



5G Introduction

2 Hr. 35 Min.



LEARNING OBJECTIVE:

Upon completing the course, the participant will be able to:

- Look at the global market of telecom
- Understand the need of 5G
- Describe the 5G requirements and Targets
- Examine the 5G Stand alone vs Non stand alone Architecture approach
- Explain the functionality of 5G core Network functionality

COURSE OBJECTIVE:

This objective of this course is to provide the recent market developments regarding 5G technology and its future prospects. So, we have designed this course from 5G basics including the Use cases, requirements, Architecture and functionalities of RAN and Core Networks.

WHO SHOULD ATTEND:

This course is designed to provide a general overview for strategic or technical managers, consultants, communications professionals, network professionals and others who plan on using, evaluating or working with 5G wireless network.

TARGET AUDIENCE:

Network engineers, Telecom professional, Any one who wants to know the basics of 5G.

INSTRUCTIONAL METHODS:

Lectures in Classroom, Virtual Classroom trainings, discussion, Questions & Answers. All participants will also receive comprehensive course materials.

COURSE OUTLINE:

1. Introduction

1.1 Overview

2. Global Market Overview

2.1 Global Mobile Market Growth

2.2 Mobile Traffic Growth

2.3 Global Data Traffic Growth





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3. 5G Drivers and Use Cases

- 3.1 Driving Factors for Data Growth
- 3.2 5G E2E Connected Society
- 3.3 5G Use Cases

4. 5G Requirements and Targets

- 4.1 5G Starting Point
- 4.2 5G Service Scenarios
- 4.3 5G Requirements and Applications
- 4.4 5G Service Enablers
- 4.5 5G NG-RAN Air-Interface

5. 5G Stand-Alone Vs Non Stand-Alone

- 5.1 5G Stand-Alone Vs Non Stand-Alone

6. 5G Deployment Options

- 6.1 5G Deployment Options

7. 5G System Architecture

- 7.1 5G E2E Architecture Overview
- 7.2 5G Service Based Architecture
- 7.3 5G Reference Point Architecture

8. 5G Service Based Architecture

- 8.1 5G Service Based Architecture
- 8.2 5G Service Based Operation
- 8.3 5G Service Based Example Using HTTP

9. 5G Core Network Functions

- 9.1 AMF
- 9.2 SMF
- 9.3 UPF

- 9.4 NRF
- 9.5 UDM
- 9.6 NEF
- 9.7 NSSF
- 9.8 AUSF
- 9.9 PCF

10. 5G NR Frame Structure

- 10.1 Frame Structure
- 10.2 Slot and Mini-Slot
- 10.3 Slot structure
- 10.4 Mini-Slot
- 10.5 Slot Formats

11. 5G Multiple Access and Physical Resources

- 11.1 Multiple Access
- 11.2 Duplexing
- 11.3 OFDM
- 11.4 OFDM Signal Processing
- 11.5 DFT-s-OFDM
- 11.6 Cyclic Prefix
- 11.7 OFDMA
- 11.8 SDMA
- 11.9 5G NR Numerology
- 11.10 Time and Frequency Domains
- 11.11 Scalable Numerology
- 11.12 Physical Resources
- 11.13 Resource Grid
- 11.14 Resource Elements
- 11.15 Resource Blocks
- 11.16 Point A
- 11.17 Bandwidth Part





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12. 5G Multi-RAT Dual Connectivity

- 12.1 Multi-Connectivity Definition
- 12.2 Multi-Connectivity Benefits
- 12.3 Multi-Connectivity Methods
- 12.4 Dual Connectivity in LTE
- 12.5 Cell Group Types
- 12.6 Multi-RAT Dual Connectivity in 5G
- 12.7 E-UTRA-NR Dual Connectivity
- 12.8 NR-E-UTRA Dual Connectivity

Evaluation and feedback of the participants

Maximum number of participants: 15

Duration: 2 Hr. 35 Min.



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