

Fiber-To-The-X (Broadband Access for the Next Generation)



COURSE FEATURES

FIBER BASICS

Identify fiber optic elements, modes and light sources. Compare fiber core sizes vs. cable specs. Review the multitude of cable types, components, connectors and specifications. Analyze the two types of fiber optic splicing methods and where they are used.

CONCEPTS

Layer 1 vs. Layer 2. Learn what's driving the fiber-to-the-X demand for the next several years. Compare the benefits of fiber vs. copper in Layer 1 for increased bandwidth. Find out what's happening in Layer 2 to be able to support new user behaviors, triple play offerings and growing expectations for bandwidth, quality and flexibility.

COMPONENTS

Review key outside plant components such as the MSAN, OLT, ONU, Splice Closures and Conduit used. Review premises components such as main cross-connect, intermediate cross-connect, splice panel, patch panel and wall outlets.

ARCHITECTURE

Review the technologies and architectures used for Fiber-To-The-Node, Curb, Building Home. Compare two key architectures and examine the differences for Point-To-Multipoint (PON) and Point-To-Point (AON)

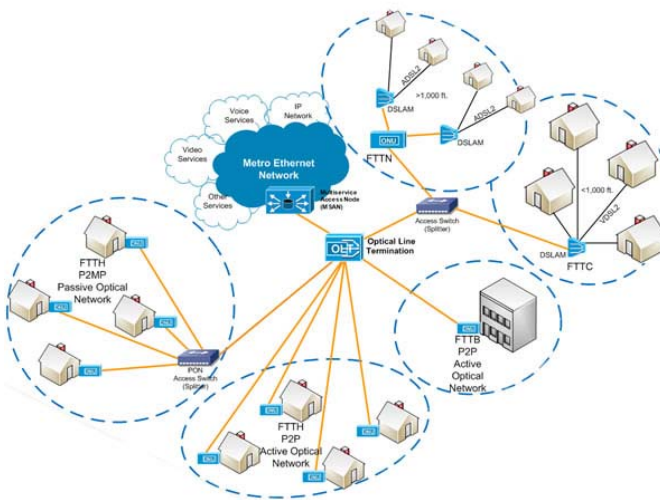
AON VS. PON

Examine a brief history of AON vs. PON. Review basic facts about Passive Optical Networks (PONs), Active Optical Networks (AONs), PON Network Topologies, AON Network Topologies. Compare AON vs. PON Bandwidth, Security and Quality of Service, Investment costs (CapEx), Operating expenses, (OpEx), Scope of operation and usage. Analyze an overall AON vs. PON comparison.

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Fiber-To-The-X Technical Sales/Consultant Training Course



COURSE BENEFITS

Your company or your clients are implementing Fiber-to-the-Node, Curb, Building or Home infrastructures for their continued growth in the broadband access world for the next generation.

You need a solid understanding of the pros and cons dealing with network technology, components, and architecture choices to consider.

The Fiber-To-The-X Technical Sales and Consultant Training Course teaches you fiber basics to help you understand fiber optic elements, modes, light sources, cable types, connectors and specifications. It gives you general concepts within Layer 1 and Layer 2 and explains how this supports growing expectations for bandwidth. It covers fiber optic components used for outside plant and inside premises installations. Finally, it goes into detail on specific AON vs. PON pros and cons to give you a solid knowledge base to make informed customer recommendations.

WHICH FIBER TECHNOLOGY & ARCHITECTURE TO USE?

Service providers have one ultimate goal: build a broadband network that enables the delivery of a wide array of new revenue-enhancing voice, video and data services.

These multi-play offerings allow a service provider to attract and retain customers during a tenuous period when their fixed line revenue is declining and they are reaching the saturation point in their mobile business.

For a service provider, success depends on the access network architecture it chooses to deploy.

When determining the proper choice of fiber access technology, a service provider must consider several factors:

How quickly do you want to begin offering services and reach profitability?

Do you have the capital and time for a long-term build-out?

Do you want to make radical changes to future-proof your network or would less costly, incremental changes serve your customers needs?

Do you want to deploy advanced voice, video and data services over a widespread area or do controlled rollouts in specific markets?

A passive optical network (PON) is a point-to-multipoint, fiber to the premises network architecture in which unpowered optical splitters are used to enable a single optical fiber to serve multiple premises, typically 32. A PON consists of an Optical Line Termination (OLT) at the service provider's central office and a number of Optical Network Units (ONUs) near end users. A PON configuration reduces the amount of fiber and central office equipment required compared with point-to-point architectures. Downstream signals are broadcast to each premises location sharing a fiber. Upstream signals are combined using a multiple access protocol, invariably time division multiple access (TDMA).

An active optical network (AON), a point-to-point architecture, relies on electrically powered equipment to distribute the signal, such as a switch, router, or multiplexer. Each signal leaving the central office is directed only to the customer for whom it is intended. Incoming signals from the customers avoid colliding at the intersection because the powered equipment there provides buffering. The most common type of active optical networks are called active Ethernet, a type of Ethernet in the first mile (EFM). Active Ethernet uses optical Ethernet switches to distribute the signal, thus incorporating the customers' premises and the central office into one giant switched Ethernet network.