

## Overview of 5G Systems

*Covers new features, advanced concepts and new deployment strategies of 5G*

### Overview

This seminar takes the participant through the preparation work towards 5G and how networks will likely evolve to 5G. It highlights the main additions and modifications as the current LTE/LTE-A network evolves. It is designed to give participants a technical overview of the draft architecture, new features and solutions to take to the 5G environment. The proposed standards and roadmap for both Non-Standalone and Standalone deployments will be discussed, as well as the ITU's role and the IMT-2020 process.

### You will be able to

- Describe the evolution of current mobile networks to 5G
- Understand the use of Network slicing to produce a flexible vEPC
- Explain the use of SDN and NFV for mobile edge computing
- Explain how SDN/NFV are used for transmission and core networks
- Describe the key features of candidate radio technologies
- Understand the application of IoT technology in mobile networks
- Describe the 5G System Architecture
- Describe 5G Core network models and configuration

### Who can benefit

Technical managers, consultants, engineers and communications professionals who need to understand and familiarize themselves with future trends of 5G network deployment.

### Pre requisite knowledge

Participants should have a basic understanding of cellular communications.

### Outline

#### Introduction

- The IMT 2020 process
- IMT-2020 5G system capability requirements
- 3GPP 5G framework
- Potential licencing requirements

#### Network Evolution

- 3GPP Family of Technologies
- Review of 3GPP Release 8-14
- LTE/LTE-A System Architecture
- Achieving higher capacity over wireless
- 3GPP R15 development

#### 3GPP 5G R15 System Architecture

- Point to Point and Service based
- Virtualization of functions
- Non Standalone (NSA) and Standalone (SA)
- Fronthaul, backhaul
- Changes/upgrades to existing network

#### 5G Radio Access

- Enabling Technologies
  - Advanced MIMO & adaptive antennas
  - Multi-RAT
  - New network technologies
  - Small Cell
  - mmWave
- New Radio (NR) Features
- Candidate technologies & enhancements
- Use of mmWave frequencies
- Extensions of SON

#### Network Softwarization

- Digital transformation
- The API model for mobile operators
- Network Function Virtualization (NFV)
- ETSI model for NFV, MANO and OSS impact
- Introduction to Software Defined Networking
- Network slicing
- Use of orchestration for service fulfillment
- Mobile edge computing

#### 5G Service Architecture

- The IMT-2020 Service Model
- Addressing new business segments
- Role of IoT & NB-IoT
- Demand for services
- Public safety & D2D communications
- Smart cities
- Low latency communications & automation

DURATION 2 days

MAXIMUM CLASS SIZE 16