VoLTE Overview

LTE_112d | On-Demand | LTE and VoLTE | Express
Course Duration: 1.5 hours

The LTE Evolved Packet Core (EPC) is an evolution of the 3GPP system architecture with the vision of an all-IP network finally realized. EPC in conjunction with IP Multimedia Subsystem (IMS) delivers various services such as VoIP, SMS, Video call, Picture share, IM and Presence. EPC and IMS support interworking with the existing 2G/3G wireless networks as well as PSTN to facilitate smooth migration, seamless mobility and service continuity across these networks. This eLearning module provides an overview of supporting voice services using LTE, which is known as Voice over LTE (VoLTE). LTE-EPC, IMS, and the PCC are discussed as the building blocks for VoLTE. The pre-call operations such as connectivity with the IMS network and IMS registration are explained along with VoLTE call setup and configuration.

Intended Audience

This course is an overview of Voice over LTE, and is targeted for a broad audience. This audience includes those in planning, Integration, operations, and end-to-end service deployment groups.

Objectives

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

- List various solutions for delivering voice in LTE networks
- Describe the role of LTE-EPC, PCC, and IMS in VoLTE
- Specify the roles of key IMS and PCC nodes
- Sketch inter-connectivity of LTE-EPC, IMS, and PCC nodes to deliver an end-to-end IMS call
- Summarize main steps of pre-call operations such as IMS registration
- Describe the main steps of setting up a VoLTE call
- Specify how SMS can be supported in LTE

Course Prerequisites

LTE Overview

Outline

1. Overview of EPS
1.1 Supporting voice services in LTE
1.2 Overall network architecture (EPS, IMS, PCC)
1.3 Initial attach
1.4 Default vs. dedicated EPS bearers
1.5 Connectivity with IMS APN

2. Connectivity Among EPS, IMS, and PCC
2.1 Overview of IMS elements
2.2 Overview of PCC elements
2.3 QoS model in LTE
2.4 Connectivity of IMS, LTE-EPC & PCC

3. Pre-Call IMS Functions for VoLTE
3.1 PDN connection to IMS
3.2 P-CSCF discovery
3.3 IMS registration

4. VoLTE Call Setup
4.1 Overall steps for an all-IP call
4.2 PCC-IMS interactions
4.3 Dedicated bearer setup

5. VoLTE-Scenarios
5.1 LTE-PSTN interworking and role of IMS
5.2 Overview of Single Radio Voice Call Continuity(SRVCC)
5.3 Supporting SMS in LTE

6. Summary

7. Put It All Together
7.1 Assess the knowledge of the participant based on the objectives of the course

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