ENG-100 - Telecom Technologies & Services for Today and Tomorrow

Next session: 24 - 28 July 2017, Amsterdam

Neotelis can also deliver an in-house session of this course specifically for your organization. Please contact us at training@neotelis.com for more information and a Proposal.

Description

The telecommunications industry is continuously changing with new technologies and services being launched every day. Success in this environment thus requires a clear understanding of current and emerging technologies and services.

This 5-day training course focuses on the key knowledge telecom professionals need to possess on current and emerging telecom technologies. The course empowers participants with essential knowledge on the telecom technologies that enable the delivery of today's and tomorrow's consumer and enterprise telecom service offerings.

Learning Outcomes

At the end of the course, participants will be able to:

- Explain the fundamental concepts of telecom networks and technologies, fixed and wireless
- Recognize the current and emerging technologies that are shaping the present and future of telecom networks
- Discuss voice and data convergence in telecom networks and explain key issues arising from that convergence
- Be aware of recent trends in technology, services and platforms

Topics

Day 1

Key drivers and trends in telecom technologies and networks

- The telecommunications market
- Market forces acting on telecommunications
- Sector regulation and the role of the regulator
- Telecommunications standards
- Telecommunications basics
    - Core versus access networks
    - Transmission
    - Media
- OSI Model (Open System Interconnect)

Core network structures

- Circuit vs. packet switched networks overview
- Signalling systems
- Intelligent network
- IP routing - overview
- QoS (Quality of Service)
- Packet switched network structure
- TCP/IP – addressing, IPv4, IPv6
- Internet
- Next Generation Network (NGN)
- Multi-Protocol Label Switching (MPLS)

Day 2

Access Networks

- Access network fundamentals
- Broadband
- Fixed wireline broadband access (xDSL, FTTx)
- Local access network structures
- Wireless access
- Mobile wireless access
- Fixed wireless access

Day 3

Next Generation Networks (NGN)

- Convergence - Telecom service evolution
- NG service fundamentals
- Service QoS (Quality of Service)
- VoIP (Voice over IP)
- SIP protocol (Session Initiation Protocol)
- Hosted IP, IPTV, Triple and Quad play
- Cloud services xaaS ("x as a Service")
- Service Level Agreements (SLA)
- IP service impairments
- NG mobility and security

Day 4

Cellular network technologies

- Radio theory principles
- Frequency allocation
- Modulation techniques
- Radio fundamentals
- 2G GSM
- 2.5 GSM GPRS, EDGE
- 3G UMTS, HSPA and HSPA+
- 4G LTE
- 5G
- Wireless Personal Area Networks (WPAN): Bluetooth, RFID, NFC
- Roaming

Day 5

Support systems

- Business Support System (BSS)

- Operational Support System (OSS)

Recent services and platforms

- Over the Top (OTT) services
- Bring Your Own Device (BYOD)
- Collaboration
- Unified Communications (UC)
- Geolocation
- Triple play / quadruple play
- SIP trunking
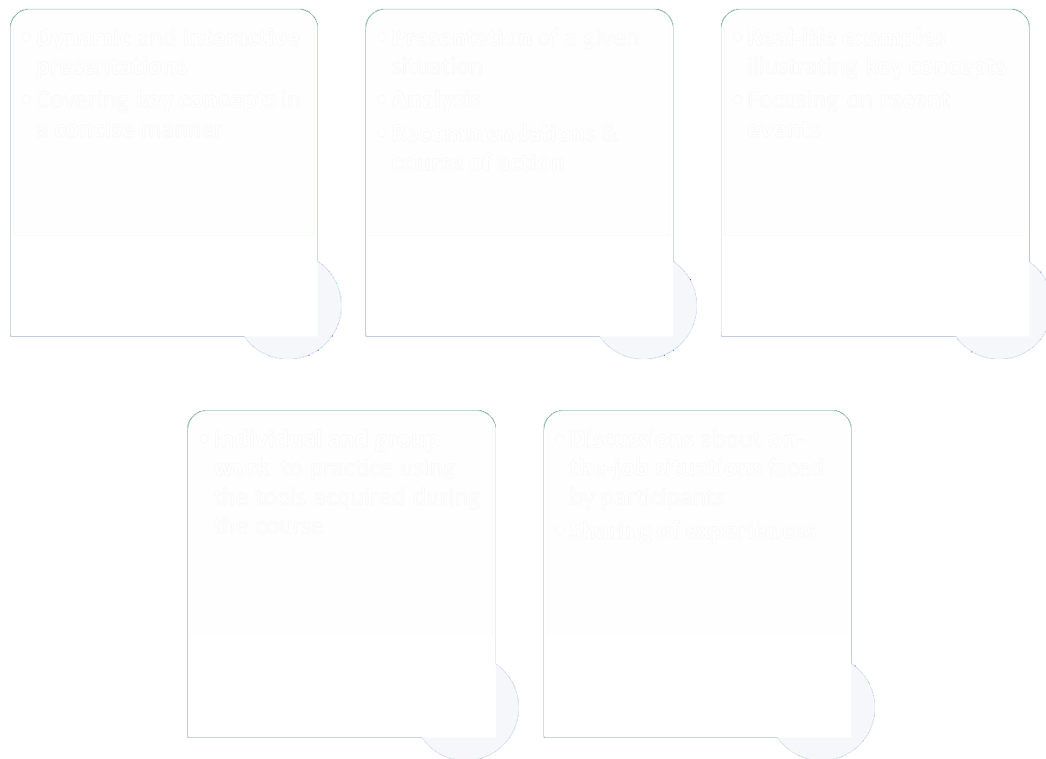
A glimpse at the future

- State-of-the-art security
- Software-Defined Networking (SDN)
- Network Functions Virtualisation (NFV)
- Machine-to-Machine (M2M)/ Internet of Things (IoT)

Target Audience

- New telecommunications personnel in engineering or operations interested in a general overview of telecommunications technologies and services
- Telecommunications managers looking to complement their skill-set by gaining a better understanding of telecommunications technologies and services

Methodology

A combination of engaging activities and dynamic presentations to stimulate and maximize participants' learning.

- Dynamic and interactive presentations
- Covering key concepts in a concise manner

- Presentation of a given situation
- Analysis
- Recommending a course of action

- Real-life examples illustrating key concepts
- Focusing on recent events

- Individual and group work to practice using the tools acquired during the course

- Discussions about on-the-job situations faced by participants
- Sharing of experiences

Location

A selection of Neotelis' training courses is held in various cities around the world. Please contact us at training@neotelis.com for the complete Yearly Training Calendar.

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About Neotelis

Neotelis provides training, consulting, conferences and publications to the telecommunications industry worldwide. Its team of senior experts has trained thousands of executives and managers working for operators, regulators, policy-makers and governments in over 120 countries around the world.

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