

# € TRAINING

Fundamentals of VoIP and IP Telecom  
Networks



27 April - 1 May 2025  
Online



# Fundamentals of VoIP and IP Telecom Networks

REF: B2277 DATE: 27 April - 1 May 2025 Venue: Online - Fee: 2250 Euro

## Introduction:

VoIP and IP Telecom Networks focus on the basics of voice communication over IP-based systems and their network infrastructure. This training program is designed to provide participants with essential knowledge and skills in Voice over IP VoIP and IP-based telecommunications networks. It empowers them to understand the foundational principles and practical applications of modern telecommunication technologies.

## Program Objectives:

At the end of this program, participants will be able to:

- Explore the foundational concepts, protocols, and security aspects of VoIP technology.
- Analyze IP telephony architecture and integrate systems with traditional telephony.
- Design efficient and scalable VoIP networks with redundancy and QoS considerations.
- Troubleshoot and optimize VoIP systems for performance and reliability.
- Explore emerging trends and innovations in IP telecom networks, including cloud and 5G integration.

## Targeted Audience:

- Network Engineers.
- Telecom Engineers.
- IT Professionals involved in voice and data communications.
- System Administrators.

## Program Outline:

### Unit 1:

#### Introduction to VoIP:

- Overview of VoIP technology.
- Understanding VoIP protocols SIP, RTP.
- VoIP deployment models cloud vs. on-premises.

- Quality of Service QoS considerations.
- VoIP security challenges and solutions.

## Unit 2:

### IP Telephony Fundamentals:

- Basics of IP telephony architecture.
- Call processing and signaling protocols H.323.
- IP PBX systems and their components.
- Integration with traditional telephony systems.
- Unified Communications UC features and benefits.

## Unit 3:

### VoIP Network Design:

- Planning and designing VoIP networks.
- Network requirements and bandwidth considerations.
- Redundancy and failover strategies.
- Implementing voice gateways and codecs.
- Case studies on VoIP network implementations.

## Unit 4:

### VoIP Troubleshooting and Optimization:

- Common VoIP issues and troubleshooting methodologies.
- Monitoring and performance optimization techniques.
- Call quality testing and troubleshooting tools.
- Capacity planning and scalability considerations.
- Continuous improvement strategies for VoIP networks.

## Unit 5:



## Future Trends in IP Telecom Networks:

- Emerging technologies in IP telecom networks.
- VoIP and cloud communications integration.
- Impact of 5G and IoT on IP telephony.
- Regulatory and compliance considerations.
- Future directions and innovations in IP telecom.