ENG-513 - 4G Core Network

Description

The 4G Core Network, while built on the 3G UMTS (Universal Mobile Telecommunication System) service architecture, emerged through work at the 3GPP (3rd Generation Partnership Project – the mobile platform Standards Body) in an advanced versatile platform capable of processing large amounts of data more efficiently than earlier generations of cellular networks. This 3-day Training Course includes a detailed analysis of the architecture, interfaces, protocols, QoS, deployment and dimensioning of the EPC which supports higher throughput, lower latency, and mobility between 3GPP and non-3GPP radio access technologies.

Learning Outcomes

At the end of the course, participants will be able to:

- Describe the architecture and interfaces between the E-UTRAN (the 4G air interface) and the EPC
- Characterize the performance capabilities of 4G SAE platform
- Discuss the different services carried by the Evolved Packet System (EPS) and their impact on traffic and signaling
- Outline the key protocols used for control and user traffic
- Explain the procedure for EPS bearer establishment and service data flow
- Explain options for carrying voice in 4G, including VoLTE, CSFB, SVLTE, OTT

Topics
The Training Course covers the following topics:
DAY 1

- Introduction, 3GPP, Evolved Packet Core
  - Introduction
  - 3GPP - 3rd Generation Partnership Project
  - EPS - Evolved Packet System

    - EPC interfaces
    - Roaming architecture
    - Non-3GPP access
    - Subscriber identities in EPC (Evolved Packet Core)
    - Call Flow

DAY 2

- Mobility and Bearer Management
    - MME Role and Architecture
    - MM and SM States
    - LTE/EPC Bearer Types and QoS
    - LTE/EPC Attach Procedure
    - LTE/EPC Detach Procedure
    - LTE/EPC Bearer Activation Procedure
    - LTE/EPC Service Request Procedures
    - Tracking Area Update (TAU)
    - LTE/EPC Handover
    - Call flows
        - LTE Attach & EPS Bearer Setup
        - Attach and Default Bearer Setup
        - Tracking Area Update
        - LTE S1 Handover

DAY 3

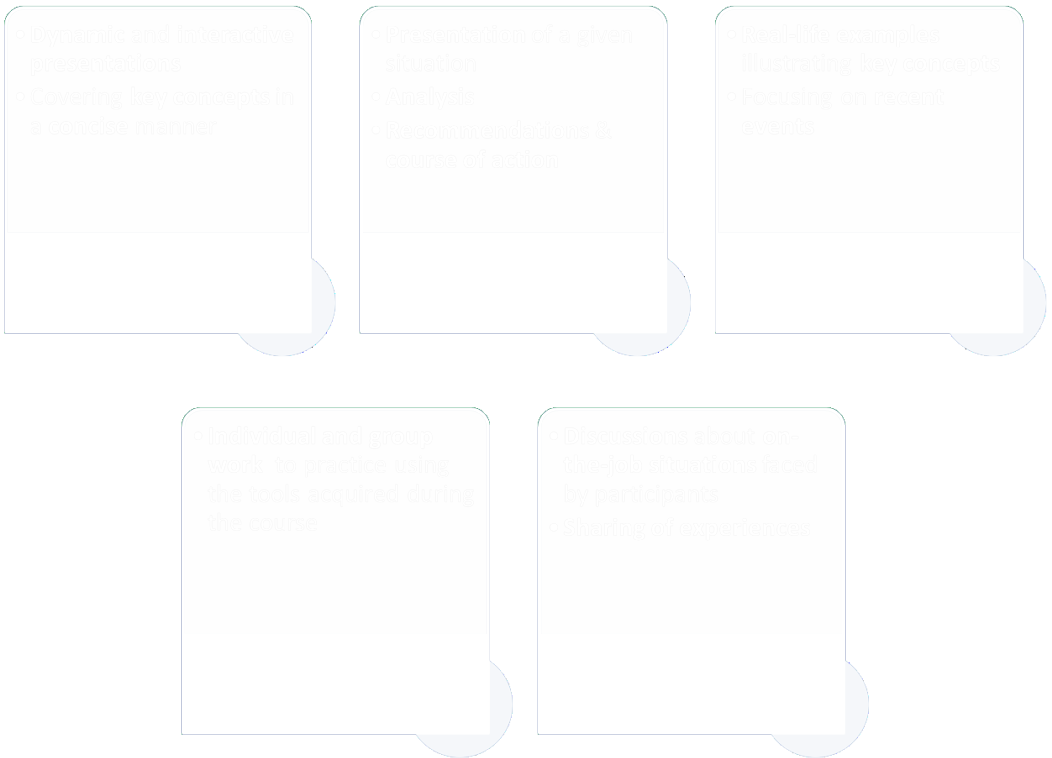
- Voice Services and SMS in LTE
    - Voice and SMS in LTE
    - VoLTE
    - CSFB (Circuit Switched FallBack)
    - SVLTE (Simultaneous Voice and LTE)
    - Over the Top (OTT) Services

Target Audience

- Engineers and technical staff who need a detailed introduction to 4G core networks, (as differentiated from the RF access portion of the network)

Methodology

A combination of engaging activities and dynamic presentations to stimulate and maximize participants' learning.



Location

A selection of Neotelis' training courses is held in various cities around the world. Please contact us at training@neotelis.com for the complete Yearly Training Calendar.



Neotelis can also deliver in-house sessions of this course specifically for your organization. Please contact us at training@neotelis.com for more information and a Proposal.

About Neotelis

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4802 de Verdun St, Office #1, Montreal, QC, H4G 1N1 Canada
Tel: +1 514 281 1211 Fax: +1 514 281 2005
info@neotelis.com