

Introduction to LTE Radio Planning

COURSE OUTLINE



Course Details

Name: *Introduction to LTE Radio Planning*

Target Audience

This course is designed for participants who want to have a basic understanding of Radio Planning. Basic knowledge of mobile communication networks is necessary. Participants that would benefit by attending this course are Technicians, Sales/Marketing people and Project/Programme managers who are new in their role.

Training Objective

By the end of the course, the participants will understand the basics of LTE Radio Planning from coverage and capacity point of view.

Duration of Training: 2 Days

Max Number of Participants: 15

Prerequisite: General knowledge of mobile communication networks.

Module List Detailed

Module 1: LTE Overview

Topics discussed in this module are listed below:

- LTE MOTIVATION
- LTE REQUIREMENTS
- LTE KEY FEATURES
- LTE ADVANCED

Module 2: LTE Air Interface Radio Aspects

Topics discussed in this module are listed below:

- INTRODUCTION
- OFDM BASICS
- OFDM MULTIPLE ACCESS
- RADIO ACCESS PRINCIPLES

Module 3: LTE Air Interface Protocols and Radio Channels

Topics discussed in this module are listed below:

- INTRODUCTION TO AIR INTERFACE PROTOCOLS
- PHYSICAL LAYER ASPECTS
- LTE LAYER 2
 - RADIO RESOURCE CONTROL (RRC)
 - LTE RADIO CHANNELS
- PHYSICAL CHANNELS RESOURCE ALLOCATION

Module 4: Introduction to MIMO

Topics discussed in this module are listed below:

- INTRODUCTION TO MULTI-ANTENNA SYSTEMS
- MIMO PHYSICAL CHANNEL PROCESSING

LTE TRANSMISSION MODES

Module 5: LTE Radio Planning Process

Topics discussed in this module are listed below:

GENERIC RADIO PLANNING PROCESS
INPUTS FOR LTE RADIO PLANNING
OUTPUTS FOR LTE RADIO PLANNING

Module 6: LTE Radio Planning Specific Concepts

Topics discussed in this module are listed below:

INTRODUCTION TO LTE RADIO PLANNING
FREQUENCY BAND AND BANDWIDTH
TRANSMISSION POWER
SYSTEM OVERHEAD
MODULATION AND CODING SCHEME
(MCS) REQUIRED DATA RATE
REQUIRED SINR
INTERFERENCE MARGIN
CLUTTER RELATED PARAMETERS
OTHER RADIO PLANNING
PARAMETERS LINK BUDGET EXAMPLE
CELL RANGE

Module 7: LTE Capacity Planning Concepts

Topics discussed in this module are listed below:

INTRODUCTION TO CAPACITY
PLANNING TRAFFIC MODEL
CELL THROUGHPUT