

## Overview of LTE (Long Term Evolution)

*Covers: Network Evolution, Key aspects of an LTE network & transmission*

### Overview

This course is designed to give the participant an overview of the transition of a UMTS network to an LTE network. It highlights the main additions and modifications as the LTE network evolves. The participant will learn the key roles of the new network elements and how these elements are connected together via the transmission system. The basic concepts of what makes LTE system different to a 3G network are also highlighted.

### Who Can Benefit

Technical personnel for telecommunications organisations

### Pre-requisite Knowledge

Participants should have a basic understanding of cellular communications.

### Outline

#### Introduction

- What is 3GPP Long Term Evolution?
- The IMT Advanced process
- LTE system capabilities
- Spectrum & licencing
- LTE deployment strategies

#### Network Evolution

- 3GSM Family of Technologies
- Evolution from UMTS R99 to HSPA+
- UMTS Release 8-10
- LTE System Architecture
- Comparison with HSPA+ functionality
- Evolution to LTE-Advanced

#### LTE Architecture and Operation

- System architecture and terminology
- Key components
- The Enhanced Node B
- LTE Air Interface
- Basic principles of OFDMA
- Uplink & downlink: OFDMA & SC-FDMA
- Adaptive Modulation & coding
- The transmission network
- Rationale for all-IP
- Core network principles & network components
- Use of the IP Multimedia Subsystem
- Basic LTE Connection Life Cycle
- Interworking between LTE, UMTS & GSM

#### LTE Service Architecture

- Triple & quad play
- LTE devices
- Support for Voice in LTE
- VoLGA principles
- Presence services
- Location Based Services
- Mobile TV & Video services

DURATION	1 day
MAX CLASS SIZE	12