



FTTH Network Overview

Course Outline

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Course Description:

This program is specially designed for IT/Telecom professionals to understand the need of FTTX applications. Next generation networks are likely to need to deliver High Speed Internet. High Definition IPTV may require very high access bandwidth, so new installations will probably require fiber loops. There are many new options for loop and access aggregation network design. This course will look at the new fiber technologies now available, consider the advantages of each and provide an understanding of how a Next Generation Access network can take advantage of Ethernet over fiber options.

Target Audience:

The target audience for this course includes:

- Field Engineers, BSS/Transmission Engineers,
- Configuration, Maintenance, Planning, Testing, Development Engineers,
- Leadership team and Senior Management,
- Customer Care, Sales, Non Network Team

Delivery Method:

The delivery will be instructor-led classroom training with extensive practical case studies, interactive discussions and Q&A / quiz sessions

Course Material:

The course material will be in the form of Presentation Slides (Hardcopy or Protected Softcopy)

Pre-requisites:

The participants are expected to have prior knowledge of:

- Telecom Fundamentals
- Basic Understanding of Next Generation Networks

Duration:

2 Days

Revision:

1.0

Course Outline

Day 1:

Basics of Optical Communications

- Definitions of Units and Terms
- Optical Spectral Band
- Digital Multiplexing Hierarchy
- Refractive Index
- Elements of an Optical Link
- Optical Fibers
- Passive Optical Networks
- Basic PON Architectures
- What Is FTTx?
- Optical Fiber Attenuation
- Dispersion types and information capacity
- Optical Fiber Standards

Wavelength-Division Multiplexing

- Operational Principles of WDM
- WDM Operating Regions
- Dense WDM
- Coarse WDM
- PON Spectral Regions

Passive Optical Networks

- Fundamental PON Architecture
- Active PON Modules
- 6.4 Passive Components
- Types of PON

Day 2

Introduction to BPON

- BPON Architecture
- BPON Operational Characteristics
- Traffic Control

Introduction to EPON

- EFM Options

- EPON Architecture
- Point-to-Point Ethernet
- Main EPON and P2P EFM Standards

Introduction to GPON

- GPON Architecture
- GPON Transmission Convergence Layer

FTTP Concepts and Applications

- Implementation Scenarios
- Network Architectures
- Service Applications