GSM/GPRS/EDGE (2 days)

GSM & GPRS one of the most deployed mobile standards provides both CS & PS services. EDGE enhances GPRS data services to provide higher speeds. This course provides a good understanding of GSM/GPRS history, modulations, technology, protocols, architecture and services. A good knowledge of telecommunication 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 requiring good GSM/GPRS knowledge.

Objective

After completing this course, the audience will be able to:
- Understand GSM/(E)GPRS architecture, access and core network
- Define GSM/GPRS interfaces
- Describe location/routing area/ frame/Modulation concepts
- Explain E2E signaling procedures and protocols

Course Contents

Introduction
- History of wireless communications
- Motivation for GSM
- Current GSM status
- Key characteristics of a GSM network
- Motivation for GPRS and EDGE
- Efficient use of radio resources
- Evolution from existing networks
- Supported data rates
- Evolution to 3G

GSM Network Architecture
- Radio Subsystem
- Network Subsystem (NSS)
- Operation Subsystem (OSS)
- BTS/BSC/MSC
- GPRS Nodes

GSM Radio/Physical Layer
- Concept of radio channels
- Time Slots, frames, and multiple access
- System acquisition
- Traffic channel operations

GSM Protocols & Interfaces
- SS7 protocols
- LAPDm/RR
- BTS-BSC Interface
- BSC-MSC Interface
- MS-MSC Interface
- Core Network

GSM Network Mobility and Call Processing
- Attach and location update
- MO/MT calls
- Handover
- Security in GSM

GSM Services

GPRS Physical layer operations
- Error protection techniques
- GMSK and 8PSK modulation
- MCS and CS classes

GPRS Physical and logical channels

GPRS Interface & Protocols
- **RLC/MAC**
- **GMM/SM**
- **SNDCP**
- **Gb Interface**
- **GTP**
- **Gn Interface**

GPRS Packet Network

GPRS Signaling
- GPRS Attach/Detach
- PDP context activation/deactivation

GPRS Mobility and Roaming
- Cell update procedures
- RA update

GPRS Services

GPRS Roaming

GPRS Concepts

Different classes of GPRS handsets