

Exploring VoLTE: Architecture and Interfaces

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

What You Can Expect

- Self-Paced Duration: 1 HOUR
- Prerequisite: 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)