

### **Introduction to LTE**

#### **Course Description**

LTE is now widely established as a mobile broadband solution on a global basis. This short course aims to provide a concise synopsis of how LTE operates, focusing on the driving factors behind LTE, as well as the architectural view of an LTE deployment. Operational procedures such as network attach and bearer utilization will be examined, as well as key mobility and roaming considerations. Finally, LTE voice solutions will be highlighted, with focus on CSFB and VoLTE.

This course has no prerequisites.



### **1. Introduction to LTE**

#### Topic areas covered include:

- LTE Concepts and Drivers:
  - Key Drivers.
  - LTE Standardization.
  - LTE and 5G.
- LTE Network Architecture Part 1:
  - High Level LTE Architecture.
  - EPS Bearers.
  - LTE Identification.
  - LTE RAN.
- LTE Network Architecture Part 2:
  - Tracking Areas.
  - EPC Components.
  - Control and User Plane Separation.
- LTE Air Interface:
  - LTE Radio Bands.
  - Key LTE Air Interface Techniques.
- Initial LTE Network Procedures:
  - Finding the Network.
  - Attaching to the Network.
- Utilizing the LTE Network:
  - Idle and Connected Mode.
  - Moving to Idle.
  - Getting Connected Service Request.
  - Paging.
- LTE Mobility:
  - Tracking Area Updates.
  - Handovers.

- Interconnect and Roaming:
  - Interconnect.
  - Roaming.
- Voice Services in LTE:
  - Voice Options.
  - Circuit Switched Fallback.
  - VoLTE.







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