

GLOSSARY OF CABLE ADVERTISING TERMS

AD-SUPPORTED NETWORK

A national or regional cable TV channel, such as ESPN, that makes available a certain amount of time per hour for local commercials.

ANALOG

The most commonly used frequency for transmitting video content. Commercials stored on videotape, for instance, use an analog format. A more recent technology involves the conversion of analog content to a digital, or computer-based, format.

AVAIL (OR AVAILABILITY)

A break within normal network programming allotted to a local cable system for insertion of local commercials.

BASIC CABLE

Cable TV channels that are typically packaged and made available to a wide number of subscribing households. Basic channels usually are advertiser-supported.

BICYCLING

The physical transportation of commercials from site to site via messenger or courier.

CABLE SYSTEM

The local operation that distributes cable TV channels, usually over a combination of fiber optic and coaxial wires, to subscribing households.

COST PER PERSON

Commonly referred to as "CPP," this number describes the relationship between the cost of a television commercial and the estimated number of people or households who view it.

COVERAGE AREA

The geographic territory in which a cable system distributes commercials.

CUMULATIVE AUDIENCE

A research term describing the unduplicated audience for a television program or commercial over multiple airings. In cumulative audience figures, an individual is counted only once.

DIGITAL CABLE

A collection of channels, typically distributed to subscribers as an add-on package, which are transmitted initially in the form of binary code.

DIGITAL INSERTION

A technology for converting standard videotaped commercials into binary computer files for improved on-screen display, storage and run rate accuracy.

FIBER OPTICS

High-capacity, extremely reliable cables that carry multiple television channels over thin, glass strands.

FRANCHISE AREA

The geographic boundary in which a cable system, or group of systems, provides service. A franchise area is typically determined by municipal, county or other local government territories.

FREQUENCY

The number of times the same viewer sees your commercial. Often used in tandem with "reach," or the number of different viewers who see your commercial, to describe the impact of an advertising campaign.

HEADEND

The central receiving and processing station where a cable system collects various program signals and retransmits them to subscribing households.

HOUSEHOLD

The core measure of circulation for a cable TV system. Typically, cable companies collect a monthly subscription fee from each household served. In addition to detached homes, apartment units are usually counted as individual households.

HOUSEHOLD PENETRATION

The percentage of households within a cable TV service area that elect to subscribe. If 7,500 homes within a 10,000-household service area subscribe, the household penetration level would be expressed as 75 percent.

HUT (HOUSEHOLDS USING TELEVISION)

An estimate of the number of households within a specified coverage area which are viewing any television programming during a specified time.

INFOMERCIAL

A televised advertisement for a product or service, typically running over a longer period of time than a standard 30-second commercial.

INTERCONNECT

A collection of two or more cable TV systems that work together to distribute commercials to a wider geographic area than either system, individually, would otherwise reach.

LOCAL ORIGATION

Programs produced by or under the auspices of a local cable system, for local audiences. Multiple System Operator (MSO): A cable television company that operates more than one cable system.

PAY CABLE

Channels, such as Home Box Office™, available for an extra fee at the discretion of cable TV subscribers.

PENETRATION

See "household penetration."

QUALITATIVE RESEARCH

Information about markets and viewers that focuses on attitudes, behaviors and demographic composition.

QUANTITATIVE RESEARCH

Information about markets and viewers that focuses on the relative size of audiences.

REACH

The number of different people or households exposed to your television commercial. Often used in tandem with "frequency," or the number of times the same viewer sees your ad, to describe the impact of an advertising campaign.

REGIONAL SPORTS

Refers to cable TV channels distributed in a regional area and carrying a mix of area professional and amateur sports teams, plus some national programming.

REP FIRM

An outside sales agent contracted by a cable system to manage relationships with certain advertisers, typically those outside of the local system service area.

SHARE OF AUDIENCE

The percentage of the total television audience (within a defined universe) viewing a selected program or programming source. Cable television's total-day share of audience within U.S. cable-subscribing households, for example, exceeds 40 percent.

SPOT CABLE

Usually refers to commercial schedules placed on local cable systems by national or regional advertisers who often advertise in multiple cable TV markets.

ON-DEMAND MEDIA SYSTEMS (VOD) AND DIGITAL ADVERTISING SYSTEMS GLOSSARY

A

AAL (ATM Adaptation Layer) - The top layer of ATM protocol model that converts the information stream from the higher layer into 48-byte cells with the right format, and converts the ATM cells back to its original format that the upper layer can understand at the other end. There are four types that have been defined, and each one handles a special class of traffic. In addition, all types are furthered into 2 subclasses: CS and SAR, and this layer can only be found in an ATM end-station.

- AAL-1 - handles traffic that needs to be transmitted at CBR (constant bit rate) such as uncompressed video, audio or voice.
- AAL-2 - handles VBR (variable bit rate) traffic that requires special timing consideration such as compressed video streams.
- AAL-3/AAL-4 - handles variable rate traffic that losing cells is the worst thing; therefore, this scheme uses a lot of bytes in the cells to ensure safe transmission.
- AAL-5 - handles the "bursty" data that is common in today's LANs, and is also known as SEAL (simple and efficient adaptation layer). It has less overhead compared to AAL3/4.

ABR (Available Bit Rate) - One of the ATM traffic types that supports variable bit rate data traffic with flow control, a minimum guaranteed data transmission rate and specified performance parameters. ABR is one of the two traffic types that ATM uses for providing a "best-effort" service.

ADM (Add/Drop Multiplexor) - A device allowing ATM cells to go around ATM switches and devices.

ADSL (Asymmetric Digital Subscriber Line, or Asymmetric Digital Subscriber Loop) - A digital subscriber line (DSL) technology in which the transmission of data from server to client is much faster than the transmission from client to server. Whereas with HDSL (High-Speed Digital Subscriber Line), transmission is 784 kilobytes per second in both directions. With ADSL, the rate from client to server is 640 kilobytes per second and from server to client can be up to 6 megabytes per second. This kind of connection is useful with applications such as interactive TV and Video on Demand, because the data the server sends is much more than the data sent by the client. ADSL uses bandwidth that is not used by voice; therefore voice and data can be transmitted at the same time.

Alternative Routing - Using another transmission channel when the regular channel is busy

Analog - Representing data in continuously variable physical quantities, in contrast to the digital representation of data in discrete units (the binary digits 1 and 0). Analog systems handle information which is represented by continuous change and flow, such as voltage or current. Analog devices have dials and sliding mechanisms. Digital information, in contrast, is either on or off. An analog is a representation of a pattern by a similar pattern; for example, an analog clock represents the sun circling around the earth. An analog device converts a pattern such as light, temperature, or sound into an analogous pattern. An example is a video recorder, which converts light and sound patterns into electrical signals with the same patterns. An analog signal such as a sound wave is converted to digital by sampling at regular intervals; the more frequent the samples and the more data recorded,

the more closely the digital representation resembles the analog signal. Converting analog signals into digital makes it possible to preserve the data indefinitely and make many copies without deterioration of quality.

ANSI (American National Standards Institute) - An organization that develops standards for many things, only some having to do with computers, such as properties of diskettes, programming languages, etc. ANSI is the U.S. member of the International Standards Organization. (ISO) and the International Electrotechnical Commission (IEC). ANSI standards are voluntary. ASCII is an ANSI character set.

API (Application Program Interface) - An interface between the operating system and application programs, which includes the way the application programs communicate with the operating system, and the services the operating system makes available to the programs. For example, an API may make it possible for programs that run under it to open windows and display message boxes.

Application Server - A workstation or business server-class machine that takes care of the non real-time services of the whole media server system, and acts as the interface between the set-top box and the rest of the media server groups. This server can also function as a general data base server that stores user profile, authentication information, service data, available program data, billing data and text that the service/application providers, the end-users, and any other interested parties may want to access. Upon the user's request from the set-top box, the server can act appropriately by either routing the message to another server for specific services provided over there, or work on the request inside the server. For example, it can route the user message to the video server if the user requests to see a movie or execute the request itself by its user profile and the authentication data when the user asks for a particular service that requires passwords.

ARP (Address Resolution Protocol) - A method for finding a host's Ethernet address from its Internet address. An ARP request is sent to the network, naming the IP address, then the machine with that IP address returns its physical address so it can receive the transmission.

ASU (ATM Service Units) - An ATM termination equipment where the ATM stream is terminated, and the resulting plain MPEG-2 stream is sent to some other intermediate devices, such as ADSL and multiplexors, to transmit over the telephone lines to the customer's home.

ATM (Asynchronous Transfer Mode) - A type of fast packet switching that uses a fixed size packet called a cell. This technique makes it possible to transmit data at great speed, and can make voice, multimedia, full-motion video, and video conferencing available to all users. It also makes dynamic allocation of bandwidth possible; telephone and cable TV companies can charge individual customers based on the amount of bandwidth they use.

ATM Forum - An international organization formed by many ATM interested groups, such as manufacturers, users, vendors, researchers and carriers that try to define ATM standard protocols.

ATM Layer - The middle layer of the ATM protocol that gets cells from AAL layer, adds headers to the 48-bytes cells, and then sends to the physical layer for transmission. And at destination, it then removes the headers and sends the payloads up to the AAL layer. In ATM switch, it's also the layer that handles the multiplexing and demultiplexing of the cells.

ATM Switch - The ATM device that mainly routes, multiplexes and demultiplexes the cells through the network by the cells' VCI/VPI values. When the cell stream comes into the switch's input ports, the switch will first demultiplex the stream into groups of the same VCI or VPI. Afterwards, it will get a cell's VCI/VPI value, and uses the numbers to look up in the routing table to find out whether any change is needed for the original VPI/VCI values and which output port should the cell flow to. In addition, the switch is also responsible of enforcing the priority value of a cell and buffering the excess cells when the traffic is congested. Basically, there are two types of ATM switch: VP Switch, and VC Switch.

AVI (Audio Video Interleaved) - AVI is a Microsoft multimedia file format, similar to MPEG and QuickTime, used by Video for Windows. In AVI, audio and video elements are interleaved (stored in alternate segments) in the file.

B

Backbone - In a hierarchical network, the backbone is the top level, employing high-speed data transmission and serving as a major access point; smaller networks connect to the backbone.

Bandwidth - 1.) The amount of data that can be sent through a network connection, measured in bits per second (bps). 2.) The range of transmission frequencies a network can use, expressed as the difference between the highest and lowest frequencies of a transmission channel (in Hertz, or cycles per second). High bandwidth allows fast transmission or high-volume transmission.

B-ICI (Broadband Inter-Carrier Interface) - A kind of public NNI that defines the interface between the RBOC's public ATM switch and the IXC's public ATM switch.

B-ISDN or BISDN (Broadband Integrated Services Digital Network) - A high-speed telecommunications service which can transmit multimedia over the phone line. It uses fiberoptic cable and synchronous transfer mode, and is faster than narrowband ISDN. B-ISDN can be used for voice, data, fax, email, full motion video, and video conferencing.

BLOB (Binary Large Object) - A file that contains a large block of arbitrary bits/bytes representing an object such as a graph, an executable image or a sound storage.

BOC (Bell Operating Company) - Commonly referred as RBOC. Please see RBOC for more details.

BRI (Basic Rate Interface) - One of the ISDN standards. Please see ISDN.

C

C3 (Category 3 Unshielded Twisted Pair) - Same as CAT-3.

CAN (Campus Area Network) - The kind of network used in rather small and confined area such as connections between buildings inside a school/organization campus or just between different floors inside a building.

CAP (Carrierless Amplitude modulation and Phase modulation)

Catenet - A network made up of different kinds of networks interconnected by routers. The Internet is a catenet.

CAT-3 (Category 3 Unshielded Twisted Pair) - A digital signal standard that can multiplex 3 DS-3 lines to support voice and low-grade data traffic.

CAT-5 (Category 5 Unshielded Twisted Pair) - Industry standard for unshielded twisted pair capable of supporting high speed data traffic over short (LAN and CAN) distances.

CATV (Community Antenna TeleVision) - The original name for Cable TV.

CAU (Channel Access Unit)

CBR (Constant Bit Rate) - Specifies that certain digital data, such as video, audio and voice, need to be transmitted continuously at the same rate and interval without any misordering.

CCITT (Consultative Committee on International Telephones and Telegraph) - Now referred to as ITU.

Cell - Basic transmission unit in the ATM network. It's similar to a packet in normal networks except all cells are fixed-sized. A cell normally has 53 bytes: 5 bytes header, and 48 bytes data.

CES (Circuit Emulation Service) - An adapter that terminates AAL-1 virtual circuit, and generates T1 or E1 streams in the right formats to send to the ADSL interface.

CGI (Common Gateway Interface) - A way of interfacing computer programs with HTTP or WWW servers, so that a server can offer interactive sites instead of just static text and images.

Classical IP - A scheme developed by IETF that tries to map classical IP services into ATM AAL-5 layer. It will allow connection between LANs over ATM network or connection between ATM devices and LAN devices by just using the IP connection service. Another schema developed for similar function is LAN Emulation. Please see LAN Emulation for further details.

Client - The computer in a client/server architecture that requests files or services. The computer that provides services is called the server. The client may request file transfer, remote logins, printing, or other available services. The client also means the software that makes the connection possible.

Client/Server Network - A network in which one or more computers are servers, and the others are clients, as opposed to a peer-to-peer network, in which any node can be a client and server.

CLP (Cell Loss Priority) - A one-bit field in ATM's header indicating whether the cell can be neglected if the traffic is congested.

CLNP (Connectionless Network Protocol) - The OSI protocol for OSI Connectionless Network Service. CLNP is the OSI equivalent to the Internet Protocol (IP), and has been called ISO IP.

CLTP (Connectionless Transport Protocol) - A type of interconnection in which communication takes place without first establishing a connection. The OSI equivalent of UDP.

Coaxial Cable - A cable composed of an insulated central conducting wire, inside a cylindrical conductor called the shield, with a buffer layer in between. It offers broadband capability that it can carry much more information than the twisted pairs of copper wires without generating a lot of electromagnetic field outside the shield. Currently, the cable is used primarily for data and television signals.

Codec (Coder/Decoder) - 1.) A device that converts analog signals to digital to be read by a computer or transmitted over a network, and converts the digital signals back to analog. Sound cards and video cards use this kind of codec. 2.)

Compression/decompression. A two-step process used on very large multimedia files. Files are compressed to fit on a CD-ROM, then expanded to their original size in order to play them on the computer. MPEG and Indeo are examples of this kind of codec, which may also include analog to digital and digital to analog conversion.

Connection-oriented - The type of communication service that the sender will try to communicate with the receiver for setting the connection before the transmission. The three phases are setting up the connection, data transmission, and releasing the connection. For this kind of transmission, all the packets (cells for ATM) are delivered in order. In fact, if the desired QoS is granted in the ATM network, they can be transmitted almost without loss.

Connectionless - A kind of communication which takes place without first establishing a connection. A means of data transfer in which each data packet has source and destination information, so a direct connection is not required. Internet Protocol and most local area networks use connectionless transmission, as opposed to connection-oriented.

CORBA (Common Object Request Broker Architecture) - A program that helps transfer messages to and from objects between various platforms in a distributed environment.

CPCS (Common Part Convergence Sublayer) - For those AAL types that have been further divided, this part acts as the original CS part for the AAL types that aren't subdivided. This layer is right below SCS.

CPE (Customer Premises Equipment) - Term applied to the computers and any other communication devices that belong to customers. In media server related documents, sometimes CPE will be referred as the Set-Top Box.

CRC (Cyclic Redundancy Checks) - An error detection algorithm that adds an extra number (CRC bits) to the transmitted data in a packet/cell calculated from the bits in that packet/cell. When the receiver gets the packet/cell, it can use the same algorithm to calculate the CRC bits back. If there is a mismatch, it indicates that most likely there are some kinds of errors occurring during the transmission. Usually it's written in the form of CRC-n, where n represents the number of CRC bits used.

CS (Convergence Sublayer) - The upper layer of AAL that converts and prepares the information stream from the upper layer into certain formats indicating the type of ATM traffic which this data stream represents. It will then pass the stream down to the SAR layer for further operations. On the destination side, it gets the cell streams from SAR, and converts them back to their original formats. Basic services include padding, trailer adding and CRC checking. For some AAL service types, CS layer is further subdivided into SSCS and CPCS with additional functions.

CS-PDU (Convergence Sublayer Protocol Data Unit) - The PDU produced after passing through ATM's CS sublayer. This PDU contains the information in the format conformed to CS layer's specification, and it's ready to be passed down into SAR layer.

CSU (Channel Service Unit) - A device that provides interfaces between a customer's communication device (a computer) to the actual network digital medium. Its main functions include network signaling, test and diagnostic functions support. In order to use a CSU, the user has to supply the transmit and receive logic and timing recovery. Usually, a DSU is connected to it to perform these functions.

D

DACS (Digital Access Cross-Connect) - A device that performs some of the switch-like functions such as taking in a DS-3 signal, making connection between an arbitrary T1 input port and an arbitrary output port.

DAT (Digital Audio Tape)

Datagram (see [Connectionless](#))

DET (Digital Entertainment Terminal) - In media server related documents, sometimes DET is used as the other name for Set-Top Box.

Differential SCSI (see [SCSI](#))

DMA (Direct Memory Access/Addressing) - A method of transferring data from one memory area to another without having to go through the central processing unit.

DMT (Discrete Multitone) - An ANSI-standard modulation technique used with ADSL.

Downstream - Transmission from the server side to the end users or clients.

Downstream Manager - That part of media server systems that takes care of the downstream services from the servers to the user side (which is the Set-Top Box in the VOD trials). In an nCUBE system, downstream manager is generally implemented in the video pump software running on top of some processors.

DS-0 - Digital services-level 0. This is the lowest level of the DS series circuits with the transmission rate of 64 Kbits/s.

DS-1 - Digital services level 1. A North American digital transmission hierarchy standard for the framing of the signals at the rate of 1.544 Mbits/s. It can support up to 24 DS-0 signals (64Kbits/s each) concurrently. In many cases, DS-1 means the same as T1.

DS-1c - Can have at most 2 DS-1 circuits with the transmission rate of 3.15Mbits/s.

DS-2 - Digital services level 2. It can carry up to 4 DS-1 circuits with the rate of 6.31Mbits/s.

DS-3 - Digital services level 3. A North American digital transmission hierarchy standard for the framing of the signals at the rate of 44.736 Mbits/s. It can support up to 28 DS-1 signals concurrently.

DSL (Digital Subscriber Line or Digital Subscriber Loop) - A way of sending digital data over regular copper telephone lines. It is also called High-Speed DSL (HDSL).

DSU (Digital Service Unit) - A digital communication device that provides interfaces and resolutions between two different circuit types. In ATM technology, DSU interfaces between the original LAN router and ATM switch that provides SAR-like functions and cell-associated operations termination to convert variable length packets to fixed length ATM cells.

DTE (Data Terminal Equipment) - The device that functions as the data source or destination that provides information processing functions and network transmission control. DTE includes terminals, computers, routers, bridge, video

codecs, multiplexors, and channel extenders.

Duplex Mode - Capable of transmission upstream and downstream simultaneously.

DXI (Data Exchange Interface) - The interface between a DTE and a CSU/DSU. In ATM technology, DXI defines the format for passing information in CS-PDU forms with correct AAL information between a router and a ATM CSU/DSU.

E

E1 - European standard similar to T1 for digital transmission. The basic rate is 2.048Mbits/s with the ability of transporting up to 32 64Kbits/s channels.

E3 - European digital transmission standard that can carry 16 E1 circuits to achieve the rate of 34.368Mbits/s.

E.164 - An ITU standard using 15 digits to specify the network addresses. ATM adopts it as the basic public network addressing method for the public UNI.

EIA (Electronic Industries Association) - An organization which establishes Recommended Standards (RS) for hardware devices and their interfaces. RS-232 is a well-known standard for transmitting serial data by wire.

EISA (Extended Industry Standard Architecture) - A PC bus that extends the ISA bus from 16 bits to 32 bits, but can still be used to plug in ISA expansion cards.

ENDEC (ENcoder/DECoder)

ENR (Enterprise Network Roundtable) - An organization inside ATM Forum that mainly concentrates on development and communication of user requirements between ATM Forum technical groups and the users.

Enterprise Network - A network for a large business enterprise. This kind of network may comprise a number of local area networks which have to interface with each other as well as a central database management system and many client workstations.

EPPV (Enhanced Pay-Per-View) - Same as NVOD. See [NVOD](#) for further details.

ESF (Extended Super Frame) - A framing standard specifies how DS-0 channels are framed into DS-1 data stream. Each ESF frame contains 24 data bytes and one framing bit; and 24 ESF frames can become a superframe with 4632 bits ($24 \times (192 + 1)$). Both Set-Top Box and DACS require ESF framing.

ETE (End-to-End)

Ethernet - Originally developed by Xerox Corporation, Ethernet has become one of the most popular LAN (Local Area Network) protocol. Some major variations are:

- 10BASE2 - for thin cable Ethernet using RG-58 coaxial cable. This standard has rate of 10Mbits/s using baseband with 185 meter maximum segment length.
- 10BASE5 - for thick cable Ethernet using RG-11 coaxial cable. This standard has rate of 10Mbits/s using baseband with 500 meter maximum segment length.
- 10BASE-T - for Ethernet using UTP (Unshielded Twisted Pair) for transmission. This standard has rate of 10Mbits/s using baseband.
- 1BASE5 - for StarLAN Ethernet using twisted pairs of wires. This standard has rate of 1Mbits/s using baseband with 500 meter maximum segment length.
- 100 Mbits/s Ethernet - Emerging Ethernet with the transmission rate of 100Mbits/s. For those that transmit over UTP are called 100BASE-T. There are two important standards:
 - IEEE 802.3u - Called Fast Ethernet. For transmission over CAT-3 or CAT-5 UTP.

- IEEE 802.12 - Called 100VG-AnyLAN for transmission over CAT-3/4/5 UTP, STP or Optical Fiber.

EU (Exchange Unit)

F

Fast Packet Switching - A technology used to transmit data, voice, and images over wide area networks at high speed, by sending short packets of data. Asynchronous transfer mode is one form of fast packet switching.

Fast Wide SCSI-2 - A version of SCSI (Small Computer Systems Interface) that has a 16-bit bus, a 68-pin adapter, and a maximum cable length of 9.8 feet. It can transfer data at 10-20 megabytes per second, and can be used attach a maximum of 16 devices.

FCC (Federal Communications Commission) - A U.S. government agency that regulates interstate and foreign communications. The FCC sets rates for communications services, determines standards for equipment and controls broadcast licensing.

FDDI (Fiber Distributed Data Interface) - An ANSI standard for 100 Mbit/s data transmission through fiber optic cable, in a token ring setup. Many local area networks can be linked together with a backbone that uses FDDI.

Fiber-optic Cable - A cable that carries laser light, encoded with digital signals, rather than electrical energy. Made of thin fibers of glass, fiber-optic cables can transmit large amounts of data per second. Fiber-optic cables cannot be tapped by remote sensing equipment because they do not emit electromagnetic radiation.

Fiber-optic Connector - One of several types of devices used to join pairs of optical fibers together. Some of the types are ST connectors, SMA connectors, MIC connectors, and SC connectors.

FMV (Full-Motion Video) - Video that runs at the same rate at which it was filmed. Moving video images and sound available on a computer; usually stored on CD-ROM because of the large size of the files.

FO (Fiber Optics) - The transmission of data in the form of pulses of light. Fiber optics uses cables containing glass or silica fibers no thicker than a human hair. There is very little signal loss, and information can be transmitted at high speed over long distances. Fiber optic cables do not have problems with external noise like wire cables do, and are better for transmissions requiring security.

Four-B/Five-B (4B/5B) Encoding - The encoding method used by FDDI that a group of 4 bits of a signal is converted into another group of 5 bits with the right format.

FOX (Fiber Optic Interconnect)

FSN (Full Service Network) - A video network that makes it possible for the television to work like a computer, through the use of special equipment; users have access to video, home shopping, interactive games, and other services.

Full-motion Full-screen Video - Video that fills the full display screen and shows lifelike smooth motion, instead of the video on some CD-ROMs and Internet downloads which is in a tiny window and only shows jerky movement. Full-motion, full-screen video is made possible by compression programs such as MPEG, which make video files small enough to transfer to the computer at high speed.

G

G.704 - A framing interface for E1 that divides an E1 signal into 32 timeslots, and uses 30 of them for voice transmission.

GFC (Generic flow control) - A 4-bit field in ATM header found only in UNI that indicates a cell's priority level for traffic congestion control.

H

H.261 - A video compression standard designed for ISDN with the compressing rate depending on the amount of ISDN channels used. The rate is in the form of 64P Kbits/s where "P" represents the amount of used ISDN channel in the range of 1 to 30. The standard is designated primarily for video conferencing.

HDLC (High-level Data Link Control) - An ITU specified link protocol that provides half-duplex and full-duplex transmission, point-to-point and point-to-multipoint connections, and switched or nonswitched channels.

HDSL (High-bit-rate Digital Subscriber Line)

HDTV (High Definition Television) - TV that is capable of reaching the resolution which is about twice as much as the normal TV's.

HEC (Header Error Control) - A one-byte field in ATM header used for correcting single-bit errors and detecting multiple-bit errors.

HFC (Hybrid Fiber Coaxial) - The kind of networking architecture built up by mixing up optical fibers and coaxial cables. Typically, coaxial cables are those used to connect to the households, and fibers are those used to interconnect cables and back-end devices (such as the media server) as the backbone of the whole network. Cables and fibers are connected at some fiber termination points.

HSSI (High-Speed Serial Interface) - Developed by Cisco and T3plus for Physical Layer.

I

IEC (International Electrotechnical Commission)

IEEE (Institute of Electrical and Electronic Engineers) - An organization that works on creating standards for the electronics industry and performs some pre-standardization works for OSI.

IEEE 802.x - The IEEE standards for the LAN protocols. For example, 802.3 specifies standards for 10Mbps/s CSMA/CD Ethernet, including 10Base5, 10Base2, 1Base5 and 10Base-T.

IETF (Internet Engineering Task Force) - The organization works on and provides Internet standards and technology.

ILMI (Interim Local Management Interface) - An ATM network management protocol built on SNMP that uses ATM UNI MIB to monitor the status of network objects. It manages the interfaces between the users and the ATM network, and between two ATM networks. As its name suggests, it may be replaced by more thoroughly defined management protocol later.

IMM (Interactive Multi Media)

IP (Internet Protocol) - Implemented in the network layer, IP takes care of the routing, segmentation and reassembly of messages and actual delivery of the packets across different types of networks. This protocol provides connectionless datagram services. See CT3 for further details.

ISDN (Integrated Services Digital Network) - A telephone line standard that digitally transmits voice, data and other useful information simultaneously. It is much faster and more reliable compared to the traditional analog transmission. There are two types: BRI (Basic Rate Interface) and PRI (Primary Rate), and each type is composed of combinations of two kinds of channels. B (Bearer) channels are used for transmitting voice and data with the bandwidth of 64Kbits/s, and D (Data) channels are used for signaling and call set-up. BRI has two B channels and one D channel (16 Kbits/s here) with the maximum bandwidth of 128 Kbits/s. PRI is composed of 23 B channels and one D channel (64 Kbits/s) with the maximum bandwidth of 1.544mbits/s, which is the same as T1 (in U.S. Only). Actual implementation of PRI may vary from nation to nation.

ISO (International Standards Organization)

ISSI (Inter-Switching System Interface) - Same as Public NNI. See NNI for further details.

ITU(-T) (International Telecommunications Union-Telecommunications) - The original CCITT.

IXC (Inter-Exchange Carrier) - Any long-distance carrier that handles inter-LATA message communication.

J

J2 (Japanese Signaling Level 2) - The digital transmission standard in Japan with the rate of 36.312 Mbits/s.

Jitter - The timing variation problem of a signal caused by incorrect recovery of the clock.

JPEG (Joint Photographic Experts Group) - A committee that develops the standards for compressing either full-color or gray-scale digital images of real-world scenes and also for the transmissions of these encoding pictures over the network.

K

L

LAN (Local Area Network)

LAN Emulation - A Mac-like service developed by ATM Forum that will be built on ATM devices, such as ATM end-station and ATM-to-Legacy Lan Bridge, that make LAN upper layer (those higher than MAC) applications possible to operate transparently across an ATM network. As the result, there is no need to make modifications on existing LAN (Ethernet, Token Ring, etc...) devices to make them communicate with ATM devices or other LAN devices over ATM network. See Classical IP for further details.

LATA (Local Access and Transport Area) - In 1984, the United States was divided into over a hundred geographic areas, which are LATAs, for local telephone operations.

LBO (Line Build Out)

LEC (Local Exchange Carrier) - Inside every LATA, there is a specific LEC that oversees any local communication services within the area.

Level-1 Gateway - A set of devices that provides VDT services. At Level-1 gateway, there will be one or more service providers' level-2 gateways connecting to it, and the user thus can choose the type of service preferred through a level-2 gateway to the particular service provider.

Level-2 Gateway - Provides specific services from a particular provider to the end-users through Level-1 gateway.

LIM (Line Interface Module)

M

M13 - A DS-1/DS-3 Multiplexer. A device that is able to multiplex 28 DS-1 streams into a single DS-3 stream, and vice versa.

MAC (Media Access Control) - The bottom sublayer of the data link layer in the OSI model that regulates the access to the LAN channel shared by the nodes. General functions include scheduling, gaining access, and transmitting and receiving data.

MAN (Metropolitan Area Network)

MDS (Media Data Store) - A special file system that is designed to send real-time data stream continuously.

MOD (Movies On Demand)

MPEG-1 - The first standard announced by the Moving Picture Experts Group under ISO for video and audio compression. It's mainly targeted for compression stream at about 1.5Mbits/sec, such as CD-Rom.

MPEG-2 - The second generation of the ISO standard. Its main difference from MPEG-1 is the compression bit rate, which is between 4-9Mbits/sec. The standard is targeted for the transmission of high quality video.

MPP (Massively Parallel Processing)

Multipoint-to-Multipoint - A connection based on a full mesh of Point-to-Multipoint VCCs or VPCs between all the associated endpoints. In a Multipoint-to-Multipoint connection, all the endpoints are roots and can send cells to all the other endpoints.

N

NFS (Network File System)

NNI (Network-to-Network Interface) - There are two definitions defined in different organizations:

- Frame Relay Forum Specification (Network-to-Network Interface) - Developed by Frame Relay Forum, the standard specifies the interfaces between public frame relay networks for supporting user services across multiple public carriers. It's similar to B-ICI in the ATM Forum specification.
- ATM Forum Specification (Network-Node Interface) - There are generally two types: Public NNI (or just called NNI) --- The interfaces between public ATM switches (switches in the Wide Area ATM Network). B-ICI is an instance of this type of NNI. See B-ICI for further details.
- Private NNI (P-NNI) - The interfaces between private ATM switches (switches in the Local ATM network).

NOD (News On Demand)

NSAP (Network Services Access Point) - A network addressing schema from OSI consisting of 20 octets. ATM uses it as the private network addressing method for Private UNI.

NTSC (National Television Systems Committee) - A standard format for analog TV signals that requires 30 stand-alone video frames per second. Mostly used in U.S., Japan and Canada.

NVOD (Near Video On Demand) - A technique that broadcasts a video at certain intervals so that a user can view the program at the next interval when ordering the video. Unlike TVOD, this method only allows the user to do operations on the video based on every video interval with possibly long waiting time. For example, for rewinding, the user can only select on which video interval that he/she wants to pick to continue seeing the video; in other words, the user can't rewind the video back to any time that he/she wants to. Also, this method allows possible delays from the ordering time to the actual video delivery time when the amount of users is large. However, since real-time performance is not really enforced in this kind of technique, the expense for installing this service is relatively inexpensive compared to the TVOD technique. Therefore, with this service, the user will have to tolerate longer waiting time and more inconvenience for cheaper prices. See TVOD for further interests.

O

OAM(&P) - Operations, Administration and Maintenance (and Provisioning). Name given to any function, and maintenance and management information necessary to operate a network. In ATM, cells carrying OAM information communicating around the network will have special set-ups for identification. OAM is divided into five hierarchical sub-levels called Fn as for Flow of information, and they are:

- F1 --- Regenerator Section.
- F2 --- Digital Section.
- F3 --- Transmission Path.
- F4 --- Virtual Path.
- F5 --- Virtual Channel.

OC-n (Optical carrier) - A standard that defines how optical signals are transmitted over fibers in SONET. The transmission rate supported by this standard will be "n" multiplying by 51.84Mbits/s. Base unit is OC-1, which starts at 51.84Mbits/s. OC-3 will be 155.52Mbits/s, and OC-12 will be 622.08Mbits/s.

OEM (Original Equipment Manufacturer)

Optical Fiber - Thin glass strands through which light beams are transmitted. Inside the fiber, light beam is guided and projected as a communication medium which is capable of carrying a huge amount of information over a long distance. Fiber is superior over coaxial cable and twisted pairs of wires in terms of larger bandwidth and better signal quality with much less attenuation.

OVS (Oracle Video Server) - Oracle Video Server is an end-to-end software solution that enables customers to store, manage and deliver full-motion, full-screen video and high fidelity audio to PCs, network computers, workstations and set top boxes over a variety of networks. Oracle Video Server enables the creation of direct-to-consumer applications (such as video-On-Demand, music-On-Demand, home shopping and home banking) and information On-Demand applications (such as news-On-Demand and interactive education) that can be delivered to any client device. Oracle Video Server includes plug-and-play support for Web browsers to allow easy creation of Web pages with embedded video content.

OSI (Open Systems Interconnect) - The networking layer architecture standard developed by ISO in the late 1970's for making compatibility of different networks. The seven OSI layers from top to bottom are application, presentation, session, transport, network, data link and physical layers.

P

P-NNI (Private NNI) - See NNI for further information.

Point-to-Multipoint - A hierarchical, tree-like ATM connection that configures an end-station as the root, and some other end-stations connecting to it as the leaves. Inside the connection, the leaf-nodes can only send messages back to the root for communication with other nodes. There is no connection between any leaf end-station.

Point-to-Point - The kind of connection that is between only two ATM end-stations.

POSIX (Portable Operating System Interface) - IEEE-developed standard that describes the high-level operating system interface in order to offer program compatibility at the source code level and to promote codes that are platform independent. A large part of POSIX is based on UNIX.

POTS (Plain-Old Telephone Service)

PRI (Primary Rate Interface) - One of the ISDN standards. See ISDN

PSB (Parallel Storage Bay)

PSE (Parallel Software Environment)

PSTN (Public Switched Telephone Network)

PT (Payload type) - Same as PTI.

PTI (Payload Type Identifier) - A field in ATM cell header that distinguishes different types of information a cell carries. For instance, some cells can carry OAM (operation, administration and maintenance) information for ATM network management, but some just carry typical user data.

P-UNI (Private UNI) - See UNI for further details.

PVC (Permanent virtual circuit) - A network connection type between two end-points that is pre-set up by the network administrator in advance of the needs. For networks supporting only PVCs, each end-station can only connect to those other end-stations that have pre-defined PVC routes set up between them. Also, the PVC link can be closed down only manually, not by the network. Many PVCs can also be supported simultaneously by a virtual path. See SVC for further interests.

Q

Q.2931 UNI Signaling - An ITU recommended signaling protocol when setting up SVCs. Its message primarily includes the ATM addresses of the source and destination end-stations, and the desired QoS parameters. If the destination agrees to connect and the QoS requirements are met, a virtual connection will be set up between source and destination end-stations. The protocol is upgraded from the old signaling protocol q.93B with lots of functions borrowing from the ISDN protocol Q.931. All the cells carrying information about q.2931 signaling will have the values of VPI=0 and VCI=5. See QoS for further details.

Q.2100 SAAL - An ITU recommendation for the required functions and implementations of SAAL. See SAAL for further details.

Q.2110 SSCOP - An ITU recommendation for the necessary functions and implementations of SSCOP. See SSCOP for further details.

Q.2130 SSCF - An ITU recommendation for the needed functions and implementations of SSCF. See SSCF for further details.

q.91B (Formerly q.2931) - See q.2931 UNI Signaling.

QoS (Quality of Service) - A certain set of parameters indicating the amount of resources that the user needs for the transmission. During the connection set-up process, an ATM end-station's application's layer will try to negotiate these parameters with the network to see whether the network is capable of allocating the specified resources for the transmission. The typical types of service parameters include desired bandwidth, cell priority, maximum allowable delay and jitter.

R

RAID (Redundant Array of Inexpensive Disks) - A protection method by storing data redundantly so that data can still be retrieved in the case of disk failure and reconstructed afterwards. In addition, many RAID methods assign parity disks in the system that can store the information after performing XOR operation on the original data for all the data disks. Some important RAIDs are:

- RAID 0 - No redundancy at all! No parity disk also. If a drive crashes, all the other drives will become useless, and consequently, all the data won't be reachable. However, since the method has no redundancy, it's generally faster than the other RAID methods. There are 2 types of RAID 0: Single-block and Multiple-block. The single-block method tries to access many disks simultaneously in a write or read of large chunk of data to speed up the transmission, while multi-block can handle smaller transmission block by only accessing the necessary blocks. RAID 0 best for high data transfer speeds.
- RAID 3 - Has similar striping method as RAID 0, except it has parity disk to store redundant information. In this method, a single pool of disks will be used to serve as the parity disk for all the disks in the system. It's best for images and graphics.
- RAID 5 - This method takes a different approach for striping and parity disk from RAID 0 and RAID 3. Unlike RAID 3, this method assigns a parity disk to a certain set of disk drives, and the whole memory is divided into many sets of disk drives. It's best for transaction processing.

RAID-set - The set of disks that are used to ensure RAID protection for storing data. A memory system can have many RAID-sets.

Raid Size - The number of disks in a RAID-set.

Raid Stripe - This shows all the stripes that have the same logical location on disks in a RAID-set.

RBOC (Regional Bell Operating Company) - The seven regional telephone companies, such as Bell Atlantic and Pacific Bell, that are formed by the breakup of AT&T in 1984.

RFC (Request For Comments) - This series contains documents that propose internet standards, and will be reviewed by a large amount of people on the internet. Many internet proposals are thus developed by communication through RFCs and finally adopted as the standards.

RFI (Request For Information) - This series contains documents regarding information and questions of a product that the users have for the vendors. Vendors aren't binding to the information provided.

RFP (Request for Procurement/Pricing) - This series contains documents regarding information and questions of a product that the users have for the vendors. Unlike RFI, vendors may be bounded by the provided information.

RJ-11 - A telephone jack used in U.S. that has the maximum of six connections.

RJ-45 - The ISDN telephone line connector.

RPC (Remote Procedure Call) - A mechanism in the client/server architecture of

distributed system that provides ways to allow procedures/processes to be executed on a remote machine with the results sending back to the host.

RS-232 (Recommended standard) - A communication connector standard that connects a computer/terminal to data circuit-terminating equipment, such as printer and modem. It's used only for transmission over short distances with the transmission rate up to 38400 bits/s. There are usually two types: one with 9 pins, and the other one with 25 pins.

RS-422 (Recommended standard) - Developed by the EIA, this specifies serial-line standards for differential drivers and receivers.

S

SAAL (Signaling ATM Adaptation Layer) - A special kind of AAL layer developed primarily for reliable transfer of signaling messages. Basically, AAL5 with SSCS (including SSCF and SSCOP), CPCS and SAR. The layer is between signaling layer protocol, such as Q.2931, and ATM layer.

SAR (Segmentation and Reassembly) - The bottom sublayer of AAL that segments the packets received from CS layer and does some conversion on them, such as adding some overheads, to form the 48-bytes ATM cell payloads with the correct information and format. At the destination, it will remove cell payloads information, and converts them back to the data stream that CS layer understands.

SAR-PDU (Segmentation And Reassembly Protocol Data Unit) - The PDU produced after passing through ATM's SAR layer, and has been encapsulated into the right SAR-specified formatted cells to be ready to pass to ATM and physical layers for the actual transmission.

SCAC (System Clock And Control)

SCSI (Small Computer System Interface) - A standard that can connect up to 16 peripherals in the computer system using the specialized hardware interface with SCSI commands on it to operate. SCSI has two handshaking protocols, synchronous and asynchronous, in which synchronous transfer is faster in longer cables, and asynchronous transfer is better in shorter cables (for cables shorter than 6 meters/ 19.68 feet). Up to now, SCSI-1 and SCSI-2 are widely used, and SCSI-3 is still under development. Normal SCSI are also called single-ended SCSI. Some important variations are listed below:

- Differential SCSI - Type of SCSI that uses two wires for each signal to let them cancel out each other's noise and to single out the actual signal during transmission. It's capable for transmission over longer distance (the cable can be as long as up to 25 meters or 82.02 feet).
- Fast SCSI - Type of SCSI that uses synchronous transfer mode with the ability to transfer up to 5.0 Mbytes/s for SCSI-1, and up to 10.0 Mbytes/s for SCSI-2.
- Wide SCSI - Type of SCSI that doubles the amount of bits normal SCSI bus carries by adding another SCSI cable. This extra cable can provide either 16-bit or 32-bit datapath (normal SCSI bus only have 8-bit datapath), which is either 2 times or 4 times faster than the original transmission rate.

SDH (Synchronous digital hierarchy) - SONET in the international standard with some variations. The main difference between SDH and SONET is on the transmission rate that it is based on. SDH adopts STM standard with the base rate (STM-1) of 155.52 Mbits/s, and SONET adopts STS standard with the base rate (STS-1) of 51.84 Mbits/s. As a result, the cell mapping is also different to accommodate the different transmission standards. See STS.

SEAL - Same as AAL5.

SECAM (Sequential couleur Avec Memoire) - A standard format for analog TV signals that requires 25 standalone video frames per second. This standard is mainly used in France, and is different from PAL on the color information storage algorithm.

SMDS (Switched Multi-megabit Data Service) - Developed by Bellcore, it's a

connectionless datagram service that can be used to implement on the existing LAN protocols, and future ATM networks. The cells used to transmit in this service are fix-length with 53 bytes (same as in ATM technology), and they can go from any node to any node without a connection set-up.

SMP (Symmetrical Parallel Processing)

SNMP (Simple Network Management Protocol) - An IETF standard for TCP/IP network management. The protocol has been widely used now for supporting many network products and operations.

SONET (Synchronous Optical NETwork) - A set of standards that has been defined to be used as the physical layer of ATM (not necessarily) to transmit optical signals over fibers.

SRTS (Synchronous Residual Time Stamp) - A technique that maintains synchronization between the source, destination end-stations, and network clock for AAL1 transport by using special information generated at the source end-station and extracted from the physical layer before the transmission.

SSCF (Service Specific Coordination Function) - A coordination function that maps SSCOP services into those primitives needed specifically for signaling (by Q.2931). Different SSCFs may be prescribed for different services using the same SSCOP.

SSCOP (Service Specific Connection Oriented Protocol) - The bottom layer of SSCS found in some AAL types that provides assured data transfer based on retransmissions. Typical tasks will be taking care of lost and corrupted cells.

SSCS (Service Specific Convergence Sublayer) - As its name suggests, the service can be found only on certain AAL service types. It's further divided into SSCF and SSCOP. Its main purpose is to provide reliable/error-free data transmissions in the network. The layer usually can be found in AAL5 and AAL3/4, and it can be null if classic IP over ATM or LAN Emulation is implemented above these AAL layers. Please see SSCF and SSCOP for further details.

STB (Set-Top Box) - see Set-Top Box.

STM-n (Synchronous Transfer Mode) - The base of SDH (similar to STS-n in SONET) in which "n" represents the multiple of the increment of 155.52Mbits/s. Therefore, STM-1 will have the rate equal to STS-3/OC-3.

STP (Shielded Twisted Pair) - General term given for any cable built by a pair of twisted wires surrounded by a metallic shield for greater interference immunity.

Streaming - Technology that allows video or audio programming (among other things) to be downloaded uniquely to the user's display device (such as TV set) while allowing the user to simultaneously watch or listen to the material as it is being downloaded. The streamed material is not required to be stored in any memory capability within the user's display device before it can be used - an analogy would be if you could command your local TV station to show whatever program or movie you wanted whenever you wanted to watch it. As noted above, moreover, VOD's full VCR-like capability allows the VOD user to store the material at his or her option.

Stripe - A portion of a disk that is used to store a part of a striped file.

Stripewidth - The size of a stripe.

Striping - A method that divides a file into pieces (stripes), and then stores each piece on a different disk. It's a nice way to achieve higher order of concurrency when a file is used heavily.

STS-n (Synchronous Transfer Mode) - The electrical signal version of OC-n in SONET with the base bit rate of 51.84Mbits/s also. Therefore, STS-1 will be 51.84Mbits/s, and each integer increment of n from 1 will increase the bit rate by 51.84Mbits/s. The "n" also indicates the unit of SONET frames transmission. In addition, if the standard is implemented as a single circuit instead of the result of multiplexing other lower level circuits(with smaller number), a "c" is appended to it.

STS-12c - A transmission standard that has the speed of 622.08 Mbits/s.

STU (Set Top Unit) - Same as Set-Top Box. See Set-Top Box.

SVC (Switched Virtual Circuit) - A connection type that can be established and closed down by the network upon users' requests. With SVC, each end-station in the network can request to set up connection with any other end-station if the destination end-station agrees. Many SVCs can be supported by a virtual path simultaneously. Please see PVC for further interests.

T

T1 (Transmission System 1) - A digital transmission standard for digital carrier that can support DS-1 digital signals. It has transmission rate of 1.544Mbits/s that can carry maximum of 24 time-division multiplexed 64 Kbits/s channels.

T3 (Transmission System 3) - The name given to any protocol that is capable of carrying DS-3 digital signals at 44.736 Mbits/s. However, T3 is not really a formal name for any standard!

TCP (Transmission Control Protocol) - Implemented in transport layer, the protocol provides reliable end-to-end and connection-oriented data communication between the hosts in the network. It is built on top of IP for actual packet delivery, and the two together often classified as TCP/IP.

TCP/IP - The two protocols are originally developed by the Department of Defense to link different types of computers (by different manufacturers across the network). Right now, the two protocols together are widely accepted as the main standard for providing any necessary function and operation required by OSI layers 3-5.

TDM (Time Division Multiplexing) - A multiplexing protocol that divides time into slots, and each channel takes certain time slots for transmission.

Throughput - Measures how much media can be streamed by a given server - more throughput means lower capital and operating costs. The n4x delivers industry-leading throughput because it was designed from the ground up as a streaming media appliance. It is not a general purpose application server, and it is not a re-purposed file server appliance.

Time-Division - See TDM.

TVOD (True Video On Demand) - The ideal VOD service that each user can get immediate response when interacting with the video service system using any commands. In fact, with TVOD, the user can do any VCR-like commands on the video with similar response time. Since it's quite expensive for making instantaneous reply possible when lots of users are accessing the system, there is one other alternative, NVOD, that reduces cost by increasing the waiting time. See NVOD for further details.

Twisted Pairs of Copper Wire - Two insulated copper wires twisted around each other to reduce interference of electromagnetic fields between wires. There are two types of twisted wires: STP and UTP.

U

UBR (Unspecified Bit Rate) - One of the ATM service types that supports variable bit rate data traffic with only a peak traffic parameter which can tolerate variable delays. However, performance is not guaranteed. UBR is also one of the two traffic types that ATM uses for providing a "best-effort" service.

UDP (User Datagram Protocol) - Implemented in transport layer, the protocol provides connectionless datagram service that no acknowledgement will be sent for the delivery of packets. Therefore, even though UDP also used IP for actual packet delivery, it's less reliable compared to TCP.

UNI (User-to-Network Interface) - ATM Forum specification for operations between users and network. There are two types of UNI:

- Public UNI (or just called UNI) - The interface between a user's ATM end-station or switch with the public ATM network. "Public" means the Wide Area ATM network.
- Private UNI (P-UNI) - The interface between an user's ATM end-station or an ATM DSU with the private ATM network, such as the private ATM switch. "private" means that the devices are within the same local ATM network.

UNI Signaling - See [q.2931](#) UNI Signaling.

Upstream - The transmission from the end-users or clients to the servers.

Upstream Manager - The part of the server systems where all user requests are first directed to and processed. Afterwards, these requests will be routed to the appropriate service processes to carry out the desired transaction by this upstream manager.

UTP (Unshielded Twisted Pair) - A name given to any twisted pair of wires that doesn't have any shield covering it. UTP is the common telephone wire in US.

V

V.24 - Same as RS232c.

VBR (Variable Bit Rate) - One of the ATM traffic types that specifies the transmission of certain data types that will be transmitted by groups instead of streams. As a result, this traffic type also tolerates some certain packet/cell delays in order to support the transmission.

VBR+ (Variable Bit Rate +) - One of the ATM traffic types that can support the kind of transmission requiring characteristics of both VBR and ABR.

VC - Three things that can be called by this name:

- Virtual Circuit - A type of network connection that all the data transmission will be sent in a defined route between two end-users in X.25's terminology. In ATM, sometimes it means one connection over the virtual channel. However, bandwidth isn't allocated to the link until the user's request to start communication.
- Virtual Connection - The virtual circuit in Frame Relay terminology. Sometimes it also points to the actual connection (when a connection is set up) between the end-stations in ATM terminology.
- Virtual Channel - A determined route between two ATM end-stations setting up for transmission. In other words, a virtual channel is a connection over a virtual circuit. A virtual channel can traverse several virtual paths, and supports several virtual circuits.

VC-4 - A type of virtual circuit.

VCC (Virtual Channel Connection) - The ATM connection that is formed by the concatenation of virtual channel links extended between two ATM end-points where higher layer protocols, such as IP, can be accessed. Also, the cell sequence during the transmission must be preserved over a VCC. A VCC is an instance of SVC or PVC.

VCI (Virtual Channel Identifier) - A 16-bit field in the ATM header for both UNI and NNI that indicates which virtual channel the cell is routed from. Also, this number will possibly be changed at an ATM switch to indicate the output virtual channel that the cell should be forwarded to.

VCL (Virtual Channel Link) - The circuit between an ATM end station and a switch or two ATM switches in a virtual channel connection.

VC Switch (Virtual Channel Switch)

VDT (Video Dial Tone) - A platform service providers can use to offer multimedia applications.

Video Pump - The software running on top of some nCUBE's systems that takes care of sending data packets and data stream from the media server storage system to the users' Set-Top Boxes.

VIP (Video Information provider)

Virtual Channel - See VC

Virtual Channel Link - See VCL

Virtual Circuit - See VC

Virtual Path Link - See VPL

VLDB (Very Large DataBase)

VME (Versa module Europe) - A bus architecture similar to PCI.

VOD (Video On Demand)

VP (Virtual Path) - Virtual channels that have the same sender and destination can form a virtual path to be routed and switched together to facilitate the routing decision and resource allocation. A virtual path can contain several SVCs or PVCs.

VPC (Virtual Path Connection) - The ATM connection that is formed by the concatenation of virtual path links between the points where a VCI value is first assigned and the point where the VCI value is either reassigned or terminated.

VPI (Virtual path identifier) - A field in the ATM header that takes 8 bits in UNI, and 12 bits in NNI in ATM network. It's mainly a number that identifies which virtual path a cell is routed from. Furthermore, the number may be changed at an ATM switch to indicate which output virtual path the cell should be taking.

VPL (Virtual Path Link) - The circuit between an ATM end station and a switch or two ATM switches in a virtual path connection.

VP Switch (Virtual Path Switch)

W
X

X.25 - A popular packet-switched networking protocol that defines the standards for the 3 bottom OSI layers, Physical, Data Link and Network layers, and it's mainly for variable-length packets in connection-oriented services.

X.121 - The network addressing standard approved by ITU/CCITT for packet-switched networks.

X.400 - The standard developed by CCITT/ ITU for data network message handling, such as e-mail services.

Y
Z