UMTS Air Interface (2 days)

3G

3GPP UMTS air interface uses WCDMA technology far different than ETSI GSM and brings a whole new set of CDMA features. This course provides a good understanding of UMTS air interface technologies e.g. WCDMA Spreading, Scrambling and protocols (e.g. RRC, RLC, MAC) including functional details. A basic understanding of 3GPP UMTS 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 UMTS technologies.

Objective

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

- Understand UMTS Architecture
- Describe Air interface channels/technology
- Describe protocols (e.g. RRC, RLC, MAC) & functions
- Explain UMTS procedures

Course Contents

UMTS Overview

- What is UMTS ?
- Cellular Evolution
- UMTS network overview
- 3GPP UMTS Architecture
- UTRAN Interfaces

UMTS Air Interface Architecture

- Channel Types
- Radio Channels
- Logical Channels - Control and Traffic
- Transport - Common and Dedicated

Physical Channels

- Channel Mapping
- Physical Interface
- Spread Spectrum
- Scrambling Codes, Spreading Codes
- Rake Receiver
- Uplink and Downlink Code Processing

Radio Resource Control

- RRC Functions / Architecture.
- RRC Procedures
- Idle Mode Procedures
- RRC Connection.
- Radio Bearer Procedures.

UMTS Procedures

- PLMN Selection.
- Cell Selection Procedures, System Information.
- UMTS Mobility, Cell Reselection.
- Measurement Reporting.
- Handover Procedures
- Common Channel Procedures
- Power Control

Interworking

- Mobility
- Handover