

3GPP LTE air interface requirements include reduced cost per bit, higher data speed, flexibility of use of existing and new frequency bands. This course provides a good understanding of LTE air interface technologies e.g. OFDM, MIMO and protocols (e.g. RRC, RLC, MAC) including 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
- Explain LTE Air Interface technologies
- Define Air Interface Physical layer
- Describe LTE Air Interface protocols & 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 and message details
 - RRC
 - PDCP
 - RLC
 - MAC

Air Interface Physical Layer & Channels

- Frame Structures
- Frequency Spectrum
- Physical Channels
- Logical Channels
- Transport Channels
- Channel Mappings

Air Interface Technologies

- OFDMA
- SC-FDMA
- MIMO
- Multiplexing
- Modulation, Coding, & Scrambling

Air Interface Procedures & Signaling

- Connection Setup & Deletion
- Mobility
- Monitoring & Measurements
- Interworking

LTE QoS & Security