Glossary of Broadband Terminology

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802.11	A family of specifications covering wireless connectivity between devices normally located within 100' to 300' of each other. Often referred to as Wireless Local Area Network (WLAN). Most common implementation is 802.11b (see Wi-Fi), but 802.11a and 802.11g are also in active use.
802.15	A family of specifications covering wireless connectivity between devices normally located within 10' to 30' of each other. Often referred to as Wireless Personal Area Network (WPAN). Implemented as "Bluetooth."
802.16	A family of specifications covering wireless connectivity between devices normally located within 1 to 30 miles of each other. Often referred to as Wireless Metropolitan Area Network (WMAN).
Access Point (AP)	A hardware device that acts as a connectivity hub to permit users of a wireless device to connect to a wired local area network. Provides a bridge between Ethernet wired LANs (local area networks) and the wireless network. Access points are the connectivity point between Ethernet wired networks and devices equipped with a wireless LAN adapter card.
Antenna	The equipment that allows the transmission or reception of radio frequency energy.
Asynchronous Digital Subscriber Line (ADSL)	A technology that allows high-speed data to be sent over a single pair of existing copper telephone lines, with data rates for receiving data differing from data rates for sending data. ADSL supports data rates of 1.5 to 9 Mbps when receiving data (known as the *downstream* rate) and from 16 to 640 kbps when sending data (known as the *upstream* rate). (See DSL.)
Asynchronous Transfer Mode (ATM)	A high-speed telecommunication technology with a unique multiplexing and switching method utilizing fixed-length cells of 53 octets to support multiple types of traffic.
Broadband	Used to describe connectivity services that deliver multiple channels of data (services) through one connection. The bandwidth that qualifies as broadband is evolving. An alternate and better definition is to view broadband as a connectivity service that provides performance such that the connection does not in any way constrain the application being used.
Bandwidth	a) A measurement of capacity in terms of its spectrum usage;

	the frequency range available or necessary to transport data measured in Hz (Hertz or cycles per second), KHz, MHz, or GHz. For example, a standard voice telephone conversation requires a bandwidth of just more than 3 KHz. A standard television channel requires a bandwidth of just more than 6 MHz. b) A measurement of capacity in terms of its data rate; the number of binary bits per unit time available or necessary to transport data measured in bps (bits per second), kbps, Mbps, or Gbps. A T1 data line provides a data rate of 1.5 44 Mbps. A standard Ethernet data connection provides a data rate of 10 Mbps. A digital transmission system defined as in (b) above has a transmitted waveform that can also be characterized according to its spectrum usage as in (a) above. The spectrum usage of a digital signal depends on the modulation scheme employed; thus two systems with the same data rate can have significantly different spectrum usage requirements if different modulation schemes are used.
Cable Modem	Device providing data connectivity over a cable television network, allows high-speed Internet access through cable television network at rates up to 1.544 Mbps.
Cable Modem Termination System (CMTS)	A system of devices located in the cable headend that allows cable television operators to offer high-speed Internet access to home computers. The CMTS sends and receives digital cable modem signals on a cable network, receiving signals sent upstream from a user's cable modem, converting the signals into Internet Protocol (IP) packets and routing the signals to an Internet service provider for connection to the Internet.
Carrier/provider	An organization or company that provides connectivity services. Often used as a general description of someone who transports or "carries" signals over some kind of electronic, fiber, copper, or radio-based equipment.
Channel	A path for electronic connectivity between two facilities or devices.
Competitive Local Exchange Carrier (CLEC)	Carriers/providers established after the AT&T divestiture offering competitive local telecommunications services. CLECs give consumers an alternative to the incumbent telecommunication provider (ILEC).
Connectivity	The ability to connect with something, especially to connect with another device or facility, forming a logically continuous path between two or more devices/facilities.
Communication	Process of two or more devices/facilities exchanging data once connectivity is established.
Customer Premises	Connectivity equipment that resides on the customer's

Equipment (CPE)	premises, which may or may not be owned by the connectivity provider. Can include such equipment as wireless antenna, transceiver, and broadband modem.
Data	Numbers, characters, images, or other method of recording in a form that can be assessed by a human, (especially) input into a computer, or transmitted on some connectivity link. Data on their own have no meaning and must be processed to take on meaning and become information (see also).
Digital Divide	Gap between accessibility and use of broadband connectivity services. The definition of digital divide includes four parts: 1. Not having access to reliable and affordable broadband services 2. Not having access to enabling hardware, such as a personal computer 3. Not being aware (educated) of the benefits of broadband services 4. Not having the expertise (training) of how to leverage and use broadband services
Digital Subscriber Line (DSL)	A generic name for a family of data connectivity services: Asymmetric Digital Subscriber Line (ADSL), High Bit Rate Digital Subscriber Line (HDSL), and Symmetric Digital Subscriber Line (SDSL). DSL lines typically operate on Unshielded Twisted Pair (UTP) copper telephone facilities. DSL works by sending digital pulses in the high-frequency area of telephone wires. Since these high frequencies are not used by normal voice communications, DSL can operate simultaneously with voice connections over the same wires.
Digital Subscriber Line Access Multiplexer (DSLAM)	A device used in a variety of DSL technologies. A DSLAM serves as the point of interface between the equipment located at some number of subscriber premises and the carrier network. The DSLAM generally is positioned in the carrier's central office/wire center.
Direct-Sequence Spread Spectrum (DSSS)	A transmission technology used in wireless local area network transmissions where a data signal at the sending station is combined with a higher data rate bit sequence, or chipping code, that divides the user data across multiple frequencies according to a spreading ratio.
Fiber Node	In a hybrid fiber coax (HFC) cable system, the location where the fiber optic transport cable is converted to coaxial cable, which then runs to the residence and/or business.
Fiber Optics	Hair-thin filaments of transparent glass or plastic that use light to transmit voice, video, or data signals over long distances with very high resistance to interference.
Fixed Wireless	A network service in which wireless devices or systems are situated in fixed, stationary locations (such as an office or

	home) as opposed to a network service supporting mobile wireless devices, such as cell phones or PDAs.
Frame Relay	An interface protocol for statistically multiplexed packet-switched data connectivity in which transmission rates are usually between 56 kbps and 1.544 Mbps.
Frequency-Hopping Spread Spectrum (FHSS)	A transmission technology used in wireless local area network transmissions where the data signal is modulated with a narrowband carrier signal that "hops" in a random but predictable sequence from frequency to frequency as a function of time over a wide band of frequencies.
Geosynchronous	Refers to the orbit in which the speed of a satellite's orbit is synchronized with the speed of the earth's rotation so that a given satellite is always positioned above the same spot on the earth. For this to occur, the satellite must be in orbit 22,300 miles over the equator.
Headend	The central technical facility (central office) for a cable television network. At the headend, the cable modem termination system (CMTS) converts data from a wide area network protocol into analog signals that are modulated for transmission over the in-place plant, and then demodulated by the cable modem in the home or business.
High Bit Rate Digital Subscriber Line (HDSL)	HDSL provides for sending and receiving high-speed symmetrical data streams over two pairs of copper wires. HDSL allows for higher maximum speeds than ADSL or SDSL, but requires two pairs of wires where ADSL and SDSL only require one. (See DSL.)
High Speed	Data connectivity at rates up to 2 Mbps. The data rate at which high speed begins is continually being moved upwards due to increased workload and improvements in the methods of connectivity.
Incumbent Local Exchange Carriers (ILECs)	Companies that provided local telephone services before the AT&T divestiture.
Information	Data modified by experience.
Integrated Services Digital Network (ISDN)	An international standard that provides end-to-end digital connectivity using existing telephone plant to support a wide range of voice, data, and video services. It uses a single connectivity channel for all forms of data transfer. However, the technology required is more expensive and less flexible than newer DSL technologies.
Instructional Television Fixed Service (ITFS)	Microwave-based, high-frequency television used in educational program delivery. Many ITFS facilities are currently being modified to become high-speed data distribution links.
Inter-exchange	Carriers/providers that provide services between two or more

Carriers (IXCs)	local access and transport areas (LATA).
Internet	A network of computer networks that originally began as the Advanced Research Projects Agency Network (ARPANET). This Department of Defense-commissioned project originally linked universities and research facilities for the quick and easy exchange of data. The original ARPANET was commissioned in 1969 and officially ceased existence in 1990.
Intranet	An internal network that allows the employees of a company to access company data via tools that are similar to the "public" Internet. Intranets typically make internal use of structures making up the World Wide Web by using Web browsers as the interface to internal company data. Software "firewalls" keep access restricted to internal use. Intranets can also allow for inexpensive, ubiquitous connectivity with remote offices and employees if appropriate access and security controls are put in place.
LAN/WLAN	Local area network. Usually refers to a network connecting devices within a single building or facility. If implemented using wireless connectivity, it becomes a WLAN (wireless local area network).
Latency	A measure of the time delay in the transmission of a message or signal across a network.
Line of Sight (LOS)	A clear and unobstructed path between an access point and a customer antenna.
Local Access and Transport Area (LATA)	Federally defined geographic area in which telephone services are provided. LATA boundaries are arbitrary and generally don't conform to any existing geographic town/county/region. LATAs only apply to ILECs and CLECs.
Local Exchange Carrier (LEC)	A company that provides telephone service for subscribers in a geographical area encompassing one local access and transport area (LATA).
Local Multipoint Distribution Service (LMDS)	A fixed wireless technology that operates in the 28 GHz band and offers line-of-sight coverage over distances up to 3 to 5 kilometers. LMDS systems were originally intended to distribute a large number of channels of video programming over a relatively short distance, but are now being reconfigured to carry data traffic.
MAN/WMAN	Metropolitan area network. Usually refers to a network connecting devices in multiple facilities in a single metropolitan area. If implemented using wireless connectivity, it becomes a WMAN (wireless metropolitan area network)
Modem	A word combining *mo*dulator and *dem*odulator. A device that converts digital data to analog signals for transmission on phone lines and other analog circuits such as cable television systems. A matching device at the receiving end converts the analog signals back into digital data.

Multichannel Multipoint Distribution Service (MMDS)	A fixed wireless technology that operates in the 2.5 to 2.7 GHz band and offers line-of-sight coverage over distances out to the horizon (25 to 30 kilometers depending on tower height). MMDS systems were originally intended to distribute a small number of channels of video programming over a relatively long distance, but are now being reconfigured to carry data traffic.
NPA-NXX	The first six digits of a North American telephone number; the area code (NPA) and exchange (NXX).
PAN/WPAN	Personal area network. Usually refers to a network connecting devices used by a single individual within a range of 10' to 30'. If implemented using wireless connectivity, it becomes a wireless personal area network (WPAN).
Point of Presence (POP)	A telecommunication center and switching facility within a local access and transport area (LATA) at which an interexchange carrier (IXC) establishes itself for the purpose of obtaining LATA access and to which the local exchange carrier (LEC) provides access services.
Radio Frequency (RF)	Any frequency within the electromagnetic spectrum associated with radio wave propagation. When an RF current is supplied to an antenna, an electromagnetic field is created that is then able to propagate through space.
Reseller	A company that redistributes the services of another carrier and/or retails those services to the public.
Response Time	In a data communications system, the elapsed time between the end of transmission of an inquiry message and the beginning of the receipt of the resulting response message, measured at the station originating the inquiry.
Satellite Hub	The central earth station satellite transmission facility that is the focal point for communicating to remote locations within a satellite communications network.
Synchronous Digital Subscriber Line (SDSL)	A technology that allows high-speed data to be sent over a single pair of existing copper telephone lines, with data rates for receiving data being the same as data rates for sending data. Maximum speeds of SDSL links are somewhat lower than those of ADSL links, but the speeds are the same in both directions. (See DSL.)
Synchronous Optical NETwork (SONET)	A family of fiber optic transmission rates from 51.84 Mbps to 39.812 Gbps, created to provide the flexibility needed to transport many digital signals with different capacities, and to provide a design standard for manufacturers.
Telco	A generic abbreviation for a telephone company.
Telecom	A generic abbreviation for telecommunications.
Telecommunication	Any transmission, emission, or reception of information of any kind (voice, data, or video) over a distance by electrical or electromagnetic means. Legally, it refers to connectivity

	services, which use or provide the interconnection to the Public Switched Telephone Network (PSTN).
Telecommunication Service Provider	An entity, usually a common carrier, that offers telecommunications services for a fee directly to the public.
Uplink	The transmission of data from a user to a data connectivity hub or center. Originally assumed a satellite connection, but has been extended to refer to any generic movement of data 'higher' in the network.
Value Added Network (VAN)	Data network operated by a firm that obtains basic transmission facilities from common carriers and adds "value," such as error detection, data storage, directories, or sharing, and then resells the service.
WAN/WWAN	Wide area network. Usually refers to a network-connecting device located in multiple metropolitan areas, nationwide, or worldwide. If implemented using wireless connectivity, it becomes a wireless wide area network (WWAN).
Wireless Fidelity (Wi-Fi)	Another name for IEEE 802.11b. Products certified as Wi-Fi by Wireless Ethernet Compatibility Alliance (WECA) are interoperable with each other even if they are from different manufacturers. A user with a Wi-Fi product can use any brand of access point with any other brand of client hardware that is built to the Wi-Fi standard.
Wireless Internet Service Provider (WISP)	A provider of Internet service using fixed wireless technology.
World Wide Web (WWW)	An Internet service that is graphical in nature. It enables a user to work not only with text, but with graphics and even audio to establish a "multimedia" connection. One must load special software called a "browser" to access the full potential of the World Wide Web.
Wideband	A connectivity channel offering bandwidth greater than a voice-grade channel. There is no specific definition of wideband in terms of data rates, but typically speeds in excess of 28.8 kbps are considered wideband data rates.
WLL (wireless local loop)	A term used to encompass all of the equipment used in a fixed wireless network.