



# Welcome to LTE

LTE\_109d | On-Demand | LTE and VoLTE | ⚙️

Course Duration: 1 hour

Long Term Evolution (LTE) is one of the choices for next generation broadband wireless networks and is defined by the 3GPP standards as an evolution to a variety of 3G wireless networks, including both UMTS and 1xEV-DO; its high data rates enable a wide range of advanced multimedia applications. This on-demand offers a quick, high-level overview of LTE radio and Evolved Packet Core (EPC) networks.

## Intended Audience

This course is an end-to-end overview of LTE networks and is targeted for a broad audience. This includes those in sales, marketing, deployment, operations, and support groups.

## Objectives

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

- Identify the motivations and goals for 4G networks
- Summarize the basic concepts of LTE Air Interface
- Sketch the high-level architectures of the E-UTRAN and EPC
- Describe the different categories of LTE UE
- Walk through a typical LTE call from power-up to service setup to disconnect
- Define the key services expected on LTE networks
- Illustrate the interworking solutions for GSM/UMTS and 1x/1xEV-DO networks
- Explain the important factors to consider when deploying LTE networks

## Course Prerequisites

No Prerequisites

## Outline

Motivations for 4G

- 1.1 3G limitations
- 1.2 LTE goals and targets
- 1.3 4G building blocks

2. LTE Network Architecture

- 2.1 LTE architecture goals
- 2.2 LTE network components
- 2.3 Evolved UTRAN (E-UTRAN)
- 2.4 Evolved Packet Core (EPC)

3. LTE Devices

- 3.1 Device categories
- 3.2 Role of SIM card

4. LTE Air Interface

- 4.1 Scalable bandwidth
- 4.2 Supported radio bands
- 4.3 OFDM/OFDMA concepts
- 4.4 Multiple antennas in LTE

5. LTE Services

- 5.1 Typical call setup sequence
- 5.2 Basic and enhanced services
- 5.3 Voice and SMS solutions
- 5.4 IP Multimedia Subsystem (IMS)
- 5.5 Policy and Charging Control (PCC)

6. LTE Deployment

6.1 Interworking with GSM/UMTS

6.2 Interworking with 1x/1xEV-DO

6.3 Deployment considerations

6.4 Backhaul options