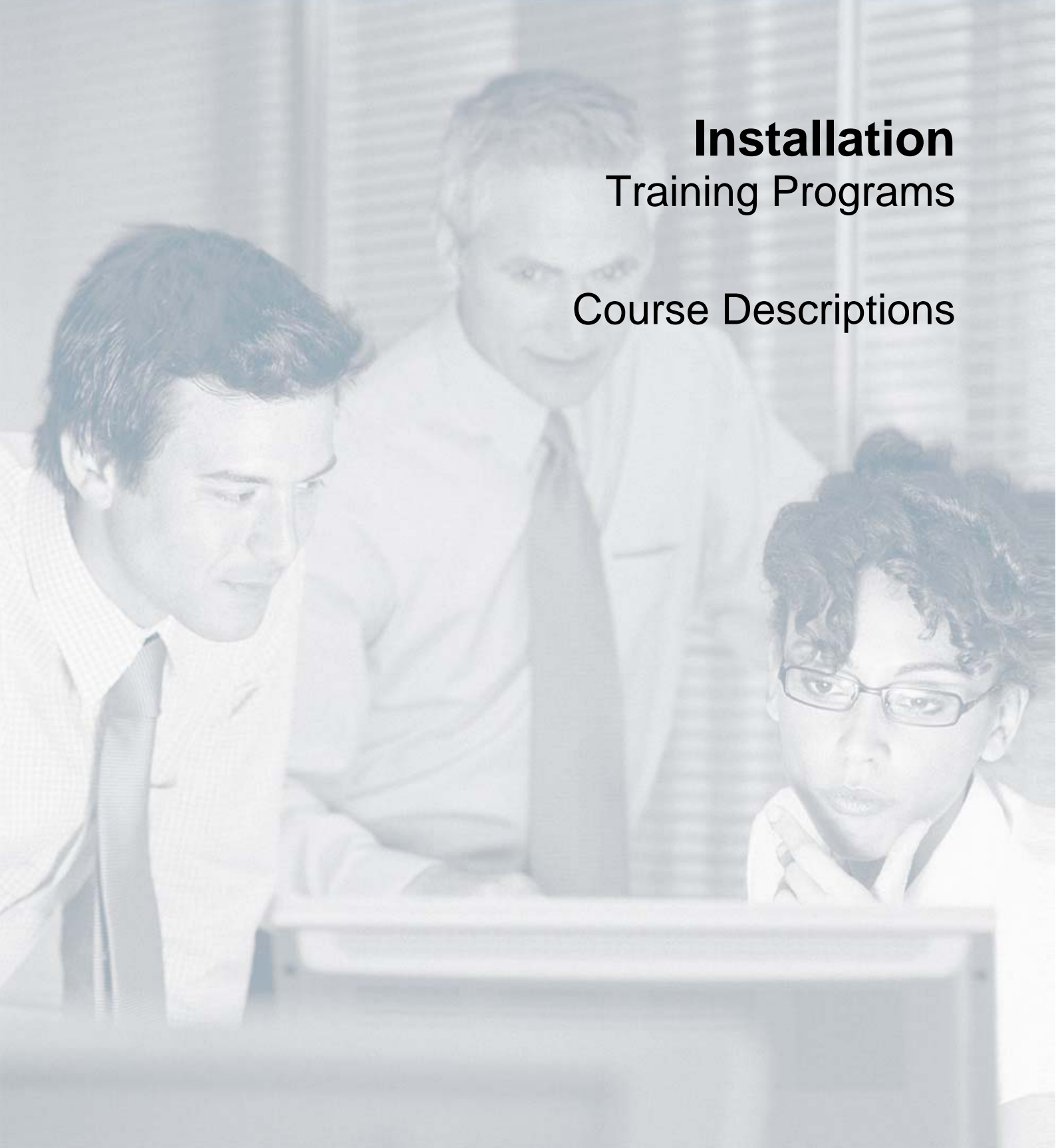




# Installation Training Programs

## Course Descriptions





## Catalog of Course Descriptions

|  |           |
|--|-----------|
| <b>GSM RBS 2202/2102 INSTALLATION.....</b>                                     | <b>4</b>  |
| <b>GSM RBS 2106/2206 INSTALLATION.....</b>                                     | <b>5</b>  |
| <b>GSM RBS 2106/2206 INSTALLATION VERIFICATION .....</b>                       | <b>7</b>  |
| <b>GSM RBS 2106/2206 INSTALLATION AND INSTALLATION VERIFICATION DELTA.....</b> | <b>9</b>  |
| <b>WCDMA RBS 3101/3202 INSTALLATION.....</b>                                   | <b>11</b> |
| <b>WCDMA RBS 3101/3202 INSTALLATION DELTA.....</b>                             | <b>13</b> |
| <b>WCDMA RBS 3101/3202 INSTALLATION VERIFICATION .....</b>                     | <b>15</b> |
| <b>CDMA RBS 1130/1131 INSTALLATION .....</b>                                   | <b>17</b> |
| <b>CDMA RBS 1130/1131 INSTALLATION VERIFICATION.....</b>                       | <b>19</b> |
| <b>ANTENNA SYSTEM INSTALLATION .....</b>                                       | <b>21</b> |
| <b>INSTALLATION TECHNIQUE BYB 501 (GSM, RNC, EAR).....</b>                     | <b>24</b> |
| <b>MINI-LINK INSTALLATION .....</b>  | <b>26</b> |
| <b>MINI-LINK E BASIC SETUP .....</b>   | <b>28</b> |
| <b>MINI-LINK HC BASIC SETUP .....</b>  | <b>30</b> |
| <b>MINI-LINK TN BASIC SETUP.....</b>   | <b>32</b> |



## INTRODUCTION

Ericsson has developed an extensive competence development learning portfolio to satisfy the competence needs of our customers in all situations and at all times – from exploring business opportunities, to expertise required for operating a network. The training has been developed to offer clearly defined, yet flexible training paths to target specific technical and business areas within your organization using blended learning – from traditional classroom teaching (instructor led), to learning off the web for efficient, cost effective and highly successful results.

The ASP training package is supporting the Skills Development Phase in the Ericsson Authorized Service Provider (ASP) Solution. The main target group is Ericsson's subcontractors (ASP's) and Ericsson staff. Operators are offered the majority of the courses but for example not the Engineering courses. Operators are not offered the ASP Certification (Theoretical and Practical Assessment).

## GSM RBS 2202/2102 Installation



LZU 108 3959 R2C

### Description

This course will enable the student to install an appropriate version of RBS 2000 (2102 and 2202) on a quality level defined by Ericsson.

### Learning Objectives

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

- Have a basic understanding of GSM
- Understand what a RBS site consists of
- Describe the basic function of the RBS 2202/2102 on a block level
- Understand the process of Radio Site Installation
- Install the RBS 2202/2102 according to the safety regulations
- Interpret the Site Installation Documentation and make necessary changes (so called 'red marking') after installation
- Use the correct tools and instruments for the installation procedures

### Prerequisites

- Installation of RBS 2202 LZY 213 1281, MBL
- Installation of RBS 2102i LZU 108 2037, MBL
- Installation of cabinet TMR 9202 LZU 108 5688, MBL
- Installation work issues (Quality) LZY 213 1282, MBL (optional)
- Manners & Etiquette LZY 213 1284, MBL (optional)
- Basic understanding in technical English, unless the manuals used during the course are translated in to a local language.
- The students should have experience working with high-voltage equipment

### Training Method

Theoretical lessons and practical exercises (stand alone and group).

### Target Audience

The course is intended for RBS 2000 installation personnel according to the ASP(Authorized Service Provider) concept.

### Duration and class size

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

## GSM RBS 2106/2206 Installation



LZU 108 5739 R2B

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the RBS 2106/2206 cabinets in various environments. The course also considers installation of other site materials such as cable ladders, BBS, and DF.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Identify RBS 2106/2206 and related hardware units, and explain their functions and features
- Describe the RBS and BBS unit functions on a block level
- Describe RBS 2106/2206 configuration possibilities
- Describe and apply the safety precautions to be taken on-site during installation
- List the tools to be used during installation
- Install RBS 2106/2206 and related units on a quality level defined by Ericsson

### Target audience

The target audience for this course is RBS 2106/2206 Installation personnel.

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Normal physical ability
- No color blindness

The following MBLs should have been completed:

- MBL: Installation of RBS 2206 EN/LZY 213 1287
- MBL: Installation of RBS 2106 EN/LZY 213 1280
- MBL: Installation work issues (Quality) EN/LZY 213 1282
- MBL: Manners & Etiquette EN/LZY 213 1284

### Duration and class size

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



### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

### Time schedule

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

| Day | Short description of the topics in the course                | Estimated time |
|-----|--|----------------|
| 1   | • Introduction   | 0.5 hour       |
|     | • GSM System Description and Technical Data                  | 2 hours        |
|     | • Safety precautions and tools                               | 0.5 hour       |
|     | • RBS Configurations   | 1 hour         |
|     | • Site Equipment Installation theory                         | 2 hours        |
| 2   | • RBS 2106/2206 Installation practical exercises             | 6 hours        |
| 3   | • RBS 2106/2206 Installation practical exercises (continued) | 4 hours        |
|     | • Theoretical test and summary                               | 2 hours        |

### Terminology

BBS – Battery Back-up System

DF – Distribution Frame

GSM – Global System for Mobile Communication

RBS – Radio Base Station

MBL – Multimedia Based Learning



## GSM RBS 2106/2206 Installation Verification



LZU 108 5740 R1B

### Description

The course instructs the participants on the processes for conducting installation verification on an RBS 2106/2206 site and what actions to take in compliance with the RBS 2106/2206 Installation and Integration manuals. This course includes theoretical information and practical exercises on hardware identification, configuration, safety measures, site installation verification, antenna system tests, site integration, and fault handling.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Describe basic product data and specifications
- Identify RBS 2106/2206 and BBS 2000 hardware units and explain their functions and features
- Describe the RBS and BBS unit functions on a block level
- Describe RBS 2106/2206 configuration possibilities
- Describe and apply the safety precautions that should be taken on-site
- List the tools to be used during testing
- Perform Antenna System Tests
- Perform the standard Site Installation Verification
- Perform site integration
- Perform basic fault handling

### Target audience

The target audience for this course is RBS Installation Verification personnel that have no previous experience on RBS 2000 equipment and will have the responsibility of verifying the RBS 2106/2206 equipment.

### Prerequisites

The participant should have completed the following courses:

- RBS 2000 Basics (ILT) LZU 108 3241 or equivalent knowledge
- GSM System Introduction (ILT) LZU 108 3279 or Mobile Telecommunications Overview (MBL) LZU 108 4502/1 or equivalent knowledge.



- Educated or experienced Technician/Engineer
- Basic understanding of English

**Duration and class size**

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

**Learning situation**

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

**Time schedule**

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

| <b>Day</b> | <b>Short description of the topics in the course</b>  | <b>Estimated time</b> |
|------------|---|-----------------------|
| 1          | <ul style="list-style-type: none"><li>• GSM/BSS Overview</li><li>• Product identification, functions, and architecture</li><li>• RBS configuration</li><li>• Safety precautions and tools</li></ul> | 6 hours               |
| 2          | <ul style="list-style-type: none"><li>• Antenna System Tests (practical exercises)</li><li>• Site Installation Verification (practical exercises)</li></ul>   | 6 hours               |
| 3          | <ul style="list-style-type: none"><li>• Site Integration (practical exercises)</li><li>• Fault Handling (practical exercises)</li></ul>   | 6 hours               |

**Terminology**

RBS – Radio Base Station

MBL – Multimedia Based Learning

ILT – Instructor Led Training

## GSM RBS 2106/2206 Installation and Installation Verification Delta



LZU 108 5696 R4B

### Description

This course is intended to instruct students in the installation and installation verification practices of the RBS 2106 and 2206. This is a Delta course, which means it is designed to upgrade the participants' knowledge from the old RBS series (RBS 2102/2202) to the new RBS 2106/2206.

NOTE: This is a Delta course and does therefore not entitle the participants to ASP certification.

### Learning objectives

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

- Know basic product data of the RBS 2106/2206
- Identify the RBS 2106/2206 hardware units and explain their functions
- Describe RBS 2106/2206 configuration possibilities
- Install RBS 2106/2206 including site equipment to a quality level defined by Ericsson
- Perform Site Installation Verification on an RBS 2106/2206 site
- Understand the Man-Machine Interface (MMI) of the RBS 2106/2206

### Target audience

The target audience for this course is RBS 2106/2206 Installation and Installation Verification personnel.

### Prerequisites

The participants should have the following prerequisites:

- Installation personnel:
  - Participated in RBS 2102/2202 training flow or experience in RBS 2102/2202 installation work
- Installation Verification personnel:
  - Knowledge equivalent to GSM System Survey course, LZU 108 852 or LZU 108 4513 (MBL)
- Recommended MBL courses:
  - Installation of RBS 2106, LZY 213 1280
  - Installation of RBS 2206, LZY 213 1287
  - Installation Work Issues (Quality), LZY 213 1282



- Manners & Etiquette, LZY 213 1284

### **Duration and class size**

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

### **Learning situation**

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

### **Time schedule**

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

| <b>Day</b> | <b>Short description of the topics in the course</b>               | <b>Estimated time</b> |
|------------|--|-----------------------|
| 1          | • Introduction   | 0.5 hours             |
|            | • RBS 2106/2206 Survey, Technical Data, Configurations             | 1.5 hour              |
|            | • RBS 2106/2206 Installation theory                                | 2 hour                |
|            | • RBS 2106/2206 Installation practical exercises                   | 2 hours               |
| 2          | • RBS 2106/2206 Installation practical exercises (continued)       | 1 hours               |
|            | • RBS 2106/2206 Site Installation Verification theory              | 2 hour                |
|            | • RBS 2106/2206 Site Installation Verification practical exercises | 3 hours               |

### **Terminology**

ASP – Authorized Service Provider

GSM – Global System for Mobile Communication

MMI – Man-Machine Interface

RBS – Radio Base Station

MBL – Multimedia Based Learning

## WCDMA RBS 3101/3202 Installation



LZU 108 5277 R4C

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the RBS 3000 macro cabinets in various environments. The course also considers installation of other site materials such as cable ladders, DC Power System and EACU.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Identify RBS 3000 macro cabinets and related hardware units, and explain their functions and features on an overview level.
- Describe the RBS and DC Power System unit functions
- Describe RBS 3000 configuration possibilities
- Describe and apply the safety precautions to be taken on-site during installation
- List the tools to be used during installation
- Install RBS 3000 and related site equipment on a quality level defined by Ericsson

### Target audience

The target audience for this course is RBS 3000 Installation personnel.

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Normal physical ability
- No color blindness

The following MBLs should have been completed:

- Installation of RBS 3202 LZU 108 5508
- Installation of RBS 3101 LZY 216 1632
- Installation work issues (Quality) LZY 213 1282
- Manners & Etiquette LZY 213 1284

### Duration and class size



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

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

### Time schedule

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

| Day | Topics   | Estimated time                                       |
|-----|--|--|
| 1   | <ul style="list-style-type: none"><li>• Introduction</li><li>• WCDMA System Description</li><li>• RBS 3000 Survey and Technical Data</li><li>• Safety precautions and tools</li><li>• Site Equipment Installation theory</li></ul> | 0.5 hour<br>0.5 hours<br>2 hour<br>1 hour<br>2 hours |
| 2   | <ul style="list-style-type: none"><li>• RBS 3000 Installation practical exercises</li></ul>  | 6 hours  |
| 3   | <ul style="list-style-type: none"><li>• RBS 3000 Installation practical exercises (continued)</li><li>• Theoretical test and summary</li></ul>   | 4 hours<br>2 hours                                   |

### Terminology

EACU – External Alarm Connection Unit

WCDMA – Wideband Code Division Multiple Access

RBS – Radio Base Station

MBL – Multimedia Based Learning

## WCDMA RBS 3101/3202 Installation Delta



LZU 108 5766 R2B

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the RBS 3000 macro cabinets in various environments. On completion of this course the student will understand the activities involved in installing RBS 3000 equipment, and perform cable crimping and connector assembly. The course does not include a ASP Theoretical Assessment and does therefore not have ASP certification status.

### Learning objectives

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

- Identify RBS 3000 macro cabinets and related hardware units, and explain their functions and features on an overview level.
- Describe the RBS and DC Power System unit functions
- Describe RBS 3000 configuration possibilities
- Describe and apply the safety precautions to be taken on-site during installation
- List the tools to be used during installation
- Install RBS 3000 and related site equipment on a quality level defined by Ericsson

### Target audience

The target audience for this course is people who have experience of working with RBS 2000 Installation and want to learn about RBS 3000 Installation.

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Experience of working with RBS 2000 Installation
- Normal physical ability
- No color blindness

The following MBLs should have been completed:

- Installation of RBS 3202 LZU 108 5508
- Installation of RBS 3101 LZY 216 1632
- Installation work issues (Quality) LZY 213 1282



- Manners & Etiquette LZY 213 1284

### Duration and class size

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

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

### Time schedule

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

| Day | Topics  | Estimated time  |
|-----|---|---|
| 1   | <ul style="list-style-type: none"><li>• Introduction</li><li>• Network Overview</li><li>• RBS 3000 Library Overview</li><li>• RBS 3000 Survey &amp; Technical Data</li><li>• Safety</li><li>• Tools and instruments</li><li>• Earthing and lightning protection</li><li>• Site Installation Planning &amp; Procedures</li><li>• Site Solutions</li><li>• Practical Exercises; C-Clamps, Cable lugs, RJ-45 connector assembly and installation of a WCDMA RBS 3000 site (MBL and a site visit)</li><li>• Summary</li></ul> | 15 min<br>30 min<br>15 min<br>30 min<br>15 min<br>30 min<br>20 min<br>15 min<br>30 min<br><br>2,5 hours<br>10 min |

### Terminology

ASP – Authorized Service Provider; MBL – Multimedia Based Learning



## WCDMA RBS 3101/3202 Installation Verification



LZU 108 5844 R2C

### Description

This course is designed to provide the student with the knowledge and skills needed to perform on-site installation verification of the RBS 3000 macro cabinets. The course also considers tests of other site materials such as power system and Antenna system.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Point out the main components of the RBS 3000 Site
- Prepare and connect a laptop to an RBS 3000 and start the RBS element manager
- Execute on-site configuration XML-files with the element manager
- Verify the on-site configuration
- Test the power system
- Test the antenna system with Sitemaster and verify the antenna system installation

### Target audience

The target audience for this course is RBS Installation Verification personnel with no previous experience on RBS 3000 equipment that will have the responsibility of verifying and/or configuring this equipment.

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced Technician/Engineer
- Basic understanding of English
- Basic computer skills
- ILT: Ericsson WCDMA System Overview, LZU 108 5418  
or  
WBL: WCDMA/UMTS Radio Access Network Overview, LZU 108 5202

### Recommended prerequisites

- MBL: Installation of RBS 3202, LZU 108 5508



- MBL: Installation of RBS 3101, LZY 214 1632
- MBL: Installation of Antenna System, LZU 108 5683
- MBL: Site Master; LZY 213 1328

### Duration and class size

The length of the course is 2 days and the maximum number of participants is 3 on 1 RBS.

The course can have a maximum of 9 students if 3 RBS cabinets are available

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in a RBS lab environment. This course can be delivered on 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 an estimate.

| Day | Topics                                  | Estimated time |
|-----|---|----------------|
| 1   | • Introduction                          | 0.5 hour       |
|     | • Network overview                      | 0.5 hour       |
|     | • RBS library overview                  | -              |
|     | • RBS overview                          | 0.5 hour       |
|     | • RBS site equipment overview           | 0.5 hour       |
|     | • RBS On-site configuration with wizard | 0.5 hour       |
|     | • Practical exercises                   | 1 hour         |
| 2   |   | 3 hours        |
|     | • Antenna theory                        | 0.5 hour       |
|     | • Standard antenna system components    | 0.5 hour       |
|     | • DTF test                              | 0.5 hour       |
|     | • SWR test                              | 0.5 hour       |
|     | • Practical exercises                   | 0.5 hour       |
|     | • ASP certification test                | 3 hours        |
|     | 1 hour                                  |                |

### Terminology

ASP-Authorized Service Provider

DTF-Distance To Fault

WCDMA – Wideband Code Division Multiple Access

RBS – Radio Base Station

SWR-Standing Wave Ratio

MBL – Multimedia Based Learning



## CDMA RBS 1130/1131 Installation



LZU 108 6328 R1A

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the CDMA RBS 1130 E and 1131 C cabinets and related site materials – including the GPS, antenna jumpers, cable ladders, etc. – in various environments. It also includes an overview of safety precautions, tools, configurations, and practical experience of the installation process.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Identify RBS 1130 E /1131 C cabinets and related hardware units, and explain their functions and features on an overview level
- Identify RBS 1143, 1140, and 1127 cabinets
- Describe the Power System unit functions
- Describe RBS 1130 E and 1131 C configuration possibilities
- Describe and apply the safety precautions to be taken on-site during installation
- List the tools to be used during installation
- Install RBS 1130 E and 1131 C and related site equipment on a quality level defined by Ericsson

### Target audience

CDMA Installation personnel who want to be ASP Certified within the ASP Certification Group (ACG) Installation of Radio Cabinet (IRC).

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Basic telecommunications knowledge
- Basic knowledge in English
- Basic PC knowledge

**Duration and class size**

The length of the course is three (3) days and the maximum number of participants is eight (8).

**Learning situation**

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

**Time schedule**

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

| Day | Topics  | Estimated time   |
|-----|---|--|
| 1   | <ul style="list-style-type: none"> <li>• Introduction</li> <li>• CDMA2000 RAN System Description</li> <li>• RBS 1100 Series Survey and Technical Data</li> <li>• Safety Precautions and Tools</li> <li>• RBS 1130 Installation Theory</li> <li>• RBS 1130 Installation Exercises</li> </ul> | 0.5 hours<br>1 hour<br>2 hour<br>0.5 hours<br>1 hour<br>1 hour |
| 2   | <ul style="list-style-type: none"> <li>• RBS 1130 Installation Exercises (continued)</li> <li>• RBS 1131 Installation Theory</li> <li>• RBS 1131 Installation Exercises</li> </ul>  | 4 hours<br>1 hour<br>1 hour                                    |
| 3   | <ul style="list-style-type: none"> <li>• RBS 1131 Installation Exercises (continued)</li> <li>• Course Summary and Site Conduct</li> <li>• Theoretical Assessment</li> <li>• Course Evaluations</li> </ul>  | 3 hours<br>1 hour<br>1 hour<br>1 hour                          |

**Terminology**

ACG – ASP Certification Group  
 ASP – Authorized Service Provider  
 CDMA – Code Division Multiple Access  
 GPS – Global Positioning System  
 IRC – Installation of Radio Cabinet  
 MBL – Multimedia Based Learning  
 PC – Personal Computer  
 RAN – Radio Access Network  
 RBS – Radio Base Station



## CDMA RBS 1130/1131 Installation Verification



LZU 108 6345 R1A

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation verification of the RBS 1130 E and RBS 1131 C in a correct way. This includes the testing of the power system, RBS software configuration (through practice with the RBS Element Manager), and basic fault handling techniques.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Describe and apply the safety precautions that should be taken on-site
- List the tools to be used during testing
- Identify the hardware units of an RBS 1130 E/RBS 1131 C site and explain their functions and features
- Describe basic product data and specifications
- Describe RBS 1130 E/RBS 1131 C configuration possibilities
- Prepare and connect a laptop to an RBS 1130 E/1131 C and start the RBS Element Manager
- Verify the on-site configuration
- Perform test calls
- Test the power system
- Perform basic fault handling

### Target audience

The target audience for this course is CDMA installation verification personnel that want to be ASP Certified within the ASP Certification Group (ACG) Test of Radio Site RBS 3000 (TRS-3).



### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Basic telecommunications knowledge
- Basic knowledge in English
- Basic PC knowledge

### Duration and class size

The length of the course is two (2) days and the maximum number of participants is eight (8).

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in an RBS lab environment.

### Time schedule

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

| Day | Topics in the course   | Estimated time  |
|-----|--|---|
| 1   | <ul style="list-style-type: none"><li>• Introduction</li><li>• CDMA2000 RAN System Description</li><li>• RBS 1100 Series Survey and Technical Data</li><li>• Safety Precautions and Tools</li><li>• RBS Verification and Basic Fault Handling theory</li><li>• RBS Verification and Basic Fault Handling exercises</li></ul> | 0.5 hours<br>1 hour<br>1 hour<br>0.5 hours<br>2 hours<br>1 hour |
| 2   | <ul style="list-style-type: none"><li>• RBS Verification and Basic Fault Handling exercises (continued)</li><li>• Course summary and Site Conduct</li><li>• Theoretical Assessment</li><li>• Course Evaluations</li></ul>  | 4 hours<br><br>0.5 hours<br>1 hour<br>0.5 hours                 |



## Antenna System Installation



LZU 108 3960 R3A

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the Antenna System in various environments. The course also considers installation of other site materials such as cable ladders, tilting kits, TMA/ASC etc.

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Install and verify antenna systems for GSM, WCDMA and CDMA 2000 on a quality level defined by Ericsson.

### Target audience

The target audience for this course is antenna system installation personell that want to be ASP Certified within the ASP Certification Group (ACG) Installation of RBS Antenna System products (IRA).

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced Technician/Engineer
- Have basic telecom knowledge
- Basic understanding of English
- Normal physical ability
- Have basic PC knowledge



### Recommended prerequisites

- MBL: Installation of Antenna System, LZU 108 5683
- MBL: Safe Climbing LZY 213 715/02
- MBL: Installation work issues (Quality) EN/LZY 213 1282
- MBL: Site Master; LZY 213 1328
- MBL: Manners and Etiquette

### Duration and class size

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

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in a lab environment. This course can also be delivered on customer site on request.

### Time schedule

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

| Day | Topics  | Estimated time   |
|-----|---|--|
| 1   | <ul style="list-style-type: none"><li>• Introduction</li><li>• Cellular systems</li><li>• Radio problems and solutions</li><li>• Feeder cables</li><li>• Customer Library</li><li>• Safety regulations</li><li>• Mounting connectors</li><li>• Sealing connectors</li><li>• Practical exercises</li></ul> | <p>20 min</p> <p>40 min</p> <p>35 min</p> <p>35 min</p> <p>15 min</p> <p>25 min</p> <p>25 min</p> <p>15 min</p> <p>2,5 hours</p> |



|       |   |               |
|-------|---|---------------|
| 2     | • Introduction to antenna systems               | 50 min        |
|       | • Antenna spacing and directioning requirements | 30 min        |
|       | • Site Installation planning and procedures     | 20 min        |
|       | • Site Installation Documentation               | 25 min        |
|       | • Earthing and lightning protection             | 35 min        |
|       | • Roxtec installation                           | 20 min        |
|       | • Practical exercises                           | 3 hours       |
| <hr/> |   |               |
| 3     | • Site Master theory                            | 15 min        |
|       | • Antenna System testing                        | 1 hour 45 min |
|       | • Practical exercises                           | 3 hours       |
|       | • ASP Certification test                        | 1 hour        |

### Terminology

ASP-Authorized Service Provider

ASC-Antenna System Controller

MBL-Multimedia Based Learning

CDMA-Code Division Multiple Access

TMA-Tower Mounted Amplifier

GSM-Global System for Mobile communications

WCDMA-Wideband Code Division Multiple Access



## Installation Technique BYB 501 (GSM, RNC, EAR)



LZU 108 116 R3A

### Description

This course is designed to provide the student with the knowledge and skills needed to perform installation of the BYB 501 cabinet in various environments. The course will also consider cable connections depending on the hardware content of the BYB 501 cabinet (GSM Mobile Switching, RNC and EAR).

This course is part of the Authorized Service Provider (ASP) Certification Process and includes a Theoretical Assessment.

### Learning objectives

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

- Locate needed documents from C and G module
- Identify ESD and safety concepts
- Perform floor layouts and marking task
- Install BYB 501 in different environments
- Route and install cabling for grounding, power and signal cables
- Final assembling
- Write Installation inspection, Advance Inspection and Complaint report

### Target audience

The target audience for this course is BYB 501 (GSM Mobile Switching, EAR and RNC) installation personnel.

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced Technician/Engineer
- Normal physical ability
- No color blindness



The following MBLs should have been completed:

- Installation of RNC 3810, LZU 108 5509
- AXD 301 Cabling, LZU 108 6097
- Installation work issues (Quality), LZY 213 1282
- Manners & Etiquette, LZY 213 1284
- Site Conduct, LZU 108 6337

### **Duration and class size**

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

### **Learning situation**

The course consists of Instructor-led theoretical lessons in a normal classroom and practical exercises in a training exchange environment.

### **Time schedule**

The time required always depends on the knowledge of the attending participants and may vary from one course to another.

| <b>Day</b> | <b>Topics</b>  |
|------------|--|
| 1          | <ul style="list-style-type: none"><li>• System description and Installation theory.</li></ul>                          |
| 2          | <ul style="list-style-type: none"><li>• Practical installation on concrete floor, 1 to 4 cabinets.</li></ul>           |
| 3          | <ul style="list-style-type: none"><li>• Practical installation with Overhead Mechanics.</li></ul>                      |
| 4          | <ul style="list-style-type: none"><li>• Practical installation on raised floor and cabinet grounding/cabling</li></ul> |
| 5          | <ul style="list-style-type: none"><li>• Final assembly and Theoretical test</li></ul>                                  |

### **Terminology**

MBL - Multimedia Based Learning

RNC – Radio Network Controller

EAR – Engine Access Ramp

## MINI-LINK INSTALLATION



LZU 108 6144 R1B

### Description

This course covers the entire MINI-LINK Microwave Networks product portfolio focusing on hardware installation. The course gives the basic knowledge of how to install the MINI-LINK hardware in a correct way.

This course is part of the Authorized Service Provider (ASP) Certification Process for MINI-LINK Installation. On the last day of the course, the participant can take the Theoretical Assessment for ASP Certification. The Theoretical Assessment should later be followed by Practical Assessment to give an ASP Certificate. Note that the ASP Certification is only for Ericsson employees and Ericsson subcontractors with an ASP contract.

### Learning objectives

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

- Understand the basics of the system concept and terminal configuration
- Install MINI-LINK hardware
- Verify correct hardware installation

### Target audience

The target audience for this course is:

- MINI-LINK Installation personnel

### Prerequisites

The participants should have the following prerequisites:

- Educated or experienced technician/engineer
- Normal physical ability
- Basic knowledge in telecommunications, transmission techniques and data communications
- Working in Windows operating system environment

### Duration and class size

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



### Learning situation

This course utilizes Instructor Led Training

The course consists of instructor-led lessons using power point presentations and hands-on exercises in a realistic installation environment using MINI-LINK equipment.

### 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               | 30 min         |
|     | • MINI-LINK Survey                  | 120 min        |
|     | • Indoor Installation Theory        | 105 min        |
|     | • Cabling                           | 120 min        |
| 2   | • Outdoor Installation Theory       | 105 min        |
|     | • Local Craft tools                 | 60 min         |
|     | • Installation Exercises            | 180 min        |
| 3   | • Installation Exercises            | 240 min        |
|     | • Installation Inspection Record    | 30 min         |
|     | • Summing-up/Theoretical Assessment | 90 min         |

## MINI-LINK E Basic Setup



LZU 108 6280 R1B

### Description

This course focus on basic setup of MINI-LINK E terminals. The course consist of a short theory part and practical exercises setting up MINI-LINK E terminals.

This course is part of the Authorized Service Provider (ASP) Certification Process for MINI-LINK Installation. On the last day of the course, the participant can take the Theoretical Assessment for ASP Certification. The Theoretical Assessment should later be followed by Practical Assessment to give an ASP Certificate. Note that the ASP Certification is only for Ericsson employees and Ericsson subcontractors with an ASP contract.

### Learning objectives

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

Use the MINI-LINK E local craft tool MINI-LINK Service Manager (MSM)

Define different terminal configurations

Perform basic setup of MINI-LINK E terminal configurations by entering configuration data from a site installation document

Perform basic functional test

### Target audience

The target audience for this course is installation personell that needs to have the knowledge of how to setup MINI-LINK E terminals.

### Prerequisites

Successful completion of the following course:

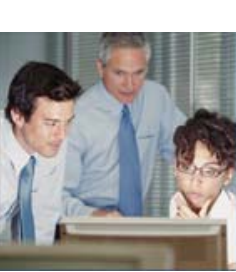
MINI-LINK Installation LZU 108 6144

### Duration and class size

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

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises on MINI-LINK E equipment in lab 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"><li>• Introduction</li></ul>                              | 15 min         |
|     | <ul style="list-style-type: none"><li>• MINI-LINK Service Manager Theory and Demo</li></ul> | 75 min         |
|     | <ul style="list-style-type: none"><li>• MINI-LINK E Setup Exercises</li></ul>               | 120 min        |
|     | <ul style="list-style-type: none"><li>• Functional Test</li></ul>                           | 60 min         |
|     | <ul style="list-style-type: none"><li>• Summing-up</li></ul>                                | 20 min         |
|     | <ul style="list-style-type: none"><li>• Theoretical Assessment</li></ul>                    | 40 min         |



## MINI-LINK HC Basic Setup



LZU 108 6281 R1B

### Description

This course focus on basic setup of MINI-LINK HC terminals. The course consist of a mixture of theory parts and practical exercises setting up MINI-LINK HC terminals.

This course is part of the Authorized Service Provider (ASP) Certification Process for MINI-LINK Installation. On the last day of the course, the participant can take the Theoretical Assessment for ASP Certification. The Theoretical Assessment should later be followed by Practical Assessment to give an ASP Certificate. Note that the ASP Certification is only for Ericsson employees and Ericsson subcontractors with an ASP contract..

### Learning objectives

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

Use the MINI-LINK High Capacity Local Craft Terminal

Define different terminal configurations

Perform basic setup of MINI-LINK HC terminal configurations by entering configuration data from a Site Installation Document

Perform Functional Test after installation

### Target audience

The target audience for this course is ASP installation personell who needs knowledge in how to setup MINI-LINK HC terminals.

### Prerequisites

Successful completion of the following courses:

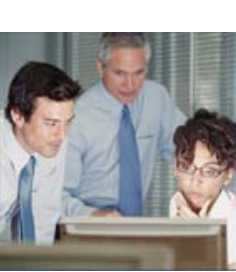
MINI-LINK Installation LZU 108 6144

### Duration and class size

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

### Learning situation

The course is based on instructor-led lectures in classroom mixed with practical exercises on MINI-LINK HC equipment in lab 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"><li>• Introduction</li></ul>                                       | 15 min         |
|     | <ul style="list-style-type: none"><li>• MINI-LINK HC LCT Theory, Demo and Cases</li></ul>            | 3 hour 15 min  |
|     | <ul style="list-style-type: none"><li>• MINI-LINK HC Functional Test Theory, Demo and Case</li></ul> | 1 hour         |
|     | <ul style="list-style-type: none"><li>• Summing-up</li></ul>   | 20 min         |
|     | <ul style="list-style-type: none"><li>• Theoretical Assessment</li></ul>                             | 40 min         |



## MINI-LINK TN Basic Setup



LZU 108 6282 R1B

### Description

This course focus on basic setup of MINI-LINK TN terminals. The course consist of a short theory part and practical exercises setting up MINI-LINK TN terminals.

This course is part of the Authorized Service Provider (ASP) Certification Process for MINI-LINK Installation. On the last day of the course, the participant can take the Theoretical Assessment for ASP Certification. The Theoretical Assessment should later be followed by Practical Assessment to give an ASP Certificate. Note that the ASP Certification is only for Ericsson employees and Ericsson subcontractors with an ASP contract.

### Learning objectives

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

Use the MINI-LINK TN local craft tool

Define different terminal configurations

Perform basic setup of MINI-LINK TN terminal configurations by entering configuration data from a site installation document

Perform basic functional test

### Target audience

The target audience for this course is installation personell that needs to have the knowledge of how to setup MINI-LINK TN terminals.

### Prerequisites

Successful completion of the following course:

MINI-LINK Installation LZU 108 6144

### Duration and class size

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

### Learning situation

The course is based on instructor-led lessons in classroom and practical exercises in a MINI-LINK lab 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"><li>• Introduction</li></ul>                      | 15 min         |
|     | <ul style="list-style-type: none"><li>• MINI-LINK TN LCT, Theory and Demo</li></ul> | 75 min         |
|     | <ul style="list-style-type: none"><li>• MINI-LINK TN Setup Exercise</li></ul>       | 180 min        |
|     | <ul style="list-style-type: none"><li>• Functional Test</li></ul>                   | 60 min         |
|     | <ul style="list-style-type: none"><li>• Summing-up</li></ul>                        | 20 min         |
|     | <ul style="list-style-type: none"><li>• Theoretical Assessment</li></ul>            | 40 min         |

