Introduction to VoLTE

LTE_501x | Expert-Led Live | LTE and VoLTE | Expert
Course Duration: 1 day

Since its standardization over a decade ago, VoLTE, or Voice over LTE, has been deployed by operators around the world. Compared to the traditional circuit-based 2G/3G voice solutions, VoLTE provides better voice experiences, enables rich multi-media communications features, and makes the network more efficient for operators. This course provides an overview of the LTE and IMS network architecture supporting VoLTE, and the key technologies used in VoLTE such as IMS and SIP. The course also covers high level information on key scenarios in VoLTE signaling and operations, media support, VoLTE interworking, roaming, and air interface enhancements for VoLTE. This course is delivered in a blended format, including two live web sessions along with self-paced multimedia content, allowing students to learn in bite-sized chunks over a three-week interval.

Intended Audience

This blended (self-paced and instructor-led) course is intended for a technical audience looking for an overview of the drivers for VoLTE and a basic understanding of the underlying technologies being considered.

Objectives

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

- Describe the architectural elements of the LTE and IMS networks used to support VoLTE
- Discuss benefits of VoLTE compared to traditional circuit-based 2G/3G voice
- Explain key VoLTE signaling and operational scenarios including registration and call processing
- Identify the key technology building blocks needed for VoLTE
- Describe the network functions involved in VoLTE interworking and roaming
- Discuss key air interface enhancements for VoLTE
- List the key KPIs (Key Performance Indicators) used to measure VoLTE performance

Course Prerequisites

Welcome to LTE

Outline

1. Kickoff Session [Live: Web-based]
1.1 Course Overview
1.2 VoLTE Overview

2. The LTE Network
2.1 LTE RAN and Core
2.2 LTE Attach and PDN Connection Setup
2.3 QoS in LTE
2.4 IMS Architecture

3. VoLTE Operations
3.1 VoLTE Registration
3.2 VoLTE Call Origination/Termination
3.3 EPS Bearers and DRBs for VoLTE

4. VoLTE Media
4.1 Media Path and RTP
4.2 Introduction to 5G New Radio
4.3 Audio Codecs for VoLTE
4.4 RoHC and Other Air Interface Enhancements

5. VoLTE Interworking
5.1 VoLTE to 3G/PSTN Call Setup
5.2 3G/PSTN to VoLTE Call Setup
5.3 Outbound Roaming

6. KPIs
6.1 KPIs and Failures Overview

7. Review Session [Live: Web-based]