5G Roaming: Architecture, Protocols, and Signalling Flows

CONTENTS

This course delivers an in-depth exploration of 5G roaming, covering service-based architecture, key network functions, and signalling flows. Participants gain expertise in SEPP security, N32 interface protocols, IPX interconnect models, and the differences between home-routed and local breakout scenarios.

The curriculum also addresses 5G-to-4G interworking, quality of service mapping, and network data analytics for roaming. Designed for telecom professionals, the course emphasizes practical implementation and troubleshooting in multi-operator environments.

TARGET AUDIENCE

- Telecom System Architects
- Core Network Engineers
- IT Professionals involved in Mobile Networking
- Security Specialists

PREREQUISITES

Understanding of 4G and 5G architectures, IP networking, and telecom security.

Introduction to 5G Roaming

- Introduction to 5G Roaming
- Key Roaming Architectures in 5G

SEPP Role in Roaming

- PLMN Interconnection with SEPP
- SEPP Call Flows

N32 Interface

- N32 Protocol Stack
- N32 Procedures

IPX

- IPX Network Architecture Overview
- IPX Services
- QoS Requirement for IPX

Home Routed Roaming Implementation

- Home Routed Roaming Requirements
- Call Flow for HR Scenario

5GC Interworking and Co-Existence with E-UTRAN and EPC

- Interworking Scenarios

Security

- Security in PLMN Interconnection

Data Analytics

- Roaming Architecture for Data Analytics
- NWDAF Services
- Analytics Exposure