

# TOP LOC 092023 Introduction to Voice over IP – End-User WS

Voice over IP has developed into a central component of communication in today's companies. However, there are many reasons that can affect VoIP connections. This course provides the necessary basic knowledge and handling of the relevant tools to find out why a Voice over IP connection cannot be established or is defective.

## Target Group

Technical staff from

- | Enterprise networks responsible for network integration, operation and maintenance
- | Infrastructure and terminal equipment suppliers
- | Software companies and measurement suppliers responsible for development, production, quality monitoring, service and documentation

## Methods

**Instructor Leader Led/ILL:** Physical classroom environment

**Remote Leader Led/RLL:** Virtual classroom environment

**Hybrid:** ILL or RLL. You can attend the course on-site or remotely.

Equipment and Setup Requirements for Remote Leader Led Training:

- | Equipment to participate in a video conference e.g. headset
- | Two PCs or one PC with dual screens.

Further information will be provided prior to the start of the course.

## Key Features

### Day 1

- | IT basics for VoIP
- | Communication models (ISO/OSI and DoD model)
- | Overview of network protocols
- | Basic TCP and UDP
- | Switching, VLAN, Spanning Tree
- | Routing, routing protocols (RIP, RIP II and OSPF)
- | Ipv4 addressing, address classes and subnetting
- | Network Address Translation (NAT)
- | Services in the network: DHCP, DND, FTP, HTTP
- | Security, Encryption, VPN, Certificates
- | Network management, SNMP
- | Stanstands according to IEEE and RFCs
- | IPv6 Basics

### Day 2

- | VoIP Basics
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- | Voice over Internet Protocol (VoIP)
- | Bandwidth, Packet Loss, Delay, Jitter, VoIP Readiness Check
- | Speech Quality, Mean Opinion Score (MOS)
- | Prioritization, Quality of Service (QoS)
- | Codecs, G.711 and G.729
- | Session Initiation Protocol (SIP)
- | Real-Time Transport Protocol (RTP)
- | Real-Time Control Protocol (RTCP)
- | VoIP Security, SIPS and SRTP

### Day 3

- | VoIP using the example of MX-ONE
- | Architecture and Components
- | Installation
- | Basic Configuration
- | Telephone configuration, boot process
- | Backup
- | Updates, OS and MX-ONE components
- | Redundancy
- | Connecting door intercoms

### Events

Dates on request

### Duration

3 Days

### Certificate

TOP Certification

### Contact Person



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