LTE E-UTRAN Training (2 days)

4G

3GPP LTE radio access network E-UTRAN is greatly simplified from it's predecessor UMTS by combining RAN & Node-B functionality in a new node called e-NodeB. This course provides a good understanding of LTE E-UTRAN S1, X2 interfaces, protocol architecture and functional details. A basic understanding of 3GPP technologies like UMTS, LTE 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 who already have some understanding of LTE & UMTS technologies.

Objective

After completing this course, the audience will be able to:

- Understand LTE Evolution & Architecture
- Define LTE E-UTRAN Interfaces & Nodes (eNodeB)
- Describe LTE E-UTRAN Interface protocols (S1, X2) & functions
- Explain signaling procedures

Course Contents

LTE Overview

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

Evolved UTRA

- Air Interface Evolutions
- LTE Identities: GUTI, M-TMSI, S-TMSI and C-RNTI, TAI
- LTE-Advanced Enhancements
- E-UTRA Protocol Interface
- Air interface - Control/User Planes
- Air interface Protocols, functions

Evolved UTRAN

- EUTRAN Architecture
- eNodeB Functions
- X2 Interface
- S1 Interface
- X2AP Protocol functions & Messages
- S1AP Protocol functions & Messages
- UE, eNodeB states

LTE E-UTRAN Functions & Procedures

- LTE cell search, synchronization, cell selection
- Measurements
- Self Organizing Network (SON)
- Automatic Neighbor Relation (ANR) functions

E-UTRAN procedures & Signaling

- X2 Interface - Complete procedures & Signaling Scenarios
- S1 Interface - Complete procedures & Signaling Scenarios
- NAS Signaling
- Handovers

LTE security

- Architecture
- Authentication
- Encryption
- Integrity