The Education Coalition

31 Segovia, San Clemente, CA 92672
(949) 369-3867 • TECemail@aol.com

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Telecommunications Glossary

*from "A Technical Guide to Teleconferencing and
Distance Learning," 3rd edition*

A

Access Channels: Dedicated channels giving nondiscriminatory access to a local cable system by the public, government agencies or educational institutions.

ACCUNET Switched Digital Services: High-speed dial-up digital data services offered by AT&T for full duplex digital transmission at speeds of 56, 64, 384 and 1536 kbps. Uses include data, voice and video services.

Acoustic Coupler: A device that allows a conventional telephone handset to feed its signal into a modem, as opposed to direct couplers, which feed the modulated/demodulated signal directly into the phone line.

Acoustic Echo Canceller: All speakerphones have some form of adaptive echo canceller that produces a synthetic replica of the potential echo to subtract from the transmit audio. Most units have a center clipping echo suppresser to remove the residual echo from the transmit signal. The goal of the acoustic echo canceller is to reduce the amount of direct and reverberant loudspeaker coupling to the microphone to prevent echo. To achieve this, the algorithms used in today's devices require an audio system that is feedback stable.

Acoustic Echo Return Loss - AERL: The minimum loss experienced by a sound in traveling from the loudspeaker to the microphone in a conference room. It is expressed in dB or decibels. A 0 dB loss corresponds to a perfectly reflective room or to very close coupling between loudspeaker and microphone. In practice, AERL figures can range from 0 to -30 dB, with a poor room having the former figure.

Acoustic Echo Return Loss Enhancement - AERLE: The maximum echo cancellation provided by the acoustic canceller. Typical figures will vary from 6 to 18 dB. The larger the number the better. It is important to note whether the figure is quoted with the center clipper enabled or disabled. If quoted with center clipper disabled, it is a true measure of the cancellation provided by the echo canceller rather than the attenuation provided by the center clipper.

Acoustic Modem: A modulator-demodulator unit that converts data signals to telephone tones and back again.

Active Satellite: A satellite that transmits a signal, in contrast to a passive satellite that only reflects a signal. The signal received by the active satellite is usually amplified and translated to a different frequency before it is retransmitted.

Ad Hoc: Teleconferencing technology and sites assembled for an event; equipment may be rented or permanently installed; sites are not always part of the network.
Addressable: The ability to signal from the headend or hub site in such a way that only the desired subscriber's receiving equipment is affected. This makes it possible to send a signal to a subscriber and effect changes in the subscriber's level of service such as the ability to receive a program.

ADPCM - Adaptive differential pulse code modulation: A method of compressing audio data by recording the differences between successive digital samples rather than full value of the samples. There are many different types of ADPCM standards; this refers to the standard as defined in the CD-ROM XA and CD-I standards.

ADSL - Asymmetric Digital Subscriber Loop: ADSL uses a regular phone line (twisted pair) without a dial tone (a dry pair) to allow transfer speeds of up to 7Mb downstream with slower speeds going back up (faster than a T1). The Telcos are using ADSL to maintain market share rather than allowing the cable industry to deploy cable modems. Pacific Bells says that 45 percent of its customers will be able to have access to ADSL by the end of 1997.

Affiliate Network: Group with their own satellite receive equipment; routinely receive same programming.

Agent: See knowbot.

Algorithm: 1. Rule of thumb for doing something with a semblance of intelligence. For example, a descrambling algorithm will yield a clear, unscrambled message from an apparently meaningless one. 2. The procedure used for performing a task.

America Online - AOL: Commercial information service with a graphical interface.

Amplifier: A device used to increase the strength of video and audio electronic signals.

Amplitude: The size or magnitude of a voltage or current waveform; the strength of a signal.

Analog: Information represented by a continuous electromagnetic wave encoded so that its power varies continuously with the power of a signal received from a sound or light source.

Analog-to-Digital - A/D Conversion: The conversion of an analog signal into a digital equivalent. An A/D converter samples or measures an input voltage and outputs a digitally encoded number corresponding to that voltage.

Analog Transmission: Transmission of a continuously variable signal as opposed to a discrete signal. Physical quantities such as temperature are described as analog while data characters are coded in discrete pulses and are referred to as digital.

Animate: To effect motion of any sort; e.g. to animate a person's presentation.

Animation: A video, film, and computer production technique utilizing cartoon-type artwork to create the illusion of movement.

ANSI - American National Standards Institute: ANSI is one of these "terminal emulation" methods. Although most popular on PC-based bulletin-board systems, it can also be found on some Internet sites. To use it properly, you will first have to turn it on, or enable it, in your communications software.

Answerback: The response of a terminal to remote control signals. Antenna (dish) The device that sends and/or receives signals (electromagnetic) from the satellite.:

Antenna Power: The product of the square of the broadcast antenna current and the antenna resistance where the current is measured.

Aperture: A cross section of the antenna exposed to the satellite signal.

Application: The use of a technology to achieve a specific objective.

Application Software: In computers, programs used to interact with and accomplish work for the user. Application software is usually written in a higher computer language such as Basic, COBOL, FORTRAN or Pascal, and may be written by the user or supplied by the manufacturer or a software company.

Applications Program: A computer program dedicated to a specific purpose or task. Applications programs which produce discernible results and can sometimes be machine-independent, are distinct from systems programs, which are designed to drive particular electronic devices and are always machine-dependent.

Archie: A system which allows searching of indexes of files available on public servers on the Internet.

Archival: A medium that is readable and/or writable for an extended period.

Armored Cable: Coaxial cable that can be direct buried without protective conduit, or used in underwater applications.

ARPANet: A predecessor of the Internet. Started in 1969 with funds from the Defense Department's Advanced Research Projects Agency.

ASCII: American Standard Code for Information Interchange; pronounced "Askee." An eight-level code for data transfer adopted by the American Standards Association to achieve compatibility between data services.

Aspect Ratio: The ratio of picture width to height (4 to 3 for North American NTSC broadcast video).

Asynchronous Communication: Takes place in different time frames and accessed at the user's convenience. Synchronous communication takes place in the same time frame such as a live teleconference.

Asynchronous Time-Division Multiplexing: An asynchronous signal transmission mode that makes use of time-division multiplexing.

Asynchronous Transmission: A technique in which the time interval between characters may be of unequal length. Transmission is controlled by start and stop elements at the end of each character. Used for low-speed terminal links.

ATM - Asynchronous Transfer Mode: ATM switching protocol can handle all types of traffic - voice, data, image, and video.

Attenuation: The difference between transmitted and received power due to loss through equipment, lines, or other transmission devices; usually expressed in decibels. The loss in power of electromagnetic signals between transmission and reception points.

Attenuator: A device for reducing the amplitude of a signal.

ATSC: Advanced Television Systems Committee.

ATV - Advanced Television: An agglomeration of techniques, based largely on digital signal processing and transmission, that permits far more program material to be carried through channels than existing analog systems can manage. In this sense, HDTV (high definition television) is a subset of ATV. ATV does not automatically signify improved picture or sound performance. Those are things that can be accomplished with ATV in systems designed for such purposes, but it can also carry ten somewhat lower- quality signals where only one could exist previously, or permit ghost cancellation for ordinary NTSC signals. In each case, the new features derive from the use of digital techniques of one form or another.

Audio Bridge: An audio bridge connects the telephones at remote sites, equalizes the noise distortion and background noise for a live audio teleconference.

Audio Frequency: A frequency lying within the audible spectrum (the band of frequencies extending from about 20 Hz to 20 kHz).

Audio Presentation: Often overlooked, but just as important as the video (perhaps more so) is the sound portion of the program. Without the audio, nothing is understood while a video failure could be tolerated if the sound portion is not affected. Use a good audio system to augment the video display. Do not use the built-in speaker of the TV monitor or room PA system. Rather, employ a high quality stand-alone system, with the speakers positioned adjacent to the TV screen. This affords the best audio experience. The audio quality coming off the satellite signal is true high fidelity, and its reproduction further enhances program presentation.

Audio Teleconferencing: Two-way electronic voice communication between two or more groups, or three or more individuals, who are in separate locations.

Audiographic: Teleconference system which uses narrow band telecommunications channels (telephone lines or subcarriers); transmits audio and graphics. Graphics can be transmitted by facsimile transceivers (transmitter-receiver), computers (text or graphic display), or electronic drawing systems (such as electronic blackboard) which allow a participant to draw or write on an electronic screen which is transmitted to a remote site where participants can see it.

Audio Response: A form of output that uses verbal replies to inquiries. The computer is programmed to seek answers to inquiries made on a time-shared on-line system and then to utilize a special audio response unit which elicits the appropriate prerecorded response to the inquiry.

Audio Response Unit: Device that provides a spoken response to digital inquiries from a telephone or other device. The response is composed from a prerecorded vocabulary of words and can be transmitted over telecommunication lines to the location from which the inquiry originated.

Audio-Subcarrier: Frequency which transmits audio for an accompanying video signal or independent audio (such as a radio program). Audio is sent along with the video signal, but on a different frequency.

Aural Cable: Services providing FM-only original programming to cable systems on a lease basis.

Authoring System: Computer software that allows one to develop the framework for an interactive multimedia presentation. Authoring software enables the use of multiple data types as well as the controls needed to play-back information on the computer from devices such as CD-ROMs, computer hard disks and videodiscs.

Automatic Number Identification - ANI: The automatic identification of a calling station, usually for automatic message accounting. Also used in pay-per-view automated telephone order entry to identify a customer for billing and program authorization purposes.

Azimuth: Angle between an antenna beam and the meridian plane, measured along a horizontal plane. How far east or west in the southerly sky the satellite is located in relation to the local meridian, or north-south plane. It is measured in degrees, clockwise from true north.

B

B-Mac: A method of transmitting and scrambling television signals where MAC (multiplexed analog component) signals are time-multiplexed with a digital burst containing digitized sound, video synchronizing, authorization, and information.

Backbone: A high-speed network that connects several powerful computers. In the U.S., the backbone of the Internet is often the NSFNet, a government funded link between a handful of supercomputer sites across the country.

Backbone Microwave System: A series of directional microwave paths carrying common information to be relayed between remote points. The backbone microwave system is engineered to allow the insertion of signals, the dropping off of signals and the switching of signals along its length at designated relay points. In order to maintain the signals in the highest possible quality, the equipment used in the backbone microwave system is normally of a higher technical performance level than other microwave electronics in the network. Antennas are always directional.

Backhaul: A term used for the transmission of a signal (normally video) from the ends of transmission systems such as microwave to a central point. For a satellite videoconference, a backhaul refers to a signal brought in from a secondary site to the origination site, mixed with the primary signal, and sent out over the program out satellites.

Bandwidth: Determines the rate at which information can be transmitted across that a medium. The rates are measured in bits (bps), kilobits (kbps), megabits (Mbps), or gigabits per second (Gbps). Typical transmission services are 64 kbps, 1.544 mbps (T1), and 45 Mbps (T3). The space between the top and bottom limit of airwave frequencies that are transmitted over a communications channel. The maximum frequency (range), measured in Hertz, between the two limiting frequencies of a transmission channel; the range of frequencies that can be carried by a transmission medium without undue distortion. Narrowband uses lower frequency signals such as telephone frequencies of about 3,000 Hertz and radio subcarrier signals of about 15,000 Hertz. Broadband uses a wide range of frequencies (broadcast and cable TV, microwave and satellite; carries a great deal of information in a short time; more expensive to use. C band is in the 4 to 6 giga-Hertz (gHz) Ku Band is 12 and 14 gHz .14.0 and 14.5 gHz are used to uplink; 11.7 and 12.2 gHz are used to downlink. A receiver with dual band capability can receive C and Ku band signals.

Base Band: The unmodulated signal that is delivered from a satellite receiver.

Base Band Distribution Systems: Usually used when the viewing areas are close together, and when TV monitors are used for viewing. The base band audio/video output from the satellite receivers is fed directly into the monitor. This form of wiring uses several twisted pair wires which can be very expensive when wiring more than 50 feet because of the need for many amplifiers and splitters. The picture quality is much sharper using a base band system, than with any other system.

Basic Rate Interface - BRI: The basic subscriber loop for one or two users, which delivers two 64 kpbs B channels and one 16 kbps D channel over a standard twisted pair loop. Each circuit-switched B channel can transmit voice or data simultaneously. The D channel transmits call control messages and user packet data.

Batched Communication: The sending of a large body of data from one station to another station network, without intervening responses from the receiving unit.

Baud: A unit of digital transmission signaling speed derived from the duration of the shortest code element. Speed in bauds is the number of code elements per second. 300 Baud is low, 2400 Baud and 9600 Baud are much faster and common for transmitting data by computer.

BBS - Bulletin Board System/Service: The BBS is an area within a network where users can "post" information for public display, in much the same way one posts information on a regular bulletin board. Most networks dedicate a bulletin board to special interest areas, such as education or computer care.

Beyond the Horizon Region: That physical region beyond the optical horizon with which line-of- sight radio communications is not normally possible, but can occur if atmospheric conditions are such to cause beam bending or forward scattering of the radio signal.

Bicycle Tapes: The process whereby video tape material is distributed by sending or "bicycling" the tape after presentation to the next site for its scheduled presentation.

Bidirectional Flow: A pathway allocating two-way data or communication exchange; flow in either direction represented on the same flow line in a flowchart.

Binary: Numbering system with two possible states, on or off as designated by 0 and 1.

BISDN - Broadband ISDN: Is expected to offer dedicated circuits, switched circuits and packet services at rates of 155 Mbps and above.BISDN is currently in the conceptual stage, and the term refers to a family of services being defined by the standards organizations. The goal of BISDN is to take advantage of the immense amount of raw bandwidth being made available due to the proliferation of fiber cable plant, and to enable customers to send data, voice, and video at high speeds and in an integrated manner. BISDN is expected to be fully defined in 1993-95, and deployment will take place in the latter half of the decade. SONET-based fiber will serve as the delivery vehicle for BISDN services. BISDN will employ the concept of cell relay (Asynchronous Transfer Mode - ATM), which uses a transmission scheme based on small, fixed-sized (53-byte) cells. These cells carry address and raw information, and the carrier networks will use address information to route the cells to the appropriate destination. As discussed above, frame relay is an interface; in contrast, cell relay is broader in scope and defines the size of the packets and the process for carrying packets across a network. BISDN is expected to encompass different types of services, including datagram service, switched circuits and permanent circuits, and to run at speeds ranging from 155 to 622 mbps. Some services, like SMDS and frame relay, will be in

operation before BISDN is introduced, and the BISDN specs are expected to incorporate these preexisting services.

Binary Files: Those containing information that is not represented in the file by ASCII characters. These may be graphics, formatted files, or even executable programs. In order to send these files, special up- and downloading protocols must be used. Base Two, a number system comprised of zeros and ones, which represent off and on, absence or presence of a pulse. Used to store data.

Bit: A contraction of the words "binary digit," the smallest unit of information. A code element of digital transmission. One bit per second equals one baud "binary digit" single unit of information 0 or 1. See kbps or mbps.

Bit Density: A measure of the number of bits received per unit of length or area.

Bit Error Rate: Fraction of a sequence of message bits that are in error. A bit error rate of 10-6 means that there is an average of one error per million bits.

Bit Rate: Speed at which bit positions are transmitted, normally expressed in bits per second (see Baud.)

Bit Stream: A continuous string of bit positions occurring serially in time.

BITNET: Another, academically oriented, international computer network, which uses a different set of computer instructions to move data. It is easily accessible to Internet users through e-mail, and provides a large number of conferences and databases. Its name comes from "Because It's Time." BITNET is linked to Net North, the Canadian equivalent, and EARN, the European Academic and Research Network, as well as Internet/NREN.

Blanking (picture): The portion of the composite video signal whose instantaneous amplitude makes the vertical and horizontal retrace invisible.

Blanking Level: The level of the front and back porches of the composite video signal.

Blanking Pulse: 1. A signal used to cut off the electron beam and thus remove the spot of light on the face of a television picture tube or image tube. 2. A signal used to suppress the picture signal at a given time for a required period.

Blanking Signal: A specified series of blanking pulses.

Block: A group of bits, or characters, transmitted as a unit. An encoding procedure is generally applied to the group of bits or characters for error control purposes.

Block Downconverter - BDC: Located at the antenna. The multi-conversion process of converting the entire band to an intermediate frequency (4 GHz to 1 GHz) for transmission to multiple receivers, where the next conversion takes place. The BDC receives the signals from the Low Noise Amplifier (LNA) and converts them from the extremely high 4 GHz range to a much lower range, usually around 1 GHz. This range

is less critical to signal loss, and permits the use of inexpensive long-run cable to interconnect with the receiver. Perhaps the biggest advantage of the BDC is the manner in which it handles the "block" of signals. It can be thought of as a passive device, converting and passing on to the receiver all of the channels on the satellite (of the selected polarity). This allows for the installation of multiple receivers through signal splitters, and simultaneous program viewing or taping. Older installations used downconverters that operated on only one channel, tuned by the receiver. These downconverters converted the LNA signals to 70 MHz, which provided considerable flexibility in quality and length of the connecting cables. The BDC method is used by Ku-Band systems and is also compatible with C-Band receivers.

Block-Error Rate: The ratio of the number of blocks incorrectly received to the total number of blocks sent.

Bounce: What your e-mail does when it cannot get to its recipient - it bounces back to you - unless it goes off into the ether, never to be found again.

Branch Cable: A cable that diverges from a main cable to reach some secondary point.

Branching: A computer operation, such as switching, where a choice is made between two or more possible courses of action depending upon some related fact or condition.

Bridge: Device which interconnects three or more telecommunication channels, such as telephone lines. A telephone conference audio bridge links three or more telephones (usually operated assisted). Usually a meet-me audio bridge or provides a teleconference direct dial access number. Both connect remote sites and equalize noise distortion.

Bridges, Gateway, Routers: Devices that convert LANs to other LANs, computers and WANs by allowing systems running on different media (copper wire, fiber optics, etc.) and protocols (rules to communicate).

Bridging Amplifier: An amplifier connected directly into the main trunk of the CATV system. It serves as a sophisticated tap, providing isolation from the main trunk, and has multiple high level outputs that provide signal to the feeder portion of the distribution network. Synonymous with bridger and distribution amplifier.

Broadband: Communications channels that are capable of carrying a wide range of frequencies. Broadcast television, cable television, microwave and satellite are examples of broadband technologies. These technologies are capable of carrying a great deal of information in a short amount of time, but are more expensive to use than technologies like telephone which require less band width. Broadband (Wideband) distribution systems. A telecommunications medium that carries high frequency signals; includes television frequencies of 3 to 6 megahertz. Broadband distribution systems work like cable TV, in that up to twenty channels are available from a single coaxial cable. A main trunk cable will originate at the control room, and run down the hallways of the viewing area. Smaller cables can tie into the main cable at any point along its length. Any room that is near the main cable run can have access to all of the channels

on the system. Normal television sets are used, and a variety of channels can be received by simply changing channels on the television set.

Broadband Network: A local area network (LAN) residing on coaxial cable capable of transporting multiple data, voice and video channels.

Broadcasting: The dissemination of any form of radio electric communications by means of Hertzian waves intended to be received by the public. Transmission through space, utilizing preassigned radio frequencies, which are capable of being received aurally or visually by an audience. The one-way transmission of information.

Brokers: Organizations which maintain primary leases or ownership of communications satellite time and provide subleases to teleconference originators.

Buffer: Temporary storage facility used as an interface between system elements whose data rates are different; Memory area in computer or peripheral device used for temporary storage of information that has just been received. The information is held in the buffer until the computer or device is ready to process it. Hence, a computer or device with memory designated as a buffer area can process one set of data while more sets are arriving.

Bug: A system or programming problem. Also refers to the cause of any hardware or software malfunction. May be random or non-random.

Bundle: A package that includes several products for one price. For example, a CD-ROM drive, with controller card, cable, software, and one or more CD-ROMs.

Bus Interface: An electronic pathway between CPUs and input/output devices. A bus interface for a CD-ROM drive consists of a controller card and cable.

Business Television - BTV: Corporate use of video transmission for meetings/training via satellite.

Burst: 1. In data communication, a sequence of signals counted as one unit in accordance with some specific criterion or measure. 2. A color burst.

Burst Modem: In satellite communications, an electronic device used at each station that sends high-speed bursts of data which are interleaved with one another. These bursts must be precisely timed to avoid data collisions with multiple stations.

Burst Transmission: Data transmission at a specific data signaling rate during controlled intermittent fiintervals.

Bus: A circuit or group of circuits which provide an electronic pathway between two or more central processing units (CPUs) or input/output devices.

Bus Controller: The unit in charge of generating bus commands and control signals.

Byte: A group of bits treated as a unit used to represent a character in some coding systems. The values of the bits can be varied to form as many as 256 permutations. Hence, one byte of memory can represent an integer from 0 to 255 or from -127 to +128. The unit of computer memory typically consists of eight bits; 64K, 64,000 bytes or 64 kilobytes.

Byte: Primary and secondary memory (RAM and magnetic media) are measured in kilobytes (1,024, or 210 bytes) and megabytes (one million bytes).

C

C-Band: A category of satellite transmissions which transmit from earth at 4.0 to 6.0 GHz and receive from the satellite at between 3.7 and 4.2 GHz which are also shared with terrestrial line-of-sight microwave users. This band of transmissions has less path loss than the other standard used for satellites (Ku-Band) but must have a large antenna for the same receiver input power level due to its use of longer wavelength frequencies. Other problems relating to the use of C-Band include the shared use of these frequencies with terrestrial microwave transmission which cause interference with the weaker satellite signals in certain areas.

Cable/Cable Television: A broadband communications technology in which multiple television channels as well as audio and data signals are transmitted either one way or bidirectionally through a distribution system to single or multiple specified locations. Uses coaxial cable to transmit programs. Direct-by-wire transmission to homes from a common antenna to which these homes are linked. Cable companies provide the service in most cases. Distinguished from television reception through a roof-top antenna that picks up the broadcast signal. The only acronym was CATV, denoting community antenna television.

Cable Television Channel Classes:

Class I Source is a television broadcast signal that is being presently transmitted to the public and conveyed to the cable system for retransmission to the public, direct connection, off-the-air or obtained indirectly by microwave or by direct connection to a television broadcast station.

Class II: A signaling path provided by a cable television system to deliver to subscriber terminals television signals that are intended for reception by a television broadcast receiver without the use of an auxiliary decoding device and whose signals are not involved in a broadcast transmission path.

Class III: A signaling path provided by a cable television system to deliver to subscriber terminals signals that are intended for reception by equipment other than a television broadcast receiver or by a television receiver only when used with auxiliary decoding equipment.

Class IV: A signaling path provided by a cable television system to transfer signals of any type from a subscriber terminal to another point in the cable television system.
Cablecasting: Origination of programming, usually other than automated alphanumeric services, by a CATV system.

Cable Communications Policy Act of 1984: This act, passed by Congress in 1984, updated the original Communications Act of 1934. The primary changes dealt with cable television regulation, theft of service, equal employment opportunity (EEO) an various licensing procedure changes.

Cable Compatible: Generally refers to consumer devices, such as television sets and videocassette recorders, that are designed and constructed to allow direct connection of a CATV subscriber drop to the device. Frequently, they have a tuner capable of receiving cable channels other than 2-13 (e.g., midband, superband, and hyperband channels). Even though a device may be cable compatible, it may still require an external descrambler to receive scrambled channels such as the premium pay channels or pay-per-view channels.

Cache: In a processing unit, a high-speed buffer storage that is continually updated to contain recently accessed contents of main storage. Its purpose is to reduce access time. A holding area for data within the CD-ROM drive itself or on its interface board, that allows the system a method for matching data transfer rates and presentation speed requirements.

CAD: Computer Aided Design.

CAI: Computer Assisted Instruction.

Camera: In television, an electronic device utilizing an optical system and a light-sensitive pick-up tube to convert visual images into electrical impulses.
Camera Control Unit # CCU: An electronic device that provides all the operating voltages and signals for the proper set up, adjustment and operation of a television camera.

Candle Power: A measure of intensity of a light source in a specific direction.

Carrier-to-Noise Ratio: In cable television, the ratio of peak carrier power to root mean square (RMS) noise power in a 4 MHz bandwidth.

CATV- Community Antenna Television: A broadband communications system capable of delivering multiple channels of entertainment programming and non-entertainment information from a set of centralized antennas, generally by coaxial cable, to a community. Many cable television designs integrate microwave and satellite links into their overall design, and some now include fiber optics.

Carrier: Vendor of transmission services operating under terms defined by the FCC as a common carrier. Owns a transmission medium and rents, leases or sells portions for a set tariff to the public via shared circuits.

CAV - Constant Angular Velocity: A disk that rotates at a constant rate of speed. Examples are hard drives, floppy disks, magneto-optical discs and some videodiscs. A CAV videodisc permits access to video within seconds, allows for up to 54,000 still frames, or may contain up to 30 minutes of full motion video (or any combination of stills and video). (See CLV)

CBT - Computer Based Training: The use of interactive computer or video programs for instructional purposes.

CCITT: Consultative Committee on International Telephony and Telegraphy; An international standards group.

CCITT Standard: Transmission rate of Px64 or multiples.

CCL - Connection Control Language: A scripting language that allows the user to control a modem.

CCTV: Closed-Circuit Television. The system for sending cable signals to subscribers or designated locations.

CD-Audio: Also called CD-DA for Compact Disc-Digital Audio. The use of CDs to record music in digital audio format. The disc holds a sequence of audio tracks. Each can be a very high-fidelity stereo recording. These discs can be played on conventional CD players, CD-I systems and at least some CD-ROM drives. Standards for this are called the Red Book.

CD audio jack: An outlet on a CD-ROM drive that provides audio playback through speakers or headphones. Only Red Book, or true CD-Audio sound can be heard from the audio jack on a CD-ROM drive.

CD-ROM Compact Disc - Read Only Memory: CD-ROM discs can store a variety of data types including text, color graphics, sound, animation and digitized video that can be accessed and read through a computer. A disc can store up to 600 megabytes of data, much more information that can be stored on a 3.5 inch compute disk, which hold up to 1.4 megabytes. This makes CD-ROM an inexpensive medium for storing large amounts of data. Because CD-ROM was not designed to store digitized, full-motion video, compression technology is important in compressing data to fit on a disc as well as decompressing data for playback.

CD-I: 1. Compact Disc-Interactive. Stores text, audio, video, images and animation. Requires a CD-I player and will not work on a regular CD-ROM player. 2. This interactive multimedia system, developed by Philips and Sony, connects to a television and stereo audio system. The standards for this are called the Green Book.

CD-R: CD-Recordable Term used to describe special players and media which enable the creation of a single CD-ROM, written from the PC as if it were a magnetic disk drive. The end product, however, is a read-only disc: it cannot be erased or written over. Therefore, this technology is also known as "write-once CD." See CD-WO.

CD-ROM: A laser-encoded optical memory storage medium, defined by the Yellow Book standard.

CD-ROM Drive: A computer peripheral that plays CD-ROMs.

CD-ROM XA: CD-ROM Extended Architecture: A compact disc standard that permits the interleaving of compressed audio and video tracks for sound and animation synchronization. Based on the Yellow Book, it also uses some elements of the Green Book (CD-I).

CD-WO - Compact Disc-Write Once: A term that describes compact discs that can be written to directly (rather than mass produced) with a laser recorder. Recent developments allow the CD-WO to be appendable. CD-WO media is physically defined by the Orange Book standard, Part II, and a proposal for the logical format has been submitted to ECMA by the Frankfort Group.

Center Clipper: Variable attenuator which is used to eliminate any residual echo left by the echo canceller. A key difference between one canceller and another is the manner in which this center clipper operates. In a high quality canceller, the center clipper will operate very rapidly and smoothly, resulting in no residual echo during double-talk and no clipping of syllables. The center clipper is in essence a level- activated switch. Signals above the threshold level are passed unaltered and signals below the threshold are blocked. When speech is present in both directions, the center clipper tends to mutilate the speech signal, adding audible amounts of harmonic and intermodulation distortion. This distortion is often referred to as "glitch" and sounds remarkably like its name when it occurs. The transmit signal can be totally chopped out if the level of the transmit signal drops below the estimated level of returning echo.

Central Office: The physical location where communications carriers terminate customer lines and locate the switching equipment that interconnects those lines.

Central Processing Unit - CPU: The unit of a computer that includes circuits controlling the interpretation and execution of instructions.

Channel: A signal path of specified bandwidth for conveying information. 1. A half-circuit; 2. A radio frequency assignment (which is dependent upon the frequency band and the geographic location). Channel capacity in a cable television system is the number of channels that can be simultaneously carried on the system. Generally defined in terms of the number of 6 MHz (television bandwidth) channels.

CFDA - Catalog of Federal Domestic Assistance: The CFDA is a government-wide compilation of federal programs, projects, services and activities that provide assistance or benefits to the American public. The primary purpose of the CFDA is to assist users in identifying programs that meet specific objectives of a potential applicant, and to obtain general information on federal assistance programs. The catalog is published once yearly, usually in June. An update occurs around December.

CFR - Code of Federal Regulations: The CFR is the "book" of federal laws and regulations. Usually referenced like this, 34 CFR 74.137. The "34" indicates that the subject of the regulation is education. The "70.137" refers to a specific paragraph.

Character Generator: An alphanumeric text generator, a typewriter like device, commonly used to display messages on a television set. Chyron is a brand name for a character generator which is often mistakenly used to cover all character generators generically. Some sophisticated models also include color, graphics, and mass memory for text storage.

Charge-Coupled Device - CCD: A solid-state device used in many television cameras to convert optical images into electronic signals. These imagers are organized into rows and columns called pixels. The charge pattern formed in the CCD pixels when light strikes them forms the electronic representation of the image.

Chip: A thin silicon wafer on which electronic components are deposited in the form of integrated circuits; the basis of digital systems.

Chip Sets: Application-specific integrated circuits (ASICs) are being developed for use in video application products such as codecs, desktop video, and home satellite entertainment. ASICs operate more like computer hardware. Programmable chips operate much like computer software. The chip sets meet the CCITT H.261 compression standard and will be the driving force in the widespread use of video communications technology because they will lower the cost and open up the technology to a much larger group of users.

Chroma Key: In color television, an electronic matting process of inserting one image over a background. Used very commonly with weathercasters who are standing in front of a blank wall painted process blue. The electronics remove the blue and insert the weather map so that on the television screen the two images merge and the weathercaster appears to be standing in front of a large map painted on the wall.

Chrominance Signal: The color signal component in color television that represents the hue and saturation levels of the colors in the picture.

Circuit: Means of two-way communication between two or more points. 1. In communication systems, an electronic, electrical, or electromagnetic path between two or more points capable of providing a number of channels. 2. Electric or electronic part. 3. Optical or electrical component that serves a specific function or functions. Circular Polarization: A mode of transmission in which signals are downlinked in a rotating corkscrew pattern. A satellite's transmission-capacity can be doubled by using both right-hand and left-hand circular polarization.

Closed Circuit Television - CCTV: A private television system in which signals are sent usually via cable, to selected viewing points throughout the distribution system but are not broadcast to the public. The signal does not have to meet FCC commercial specifications.

CLV - Constant Linear Velocity: A disc that rotates at a varying rate of speed. Examples are CD-Audio, CD-ROM, CD-I, CD-ROM XA, and some videodiscs. CLV videodiscs may contain up to one hour of full motion video, but still frames and quick access time are forfeited. (See CAV.)

CMC: Computer mediated communication.

C/N - C/NR - Carrier to Noise Ratio: Refers to the ratio of the satellite carrier (or signal) to noise level in a given channel. Usually measured in dB at the LNA output. Coaxial Cable - Coax: A type of metal cable used for broadband data and cable systems. It has excellent broadband frequency characteristics, noise immunity and

physical durability. Consisting of a center conductor in the form of a tube which carries broadband signals by guiding high-frequency electromagnetic radiation, insulating dielectric, conductive shield, and optional protective covering.

Co-Channel Interference: Interference on a channel caused by another signal operating on the same fichannel.

Codec: A COder-DECoder converts analog signals, (voice or video), into digital form (1 or 0) for transmission over a digital medium and, upon reception at a second codec, re-converts the signals to the original analog form. Two codecs are needed - one at each end of the channel.

Collaborative Learning: Collaborative learning involves a group working together through technology to delve into content. Students can electronically access other students, the instructor and resources.

Color Bars and Tone: A color standard test pattern used by the television industry to adjust equipment to standard levels. The tone is generated at a certain preset frequency so that audio levels can be set.

Color Burst: In NTSC terminology, refers to a burst of approximately nine cycles of 3.58 MHz subcarrier on the back porch of the composite video signal. This serves as a color synchronizing signal to establish a frequency and phase reference for the chrominance signal.

Color Signal: Any signal at any point in a color television system for wholly or partially controlling the chromaticity values of a color television picture.

Color Subcarrier: In NTSC color, the 3.58 MHz subcarrier whose modulation sidebands are interleaved with the video luminance signal to convey color information.

Color Transmission: A method of transmitting color television signals which can reproduce the different values of hue, saturation, and luminance which together make up a color picture.

Combining Network: A passive network which permits the combining of several signals into one output with a high degree of isolation between individual inputs; commonly used in CATV headends to combine the outputs of all processors and modulators into a single coaxial cable input. Synonymous with combiner.

Command Line: On Unix host systems, this is where you tell the machine what you want it to do, by entering commands.

Common Carrier: Usually a telecommunications company that owns a transmission medium and rents, leases or sells portions for a set tariff to the general public via shared circuits through published and nondiscriminatory rates. In the U.S., common carriers are regulated by the FCC or various state public utility commissions. Communications Satellite Corporation - COMSAT: A common carrier service that provides commercial communications services.

Communications Satellite: Relay system in orbit above earth for telecommunications signals (voice, video, data); require earth stations to transmit and receive signals at the ground locations. Commonly called a "bird."

Communications Software: A program that tells a modem how to work.

Compatible: Describes different hardware devices that can use the same software or programs without modification, or with appropriate software.

Compression: The application of any of several techniques that reduce the amount of information required to represent that information in data transmission. This method reduces the required bandwidth and/or memory.

Compressed Video: Processes video images; transmits changes fro one frame to the next which reduces the bandwidth to send them over a telecommunications channel; reduces cost. Also called bandwidth compression, data compression or bit rate reduction. The most publicized compression techniques are proposed by two expert groups, that of JPEG (Joint Photographic Expert Group) and MPEG (Moving Picture Expert Group), who are defining methods for image compression in still frame and real-time video. The algorithm used by these two groups is called discrete cosine transform (DCT). DCT transforms a block of pixels into a matrix of coefficients and estimates redundancy in the matrix. The advantage of JPEG and MPEG is that the algorithms are symmetrical; that is, the same amount of processing is required for the encode and decode functions. These are ideal for two-way applications such as videoconferencing.

CompuServe - CompuServe Information Service - CIS: One of the oldest and largest commercial computer network services.

Computer: A functional unit that can perform substantial computations, including numerous arithmetic operations or logic operations, often without intervention by a human operator.

Computer-Aided Design - CAD: A computer system whereby engineers create a design and see the proposed product in front of them on a graphics screen or in the form of a computer printout.

Computer Conferencing: Allows individuals at different locations to communicate with each other through computers. This could be through a chat room, e-mail, a classroom environment created by software. It might include text, audio, video, or shared work spaces on which all participants can type or draw.

Conferencing: A term used to indicate when several network users communicate on a particular subject. Conferences can be "live" or conducted via a BBS (see above).

Connect Time: Time period during which a user is utilizing a computer on-line - or directly connected with the computer.

Connect Time Charges: Most networks charge users for the time they spend on-line. These are referred to as connect time charges. The amount charged depends on the network's fee schedule. Users must also pay a separate fee if the call to connect is toll.

Control Room: A room separate from a studio in which the director, the technical director (TD), the audio engineer, and other technical and program assistants control program production.

CONUS: Contiguous United States.

Consortium: Voluntary group affiliated for a purpose. Consortia is plural.

Continuous Presence Video: Simultaneous and continuous pictures of participants.

Convergence - Digital Fusion: The merging of video, audio, and data communications through digitization of the media. The equipment to receive the signals is projected to be a telecomputer.

Cooperative Learning: This learning model is based on specific group rewards for team members' learning and task specialization. Students work together to solve problems and locate information,

Courseware: Software used in teaching. Often used to describe computer programs designed for the classroom.

Crash: An abrupt, unplanned computer system shutdown caused by a hardware or software malfunction.

Crawl: A visual technique; electronically generated words or graphics that move horizontally or crawl across the screen, usually at the bottom.

Crawl Space: Space for textual messages usually at the bottom of the television screen.

Credits: The names of people on whom the production can be blamed. Electronically generated words that usually move horizontally up the screen like a scroll, or inserted a page at a time.

CREN: Corporation for Research and Educational Networking.

Crosstalk: 1. Undesired transfer of signals from one circuit to another circuit. 2. The phenomenon whereby a signal transmitted on one circuit or channel of a communications system is detectable or creates an undesirable effect in another circuit or channel.

Cue: Signal to start, pace, or stop any type of production activity or talent action.

Cursor: A symbol on the display of an editing or display terminal that can be moved up, down, or sideways and indicates where the next character is to be located or where "home" or beginning is located.

Cut: A command that stops all action in actual production; or a visual technique for changing abruptly from one picture to an entirely different one; for example, quick cuts in which many different visuals appear rapidly one after another on the screen.

Cyberphobic: A person who is fearful of working in cyperspace.

Cyberspace: Coined by science fiction writer William Gibson in the 1970s, it describes the virtual place of computer memory, networks, and multimedia.

D

D1 and D2: Digital tape component and composite formats (respectively) used for professional video recording. D1 is costlier than D2. Both can go through many generations of dubbing without visible loss of picture quality.

Daemon: An otherwise harmless Unix program that normally works out of sight of the user. On the Internet, you'll most likely encounter it only when your e-mail is not delivered to your recipient - you'll get back your original message plus an ugly message from a "mailer daemon" saying the message was undeliverable.

Daisy Chain: A way to connect computers - one after another along a single line.

DARPA: Defense Advanced Research Projects Agency of the Pentagon. Replaced ARPA.

Data: Any and all information, facts, numbers, letters, symbols, etc. which can be acted on or produced by the computer.

Database: Organized collection of files and information stored on a computer disk/drive available for update and retrieval.

Data Communications: 1. The movement of encoded information by means of electrical or electronic transmission systems. 2. The transmission of data from one point to another over communications channels.

Data Compression: A technique that saves storage space by eliminating gaps, empty fields, redundancies, or unnecessary data to shorten the length of records or blocks.

DBS - Direct Broadcast Satellite: Service uses high powered satellites to broadcast multiple channels of TV programming to inexpensive, small-dish antennas at homes for direct on-site reception of signals.

DCT - Discrete Cosine Transform: Compression algorithm.

Debug: To detect, trace, and eliminate mistakes in computer programs or in other software.

Dedicated Lines: Leased telecommunications circuits that are devoted to a specific application; a circuit designated for exclusive use by two users; i.e., for interactive portion of a teleconference.

Dedicated System: Videoconferencing equipment, transmission circuits, and teleconferencing facilities that are permanent and used on a regularly scheduled basis as opposed to rented for a one-time or ad hoc event.

Default: A standard setting or action taken by hardware or software if the user has not specified otherwise.

Definition: Also called resolution. The fidelity with which detail is reproduced by a television system ranging from a fuzzy to a sharp appearance.

Degausser: 1. Demagnetizer. 2. A device for bulk erasing magnetic tape.

Delay: Time it takes for a signal to go from sending station through the satellite to receiving station.

Demodulate: To retrieve an information carrying signal from a modulated carrier. A demodulator is a device that removes the modulation from a carrier signal.

Dial up - Dialup: To call another computer via modem. A connection or line reached by modem, as in "a dialup line."

Dial-Up Teleconferencing: Using public phone line to connect with a teleconference, either with or without operator assistance.

Dielectric: A non-conductive insulator material between the center conductor and shield of coaxial cable. The dielectric constant determines the propagation velocity.

Digirati: Literati who do everything digitally.

Digital: Discrete bits of information in numerical steps. A form of information that is represented by signals encoded as a series of discrete numbers, intervals or steps, as contrasted to continuous or analog circuits. Digital signals can be sent through wire or over the air. The method allows simultaneous transmission of voice and data. All digital technology is emerging as the primary transmission mode for voice, video, data and facsimile; Information represented by signals encoded as a series of discrete numbers, intervals or steps. Can be sent through wire or over the air. Allows simultaneous transmission of voice, video and data.

Digital Computer: A computer that operates on discrete data by performing arithmetic and logic processes on these data.

Digital Media: Refers to any type of information in digital form including computer-generated text, graphics and animations, as well as photographs, animation, sound, and video.

Digital Transmission: The transmission of information in the form of "1s" and "0s." Information customarily sent in this form is related to computer data traffic which is already in digital form. Other communications include audio and video.

Digital Video Effects - DVE: Video effects accomplished through digital devices that manipulate the video; e.g., page turns, revolves, boxes that zoom into and out of the picture, images that turn into pixels, etc.

Digitized Audio: Allows the incorporation of audio materials with other media to present information over a computer network or through the Internet. With this method,

the audio is contained.Various software programs "stream" the audio signal so that it can be heard as it is being said.

Digitizer: A device that converts an analog signal (either images or sound) into a digital signal that can be manipulated on the computer. Video capture boards convert video images from video sources such as the VCR or video camera, while sound digitizers take any sounds, the spoken word as well as music off of a cassette or CD player, and turn them into digital data. That data can be edited using sound editing and multimedia software.

Diode: An electronic device used to permit current flow in one direction and to inhibit current flow in the other.

Directional Microphone: A microphone that detects and transmits sound from only a certain direction. Useful in preventing unwanted sound from being transmitted.

Direct Read After Write - DRAW: A laser based technology for recording data on a videodisk.

Disc: Preferred usage (spelling) of the term for reference to optical storage media, such as CD-Audio, CD-I, CD-ROM, videodisc, or WORM.

Disk: Preferred usage (spelling) of the term for reference to magnetic media, such as floppy and hard disks.

Disk - Disc: A record-like magnetic-coated piece of material that can store digital information; may be a hard disk or pliable floppy disk.

Disk Drive: A computer data storage device in which data is stored on the magnetic coating (similar to that on magnetic tape) of a rotating disk.

Dish: Parabolic antenna. Primary element of a satellite earth station; sends and/or receives satellite signals. Usually bowl-shaped; concentrates signals to a single focal point. The antenna cross section exposed to the signal is the aperture.

Display: The visual presentation on the indicating device of an instrument.

Dissolve: Gradual transition from one television picture to the next by fading out one picture and simultaneously fading in another.

Distance Learning: Educational situations which use telecommunications devices to deliver content, exchange information, allow student interaction, and other educational activities. Technologies might include one, all, or some of the following technologies; satellite, DBS, compressed video, broadcast television, cable, fiber optics, computer, classroom created in a computer environment, telephone, computer chat rooms, audio conferencing, e-mail, listservs, audio tapes, video tapes, CD-ROMs, simulations, textbooks, worksheets/workbooks, Internet access to resources, fax machine, instructor/facilitators at one or all sites. Learners could be in age groups for early childhood, K-12, higher education, or training. Courses might be for credit, continuing

education credit, or required by an employer. There has been an effort to limit the number of technologies included in this definition. This counter-productive effort minimizes the overall impact of distance learning and grants "status" to a few. Because the use of multiple technologies meets the learning style needs of all students, the inclusion of many technologies represents the student-centered approach that we endorse.

Distortion: An undesired change in wave form of a signal in the course of its passage through a transmission system.

Distributed Data Processing: Data processing in which some or all of the processing, storage, and control functions, in addition to input-output functions, are situated in different places and connected by transmission facilities.

Distributed Function: The use of programmable terminals, controllers, and other devices to perform operations that were previously done by the processing unit, such as managing data links, controlling devices, and formatting data.

Distribution: A way to limit where your Usenet postings go. Handy for such things as "for sale" messages or discussions of regional politics.

Distribution Systems: Any program that can be received by the satellite antenna, can be distributed into several viewing areas. The distribution system is one or more wires that run from the earth station control room, into several classrooms or conference rooms. Broadband wiring systems use a single coaxial cable, while baseband systems use several twisted-pair wires. Both systems must be custom designed for each location, using high output amplifiers and exact cable lengths.

Domain: The last part of an Internet address, such as "news.com." The zones include:
    edu-education
    mil-military site
    com-commercial organizations
    gov-government body or department
    net-networking organization
    int-international organization (mostly NATO)
    org-anything that doesn't fit elsewhere, such as a professional society

Domestic Satellite: A satellite that provides communication services primarily to one nation.

DOS: Disk Operating System.

Dot: To impress the Net veterans encountered, parties say "dot" instead of "period." For example: "My address is john at site dot domain dot com."

Dot file: A file on a Unix public-access system that alters the way the user or the messages interact with that system. For example, a user's .login file contains various parameters for such things as the text editor used when a message is sent. When an ls command is done, these files do not appear in the directory listing; do ls -a to list them.

Double speed drive: Refers to a CD-ROM drive that will read certain kinds of data faster than the standard requires (155KB/sec). Many drives now have 300KB/sec transfer rates (also known as twice the standard, or 2X); at least one claims 600KB/sec (4X).

Double-Talk: The situation where parties at both ends of a conference are speaking simultaneously. A quality echo canceller will provide a continuous speech path in both directions during double-talk.

Down: When a public-access site runs into technical trouble, and you can no longer gain access to it, it's down.

Downconverter: A device used to lower the frequency of any signal.

Downlink: Transmission of radio frequency signals from a satellite to an earth station (verb). A satellite receiving station (noun).

Download: 1. Transfer data from a main computer or memory to a remote computer or terminal. 2. There are several different methods, or protocols, for downloading files, most of which periodically check the file as it is being copied to ensure no information is inadvertently destroyed or damaged during the process. Some, such as XMODEM, only let you download one file at a time. Others, such as batch-YMODEM and ZMODEM, let you type in the names of several files at once, which are then automatically downloaded.

Downstream: An audio or video signal traveling from the cable TV headend to a subscriber point in the community.

Drive bay: The opening in a computer chassis designed to hold a floppy drive, hard drive, CD-ROM drive, tape drive or other device. May be half-height or full-height, exposed or internal.

Drop-Outs: Black or white lines or spots appearing in a television picture originating from the playback of a video tape recording.

DS1: Digital signal level 1; a digital transmission format in which 24 voice channels are multiplexed into one T1 channel.

DS3: Digital signal level 3; a telephony term describing the 45 mbps signal carried on a T3 facility. It is most often associated with broadcast video transmission. Although the broadcast purest will rightfully point out that as a digital signal it is not a true broadcast quality RS-250B standard signal, it is the nearest approximation to a broadcast signal in a digital environment.

DSP: Digital signal processing.

DTMF - Dual Tone Multiple Frequencies: Standard telephone signaling technique which can be used through any transmission medium of voice grade or better. he technique is often used for remote switching control functions.

Dual Band Capability: Many receivers are capable of both C and Kuband operation.

Dub - Dupe - Duplicate: The duplication of an electronic recording. Dubs can be made from tape to tape in video, or from record to tape in audio. In video, one generation of quality is usually lost between each duplicate except when using high grade broadcast equipment and one inch wide tape. Usually a video tape that appears fuzzy and the colors have lost clarity, it is a 3rd, 4th, or 5th generation tape - in other words, a copy, of a copy, of a copy, of a copy, of a copy.

Duplex: In a communications channel the ability to transmit in both directions.

DVI - Digital Video Interactive: DVI is a programmable (variable bit and frame rate) compression and decompression technology developed by Intel offering two distinct levels and qualities of compression and decompression for motion video. Both PLV and RTV use variable compression rates. Production Level Video (PLV), a proprietary asymmetrical compression technique that is well suited for encoding full motion, color video requires compression to be performed by Intel at its facilities or licensed encoding facilities set up by Intel. PLV emulates MPEG. It has a very high image quality. Real Time Video (RTV) provides comparable image quality to frame-rate (motion) JPEG and uses a symmetrical variable rate compression. To provide expanded still image editing features, future versions of Intel's DVI will be JPEG compliant.

E

E-Layer: A heavily ionized signal-reflecting region location 50-70 miles above the surface of the earth, within the ionosphere.

E-mail - Electronic mail: The term for private messages sent as files from one computer to another, either over a local area network (LAN), or via modem over the phone lines. E-mail is like having your own private mail box on a network. Used as both a noun and verb. Mail can be sent between Internet and commercial services such as American On Line.

Earth Station: The location antenna used to send or receive signals to satellites normally located in the geostationary orbit. A parabolic antenna and associated electronics for receiving or transmitting satellite signals.

Echo: The reflections of signal energy that cause it to return to the transmitter or to the receiver.

Echo Canceller: Eliminates audio transmission echo. A telephone line echo canceller produces a synthetic replica of the echo it expects to see returning and subtracts it from the transmitted speech. The replica it creates is based on the transmission characteristics of the telephone cable between the echo canceller and the telephone set.

Echo Reduction: A newer method of echo control, developed in 1988, uses attenuation in a new way to subjectively reduce the returned echo without the mutilation (choppiness, level drops, distortion) found in suppressers or center clippers. It rapidly and momentarily applies a variable amount of attenuation in between transmitted speech peaks (where the echo would be audible). It compares the transmit and receive signals to determine the likelihood of objectionable echo in the transmit signal, then calculates and inserts the appropriate amount of attenuation for that instant to control the echo. During outgoing speech peaks, the echo is masked by the strong local speech and rendered inaudible to the listener so that no attenuation is required.

Editor: A computer program used to edit (prepare for processing) text or data.

Educational Access Channel: A cable television channel specifically designated for use by local education authorities.

Edutainment: Multimedia designed for teaching. It's based on the theory that learning doesn't have to be boring.

EFM: Eight to fourteen modulation.

Electrically Alterable Read Only Memory - EAROM: A type of memory that is nonvolatile, like ROM, but can be altered, or have data written into it, like RAM.

Electromagnetic Interference: Any electromagnetic energy, natural or man-made, which may adversely affect performance of the system.

Electromagnetic Spectrum: The frequency range of electromagnetic radiation that includes radio waves, light and X-rays. At the low frequency end are sub-audible frequencies (e.g., 10 Hz) and at the other end, extremely high frequencies (e.g., X-rays, cosmic rays).

Electronic Blackboard or Whiteboard: A device that looks like an ordinary blackboard or whiteboard, but has a special conductive surface for producing free-hand information that can be sent over a telecommunications channel, usually a telephone line.

Electronic Editing: The process by which audio and/or video material is added to a previously recorded tape in such a manner that continuous audio and/or video signals result.

Electro-Mechanical Pen: A device that has an electronic pen with a mechanical arm for producing free-hand information that can be sent over a telecommunication channel, usually a telephone line.

Electronic Editing: In videotapes, a process by which picture and sound elements (live or pre- recorded) are joined together without physically cutting the tape. In sophisticated editing suites, this is done by computer.

Electronic Mail - E-Mail: A system of electronic communication whereby an individual sends a message to another individual or group of people; includes computer mail and facsimile (FAX).

Elevation: The location of the satellite in the sky from your viewing site. How high above the horizon the satellite is, which is called elevation or altitude which is measured in degrees.

EMACS: A standard Unix text editor preferred by Unix types that beginners tend to hate.

EMI: Electronic mediated instruction.

Emoticon: See "Smiley".

Encoder: A device that electronically alters a signal (encrypts) so that it can be clearly seen only by recipients that have a decoder which reverses the encryption process.

Encryption: An encoder electronically alters a signal so that it can be clearly seen only by recipients who have a decoder to reverse encryption. Selective addressability/scrambling designates receivers to descramble a signal. Each decoder has a unique "address."

End of Tape Sensing: A form of sensing (optically or mechanically) that automatically stops the tape transport at the end of tape or upon breakage of tape.

End User: The ultimate last user of a telecommunications system whether or not it is a student within a school, business or a subscriber on a cable television system.

ENG: Electronic news gathering.

Enter: To place on the line a message to be transmitted from a terminal to the computer.

EPROM: Erasable-Programmable Read-Only Memory.

EPS - Electronic Performance Support System: A computer supported just-in-time information system that might hold instruction manuals and other information on how to perform the tasks at hand.

EROM - Erasable Read-Only Memory: In a computer, the read-only memory (ROM) that can be erased and reprogrammed. Synonymous with erasable-programmable read-only memory (EPROM)

ESEA: Elementary and Secondary Education Act of 1965. This acronym is used mainly when referring to programs by their legislative authorization. The most common example is the "Chapter 1" series of programs.

Ethernet: Baseband protocol and technology developed by Xerox and widely supported by manufacturers; a packet technology that operates at 10 mbps over coaxial cable and allows terminals, concentrators, work stations and hosts to communicate with each other.

ETV: Educational television.

Eudora: E-mail program.

Execute: To perform the operations required by an instruction, command or program.

F

F2F - Face to Face: When you actually meet those people you been corresponding with/flaming.

Facilitator: In adult education (androgogy), the person responsible for a class who acts as a guide and resource to the students. The person responsible for the local component of a video teleconference site is normally called a facilitator.

Facsimile - FAX: A devce which uses a form of electronic transmission allowing movement of hard-copy documents from widely separated geographic areas via a telecommunications channel, usually a telephone line. Usually called a FAX machine now but previously was called a telecopier.

FAQ - Frequently Asked Questions: A compilation of answers to these. Many Usenet newsgroups have these files, which are posted once a month or so for beginners.

FDDI Fiber Distributed Data Interface: 1. Transports data up to speeds of 100 Mbps. 2. FDDI is a high-speed (100Mb) token ring LAN.

FDMA - Frequency Division Multiple Access: Refers to the use of multiple carriers within the same satellite transponder where each uplink has an assigned frequency slot and bandwidth.

Federal Communications Commission (FCC): An independent government agency established by the Communications Act of 1934 to regulate the broadcasting industry. The Commission later assumed authority over cable. The FCC is administered by seven commissioners and reports to Congress. The FCC assigns broadcasting frequencies, licenses stations, and oversees interstate communications.

FEC - Forward Error Correction: Adds unique codes to the digital signal at the source so errors can be detected and corrected at the receiver.

Feedback: In video; wild streaks and flashes on the monitor screen caused by re-entry of a video signal into the switcher and subsequent over-amplification. In audio, piercing squeal from the loudspeaker caused by the accidental re-entry of the loudspeaker sound into the microphone and is over-amplified. Feedback can also occur when using a conference telephone while the TV volume is too loud.

Feeder Cables: The coaxial cables that take signals from the trunk line to the subscriber area and to which subscriber taps are attached. Synonymous with feeder line.

Fetch: Macintosh program for retrieving files via FTP.

Fiber Optics: Communications medium based on a laser transmission that uses a glass or plastic fiber which carries light to transmit video, audio, or data signals. Each fiber can carry from 90 to 150 megabits of digital information per second or 1,000 voice

channels. Transmission can be simplex (one-way) or duplex (two-way) voice, data, and video service.

Field: One-half of a video frame two fields equal one frame or a full video screen. One field will contain all of the odd or even scanning lines of the picture.

Field Blanking Interval: The period provided at the end of the field picture signals primarily to allow time for the vertical sweep circuits in receivers to return the electron beam completely to the top of the raster before the picture information of the next field begins.

File: An organized collection (in or out of sequence) of records related by a common format, data source or application.

File Server: A component of a local area network, or LAN, which stores information for use by clients, or workstations.

Filename Extension: A three-letter (usually) code at the end of a filename that give some indication as to the type of file in non-Macintosh environments that lack icons or other methods of identifying files. Common extensions include .txt for text files, .hqx for BinHexed files, .sea for a self-extracting file, and .sit for Stuffit files.

Film at 11: One reaction to an overwrought argument: "Imminent death of the Net predicted. Film at 11."

Film Chain: Also called film island, or telecine. Consists of one or two film projectors, a slide projector, a multiplexer, and a television camera. Converts film and slides to television signals.

Finger: An Internet program that lets you get some bit of information about another user or computer, provided they have first created a .plan file.

FIPS: Federal Information Processing Standard.

Fixed Satellite Service - FSS: The earth stations are not mobile. This service generally provides telephone and TV distribution.

Fixed System: A permanent satellite receive and transmit system. The fixed system is put in place for regular use and broadcasts are made to the same sites repeatedly. The fixed systems are used for employee training, product introduction, meetings and other needs. Most fixed networks are owned by corporations such as Merrill Lynch, Hewlett-Packard, Sears, J. C. Penney, and General Motors and are not available to outsiders for videoconference use. However, they can receive teleconferences which are of interest to them.

Flame: On-line yelling and/or ranting directed at somebody else. Often results in flame wars, which occasionally turn into holy wars.

Floppy Disk - FD: Out-of-use term for diskette.

FM Microwave Radio: Ultra-high frequency often used to provide the return link in fully interactive systems (simplex). It can also be used in duplex to provide two-way full-motion video and audio interactivity.

FM Broadcast Band: The band of frequencies extending from 88 to 108 MHz.

FM-TV: Frequency modulated TV.

Follow-up: A Usenet posting that is a response to an earlier message.

Font: A complete set of characters for one style of one typeface (and traditionally, in metal type, in one size), including upper and lowercase letters, numerals, punctuation marks, and special characters. Often used to mean the software that renders a particular typeface. Sometimes used interchangeably with typeface.

> Typeface The full range of letters and other characters of a given type design. Usually includes all the weights and styles, but is sometimes used to mean just one weight and style.

> Type Family A collection of related typefaces, designed to work together attractively. Also used to mean the collection of weights and styles of a single typeface.

Foo/foobar: A sort of on-line algebraic place holder, for example: "If you want to know when another site is run by a for-profit company, look for an address in the form of foo@foobar.com."

Format: An established system standard in which data is stored.

Footcandle: The unit of illumination equal to 1 lumen per square foot.

Footprint: Earth area covered by a satellite's signal or beam.

Format - Videotape: Designated by the width of tape and method of recording e.g., 2-inch Quad, 3/4-inch U-Matic, 1/2-inch VHS, 1/2-inch Beta, 1/2-inch BetaCam.

Format - Programming: Type of program (drama, documentary, newscast, interview, etc.).

Fortune Cookie: An inane/witty/profound comment that can be found around the Internet.

Four-Wire Circuit: A circuit that has two pairs of conductors (four wires), one pair for the send channel and one pair for the receive channel; allows two parties to talk and be heard simultaneously.

Fractal Compression: Compression technique which uses real-time adaption of the numbers of bits allocated to different colors based upon the present scene.

Fragmentation: Storing parts of a file in disparate available space on a disk, rather than contiguously.

Frame: Full screen or frame of video is made up of two fields. Thirty frames is one second of video.

Frame Relay: A high speed interface between switches and T1 or T3 multiplexers. Frame relay is a connection-oriented interface that initially will be incorporated into private T1 and T3 multiplexers. While some carriers have committed to offer public frame relay service, others consider frame relay to be an "interim technology" and are focusing on cell relay (see BISDN below). T1 and T3 multiplexers equipped with frame relay will provide a packet-oriented, HDLC-framed interface to routers and X.25 packet switches. The packets will be routed to the proper destination by the multiplexers. Minimal protocol processing enables frame relay multiplexers to achieve high throughput. Initially, permanent virtual circuits will be supported; later, it is likely that switched virtual circuits services may also be provided by frame relay. The major advantage of frame-relay-equipped multiplexers is that only a single connection is required from the customer premises equipment (routers or X.25 packet switches) to the multiplexer. Also, with frame relay support in multiplexers, users contend for bandwidth provided via the multiplexer, and thus line cost efficiencies can be improved.

Frame Store: A video storage and display technique where a single frame of video is digitized and stored in memory for retrieval and subsequent display or processing. An electronic device used to store still pictures; a highly sophisticated slide projector used to insert pre-produced still materials into a live production for visual enhancement. The graphic material can be words, graphs, quotes, or photographs.

Frame to Frame Differencing: Compression technique which encodes only the information that represents the difference between successive frames.

Franchise: Authorization issued by a municipal, county, or state government entity which allows the construction and operation of a cable television system within the bounds of its governmental authority. The franchise area is the geographical area specified by a franchise where a cable operator is permitted to provide CATV service.

Freenet: An organization whose goal it is to provide free Internet access in a specific area, often by working with local schools and libraries. The first and preeminent example is the Cleveland Freenet. Freenet also refers to the specific Freenet software and the information services that use it.

Freeze Frame Video: Freeze frame video is one frame of video, saved as an electronic slide. It can be transmitted by video over a network or saved in a video effects generator to display when it is needed to illustrate a concept.

Freeware: Software that doesn't cost anything. It can be distributed freely. However, the author still holds the copyright which means that the software can't be modified.

Freeze Frame: Repeating or holding one frame so that it appears that the action has stopped.

Frequency: The number of times a complete electromagnetic wave cycle occurs in a fixed unit of time, usually one second. The rate at which a current alternates, measured in Hertz on a telecommunications medium.
Frequency Modulation: The range of frequencies within which an audio device will function.

FTP - File-transfer Protocol: A system for transferring files across the Internet. Anonymous FTP is a conventional way of allowing you to sign on to a computer on the Internet and copy specified public files from it. Some sites offer anonymous FTP to distribute software and various kinds of information. You use it like any FTP, but the username is "anonymous". Many systems will allow any password and request that the password you choose is your userid. If this fails, the generic password is usually "guest".

Full Duplex Audio Channel: An audio channel which allows conversation to take place interactively and simultaneously between the various parties, without electronically cutting off one or more participants if someone else is speaking. With a Half Duplex Audio Channel, only one party can speak at a time without cutting off the other end.
Full-motion Video: Not compressed. A standard video signal of 30 frames per second, 525 horizontal lines per frame, capable of complete action.

Fully Interactive Audio/Video: Two or more video conferencing sites can interact with one another via audio and video signals. Two sites may be fully interactive without necessarily being full-motion sites.

G

Gain: An increase in signal power in transmission from one point to another; usually expressed in decibels.

Gateway: A machine that exists on two networks, such as the Internet and BITNET, and that can transfer mail between them.

Gateway: A network element (node) that performs conversions between different coding and transmission formats. The gateway does this by having many types of commonly used transmission equipment to provide a means for interconnection.

GB - Gigabyte: A unit of data storage size which represents 2^30 (over 1 billion) characters of information.

Gb - Gigabit: 2^30 bits of information (usually used to express a data transfer rate; as in, 1 gigabit/second = 1Gbps).

Generational Loss: Reduction in picture quality resulting from copying video signals for editing and distribution.

Genlock: Ability of a device that handles video signals to synchronize itself to an external signal, as for overlaying graphics onto the incoming signal.

Geostationary Orbit - Geosynchronous - Clarke Belt: An orbital path approximately 22,300 miles above the earth. This unique satellite orbit has the characteristic that objects located in it rotate at the same relative speed as the surface of the earth. Objects placed in this orbit such as communications satellites can be considered fixed with respect to antennas located on the surface of the earth which are oriented towards them. Satellites in this orbit are always positioned above the same spot on the earth and from the earth, they appear fixed in space. Microwave transmission from these earth located antennas can be sent to the relatively fixed satellites in this orbit which serve as microwave repeaters back to the surface of the earth. British physicist and science fiction writer, Sir Arthur C. Clarke, invented satellite communication in his 1954 paper Wireless World, which explained this east-west orbit, 22,300 miles above the equator; three satellites based in this orbit could provide world-wide communications.

Get a life: What to say to somebody who has spent too much time in front of a computer.

Ghz - GigaHertz: See Hz - Hertz.

Glass Master: A highly polished glass disc, coated with photoresist and etched by a laser beam, that is used at the start of the compact disc manufacturing process.

GIF - Graphic Interchange Format: A format developed in the mid-1980s by CompuServe for use in photo-quality graphics images. Now commonly used everywhere on-line. The filename extension generally given to GIF files is .gif.

Glitch: 1. A narrow horizontal bar moving vertically through a television picture. 2. A short duration pulse moving through the video signal at approximately reference black level on a wave-form monitor. 3. A random error in a computer program. 4. Any random, usually short, unexplained malfunction.

GNU - Gnu's Not Unix: A project of the Free Software Foundation to write a free version of the Unix operating system.

Gopher and Gopher Server: An Internet information retrieval system. Software following a simple protocol for tunneling through a TCP/IP Internet, and running errands, especially the retrieval of "documents." This information system is technically known as a Gopher Server and is part of an international network of Gopher Servers. The Gopher concept was created and initially implemented at the University of Minnesota. The software they created has migrated around the Internet and is now serving the public at large. Since its initial conception, many other organizations have contributed software to this effort.

Graphics: Visual data. This includes photographs, line drawings, computer-generated artwork, and graphs. Graphics can be entered into the computer using scanners, drawing programs, cameras, and graphics tablets.

Green Book: The specification for the CD-I standard. See CD-I.

Groupware: Groupware is an interactive collaboration of workers or students via networked applications on the computer. It provides audio, video conferencing and data sharing among a group of users using the network at the same time. Examples of programs/equipment that foster the concept of groupware is CLI's Cameo, Northern Telecom's Visit, and IBM's Person-to-Person.

GUI - Graphical user interface: The underlying principle of client/server computing is empowerment of the end-user through the delivery of information services to the desktop. Services are delivered across the network to a graphical user interface where data is massaged, merged, and maximized. GUIs are designed to juggle multiple applications in windows, through icon-driven commands that standardize application usage and optimize the underlying flow of information across the network.

H

H.261: CCITT standard for video compression. It is used to transmit video at rates between 64 Kilobits per second and T1 speeds. It is also referred to as Px64. Px64 supports intra-coded frames (JPEG-like compression techniques) or "p-frames" (predictive frames, typical of temporal compression and decompression techniques like MPEG). Px64 is an evolving multi-dimensional video telephone conferencing standard that defines compression of audio and motion video images at resolutions of 288 lines by 360 pixels or 144 lines by 180 pixels. Complying with the CCITT's recommendation H.261 Px64 incorporates multiplexing, demultiplexing and framing of multimedia data, as well as transmission protocol and bandwidth congruence, and call setup and teardown. Px64 supports intra-coded frames (JPEG-like compression techniques) or "p-frames (predictive frames, typical temporal compression and decompression techniques like MPEG).

H.323 Series Standard: The H.323 standard provides a foundation for audio, video, and data communications across IP-based networks, including the Internet. By complying to H.323, multimedia products and applications from multiple vendors can interoperate, allowing users to communicate without concern for compatibility. H.323 is the keystone for LAN-based products for consumer, business, entertainment, and professional applications. These networks dominate corporate desktops and include packet-switched TCP/IP and IPX over Ethernet, Fast Ethernet and Token Ring network technologies. . The standard is broad in scope and includes both stand-alone devices and embedded personal computer technology as well as point-to-point and multipoint conferences. H.323 is part of a larger series of communications standards that enable videoconferencing across a range of networks. Known as H.32X, this series includes H.320 and H.324, which address ISDN and PSTN communications, respectively. H.323 applications include desktop videoconferencing, Internet telephony and video telephony, collaborative computing, network gaming, business conference calling, distance learning, support and help desk applications and interactive shopping.

Hacker On the Net: Unlike among the general public, this is not a bad person; it is simply somebody who enjoys stretching hardware and software to their limits, seeing just what they can get their computers to do. What many people call hackers, net.denizens refer to as crackers.

Half-Duplex: A communications channel over which both transmission and reception are possible but only in one direction at one time; e.g., a two-wire circuit.

Handshake: Two modems trying to connect first do this to agree on how to transfer data.

Handshaking: Exchange of predetermined signals when a connection is established between two data-set devices.

Hang: When a modem fails to hang up.

Hard Copy: 1. Any physical document. 2. Computer printout on permanent media such as paper.

Hard-Wired: The direct local wiring of a terminal to a computer system.

Hardware: Collectively, electronic circuits, components and associated fitting and attachments. The physical parts, components and machinery associated with computation.

Hayes Compatible: Describes modems that are compatible because they respond to the same set of commands as a modem manufactured by Hayes Microcomputer Products. This has become the standard for microcomputer modems.

HDSL - High-Bit-Rate Digital Subscriber Line: A method of providing high-speed data services over unconditioned copper wires at a top speed of 1.544 mbit/s. VHDSL (for very high-bit-rate digital subscriber line) is double that at 3 mbit/s. The key advantage of HDSL and VHDSL is that they allow telcos to provide services like frame relay, SMDS, and high-quality compressed video over existing telephone lines which is much less expensive than pulling fiber or installing additional repeaters. VHDSL is based on carrierless amplitude/phase modulation (CAP) and has applications beyond HDSL and VHDSL such as a video-on-demand service (being tested by Bell Atlantic) using CAP in which subscribers can interactively request videos, which are then transmitted over high-speed lines.

HDTV: Higher (than normal) definition TV. HDTV is generally defined as a system that offers, as a minimum, certain specific features and characteristics. These are Wide aspect ratio (now agreed as 19:9 or 1.778:1.; effectively doubled horizontal and vertical resolution (compared to existing systems); absence of encoding/decoding artifacts (requires component operation); and compact disc quality stereo sound. The technology applied to make HDTV transmittable in existing 6 MHz channels is essentially the same as the technology necessary for multichannel operation in those same channels.

Headend: Electronic control center that receives and re-transmits broadcast TV signals or original signals to receiving locations in a cable system or satellite network. A system usually includes antennas, preamplifiers, frequency converters, demodulators, modulators, processors and other related equipment.

Header: The part of an e-mail message or Usenet posting that contains information about the message such as who its from, when it was sent, etc.
Helical Recording Format: A recording format in which the tape is unwrapped around a cylindrical scanning assembly with one or more recording heads.

HFS - Hierarchical File System: Used on the Macintosh platform for directory structure. The hierarchical directory structure allows a volume to be divided into smaller units known as directories and, in turn, sub-directories. The hierarchical directory structure uses a graphical metaphor of folders containing files or additional folders. Macintosh interface elements, like color icons, are embedded with file structure information.

High Band: That portion of the electromagnetic spectrum from 174 to 216 MHz, where television channels 7 through 13 are located.

High Sierra Format: The original format proposed by the High Sierra Group for organizing files and directories on CD-ROM. A revised version of this format was adopted by the International Standards Organization as ISO 9660.

High Sierra Group: An ad hoc group of CD-ROM researchers and developers who first gathered at the High Sierra Hotel in Lake Tahoe, CA, to propose a standard CD-ROM file format. This proposal was later amended and approved as the ISO 9660 standard for CD-ROM.

Hollywood Syndrome: Tendency to base ones video behavior on a model that includes a highly polished presentation rather than interaction and the use of fast-paced visuals for effect rather than substance.

Holy War: Arguments on the Internet that involve certain basic tenets of faith, about which one cannot disagree without setting one of these off. For example: IBM PCs are inherently superior to Macintoshes or Macs are inherently superior to IBMs.

Homes Passed: The number of living units (single residential homes, apartments, condominium units) passed by cable television distribution facilities in a given cable system service area.

Homogeneous Network: A network of similar host computers such as those of one model of one manufacturer.

Horizontal Blanking: The blanking signal at the end of each scanning line that permits the return of the electron beam from the right to the left side of the raster after the scanning of one line.

Horizontal Resolution: The maximum number of black and white vertical lines that can be resolved within a horizontal expanse of raster equal to one picture height. NTSC television pictures normally have 300 lines of resolution or less.

Horizontal Retrace: The return of the electron beam from the right to the left side of the raster after the scanning of one line.

Host System: A public-access site; provides Internet access to people outside the research and government community.

Hosts: Computers (not terminals) that process data, act as data sources or destinations in a communications network.

.hqx: The filename extension used for BinHex files.

HTML - HyperText Markup Language: The language used to mark up text files with links for use with World Wide Web browsers. This is a file format, based on SGML, for hypertext documents on the Internet. It is very simple and allows for the embedding of images, sounds, video streams, form fields and simple text formatting. References to other objects are embedded using uniform resource locators (URLs).

HTTP - Hypertext Transfer Protocol: The Internet protocol, based on TCP/IP, used to fetch hypertext objects from remote hosts. See also TCP/IP.

Hub: 1. A signal distribution point for part of an overall system. 2. The master station through which all communications to, from and between micro terminals must flow.

Hue: The attribute of color perception that determines whether the color is red, yellow, green, blue, purple, etc.

Hyperband: The band of cable television channels above 300 MHz.

Hypermedia: Software that allows the user to interactively manipulate text, images, animation, graphics, sounds, digitized voice, and video.

HYTELNET: Stands for HyperTelnet. HYTELNET is essentially a database of Telnet sites and other Internet resources that can link to other programs when you want to connect to a site you've found. Not as useful as Gopher. A system that provides access to libraries around the world through the Internet.

Hz - Hertz: Basic measure of frequency with which an electromagnetic wave completes a full cycle from its positive to its negative pole and back again. Hertz is a unit of frequency equal to one cycle per second. Normal house current is 60 Hertz (60 cycles per second).
> kHz - Kilohertz: 1,000 Hertz
> MHz - Megahertz: 1,000 kHz-one million Hertz
> GHz - Gigahertz: 1,000 MHz-one billion Hertz.

I

I/O: Input/output.

IAB - Internet Architecture Board: The coordinating committee for Internet design, engineering and management.

ICN: Iowa Communications Network.

Icon: A pictorial, symbolic representation of a function or task. Used in GUIs (Graphical User Interfaces) such as Windows and Apple Macintosh Finder. See GUI.

IEEE: Institute of Electrical and Electronic Engineers.

IETF: Internet Engineering Task Force.

IHE - Institution of Higher Education: A postsecondary educational institution college, university, and other such schools.

IM: Intermodulation distortion occurs when two or more signals are passed through a nonlinear device such as an amplifier.

IMAP: A new protocol for the storage and retrieval of e-mail. Much like POP - the Post Office Protocol.

Inbound: The direction of a signal relative to the hub of a local area network (LAN) or other telecommunications system. Inbound signals would be traveling from originating points other than the primary hub in the reverse direction to the hub.
Information Agent: A software program (currently only an interface to frequently updated databases) that can search numerous databases for information that interests you without your having to know what it is searching. Archie and Veronica are current examples of information agents.

Infrared: That portion of the electromagnetic spectrum just below visible light; infrared radiation has a wavelength from 800 nm to about 1mm. Fiber-optic transmission is predominantly in the near-infrared region, about 800 to 1600 nm.
Initialization: The process carried out at the commencement of a program to test that all indicators and constants are set to prescribed conditions.

Intelsat: The International Telecommunications Satellite Organization operates a network of satellites for international transmissions. The stated purpose is the design, development, construction, establishment, maintenance, and operation of the space segment of the global communications satellite system.

Interactive: Any application that allows the participants at distant locations to communicate with each other; may indicate two-way video and two-way audio; one-way video and two-way audio through a normal telephone call placed to the origination site; asynchronously (not in real time) as through computer conferencing such as an electronic mail system; or through interaction with a teaching machine such as a

computer which is programmed to respond to the user with messages on the screen, voice or other sounds to indicate that an answer is right or wrong.

Interactive Technology: Any technology that permits two-way participation.

Interactive Television: Lets owners of ordinary TVs order movies, home shopping, mutimedia packages and other digitized products from electronic jukeboxes.

IMHO: Internet shorthand for "In my humble opinion."

Instructional Design: The methodology used to deliver information in a manner that achieves learning.

Integrated Circuit - IC: An electronic circuit made by manipulating layers of semiconductive materials.

Integrated System: A system in which all components including the various types of amplifiers and taps have been designed from a well-founded overall engineering concept, to be fully compatible with each other.
Interactive: The active participation of the user in directing the flow of the computer or video program.

Interactive video: The capability to transmit and receive two-way video transmissions between two or more sites.

Interactive Cable System: A two-way cable system that has the capability to provide a subscriber with the ability to enter commands or responses on an in-home terminal and generate responses or stimuli at a remote location. An example of an interactive system would be order entry for Pay-Per-View the order information is transmitted upstream on the cable from the subscriber's terminal to the headend, processed by a billing/authorization computer, and authorization to view a specific Pay-Per-View event is sent downstream to the subscriber's terminal.

Interactive Multimedia: A multi-level multimedia presentation that allows you to access information randomly and nonsequentially.

Interconnect: The connection of two or more cable systems. 2. The connection of a headend to its hubs.

Inter-Exchange Carrier - IXC: Carriers that can carry inter-LATA traffic. Long distance telephone companies such as AT&T, MCI, and US Sprint.

Interface: The link between two pieces of disparate equipment, such as a CPU and a peripheral device. Also, a method of translating data from computer to user. For Internet, the user interface is difficult for the uninitiated to use. Software programs have been written which change the look of the screen by provide pull-down menus, buttons, hierarchical files folders or hypertext to use and move around the Internet. Software program names include Mosaic, Lynx, Internet in a Box and GINA.

Interference: A scrambling of the content of signals by the reception of desired signals.

Interlaced Video: Process of scanning video frames in two passes, with each pass painting every other line of the frame onto the screen. NTSC's 525-line frame scans in two fields of 262.5 lines each that take 1/60 second to paint; a frame takes 1/30 second to paint. Noninterlaced video scans complete video frames in one pass usually producing a higher image quality.

Interleave: A method of storing information in an alternating sequence of frames.

International Telecommunication Union - ITU: Organization composed of the telecommunications administrations of the participating nations. Focus is the maintenance and extension of international cooperation for improving telecommunications development and applications.

Internet: A worldwide system for linking smaller computer networks together - governmental institutions, military branches, educational institutions, and commercial companies. Networks connected through the Internet use a particular set of communications standards to communicate, known as TCP/IP. Internet is the name given to the overall connectivity of all its various sub-networks, including USENET, APRAnet, CSnet, BITNET, etc. There is no surcharge to send or receive messages through Internet. Only ASCII messages up to 50,000 characters can be sent through this system. With a lowercase "i", an internet is a group of connected networks.

InterSLIP: A free program provided to the Macintosh Internet community by InterCon Systems. In conjunction with MacTP, InterSLIP enables users with modem and a SLIP account to use excellent software like Fetch and TurboGopher.

Intranet: Intranets differ from the Internet because they are private networks, set off from the rest of the world by firewalls. They can often connect disparate corporate networks. They often access corporate resources and databases that were built with non-Internet technology in mind.

IP - Internet Protocol: The main protocol used on the Internet.

IRC - Internet Relay Chat: A service where users can "talk" via typing to people around the world.

Iridium: Motorola's $3 billion worldwide direct cellular project which will enable users to have one worldwide number. This will be accomplished by a system of low earth orbiting satellites (LEOs).

ISDN - Integrated Services Digital Network: A set of standards provide a common architecture for the development and deployment of digitally integrated communications services. A set of standardized customer interfaces and signaling protocols for delivering digital circuit-switched voice/data and packet-switched data services. ISDN is designed to provide standard interfaces to custom premises equipment such as computers, telephones, and facsimile machines through basic rate interface (BRI) to PBXs, host computers, and LANs through primary rate interface (PRI); to the pubic

switched network through SS7; and to local packet data terminals and the public packet-switched network through X.25 and X.75/X.75' packet services. The key to ISDN is out-of-band signaling which permits the users' equipment and the network to exchange control and signaling information over a separate channel from that which carries user information. A digital telecommunications channel that allows integrated transmission of voice, video and data. ISDN lines used to access network services are divided into bearer, or "B" channels, and a supervisory, or "D" channel, for out-of-band signaling. B Channels carry digitally encoded customer information such as voice and data traffic, while the D channel provides the information required to set up, route and disconnect calls on B Channels. D channels can also carry other information such as caller identification. Twenty-three B channels and one D channel form a Primary Rate Interface or "23B+D". PRI B channels can be used for any combination of voice, data, and image transmission at 64 kpbs. In addition, B channels can be grouped together to create wider bandwidths for applications like video transmission.

ISO: International Standards Organization.

ISO 9660: The international standard for directory structures and file layout on CD-ROMs, a logical, structural standard compared to the physical standards for manufacturing called the "Yellow Book." This standard specifies, for single sessions, exactly how information is stored on a CD-ROM to be accessible in any CD-ROM drive running on a variety of common operating systems.

ISOC - Internet Society: ISOC is a membership organization that supports the Internet and is the governing body to which IAB reports.

ITFS Antenna System - Instructional Television Fixed Service: Local (up to 25-mile radius) one-way, over-the-air block of TV channels operating at microwave (very high) frequencies reserved for educational purposes; can be received only by TV installations equipped with a converter to change signals back to those used by a TV set. One-way audio and full motion video. The antenna may be omnidirectional or shaped to cover a specific geographic area. In rare instances the ITFS antenna system can be found to be very directional for special repeater applications or to serve a series of co-linear receive sites. The ITFS television transmission system was first authorized in 1963 by the FCC for educational television in the 2.5 to 2.686 GHz band. The ITFS band has subsequently been re-allocated for shared operation among multipoint distribution services, multichannel multipoint distribution services, operational fixed services, and ITFS users.

IVDS - Interactive Video and Data Services: Name for license which will be granted by the FCC to devices called Interactive TV Appliances (ITAs). ITAs include TVAnswer, a two-way television service for consumers for game shows, sporting events and respond instantly to news polls and interactive advertising as well as participate in distance learning. The system will also let viewers shop, bank, pay bills, organize TV programming and order a pizza.

IVR: The IVR unit answers the call, greets the caller, and guides the caller through possible responses with a series of voice prompts. The desired information is provided via prerecorded voice fragments (words) or computer-generated speech.

J

Jack: A connecting device to which a wire or wires of a circuit may be attached and which is arranged for the insertion of a plug.

JANET - Joint Academic Network: JANET is Great Britain's national network. JANET addresses work backwards from normal Internet addresses (largest domain to the smallest). Mot gateways to JANET perform the necessary translations automatically.

Janus disc: A CD-ROM that contains data tracks in two or more different formats, such as ISO 9660 and HFS (Macintosh Hierarchical File Structure).

Java: Java is similar to the C++ computer language that is already used by many programmers, and it is object-oriented so that new applications can be built from pre-existing components. It is a compiled language, so that after it is written, it must be run through a compiler to allow computers to understand it. But - only one compiled version is created which can run on many different platforms (where other languages require a different version for each platform). Java can be used to tap into and "mine" databases or create interactive multimedia applications. A common use of Java is to create a news ticker broadcasting the latest news that people can click on to get more details.

Java Applet: A program written in Java to run within a Java-compatible web browser, such as HotJava or Netscape Navigator.

Java Platform: The Java Virtual Machine and the Java core classes make up the Java Platform. The Java Platform provides a uniform programming interface to a 100 percent pure Java program regardless of the underlying operating system. When implemented on a particular operating system, the Java Platform is said to be Java Compatible if it passes the Java Compatibility Kit suite of tests

JPEG - Joint Photographic Expert Group: JPEG is an industry standard for still-image compression that is moving into full-motion video. Storing the video signal is a problem as it takes a 300 megabyte hard disk to store just 10 seconds of digital video. Compression is the answer to storage problems. JPEG is a compression technique based upon intraframe encoding technology. It allows full restoration of symmetrically compressed images. Symmetrical compression means that the image takes an equally long time to be compressed as it does to be decompressed. An asymmetrical scheme takes longer to compress an image than to decompress it and typically compresses the image on a computer other than the one to be used for decompression. Relying on a newly adopted format to encode and decode digital images based on independent, non-temporal (intraframe) data, JPEG typically divides an image into 8 by 8 pixel blocks. These 64 square pixel matrices, called a "search range," enable the aggregate quantization of the image and color data store by the pixels within each of the blocks. Advanced JPEG algorithms that use larger search ranges, up to as much as 32 by 32 pixels, called "super blocks," enable significantly faster encoding and decoding (up to 40 to 1 compression at about 4MB per second) but demand exponentially more processing power to maintain the same degree of image quality as the smaller pixel block. Originally, JPEG was intended to compress only still images. However, video is nothing more than a quick presentation of successive still images. Thus, a form of JPEG, known

commonly as motion JPEG, is being used to compress motion images, particularly in applications like video editing where it is necessary to access individual frames of video and to scrub forward and backwards through source material. JPEG, MPEG and Px64 specifications use a Discrete Cosine Transform (DCT), an encoding algorithm that quantifies the human eye's ability to detect color and image distortion. DCT parses color content data thereby enabling the use of a higher pixel depth sampling rate (typically 24 or 32 bits) than non-DCT compression techniques. JPEG typically controls 24 bits per RGB pixel, retaining a high quantization of luminance and color resolution.

JPEG System Highlights: Used to encode still images. It compresses about 20 to 1 ratio before visible image degradation occurs. Compression ratios exceeding 100 to 1 attainable but image degrades excessively. At very low compression ratios of 5 to 1 maximum JPEG maintains absolute resolution. It excludes audio compression. Symmetrical (compresses at same rate as it decompresses,) uses the same hardware to encode and decode. It compresses redundant data occurring within each frame (intraframe). Compresses comparatively slow, depending on computer speed, about 1 to 3 seconds for a 1 MByte image. Decompresses a full sized image in .5 to 1 second or reduced sized image in real time. It has good quality at maximum compression. Jukebox: CD-ROM drive with a disc changing mechanism, capable of playing multiple discs.

K

Ka-Band: A satellite transmission in the 20 and 30 gigahertz frequency spectrum.
Kbps, kb/s - Kilobits per Second: A unit of measure of data of 1,000 bits per second or 1,000 Baud.

Kermit: A file transfer protocol named after Kermit the Frog. Kermit is generally slower than XMODEM, YMODEM, and ZMODEM.

Kerning: Reducing the horizontal space between characters of type. Originally, casting a letter so that part of it (e.g., the top of the f) extends beyond the body of the letter, into the space occupied by the next letter. Sometimes used to mean adding or removing space between letters.

Keyboard: An alphanumeric, input/output, peripheral device used to communicate with a computer.

Killfile: A file that lets you filter Usenet postings to some extent, by excluding messages on certain topics or from certain people.

Kilobaud: The measure of data transmission speed a thousand bits per second.

Kilobyte: A unit of measurement equal to 1024 bytes.

Kine Recording: The technique of converting a video image to motion picture film.

Knowbot: Short for knowledge robot. Embedded machine intelligence capable of automatically and regularly searching for new information on parameters set by the user. At its extreme, the knowbot becomes an intelligent partner in mediating human communication. Sometimes called an agent.

Knowledge Navigator: An information agent popularized by an Apple video about working with computers in the future.

Ku Band: A category of satellite transmissions higher in frequency than those used as "c band" which are being transmitted from satellites placed in the geostationary orbit. The group of microwave frequencies from 12 to 18 GHz and the band of satellite downlink frequencies from 11.7 to 12.2 GHz. The higher frequencies (12 GHz versus 4 GHz) have created the possibility of smaller receive antennas and the realization of direct broadcast satellite (DBS) signals to the end user without the necessity of going through a cable television system or other shared use receive site due to the factors of size and cost.

L

LAN - Local Area Network: Private transmission network interconnecting offices within a building or group of buildings and usually designed to convey traffic; e.g., voice, data, facsimile, video. Usually associated now with a computer network made up of computers, printers, and mass storage units. MAN Metropolitan area network. WAN - Wide Area Network.

Large-Scale Integration - LSI: The process of engraving many thousands of electrical circuits on a small chip of silicon.

Laser - Light Amplification by Stimulated Emission of Radiation: 1. A device for generating coherent electromagnetic signals (e.g., light). Low powered lasers are frequently used to transmit light signals into optical fibers. 2. Laser light contains waves that have the same phase, as opposed to conventional light, whose individual wave phases are unrelated to the phases of the others.

LATA: Local access and transport area of a telephone company.

Lavaliere: A small microphone that can be clipped onto clothing or suspended from neck cords and worn in front of the chest.

LCD - Liquid Crystal Display: A method of creating alphanumeric displays by reflecting light on a special crystalline substance. Frequently used in electronic games and watches, and in portable electronic instruments.

LEA - Local Educational Agency: (a) a public board of education or other public authority legally constituted within a state for either administrative control of, or direction of, or to perform service functions for, public elementary or secondary schools in a city, county, township, school district, or other political subdivisions of a State; or such combination of school districts or counties a State recognizes as an administrative agency for its public elementary or secondary schools; (b) any other public institution or agency that has administrative control and direction of a public elementary or secondary school; (c) as used in vocational education programs the term also includes any other public institution or agency that has administrative control and direction of a vocational education program.

Leading (pronounced "ledding"): Vertical space between lines of type, measured in points. In metal type, leading is the additional space (from inserting strips of lead between lines of metal type). In phototype and digital type, where there is no metal body determining the height of the type, leading has come to mean the total space from one line to the next, usually measured from baseline to baseline.

Learning Styles: A learner's learning style is as individual as a fingerprint. We all learn differently. The Canfield Learning Style instrument identifies styles in iconic, direct experience, listening, qualitative, numeric, and other modes. The student-centered approach to learning styles is to have the facilitator adapt his/her style to that which will meet the student's learning style. Since even a small class will present varied learning

styles, it is best to prepare materials that use a variety of technology delivery methods so that the needs of all learners are met.

Leased Lines: A term used to describe the leased or rented use of dedicated lines from point to point. Lines could include fiber optic cables, telephone cables, microwave or other transmission systems.

LEC: Local exchange carrier of a telephone company.

LED - Light Emitting Diode: A semiconductor which emits light when a proper voltage is applied to its terminals.

Light Pen: A pen-like device that contains a photosensitive cell and small aperture lens that produces or detects electronic signals; can be used to write free-hand directly on a TV screen or to enter, edit and position computer text or graphics.

Linear: Video technology designed to be played from beginning to end without stops.

Links: Communication pathways between nodes.

Lip Sync: Synchronization of the sound portion with the visual portion of a television program.

LISTSERV: A powerful program for automating mailing lists.

LNA - Low Noise Amplifier: Located at the antenna. Refers to electronic equipment, used in conjunction with satellite reception, intended to amplify extremely weak satellite signals without introduction of noise. They are rated in different noise temperatures, expressed in degrees Kelvin. The lower the noise temperature figure, the higher the carrier-to-noise ratio, and the better the picture.

Local Exchange Carrier (LEC): Carriers that can carry only intra-LATA traffic. Local telephone companies such as US West, Contel, Centel etc.

Local Loop: The local loop gets the signal from the receive site to the viewing room. Microwave, fiber optics, cable and sometimes broadcast are used to distribute the signal. Also referred to as the "Last Mile".

Location - Remote: Production shooting site other than a studio.

Log On/Log In: Connect to a host system or public-access site.

Log Off: Disconnect from a host system.

Low Band: That portion of the electromagnetic spectrum from 54 to 88 MHz, where television channels 2-6 are located.

Low Earth Orbiting Satellite - LEO: Low earth orbit satellites which require 77 small, smart satellites to provide linkage around the world. The satellites move overhead in

their low orbit. Motorola's Iridium (from the element Iridium which has 77 electrons) uses the concept to provide, digital, satellite-based personal communications via small, hand-held transportable receivers. With the system, voice, fax, or data calls can be made or received anywhere. The user will have one universal telephone number for the phone. Local gateways will store customer billing information, keep track of user locations, and interconnect with terrestrial carriers worldwide. The dual-mode phone will access customers' regular cellular service first, switching to Iridium only when there is no terrestrial signal, to assure least-cost routing. The system is planned to be launched in 1994 with service by the end of 1996. Inmarsat's Project 21 will provide similar services.

LPTV - Low Power Television: Broadcast medium that is similar to commercial TV but limited in broadcast coverage area by its low power signal. Can air one class per time frame which can be received at multiple sites.

Lumen: Unit of light flux.

Luminance: 1. Luminous flux emitted, rejected, or transmitted per unit of solid angle per projected area of the source. 2. The photometric equivalent of brightness. 3. The brightness part of a television picture.

Luminance Signal: That portion of the television signal which conveys the luminance or brightness information.

Lurk - Lurkers - Lurking: People who read messages in a Usenet newsgroup or other public system without ever responding or contributing to the topic.

Lux: Unit of n equal to 1 lumen per square meter or approximately 0.1 candle power.

M

MacBinary: A file format that combines the three parts of a Macintosh file; the data fork, the resource fork, and the Finder information block. No other computers understand the normal Macintosh file format, but they can transmit the MacBinary format without losing data. When you download a binary Macintosh file from another computer using the MacBinary format, your communications program automatically reassemble the file into a normal Macintosh file.

Machine Language: Binary code that can be directly executed by the processor, as opposed to assembly or high-level language.

MacTCP: A Control Panel from Apple that implements TCP on the Macintosh. MacTCP is required to use programs such as Fetch and TurboGopher.

Magnetic Media: Any medium on which data is stored as variations in magnetic polarity. Usually floppy disks, hard disks, and tape.

Magnetic Tape: A mylar tape, coated with magnetic particles, on which audio, video or data can be stored.

Mailing List: Essentially a conference in which messages are delivered right to your mailbox, instead of to a Usenet newsgroup. You get on these by sending a message to a specific e- mail address, which is often that of a computer that automates the process.

Magneto-optical: An information storage medium that is magnetically-sensitive only at high temperatures. A laser heats a small spot, which allows a magnet to change its polarity. The medium is stable at normal temperatures. Magneto-optical discs can be erased and re-recorded.

Master: The original video tape, audio tape or film of a finished product. Usually stored in a vault or area protected from the environment. Dubs are made from the master. Once the master is worn out, it can not be replicated.

Master Antenna Television System - MATV: An antenna and distribution system which serves multiple dwelling complexes such as motels, hotels, and apartments. It is, in effect, a miniature cable system.

Mastering Facility: A manufacturing plant where compact disc "masters" are created for the mass production or replication of the actual compact discs. Metal Master: A metal disc created by plating an etched glass master disc with nickel. Used in a mastering facility to create metal stampers for the mass production of compact discs.

MATV - Master Antenna Television: Centrally-located receiving system that distributes off-air signals and to multiple places in the cable transmission system.

Master Control: Nerve center for telecasts. Controls the program input, switching, and retrieval for on-the-air telecasts. Also oversees technical quality of programs.

Matte: The keying of two scenes; the electronic laying in of a background image behind a foreground scene, such as a picture of a town meeting behind the newscaster reporting on the meeting.

Matte Key: Keyed (electronically cut-in) title whose letters are filled with shades of gray or a specific color.

MBONE - Multicast Backbone: Internet. An outgrowth of the first two IETF "audiocast" experiments in which live audio and video were multicast from the IETF meeting site to destinations around the world. The idea is to construct a semi-permanent IP multicast testbed to carry the IETF transmissions and support continued experimentation between meetings. The MBONE is a virtual network. It is layered on top of portions of the physical Internet to support routing of IP multicast packets since that function has not yet been integrated into many production routers. The network is composed of islands that can directly support IP multicast, such as multicast LANs like Ethernet, linked by virtual point-to-point links called "tunnels". The tunnel endpoints are typically workstation-class machines having operating system support for IP multicast and running the "mrouted" multicast routing daemon.

mbps, MB/s - Megabits per Second: A unit of measure of data of 1,000,000 bits per second or 1,000,000 Baud.

MCC - Microelectronics and Computer Technology Corporation: An industry consortium that developed the MacWAIS software.

MCU - Multipoint Control Unit: MCU's have the ability to support multipoint videoconferences on codecs of the same brand and (in most cases) model.

MDS: Pay television delivery service relayed by microwave to small dish antennas.

Mean Time Between Failure - MTBF: A statistical quantitative value for the time between episodes of equipment or component failure.

Medium (Media): Any material substance(s) that can be used for the propagation of signals. Examples are copper, air, water, and fiber optics.

Meet-Me Bridge - Meet-Me Teleconferencing: A type of telephone bridge that can be accessed directly by calling a certain access number; provides dial-in teleconferencing. The term "meet-me bridging" refers to the use of this type of bridge.

Mega: 1. Ten to the sixth power, 1,000,000 in decimal notation. 2. When referring to storage capacity, two to the twentieth power, 1,048,576 in decimal notation.

Megabyte: A unit of measurement equal to 1024 x 1024 bytes, or 1024 kilobytes; 8 million bits.

MegaHertz - MHz: One million cycles per second.

Memory: Computer's information storage capability. RAM - random access memory; ROM - read only memory.

Menu: A list of symbols and functions that can be selected on a computer system.

Microcomputer: A relatively precise term for computers whose central processing units (CPUs) are microprocessor chips. By contrast, mainframes and most minicomputers have CPUs containing large circuitry. Microcomputers include personal computers, small business computers, desktop computers, and home computers.

Microfiche: A system of storing and retrieving information microforms, consisting of film in the form of separate sheets, that contain original text, pictures, data, or anything which has been reduced to micro- images for a greater storage efficiency and arranged in a grid pattern for location of those original images by means of Cartesian coordinates.

Microfilm: A system of storing and retrieving information microforms, consisting of film as a data medium, usually in the form of a roll or strip, that contains micro-images of the original information. The images are generally in a sequential arrangement rather than in rows or columns as on microfiche.

Microprocessor: The heart of the computer. This is a silicon chip with the computer's central processing unit implemented on the chip.

Microsecond: One millionth of a second.

Microsoft Windows: A GUI (graphic user interface) operating environment developed by Microsoft for use on PCs running under the MS-DOS operating system.

Microwave: That portion of the electromagnetic spectrum from approximately 1,000 Megahertz to 100,000 Megahertz. The microwave energy is capable of being focused in concentrated beams in specific directions due to its short wavelength characteristics and sent over long distances. Point-to-point transmission system that transmit signals through the air using transmitters and antennas attached to tall towers. Provides program audio and video plus the capacity for additional voice and data material. It is also capable of being transmitted over wide areas from a central point or shaped into specific coverage areas with special antennas (ITFS). Extreme examples of long distance focused microwave transmissions are the signals sent from a satellite uplink earth station to a satellite 22,300 miles above the earth and from that satellite back to earth.

MHz - Megahertz: Refers to a frequency equal to one million Hertz, or cycles per second.

Midband: The band of cable television channels A through I, lying between 120 and 174 MHz.

MIDI - Musical Instrument Digital Interface: 1. An industry-standard connection for computer control of musical instruments and devices. 2. Musical Instrument Digital

Interface. Industry standard for exchange of musical information between computers and musical instruments or music synthesizers.

Midsplit System: A cable-based communications system that enables signals to travel in two direction, forward and reverse simultaneously with upstream (reverse) transmission from 5 MHz to about 100 MHz and downstream (forward) transmission greater than about 150 MHz. Exact crossover frequencies vary from manufacturer to manufacturer.

MIME - Multipurpose Internet Mail Extensions: A new Internet standard for transferring non-textual data, such as audio messages or pictures, via e-mail.

Minicomputer: An intermediate range computer, between full-size mainframes and 16-bit microcomputers. Historically, minicomputers have served dedicated uses, such as in scientific and laboratory work.

MIS: Management Information System.

Mixed Mode Disc: A CD-ROM that contains both CD-ROM (Yellow Book) and CD-Audio(Red Book) tracks.

MNP: Microcom Networking Protocol.

Model: 1. A representation in mathematical terms of a process, device, or concept. 2. An academic model; a program with a certain set of procedures or elements which can be duplicated by others in their institutions.

Modem - MOdulator/DEModulator: Device that connects computer terminals and hosts through analog links by converting data signals to analog signals and back again. Transmission rate of 300 Baud is slow; 2400 is faster.

Modem-Encryption Devices: By placing encryption units at modem interfaces, some systems have all data on the link encrypted and decrypted in a manner that is transparent to the sending and receiving stations.

Modular: Constructed with standardized units or dimensions for flexibility and variety in use; allows for easy replacement, substitution, expansion or reconfiguration of modules or sub-assemblies.

Modulator: A device which converts the video signal and audio signal onto a viewable TV channel. It takes the video and audio signals that are separated by the receiver and combines them into a signal that can be received by an ordinary TV set. This signal is called an "RF" signal, meaning radio frequency, and is usually set for either channel 3 or 4. The advantage of using a modulator is that it permits the use of standard TV receivers for displays, but the signal quality is not as good as using a direct video and audio feed to a monitor TV display. As with receivers, modulators should also be redundant.

Monitor: A television monitor is capable of projecting from an attached device such as a video tape recorder or camera; or from a cable such as that connected by cable companies or the cable from the satellite receiving unit. It is not equipped with receiver electronics which enable it to receive local broadcast channels. Studio monitors are usually high resolution so that the best possible picture is seen.

Mosaic: A free graphical front end to the Internet that supports browsing of multimedia data that includes plain and formatted text, picture, video and sound. The data is based on the hypertext document format where text or pictures can act as links to other places in the same or different documents. Mosaic provides a simple graphical user interface (GUI) that enables easy access to the data stored on the Internet. These data may be simple files or hypertext documents. The document a user points to on the receiving desktop could be on the same machine or on another computer elsewhere on the Internet. Mosaic clients are currently available for Windows, Macintosh, the X Window System and many flavors of UNIX. Mosaic was developed by the National Center for Supercomputing (NCSA).

MOTSS - Members of the Same Sex: Originally an acronym used in the 1980 federal census.

MPC - Multimedia Personal Computer: A standard which describes a PC that can run Microsoft's Windows efficiently because the system software beneath multimedia would be "Windows with Multimedia Extension." The specification calls for added audio and CD-ROM hardware. MPC is a registered trademark of the MPC Marketing Council.

MPEG - Moving Pictures Experts Group: Multimedia compression standard for professional and consumer applications - digital video, digital audio and systems compression. MPEG compression compresses similar frames of video, tracks elements which change between frames and discards the redundant information. This allows full-motion video to be sent at CD-ROM data rates - around 160kbps. MPEG, which is now being called MPEG1 in some circles achieves increased compression through the use of a combination of interframe and intraframe (sometimes called MPEG 1-Frame) image and audio compression algorithms, including predictive and interpolated technologies. These techniques analyze the degree of motion present in a search range and predict the "temporal redundancy" (anticipated repetitive motion) occurring between adjacent frames. As in JPEG, pixel search blocks form the basis of the representative sampling unit.

MPEG differs from motion JPEG (sometimes called "frame-rate" or motion JPEG). For frame rate JPEG to achieve the same data rates as MPEG, it must resort to bandwidth reduction strategies, such as chroma subsampling, reducing data rates either through an averaging of color information, or through decimation, which discards alternate lines or pixels of image information. The compression ratios obtainable with MPEG, which can be as high as 200 to 1 with decimation and chroma sampling, are directly dependent on the amount of data redundancy present in a given image. MPEG is designed to deliver data in the 1 to 2mbps range making it suitable for replaying full motion video stored on CD-ROMs.

MPEG2, which is still under development, will define a compression and decompression technology suitable for delivering data at a 5 MB to 10 MB-per-second rate. It is envisioned as a data delivery system capable of delivering high-quality, high data content capacity images to computers and television.

MPEG3 is projected to deliver data at a stunning (by today's standards) 60 mbps making it suitable for complex saturated color data signals, including HDTV. MPEG3 is several years away from finalization.

MPEG System Highlights: Used to encode motion images. Will deliver decompressed data in the 1.2 to 1.5 mbps range enabling CD-ROM to play back full motion color motion images at 30 frames/second. Compresses about 50 to 1 ratio before image degradation occurs. Compression ratios are as high as 200 to 1 attainable but with observable degradation, including audio compression. Asymmetrical (compresses slower than it decompresses), uses different hardware or techniques to encode and decode. Compresses redundant data appearing in sequential frames (temporal, interframe). Compression rate is fast. Decompresses in real time. Fair quality at maximum compression.

MUD/MUSH/MOO/MUCK/DUM/MUSE: These are multi-user, text based, virtual reality games. A MUD (Multi-User Dungeon) is a computer program which users can log into and explore. Each user takes control of a computerized persona/avatar/incarnation/character. You can walk around, chat with other characters, explore dangerous monster-infested areas, solve puzzles, and even create your very own rooms, descriptions and items. There are an astounding number of variations on the MUD theme.

Multiple System Operator - MSO: An organization that operates more than one cable television system.

Multi-Link Audio: Any application allowing viewers to be connected by phone (usually by audio bridge) to the spot where the broadcast originates.

Multimedia: The combination of multiple digitized data types; text, sound, computer-generated graphics and animations, photographs and video. The merger of digital technologies based on the use of computers. The technologies that are converging are computing, television, printing and telecommunications.

Multimedia Extensions: Adds audio and video recording and playback capabilities to Microsoft Windows. Part of the MPC standard.

Multisession: A drive that has the ability to read a CD-ROM on which data was recorded in at least two different recording sessions, or a disc that contains data recorded at different times.

Multiple Access: The ability of more than one user to use a transponder. Transponders have three basic resources frequency, time and space. The frequency domain is used in FDMA. Time domain multiple access is used in TDMA by time-sharing the

transponder. Space domain multiple access makes use of either the polarization discrimination, orthogonal digital codes or through spread-spectrum techniques.

Multiple Audio Subcarrier Tuning: Essential to take advantage of radio and data services riding piggy-back on video signals. Also, some programming may use nonstandard (6.8 and 6.2 MHz) frequencies.

Multiplexor - MUX: Device that uses one of several techniques to combine multiple analog or digital signals onto a single path.

Multiplexing: Transmission of two or more information streams over a single physical medium at the same time such that each data source has its own channel. Allows a number of simultaneous transmissions over a single circuit. Common methods are frequency division multiplexing (FDM) where the frequency bands are split to constitute a distinct channel and time division multiplexing (TDM) where the common channel is allotted to several different information channels, one at a time.

Multiprocessor: A computer employing two or more processing units under integrated control.

Multitasking: Pertaining to the concurrent execution of two or more tasks by a computer.

N

N + 1: Created by the FCC, this formula forms the basis by which the FCC regulates expansion of channel capacity for non-broadcast use. The FCC requires that if the government, education, public access, and leased channels are in use at least 80 percent of the Monday-through-Friday period for at least 80 percent of the time during any three-hour period for six consecutive weeks, then within six months the system's channel capacity must be expanded by the operator.

Nanosecond - nsec: One billionth of a second.

Narrowband: A telecommunications medium that carries lower frequency signals; includes telephone frequencies of about 3,000 Hertz and radio subcarrier signals of about 15,000 Hertz.

Narrowcast: Transmission of programs to a specifically defined audience normally using the newer technology delivery systems. Sometimes referred to as a target audience, a limited audience, or a "narrow" audience, hence the name "narrowcast."

National Cable Television Association - NCTA: Washington, D.C. based trade association for the cable television industry; members are cable television system operators; associate members include cable hardware and program suppliers and distributors, law and brokerage firms, and financial institutions. NCTA represents the cable television industry before state and federal policy makers and legislators.

Net: The Net-sanctioned way to refer to the Internet for the initiated.

Net Computers - NC: Small computers with enough memory to navigate the Internet and download content. The Net Computers were created to close the educational gap between children in prosperous and low-income schools - usually called the haves and have-nots. Net computers will work in schools, homes, small business and other sites.

Net.god: One who has been on-line since the beginning, who knows all and who has done it all.

Net.personality: Somebody sufficiently opinionated/flaky/with plenty of time on his/her hands to regularly post in dozens of different Usenet newsgroups, whose presence is known to thousands of people.

Net.police: Derogatory term for those who would impose their standards on other users of the Internet. Often used in vigorous flame wars (in which it occasionally mutates to net.nazis).

Netiquette: A set of common-sense guidelines for not annoying others.

Network: 1. Two or more information sources or destinations (points or nodes) linked via communications media to exchange information. 2. It can be as simple as a cable strung between two computers a few feet apart or as complex as hundreds of

thousands of computers around the world linked through fiber optic cables, phone lines and satellites.

Network Architecture: A set of design principles, including the organization of functions and the description of data formats and procedures, used as the basis for design and implementation of a user- application network.

Network Interface Card: Also known as NIC. Add-in circuit board that allows a PC to be connected to a local area network (LAN).
Network License: A license from a software vendor that allows an application to be shared by many users over a network.

Newbie: Someone who is new to the Internet. Sometimes used derogatorily by Net.veterans who have forgotten that, they, too, were once newbies who did not innately know the answer to everything. "Clueless newbie" is always derogatory.

Newsgroup: A Usenet conference.

Newsreader: A program to read news and providing capabilities for following or deleting threads.

NFS - Network File System: A network service that lets a program running on one computer use data stored on a different computer on the same Internet as if it were on its own disk.

NIC - Network Information Center: An organization which provides network users with information about services provided by the network. As close as an Internet- style network gets to a hub; it's usually where you'll find information about that particular network.

NII - National Information Infrastructure, Data Highway, Information Highway: An interoperable linking of all networks for business, government, education and consumer uses. Much of the highway already exists in phone lines, coaxial cable, satellites, and cellular networks, and already functions as the Internet. The difference between the Internet and the future NII is primarily based on more bandwidth, faster operating systems, intelligence in data routing, security for all services which are conveyed through audio, data, and video modes.

NNTP - Net News Transport Protocol: A transmission protocol for the transfer of Usenet news.

NOC - Network Operations Center: An organization that is responsible for maintaining a network.

Node: An addressable unit in a network, which can be a computer, work station or some type of communications control unit.

Noise - Audio: Unwanted sounds (static) that interfere with the intended sounds; or unwanted sound signals.

Noise Temperature: The amount of thermal noise present in a system, expressed in degrees Kelvin. The lower the noise temperature, the better.

Noise - Video: Unwanted electronic interference that shows up as snow.

Non-Composite Video Signal: A signal which contains only the picture signal and the blanking pulses.

NOS: Network operating system.

NREN - National Research and Education Network: Created by an act of Congress, this new network - still in interim stages - is replacing Internet as the national e-mail system connecting research, governmental, and high education networks and data bases. There is concern among some educators that K-12 will not have easy or immediate access to NREN as it's implemented.

NSA line eater: The more aware/paranoid Net users believe that the National Security Agency has a super-powerful computer assigned to reading everything posted on the Net. They will "jokingly" refer to this line eater in their postings. Goes back to the early days of the Net when the bottom lines of messages would sometimes disappear for no apparent reason.

NSF - National Science Foundation: Funds the NSFNet, a high-speed network that once formed the backbone of the Internet in the US.

NTSC: National Television System Committee; defined the 52 5-line color video signal frequency spectrum which extends from 30 Hz to 4.2 MHz. NTSC video consists of 525 interlaced lines, with a horizontal scanning rate of 15,734 Hz, and a vertical (field) rate of 59.94 Hz. A color subcarrier at 3.579545 MHz contains color hue (phase) and saturation (amplitude) information. 30-frame-per-second color TV standard in use in U.S., Canada, Mexico, Japan and a few other countries.

O

OEM: Original equipment manufacturer.

Off-Line: Mode of operation in which terminals, or other equipment, can operate while disconnected from a central processor. Contrast with "on-line" where there is a direct connection to a host computer.

Off-Premises System: Refers to a teleconferencing room or equipment located outside of a user organization's facility; e.g., a video teleconferencing room operated by a vendor and available to the public for a fee.

On-Demand Bandwidth: Dialable digital bandwidth access using the public switched telephone network instead of dedicated facilities.

On-line: When a computer is connected to an on-line service, bulletin-board system or public-access site, it is on-line.

Operating System: A computer program that runs the computer and handles data traffic between the disks and memory.

One-Way Video, Two-Way Audio: People at originating location can be seen and heard by participants at other locations. The people at the originating location can hear, but cannot see participants at other locations. With two-way video, each group can see and hear other groups. Usually limited to point- to-point.

Open Systems Interconnect - OSI: Generally open systems and networks are based on standards and the OSI model, providing applications and data portability, providing interoperability between systems, having common user interfaces, providing transparency below the application level, and provided by multiple sources, with multiple sources having input on development.

Optical Character Recognition - OCR: The machine identification of printed characters through use of light-sensitive devices; often used as a method of entering data.

Optical Fiber: An extremely thin, flexible thread of pure glass able to carry one thousand times the information possible with traditional copper wire. See Fiber Optics.

Orange Book: Colloquial name of the standard that describes CD-Recordable equipment, media and formats. An extension of the "Yellow Book" standard which includes specifications for incremental writes or multiple sessions. It specifies standards for CD-R and magneto-optical cartridge systems as well as Kodak's Photo CD. Most CD-ROM drives today can only read "single session" discs or the first session of a multisession disc.

Origination Site: The location from which video and/or audio is transmitted and uplinked in a teleconference. Other sites participating are receive sites.

OSI: Open Systems Interconnection.

OS/2: IBM operating system.

Outbound: Direction of a signal relative to the hub of a local area network (LAN) or other telecommunications system. Outbound signals would be traveling away from the primary hub in the forward direction to the extremities of the system.

P

PABX - Private Automatic Branch Exchange: A private automatic telephone exchange, usually located at the user's site, that routes and interfaces the local business telephones and data circuits to and from the public telephone network.

Packet: The unit of data sent across a packet switching network. The term is used loosely. While some Internet literature uses it to refer specifically to data sent across a physical network, other literature views the Internet as a packet switching network and describes IP datagrams as packets.

Packet Switching: A communications data transmission method that breaks down messages into smaller units of standard sized pieces called packets, which are individually addressed and routed through a network; the network link is occupied only during packet transmission. Packet switching increases efficiency in transport.

PAL: Phase Alternation by Line, the 625-line, 25-frame-per-second TV standard used in Western Europe, India, China, Australia, New Zealand, Argentina, and parts of Africa. Brazil uses PAL-M, a 525-line variant.

PamAmSat: International satellite operator.

Parabolic Dish: A satellite antenna, usually bowl-shaped, that concentrates signals to a single focal point. See reflector.

Parallel Input/Output: Inputting data to or outputting data from, storage in whole information elements, e.g., a word rather than a bit at a time. Typically, each bit of a word has its own wire for data transmission, so that all of the bits of a word can be transmitted simultaneously.

Parity Check: A check of the accuracy of data being transmitted. To accomplish this, an extra parity bit is added to a group of bits so that the number of ones in the group is, according to the specification, even or odd. Then, at the receiving end, the bits in the word are added, the parity bit needed for that total is determined, and the total is then compared with the parity bit transmitted.

Path Table: One of two tables contained in the volume descriptor of a CD-ROM, which comprise the file management system for the disc. The path table contains the names of all directories on the disc, and is the fastest way to access a directory that is not close to the root directory.

Pay-per-society: The idea that the pay-per-view video concept will work for all areas of an information society. Many on-line services already charge by the minute or have monthly rates.

Pay-Per-View - PPV: Usage-based fee structure used sometimes in cable television programming in which the user is charged a price for individual programs requested. Peripheral: Device such as a communications terminal that is external to the system processor.

PBX - Private Branch Exchange: A private telephone exchange that serves a particular organization and has connections to the public telephone network; refers to a multi-line telephone exchange terminal with various features for voice and data communications.

PC: Personal computer, microcomputer.

PCM - Pulse Code Modulation: A method of converting analog sound into digital representation by use of successive samples.

PDA - Personal Digital Assistant: Small, hand-held devices that combine computer power with graphics, sound, video and communication capabilities. They will take several forms including electronic note takers and portable display telephone. They hold various programs, address files and databases depending on the user's needs. Many feature a modem, fax, radio mail and computer.

PDIAL List: List of public providers that offer full Internet access.

Phase: A fraction, expressed in degrees, of one complete cycle of a wave form or orbit.

Photonics: Gallium arsenide integrated circuits for optical interconnections within and between computer and communication equipment called GaA. Present fiber optic computer and communication links are limited by discrete component electronics. In development is a projected 32-channel parallel monolithic IC connector which could vastly increase performance and drive down costs to open up long- sought new fiber optic markets which can replace current copper-wired connections.

Picture Element: One of many monochrome or color "dots" that comprise a television picture (also called pixel or pel).

Picture Signal: That portion of the composite video signal which lies above the blanking level and contains the picture brightness information.

Picture Tube: The television cathode-ray tube used to reproduce and display an image created by variations of intensity of the electron beam which scans the coated surface on the tube interior.

Ping: A program that can trace the route a message takes from your site to another site.

Pixel: The smallest controllable (addressable) picture element that can be illuminated on a display screen or printed page. Closely related to resolution.

.plan file: A file that lists anything one wants others on the Net to know about the person. It is placed in the home directory at the public-access site. Then, anybody who fingers (see) you, will see this file.

Platform: Refers to different computer types or operating environments; e.g., Macintosh, DOS/Windows, CD-I and Sega are different platforms.

Point of Presence - POP: The point where the inter-exchange carrier's responsibilities for the line begin and the local exchange carrier's responsibility ends. Location of a communications carrier's switching or terminal equipment.

Point-to-Multipoint: A teleconference broadcast from one location to several receiving locations (also known as downlink sites.)

Point-to-Point: Teleconference between two locations. Point-to-Multipoint - one location to many sites.

Polarization: A characteristic of the electric field on an electromagnetic wave in space. The directional aspects of a signal. Signals can have circular or planar polarization. Four types of polarization are used with satellites; horizontal, vertical, right-hand circular and left-hand circular. Electromagnetic waves have the ability to vibrate in different radial directions. Typically, satellite signal polarization is either horizontal or vertical. The signal coming from the satellite to the dish will either be vibrating along a horizontal or vertical plane. The receiving equipment must be adjusted to receive the correct polarization.

Polycarbonate: Material from which compact discs are made.

POP - Post Office Protocol: A protocol for the storage and retrieval of e-mail. Eudora uses POP.

Port: In software, the act of converting code so that a program runs on more than one type of computer. In networking, a number that identifies a specific "channel" used by network services. For instance, Gopher generally uses port 70 but is occasionally set to use other ports on various machines.

Portable Transmitter: A transmitter so constructed that it may be moved about conveniently from place to place but not ordinarily used while in motion, although some portable communications equipment does provide the capability to used while in motion.

Post: To compose a message for a Usenet newsgroup and then send it out for others to see.

Post-Production: For a program which is not a live broadcast, all the footage would be shot with the talent on a set constructed for the purpose or in remote locations. After the shooting, the post-production begins. The tape is electronically edited on video editing equipment. Music and graphics might be added. When the editing is finished, the program is complete. It then might be sold as a training video, situation comedy, drama, etc. Most commercial productions are produced this way, even though it might appear to be a live broadcast.

Postmaster: The person to contact at a particular site to ask for information about the site or complain about one of his/her user's behavior.

PostScript: A page-description language, developed by Adobe Systems, that converts any computer image - whether text or graphics - to a form that compatible output devices can interpret and print. PostScript typefaces can be printed on any PostScript compatible printer.

POTS: Plain Old Telephone Service.

PPP - Point-to-Point Protocol: PPP provides a method for transmitting datagrams over serial point-to-point links.

pps: Packets per second.

Pre-Production: The first phase of a videoconference. Pre-production includes planning, research, script writing, developing taped segments to be dropped into a live production, hiring and rehearsing talent, and anything else done up to minute the broadcast begins.

Pre-Produced Segments: Video segments done prior to the day of the broadcast/production. These are videotaped and edited segments which will be shown during the broadcast to take the audience into the field for interviews, demonstrations, or on site visits to places that somehow embody the content. For example, in a program about environmental pollution, a pre-produced segment might show a polluted stream with beer cans and dead fish. It might show the source of the pollution such as chemical or sewage processing plants.

Premastering: The process of logically formatting an authored application and database. A working application or database converted to a standardized format such as ISO 9660 ready for writing to a final compact disc.

Press-to-Talk Microphone: Microphone that is activated by pressing a bar or button.

Prestel: The British Post Offices public viewdata service.

PRI - Primary rate interface: PRI is a CCITT-defined ISDN trunking technology that delivers 64 kbps clear channels and standardized out-of-band signaling. PRI can serve customer premise equipment (CPE) such as a PBX, LAN gateway, or host computer or can serve as a trunk interface between central offices.

Prime Focus: Type of feed in a parabolic dish antenna which is positioned above the dish as the antennas focal point.

Printed Circuit (PC) Board: A circuit board whose electrical connections are made through conductive material that is contained on the board itself, rather than with individual wires.

Printer Font: The software that contains the image of a typeface in outline form; used by a laser printer or imagesetter to produce the image on paper or film. Also called outline font.

Screen Font: The software that contains the bitmapped images of a particular typeface, at various sizes; used to produce an approximation of the typeface on the screen. Also, a particular size of bitmapped image of a typeface. Also called a bitmap font.

Type Manager: A software program (e.g. Adobe Type Manager, Bitstream FaceLift) that generates images of a typeface for the screen or a printer, based on the typeface's printer font.

Program Day/Date/Local Time: Broadcast times are usually listed in Eastern Standard Time or Eastern Daylight Time depending upon the time of the year. Remember to convert this to the local time.

Programming Language: An artificial language, established for expressing computer programs, which uses a set of characters and rules whose meanings are assigned prior to use.

Projection Television: A combination of lenses and/or mirrors that project an enlarged television picture on a screen.

PROM - Programmable read-only memory: A type of read-only memory that can be programmed by the computer user. This programming usually requires special equipment.

Prompt: 1. Any symbol or message presented to an operator by an operating system, indicating a condition of readiness, location, or that particular information is needed before a program can proceed. 2. When the host system asks you to do something and waits for you to respond. For example, if you see "login:" it means type your user name.

PRO-Que Channel: PRO is a term used primarily in television transmissions to designate a separate audio voice grade signal sent with a television channel which is used for program instructions and queuing for the broadcast engineers. The voice quality 3 kHz channel may contain audio or data as may most be appropriate for the specific application. It is not received by a standard television receiver without special equipment.

Protocol: A set of rules and procedures for establishing and controlling conversations on a line. The set of messages has specific formats for exchanging communications and assuring end-to-end data integrity of links, circuits, messages, sessions and application processes. Usually associated with communications over computer. It is the language that computers use when talking to each other. The method used to transfer a file between a host system and your computer. A formal description of message formats and the rules two computers must follow to exchange those messages. There are several types, such as Kermit, YMODEM and ZMODEM. Protocols can describe low-level details of machine-to-machine interfaces (e.g., the order in which bits and bytes are sent across a wire) or high-level exchanges between allocation programs (e.g., the way in which two programs transfer a file across the Internet).

Proprietary: A device or program designed and owned by a particular manufacturer or vendor, as opposed to a standard. CD-ROM drives are manufactured to read discs that comply with the Yellow Book standard, but their controller cards may be either supplied by the manufacturer (proprietary) or based on the Small Computer Systems Interface (standard).

PTT - Post, Telephone & Telegraph Administration: Refers to operating agencies directly or indirectly controlled by government in charge of telecommunications services in most countries of the world.

Power user: A computer user who is quite skilled in the use of computers over a variety of applications.

Public Access Channel: A cable television channel specifically designated as a noncommercial public access channel available on a first-come, non-discriminatory basis.

Public Access Provider: An organization that provides Internet access for individuals or other organizations, often for a fee.

Public Switched Network: Any switching system that provides a circuit switched to many customers.

Pulse Code Modulation: A time division modulation technique in which analog signals are sampled and quantized at periodic intervals. The values observed are typically represented by a coded arrangement of 8 bits of which one may be for parity.

Push Technologies: "Push" is the automatic delivery of content, data or software to a desktop receiver or server receiver. Here's the problem that push technologies solve. You post new content on your Web site but there's no guarantee that anyone will care or even look for it. A related problem is tailoring interesting content so that it is easily located. Libraries and stores have the ability to display materials for people in their store. How did they get them to come in. Web sites have the same problem. A solution for both cases is push publishing where you send a message to your audience (students, employees, faculty, administrators) when you decide it is ready for distribution. A teacher might send a news article related to content to his students; ask them to read it and carry on a discussion about it in the Internet classroom. Distance learning administrators might send the new catalog directly to the student, or even a registration form for the next class in a sequence of classes. Using push publishing, it's possible to deliver to niche audiences and thus personalize the delivery to them. Instead of only marking a document as "new" on the Web page and waiting for someone to show up, an abstract of the document could be sent to the user. This is a broadcast model for the web and still one-way unless you provide a method for interaction as well as a reason. Just "pushing" documents into student's mailboxes is another form of junk-mail unless it involves them in the process of learning.

Q

QuickTime: Apple's multimedia extension to its System 7 operating software for the Macintosh. It is a time-based management system for combining text, graphics, sound, still images, animations and video. The software incorporates its own compression technology so that digitized movies can be stored and played off of a computer hard disk.

R

Rain Attenuation - Rain Losses: The attenuation (loss) of a signal due to rainfall. If you are receiving a teleconference on a Ku band dish, local rainstorms can drastically weaken the signal strength of the program. The result will be sparkles which interfere with the ability to see the program. During a heavy downpour or thunderstorm, signal reception may be lost temporarily. The noise temperature perceived by the receiving antenna may increase due to rain being present in the link.

RAM: Random-access memory. A volatile memory used by a computer's central processing unit as a chalkboard for writing and reading information. RAM is measured in multiples of 4096 bytes (4K bytes), and serves as a rough measurement of a computer's capacity.

Raster: The scanned (illuminated) area of a television picture tube.

RBOC: Regional Bell operating company.

README files: Files found on FTP sites that explain what is in a given FTP directory or which provide other useful information (such as how to use FTP).

Real Soon Now: A vague term used on the Net to describe when something will actually happen.

Receivers: Convert satellite signals into channels viewed (one at a time) on a TV monitor; designed to tune-in the format, bandwidth, and audio sub-carrier. Programs broadcast in code (encryption) are decoded at receive sites.

> Basic Receivers: Lowest cost; limited (or manual) channel tuning capability; may use fixed antennas.

> Multi-Format Receivers: Most versatile; adjusts for all broadcast formats; receive any satellite video program in six or more bandwidth selections, and two agile audio subcarrier switches; usually a motorized systems.

> Receiver - TV: Has receiver electronics which enable it to receive local broadcast signals. A monitor may not be equipped with receive equipment.

> Receiver - Satellite: Electronic unit capable of receiving video and audio signals from satellites, usually from only one satellite at a time.

Receive Site: The site receiving the transmission from the origination site. A video teleconference might have 100 or more receive sites.

Red Book: The specification for Compact Disc-Digital Audio.

Retrieval Engine: A program which finds and presents data. Same as search engine.

Redundant: A backup satellite receive system which would go into operation if the primary system failed. Although the reliability of all electronics has greatly improved, it is desirable to have backup equipment in the receive chain; i.e., a duplicate of each item except the dish. Dual LNA's or BDCs can be mounted on dual feedhorns and could easily be switched in the event of primary system failure. Likewise, two receivers could be operated simultaneously using signal splitters, and either could be switched to the viewing room.

Reflector: Antenna's main curved "dish," which collects and focus signals onto the secondary reflector or the feed.

Repeater: A term used to describe the process of reprocessing and send a weak signal on to a more distant service area. The weak signal condition develops as the initially strong signal passes through the miles of air, moisture, rain and snow which gradually attenuates or reduces its power level.

Resolution: A measure of picture resolving capabilities of a television system determined primarily by bandwidth, scan rates and aspect ratio. Relates to fineness of details perceived.

Retrace: The return of a scanning beam to a desired position.

Retrofitting: The installation of additional - equipment or the rebuilding of sections of a system after it has been installed.

RF - Radio Frequency: Radio frequencies are generally considered as any electromagnetic signal from normal radio to microwave transmission.

RFC - Request for Comments: The Internet's Request for Comments documents series. The RFCs are working notes of the Internet research and development community. A document in this series may be on essentially any topic related to computer communication, and may be anything from a meeting report to the specification of a standard.

RFD - Request for Discussion: The part of the newsgroup creation process where you propose a group and discussion starts.

RFI: Radio frequency interference.

RFP: Request for proposal.

RGB - Red, Green Blue: Method of transmitting video signals that feeds red, green, and blue channels over separate wires; provides highest-quality video signal and is the format for most computer equipment.

Ring Network: A local area network in which devices are connected in a closed loop or ring as opposed to a bus network.

Rlogin: Lets you log into other computers on the Internet as though you were connected to them directly. "rsh" is a junior version of rlogin.

ROM: Read only memory. A type of permanent, non-erasable memory that plugs directly into the wiring of a computer, and contains computer programs. Some computers are supplied with some built-in ROM, whereas others have external slots for inserting ROM cartridges.

ROTFL - Rolling on the Floor Laughing: How to respond to a particularly funny comment on the Net.

ROT13: A simple way to encode bad jokes or movie reviews that give away the ending, etc. Essentially, each letter in a message is replaced by the letter 13 spaces away from it in the alphabet. There are on-line decoders to read these; nn and rn have them built in.

Routing: Selecting the minimum delay path (and/or minimum cost path) in a network for a message or packet to reach its destination.

RS-232-C: Standard interface between a piece of equipment and a telephone circuit.

RS-250B: The technical standards established for the determination of a true broadcast quality signal. All technical parameters for each type of measurable signal degradation are at a level approximately ten times that first detectable as visible in a television picture by the average viewed.

RTM - Read the manual: Often used in flames against people who ask computer-related questions that could be easily answered with a few minutes with a manual. Often RTFM.

S

S/N - S/NR - Signal to Noise Ratio: Final relationship between the video or audio signal level to the noise level. Ratio of the signal power to the noise power in a specified band width, expressed in dBW.

Sampling Rate/Frequency: The number of samples taken per second of an analog signal, expressed in Hertz. A 44.1KHz sampling rate, used for CD-Audio sound, represents 44,100 samples per second.

SAP - Supplementary Audio Program: SAP is used to designate that part of the audio signal transmitted with the standard multi-channel sound television broadcast. The multi-channel audio signal contains stereo (left and right), SAP and PRO. The SAP signal is most often used in television broadcast applications for a second language.

SCA - Subsidiary Communication Authorization: Radio version of vertical blanking intervals (BVI). Public institutions that have access to FM have access to SCA. This electronic technique places the radio signal on the FM spectrum; these signals can only be picked up with special tuners that distinguish the SCA from the FM signals.

Satellite: An electronics retransmission device serving as repeater normally placed in orbit around the earth in the geostationary orbit for the purpose of receiving and retransmitting electromagnetic signals. It normally receives signals from a single source and retransmits them over a wide geographic area. Satellite C/Ku band Domestic communications satellites operate on two frequency ranges designated C and Ku band. Each require specific electronic equipment. C band is less expensive; operates at 4 kHz. Ku-band operates at 12 kHz. Some teleconferences are broadcast on both bands. Many satellites are now built with both C and Ku band capacity.

Satellite Earth Terminal: That portion of a satellite link which receives, processes and transmits communications between Earth and a satellite.

Satellite Footprint: In geostationary orbit, communications satellites have direct line-of-sight to almost half the earth - a large "footprint" which is a major advantage. A signal sent via satellite can be transmitted simultaneously to every U.S. city. Multiple downlinks can be aimed at one satellite and receive the same program; called point to multipoint.

Satellite Master Antenna Television System - SMATV: A system wherein one central antenna is used to receive signals (broadcast or satellite) and deliver them to a concentrated grouping of television sets (such as might be found in apartments, hotels, hospitals, etc.).

Satellite Receiver: A microwave receiver capable of receiving satellite transmitted signals, downconverting, and demodulating those signals, and providing a baseband output (e.g., video and audio). Modern receivers are frequency agile and usually capable of multiple band reception (e.g., C band and Ku band.)

Satellite Relay: An active or passive satellite repeater that relays signals between two earth stations.

Satellite System: The use of orbiting satellites to relay transmissions from one satellite dish to another or multiple dishes.

> Fixed Position System: Low cost systems limited to reception from one satellite and one band. Motorized System Receives programs on different satellites by adjusting the dish position. Automated Systems Microprocessor controlled for instant movement to satellites (positions stored in memory).

Scalability: The ability to vary the information content of a program by changing the amount of data that is stored, transmitted or displayed. In a video image, this translates into creating larger or smaller windows of video on screens.

Scan-Converter: A device that converts video frequency signals to audio frequencies and vice versa; used in freeze-frame video to transmit video signals over telephone lines.

Scanner: A device for digitizing text, drawings or photographs - anything in paper form. It works like a photocopy machine, but instead of paper, the scanner converts the printed information into digital images. Scanners are used with OCR (optical character recognition) technology, which takes the scanned pages of text and graphs and converts them into the individual letters and words that make up the text and the dots that make up the image, so that the text and images can be edited using a computer.

Scanning: The process of breaking down an image into a series of elements or groups of elements representing light values and transmitting this information in time sequence.

SCPC - Single Channel Per Carrier: Signal transmission technique often used in satellite transmission which concentrates one channel of information on a single transmitted carrier for relay through the satellite. The channel may be digital, analog or multiplexed analog in nature provided that its information may be sent on a single narrow band carrier. The Single Channel Per Carrier transmission technique allows multi-channel operation in the satellite with access from any location on the earth.

SCPT: Single carrier per transponder.

Scramble: To interfere with an electronic signal or to rearrange its various component parts. In pay television, for example, the signal might be scrambled, and a decoder, also called a descrambler, might be necessary for the signal to be unscrambled so that only authorized subscribers would receive the clear signal.

Scrambler: A device that transposes or inverts signals or otherwise encodes a message at the transmitter to make it unintelligible to a receiver not equipped with an appropriate descrambling device. Synonymous with encoder.

Screen Capture: A part of communications software that opens a file on the computer and saves to it whatever scrolls past on the screen while connected to a host system.

SCSI - Small Computer System Interface: Pronounced "scuzzy." A standard interface used to connect peripheral devices, such as a CD-ROM drive, to a computer.

Screen Density: The maximum number of accessible screen elements in a video display.

Scrolling: A property of most alphanumeric video display terminals. If the screen of such a video terminal is filled, it will move the entire display image upward, either at a smooth pace or one line at a time, so that room is continuously made at the bottom of the screen for new information.

.sea: Self-extracting Archive: A compressed file or files encapsulated in a decompression program; needs no other program to expand the archive.

SEA - State Educational Agency: The state board of education or other agency officer primarily responsible for the supervision of public elementary and secondary schools in a state. In the absence of this officer or agency, it is an officer or agency designated by the governor or state law.

Search Engine: A program which finds and presents data. Same as retrieval engine.

SECAM: Systeme Electronique pour Couleur Avec Memoire, the 625-line, 25-frame-per-second color television -system used in France, Eastern Europe, USSR and parts of Africa.

Sector: A physical data block of a CD-ROM.

Seek: In CD-ROM drives, the act of locating requested data on a disc.
Seek Time: Usually expressed in terms of "average seek time," it provides a comparative number indicating the time required to get from one position to another, in reading a CD-ROM. Some older CD-ROM drives had seek times in excess of 1,000 milliseconds (ms), or one full second. The newest drives have seek times approaching 200ms.

Selective Addressability - Selectively Addressable Scrambling: The capacity to designate selected receivers to descramble a particular signal. Each decoder has a unique "address." First developed as the pay-per-view option for cable TV, then adopted by satellite networks.

Server: A computer that can distribute information or files automatically in response to specifically worded e-mail requests.

Servo: In CD-ROM drives, an electro-mechanical device that uses feedback to achieve precise starts and stops for movements of the optical head and focusing of the laser beam.

Semiconductor: A material whose resistivity lies between that of conductors and insulators, e.g., germanium and silicon. Solid state devices such as transistors, diodes, photocells, and integrated circuits are manufactured from semiconductor materials.

Semiconductor Memory: Computer memory using solid state devices instead of mechanical, magnetic, or optical devices.

Serial Input/Output: Data transmission in which the bits are sent one by one over a single wire.

Shareware: Software that is freely available on the Internet. If you like and use the software, you should send in the fee requested by the author, whose name and address will be found in a file distributed with the software.

Shared Visual Space: Allows participants to interact with a common graphics display area; e.g., any person can make a change which is seen by all.

.sig file: Sometimes, .signature file. A file that, when placed in your home directory on your public-access site, will automatically be appended to every Usenet posting you write.

.sig quote: A profound/witty/quizzical/whatever quote that you include in your .sig file.

Sign-On Procedure: The process of connecting with a remote computer, including the provision of identification details and security access.

Signal-to-Noise: The amount of useful information to be found in a given ratio

Silicon Chip: A wafer of silicon providing a semiconductor base for a number of electrical circuits.

SIMM - Single In-line Memory Module: Devices used to add memory to computers.

Simplex: A circuit capable of transmission in one direction only. Contrast with half duplex and full duplex.

SIMTEL20: The White Sands Missile Range used to maintain a giant collection of free and low-cost software of all kinds, which was "mirrored" to numerous other ftp sites on the Net. In the fall of 1993, the Air Force decided it had better things to do than maintain a free software library and shut it down. But you'll still see references to the collection, known as SIMTEL20, around the Net.

Simulation: Simulation programs electronically substitute media for the actual experience, but may be coupled with hands-on devices that help the learner to experience physical movement.

Single Session: A drive that can read discs on which data was recorded only once, or a CD-ROM on which data was recorded in one pass, either through CD-Recordable technology, or the standard mastering process.

Site: The origination site is the location from which video and/or audio is transmitted and uplinked in a teleconference. Receive transmission from the origination site.

Skew: The angular deviation of recorded binary characters from a line perpendicular to the reference edge of a data medium.

Skewing: Horizontal displacement of video information in bands of approximately 16 lines per field producing a sawtooth effect which is most apparent on vertical picture detail of a television picture originating from the playback of a video tape recording.

SLIP - Serial Line Internet Protocol: SLIP is currently a de facto standard, commonly used for point-to-point serial connections running TCP/IP. It is not an Internet standard but is defined in RFC 1055.

Slow Scan: Uses transmitters that scan selected frames and transmit the visual information over telephone lines to receive sites where it is reconstituted as a still picture. May refer to still frame video that accepts an image from a camera or other video source one line at a time.

SMATV: Satellite master antenna television. A distribution system that feeds satellite signals to a hotel, motel, apartment complex, etc.

SMDS - Switched Multimegabit Data Service: A public network service that will enable customers to send packets between LANs at either T-1 or T-3 rates. Switched Multimegabit Data Service is offered by public network providers and is a connectionless (i.e., datagram) service. It will enable customers to exchange packets between sites at T1, T3 at potentially higher rates. This LAN-like service will be offered by local exchange carriers and will initially be available only within selected metropolitan areas. A typical SMDA customer will have a wide-area communications device - i.e., a router - connected to a campus LAN or backbone, which interface through a subscriber line to the local telco central office. The communication between the customer premises device (e.g., the router) and the telco will adhere to a protocol called Subscriber Interface Protocol (SIP). This protocol has three levels, only two of which are standardized Levels 1 and 2 are fashioned from the IEEE 802.6 MAC standard for metropolitan area networking, which is called the Distributed Queued Dual Bus (DQDB) protocol. The third layer was promulgated by Bellcore in one of its Technical Advisories. The SMDS service will support both T1 and T3 access from the user's router to the local exchange carrier's central office. SMDS is considered by the regional Bell operating companies (RBOCs) to be their first broadband service, and it will eventually be incorporate as a service offering for Broadband ISDN (BISDN) family of services in the late 1990s.

Smiley: A way to describe emotion on-line. Look at this with your head tilted to the left :-). There are scores of these smileys, from grumpy to quizzical.

> :-) smile
> :) also a smile
> :-D laughing

:-} grin
:-] smirk
:-(frown
;-) wink
8-) wide-eyed
:-X close mouthed
:-o oh, no!

SMPTE Time Code: Society of Motion Picture and Television Engineers' system of giving each frame of video a number to allow indexing and precise tape control. EBU time code is the European Broadcast Union version of SMPTE time code.

SMTP - Simple Mail Transfer Protocol: The Internet standard protocol for transferring electronic mail messages from one computer to another. SMTP specifies how two mail systems interact and the format of control messages they exchange to transfer mail.

SNA: System network architecture.

Snail Mail: Mail that comes through a slot in your front door or a box mounted outside your house.

SNMP: Simple Network Management Protocol The Internet's standard for remote monitoring and management of hosts, routers and other nodes and devices on a network (RFC 1157).

Snow/Ice on the Satellite Dish: A significant build up of snow (4-5 inches) on the dish can interfere with signal reception. Snow can be removed with a soft broom or soft cloth. Since accurate curvature of the dish is vital to a good signal, avoid banging or hitting the dish. Ladders should not be leaned against the dish as it may warp or change the azimuth and/or elevation setting. A small amount of ice should not cause problems.

Software: A set of programs, procedures or related documentation associated with a system; materials for use with audio visual equipment; programs in contrast to equipment.

Solar Outage: If an antenna is pointed at or near the sun, the sun's high radiated noise level may be many times stronger than the desired signal.

Solid State: A class of electronic components utilizing the electronic or magnetic properties of semiconductors.

SONET - Synchronous Optical Network: Will offer dedicated point-to-point lines via fiber, with bandwidths ranging from 51.84 mbps to over 2gbps. SONET defines optical interfaces for high speed digital transmission - ranging from 51.84 mbps to more than 2 gbps in multiples of 51.84 mbps. The purpose of the SONET standard is to guarantee that fiber, and fiber terminating equipment (e.g. digital loop carrier systems) from different central office vendors, can all interface with each other. While many trials are currently under way to test the SONET central office standards, all new fiber deployment is expected to be compliant with this standard.

After the SONET CO standards are proven, carriers will begin providing SONET-compatible equipment to customers; the roll out of SONET circuits to customers will begin in 1993. With SONET, customers will be able to order "pipes" running at speeds higher than T3. SONET will be the transmission platform for other high-speed (above T3 speeds) services, such as SMDS and BISDN. SONET will be a major breakthrough for carriers, because standardization will significantly lower their equipment and operational costs, which, in turn, should result in lower cost for private networking.

Sound board: A device required by a DOS-based computer to access digital sound, exists in the form of an add-in board inserted in the computer, and accesses (and/or creates) .WAV, .SND, MIDI and other digital sound formats.

Special Event Teleconferencing: Teleconference that uses facilities that are temporarily linked for a specific event; implies a temporary satellite network for one-way video and two-way audio.

Specialized Common Carrier: 1. A company authorized by a government agency to provide a limited range of telecommunications services. Examples of specialized common carriers are the value- added networks. fi2. Those common carriers not covered in the original federal communications legislation.

Spectrum: Range of electromagnetic radio frequencies used in transmission of voice, data, and TV.

Spin Up: Come up to speed. When a CD-ROM is inserted in a drive, it must reach a certain rate of rotational speed in order to be read.

SS7 - Signaling System 7: Increases both the efficiency of the telcos' interoffice trunking facilities and their opportunities for revenue generation by enabling network-wide services. With SS7 trunk signaling, premium services such as ISDN and Custom Local Area Signaling Service can be easily and efficiently extended across the network.

SSMA - Spread Spectrum Multiple Access: Frequency modulation technique. Standard Broadcast Band: The band of frequencies extending from 535 to 1605 kHz, usually called AM.

Star Network: A network configuration in which there is only one path between a central or controlling node and each end-point node.

Station: Assigned satellite location.

Stereophonic: Giving, relating to, or constituting a three-dimensional effect of auditory perspective, by means of two or more separate signal paths.

Still-Image Video: System by which still images are transmitted over standard telephone lines, usually allowing for real-time interaction between locations.

STL - Studio Transmitter Link: Description of a type of microwave link which connects a television studio to the television station transmitter location. The designation is used

by the Federal Communications Commission to differentiate a specific band of frequencies allocated for this specific application.

Studio: A specially designed room with associated control and monitoring facilities used by a broadcaster for the origination of radio or television programs.

Subcarrier: Signal which is transmitted along with the main video signal carrier. Subcarriers can transmit data, color picture information or audio.

Subscription Television - STV: The broadcast version of pay television. Not a cable service, it is distributed as an over-the-air broadcast signal. Its signals are scrambled and can be decoded only by a special device attached to the television set for a fee. STV contains no commercials.

Superband: The band of cable television channels J through W lying between 216 and 300 MHz.

Supercomputers: The fastest and most powerful computing systems that are available at any given time.

Surfing the Internet: Skimming across topics on the Internet - moving in and out of systems looking for information that is not specified. More like browsing than a true search. Also net surfing.

Switch: Mechanical or solid-state device that opens or closes circuits, changes operating parameters or selects paths for circuits on a space or time division basis.

Switched Circuit: A circuit that may be temporarily established at the request of one or more stations.

Switched Network: Any network in which switching is present and is used to direct messages from the sender to the ultimate recipient. Usually switching is accomplished by disconnecting and reconnecting lines in different configurations in order to set up a continuous pathway between the sender and the recipient.

Switched System: A communications system (such as a telephone system) in which arbitrary pairs or sets of terminals can be connected together by means of switched communications lines.

Symmetrical Compression: A compression system that requires equal processing capability for compression and decompression of an image. Used in applications where both compression and decompression will be utilized frequently. Examples include still-image databasing, still-image transmission (color fax), video production, video mail, videophones and videoconferencing. Asymmetrical Compression requires more processing capability to compress an image than to decompress an image. It is typically used for the mass distribution of programs on media such as CD-ROM.

Synchronous Communication: Communication which takes place in the same time frame. Examples are live teleconferences which must be viewed when they are

broadcast. If the teleconference is taped and viewed later, it becomes asynchronous communication - communication which takes place at the convenience of the end user through the technology of video tape recording.

Synchronous Transmission: Data characters and bits are transmitted at a fixed rate with the transmitter and receiver synchronized. This eliminates the need for start-stop elements, thus providing greater efficiency.

Syntax Error: A mistake in the formulation of an instruction to a computer.

Sysadmin: The system administrator; the person who runs a host system or public-access site.

Sysop - A System Operator: Somebody who runs a bulletin board system or network; responsible for keeping the network or BBS working properly.

T

T1 (DS-1) Channel: High-speed digital data channel/carrier with a bit rate of 1.544 mbps which requires a bandwidth of approximately 2.1616 MHz to transmit in a television type cable environment. (1.4 x 1.544 = 2.1616); a general term for a digital carrier (DS-1. available for high-volume voice or data traffic; often used for compressed video teleconferencing networks. Each T1 circuit can accommodate 24 voice channels. A video codec operating at the T1 rate uses the equivalent of 24 voice channels. A codec operating at 56 or 64 Kbps is operating in the range of one voice channel. A standard video signal digitized at 90 Mbps has approximately 1400 voice channels. The compressed video signal quality and the cost decreases as the transmission speed decreases.

T.129 Series Standards: The T.120 standard contains a series of communication and application protocols and services that provide support for real-time, multipoint data communications. These multipoint facilities are important building blocks for a range of collaborative applications, including desktop data conferencing, multi-user applications, and multi-player gaming. Through it data is seamlessly delivered to multiple parties in "realtime." It allows endpoint applications from multiple vendors to interoperate. It specifies how applications may interoperate with (or through) a variety of network bridging products and services that support the T.120 standard. It is completely free from any platform dependencies including OS/2, MAC/OS, several versions of UNIX, and other proprietary real-time operating systems. The T.120 standard supports a broad range of transport options, including the Public Switched Telephone Networks (PSTN or POTS), Integrated Switched Digital Networks (ISDN), Packet Switched Digital Networks (PSDN), Circuit Switched Digital Networks (CSDN), and popular local area network protocols (such as TCP/IP and IPX via reference protocol). These network transports operate at different speeds, but can easily co-exist in the same multipoint conference. T.120 was designed to work alone or with in the larger context of other ITU standards such as the H.321x family of video conferencing standards and V.series modems.

T3 (DS-3.: A carrier of 45 mbps bandwidth; one T3 channel can carry 28 T1 channels. Used for point-to-point digital video transmissions or for major PBX-PBX interconnection. Dedicated service delivered via fiber. The price for a T3 circuit can be comparable to seven to 12 T1 circuits. In addition to being offered by the traditional local and interexchange carriers, a number of alternative access carriers offer T3 circuits in major metropolitan areas.

Talk-back Circuit: An audio return link from a receive location to the originating video/audio point. The equipment used is generally either a leased telephone line, dedicated radio link, or special microwave equipment made for this service.

TANSTAAFL: Internet shorthand for "There Ain't No Such Thing as a Free Lunch."

.tar: The filename extension used by files made into an archive by the Unix tar program.

TBC - Time Base Corrector: An electronic accessory to a videotape recorder that helps make mixed format playback or transfers electronically stable. It helps maintain picture quality even in dubbing operations within a single tape format.

TCP: Transmission Control Protocol.

TCP/IP - Transmission Control Protocol/Internet Protocol: The combination of TCP and IP. The particular system for transferring information over a computer network that is at the heart of the Internet.: IP is the network layer protocol for the Internet. It is a packet switching, datagram protocol defined in RFC 791.

TDMA - Time Division Multiple Access: Form of multiple access where a single carrier is time shared by many users. Signals from earth stations reaching the satellite consecutively are processed in time segments without overlapping.

Telco: Generic name for telephone companies.

Telecommunications: Communicating over a distance. Use of wire, radio, optical or other electromagnetic channels to transmit or receive signals for voice, video and data communications.

Telecommuter - telecommuting: Ability to work from home, local office, or from the road because of equipment. Equipment allows the telecommuting employee to work from anywhere. The equipment includes a telephone, fax, modem and as the NII is deployed, video.

Telecomputer: Equipment used to receive digitized information in audio, video, and data modes.

Teleconference: Electronic communications between two or more groups, or three or more individuals, who are in separate locations via audio, audiographics, video or computer. Audio teleconference - two-way communication between two or more groups, or three or more individuals, in separate locations. Video teleconference - one (or more) uplink and downlink sites. May be fully interactive voice and video, two-way voice and one-way video; full-motion, compressed, or freeze-frame video.

Telemetry: The science of sensing and measuring information at some remote location and transmitting the data to a convenient location to be read and recorded.

Telenet: A public packet-switching network operated by US Sprint. Also known as "SprintNet".

Telnet: The Internet standard protocol for remote terminal connection service. Allows a user at one site to interact with a remote time sharing system at another site as if the user's terminal was connected directly to the remote computer (see "rlogin"). On the Macintosh, NCSA Telnet is the standard.

Telephone Conference Bridge: Device that links three or more telephone channels for a teleconference; usually refers to a bridge that provides only dial-up teleconferencing where an operator calls each participant. Contrast to meet-me bridge.

Telephony: the use or operation of an apparatus for transmission of sounds between widely removed points with or without connecting wires.

Teleport: A generic term referring to a facility capable of transmitting and receiving satellite signals for other users.

Teletext: Broadcast service using several otherwise unused scanning lines (vertical blanking intervals) between frames of TV pictures to transmit information from a central data base to receiving television sets. Users of a teletext service grab pages from the transmission cycle using a keypad similar to that used in videotex systems.

Television: The electronic transmission of pictures and sounds.

Telewriter: General term for an electronic device that produces free-hand information that can be sent over a telecommunications channel, usually a telephone line.

Terminal: 1. Generally, connection point of equipment, power or signal. 2. Any terminating piece of equipment such as a computer terminal.

Text: In terms of files, a file that contains only characters from the ASCII character set. In terms of FTP, a mode that assumes that files will be transferred containing only ASCII characters.

Terrestrial Carrier/Land Line: Telecommunications transmission system using land-based facilities (microwave towers, telephone lines, fiber optic cable).

Thicknet - Thinnet: Thicknet cable can support longer distances than Thinnet (500 meters) and have up to 100 nodes connected to it. Thinnet cable looks similar to television cable and is often used to connect networks within limited distances (185 meters) and limited nodes (35).

Thread: A group of messages in a Usenet discussion group that all share the same subject and topic, so one can easily read the entire thread or delete it, depending on the specific newsreader.

TI - Terrestrial Interference: TI is normally generated as a result of relatively strong terrestrial microwave signals overpowering the weak satellite transmissions which are the primary signals of interest at a satellite earth station.

Time Code: Code electronically placed on a videotape that appears on the screen or on a counter to locate specific footage and edit tape. Logs are made of the footage on tape before editing so it can be located and viewed quickly during the editing.

Time Sharing: Pertaining to the interleaved use of time on a computer system that enables two or more users to execute computer programs concurrently.

Token Ring: A type of LAN. Examples are IEEE 802.5, ProNET-10/80 and FDDI. The term "token ring" is often used to denote 802.5

Touch Screen: A video-and/or computer monitor which responds to the user's finger touch in order to control the program.

Transceiver: Terminal that transmits and receives.

Transfer Rate: The amount of data that can be communicated from the CD-ROM drive to the CPU. Standard CD-ROM data transfer rate is 155KB/sec, (often rounded to 150KB/sec).

Transmission Channel: The medium by which a signal is sent and received between separate locations.

Transponder - Channel - Downlink Frequency: A satellite microwave repeater (receiver and transmitter) receives the signal from an uplink, amplifies it, down converts the frequency of a received band of signals, and re-transmits the signal back to earth. Satellites have 12, 24, or more transponders each with the capacity for one color TV signal and two audio channels. Typically transponder with 24 transponders have twelve polarized for vertical and twelve for horizontal transmissions in order to optimize the bandwidth of the satellite and the respective transponders.

Treatment: A narrative description of a media program. In videoteleconferencing, usually describes routine of action and precedes a rundown and/or script.

Tuner: A device, circuit, or portion of a circuit that is used to select one signal from a number of signals in a given frequency range.

TVRO - Television Receive Only: Earth stations which receive (but not transmit) satellite transmissions. Normally comprised of a parabolic antenna, low noise converted (LNC) or low noise amplifier (LNA) and a satellite receiver. The antenna gathers the weak signals transmitted from the communications satellite located in the geostationary orbit which are then amplified and downconverted to a more usable portion of the spectrum by the low noise converted. From the LNC the signals may travel up to several hundred feet to a satellite receiver; the output of which is typically video and audio or modulated channel three or four. 23B+D The capability of ISDN primary rate interface (PRI) to enable data terminals served by a DMS-100 ISDN node to have fully digital circuit- and packet-switched ISDN internetworking with data terminals served by PBXs.

Twisted Pair: A pair of wires used in transmission circuits and twisted about one another to minimize coupling with other circuits. UTP - unshielded twisted pair.

Two-way Interactive Television: Two-way interactive television provides real-time, two-way visual contact and audio contact between students in two or more classrooms and their instructor/facilitator who may be at one of the sites or a separate origination site. Two-way compressed video systems are not all delivered at the same speed. Some are full-motion video and some are delivered at slower speed so that the picture and audio are delayed in delivery and do not have the same appearance as full NTSC video. Some systems use full fiber optic or T1 lines for delivery while other use a partial T1 or ISDN for delivery of the signal. Signals are also delivered compressed to a part of

a satellite transponder. The reason for using partial lines and partial transponders is to use less bandwidth. Less bandwidth for the transmission reduces the cost to deliver the signal.

Two-Wire Circuit: A typical telephone circuit on the public switched network; a circuit formed by two conductors insulated from each other to provide a send and receive channel in the same frequency.

U

UHF-VHF: UHF stands for ultra high frequency television transmission channels above channel 13 (Channels 14-3.. VHF stands for very high frequency; television transmission channels 2 through 13.

Unions: The unions most closely associated with video production. Usually, if one group of people on a production are union, all will be. They may belong to the following unions:

> Actors Equity represents actors in certain areas of the country.

> AFM: American Federation of Musicians. This union represents professional musicians in all areas of performance - recording and personal appearance.

> AFTRA: American Federation of Television and Radio Artists. A union for artists who perform on broadcast media, including tape.

> BMI and ASCAP: Broadcast Music Incorporated and American Society Composers and Publishers which serve the same function of licensing and collecting creative royalties on works of music played in live public performance and recordings.

> IATSE: International Association of Theatrical and Stage Employees.: Normally these people are found on live theater stages working with sets, props, lighting and other theatrical gear. However, they may also be the union representing the same group of workers as IBEW.

> IBEW: International Brotherhood of Electrical Workers. IBEW has a special chapter for engineers, camera operators, audio engineers, video engineers, lighting designers and technicians, video editors and any other technicians or electricians who work in television production. IBEW members are employed by television stations, some cable companies, some corporations and some production companies.

> SAG: Screen Actors Guild which represents talent. Originally, this union represented actors working in the motion picture industry, but in recent years they have represented other talent areas.

UNIX: An operating system developed by Bell Laboratories that supports multiuser and multitasking operations.

UNMA - Unified Network Management Architecture: (AT&T).

Uplink: An earth station that transmits a radio frequency signal to a communications satellite. The transmitting facility, or uplink, consists of a large dish-shaped antenna and high-power amplifiers. The uplink is like the transmitter of a radio or television station, except that it concentrates it signals in one direction by means of a parabolic dish antenna that delivers a strong pinpoint signal to a specific satellite in space.

Upload: Copy a file from your computer to a host system. Upload is the term used for sending information over a network. Download refers to receiving information off a network. To save on connect time charges users often download information on to a data disk, and then work with it off-line.

URL - Uniform Resource Locator: A standard for writing a text reference to an arbitrary piece of data in the WWW. A URL looks like "protocol://host/localinfo" where protocol specifies a protocol to use to fetch the object (like HTTP or FTP), host specifies the Internet name of the host on which to find it, and local info is a string (often a file name) passed to the protocol handler on the remote host.

Usenet: An anarchic network of sorts, composed of thousands of discussion groups on every imaginable topic.

Usenet Newsgroup: Discussion group on one topic.

User name: On most host systems, the first time you connect you are asked to supply a one-word user name. This can be any combination of letters and numbers.

UUCP - Unix-to-Unix Copy Program: A method for transferring Usenet postings and e-mail that requires far fewer Net resources than TCP/IP, but which can result in considerably slower transfer times.

V

Value Added Network - VAN: A data network operated in the U.S. by a firm which obtains basic transmission facilities from the common carriers, and adds value such as error detection and sharing and resells the service to users. Telenet and TymNet are examples of VANs.

Vector Quantization: Compression coding technique that uses block processing to exploit redundancies within a frame. For example, if the blue sky background within a frame is one constant color, one pixel of that color is all that needs to be stored. Quick duplication of the pixel by vectors (usually 8 x 8) occurs when decompressed and displayed on a monitor.

Veronica: An information agent that searches a database of Gopher servers to find items that are of interest to the user.

VF: Voice frequency.

Vi: An extremely powerful Unix editor with the personality of a junkyard dog. Much-beloved by many Unix aficionados.

Videodisc: Information stored on an optical disc is retrieved via laser technology (versus a stylus or needle). The most commonly known optical disc is the audio compact disc. 12" or 8" in diameter optical disc; requires laserdisc player; may contain up to 54,000 still frames or 30 minutes of full motion video on each side (or some variation of each); stores information in analog format. Their use and popularity has been largely eclipsed by VCRs using magnetic videotape cassettes. Levels of Interactive Videodisc Systems:

> Level I: A videodisc player with the following capabilities: still/free frame, picture stop, chapter stop, frame address and two audio channels. Level I videodiscs have limited memory and limited processing power.

> Level II: A videodisc player with the capabilities of Level I, plus programmable memory and improved access time.

> Level III: Level I or II players combined with an external computer and/or other peripheral processing device. Level III IVD systems may have two monitors - one for the video and one for the computer - or may display the video and computer screens on a single monitor.

> Level IV: Combines computer and videodisc technologies into one piece of equipment. Too expensive for most commercial uses, it is used almost exclusively by the military.

Video: A term pertaining to the bandwidth and spectrum of the signal which results from television scanning and which is used to reproduce a picture.
Video Camera: A camera which converts images to electrical signals for recording on magnetic tape or live transmission. Videodisc A record-like device storing a large

amount of audio and visual information that can be linked to a computer; one side can store the pictures and sounds for 54,000 separate television screens.

Video Display: Presentation of the TV signal can be as simple as using a 19" TV receiver or as elaborate as large screen projection costing $200,000. The ideal lies somewhere in between. Analyze the room, physical layout, anticipated audience size, and AV support staff. In general, the larger the screen, the better. Projected images produce greater psychological impact, and help to dispel a viewer's feeling that he or she is watching TV. A general rule of thumb that has been suggested concerning minimum screen size is to figure no more than one viewer per diagonal inch. A 19" set would accommodate 19 viewers. This may not always be the case and it does not provide the larger-than-life experience that may be more effective in communicating the message.

Videotape: A plastic, iron oxide-coated tape of various widths from 1/4" to 2" for recording and playback of video and audio signals and additional technical code information.

Video Teleconference: A meeting involving at least one uplink and a number of downlinks at different locations. Electronic voice and video communication between two or more locations. It can be fully interactive voice and video or two-way voice and one-way video. It includes full-motion, compressed, and freeze-frame video.

Videotex: The generic term used to refer to a two-way interactive system(s) for the delivery of computer-generated data into the home, usually using the television set as the display device. Some of the more often used specific terms are "viewdata" for telephone-based systems (narrowband interactive systems); "wideband broadcast" or "cabletext" for systems utilizing a full video channel for information transmission; and "wideband two-way teletext" for systems which could be implemented over two-way cable television systems. In addition, hybrids and other transmission technologies, such as satellite, could be used for delivery of videotex services on a national scale.

Viewdata: Generic term used primarily in the U.S. and Great Britain to describe two-way information retrieval systems based on mainframe computers accessed by dumb or intelligent terminals whose chief characteristic is ease of use. Originally designed to use the telephone network, viewdata in the U.S. is being implemented over other distribution media such as coaxial. Viewdata's salient characteristic is the formatting, storing, and accessing of screens (sometimes called frames or pages) of alphanumeric displays for retrieval by users according to a menu or through use of keyboard search. A two-way form of videotex.

Virtual Private Network: Use of the public switched telephone system to provide a capability similar to that of a private network.

Virtual Reality - VR: Loosely defined as putting users into a computer-generated environment, rather than merely reacting to images on a display screen. Full immersion VR can include a helmet that senses head movement and changes the view seen through small TV screens mounted in front of each eye along with gloves that allow users to touch objects in the virtual world.

Virtual Space: Refers to a type of videoconference in which each participant is assigned a separate camera and is seen on a separate monitor, large screen or assigned spatial area.

VLSI: Very large scale integration.

Voice Actuated: Equipment activated in response to a voice. A voice-switched microphone is activated by a voice. In voice-switched video cameras are activated by voice to send a picture of the speaker.

Voice Mail: Products record, store and forward voice messages from one electronic mailbox to another by using single commands from any touch tone phone.

Voice-Over: Words spoken by an off-camera narrator - over the video.

Voice-Switched Microphone: Microphone that is activated by a sound of sufficient amplitude; generally allows only one person to speak at a time.

Voice-Switched Video: Type of video conference in which the cameras are activated by voice signals to send a picture of a particular person in the group. Not all participants can be seen at any one time in contrast to continuous presence video.

Volatile Memory: A storage medium in which information is destroyed when power is removed from the system.

VSAT - Very Small Aperture Terminal: Small earth stations with a satellite dish usually 4 to 6 feet (1.2 to 1.8 meters) in diameter used to receive high speed data transmission; can also transmit slow- speed data. A VSAT uplink for compressed video a C-Band frequencies is approximately 4.5 meters in diameter for most satellite applications.

VT100: Another terminal-emulation system. Originally, a dedicated terminal built by DEC to interface to mainframes. Supported by many communications program, it is the most common one in use on the Internet. VT102 is a newer version.

VTR - VCR: Video tape recorder or video cassette recorder. Equipment capable of recording video. All video equipment is not equipped to record as it requires recording heads to accomplish.

W

WAIS - Wide Area Information Service: A distributed text search system based on a standard (Z39.50) that describes a way for one computer to ask another to do searches for it. It looks at the content of files (not just the titles).

WAN: Wide Area Network (see LAN)

WATS Line: Wide Area Telecommunications Service A type of telephone service in which subscribers pay a base rate rather than a charge per call. An in-WATS line allows anyone in a designated area to phone an 800 number and pay nothing for the call. An out-WATS line allows users to place outgoing long-distance calls.
Wavelength Multiplexing: Transmitting individual signals simultaneously by using a different wavelength for each signal. Synonymous with frequency division multiplexing. Whois: An Internet program which allows users to query a database of people and other Internet entities, such as domains, networks and hosts, kept at the NIC. The information for people shows a person's company name, address, phone number and e-mail address.

Wildcards: Special characters such as * and ? that can stand in for other characters during text searches in some programs. The * wildcard generally means "match any other characters in this spot," and the ? generally means "match any other character in this spot."

Wipe: Optical effect in which the picture appears to have been wiped from the screen; i.e. from left to right, top to bottom.

Wireless Cable: Uses microwave frequencies to transmit programming to a small antenna (about the size of an open newspaper) at subscriber homes.

World Wide Web - WWW: The web of systems and the data in them that is the Internet. Presents information in a user friendly hypertext format. WWW displays pages of information, with links to other pages. Mosaic is the program that really makes Web materials come alive. Different systems display the links differently, by highlighting the link items or by putting a code (such as a number in brackets) after the item. Others put the link in boldface or in color.

WorldWindow: Offered by the Washington University Libraries in St. Louis, MO, a gateway to dozens of login services. Telnet to library.wustl.edu (no login needed).

WORM - Write Once Read Many: A type of permanent optical storage which allows the user to record information on a blank optical storage disc. Information may be added until the disc is full, but not erased or changed.

Word Processor: A computer-based typing and text-editing system.

Workstation: Computers that are generally targeted at technical users, interface over a network easily, often run UNIX, come standard with more compute power than PCs and are capable of fast graphics. Distinctions between high-end personal computers and

workstations are blurring. For high-end animation work such as 3-D logs, morphing or animated characters, workstations provide the compute power and graphics performance the animator needs. Workstations are used for computer-generated imagery (often called CGI) because they take less time than PCs to render images.

Wrap: The end of a program or production sequence, as in, "That's a wrap."

Wraparound: Local activities prior to, in the midst of, or following a teleconference to focus the content toward outcomes and ideas which can directly assist the participants.

X

X.25: Set of packet-switching standards published by the CCITT. An international standard for control of data communications between two or more computers or terminals using packet-switching technology.

XMODEM: A common file transfer protocol.

Y

Yanoff: Scott Yanoff publishes a regularly updated on-line resource guide. To find out how to get a copy finger yanoff@csd4.csd.uwm.edu

Yellow Book: The physical specification for CD-ROMs. See CD-ROM.

YMODEM: Another common file transfer protocol.

Z

.zip: The filename extension used by files compressed into the ZIP format common on PCs.

ZMODEM: The fastest and most popular file transfer protocol.