

5G Voice Solutions – VoNR and EPS Fallback

5G_205x | Expert-Led Live | 5G Core | ⚙️⚙️⚙️

Course Duration: 2 days

This course describes the end-to-end 5G network (5GC, NG-RAN and IMS) and related operations for implementation of Voice over New Radio (VoNR). It provides key features and functionalities for the VoNR service including descriptions of the signaling procedures for IMS registration, Call Setup and release. The course also provides the description and signaling required for EPS fallback to VoLTE and procedures for emergency calling in 5G. The architecture for these services is described together with call flows showing the relationships between network functions in 5G and 4G RAN and core systems and the IMS and PCC networks. The course provides hands on exercises for students using log files if available. This training is delivered in a blended form with elements of self-paced and instructor led to enhance the learning experience and effectiveness.

Intended Audience

Planning, design, engineering and operations personnel

Objectives

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

- Sketch the architecture for voice services in 5G
- Describe the VoNR and EPS fallback services
- Illustrate the signaling flow for VoNR calls in 5G
- Describe the codecs used for VoNR
- Sketch the signaling procedures for EPS fallback
- Identify call flows for emergency services in 5G

Course Prerequisites

[5G Networks and Services](#)

Outline

1. Voice services in 5G

- 1.1 4G, 5G, and IMS network architecture
- 1.2 Introduction to EPS Fallback
- 1.3 Introduction to VoNR

Exercise: Voice Services in 5G

2. 5G and IMS Registration

- 2.1 5G Architecture and Operations
- 2.2 PDU Session, IMS Registration Call Flows
- 2.3 Voice with IMS and VoNR
- 2.4 IMS Pre-Call Functions
- 2.5 IMS Registration

Exercise: 5G and IMS Registration

3. EPS Fallback Operations

- 3.1 LTE Interworking
- 3.2 EPS and RAT Fallback
- 3.3 Call Origination with EPS Fallback
- 3.4 Call Termination with EPS Fallback
- 3.5 Ending the Call
- 3.6 EPS Fallback Call Flows

Exercise: EPS Fallback

4. Voice over NR (VoNR) Operations

- 4.1 VoNR call model
- 4.2 Call Setup
- 4.3 Resource Establishment
- 4.4 Call Termination

Exercise: VoNR call setup

5. Emergency calls in 5G

- 5.1 E-Call in 5G with VoNR
- 5.2 Call Setup – Pre-conditions Assumed
- 5.3 E-Call Using EPS Fallback

Exercise: Emergency calls in 5G

Final Assessment