Training Program:

Advanced Telecom Training Course

www.btsconsultant.com

INTRODUCTION:

Advanced Telecom Training Course, Telecommunications Training Level II provides a thorough technical overview of modern telecom, data, wireless, mobile and convergent networks by utilizing Tonex Roadmaps ™ . Participants will acquire an understanding of how current advancements will fit into today's networks to build the next generation of telecommunication services.

WHO SHOULD ATTEND?

This course is designed to provide a technical overview for technical sales and marketing managers, data communications professionals, software engineers, network engineers, technicians, network design and information systems engineers.

COURSE OBJECTIVES:

- Upon completion of this course attendees will:
- Understand the details of telecom networks and technologies
- Understand advanced data communications concepts
- Understand IP Networking
- Exploit the capabilities of next-generation networks
- Understand fixed and mobile wireless
- Exploit the capabilities of wireless networks
- Design and manage telecom converged network

- Leverage communication technologies and protocols for voice, data and video convergence
- Apply best practices to plan, design, implement and manage converged network

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- Design and manage telecom converged network
- Leverage communication technologies and protocols for voice, data and video convergence
- Apply best practices to plan, design, implement and manage converged network
- Current and future telecom market
- Major new trends in technology and regulation
- Access and transport technologies
- PSTN operations and topology
- Fiber optic transmission systems
- SONET/SDH and DWDM/WDM
- Cable
- SS7

- HFC, FTTN, FTTC and FTTB
- Convergence
- Integrated voice and data networks

Integrated voice and data networks

- Voice and data traffic measurements and engineering
- Network convergence
- Requirements of converged solutions
- VoIP, IPTV, unified messaging, video-on-demand and presence
- Transporting voice and video
- Converged network building blocks
- Working with IPv4 and IPv6
- Delivering End-to-End Quality of Service
- Defining Quality of Service (QoS)
- Moving from TDM to IP
- Core network services
- Voice over IP (VoIP)
- Unified Communications (UC)
- Next generation of voice and data services
- SIP, MGCP/MEGACO, SIGTRAN
- IMS
- IPTV
- MPLS TE and MPLS VPN
- IPv6
- cloud computing

Fixed and Mobile Networks

- GSM/GPRS/EDGE

- CDMA/CDMA2000/1xEV-DO
- WCDMA/UMTS/HSPA/HSPA+
- 802.11 a/b/g/n/ac/ad
- WiMAX
- LTE/EPC/EPS
- SATCOM and VSAT

Evolving Broadband Technologies

- Digital subscriber line (DSL) services
- Ethernet
- Power-line communication
- Broadband Over Powerline (BPL)
- Cable broadband
- Fiber optic based Broadband
- FTTH - Fiber-to-the-home
- FTTN - Fiber-to-the-node
- FTTC - Fiber-to-the-cabinet or fiber-to-the-curb
- FTTB - Fiber-to-the-building or Fiber-to-the-basement
- Active optical networks (AONs)
- Passive optical networks (PONs)
- Optical Network Terminal (ONT)
- Optical Network Unit (ONU)
- Optical line terminal (OLT)
- TDM-PON
- DOCSIS Provisioning of EPON or DPoE
- RFoG
- WDM-PON
- Long-Reach Optical Access Networks

Overview of Evolving Wireline Access Broadband Technologies

- Digital Subscriber Line
- xDSL Capabilities
- Cable Networks – Components and Architecture
- The DOCSIS
- Fiber Distribution
- Metro Ethernet
- Hybrid Fiber and Cable (HFC)
- Fiber to the Curb (FTTC)
- Fiber to the Home (FTTH)
- Passive Optical Networks (PON)
- PON Variants
- PON Components and Architectures

Overview of Broadband Optical networking

- FTTx
- Passive Optical Networks (PON)
- PON network architecture
- APON
- BPON
- GPON
- EPON
- GEPON
- CPON
- ITU-T G.983.x
- ITU-T G.984.x
- IEEE 802.3-2005 clauses 64 and 65
- Self-Defending networks

- Ethernet's ongoing evolution
- GigE
- Metro Ethernet and VPLS
- GMPLS
- Advanced optical and photonic

Ethernet-Based Backhaul

- Backhaul Network Options and Operations
- Network architecture
- Ethernet in the First Mile (EFM)
- EFM over fiber
- EFM over copper
- EFM over passive optical network
- Ethernet First Mile
- Over Dense Wave Division Multiplex (DWDM) optical networks
- 10GbE
- Over SONET / SDH
- Backhaul access network options
- Backhaul aggregation network options
- IP/MPLS pseudowires
- VLANS/VPLS
- Topology
- Ring, hub-and-spoke (star), or full or partial mesh
- Ethernet Transport in the form of 10G or 100G speeds
- Ethernet on the MAN
- Ethernet, Ethernet over SONET/SDH
- Ethernet over MPLS

Evolving of Wireless Access Broadband Technologies

- Short-Range Wireless Technologies
- Personal Area Networks (PAN)
- Bluetooth, RFID, NFC and Zigbee Capabilities
- Wireless LANs and 802.11n/ac/ad
- In-Home Networks
- Femtocells
- Satellite Systems/VSAT
- Wireless Backhaul Evolution Scenario
- Concepts behind Radio Communications
- Cellular Networks
- 2G./3G/4G Basics
- WiMAX and Mobile WiMAX
- 3G/UMTS/EV-DO
- LTE (Long Term Evolution)
- LTE/EPC, Flat IP Core

OSS (Operations Support Systems)

- Concepts behind OSS/BSS
- Billing
- Fraud
- CRM
- Revenue Assurance