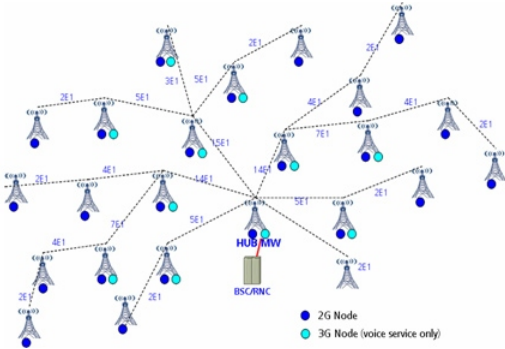


Telecom



Corporate Trainer's Profile

Corporate Trainers are having the experience of 4 to 12 years in development , working with TOP CMM level 5 companies (Project Leader /Project Manager) qualified from NIT/IIT/IIM and work exp in USA and UK.



CMM (Capability Maturity Model) level Project Standard:-

The Capability Maturity Model (CMM) is a method for evaluating the maturity of organizations on a scale of 1 to 5. Get the Oppertunites to work on Client Projects Of US/UK, which follow the all standard of CMM level 5 Company.



UMTS Introduction and IP Multimedia Services

Course Duration: 2 Days

Training Course Description:

Officially recognized standardization organizations have agreed to work collaboratively for the production of Third Generation Mobile System specifications, based on evolved GSM core networks and the radio access technologies that they support (i.e. Universal Terrestrial Radio Access (UTRA) both Frequency Division Duplex (FDD) and Time Division Duplex (TDD) modes. UTRA will support operation with high spectral efficiency and service quality in all the physical environments in which wireless and mobile communication take place. This course will explain in detail the design and procedures used over the air interface that has been selected to fulfill high flexibility requirements.

The IP Multi-Media Subsystem (IMS) is an IP multimedia and telephony core network. It is defined by 3GPP and 3GPP2 standards and organizations based on IETF Internet protocols. IMS is access independent as it supports IP to IP session over wireline IP, 802.11, 802.15, WiMAX, CDMA, GSM/EDGE/UMTS and other packet data applications. IMS permits and enhances real time, multimedia mobile services such as rich voice, video telephony, messaging, conferencing and push services by responding to the emerging trend to move toward a common, standardized subsystem. As data services proliferate and the value chain expands, current vertical application platforms are proving insufficient to meet operator needs. IMS represents a standardized, reusable platform providing a better way to experiment with, deploy, integrate, and expand consumer and enterprise voice and data services.

This course provides an advanced technical overview of IMS.

In this course we will discuss various advanced concepts that are integral to the development of IMS and all IP networks.

Course objectives

After completing this course, students will be able to:

- Understand concepts behind All-IP Multimedia Networks
- Understand IMS architecture
- Explain IMS reference architecture
- Understand IMS session control, connection control and applications services
- Explore SIP and SDP extensions used in IMS
- Explain IMS services
- Understand IMS Security and QoS

UMTS includes the following modules:

Introduction

- The Standardization Process
- IMT-2000 Requirements
- IMT-2000 Spectrum
- Bearer and Teleservices
- Evolution Path
- UMTS General Architecture

UTRAN Architecture & Radio Access Bearer

CDMA Principles

CDMA Principle
Direct Sequence Spreading/ De-Spreading
DS- Frequency Domain
Cell Capacity Consideration
Code Characteristics
Code Classifications/ Generations
Code Requirements

CDMA Requirements

Synchronization
Power control
Soft handover
Rake receiver
Antenna consideration
Multi-user detection

Radio Interface Protocol Architecture

Access stratum & Non-access stratum
Overall Protocol Structure
Logical and Transport Channels
Physical Channels
Protocol Termination

FDD Physical layer Implementation

Code Requirements
Uplink Physical Channels
Downlink Physical Channels
Transport to Physical Channels
Frame Structure
Multiplexing and coding
Selected Codes
Channel structures and Information Content
Mobile synchronization
Modulation
Power Control
Additional TDD Implementation Features

TDD Physical Layer Implementation

Frame Structure
Burst Structures
TDD specific spreading
Synchronization Channels
TDD specific operations

Mobile Procedures

- Mobility Management states and transitions
- UMTS identities
- Procedures in Idle mode (location updates, cell selection/ re-selection)
- Circuit-switched call set-up
- Packet-switched context activation and context preservation
- Data transfer initialization
- Measurement reporting
- Soft-handover procedure

IMS Business Aspects

- Market opportunities
- The IP Multimedia Subsystem (IMS) is the 3GPP and 3GPP2
- IMS market trends
- IMS in GSM, CDMA, WiFi and PSTN based networks
- Business case and challenges for IMS
- Delivering value added services enabled by IMS
- Mobile content & delivery
- Push To Services
- Converged Voice Services
- Multimedia Messaging
- Conferencing Messaging
- Response Services
- Service roaming

What is IMS?

- What is a service?
- What is an application?
- Mobile services
- Mobile services by media
- Mobile services by application
- IMS elements
- SIP protocol for session control
- SIP-based Servers for session control, security and routing
- IMS resource and media control elements
- Signalling and transport interworking elements
- Session Control in the IMS
- Media Encoding
- Media Transport
- The Instant Messaging Service in the IMS
- Push-To-Talk

Architecture of UMTS IP Multimedia Subsystem (IMS)

- Reference architecture
- Application layer
- Service control layer
- Media layer

Interfaces and Protocols
Scenarios in UMTS and CDMA2000 IMS
Registration
Protocols (SIP+, CAMEL)
All-IP UTRAN
Inter-working with PSTN and UMTS/CDMA2000 IMS

Trainer's Profile :

Amit Kumar Dubey:

Profile

Amit Kumar Dubey is working as a Project Manager in Telecom Division at Miracle Corporate Solutions Pvt. Ltd, India. He holds B.Tech in Electronics and Communication and M.Tech from Indian Institute of Technology, Kharagpur in the Telecommunications area. He has got his first patent on a project by National Semiconductors USA, on "Development of an ASIC for spreading code generation in UMTS Mobiles", at IIT Kharagpur. Initially he worked in Samsung India Software Operation Bangalore as a Software Engineer on various Mobile Applications and GSM/GPRS/UMTS protocol stacks. His expertise includes implementation of Audio/Video (MPEG4, H.263, AAC, AMR, and MP3) codec, DSP Algorithms and Computer Networks. He has also worked in various countries Spain/France/South-Korea with Vodafone and South Korea Telecom for various software deliveries of Z200 and Z200i mobile handsets. He has filed two more patents on his name; one is on synchronization techniques in MC-CDMA while other is on proposing an efficient image coding standard. He has also co-authored a book named "Development Guide for 3G Mobile Applications". Amit has more than 8 years of industrial and research experience including IIT Kharagpur, Samsung Electronics, Vodafone, and Miracle. He has been actively participating in different designing and development activities (WinCE, Symbian) including work group meetings and workshops. He is an editor of various International Journals on Computer Science and Information Technology. He has also served as a Visiting Lecturer in various companies and corporate world. His current thrust is on system-on-chip (SOC) and embedded solutions for mobile terminals and other multimedia communication appliances used across various networks.

(Contact: amit@miracleindia.com)