Technology Primer: 5G Services and Network Architecture

Instructor Led Live Virtual Class | Duration: 0.5 Day | Course Number: TPR1021

Technology Primers

ITU is defining 5G standards as part of IMT2020 with active input from industry groups like the NGMN alliance and 3GPP. This course offers an overview of target services and potential technologies of the network architecture in the upcoming 5G standards. Use case families defined by the NGMN alliance are discussed along with the ITU and 3GPP usage scenarios. Key performance goals defined by the ITU for the wireless network to meet requirements of target 5G services are specified. An overview of key components for a 5G wireless network is given. Fundamental technologies for a 5G network architecture such as New Radio (NR) and Next Generation Core are discussed. Radio and core technologies described in the course include Cloud Radio Access Network (C-RAN), Network Functions Virtualization (NFV), Software-Defined Networking (SDN), Mobile Edge Computing (MEC), and network slicing.

Intended Audience

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

Learning Objectives

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

- Give examples of use case families identified by NGMN for 5G
- Specify 5G performance targets defined by the ITU
- Illustrate emerging 5G network architecture
- Explain how NFV and SDN can facilitate deployment of a wireless network
- Summarize benefits of MEC
- Describe how network slicing works

Suggested Prerequisites

- [LTE_102] LTE Overview (eLearning)

Course Outline

1. 5G Services
   - 1.1. Use cases for 5G
   - 1.2. Performance goals for 5G
   - 1.3. Key 5G components
   - 1.4. Evolution to 5G
2. 5G Network Architecture
   - 2.1. 5G End-to-End architecture
   - 2.2. 5G deployment options
   - 2.3. 5G NG-RAN architecture
   - 2.4. Next Generation Core
   - 2.5. Interworking with 4G
3. Supporting Technologies
   - 3.1. NFV and SDN in 5G
   - 3.2. Network slicing in 5G
   - 3.3. Mobile Edge Computing (MEC)
   - 3.4. C-RAN