM terminology, wireless concepts, functions of network nodes, and the Ericsson implementation of those network nodes. Completing this training you will have all the initial knowledge you need to proceed in competence development in other areas.

Learning objectives

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

- 1 Understand how mobile systems have evolved over the time and tell the history of GSM development.
 - 1.1 List benefits of having a standard.
 - 1.2 Describe the GSM geographical network structure and node functions.
 - 1.3 Understand the GSM frequency bands.
 - 1.4 List subscriber services provided in the GSM network.
- 2 List Ericsson's GSM System divisions and components and perceive how Ericsson has been involved in GSM since its inception and took an active part in the GSM specification process.
 - 2.1 List network components and describe their functions.
 - 2.2 Briefly describe optional additional network entities functions.
 - 2.3 Briefly present Protocols used in the GSM Access and Core Networks.
- 3 Know basic concepts of wireless communications and its importance to provide a good knowledge of how GSM Systems works.
 - 3.1 Understand Time Division Multiple Access technique (TDMA).
 - 3.2 List the transmission problems and their solutions.
 - 3.3 Understand how Adaptive Multi-Rate (AMR) can increase capacity and the new AMR-WD.
- 4 List and identify GSM System mandatory concepts of air interface, their functions and required specifications.
 - 4.1 Understand the concepts of physical channel and a logical channel.
 - 4.2 List one important piece of information sent on each of 3 different logical channels.
 - 4.3 Briefly explain the idea of mapping.

- 5 Differentiate the platforms that provide the network nodes and functionalities that are basis to provide Circuit and Packet switching, including AXE and CPP platform principles, list the main components and outline the main features.
 - 5.1 Understand the function of APT and APZ.
 - 5.2 Differentiate functions that can be implemented using AXE platform modularity.
 - 5.3 Explain how the group switch switches calls.
 - 5.4 Discriminate the AXE 810 hardware structure.
 - 5.5 Discriminate the CPP Hardware Platform.
 - 5.6 Show CPP Interconnection Structure
 - 5.7 Differentiate functions that can be implemented using CPP platform
- 6 Explain how Ericsson implements the functions and nodes of the GSM switching system.
 - 6.1 Name the nodes in the Switching System.
 - 6.2 Understand Ericsson's Mobile Softswitch Solution
 - 6.3 List which nodes that are contracted for the security procedure in the GSM system.
 - 6.4 Briefly explain the purpose of Authentication, Ciphering and Equipment Check.
- 7 List and identify Radio Access Network system nodes, its functions and required specifications.
 - 7.1 Outline the main functions of a BSC, TRC and RBS.
 - 7.2 Describe the Abis over IP solution
 - 7.3 List the Ericsson's RBS 2000 configurations.
 - 7.4 Explain the RBS architecture and functional blocks.
 - 7.5 Understand the benefits with new BSC BSS 08.
 - 7.6 Outline the new IP infrastructure.
- 8 Recognize different mobile stations types, including their components, functions, features and required specifications.
 - 8.1 Outline the information stored on the SIM-card.
 - 8.2 Explain the advantage of having a separation between mobile equipment (ME) and subscription (SIM-card).
 - 8.3 List the product categories of Mobile Stations (MS).
- 9 Understand the GSM traffic cases to consolidate all the GSM Network concepts using basic traffic cases examples.
 - 9.1 Explain the purpose of GSM ID-number (MSISDN, IMSI, TMSI, MSRN and LAI).
 - 9.2 Understand the handover, locating and location updating concepts.
 - 9.3 Briefly describe how a traffic case works.

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- 10 Explain the basic concepts and difficulties of planning a cellular network based on text examples and explanations.
 - 10.1 Describe 3 stages in the cell planning process.
 - 10.2 Explain the terms Grade of Service (GOS) and 'Erlang'.
 - 10.3 Name 2 types of Interference.
 - 10.4 Describe briefly the feature 'Re-Use of Frequencies within a Cell'.
 - 10.5 Understand what is meant by the term 'Hierarchical Cell Structure'.
 - 10.6 Describe briefly the feature 'BCCH in Overlaid Sub cell'.
 - 11 Recognize Ericsson's Operation and Support System – OSS as an important tool for operation and maintenance in GSM network describing its features and functions.
 - 11.1 Explain the functions of the Operations and Support System.
 - 11.2 Describe the architecture of the Operations and Support System.
 - 11.3 Outline the implementation of the Multi Mediation.
 - 11.4 Understand the implementation of the Ericsson Multi Activation.
 - 12 List the most common and main subscriber services, explaining their functions, features, and specifications.
 - 12.1 List the different types of services available in the network.
 - 12.2 Identify one of each of the following service types in the network: teleservices, bearer services and supplementary services.
 - 12.3 Identify one of the Ericsson innovative services in the network.
 - 12.4 Briefly describe the mobile intelligent network services available with Ericsson GSM systems.
 - 12.5 Understand the need and advantages of the CAMEL system.
 - 13 Understand charging and accounting concepts, their functions, features and required specifications, drawing attention to the fact that the charging concept is changing due to the introduction of new technologies such as GPRS, UMTS.
 - 13.1 Understand the charging concepts.
 - 13.2 List three call components.
 - 13.3 Explain the future of billing.
 - 14 Discriminate how data calls are initiated in the GSM network and cite examples of how a data call is handled in a GSM network through a traffic case analysis.
 - 14.1 Explain the data transmission services which GSM offers.
 - 14.2 Describe a GSM data traffic case.
 - 14.3 List the data transmission services which GPRS offers.
 - 14.4 List the things that can lead to improved GPRS end-user performance.
 - 14.5 Describe a GPRS data traffic case.
 - 15 Have an overview of the possible future functionality of GSM-based systems.
 - 15.1 Describe the evolution of GSM to WCDMA systems.
 - 15.2 List the technologies that will bridge these two systems including HSCSD, EDGE , GPRS , WCDMA and HSPA.
 - 15.3 Explain the 3G system and feature Adaptive Traffic Control.

Target audience

The target audience for this course is: Service Planning Engineers, Service Design Engineers, Network Design Engineers, Network Deployment Engineers, Service Deployment Engineers, System Technicians, Service Technicians, System Engineers, Service Engineers, Field Technicians, System Administrators, Application Developers, Business Developers, Customer Care Administrators.

Prerequisites

The participants should be familiar with telecommunication basics.

Duration and class size

The length of the course is 4 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.



Time schedule

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

1	Course Introduction & pre-course test	1,0 h
	Introduction to Mobile Telecommunications and GSM	1,5 h
	Overview of Ericsson's GSM Systems	0,5 h
	Introduction to AXE and CPP	1,5 h
	Switching System	1,5 h
2	Radio Access Network	1,5 h
	Mobile Station	0,5 h
	Wireless Concepts	2,0 h
	Channel Concepts	2,0 h
3	Traffic Cases	2,5 h
	Cell Planning	1,5 h
	Operation and Maintenance tools	1,0 h
	Mobile IN and Subscriber Services	1,0 h
4	Charging and accounting	0,5 h
	Data Services	2,0 h
	The future of GSM	2,0 h
	Optional Components (Appendix A-B)	1,0 h
	Post-course Test	0,5 h

Ericsson WCDMA System Overview



LZU 108 5418 R7A

Description

Do you need to understand what 3rd generation systems are all about? Do you get lost when people talk about Wideband Code Division Multiple Access (WCDMA) system? This course explains the purpose of the WCDMA Core, Radio, and Service Network Elements together with the standardization of the WCDMA access network. In addition, the participants will learn how Ericsson's mobile core network solution connects to external networks such as WCDMA Radio Access Networks, PSTN Networks, PABXs, IMS/VoIP networks or other Mobile Networks. The focus is on general principles rather than specific technical details.

Learning objectives

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

- 1 Detail the nodes and interface in WCDMA Network.
 - 1.1 Explain the idea of the converged industries and the layered core network.
 - 1.2 Present the 3GPP network model, and Ericsson network
 - 1.3 Explain on overview level the functionality of each node and its architecture.

- 2 Understand the standardization bodies involved in 3rd generation.
 - 2.1 Distinguish the Standardization bodies involved in the WCDMA Systems.
 - 2.2 Give in own words why standards are important in Telecommunications.
 - 2.3 Acknowledge what standardization bodies are, and what are their functions.
 - 2.4 Express the concept of full duplex communication, and FDD.
 - 2.5 State the frequency bands and systems chosen for the different areas.

- 3 Explain on an overview level the Ericsson Mobile Core Network Solution
 - 3.1 Explain on an overview level the architecture of the mobile core network.
 - 3.2 Describe the Mobile Softswitch Solution.
 - 3.3 Detail the architecture and functions of the MSC-Server and M-MGW
 - 3.4 Describe the two nodes involved in the P.S, domain of the core network.
 - 3.5 Recall the transport domain, and the various transport technologies used.
 - 3.6 Describe interconnections and protocols in the C.S. and P.S. Domains
 - 3.7 Identify the function of the main database nodes.
 - 3.8 Explain basic traffic cases in the Mobile Softswitch Solution.

- 4 Explain the 3rd Generation Radio Access Network.
 - 4.1 Explain various access techniques.
 - 4.2 State the coding types used in WCDMA, and how they prevent interference in the uplink and downlink.
 - 4.3 Recognize the Importance of power control.
 - 4.4 List the different handover scenarios in terms of soft, softer and hard handover.

- 4.5 Acknowledge the architecture of the Ericsson RAN Nodes RNC and RBS.
- 4.6 Identify the basic principles of HSDPA and EUL.

- 5 Detail the Network Services involved in WCDMA.
 - 5.1 Acknowledge the functions of the service layer.
 - 5.2 Detail various terminal technologies and platforms used.
 - 5.3 Identify the difference between Applications and enablers, and detail some of the more common enablers.
 - 5.4 Explain Mobile Positioning, MMS and Messaging over IP.
 - 5.5 Acknowledge the architecture and operation of the IP Multimedia Subsystem (IMS).

Target audience

The target audience for this course is:

- Service Planning Engineers
- Service Design Engineers
- Network Design Engineers
- Network Deployment Engineers
- Service Deployment Engineers
- System Technicians
- Service Technicians
- System Engineers
- Service Engineers
- Field Technicians
- System Administrators
- Application Developers
- Business Developers

Prerequisites

The participants should be familiar with general telecom technologies.

Duration and class size

The length of the course is 2 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.



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	Short description of the topics in the course	Estimated time
1	• Network Introduction	1 hour
	• Standardization	1 hour
	• Mobile Core Network Solution	4 hours
2	• Circuit Switched and Packet Switched traffic cases	1 hour
	• WCDMA Radio Access Network Technology	4 hours
	• Service Network and IP Multimedia	1 hour



LTE/SAE– System Overview, WBL



LZU 108 7318 R1A

Description

If you want to know what LTE/SAE (Long Term Evolution / System Architecture Evolution) is, this course will give you an overview of the new radio technology and protocols involved in the E-UTRAN (Evolved UTRAN, also referred to as LTE) and the architecture behind EPC (Evolved Packet Core, also referred to as SAE – System Architecture Evolution).

Learning objectives

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

- 1 Explain the background and architecture of E-UTRAN and EPC
 - 1.1 Describe the evolution of cellular networks
 - 1.2 Summarize the evolution of 3GPP releases
 - 1.3 Describe the flexible spectrum usage

- 2 Describe the EPS Architecture
 - 2.1 Explain the logical architecture of EPS (E-UTRAN and EPC)
 - 2.2 Give an overview of the interfaces in EPS
 - 2.3 Describe the radio interface techniques
 - 2.4 Explain the difference between the FDD and TDD mode
 - 2.5 Detail the terminal states
 - 2.6 Describe the Evolved Packet Core
 - 2.7 Describe the role of the MME and the S-GW
 - 2.8 Detail the S1 and X2 interfaces and their protocol stacks

- 3 Describe the Air Interface
 - 3.1 Explain the radio interface structure
 - 3.2 Detail the channel structure of the radio interface
 - 3.3 Describe the physical signals in UL and DL
 - 3.4 Detail the time-domain structure in the radio interface in UL and DL for both FDD and TDD mode
 - 3.5 Detail the downlink transmission technique
 - 3.6 Have a good understanding of the OFDM principle, signal generation and processing
 - 3.7 Detail the reference symbols in DL
 - 3.8 Detail the control signaling in DL
 - 3.9 Detail the uplink transmission technique
 - 3.10 Have a good understanding of the SC-FDMA principle, signal generation and processing
 - 3.11 Explain the pros and cons with OFDM and SC-FDMA
 - 3.12 Detail the control signaling in UL

- 3.13 Describe the concepts of layers, channel rank, spatial multiplexing, SU-MIMO and MU-MIMO
- 4 Detail the Radio Resource Management and Mobility
 - 4.1 Describe the Radio Resource Management
 - 4.2 Describe UL and DL scheduling and signaling
 - 4.3 Explain the concepts of dynamic and persistent scheduling
 - 4.4 Describe LTE Mobility
 - 4.5 Describe intra-LTE mobility in ECM_CONNECTED and ECM_IDLE mode
 - 4.6 Explain inter-working with 2G/3G

Target audience

The target audience for this course are:

Network Engineer

Service Engineer

Service Design Engineer

Network Design Engineer

Prerequisites

A general knowledge in cellular systems and radio technology.

Duration and class size

The length of the course is 3 hours.

Learning situation

This is a web-based interactive training course with multimedia content.

LTE/SAE in Nutshell

LZU1087417 R1A

Description

Do you want to know what LTE/SAE is all about. This eLearning course will give you on overview on end user experience of Long Term Evolution (LTE) in terms of services and applications, speed and capacity as well as network setup. The course will also highlight the mobile technology evolution. The course content is a simple explanation of the next generation technology with a focus on a non technical target audience.

Learning objectives

On completion of this course the participants will have answers to the following questions:

- 1 What is LTE/SAE?
 - 1.1 How fast is LTE?
 - 1.2 What is included in the Mobile Technology Evolution?

- 2 What is the end user experience?
 - 2.1 What are possible services and application?
 - 2.2 What is the speed and capacity?
 - 2.3 Is it better than 3G?
 - 2.4 How much does it cost?
 - 2.5 Do I need a new phone?
 - 2.6 Is the coverage and mobility better then today?

- 3 How does LTE/SAE work?
 - 3.1 Which Frequencies are used?
 - 3.2 Which nodes are included in the Radio Network?
 - 3.3 Which nodes are included in the Core Network?

- 4 What is the meaning of the typical LTE related abbreviations?

Target audience

The target audience for this course is: System Technicians, Service Technicians, Field Technicians, System Administrators, Application Developers, Business Developers, Customer Care Administrators.

The main focus of this course is on non technical personnel.



Prerequisites

None

Duration and class size

The length of the course is 1 hour.

Learning situation

This is a web-based interactive training course with multimedia content.

RBS 6000 in a Nutshell



LZU1087504 R1A

Description

This WBL course is intended to give the participant an overview of the RBS 6000 series.

Are you interested in the latest RBS technology from Ericsson. The RBS 6000 Overview course will guide you through the concept and explain to you the main benefits of the new architectures. You will learn how the multi-standard concept is implemented, more room for expansion is generated and how you can lower the power consumption of your network for greater sustainability.

Learning objectives

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

- 1 Describe on an overview level the RBS 6000 Platform
 - 1.1 Describe the generic building and form structure used in RBS 6000
 - 1.2 Describe on an overview level the building practice
 - 1.3 Explain the advantages of multi-standard RBS
 - 1.4 Describe how more room for expansions is generated
 - 1.5 Compare the power consumption of a RBS 6000 to today's technologies

- 2 Understand how WCDMA is implemented in the RBS 6000
 - 2.1 Describe on block level which boards and units gives the WCDMA Functionality

- 3 Understand how LTE is implemented in the RBS 6000
 - 3.1 Describe on block level which boards and units gives the LTE Functionality

- 4 Understand how GSM is implemented in the RBS 6000
 - 4.1 Describe on block level which boards and units gives the GSM Functionality

Target audience

The target audiences for this course are:

System Technician
Service Technician
System Engineers
Service Engineers

Prerequisites

The participants should be familiar with the WCDMA, GSM and LTE on overview level.



Duration

The length of the course is 1 hour.

Learning situation

This is a web-based interactive training course with multimedia content.

RBS 6000 Overview



LZU1087503 R1A

Description

The new RBS 6000 product family is the compact multi standard base stations used in GSM, WCDMA and LTE networks. The focus of this course is to cover all RBS models used by Ericsson in the current market. We will explain the RBS 6000 units, block diagram, technical specifications and optional units. Installation, operation and maintenance procedures will be briefly described.

Learning objectives

- 1 Recognize and identify the main components of Radio Access Network, RBS Site Solutions and RBS 6000 basic functions.
 - 1.1 Give an high level overview on the GSM, WCDMA and LTE Network nodes
 - 1.2 Outline the RBS main functions
 - 1.3 Give an outline of the sustainable solutions for RBS 6000 site
 - 1.4 Describe how more room for expansions is generated
 - 1.5 Compare the power consumption of a RBS 6000 to today's technologies
 - 1.6 Describe Antenna, TMA, Site Transmission and Power Backup System for different RBSs
 - 1.7 Understand the Power Supply, external cables and antenna connections for the RBS 6000.

- 2 Describe on an overview level the RBS 6000 Platform and understand how Radio Access for various radio technologies is implemented in the RBS 6000
 - 2.1 Describe the generic building and form structure used in RBS 6000
 - 2.2 Describe on an overview level the building practice
 - 2.3 Describe on block level which boards and units gives the WCDMA Functionality
 - 2.4 Describe on block level which boards and units gives the LTE Functionality
 - 2.5 Describe on block level which boards and units gives the GSM Functionality
 - 2.6 Explain the advantages of multi-standard RBS

- 3 Detail the RBS 6000 portfolio for compact macro, full-size macro, main-remote and micro RBS
 - 3.1 Describe the compact outdoor macro base station RBS 6101
 - 3.2 Describe the full size macro base station RBS 6102
 - 3.3 Describe the full size macro base station RBS 6201
 - 3.4 Describe the compact mice or main-remote base stations RBS 6601
 - 3.5 Describe the indoor micro RBS 6301

- 4 Outline the main Operation and Maintenance tools for RBS 6000

Target audience

The target audience for this course is: Engineers that would like to get an introduction to RBS 6000 family and corresponding Site Products.

Prerequisites

Successful completion of the following courses:

Ericsson WCDMA System Overview	LZU1085418-R7A
GSM System Survey	LZU108852-R9A
LTE/SAE - System Overview	LZU 108 7020

Or

WCDMA RAN Overview (WBL)	LZU1085202-R3A
GSM Radio Network Overview (WBL)	LZU1086235-R3A
LTE/SAE in Nutshell (WBL)	LZU1087417-R1A

Duration and class size

The length of the course is 1 day and the maximum number of participants is 16.

Learning situation

Instructor led training.

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
1	Introduction	0.5 hour
	Radio Access Network, RBS Site Solutions and RBS 6000 basic functions	1.hour
	RBS 6000 Platform	1.0 hour
	RBS 6101	0.5 hour
	RBS 6102	0.5 hour
	RBS 6201	0.5 hour
	RBS 6601	0.5 hour
	RBS 6301	0.5 hour
	Operation and Maintenance tools	0,5 hour
	Course summary	0.5 hour

GSM RBS 6102 Field Maintenance



LZU 108 7643 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6102 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6102 type on BSS 10 level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Operation Maintenance Tool, OMT.

Learning objectives

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

- 1 Explain on overview level the GSM RAN Site Concept for RBS
 - 1.1 Explain the basic GSM Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify GSM Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify the Tower Mounted Amplifier, TMA

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Operation Maintenance Terminal

- 3 Use the Operation Maintenance Terminal, OMT
 - 3.1 Install and start the Operation Maintenance Terminal.
 - 3.2 Access and use the different Views System, Cabinet, Radio and Object
 - 3.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 3.4 Access the property help feature from each window.

- 4 Perform maintenance and configuration tasks on the RBS 6102
- 4.1 Trace the uplink and downlink traffic paths through the RBS 6102 hardware
- 4.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6102 site
- 4.3 Power up/down the RBS 6102 and connect a thin client to the node
- 4.4 Perform preventative maintenance on the RBS 6102
- 4.5 Find Faulty Hardware units and replace them
- 4.6 Perform Configuration of the Installation Data Base, IDB, on the RBS 6102
- 4.7 Perform Software backup and restore on RBS 6102

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following courses:

GSM System Survey	LZU108852
RBS 6000 Overview	LZU1087503

Or

GSM Radio Network Overview (WBL)	LZU1086235
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	0.5 hour
	GSM RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	0.5 hour
	Operation Maintenance Terminal	1 hour
	GSM RBS 6102 Maintenance	3.5 hours



WCDMA RBS 6102 Field Maintenance



LZU 108 7644 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6102 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6102 type on P7 FP level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Element Manager and NCLI (Node Command line Interface).

Learning objectives

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

- 1 Explain on overview level the WCDMA RAN Site Concept for RBS
 - 1.1 Explain the basic WCDMA Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify WCDMA Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify and locate Remote Electrical Tilt (RET)
 - 1.6 Identify the Antenna System Controller (ASC)

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Element Manager

- 3 Connect to a node using CLI and also using NCLI.
 - 3.1 Understand basic commands using CLI and using NCLI.
 - 3.2 Have a basic understanding of the functionality and technology used in CLI and NCLI.
 - 3.3 Understand the basic principles behind the Managed Object Model (MOM).

- 4 Use the Element manager and understand the concepts behind Object Explorer
 - 4.1 Download and start the Element Manager.
 - 4.2 Access and use the different "Views"; Containment, ATM, Equipment, IP, Licensing, Radio Network and the Software.
 - 4.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 4.4 Access the property help feature from each window.
 - 4.5 Create a Customized View (User Defined) in Element Manager.



- 5 Perform maintenance and configuration tasks on the RBS 6102 nodes
- 5.1 Trace the uplink and downlink traffic paths through the RBS 6102 hardware
- 5.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6102 site
- 5.3 Power up/down the RBS 6102 and connect a thin client to the node
- 5.4 Perform preventative maintenance on the RBS 6102
- 5.5 Find Faulty Hardware units and replace them
- 5.6 Perform Configuration tasks on the RBS 6102
- 5.7 Perform configuration version backup and restore on RBS 6102

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following courses:

Ericsson WCDMA System Overview	LZU1085418
RBS 6000 Overview	LZU1087503

Or

WCDMA RAN Overview (WBL)	LZU1085202
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	15 min
	WCDMA RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	15 min
	Command Line Interface/Node Command Line Interface	1 hour
	Element Management	1 hour
	WCDMA RBS 6102 Maintenance	3 hours

LTE RBS 6102 Field Maintenance



LZU 108 7645 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6102 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6102 type on L10 level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Element Manager and NCLI (Node Command line Interface).

Learning objectives

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

- 1 Explain on overview level the LTE RAN Site Concept for RBS
 - 1.1 Explain the basic LTE Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify LTE Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify and locate Remote Electrical Tilt (RET)
 - 1.6 Identify the Antenna System Controller (ASC)

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Element Manager

- 3 Connect to a node using CLI and also using NCLI.
 - 3.1 Understand basic commands using CLI and using NCLI.
 - 3.2 Have a basic understanding of the functionality and technology used in CLI and NCLI.
 - 3.3 Understand the basic principles behind the Managed Object Model (MOM).

- 4 Use the Element manager and understand the concepts behind Object Explorer
 - 4.1 Download and start the Element Manager.
 - 4.2 Access and use the different "Views"; Containment, Equipment, IP, Licensing, Radio Network and the Software.
 - 4.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 4.4 Access the property help feature from each window.
 - 4.5 Create a Customized View (User Defined) in Element Manager.



- 5 Perform maintenance and configuration tasks on the RBS 6102 nodes
- 5.1 Trace the uplink and downlink traffic paths through the RBS 6102 hardware
- 5.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6102 site
- 5.3 Power up/down the RBS 6102 and connect a thin client to the node
- 5.4 Perform preventative maintenance on the RBS 6102
- 5.5 Find Faulty Hardware units and replace them
- 5.6 Perform Configuration tasks on the RBS 6102
- 5.7 Perform configuration version backup and restore on RBS 6102

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following flow and course:

LTE/SAE - System Overview	LZU1087020
RBS 6000 Overview	LZU1087503

Or

LTE/SAE - System Overview (WBL)	LZU1087318
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	15 min
	LTE RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	15 min
	Command Line Interface/Node Command Line Interface	1 hour
	Element Management	1 hour
	LTE RBS 6102 Maintenance	3 hours

GSM RBS 6201 Field Maintenance



LZU 108 7646 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6201 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6201 type on BSS level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Operation Maintenance Tool, OMT.

Learning objectives

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

- 1 Explain on overview level the GSM RAN Site Concept for RBS
 - 1.1 Explain the basic GSM Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify GSM Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify the Tower Mounted Amplifier, TMA

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Operation Maintenance Terminal

- 3 Use the Operation Maintenance Terminal
 - 3.1 Install and start the Operation Maintenance Terminal.
 - 3.2 Access and use the different Views System, Cabinet, Radio and Object
 - 3.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 3.4 Access the property help feature from each window.



- 4 Perform maintenance and configuration tasks on the RBS 6201
- 4.1 Trace the uplink and downlink traffic paths through the RBS 6201 hardware
- 4.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6201 site
- 4.3 Power up/down the RBS 6201 and connect a thin client to the node
- 4.4 Perform preventative maintenance on the RBS 6201
- 4.5 Find Faulty Hardware units and replace them
- 4.6 Perform Configuration of the Installation Data Base, IDB, on the RBS 6201
- 4.7 Perform Software backup and restore on RBS 6201

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following courses:

GSM System Survey	LZU108852-R9A
RBS 6000 Overview	LZU1087503-R1A

Or

GSM Radio Network Overview (WBL)	LZU1086235-R3A
RBS 6000 in a Nutshell (WBL)	LZU1087504-R1A

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	0.5 hour
	GSM RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	0.5 hour
	Operation Maintenance Terminal	1 hour
	GSM RBS 6201 Maintenance	3.5 hours

WCDMA RBS 6201 Field Maintenance



LZU 108 7647 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6201 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6201 type on P7 FP level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Element Manager and NCLI (Node Command line Interface).

Learning objectives

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

- 1 Explain on overview level the WCDMA RAN Site Concept for RBS
 - 1.1 Explain the basic WCDMA Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify WCDMA Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify and locate Remote Electrical Tilt (RET)
 - 1.6 Identify the Antenna System Controller (ASC)

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Element Manager

- 3 Connect to a node using CLI and also using NCLI.
 - 3.1 Understand basic commands using CLI and using NCLI.
 - 3.2 Have a basic understanding of the functionality and technology used in CLI and NCLI.
 - 3.3 Understand the basic principles behind the Managed Object Model (MOM).

- 4 Use the Element manager
 - 4.1 Download and start the Element Manager.
 - 4.2 Access and use the different "Views"; Containment, ATM, Equipment, IP, Licensing, Radio Network and the Software.
 - 4.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 4.4 Access the property help feature from each window.
 - 4.5 Create a Customized View (User Defined) in Element Manager.



- 5 Perform maintenance and configuration tasks on the RBS 6201 nodes
- 5.1 Trace the uplink and downlink traffic paths through the RBS 6201 hardware
- 5.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6201 site
- 5.3 Power up/down the RBS 6201 and connect a thin client to the node
- 5.4 Perform preventative maintenance on the RBS 6201
- 5.5 Find Faulty Hardware units and replace them
- 5.6 Perform Configuration tasks on the RBS 6201
- 5.7 Perform configuration version backup and restore on RBS 6201

Target audience

The target audience for this course is:

Field Technician.

Prerequisites

Successful completion of the following courses:

Ericsson WCDMA System Overview
RBS 6000 Overview

LZU1085418-R7A
LZU1087503-R1A

Or

WCDMA RAN Overview (WBL)
RBS 6000 in a Nutshell (WBL)

LZU1085202-R3A
LZU1087504-R1A

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	15 min
	WCDMA RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	15 min
	Command Line Interface/Node Command Line Interface	1 hour
	Element Management	1 hour
	WCDMA RBS 6201 Maintenance	3 hours

LTE RBS 6201 Field Maintenance



LZU 108 7648 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6201 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6201 type on L10 level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Element Manager and NCLI (Node Command line Interface).

Learning objectives

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

- 1 Explain on overview level the LTE RAN Site Concept for RBS
 - 1.1 Explain the basic LTE Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify LTE Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify and locate Remote Electrical Tilt (RET)
 - 1.6 Identify the Antenna System Controller (ASC)

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Element Manager

- 3 Connect to a node using CLI and also using NCLI.
 - 3.1 Understand basic commands using CLI and using NCLI.
 - 3.2 Have a basic understanding of the functionality and technology used in CLI and NCLI.
 - 3.3 Understand the basic principles behind the Managed Object Model (MOM).

- 4 Use the Element manager
 - 4.1 Download and start the Element Manager.
 - 4.2 Access and use the different "Views"; Containment, Equipment, IP, Licensing, Radio Network and the Software.
 - 4.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 4.4 Access the property help feature from each window.
 - 4.5 Create a Customized View (User Defined) in Element Manager.



- 5 Perform maintenance and configuration tasks on the RBS 6201 nodes
- 5.1 Trace the uplink and downlink traffic paths through the RBS 6201 hardware
- 5.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6201 site
- 5.3 Power up/down the RBS 6201 and connect a thin client to the node
- 5.4 Perform preventative maintenance on the RBS 6201
- 5.5 Find Faulty Hardware units and replace them
- 5.6 Perform Configuration tasks on the RBS 6201
- 5.7 Perform configuration version backup and restore on RBS 6201

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following flow and course:

LTE/SAE - System Overview	LZU1087020
RBS 6000 Overview	LZU1087503

Or

LTE/SAE - System Overview (WBL)	LZU1087318
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	15 min
	LTE RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	15 min
	Command Line Interface/Node Command Line Interface	1 hour
	Element Management	1 hour
	LTE RBS 6201 Maintenance	3 hours

GSM RBS 6601 Field Maintenance



LZU 108 7674 R1A

This course is a task-based course covering hardware replacement and maintenance of the RBS 6601 node types. The participants will perform hardware fault localisation, hardware replacement and configuration tasks on a RBS 6601 type on BSS level of software release. On completion of this course the participants will also be familiar with the features of the operation and maintenance tools Operation Maintenance Tool, OMT

Learning objectives

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

- 1 Explain on overview level the GSM RAN Site Concept for RBS
 - 1.1 Explain the basic GSM Radio Access Network
 - 1.2 Identify the Power and Battery Cabinets on Site
 - 1.3 Identify GSM Interface for Transmission on Site
 - 1.4 Identify, locate and handle the connection Unit for External Alarms
 - 1.5 Identify the Tower Mounted Amplifier, TMA

- 2 Use the Customer Product Information (CPI)
 - 2.1 Explain the CPI Library structure of the node
 - 2.2 Find information in the Library with use of regular expression
 - 2.3 Find operational instructions (OPI) and maintain the node according to the OPI
 - 2.4 Find additional information on an alarm and solve the problem with the help of the CPI and Operation Maintenance Terminal

- 3 Use the Operation Maintenance Terminal
 - 3.1 Install and start the Operation Maintenance Terminal.
 - 3.2 Access and use the different Views System, Cabinet, Radio and Object
 - 3.3 Find the alarm list and comment on the Alarms and Events on the Alarm and Event Log.
 - 3.4 Access the property help feature from each window.



- 4 Perform maintenance and configuration tasks on the RBS 6601 nodes
- 4.1 Trace the uplink and downlink traffic paths through the RBS 6601 hardware
- 4.2 Trace the control and supervision communication throughout the node and the antenna system of an RBS 6601 site
- 4.3 Power up/down the RBS 6601 and connect a thin client to the node
- 4.4 Perform preventative maintenance on the RBS 6601
- 4.5 Find Faulty Hardware units and replace them
- 4.6 Perform Configuration of the Installation Data Base, IDB, on the RBS 6601
- 4.7 Perform Software backup and restore on RBS 6601

Target audience

The target audience for this course is:

Field Technician

Prerequisites

Successful completion of the following courses:

GSM System Survey	LZU108852
RBS 6000 Overview	LZU1087503

Or

GSM Radio Network Overview (WBL)	LZU1086235
RBS 6000 in a Nutshell (WBL)	LZU1087504

Duration and class size

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

Learning situation

This course is based on theoretical instructor-led lessons and practical exercises 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
1	Course Introduction	0.5 hour
	GSM RAN Systems and Site Introduction	0.5 hour
	Customer Product Information and tool kits	0.5 hour
	Operation Maintenance Terminal	1 hour
	GSM RBS 6601 Maintenance	3.5 hours

