LTE RF Planning (2 days)

`4G`

LTE (Long Term Evolution) is initiated by 3GPP to improve the mobile phone standard to cope with future technology evolutions and needs. The LTE RF planning goal is to achieve optimum use of resources and maximum revenue potential whilst maintaining a high level of system quality. This course provides a good understanding of LTE concepts, LTE planning process details. A good knowledge of telecommunication & GSM/UMTS technology would be beneficial for anyone attending this course.

Who Should Attend

This is advanced level course and suitable for telecom professionals including design, testing , support & sales engineers requiring good RF planning & optimization knowledge.

Objective

After completing this course, the audience will be able to:
- Understand LTE architecture & concept
- Describe LTE Link Budget
- Define RF planning process
- Explain Coverage & Capacity Dimensioning

Course Contents

LTE Introduction
- Evolution & High Level Requirements
- High level architecture for the evolved system
- LTE-SAE Nodes
- Functional Architecture (E-UTRAN/EPC)
- LTE-SAE Interfaces
- EUTRAN Architecture

LTE Air Interface Technologies
- OFDMA
- SC-FDMA
- MIMO
- Beamforming
- Transmission Modes

LTE Air Interface Physical Layer & Channels
- Frame Structures
- Frequency Spectrum
- Physical Channels
- Logical Channels
- Transport Channels
- Channel Mappings
- Reference Signals

Radio Planning Process
- Radio Planning Process Overview
- Dimensioning
- Nominal Planning
- Detailed Planning
- Pre-Launch Optimization

Radio Propagation Fundamentals
- Propagation Mechanisms
- Multipath & Fading
- Propagation Loss

Link Budget for LTE
- System parameter considerations
- Gains and losses
- Link Budget –DL
- Link Budget –UL

Coverage & Capacity Planning
- Coverage Dimensioning
- Propagation Models
- LTE vs 3G WCDMA
- Capacity Dimensioning
- Cell Capacity (Throughput)

LTE Deployment Scenarios
- Frequency Deployment Scenarios
- Cell Deployments
- Microcells/Macrocells/Indoor
- Co-Existence Scenarios
- Backhaul