

5G Use Cases and Technology Options [Advances in LTE RAN Series]

Instructor Led Live Virtual Class | Duration: 0.5 Day | Course Number: TPR1003

Technology Primers

ITU is defining 5G standards (IMT2020) with active input from industry groups like the NGMN alliance and 3GPP. Use cases have been defined that require data rates from few bytes to tens of gigabits anytime, anywhere. This course offers an overview of upcoming 5G standards. We start by highlighting the limitations of existing networks followed by the requirements and the targets for 5G systems. Then we discuss the technological enablers of 5G in the radio, transport and core networks. Finally, we walk through possible deployment scenarios of 5G.

Intended Audience

Technical, product development, and marketing personnel working for chipset manufacturers, equipment manufacturers, device manufacturers, and operators.

Learning Objectives

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

- List 5G use cases defined by NGMN
- Enumerate 5G performance targets defined by ITU
- List the key technology enablers for 5G standards
- Explain how C-RAN benefits the 5G deployments
- Describe the benefits of SDN and NFV that can be exploited in 5G
- Summarize how Big Data and Internet of Things to support 5G
- Explain 5G deployment scenarios of enhanced mobile broadband, massive Machine Type Communication, and massive IoT

Suggested Prerequisites

- [LTE_102] LTE Overview (eLearning)
- [NWW_111] Cloud RAN Overview (eLearning)
- [NWW_105] SDN Overview (eLearning)
- [NWW_106] NFV Overview (eLearning)
- [NWW_109] Big Data Overview (eLearning)

Course Outline

1. 5G Overview

- 1.1. NMGN use cases for 5G
- 1.2. ITU 5G performance requirements
- 1.3. 5G technology enablers

2. 5G Technology enablers

- 2.1. 5G Radio technologies
- 2.2. 5G Radio Access Network
 - 2.2.1. Centralized RAN
 - 2.2.2. Cloud RAN
- 2.3. 5G Core and Transport Network
 - 2.3.1 SDN
 - 2.3.3 NFV
- 2.4. Big Data

3. 5G Deployment Scenarios

- 3.1. Enhanced Mobile Broadband (eMBB)
- 3.2. Massive Machine Type Communication)
- 3.3. Massive IoT
- 3.4. Ultra Reliable and Low Latency Communication (URLLC)
- 3.5. Critical Communications