Wireless Technologies and Network Operations

TPR1041d | On-Demand | 5G Access | Expanded
Course Duration: 4 hours

Wireless networks and related technologies are becoming ubiquitous in everyday life. Everyone who is in the field of telecom needs to have foundation knowledge of the wireless network and its operations and offered services. This training covers the end-to-end wireless architecture, connectivity of radio, core and transport networks, various types of cell sites such as macro, micro, small cells, etc. It also covers the foundations of radio technology such as frequency spectrum, channel bandwidth, role of antennas, and signal propagation. It gives an overview of key operations of the wireless network such as registration, voice/data call setup, and covers the KPIs used to monitor the health of the network.

Intended Audience

Everyone who needs a technical overview of wireless networks.

Objectives

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

- Effectively use key terms and concepts of wireless networks
- Sketch wireless network elements such as LTE RAN, LTE Core, Transport, and IMS service network
- Understand role of frequency spectrum, channel bandwidth, and antenna on data rates
- Step through key procedures like Registration, Voice/Data call setup, Handovers
- Identify Key Performance Indicators (KPIs) to measure the performance of a wireless network

Course Prerequisites

No Prerequisites

Outline

1. End-to-End Wireless Network
1.1 Evolution of wireless networks
1.2 Cells, sectors and carriers
1.3 Cell site and base station evolution
Exercise: Knowledge check

2. Radio Technology Essentials
2.1 Spectrum and antennas
2.2 Signal generation and measurement
2.3 Factors affecting radio signals
Exercise: Knowledge check

3. Wireless Network Operations
3.1 Connecting to a wireless network
3.2 Idle mode and paging
3.3 Handover and roaming
Exercise: 4G UE Attach
Exercise: Knowledge check

4. Services and Key Performance Indicators
4.1 IMS network and VoLTE calls
4.2 Key Performance Indicators (KPIs)
Exercise: 4G VoLTE Call Flow
Exercise: Knowledge check

Putting it all together
Final assessment

© 2024 Award Solutions, Inc.