5G Private Network Overview

TPR1053x | Expert-Led Live | 5G Core | Expert
Course Duration: 4 hours

The availability of licensed, unlicensed, and shared frequency spectrums as well as the capabilities of 5G and 4G networks enable the deployment of private networks for many verticals, including industrial automation, healthcare, etc. This training covers fully private networks and operator-supported hybrid private networks.

Intended Audience

This course is intended for solution architects, planning, engineering, operations, and systems performance teams.

Objectives

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

- List the drivers for deploying Non-Public Networks (NPN) a.k.a. Private Networks
- List and describe private network enablers like spectrum, 5GC, Network Slicing
- Sketch the network architecture for SNPN and PNI-NPN
- Step through the life of a device using private networks
- List deployment scenarios for private networks

Course Prerequisites

Welcome to 5G

Outline

1. Private Networks: What and Why
1.1 Define Non-Public Networks (NPN)
1.2 Key drivers for Private networks
1.3 Deployment use cases

2. Private Network Architecture
2.1 5G Non-Public Network (NPN) architecture
2.2 Standalone NPN (SNPN) network components
2.3 Public Network Integrated (PNI-NPN) network components
2.4 Deployment configurations e.g. RAN Sharing
Exercise: Build Private Network

3. Enablers of Private 5G Network
3.1 MEC deployment in Private Networks
3.2 Use of Network Slicing for Private Networks
3.3 Role of Time-Sensitive Networking (TSN) for Industry 4.0

4. Private Network Operations
4.1 Use of PLMN ID, NID, Slice ID for identification
4.2 Device registration and Data session setup in Standalone NPN
4.3 Device registration and Data session setup in PNI based NPN
Exercise: Life of a UE in Private Networks

5. Private Network Deployment Considerations
5.1 Licensed and Shared frequency spectrums
5.2 Identifying specific needs of enterprise apps
5.3 Stakeholders for Private Networks
5.4 Examples of Real-life Private Networks

Putting it all together