

Glossary of Commonly Used Technical Terms



Agile
Optical
Switch

Diode-pumped
solid-state laser



EDFA

Access Network

A network that spans short distances, usually hundreds of feet to 10 miles.

Agile Optical Network

A dynamically reconfigurable DWDM network designed to accelerate triple-play service deployment and enable advanced wavelength applications at significantly reduced cost.

ATM

Asynchronous Transfer Mode

Network technology for local and wide area networks that supports real-time voice, data and video.

Bandwidth

The amount of data that can be transmitted in a fixed amount of time, commonly measured in bits per second (bps).

CATV

Cable television.

CWDM

Coarse Wavelength Division Multiplexing

A wavelength division multiplexing technology that spaces wavelengths widely apart.

Dark fiber

Unused fiber optic cable that is yet to be connected to a network.

Diode-pumped solid-state laser

Small laser pumped by a diode containing an optical crystal. Can be used in biotechnology instrumentation, graphics and imaging, semiconductor manufacturing, and other applications.

Dispersion

The broadening of light waveforms over long distances along a fiber optic line, making them difficult to interpret.

DWDM

Dense Wavelength Division Multiplexing

Closely spaced wavelength division multiplexing.

EDFA

Erbium Doped Fiber Amplifiers

An optical device used to amplify a modulated laser beam, using a short length of optical fiber “doped” with the element erbium.

EPON

Ethernet Passive Optical Networks.

Fiber characterization

The process of measuring and improving overall fiber network quality.

FDM

Frequency-division multiplexing

When multiple users share access to a transport channel/facility by using different frequencies.

FTTX

Fiber-to-the-X

The ‘X’ usually stands for a place. For example, FTTC stands for Fiber-to-the-Curb, which means the installation of optical fiber within a few hundred feet of a home or office.

Full-duplex transmission

Two-way simultaneous transmission.

GbE

Gigabit Ethernet

Type of Ethernet that supports data transmission rates of 1 Gigabit per second.

GEPON

Gigabit Ethernet Passive Optical Network.

GPON

Gigabit capable Passive Optical Network.

HFC

Hybrid Fiber Coax

Networks that consist of a mix of fiber and coax components.

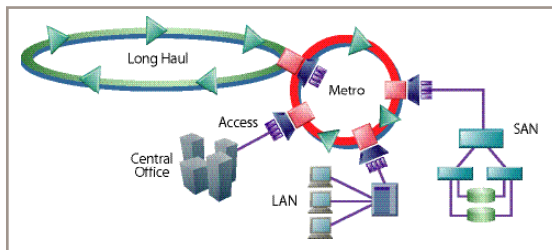
IPTV

Internet Protocol Television

When digital (as opposed to traditional analog) television service is delivered using Internet Protocol over a broadband connection.

Jitter/Wander

When the pattern of light wave deviates from its ideal timing position.



Long-haul and Metro Network

ROADM



TOSAs

LAN
Local Area Network

A computer network that spans a relatively small area, such as a home, office, or small cluster of buildings. Also known as an Access network.

LASER

Light Amplification by Stimulated Emission of Radiation.

Laser diode

Very small laser that emits a precise and intense beam of light. Can be used in optical networks to transmit light over optical fiber.

LEC

Local exchange carrier.

Long-haul Network

A telecommunications network that connects to a metro network in order to join bigger regions. It usually spans greater than 100 miles.

MAN
Metropolitan Area Network

A computer network that usually covers a city or suburb.

Metro Network

A telecommunications network within a city or suburb that usually spans about 10 to 200 miles.

MPEG
Moving Pictures Experts Group

An international standard for compressing digital video. Pronounced "Em-Peg," it is the universal standard for digital terrestrial, cable and satellite TV, DVDs and digital video recorders.

Multiplexing

Allowing more than one user to share access to a transport channel/facility, by taking turns or using different frequencies.

OEM

Original equipment manufacturer.

Optical fiber

Very thin strands of pure silica glass used to transmit light pulses through an optical network.

OTDR
Optical Time Domain Reflectometer

Tool used to analyze light loss in optical fiber during optical network troubleshooting.

PON
Passive Optical Network

A fiber-optic system with no active components between its distribution point and remote receiver modules.

Photonics

The technology of transmission, control, and detection of light and other forms of radiant energy. Also commonly known as fiber optics and optoelectronics.

Polarization

The process of transforming unpolarized light (light traveling over more than one plane) into polarized light (light traveling over one plane).

PSTN

Public switched telephone network.

ROADM
Reconfigurable Optical Add/Drop Multiplexers

As opposed to a fixed Optical Add/Drop Multiplexer (OADM), a ROADM allows network operators to remotely change which wavelengths are taken in and out of a particular switching node, reducing the time, labor and equipment needed to change network environments.

ROSA
Receiver Optical Sub-Assembly

A component used to receive optical signals in a fiber optic network. A ROSA contains a photodiode that converts light from the fiber into an electrical signal and includes electrical connections that allow the user to access the electrical signal.

SAN
Storage Area Network

A network used to attach computer storage devices.

SDH
Synchronous Digital Hierarchy

A standard for synchronous data transmission over fiber optic cables.

SONET
Synchronous Optical Network

A standard way for connecting fiber optic transmission systems.

Submarine Network

Undersea telecommunications network used to connect geographic areas, such as Europe and Africa or Europe and North America.

Transceiver



Tunable laser



A Triple-Play services tester



TDM
Time-division multiplexing

When multiple users share access to a transport channel/facility by taking turns.

TOSA
Transmission Optical Sub-Assembly

A component used to transmit light on a fiber optic network. A TOSA contains a laser or a light emitting diode (LED) that converts electrical signals into light. A TOSA provides the electrical and optical connections that allow the user to apply an electrical signal to control the laser, and to direct the light from the laser onto the optical fiber.

Transceiver

Combination of transmitters with receivers in order to generate, encode, receive, and detect signals in a single package. Transceivers are installed at both ends of a system.

Transmitter

Combination of multiple components (source lasers, modulators, wavelength lockers, electronic drivers) into a single package to generate and encode the optical signal.

Transponder

Transceivers that include electrical multiplexing and demultiplexing functions.

Triple-play services

Combining voice, video and data services over one line. Traditionally, each service has been provided by different companies, but both telecom companies (AT&T, Verizon) and cable companies (Comcast, Cox) are working on deploying all three to customers.

Tunable laser

Lasers that can continuously change their emission wavelength.

VOD

Video on demand.

VoIP
Voice over Internet Protocol

Enables people to use the Internet as a transmission mode for phone calls by sending voice in data packets using Internet Protocol instead of traditional circuit transmissions of the PSTN.

WAN
Wide Area Network

A computer network that spans a relatively large distance, such as a state or country. It usually consists of a group of Local Area Networks.

Wavelength blocker

Enables remote, dynamic channel reconfiguration and reduces the number of opto-electronic regenerators required in the network. Any or all of the wavelengths enter the device, and any selection of these wavelengths is simultaneously attenuated to any level, or the wavelengths are blocked altogether.

WDM
Wavelength Division Multiplexing

Transmitting many different wavelengths of laser light down the same optical fiber at the same time, to increase the amount of information that can be transferred.

Wi-Fi
Wireless Fidelity

Term for any type of wireless LAN technology compatible with 802.11 specifications.

WiMAX

Also known as 802.16, it is a specification for fixed broadband wireless networks.

Wireless LAN

Wireless Local Area Network that uses high-frequency radio waves rather than wires to communicate between computers.

WSS
Wavelength Selective Switch

A circuit pack that provides core wavelength switching and optical power control for ROADMs and wavelength switch nodes.

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