

3GPP UMTS (Universal Mobile Telecommunications System) is designed to fulfill high quality of service requirements for rapidly growing internet applications and to provide higher data rates to access a full range of services and applications. This course provides a high level overview of UMTS technology including its architectural and requirement details. Further it explains functional and protocol details of UMTS nodes. A good knowledge of cellular technologies like GSM would be beneficial for anyone attending this course.

Who Should Attend

This is beginner level course and suitable for telecom professionals & students who have no understanding of UMTS.

Objective

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

- Understand UMTS Evolution & Architecture
- Define UMTS Interfaces (Iub, Iur, Iu) & Nodes (RNC, NodeB)
- Describe UMTS Interface protocols (e.g. RRC, RANAP) & functions
- Explain signaling procedures

Course Contents

UMTS Overview

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

UMTS Air Interface

- Physical Radio channel
- Spreading

- OVSF code generation
- Scrambling codes
- UL/DL Physical Channels
- Physical Layer Procedures
- RLC/MAC/RRC

UTRAN

- 3GPP UTRAN Architecture
- Node B/RNC functions
- Serving/Drift concept
- UTRAN- SRNS Relocation
- Iub/Iur interface
- NBAP
- RNSAP

UTRAN Iu Interface

- Iu interface
- Iu-CS/PS Protocol structure
- RANAP
- UMTS CS/PS Control/User Plane

UMTS Signaling

- RRC Connection Establishment
- RRC/CN Connection Release
- Location Update
- CS/PS Call
- Soft/Hard Handover