

# 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