5G Services and Network Architecture

TPR1021d | On-Demand | 5G Core | Expanded
Course Duration: 4 hours

This course is an overview of the 5G network and its targeted services. Starting with 5G services and performance targets, the 5G network architecture and building blocks are explored. Then, the evolution of the 5G RAN is discussed. An overview of key components for a 5G wireless network is given and fundamental technologies for a 5G network architecture are then discussed. Afterwards, potential deployment and evolution scenarios are summarized. Finally, RAN and core technologies converge with the exploration of network slicing, Mobile Edge Computing (MEC) and solutions for voice services in 5G.

Intended Audience

A high-level technical overview to personnel involved in product management, marketing, planning, design, engineering, and operations.

Objectives

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

- Identify 5G use case families and related performance targets for 5G networks
- Describe key building blocks of 5G that help achieve higher data rates and lower latency
- Sketch the end-to-end 5G network architecture, including 5G NG-RAN and 5G Core (5GC)
- Step through the life of a UE in 5G NSA and SA networks
- Define MEC and network slicing and identify benefits in 5G networks
- Identify voice solutions in 5G networks

Course Prerequisites

Welcome to 5G

Outline

1. 5G Services and Key Building Blocks
1.1 5G Service categories and performance targets
1.2 Key building blocks for 5G networks
1.3 Features and capabilities of 5G networks
Exercise: Knowledge check

2. 5G RAN and Core Network Architecture
2.1 5G RAN evolution and split architecture
2.2 vRAN and ORAN in 5G RAN
2.3 5G Core network architecture
Exercise: Knowledge check

3. 5G Operations and Deployment
3.1 5G network deployments
3.2 Life of a device in 5G NSA Option 3x networks
3.3 Life of a device in 5G SA networks
Exercise: Knowledge check

4. MEC and Network Slicing
4.1 What is Multi-Access Edge Computing (MEC) and Why?
4.2 Network slicing in 5G
4.3 Voice solutions in 5G
Exercise: Knowledge check

Putting it all together
Final Assessment

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