Exploring VoLTE: Architecture and Interfaces

LTE_129d | On-Demand | LTE and VoLTE | Express
Course Duration: 1 hour

Long Term Evolution (LTE) network is optimized for delivering high-speed packet-oriented content and services to a large number of mobile users. However, some services, such as conversational voice over IP (VoIP), require special treatment in order to minimize end-to-end delay and provide a satisfactory user experience. The wireless industry has adopted the IP Multimedia Subsystem (IMS) architecture to implement real-time and multimedia services to LTE subscribers; Voice over LTE, or VoLTE, is the term given to voice services delivered over LTE. This self-paced eLearning course describes the network requirements for VoLTE and describes the IMS network components and interfaces needed to implement VoLTE and other IMS-based services. The course also discusses how IMS and LTE interwork with non-IMS networks in order to support worldwide calling services.

Intended Audience

This course is intended for a technical audience looking for an in-depth understanding of the important nodes, functions, and interfaces found in a typical VoLTE/IMS network.

Objectives

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

- Discuss the motivations and requirements for VoLTE and IMS
- Define the key nodes and functions needed in a typical IMS network
- Identify key interfaces between IMS nodes and define the protocols carried over each interface
- Illustrate the paths control signaling and voice media take through the LTE and IMS networks

Course Prerequisites

Exploring LTE: Architecture and Interfaces

Outline

1. What is VoLTE?
1.1 IR.92
1.2 VoIP and QoS
1.3 IMS

2. IMS Network Nodes and Functions
2.1 P-CSCF, I-CSCF, and S-CSCF
2.2 ENUM and IMS HSS
2.3 TAS
2.4 SCC-AS and BGCF
2.5 MGCF, MGW, and SGW
2.6 MRFC and MRFP

3. IMS Network Interfaces
3.1 Rx
3.2 Cx and Sh
3.3 ISC
3.4 Media interfaces

4. VoLTE Protocols
4.1 SIP and SDP
4.2 Diameter
4.3 RTP and RTCP
4.4 Megaco (H.248)

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