

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 5.1.
- 3.3 Detail the architecture and functions of the MSC-Server 13.2 and M-MGW 5.1.
- 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.