

# € TRAINING

Fundamentals of VoIP and IP Telecom  
Networks



6 - 10 April 2025  
Cairo (Egypt)



# Fundamentals of VoIP and IP Telecom Networks

REF: B2277 DATE: 6 - 10 April 2025 Venue: Cairo (Egypt) - Fee: 4095 Euro

## Introduction:

This training program provides 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:

- Gain a comprehensive understanding of VoIP and IP telecommunications networks.
- Learn about VoIP protocols, security considerations, and integration with existing systems.
- Explore emerging trends and technologies in IP telecommunications.

## 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.