Hands-On

IPTV Intermedate

from a Technicians Prospective

Course Description

This 3-day Intermediate course provides in-depth details for modern television broadcast systems and infrastructures, with particular focus given to the delivery of TV over the Internet. This will encompass both IPTV and Video on Demand (VoD).

The course is designed to give students practical and real-world experience to this technology, equipment and network architectures that are being utilized to deploy these services. The course also provides an incredible comparison to other broadcast technologies and markets today.

Students Will Learn

- Understand the Equipment and Software used to Deliver IPTV and VoD Services
- Describe the Architecture of these Modern TV Services
- Compare Cable, Over-Air Terrestrial, Satellite and Internet Delivery Systems
- Appreciate the Trend in the Technologies
- And much more...

Target Audience

Contractors, union craftsman, electricians, technicians, installers, engineers, MIS managers, facilities managers, architects and developers, systems engineers, telecom managers and anyone involved in the design, implementation, support, installing, maintaining, evaluating, troubleshooting and or repairing IPTV Systems.

Prerequisites

A basic understanding of Telecommunications, IPTV Networks and Internetworking Applications or equivalent knowledge of. This information can be obtained in our courses below

TeleCom Networks Today I
Basic Telephony & Telecom Electronics
Understanding IPTV The Triple Play for Telcos Today

Course Outline

Module 1: Television Architecture and Evolution

- Introduction to Cable Broadcasting
- The Signals
- Analog Television
- Digitally-Compressed Television
- Digital Modulation: MPEG Hierarchy, MPEG1, MPEG2
- Digital Video Broadcasting
- Cable Networking Protocols
- Over-the-air broadcasting

Module 2: Next Generation IP Network Technology

- Internet Protocol (IP) Delivery
- Internet delivery options QoS
- IP Delivery mechanisms
- Unicast vs Multicast
- Multicasting Addressing and Protocol Issues
- PIM and IGMP
- Quality of Service Issues
- MPLS
- Triple/Quadruple Play Networks
- 21st Century Network Implications - Mobility
- Internet TV Portal

Module 3: IPTV Network Architecture

- Applications and their service needs
- TV Program Distribution
- Components of IPTV Service Network
- Video Head End (HVE), Video Hub Office (VHO) , Video Serving Office (VSO)
- Studio to distributor delivery
- Streamers
- Routers and Switches
- Distribution Networks
- Core Networks
- Access Networks: Wired vs Wireless
- DSL Technology: ADSL, VDSL
- Fiber Loops
- Satellite Access
- WiMAX
- Set-top Boxes
- Media Player Applications
- Video-on-demand
- Integration with Telephones and Internet Access: Triple Play
- End-to-End Performance
- Upstream Issues

Module 4: IPTV Delivery Systems

- IPTV Delivery
- - From head-end to viewer
- - Set-top Box Issues
- - Next Generation Media Players
- IPTV Service Features
- Signaling - SIP
- Encoders: MPEG-2, MPEG-4, DVB-T, DVB-H

Module 5: The Customer Interface: Set-top Boxes

- Analog Video Reception
- Digital Video Reception
- Consumer Electronics Interface
- Equipment Compatibility
- Networking Interfaces

Module 6: Transmission for Next Generation Digital Systems

- Point to Point Microwave Signal Transportation
- Microwave Digital Distribution Systems
- Fiber Optic Transmission
- Passive Optical Fiber (PON)
- Wavelength Division Multiplexing: CWDM and DWDM
- Digital Fiber Architectures: SONET/SDH
- WiMAX IEEE 802.16e

Module 7: Security: Protected and Conditional Access

- Protected Broadcast Driver Architecture
- Asymmetric Public Keys
- Symmetric Keys
- Revocation
- Windows Media Digital Rights Management
- Watermarking

Module 8: Industry Trends

- Transmission innovations
- HDTV and Improved Quality
- Mobility

Delivery Method

Instructor led with numerous Case Studies and Hands-On exercises.

Equipment Requirements

(This apply's to our hands-on courses only)

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

3 Days