IMS Technology and VoLTE/VoNR - Hands-On

SYNOPSIS

- **Technology Introduction Seminar**: gain insight to VoLTE, IMS/EPC Architecture, Protocols and Service Scenarios.
- Introduction to IP mobility and IP security technologies for IMS/EPC.
- Focus on IMS SIP based Telephony in LTE from network point of view and IMS interconnect interfaces.

DURATION

- 3 Days

PREREQUISITES

- Previous exposure to 3GPP technologies and IP protocols.
- Previous exposure to CS Telephony.

TARGET AUDIENCE

- Technical managers, system and solution architects, product designers, software engineers, technical support personnel.
- Field engineers, Network planer, technical staff being responsible for O&M, Test planers and tester.

COURSE OBJECTIVES

- The participants would gain good understanding of IMS fundamentals, protocols and IMS Multimedia Telephony scenarios.
- They would become familiar with SIP and SDP protocols and their 3GPP-IMS specific protocol enhancements.
- The participants will become familiar with IP technologies used for transport, authentication, authorization, security and mobility in IMS and 3GPP protocol enhancements in core and interconnect.
- They would understand the technical implementation of VoLTE and IMS based Voice Call Continuity (SRVCC) in LTE-EPC.

Day-1: IMS Fundamental

1. **IMS Service Principles**

   a. IMS Architecture - Nodes, Interfaces and Protocols
   b. LTE-EPC as IP-CAN
   c. Signalling Flows and Telephony Bearer
   d. SIP Routing and Service Control
   e. **SIP/SDP enhancements for VoIMS**

2. **IMS Basic Service Scenarios**

   a. IMS Basic Service Scenarios
   b. VoIP and Video Conferencing Scenarios
   c. HSS Profile and Cx Diameter procedures
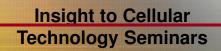   d. IMS Registration and Security Scenarios
   e. **IMS Registration Hands-On**

Day-2: VoIMS and SRVCC

3. IMS Telephony Enabler

    a. MMTel – ISUP-compliant Telephony Scenarios, Codecs

    b. MMTel Supplementary Services Scenarios

    c. MMTel Roaming Aspects and Traffic Path Optimization

    d. RTP and RTCP – in UE, access and core

    e. IMS Priority and Emergency – Architecture and Scenaios

    f. **MMTel Call Setup Hands-On**

4. SRVCC Technologies

    a. IMS Registration and Reachability

    b. Domain Selection upon Call Setup

    c. VoIMS/SRVCC Subscription Parameters and Capabilities

    d. ICS/ISC Service Principles

    e. SRVCC Handover Scenario

    f. **SRVCC Handover Hands-On**

Day-3:. IMS Voice Interconnect

5.   End-to-End Service Aspects

    a.   Policy and Charging Architecture

    b.   IMS Border Architecture – Gateway Roles

    c.   CS-IMS Telephony Interworking – VoLTE/VoNR to 3G (signalling, RTP, RTCP)

    d.   IMS Roaming Scenarios – inbound/outbound roamer

    e.   VoLTE/VoNR Call on Interconnect Hands-On

6.   Overview on 5G Core

    a.   5G Core Architecture Differences

    b.   IMS and Voice over 5G Core

    c.   5GC Telephony Hands-On