Course : Introduction to telecommunications

PSTN/ISDN, PBX/IPBX, ToIP, fixed/mobile convergence
Synthesis course - 2d - 14h00 - Ref. IAT
Price : 2020 CHF E.T.

This seminar introduces the principles of corporate telecommunications and the associated vocabulary. It describes telephony standards, architecture principles, available equipment, services and applications, and how to structure and organize a corporate telephony network.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the vocabulary and principles of corporate telecommunications
- Understanding telephony standards
- Identify new enterprise telecommunications architectures and equipment
- Discover telephony services and applications
- Discover the evolution towards telephony over IP (ToIP)
- Understanding the principles of IP mobility

Intended audience

IT specialists, engineers and network managers.

Prerequisites

No special knowledge required.

Course schedule

1   Fixed-line telephone networks

- From Voice to telephony.
- Signal processing (analog and digital).
- History of PSTN and ISDN telephone networks.
- Organization of operator networks.
- Digital operator access (MIC).
- Signals D (Q931), SS7.
- Advanced services and the smart grid.
- The evolution of telecoms.

PARTICIPANTS
IT specialists, engineers and network managers.

PREREQUISITES
No special knowledge required.

TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES
• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

2) Business telephony: from PABX to IP Centrex

- Architecture and components.
- Call handling.
- Routing/switching. Evolution of enterprise network architecture, voice/data convergence.
- Evolution towards telephony over IP (ToIP).
- PABX interconnection (ISDN).

3) Call Centers

- Architecture and components.
- Steps in handling a customer call.
- Distribution and queue management.
- CTI and CSTA standards.

4) Signage

- Role and objectives. Signaling types. Standards and convergence to IP.
- H323, SIP, RTP, MGCP multimedia protocols. Multimedia codecs (G7xx, AMR, H263, MPEG 4).
- Architecture and flow dynamics.

5) Telephony services and applications

- Basic services (dual call, multiline).
- Reception services (pre-hook, grouping, etc.).
- Voice mail and unified messaging.
- Speech synthesis and text-to-speech technology[.
- Automatic switchboard and interactive voice server.
- Management applications.

6) IP telephony

- Data and telephony network requirements.
- New services.
- Business scenarios.

7) Wireless and mobile telephony

- GSM, EDGE and UMTS mobile networks.
- Mobility over IP (WiFi / 802.11x, Wimax).
- Fixed-mobile convergence (UMA).

8) Advanced communications services

- Personal Information Management.
- Real-time voice/video services via the Web.
- New services (presence, instant messaging, videophone, etc.).
- IMS (IP Multimedia Subsystem) evolution prospects.
- New uses and change management.

Dates and locations

REMOTE CLASS

2026 : 16 June, 8 Dec.