Course Name: Introduction to IPTV

Course Overview:
Internet Protocol based Television or IPTV is beginning to be utilized by many companies to supply high quality video over IP. This technology can be utilized by business for efficient video feeds or for residential TV service. With advanced coding techniques, it is not too difficult to even have High Definition TV running over a 2-wire copper telephone line. This course is designed to provide and introduction to the technology, market, equipment and potential applications and capabilities.
Course Length: 1 day

Who should attend?
- Network Professionals
- Help Desk Support Staff
- Installers
- Field Service Technicians
- Field Engineers
- Managers/ Field Supervisors
- Design Engineers
- Electricians
- Managers or Supervisors

You will learn:
- Market drivers and applications
- Television and video fundamentals
- IP concepts including TCP/IP,VoIP and IPTV
- Network architecture for both business as well as residential applications
- Technologies utilized to provide IPTV including twisted copper pairs, coaxial, fiber optic and wireless.
- Speeds required for SDTV and HDTV service
- Video encoding techniques
- Common problems and maintenance procedures

Prerequisites: None

Customizable Course: Yes

Course Content:

Introduction to IPTV
- The concept of IPTV
- Market drivers for delivering IPTV
- The effect of an all IP Network
- The potential impact of IPTV

Television and Video Fundamentals

- Analog Television
- Digital Television
- MPEG Compression
- Video transport technologies
    - Broadcast TV
    - Satellite TV
    - Cable
    - FTTP

IP Networking Basics

- Overview of TCP/IP
- Delivering IPTV
- Video Packet transport (methods of delivery)
    - Packet over SONET/SDH
    - Coax Cable
    - DSL
    - Optical Networks
    - IP over ATM

IPTV Architecture

- Head End
    - Content Reception
    - Signal Processing
    - Encoding
    - Network Interface
- Video Hub Office
    - Ad insertion
    - PEG content
    - VOD
    - PPV
    - Emergency Alert Status
    - Local Content
    - Upstream Network Interface
- Video Serving Office
    - Broadcast Amplification and distribution to access network
    - Upstream Signaling termination and routing
- IPTV Middleware
    - Channel line-ups
    - Multicast IP address assignments for TV/music stations
- Access Network
    - Transport technology (DSL, cable, FTTP, etc.)
- Home Network
    - Set Top Boxes (STB)
    - Video On Demand (VOD)

- o DVR (Digital Video Recorder)

Network Impairments

- Packet Loss
- Packet Reordering
- Delay
- Jitter
- Quality of Service

IPTV in the Future