

# Voice in 5G in an Hour

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## CONTENTS

This course is a brief technical presentation of the handling of multimedia telephony service in 5G (with standalone deployment) and related interworking procedures with 4G, as specified in the R16 3GPP standards.

The course focuses on the voice/multimedia telephony service under IMS control for networks with 5G deployed. It presents the architecture for IMS-based call handling in 5G networks, the interworking between 4G and 5G on the core network and radio network level to support device mobility and service continuity in a multi-access environment and selected requirements as specified by GSM Association.

## PREREQUISITES

Technical knowledge of the voice service handling in 4G mobile telecom networks is crucial.

Understanding the technical solutions for the handling of the voice service in 5G requires a good grasp of voice handling in 4G (VoLTE, with IMS control) and the general 5G network architecture. Attending Apis “IMS for VoLTE in Half a Day” course, or having the equivalent knowledge, will allow the participants to benefit fully from the course.

**NOTE:** This course is not delivered with the FoldOut methodology.

## Network Architecture

- Overview of voice service handling in pre-5G networks: CS domain, IMS with 4G
- High-level network architecture for 4G and 5G interconnection
- Overview of 4G system architecture and 5G system architecture
- High-level architecture for 5GC – EPC interworking
- HSS and UDM interworking procedures
- 4G/5G deployment options with single-/multi-RAT Dual Connectivity
- UE connections to Packet Data Networks

## IMS Voice in 5G

- Introduction to IMS architecture and functionalities of IMS network elements
- Overview of IMS registration session invitation procedures
- 5G System support for IMS: support indications, PDU session attributes and 5QI values
- URSP and ANDSP
- Selected requirements from GSMA NG.114 IMS profile for 5GS
- Obtaining the P-CSCF address by the UE with 5GC registration and discovery of P-CSCF
- 5G impact on IMS interfaces

## Interworking

- Overview of idle mode mobility procedures between 2G, 3G, 4G and 5G
- UE operation mode and N26 interface
- Procedures for interworking with N26 interface
- RAT Fallback procedure for IMS voice
- EPS Fallback procedure for IMS Voice
- Overview of connected mode mobility procedures between 2G, 3G, 4G and 5G
- Overview of PS-to-CS SRVCC from 5G NR to 3G UTRA FDD