



Glossary of Telecommunications Terms

A

1+ - An outbound long distance call access code.

800 - An inbound call that is free to the caller because the toll charge is reversed and appears on the bill of the person making the call.

abbreviated dialing (synonym: speed dialing) - The ability of a telephone user to reach frequently called numbers by using less than ten or seven digits.

access - Point at which entry is gained into a circuit or a network (switched or dedicated).

access charge - A fee paid by long-distance carriers to local telephone companies for use of local facilities, and by telephone subscribers to obtain access to local networks.

access code - Preliminary digits a user is required to dial to be connected to a particular trunk group, channel, line, service, facility, function or feature of a telecommunications network or computer system.

access line - Any line giving access to a larger system or network. Also, the private lines feeding a common control switching arrangement or enhanced private switched communications service switch from a PBX.

account - Within billing terminology, this represents a customer's product or service location.

account code - Two-digit code associated with an authorization code, identifying the caller.

acknowledge character (ack) - A transmission control character transmitted as an affirmative response to a connecting station or to a sender.

acoustic coupler - A special type of modem that converts acoustic energy (sound waves) into electrical energy, allowing a standard telephone handset to be attached to a computer or data terminal for data transmission.

agent - A person or company that acts on behalf of another. Typically individuals or companies that market the services of a carrier or equipment provider as if they were an employee of the carrier or provider.

aggregator - An independent entity that brings several subscribers together to form a group that can obtain long-distance services at reduced rates. The Interexchange carrier bills subscribers. The aggregator only provides the initial plan set-up.

all trunks busy (ATB) - A single tone interrupted at a 120 impulses per minute (ipm) rate to indicate all lines or trunks in a routing group are busy. Also known as a 'busy signal'.

alternate access - A form of local access where the provider is not the local exchange carrier, but a company authorized to provide local access.



Glossary of Telecommunications Terms

alternate route - A secondary communications path used to reach a destination if the primary path is unavailable.

alternate voice data (AVD) - A single transmission facility which can be used for either voice or data.

analog - A transmission method employing a continuous (rather than pulsed or digital) electrical signal that varies in amplitude or frequency in response to changes of sound, light, position, etc., imposed on a transducer in the sending device; opposite of digital.

analog signal - A signal in the form of a continuous varying physical quantity such as voltage, which reflects variations in some quantity; or loudness in the human voice as opposed to digital.

answer supervision - (1) An off-hook signal indicating when the called party answers; used to read calls for billing purposes. (2) A signal generated by the originating switch (hardware answer supervision) or by the switch which terminates the call (software answer supervision, when FGA or WATS is used to terminate the call).

area code - The three-digit numbering plan area code in North America which permits direct distance dialing on the telephone system. Synonym: Numbering Plan Area (NPA).

assembly code - Programming language with statements that may be instructions or declarations. The instructions usually have a one-to-one correspondence with machine instructions.

asterisk laws - Gives consumers the right to say they don't want to receive marketing phone calls by choosing to have an asterisk next to their names in the telephone book. The asterisk means "no phone solicitations."

asynchronous transmission - (1) A mode of data communications transmission in which time intervals between transmitted characters may be of unequal length. (2) Transmission independently controlled by start and stop elements at the beginning and end of each character. Synonym: start-stop transmission.

attenuation - Reduction in power level due to line resistance, leakage or induction which results in the received signal being lower in volume than the original transmitted signal. [In optical fiber systems there are other causes of attenuation, such as absorption, scattering and losses into radiation modes. It is usually expressed in decibel (dB).]

audio response unit (ARU) - Output device which provides a spoken response to digital inquiries from a telephone or other device. The response is usually assembled by a computer from a prerecorded vocabulary of words.

authorization code - (1) Code that identifies the customer, and is used for billing purposes and validation by the switch. (2) An identification number that the customer enters when placing a call.

auto-dial - Automatic dialing; the capability of a terminal, modem, computer or a similar device to place a call and establish a connection over the switched telephone network without operator intervention.



Glossary of Telecommunications Terms

automatic call distributor (ACD) - A switching system designed to queue and/or distribute a large volume of incoming calls to the next available "answering" position among a group of attendants.

automatic callback - A feature of a communications device or network that records, and can dial, the originating phone number of the last incoming call.

automatic dialing unit - A device which automatically generates a predetermined set of dialing digits when the corresponding button is pushed.

automatic message-switching center - In a communications network, location at which messages are automatically directed according to routing information within the message.

automatic number identification (ANI) - The number identifying equipment at local dial offices and sent to message accounting apparatus; the final four numbers of a seven-digit phone number.

automatic route selection (ARS) - Device (or software) which chooses the lowest cost route for long-distance calls over specific lines or services, including WATS, leased, specialized non-Bell common carriers (MCI, Sprint) or direct distance dialing (DDD). Synonym: Least Cost Routing.

B

band - (1) The range of frequencies between two defined limits.

bandwidth - Indicates the information-carrying capacity of a channel. Analog transmission usually expressed in kHz or MHz; digital transmission, bps, Mbps. Fiber-optic bandwidth is usually given as its capacity to transmit information in a specific time period for a specific length. (e.g. 10 Mbps/KM.)

basic telecommunications access method (BTAM) - An access method that permits read/write communications with remote devices.

baud - A unit of data transmission speed measured in bits per second. The speed in baud is the number of discreet conditions or signal elements per second. If each event represents only one bit condition, then baud is the same as bits per second.

baud rate - A measure of signaling speed in data communications that specifies the maximum number of signal elements transmitted each second. Over dial-up telephone lines, 300 and 1200 baud are most common. For most purposes, at slow speeds, a baud rate is the same as the speed in bits per second. Baud rate is the same as bit rate if all bits have the same length.

Bell Operating Company (BOC) - Any of the 22 local Bell telephone companies owned by AT&T before divestiture. The independent BOCs provide primary access to the Interexchange carriers.

billed telephone number (BTN) - The "main number" of a customer's service that the LEC uses as a customer's account number. It is usually also an actual ANI. Will generally have WTNs associated with it. Every separate, distinct phone bill a customer gets will generally have a separate BTN.



Glossary of Telecommunications Terms

billing cycle - A recurring period of time between traffic cut-off dates which precedes customer billing. Cycles are typically 30 days.

binary - A number system based upon two's rather than ten's and that uses only two characters, zero (0) and one (1).

binary digit - Unit of information in two-level digital notation which may be 0 or 1. A member selected from a binary set.

binary synchronous transmission (BSC or bisync) - (1) Data transmission in which synchronization of characters is controlled by timing signals generated at the sending and receiving stations.

bit - (1) The smallest unit of coded information. (2) A pulse whose presence or absence indicates data. Abbreviation for binary digit.

bit duration - (1) Equivalent to the time that it takes one encoded bit to pass a point on the transmission medium. (2) In serial communications, a relative unit of time measurement used for comparison of delay times where the data rate of a transmission channel can vary (for example propagation delay, access latency).

bit rate - The rate at which bits (binary digits) are transmitted over a communications path. Normally expressed in bits per second (bps). [Not to be confused with the data signaling rate which measures the rate of signal elements being transmitted.]

bit transfer rate - The number of bits transferred per unit time, usually expressed in bits per second (bps).

bits per second (bps) - The rate at which data transmission (binary digits) is measured.

blocked calls - All attempted calls that are not connected. Two most common reasons for non-connections: all lines to the central offices are in use; all connecting paths through the PBX/switch are in use.

blocking - (1) Engineering principle involving average time a user will wait while a call searches for the most economical route; opposed to queuing where a call waits for the most economical route. (2) Inability to establish a new call because of the inaccessibility of facilities in the system being called. Measured under grade of service using "P" factor.

break - (1) To interrupt the sending of a message and take control of the circuit at the receiving end. (2) An interruption in continuity. **breakout box** - A device that allows access to individual points on a physical interface connector for testing and monitoring.

breakout panel - A breakout box mounted as a component in some larger device.



Glossary of Telecommunications Terms

bridge, bridging - Equipment and techniques used to match circuits to each other ensuring minimum transmission impairment. Bridging is normally required on multipoint data channels were several local loops or channels are interconnected.

broadband - (1) A transmission facility having a bandwidth of greater than 20 kHz and, therefore, capable of higher-speed data transmission. (2) Analog transmission technique used with data and video transmissions that provides multiple channels for users through frequency division multiplexing.

burst - A sequence of signals in data communications counted as one unit in accordance with some specific criterion or measure.

burst errors - Bits or signals lost due to such problems as line switching or multiplex switching. Typically involves a few thousand errors or lost bits at a time.

bus - (1) A heavy conductor, or group of conductors, to which several units of the same type of equipment may be connected. (2) A path or channel for transmitting electrical signals and data, usually between a computer and peripheral equipment.

busy - Call condition in which transmission facilities are already in use. Synonym: off-hook condition.

busy hour - (1) The peak 60 minutes during a business day when the largest volume of communications traffic is handled. (2) When phone lines are most in demand and/or most used.

busy tone - A single tone that is interrupted at 60 ipm (impulses per minute) rate to indicate that the call's terminating location is already in use.

bypass - When a customer avoids using the LEC to connect to their long distance carrier

byte – (1) A group of eight bits makes a byte. Typically a 16-bit "word" is itself divided into two bytes for handling. (2) Unit of measurement used to rate storage capacity of disks; usually the smallest addressable unit of information in a data store or memory. One thousand bytes is a kilobyte; one million bytes is a megabyte.

C

call-by-call selection - The ability to switch calls to individual trunks, rather than trunk groups, and to transmit necessary information to the specific trunk-type necessary to complete the call.

call detail record (CDR) - Computer record containing data unique to a specific call.

call forward/with reason display - Enables the called number, during an internodal call, to forward the incoming call to an alternate destination and provide a message explaining why the call is being forwarded.



Glossary of Telecommunications Terms

calling name delivery - Provides the ability during call setup to deliver the name of the calling party from the originating to the terminating switch or the name of the connected party from the terminating to originating switch.

camp (or camp-on) - A PBX feature where a telephone line is busy and the incoming call is placed in a waiting mode until the line is available, at which time the call is automatically put through.

carrier - (1) A company authorized by appropriate regulatory agencies to provide communications services. (2) A continuous frequency capable of being modulated or impressed with a second information carrying signal.

carrier modulation - A signal at some fixed amplitude and frequency which is combined with an information bearing signal in the modulation process to produce and output a signal suitable for transmission.

carrier system - A method for providing several communications channels over a single path. Accomplished by modulating the data, voice or video transmissions onto a higher frequency carrier wave, then recovering it at the receiving end through a process of demodulation

categories of service - Basic and enhanced, as defined by the Federal Communications Commission (FCC). Basic service refers to transmission capacity for the movement of information; for example residential telephone service. Enhanced service combines basic service with computer processing; for example Electronic Yellow Pages.

cellular mobile radio - A radio-based system providing exchange telephone service to a station located in an auto or other mobile vehicle or device (for example briefcase). Radio circuits transmitted to/from a base radio station cover a specific geographical area. As the vehicle or device moves from one area to another, different base radio stations handle the call.

central office (CO) - (1) Location of telephone switching equipment where customers' lines are terminated and interconnected. (2) Switching center that provides local access to the public network. Sometimes referred to as: End Office, Local Dial Office, Wire Center or Switching Center.

CENTREX - A type of private branch exchange service where incoming calls may be dialed direct to extensions without operator assistance. Outgoing and intercom calls may be dialed by extension users.

CENTREX, CO - Arrangement in which the Local Exchange Company's service providing switch is located in its central office.

CENTREX, CU - Arrangement in which the PBX features are provided by a switching system located on the customer's premises, but work under the control of, or in conjunction with, equipment located in a LEC central office.

channel - (1) The smallest subdivision of a transmission system by means of which a single type of communication service is provided, for example, a voice channel or a data channel. (2) A communications path via a carrier or microwave radio. (3) In data communications, a path for



Glossary of Telecommunications Terms

electrical transmission between two or more points. (4) Within a computer, the electronic paths along which data flows between the input-output units of a computer and the customer premises equipment (CPU). Synonym: circuit, facility, line, link or path.

channel bank - (1) A part of the carrier system that performs the first step of modulation. (2) A multiplexer that modulates a group of channels into a higher frequency band and, conversely, demultiplexes the higher frequency band into individual channels. It can break a signal into the equivalent of 24 analog voice grade and/or 56 Kbps digital channels.

channel capacity - The maximum bit rate that can be handled by a channel.

channel mileage charge - Monthly leased rate for circuits between telephone company (telco) central offices.

channel service unit (CSU) - Premises equipment that complies with Bell Technical Publication 62411 in providing loopback, keep-alive signals, alarm and status conditions.

channel termination charge - Fee associated with a T1 for the circuits feeding into a telco central office.

channel, four-wire - A two-way circuit, each with backup, where the signals simultaneously follow separate and distinct paths in opposite directions in the transmission medium.

character - (1) Any alphabetical letter, digit or special symbol. (2) In data transmission, the representation of a letter number or symbol by a specific code made up of binary digits.

character-oriented - A communications protocol or transmission procedure that carries control information encoded in fields of one or more bytes.

chips - Miniaturized microprocessors built on a single piece of silicon.

circuit - A path for the transmission of electromagnetic signals; includes all conditioning and signaling equipment. Synonym: facility.

circuit grade - (1) The information-carrying capability of a circuit, delineated in speed or signal type. (2) For data use, capability within certain speed ranges.

circuit switching - (1) A method of communications, where an electrical connection between calling and called stations is established on demand for exclusive use of the circuit until the connection is released. (2) A switching system that completes a dedicated transmission path from sender to receiver at the time of transmission. See also: packet switching, store and forward, message switching.

class of service (COS) - (1) Telephone service distinctions which include: rate differences between individual and party lines, flat rate and message rate, and restricted and extended area service. (2) A subgrouping of telephone customers or users for the sake of rate distinction or limitation of service.



Glossary of Telecommunications Terms

cluster controller - A device that handles the remote communications processing for multiple terminals or workstations.

coaxial cable - Cable consisting of an outer conductor surrounding an inner conductor, separated from each other by insulating material. It can carry a much higher bandwidth than a wire pair.

CODEC - Equipment containing a coder plus a decoder. Used to convert analog signals to digital form for transmission over a digital medium and back again to the original analog form.

common carrier - Government-regulated, private company that furnishes the general public with telecommunications services and facilities; for example, a telephone or telegraph company.

common channel interoffice signaling (CCIS) - A method in which labeled messages convey signaling and call completion information over a single circuit, leaving other circuits free for voice, data or video transmissions.

common control switching arrangement (CCSA) - Network service that directs inward and outward dialing typically with a seven digit code. Originally designed as a feature for private networks. Now seen in virtual switched private line networks.

common control switching 7 (CCS7) - A digital communications channel dedicated for the processing of signaling and call setup information between processors in the switched network. (2) An international standard for network signaling via data links operating at 56 kbps.

common intermediate format (CIF) - The type of coded video frame transmitted when using CCITT recommendation H.261 coding methods. CIF is 30 frames per second, 325H x 288V pixels.

communication - Transmission of intelligence between two points (origin and reception) without alteration of sequence or structure of the information content. See also data communication.

Communications Satellite Corporation (COMSAT) – A United States company created by an act of Congress in 1962 to provide communications via satellites. COMSAT leases satellite circuits to many American companies and is active in international communications through partial ownership in the International Telecommunications Satellite Organization (INTELSAT) and the International Maritime Satellite Organization (INMARSAT).

component video signal - Transmission in which the red (R), green (G) and blue (B) picture components are present as individual bits of information.

composite video signal - Transmission incorporating luminance, color and synchronizing information.
compression - Techniques to reduce the number of bits required to represent information in data transmission or storage, thereby conserving bandwidth and/or memory.

continuous presence - A video processing, transmission and display mode that involves combining parts of two separate video images for transmission in a single data stream.



Glossary of Telecommunications Terms

concatenation - (1) To unite in a series; to link together; to chain. (2) The linking of transmission channels (phone lines, coaxial cable, optical fiber) end-to-end.

conditioning - (1) To bring to a standard. (2) Addition of equipment to voice grade lines to provide for data transmissions at specified minimum values of line characteristics, in ranges from C1 to C4 (the best). Common carriers often recommend no conditioning for lines transmitting at 1200 baud; C1 for 2400 baud, C2 for 4800 baud and C4 for speeds above 4800 baud.

conference call - A connection established among three or more stations in such a manner that each of the stations is able to communicate with all the others.

configuration - The interconnection and programming of independent machines or equipment to operate as a system.

contention - Condition on a communications channel or in a peripheral device when two or more stations try to either transmit at the same time or access a resource simultaneously.

control unit (CU) - Central processor of a telephone switching device.

Consultative Committee on International Telegraph and Telephone (CCITT) - An internationally recognized advisory group that recommends worldwide standards for common-carrier communications services.

conversational mode - Operation of a data processing system in which a sequence of alternating entries between a user and the system takes place in a manner comparable to a conversation between two persons.

counter - Device which tallies the number of occurrences of an event (example, a cash register) .

country code - A one-, two- or three-digit number used for international dialing. The first digit is always the world-zone number. Subsequent digits further define the geographic area.

crosstalk - Transmission noise caused by energy "leaking" from one channel to another on the same facility. In analog voice communications, crosstalk makes conversation on one circuit accidentally audible on another.

current loop - Transmission technique that recognizes current flows, rather than voltage levels. Traditionally used in teletypewriter networks, incorporating batteries as the transmission power source.

customer information system (CIS) - The Telco database which holds customer information such as service and product orders, installation dates, features used or invoice history. This information is pulled by IPS and other billing systems.

customer owned and maintained (COAM) - User provided and serviced communications equipment and its associated wiring. customer premises equipment (CPE) customer premises equipment (CPE) - All



Glossary of Telecommunications Terms

telecommunications equipment (except pay phones) and, usually, wiring that is located at the users building.

customer service - A department in an organization that provides outbound services such as: technical assistance, help lines, product or account information, location of dealers, emergency responses, service information or complaint handling.

cut - (1) Transfer of a service from one facility to another. (2) Process of moving from a test environment into full production. (3) Implementation of a system in a continuous, time bound manner.

cut through - Establish a complete path for signaling and/or audio communications. cyclic redundancy

check - Error detection technique.

D

data above voice (DAV) - Transmission system which carries digital data on a portion of the microwave radio spectrum above the frequency used for voice transmission.

data access arrangement (DAA) - Communication equipment furnished by a common carrier that allows attachment of privately owned data transmission equipment (DTE) to the common carrier network.

data communications - (1) Transfer of information between a source and a destination via one or more data links, according to appropriate protocols. (2) Transmission and reception of data, often including operations such as coding, decoding and validation.

data conversion - Process of changing information from one form of representation to another.

data coupler - A device to connect customer-owned modems or data sets to the regular telephone network. It functions by limiting the power applied to the line and providing network control and signaling.

data encryption standard (DES) - A cryptographic algorithm designed by the National Bureau of Standards to encipher and decipher data using a 64-bit key.

data pbx - A digital switch that allows a user on an attached circuit to select from other circuits, usually one at a time and on a contention basis, for the purpose of establishing a through connection.

database - An organized compilation of computerized bits. [Formalized rules exist for the establishment, control and access of a database.]

datalink control - Second layer in the International Standards Organization (ISO) reference model for Open Systems Interconnection (OSI). Synonym: protocol.

Datapac Network - A common user, packet-switched data network provided by The Computer Communications Group of the Trans Canada Telephone System.



Glossary of Telecommunications Terms

dataphone - (1) A generic term to describe a family of devices to facilitate data communication. (2) An AT&T designation for a service which provides data communication over telephone facilities.

dataphone digital service (DDS) - A communications service of the Bell System in which data is transmitted in digital rather than analog form, thus eliminating the need for modems. See acronym list for other uses of DDS.

data terminal equipment (DTE) - (1) Provides for the communications control function (protocol). (2) Any piece of equipment at which a communications path begins or ends.

dedicated access line (DAL) - A non-switched circuit or path connecting the customer's telephone equipment to the Telco switch with no intermediate switching functions by the Local Exchange Company (LEC).

dedicated line - A permanently assigned path to specific data terminals which is not part of a switched network. Synonym: private line.

delay dial - A switching configuration whereby local equipment will wait until it receives the entire telephone number before seizing a circuit to transmit the call.

delay distortion - Noise or echo resulting from the non-uniform speeds of various signal components of transmissions through a transmission medium(s).

demarc - (Demarcation Point) The point, jack or cross connect panel, at which ownership or responsibility for operating and maintaining facilities passes from one party to another.

demodulation - Conversion of a signal from either digital or analog to its original form.

denial - Call condition that occurs when no circuits are available and a busy tone is returned to the calling party. This situation is distinctly different from delay in that denial is not time-related and can only be measured in terms of the percentage of calls denied.

deregulation - (1) A 1983 Federal Communications Committee ruling which freed the interexchange carriers from the need to file rate changes or seek authority from FCC to expand. AT&T was not deregulated because of its economic power and market dominance.

dial access - (1) Connection through the public switched telephone network. (2) Means of providing a terminal switched access to a service, network or computer.

dial exchange - An automated switching junction or central office. For example, a PBX permitting call placement by rotary or pushbutton dialing rather than by an operator.

dial level - The selection of stations or services associated with a PBX using a one- to four digit code (for example, dialing nine for access to outside dial tone).



Glossary of Telecommunications Terms

dial pulse - A short duration, direct-current signal produced by or simulated to emulate the opening and closing of contacts in a rotary telephone dial when dialing numbers. Dial pulses control the action of telephone switching equipment.

dial repeating tie line/dial repeating tie trunk - A private line communications arrangement which links two or more points together and permits direct trunk to trunk connections without use of an attendant.

dial selective signaling - A multipoint network in which the called party is selected by a prearranged dialing code.

dial tone - An audible signal indicating that automatic switching equipment is ready to receive signals required for a connection.

dial-up - Use of a rotary or dual tone multi-frequency (DTMF) telephone to initiate a station-to-station telephone call over the public switched network.

dial-up line - (1) A communications circuit that is established by a switched circuit connection. (2) Any circuit available over the public switched network.

dialing plan - A description of the telephone number assignments for customer use on a telecommunications network.

digital multiplex system (DMS) - A means of utilizing technologies that provide digital switched service for voice and data transmission. DMS is characterized by the use of pulse code modulation (PCM) and time division multiplexing (TDM) throughout the switched network. It allows the direct switching of PCM signals used in transmission systems without their conversion to analog format.

digital signal (DS) - (1) A nominally discontinuous electrical signal that changes from one state to another in discreet steps. (2) A signal that is time-wise discontinuous (i.e., discreet) and can assume a limited set of values.

digital signal hierarchy - A series of standardized increments for multiplexing of digital channels in T-carriers and other types of carrier systems for digital transmissions. The North American DS hierarchy is structured differently in other global regions. ds0 - ds0 - Digital Signal level zero. One 64 kbps capacity path, equivalent to one voice (analog) circuit.

ds1 - Digital Signal level one. One 1.544 Mbps digital signal comprised of 24 voice grade lines, each with 64 Kbps capacity. (See T1)

ds1c - One 3.152 Mbps pipe, equivalent to 48 voice grade lines, each with 64 Kbps capacity.

ds1 drop and insert arrangement - DS0-level channels are connected to and terminated at intermediate points between the originating and terminating locations within a network.



Glossary of Telecommunications Terms

ds1 fan-out arrangement - DS0-level circuits are routed to several different locations from the single DS1 termination.

ds1 private line - An 1.544 Mbps leased, owned or otherwise dedicated circuit available through the LECs interexchange carrier (POP-to-POP or interLATA) or alternate carriers.

ds2 - Digital signal level two. One 6.312 Mbps channel, equivalent to 96 voice grade lines, each with 64 Kbps capacity.

ds3 - Digital signal level three. One 44.736 Mbps channel, equivalent to 672 voice grade lines, each with 64 Kbps capacity.

ds4 - Digital signal level four. One 375.176 Mbps channel, equivalent to 4,032 voice grade lines, each with 64 Kbps capacity. Typically used in interoffice transmissions.

digital technology - Method of storing, processing and transmitting information through the use of electronic or optical pulses that represent binary digits or bits (0 and 1).

digital transmission system - A transmission system in which information is transmitted in a series of pulses, and in which the signal can be regenerated.

direct call - A facility which avoids the use of address selection signals or typed dialing sequences. The network interprets the off-hook status or call request signal as an instruction to establish a connection with a single destination address previously designated by the user.

direct distance dialing (DDD) - A toll service that permits customers to place their own long distance calls without the aid of an operator.

direct inward dialing (DID) - A PBX or CENTREX feature in which incoming calls are completed to extensions without the assistance of an operator.

direct outward dialing - A PBX or CENTREX feature that allows a station user to gain access to the public switched network without the assistance of an operator.

distortion - (1) Any change from the original wave form or signal. (2) Normally, non-predictable changes which interfere with interpretation of the result.

down time - Period during which a computer, communications line or other device is not operating correctly because of mechanical or electronic failure. (As opposed to available time, idle time or stand-by time.)

drop - (1) The portion of an outside telephone plant which extends from the telephone distribution cable to the subscriber's premises. (2) A connection point for a terminal on a line.

dry circuit - A circuit which transmits voice signals and carries no direct current.



Glossary of Telecommunications Terms

dual tone multifrequency (DTMF) - Type of signaling which emits two distinct frequencies for each indicated digit. Synonym: push button dialing, touch tone dialing

dumb terminal - (1) Conversational display terminal with limited resident intelligence. (2) Terminal capable of receiving and transmitting data from a host computer over a communications network.

duplex - (1) Two units in one. (2) Simultaneous two-way independent transmission.

E

E & M signaling - Method of receiving and transmitting signals. Originally stood for 'ear and mouth'.

External Binary Coded Decimal Interchange Code (EBCDIC) - A transmission system used by several IBM and IBM-compatible data terminals which consists of eight data bits, each of which represents a particular number, letter or character.

echo - A distortion that occurs when a signal is reflected or otherwise returned (on the same wire on which the speaker is speaking) with sufficient magnitude and delay as to be perceived by the speaker.

echoplex - A method of checking and compensating for echos in network terminals that are operating in the two-way simultaneous mode.

electronic key telephone set (EKTS) - Any key telephone with a built-in microprocessor which allows access to PBX-like features as well as access to multiple CO lines and uses two- to four-pair wiring.

electronic switching system (ESS) - Electronic versus electromechanical switching equipment.

electronic tandem network (ETN) - (1) A private network in which the network switch functions as a PBX and automatically connects the calling office to the called office through tandem-tie trunks.

enable - (1) To prepare a circuit for operation. (2) To allow an item to function.

encoding - (1) Inscribing or imprinting Magnetic Ink Character Recognition (MICR) characters on checks, deposits and other documents to be processed by a MICR reader. (2) The introduction of data on a medium such as a magnetic strip on plastic cards.

encryption - Conversion of data into code form for security purposes during transmission and decoding at the receiving end.

end office (EO) - A switching center where subscriber lines are terminated and where toll calls are switched through to the terminating destination.

enhanced services - Services using network facilities and computer processing that: act on the format, content, code, protocol or similar aspects of transmittal information; provide additional or restricted information or. involve subscriber interaction with stored data.



Glossary of Telecommunications Terms

enterprise number - (1) A unique telephone exchange number that permits the terminating party to be automatically billed for incoming calls. (2) A toll-free number.

equal access (EA) - (1) The concept -- enforced by the 1984 Modified Final Judgment (MFJ) -- that all Interexchange Carriers (IXC) must have the same access to the local BOC facilities as AT&T enjoys; provided as Feature Group D interconnection. (2) The arrangement whereby the BOCs provide trunk side connections to an End Office (EO), Automatic Number Identification (ANI), answer supervision, dial pulse or DTMF signal recognition.

equalization - (1) Procedure to compensate for fluctuation in circuit amplitude, delay or distortion and to produce a flat frequency response rate. (2) In data communications, a compensation for the increase of attenuation within frequency.

erlang - (1) A unit of traffic intensity. (2) One erlang is the intensity at which one traffic path would be continually occupied.

error burst - Results of an event that causes a lengthy stream of consecutively transmitted bits to be defective. Retransmission is the normal correction procedure in the event of an error burst.

error rate - Ratio of the number of signal elements (or data) incorrectly received to the total number transmitted. (2) The probability of an error occurring during the transmission of a message.

error-free seconds (EFS) - Ratio of the number of seconds in which there are no bits in error to the total number of seconds in the measurement interval.

errored second (ES) - A one-second interval containing one or more errors. Its reciprocal, Error Free Second (EFS), is the more commonly used term.

Ethernet - A packet-switched data local area network (LAN) design by Xerox Corp. which employs CSMA-CD as access control mechanism.

exchange (EX) - (1) A room or building equipped so that telephone lines terminating there may be interconnected as required. The equipment may include manual or automatic switching equipment. (2) A telephone switching center; an aggregate of traffic-carrying devices, switching stages, controlling and signaling means at a network node that enables subscriber lines and/or other telecommunication circuits to be interconnected as required by individual callers. (3) The territory served by an exchange, within which local service rates apply; also known as the exchange area or local service area.

extended superframe format (ESF) - Use of the Cyclical Redundancy Check-6 (CRC-6) Code to measure actual logic errors rather than format errors. ESF permits circuit performance to be measured in-service and real-time, regardless of the electrical/physical characteristics of the transmission facility and network. Error data processed and stored in the ESF CPU is available on demand for the last 24 hours in 15-minute intervals, making it possible to sectionalize problems.



Glossary of Telecommunications Terms

F

facility - A transmission path between two or more locations without terminating or signaling equipment.
facsimile - (1) A system for the transmission of a picture, drawing or other document by converting it into coded electrical signals which are subsequently converted into a replica of the original image at the receiving end. (2) The replicated image of picture, drawing or document. Synonym: fax

feature groups - The different types and qualities of public switched network connection between local telephone companies and long distance companies.

feature group A (FGA) - A level of dial-up service in which subscribers have to dial a full local subscriber number to connect to the IXC, then have to key out (using DTMF) their personal authorization code followed by the distant number required.

feature group B (FGB) - A service that uses off-network access trunks (ONAT) which eliminate most off-network access line difficulties and greatly improve transmission quality (for local offices).

feature group C (FGC) - A dial-up service that uses off-network access trunks which eliminate most off-network access line difficulties and greatly improve transmission quality (for local tandem offices).

feature group D (FGD) - (1) A dial-up service employing a coding method to enable telephone customers to choose their long distance network and use the same number of digits whichever carrier chosen.

Federal Communications Commission (FCC) - Government agency established by the Communications Act of 1934 which regulates all interstate communications.

Federal Telecommunications System (FTS) - A government communications system administered by the General Services Administration (GSA), covering all 50 states plus Puerto Rico and the Virgin Islands; provides services for voice, teletypewriter, facsimile and data transmission.

fiber optics - (1) A means of providing a high-speed transmission, using light to send images through a flexible bundle of glass fibers. (2) The use of light as the primary medium in an actual application.

fiber-optic transmission system (FOTS) - A means of sending data by coded light pulses through small diameter glass fibers. Information is transferred by modulating the transmitted light. These modulated signals are detected by light-sensitive semiconductor devices (photodiodes).

fiber-optic cable - A bundle of thin filaments of glass or other transparent materials used as the medium for transmitting coded light pulses that represent data, images or sound.

fifo (first in-first out) queuing - Method where the next item to be retrieved is the item which has been waiting the longest.

flat rate - (1) Fee for a product or service that is not dependent on usage. (2) Telephone tariff in which no charges are levied for local calls. (3) A rental charge which covers unlimited or equipment usage.



Glossary of Telecommunications Terms

flow control - The procedure for controlling the rate of transfer of packets between two designated points in a data network; used to prevent data loss during transmission.

footprint - That portion of the earth's surface illuminated by a narrow beam from a satellite.

foreign exchange (FX) - A circuit that connects a subscriber in one exchange with a central office in another exchange.

foreign exchange line - Line offered by a common carrier in which the user in one central office is assigned a telephone number belonging to a remote central office to minimize long distance charges. Charges for these lines vary from carrier to carrier.

forward channel - Communications path carrying voice or data from the originating caller to the terminating destination.

forward error correction - Technique for regenerating lost data transmissions or error messages; retransmission of any information by the transmitter

Frame Relay - Closed-community, private fast-packet data service, targeted at the high performance information needs of business customers. Operates at T-1 or sub-rate access service levels.

frequency division multiplexing (FDM) - Method of transmitting two or more signals by dividing the available transmission frequency into narrower bands and using each as a separate channel.

frequency modulation (FM) - Transmission method in which the frequency of the carrier wave is changed to correspond to changes in the signal wave.

G

gateway - Conceptual or logical network station that interconnects two otherwise incompatible networks, network nodes, sub-networks or devices. Gateways perform protocol conversion operations across a wide spectrum of communications functions or layers.

geosynchronous orbit - Position over the equator that communication satellites assume; an area about 23,000 miles above the earth's surface where a satellite's velocity matches the rotation of the earth, causing it to remain stationary relative to a point on the earth.

gigabyte - One billion or one thousand million (10⁹) bytes.

garbage in-garbage out (GIGO) - Phrase used to describe quality of data input and output within a computer system; specifically, if input data is bad (garbage in) then the output data will also be bad (garbage out).

grade of service - (1) A measurement of the quality of telecommunications related to the availability of circuits when calls are to be made. Grade of service is based on the busiest hour of the day. It is measured in either percentage of calls blocked for dial-up access or average delay for manual situations. (2) The



Glossary of Telecommunications Terms

probability of a call being blocked by busy trunks; expressed as a decimal fraction. It usually pertains to the busy-hour probability. Referred to as the "P" factor.

H

handoff - Process by which a cellular telephone call is transferred from one cell site to another.

handset - That portion of the telephone containing the transmitter and receiver which is designed to be hand-held when the telephone is in use.

handshake - A preliminary exchange of predetermined signals performed by modems and/or terminals and computers to verify that a communications link has been established and data transmission can proceed.

hertz (Hz) - International standard unit of frequency.

hierarchical network - (1) A system, in which processing and control functions are performed at designated levels by computers specifically designed for those functions. (2) A switching architecture arranged in classes of offices with defined levels of responsibility.

hit-on-the-line - Description of the errors caused by external interference such as impulse noise caused by lightning.

holding time - The total period a communications channel or facility is in use for each transmission, including both message and operating times.

homing - Fixing a signal on the originating equipment to determine service quality or problems.

hookswitch - The device on which the telephone receiver hangs or rests when not in use.

housekeeping operation - The execution of a computer program that doesn't directly contribute to a product or service but is essential to the running of the system. For example, the initialization of storage areas or the execution of a calling sequence. Synonym: overhead operation.

hub - A designated Wire Center at which bridging, multiplexing or connections to other services are performed.

hubbing - Converting analog lines to a digital T1 facility.

hunting - (1) Automatic routing of calls to an idle circuit in a prearranged group when the circuit called is busy. (2) The movement of a call as it progresses through a group of lines. Typically, the call will try to be connected on the first line of the group; if that line is busy it will try the second line and then the third, etc.



Glossary of Telecommunications Terms

I

in-band signaling - (1) A type of transmission using an alternate current (AC) signal (usually 2,600 Hz) within the normal voice band. (2) An audible signal transmitted end-to-end on a long voice circuit without intermediate signaling equipment; requires that signaling equipment be arranged for "tone on when idle" operation.

initialize - To set counters, switches, addresses or contents of storage to zero or another starting value at the beginning of or at prescribed points in the operation of a computer routine.

input/output (I/O channel) - (1) A general term for equipment used to communicate with a computer. (2) The process of transmitting information from an external source to the computer, or from the computer to an external source. (3) Buffer area for the temporary storage of data.

Integrated Services Digital Network (ISDN) - A switched network providing end-to-end digital connectivity for the simultaneous transmission of voice, data, video, imaging and fax over several multiplexed communications channels. Employs high-speed, out-of-band signaling protocols that conform to international standards.

intercept - To stop a telephone call placed to an improper number and redirect that call to an operator or a recording.

interconnect - (1) Arrangement that permits the connection of customers telecommunications equipment to a common carrier network. (2) Industry name for manufacturers, excluding AT&T and Bell companies, who provide telephone premises equipment.

interexchange (IX) - Services or channels furnished between one or more rate centers or local and long distance carriers.

interexchange carrier (IXC) - A provider of long distance service.

interexchange mileage - The airline mileage between two cities. Synonym: Long Haul Mileage.

interexchange plant - The facilities between the originating switching center and another switching center.

interference - (1) Unwanted noise, crosstalk or signal deviations on communications channels that result from natural or man-made occurrences. (2) Anything not properly a part of the signal or call being transmitted.

interLATA - Any connection or call that originates in one LATA and terminates in another.

intermachine trunk (IMT) - Circuit which connects two automatic switching centers.



Glossary of Telecommunications Terms

International Organization for Standardization (ISO) - An organization that promotes the development of standards to facilitate the international exchange of goods and services as well as develops mutual cooperation in areas of intellectual, scientific, technological and economic activity.

International Record Carrier (IRC) - Exchange companies that offer telex and teletypewriter interconnect services.

interoffice trunk (IOT) - A direct link between local exchange offices.

intraLATA - Any connection that originates and terminates within the boundaries of a single LATA.

J

jack - A connecting device having springs which make electrical contact with mating contacts of a plug.

jitter - (1) A distortion caused by the variation of a signal from its references which can cause data transmission errors, particularly at high speeds. (2) Variations in amplitude, time, frequency or phase.

K

key system - A telecommunications system with multi-button telephone sets on which more than one outside line terminates, allowing several people to answer or use more than one line. [All hardware is typically located on subscriber premises.]

key telephone set - A multi-button phone used in a key system.

kilobit (kbps) - A measurement for data transmission. One kilobit is 1,000 bits per second.

kilohertz (kHz) - Equals 1,000 hertz (1,000 cycles per second.)

L

LATA - The odd little areas that Bellcorp broke phone state districts into. The LECs used to have a monopoly on all calls connected within a LATA and are generally prohibited from connecting calls between LATAs.

latency - Time interval between when a network station seeks access to a transmission channel and access is granted or received.

layer - (1) Related processes, activities or information that constitute one level in a hierarchy or network platform. (2) Related communications-processing functions that comprise one level in a hierarchy of functions within the OSI reference model.

leased line - Any communication channel leased for exclusive use from a common carrier. Synonym: private line.



Glossary of Telecommunications Terms

least cost routing (LCR) - Method for automatic selection of the least costly facility for transmission of a call. Synonyms: Most Economical Route Selection (MERS); Route Optimization; Automatic Route Selection; Flexible Route Selection.

letter of agency (LOA) - What the customer can sign to give some other entity additional authority to contact the LEC on their behalf to facilitate the switching of long distance carriers.

level - (1) A group of related functions, activities or occurrences. (2) Expressed as the relative signal strength at a fixed point in a communications circuit .

lightwave communications - The use of light as the primary medium in an actual application. [Lightwave communications is sometimes used in place of "optical" to avoid confusion with image transmissions such as facsimile or television.] See fiber optics.

limited-distance modem - (1) A short-haul modem or line driver. [Since line conditions can be better controlled over short distances, some limited-distance modems operate at higher speeds than modems that are designed for use over analog telephone facilities.]

line - Any communications path between two or more points, including satellite or microwave channels.

line conditioning - Adjustment and control of the properties of a leased line to bring its characteristics within specified tariff limits; generally improves the frequency response and delay considerations of the line. [Line conditioning services provided by telephone carriers are designated as Type C or D (example C1, C2 or C4).]

line driver - A modem alternative used when transmitting via Electronics Industry Association (EIA) cable over short distances, usually several hundred feet. (2) Device to amplify signals and reshape distorted pulses.

line loading - Use of electrical components to improve the response characteristics of a communications line.

line side - A circuit from a subscriber's telephone to the end or central office.

link layer - (1) The logical entity in the OSI model relative to transmission of data between adjacent network nodes. (2) The second processing level in the OSI model, between the physical and the network layers.

loading - (1) Initializing software on a computer processing unit. (2) A means of adding regularly spaced inductance units on a circuit to improve its transmission characteristics.

local access and transport area (LATA) - A geographical area designated by the FCC for the provision and administration of telephone service to individual customers; designated exchanges grouped to serve common social and economic communities of interest.



Glossary of Telecommunications Terms

local area network (LAN) - An interconnecting multiple terminals, workstations, programs, storage and graphic devices within a relatively small geographic area.

local distribution area (LDA) - An area that includes the rate centers (NXXs) served by an originating city.

local exchange carrier (LEC) - (1) Provider of local telephone service. (2) The provider of service within a LATA.

local loop - (1) The communications lines/services between the telephone subscriber and the LEC switching center. (2) The local connection between the end user and Class 5 central office or end office.

loop back - A method of performing transmission tests on a circuit which does not require the assistance of personnel at the distant end.

loop charge - The installation and monthly recurring fees charged by the LEC to connect a customer to their long distance carrier via T-1.

M

main distribution frame (MDF) - A steel bar framework that is the major cross connect point for COs and TOCs. Used to interconnect loop cable pairs and line equipment terminals on a switching system. Synonym: Main Frame.

main pbx - A small, local telephone office or a device with the same functionality directly connected to a tandem switch via an access trunk group.

manual tie line - A private communication channel which requires the assistance of an attendant at both ends of the circuit in order to complete a call.

mapping - In network operations, the logical association of one set of values, such as addresses on one network, with other quantities or values, such as devices on a second network

mean time to repair (MTTR) - The average time required to restore a customer's service after a network failure.

megabyte - Literally 1,000,000 bytes; usually 1024 x 1024 bytes.

megahertz (Mhz) - 1,000,000 (10⁶) cycles per second.

message telephone system (MTS) - (1) Generic name for the switched long distance service offered by all interexchange carriers. (2) An offering for which a charge is made in accordance with a measured amount of usage referred to as message units. Also referred to as Measured Telephone Service or Direct Distance Dialing (DDD).



Glossary of Telecommunications Terms

message unit (MU) - Standard against which charges for messages based on time and distance are measured.

millisecond - One-thousandth of a second.

modem - A device which modulates and demodulates signals on a carrier frequency and allows the interface of digital terminals with analog carrier systems.

modulation - Alterations in the characteristics of carrier waves, usually impressed on the amplitude and/or the frequency, for the purpose of transferring information.

module - (1) A unit of something. (2) A unit of code performing a distinct function.

monitoring device - Equipment which records data -- originating number, length, location -- on calls placed through a company telephone system.

most economical route selection (MERS) - Method for automatic selection of the least costly facility for transmission of a call. Synonym: least cost routing

multidrop line - Communications link with more than one terminal or station connected to it.
multileaving - Transmission, usually via bi-sync facilities and protocols, of a variable number of datastreams between user devices and a computer.

multiplex - (1) To interleave or simultaneously transmit two or more messages on a single channel. (2) A communications arrangement where multiple devices share a common transmission channel, though only one may transmit at a time.

multiplexer - Hardware device that allows handling of multiple variable speed signals over a single, higher speed channel.

multiplexing - Process or equipment that combines data from two or more individual circuits onto a higher speed circuit for transmission. Two methods are used: (1) Frequency division where all channels are transmitted at the same time. (2) Time division where several messages timeshare a channel.

multipoint - (1) Line or channel connecting more than two different service points. (2) Circuit having points served by three or more switches.

MUX - Abbreviation for multiplexer or multiplexing.

N

nanosecond (NS, NSEC) - One-thousandth-millionth (or billionth) of a second.

network - (1) System of mutually-communicating devices (for example: computers, terminals, peripheral devices, process controllers) connected in common and for a purpose by one or more transmission facilities. (2) A collection of switches connected to one another by transmission facilities.



Glossary of Telecommunications Terms

network architecture - The philosophy and organizational concept for enabling communications between equipment at multiple locations; detailed specifications outlining the processors, terminals and transmission media, protocols and software to be used to accomplish accurate communications.

network layer - The logical network entity that services the transport layer in the OSI model. It is responsible for ensuring that data passed to it from the transport layer is routed and delivered through the network.

network ring-again - A feature on a PBX that allows a caller, after encountering a busy signal, to be notified when the called line becomes free, provides the option of automatically reinstating the call.

network topology - (1) Describes the physical and logical relationship of nodes in a network. (2) The schematic arrangement of the links and nodes of a network, typically either a star, ring, tree or bus topology, or some hybrid combination thereof.

network trunks - Circuits connecting switching centers.

network virtual terminal - A communications concept wherein a variety of DTEs, with different data rates, protocols, codes, and formats, are accommodated in the same network. This is done as a result of network processing, where each device's data is converted into a network standard format, then converted into the format of the receiving device at the destination end.

nibble - Popular name for four bits, or half a byte.

node - (1) In network topology, a terminal of any branch of a network or a terminal common to two or more branches of a network. (2) In a switched network, the switching points, including patch and control facilities. (3) In a data network, the location of a data station which interconnects data transmission lines. (4) A point in a standing wave at which the amplitude is at a minimum. Synonyms: junction point, nodal point, vertex, null.

noise - (1) Unplanned energy introduced onto a communications path, resulting in transmission errors. Undesirable signals bearing no desired information. (2) The unpredictable difference between the observed data and the true process.

non-blocking - A switching network having a sufficient number of paths such that an originating call can always reach any other idle station without encountering a busy signal.

nonvolatile storage - A medium that maintains or keeps its contents when the power is removed.

NNX (network numbering exchange) - Former three-digit location code which represented a central office. Now in NXX form, the available number of CO codes has been increased by permitting 0 and 1 as second digits in some circumstances.



Glossary of Telecommunications Terms

NPA (numbering plan area) - A geographical boundary within which no two telephones will have the same seven-digit number. "N" is any number between two and nine, "P" is always one or zero; and "A" is any number excluding zero. (2) Area code.

NXN (network numbering exchange) - An American Central Office Code where N is a digit 2 thru 9, and X is a digit 0 thru 9. Previously in NNX form, the available number of codes has now been increased by permitting 0 and 1 as second digits in some circumstances.

O

object program - (1) Fully compiled or assembled software that is ready to be loaded into the computer. (2) The output from processing a source program through an assembler or compiler. Synonym: object code.

off-hook - (1) Condition existing when the receiver or handset is removed from its switchhook. (2) The active state (closed loop) of a single telephone or PBX line loop.

off-line - (1) Condition that exists when devices or subsystems are not connected into, do not form a part of and/or are not subject to the same controls as an operational system. (2) A device which is not permanently connected to the processor or to external circuits.

off-network access line (ONAL) - (1) A connection from a private switched network to the public switched network. (2) The connection provided by a carrier and used in common by subscribers to enter and/or exit from the switched network.

off-network access trunk (ONAT) - The circuit between the CLEC switch and the trunk side of a telco office for FGB and FGD services.

off-network calling - Telephone calls which originate in or pass through private switching systems in transmission networks and are extended to stations in the public telephone system.

off-premises extension (OPX) - Peripheral PBX equipment located in a building other than the one housing the PBX itself.

on hook - (1) Condition existing when the receiver or handset is resting on the switchhook. (2) The idle state (open loop) of a single telephone or PBX line loop.

on network calling - A call that originates and terminates on a private network.

on-line system - A network interface which provides direct interface between applications programs stored in the computer and terminals used for data entry and output.

operator assisted calls - (1) Direct distance dialing (DDD) calls which require and receive help by telephone company operators. (2) Person-to-person, collect calls, calling card calls from rotary phones, etc.



Glossary of Telecommunications Terms

optical fiber - Any filament or fiber made of dielectric materials that is used to transmit light and/or to guide signals. [Optical fiber typically consists of a core, that carries the signal and cladding, a substance with a slightly higher refractive index than the core, which surrounds the core and serves to reflect the light signal back into it.]

original equipment manufacturer (OEM) - Producer of a product made for assembly into a final system or larger subassembly by another.

originating office - The central office that serves the calling party.

other common carriers (OCC) - Specialized common carriers, domestic or international record carriers and domestic satellite carriers engaged in providing private line services (voice, data, audio or video) as authorized by the FCC.

out-of-band - (1) Any entity outside an assigned range, scope or magnitude. (2) Any frequency outside the spectrum used for voice.

out-of-band signaling - Use of a separate data link which is not in the voice circuit to transmit call set-up and ANI information from carrier to carrier, or from carrier to customer.

outage - (1) Any disruption of service. (2) The point at which a customer releases a circuit for repair, lasting until the circuit is returned to the customer in working condition.

outage time - Accumulated interval between unavailable and restoration time. It begins when a customer releases the circuit for repair and ends when the circuit is returned to the customer.

outside plant - The connection from a customer's premises to RBOC's Central Office. Outside plant can be several different technologies, including cable, copper wire or fiber, depending on the type of service at the customer's location. The connection from a customer's premises to RBOC's Central Office. Outside plant can be several different technologies, including cable, copper wire or fiber, depending on the type of service at the customer's location.

overbuild - Adding radio capacity to a telecommunications network.

overflow - (1) Switching equipment which operates when the traffic load exceeds the capacity of the regular equipment. (2) Traffic which is handled on overflow equipment. (3) Traffic which exceeds switching capacity and is lost. (4) The carry digit in a digital computer. (5) Intermediate message storage which serves as an extension of in-transit storage to preclude system saturation.

P

P factor - Grade of service which describes the percentage of blocked calls. For example, P.10 means that 10 percent of all calls were blocked; P.01 means that 1 percent of all calls were blocked.

packet assembler/disassembler (PAD) - (1) A non-adjustable resistance network used to insert transmission loss into a circuit. (2) To fill a block with dummy data, usually zeros or blanks.



Glossary of Telecommunications Terms

PAD character - A fill character inserted when insufficient data characters are present to satisfy a field length requirement.

parity - A constant state or equal value.

parity bit - A check character or bit appended to an array of binary digits to make the sum of the digits, including the check bit, always odd or always even.

parity checking - One of the oldest error checking techniques. Character bit patterns are forced into parity (total number of bits odd or even) by adding a 1 or 0 bit as appropriate, as they are transmitted. The parity (odd or even) is then verified upon receipt by the receiving device.

patch - (1) To make an improvised modification (2) To change a software routine in a rough or expedient way. (3) A temporary electrical connection.

PBX trunk - Connects a customer's PBX to another PBX, central office (CO), remote CO or CLEC switch. (See Private Branch exchange).

percent denial - (1) A measure of the grade of service provided on a dial access circuit group; the average percentage of attempts blocked or denied due to a busy condition during the busy hour.

peripheral - Any input/output device such as a printer or modem that is not a part of the main computer.

personal identification number (PIN) - The last two digits of an authorization code that identify the caller

phase jitter - A random distortion of signal lengths. [Phase jitter interferes with interpretation of information by changing the timing.

physical layer - Within the OSI model, lowest level of network processing below the link layer that is concerned with the electrical, mechanical and handshaking procedures over the interface that connects a device to a transmission medium.

Primary Interexchange Carrier (PIC) - The carrier designated to automatically carry the long distance call on that specific ANI without the use of an access code. The use of an access code overrides the PIC.

PIC charge - The one-time fee charged by the LEC to the customer to change the PIC on an ANI from one long distance company's 10xxx access code to another.

point-of-presence (POP) - The physical location within a LATA (local access and transport area) where an interexchange carrier's circuits connect with the lines of the local telephone company serving that LATA.

point-to-point circuit - A private communications link between two terminations which does not connect with a public telephone system.



Glossary of Telecommunications Terms

polar keying - Technique of current loop signaling in which electrical flow direction establishes the two-level binary code.

polling - Process by which a computer checks the readiness of other units to transmit or receive signals and information.

port - (1) Entrance or access point to a computer, multiplexer network or device where signals may be supplied, extracted or observed. (2) The place where a peripheral device is connected to a computer.

Postal, Telephone and Telegraph (PTT) – International administration, usually government controlled, which manages and operates postal and telecommunications services outside the country. Typically a monopoly operation.

presentation layer - The OSI processing layer that provides services to the application layer, allowing it to interpret the data exchanged as well as structure data messages to be transmitted in a specific display and control format.

primary path - The preferred route from one switched node to another.

primary routing point - The switch designated as the control point for a long-haul telephone call.

private automatic branch exchange (PABX) - Small, local, automatic telephone office serving extensions in a business complex and providing access to the public network.

private automatic exchange (PAX) - Small, local, automatic telephone office, normally serving extensions in a business complex, typically without external lines to the public network.

private branch exchange (PBX) - Small, local, telephone office – either manually or automatically operated - serving extensions in a business complex and providing access to the public domain.

private line - (1) A point-to-point telephone line for the exclusive use of one party. (2) A leased, owned or otherwise dedicated channel.

private use network - Two or more channels contracted for by a customer and restricted for use by that customer only.

protocol - A set of formalized conventions governing the format and relative timing of message exchange in a communications network.

protocol conversion - Process of translating communications formats and timing, which would otherwise be incompatible, into messages understood by the network. Performed by a dedicated device, a software package loaded onto an existing system or by a value-added (intelligent) network.

public service commission (PSC) - A regulatory authority at state level.



Glossary of Telecommunications Terms

public switched network (PSN) - Any switching system that provides a circuit switched to many customers.

public utility commission (PUC) - A regulatory authority at state level.

pulse - (1) A signal that can be wholly described by a constant amplitude and the duration time. (2) Signal form typically used internally in computers, terminals and other business machines as well as in communications facilities.

pulse code modulation (PCM) - Method of sampling information signals at regular intervals and transmitting the samples as a series of pulses in coded form which represent the amplitude of the information signal at that time.

pulse modulation - Method of varying the amplitude, frequency or phase of information-bearing signals into a series of pulses. [Typical methods involve modifying the amplitude (PAM), width or duration (PDM) or position (PPM). The most common pulse modulation technique in telephone work is pulse code modulation (PCM).]

pulse-link repeater - A device used to magnify signals in a telephone circuit and re-transmit corresponding pulses to another signaling circuit.

pushbutton dialing - Type of signaling which emits two distinct frequencies for each indicated digit. Synonym: dual tone multifrequency (DTMF).

Q

quarter common intermediate format (QCIF) - A subset of the coded video signals transmitted when using CCITT Rec. H.261 coding methods.

quality improvement process (QIP) - A team-based, structured, problem-solving process aimed at achieving exceptional customer satisfaction.

queue - A temporary delay in providing service caused by the inability of the particular system to handle the number of messages or calls attempted (example, a call queued for the least expensive route).

queued telecommunications access method (QTAM) - Method used to transfer data between main storage and remote terminals; may also be employed for data collection, message switching and many other teleprocessing efforts involving queued messages or direct access storage devices.

R

radio common carrier (RCC) - A communications carrier that provides radio paging and mobile telephone services to the public.

random access memory (RAM) - Portion of a computer storage which can be accessed non-sequentially and is considered the working memory.



Glossary of Telecommunications Terms

rate center - Specific geographic location used by LECs to determine interchange mileage for rate determination purposes.

rate mileage - Airline distance from one subscriber's rate center to all other LEC rate centers.

rate periods - Division of a day into categories for charges: day, evening, night/weekend.

re-homing - A network change which involves moving customer services from one switching center to another and establishing the necessary trunking facilities to do so.

real-time ANI - Delivery of automatic number identification (either the full phone number of the calling party or the NPA & NXX) simultaneously with the call. ANI is used by telephone companies for routing and billing.

rebill - An entity that resells another long distance company's service. Unlike an agent, the rebiller retains rights to the customer as the rebiller is the actual customer so far as the long distance company is concerned since the rebiller provides their own customer service to the customer and renders to the customer their own bill.

redundancy - (1) Duplicate standby equipment or facilities that are activated to insure continuous service or minimize the effect of equipment malfunctions.

regeneration - Process of receiving distorted signal pulses and from them recreating new pulses at the correct repetition rate, pulse amplitude and pulse width.

Regional Bell Operating Company (RBOC) - The seven holding companies into which the 22 Bell System local telephone companies were assigned at divestiture: Pacific Telesis, U.S. West, Southwestern Bell Corp., Ameritech, BellSouth, Bell Atlantic, NYNEX.

remote access - (1) PABX feature that allows a user at a remote location to access PABX features by telephone (for example, WATS lines); individual authorization codes are usually required. (2) Ability of transmission points to gain access to a computer which is at a different location.

repeater - (1) A device which serves as an interface between circuits, receiving signals from one circuit and transmitting them to the other. (2) A one- or two-way device which amplifies an input signal for retransmission. (3) A device that amplifies, reshapes, retimes or performs a combination of these functions on an input pulse for re-transmission.

repeating coil - Separates one section of a telephone circuit from another, with no direct current link between the sections. Telephone industry's term for a voice frequency transformer.

resale carrier - Company which leases circuits or services from a major carrier and resells them to individual users.



Glossary of Telecommunications Terms

resporg - Responsible Organization, The carrier that has been designated to "be responsible" to ensure a customer's 800 long distance traffic is routed over the correct carrier.

restoration - Re-establishment of services, usually following the breakdown of a system, on a priority basis.

retard coil - A coil having a large inductance which slows sudden changes of the current flow; a choke.

reverse channel - A simultaneous data path in the reverse direction over a half-duplex facility; used for positive/negative acknowledgements of previously received data blocks.

Ring back - Signal used by the operator at the receiving end of an established connection to recall an operator at originating end.

Ring down - A circuit or a method of signaling where the incoming signal is actuated by alternating current over the circuit.

rotary dial - A mechanism having a 10-hole finger wheel which when wound and released causes pulsing contacts to interrupt the line current and operate the central office selecting equipment in accordance with the digit dialed.

rotary hunt - Method in which incoming calls seek out an idle circuit in a prearranged multicircuit group and find the next open line to establish a through circuit.

route optimization - Method for automatic selection of the least costly facility for transmission of a call.

S

satellite relay - Active or passive repeater in geosynchronous orbit which amplifies the signal it receives before transmitting it back to earth.

secondary channel - Low-speed channel established on a four-wire circuit over which diagnostic or control information is passed. [User data is passed on the primary, high-speed channels of the circuit.]

selective calling - Ability of a transmitting station to specify which of several stations is to receive a message through the use of assigned codes.

service and equipment record - List of equipment billed to customer by type, quantity, monthly charge, location and billing dates.

service group - One or more access lines (DAL or T1) used to terminate calls from one or more 800 service numbers; a group of lines built as one trunk group from a DMS-250 switch. [A call placed to an 800 number routed to that trunk group can be completed on any of the lines in that trunk group.]

session - (1) Connection between two stations that allows them to communicate. (2) Meeting or period devoted to a particular activity.



Glossary of Telecommunications Terms

session layer - Layer 5 of the Open Systems Interconnection (OSI) model, responsible for binding and unbinding logical links between end users and maintaining an orderly dialog between them.

severely errored second (SES) - One-second interval where the bit error ratio (BER) exceeds 10⁻³.

shielded pair - Two insulated wires in a cable wrapped with metallic braid or foil to prevent signal interferences and provide noise-free transmission.

short haul - Circuit designed for use over distances of less than 200 miles.

Shout down line - A point-to-point circuit which permits one station to go off-hook and the conversation is automatically relayed to the distance point; used primarily between single-line telephones which are connected to speakers.

sideband - Set of frequencies which are produced on either side of the carrier signal as a result of the modulation process. [Upper sidebands (USB) are higher in frequency than the carrier; lower sidebands (LSB) are below the frequency of the carrier. Various modulation techniques make use of one or both of the sidebands.]

signal - An intentional introduction of energy onto a communications path, resulting in the transmission of information. Contrast with noise.

signal-to-noise ratio - Relative power of the signal information to the noise in a specified bandwidth, usually expressed in decibels (dB). As the ratio decreases on a line, it becomes more difficult to distinguish between information and non-information (noise).

signaling - (1) Use of signals for communication. (2) Method of conveying signals over a circuit. (3) The exchange of electrical information other than by speech. (4) Means of establishing and controlling connections in a communications network.

simplex - One-way data transmission, with no capability for changing direction.

singing - (1) An undesired, self-sustaining whistle or howl in an amplified telephone circuit. (2) An occurrence when the sum of the repeater gains exceeds the sum of the circuit losses.

slope - (1) Difference in attenuation of the various frequencies in a band of frequencies; measured in decibels. (2) Measurement of the frequency response of a channel. See attenuation.

smart terminal - (1) A display unit that can operate in either conversational or block mode and can support a full range of local editing capabilities. (2) A computer with communications capabilities.

smooth scrolling - Continuous vertical movement (up or down) of lines of data displayed on a CRT screen, much in the same manner as a credit roll at the end of a movie. Contrast with jump scrolling.



Glossary of Telecommunications Terms

snapshot - (1) Extract or summary of data taken from a given system. (2) Extract passed to another system to complete processing.

software - (1) Any of the routines, programs and instructions required to use computers. (2) A written statement of the procedures to be used and the format of the data at every step.

source - Terminal or node at which data enters a network.

speakerphone - Telephone equipped with a speaker and a microphone that allows hands-free conversation.

special grade network trunk - A trunk conditioned to parameters, by providing amplitude and delay equalization for the purpose of handling special services such as medium-speed data (600 to 2400 bps).

specialized carrier - A company that provides value-added communications facilities to limited geographical areas or for specific services.

specialized common carrier (SCC) - A company that provides private line services, such as voice, teleprinter, data, facsimile transmission. Synonym : Other Common Carrier.

speed number - A one-, three- or four-digit number that replaces a seven- or ten-digit telephone number. Numbers programmed into a PBX, the switch in the carrier's office, or individual smart telephones.

split screen - Capability of a CRT screen to be divided into two or more independent workspaces.

Standard Industrial Classification (SIC) - U.S. government code that categorizes commercial enterprises. The first two digits place an organization in one of the 13 major groupings; two additional digits show the primary line of business and size.

star - A network topology in which each station is connected only to a central station by a point-to-point link; all stations communicate through the central station.

star-lan - A local network design and specification within IEE 802.3 standards subcommittee; characterized by data transmission over two-pair twisted-pair wiring.

start bit - A signal in asynchronous transmission used to signify the beginning of a character or a block of data.

station - Any input or output points in a communications system capable of sending or receiving messages or calls.

station message detail recording (SMDR) - A computer generated report showing internal usage on a telephone system; usually includes extension number, trunk number used, phone number dialed, time of call, duration and operator involvement.



Glossary of Telecommunications Terms

statistical multiplexing - A time-division interleaving technique in which timeslots are dynamically allocated on the basis of need or to equipment with data to be transmitted.

stop bit - In asynchronous transmission, the bit that indicates the end of a block of data.

store-and-forward - (1) Technique in which a message is received from the originator and held in storage until a circuit to the addressee becomes available. (2) Transmittal of complete network messages or packets into storage before sending them forward to the next center. (3) Capture of transaction data on magnetic media for subsequent batch input to a computer.

stored program control (SPC) - A method whereby instructions are placed in the memory of a common controlled switching unit for use as a reference when processing calls. Instructions may include: class marks, code conversions, routing and trouble analysis.

strap - Hard-wired connection link between two tags, terminals or items of equipment. A strapping option is one implemented by changing wires.

supergroup - In frequency division multiplexing (FDM), five channel banks, each containing 12 circuits, combined into a group bank to produce 60 voice channels.

supermastergroup - In frequency division multiplexing (FDM), 10 group banks are combined to produce 600 voice channels.

supervisory signal - A signal, such as on- or off-hook, which indicates whether a circuit is in use.

suspense file - An electronic file or folder in which records are kept until errors or problems are resolved.

switch - An electronic device which opens or closes circuits, changes operating parameters or selects paths either on a space or time division basis.

switched 56/64 kbps data transmission - Provides users with the end-to-end capability to transport high-speed data (up to 64 kbps) over the public network.

switched line - One of a series of lines that can be interconnected to all other lines through a switching center; a line on the public telephone network. Contrast with leased line.

switched message network - Any network service providing interconnection of message devices such as teletypewriters.

switched network - A multipoint network with circuit switching capabilities.

switching center - Location where an incoming call/message is automatically or manually directed to one or more outgoing circuits.

switching office - Telephone company location housing a switch.



Glossary of Telecommunications Terms

sync character - Character or defined bit pattern used by a receiving terminal to adjust its clock and achieve synchronization with the master clocking device.

synchronization - Process of adjusting a receiving terminal or switch clock to match the transmitting system's master clock.

synchronous - Having a constant time interval between successive bits, characters or events. [Synchronous transmission uses no redundant information (such as the start and stop bits in asynchronous transmission) to identify the beginning and end of characters; thus it is faster and more efficient than asynchronous transmission.]

syntax - Rules governing structure in a programming language.

syntax error - System response to a mistake in its instructions, such as a transposition of characters or an omission of a character or word.

system design - Specifications of the working relations between all the parts of a system in terms of their characteristic actions.

system reliability - Probability that a system will perform its specified task properly under stated conditions of environment.

T

t1 - (1) A 1.544 circuit with the equivalent of 24 analogs. (2) The basic 24-channel 1.544 Mbps pulse code modulation system used in the United States.

T-carrier - General designation of any digital transmission system.

table driven - A logical computer process in which a user-entered variable is matched against an array of predefined values. Frequently used logical process in network routing, access security and modem operation.

tail end hop off (TEHO) - Call in a private network which is carried over flat rate facilities (inter-machine trunks or IMTs) to the switching node closest to its destination and is connected into the public network as a local call.

tandem - A switching arrangement in which the trunk from the calling office is connected to a trunk at the called office through an intermediate point; serves to interconnect central offices when direct interoffice trunks are not available.

tandem switching - The use of an intermediate switch or switches to interconnect circuits from the switch of one serving central office to the switch of a second serving central office in the same exchange. tandem switching system - See Tandem Tie Trunk Network.



Glossary of Telecommunications Terms

tandem tie trunk network (TTN) - A serving arrangement which permits sequential connection of a group of private lines between PBX or CENTREX locations by utilizing a tandem switching operation.

tandem trunking - Group of lines which connect two or more switches together.

tariff - The published rates, regulations and descriptions governing the provisions of communications service.

task - A unit of work for the central processing unit.

Technical Operating Center (TOC) - Telco location where telecommunications operations and equipment are tested and monitored; each center contains wire centers, test jacks, equipment racks, mux and radio equipment. [TOC operations include circuit installation, circuit maintenance and performance monitoring. Some, but not all TOCs, are equipped with switch equipment.]

telco - Local telephone company; local exchange carrier.

telecommunication lines - Circuits, trunks, cables and other links that are used to transmit messages from one location to another.

telecommunications - The transmission of voice, video and/or data through a medium by means of electrical impulses; all aspects of information transmittal.

telecommunications common carrier (TCC) - Person, firm or corporation that owns or operates telecommunications facilities for the purpose of providing either the facilities or services for profit.

teleconference - Three or more people connected by telephone and capable of maintaining a continuous connection.

telegraph - A device which interrupts or changes the polarity of DC current signaling to convey coded information.

telegraphy - System of communicating coded information by the transmission of electrical signals generated by a telegraph key.

telemetry - Transmission of a measurement over long distances, usually by electromagnetic means. Includes the apparatus for measuring, formulating and recording the value of a measured quantity at a distance. For example water level monitoring or flow-rate metering.

telephone - Device which converts acoustical energy (sound) into electrical energy for transmission to a distant point.

Teletype - (1) Trademark of the Teletype Corporation. (2) Frequently used as a generic name for keyboard/printers and for asynchronous transmission.

teletypewriter - Machine used to transmit and/or receive communications on a printed page and/or tape.



Glossary of Telecommunications Terms

teletypewriter exchange service (TWX) - A service in which a customer's leased teletypewriter is connected to a TWX switchboard to be routed over regular toll circuits to any other customer who subscribes to a similar service.

terminal - (1) A point at which information can enter or leave a communications network. (2) A device for the input or output of data.

terminal equipment - Devices, apparatuses and associated interfaces used to forward information to a local customer or distant point.

termination - (1) Item such as a port that is connected to the end point of a circuit or equipment. (2) The points on a switching network to which a trunk or line may be attached.

test marketing - Research conducted within a small targeted consumer group to determine the viability of an expanded program.

test period - A defined amount of time used to measure circuit performance prior to releasing the circuit to a customer, usually after initial installation.

tie-line - A private line communications channel provided by communications common carriers that links two or more points together.

time division multiplexing (TDM) - (1) Sharing a single facility among several data paths by dividing up the channel capacity into time slices. (2) Equipment which enables the transmitting of signals over a single common path by transmitting them sequentially at different instants of time.

time out - Set waiting period before a terminal system performs some action.

time-sharing - The sharing of available processing time on a single computer system among multiple simultaneous users.

token bus - Local network access mechanism and topology in which all stations actively attached to the bus listen for a broadcast token or supervisory frame. Stations wishing to transmit must receive the token before doing so; however, the next physical station to transmit is not necessarily the next physical station on the bus. Bus access is controlled by pre-assigned priority algorithms.

token passing - Local area network access technique in which participating stations circulate a special bit pattern (the token) that grants network access to each station in sequence; often used in networks with a ring topology.

token ring - Local network access and topology in which a supervisory frame or token is passed from station to station in sequential order. Stations wishing to gain access to the network must wait for the token to arrive before transmitting data. In a token ring, the next logical station receiving the token is also the next physical station on the ring.



Glossary of Telecommunications Terms

toll call - Any transmission on the public switched network to a point outside the local service area.

toll center - Central office where operators (human or mechanical) are present to assist in completing incoming toll calls.

toll office - Switching center where inter-city circuits terminate; usually one switching center in a city is designated as the toll office and is also used for mileage rate measurements.

toll plant - Facilities that connect toll offices throughout the country.

toll restriction - Arrangement by which some telephone lines are denied access to long distance circuits.

topology - Logical or physical arrangement of stations on a network in relation to one another. See bus, ring, star and tree.

touch sensitive - System which identifies physical contact on a screen by coordinates and transmits the information to a computer to be translated into some system action.

touchtone - (1) Refers to DTMF signaling equipment. (2) Frequently used to describe telephone equipment with pushbuttons.

touchtone adapter - Device that can be connected to a rotary dial telephone to allow for dual tone multifrequency tone (DTMF) signaling.

trace - Technique used in trouble shooting and/or debugging computer programs and equipment.

traffic - (1) All calls sent and received over a communications network. (2) The total information flow of a communications system at any given time.

traffic measurement and recording systems (TMRS) - A computer-generated report with usage information of telephone systems; usually includes trunk utilization, outages, queuing time and the need for additional common equipment.

traffic overflow - Condition that occurs when the number of calls to be processed exceeds the capacity of a particular trunk groups, and calls are redirected automatically or manually to another trunk group.

traffic service position (TSP) - A computer-controlled operating position.

traffic volume analysis - Study of call patterns in a communications network.

transmission - The electrical transfer of a signal, message or other form of data from one location to another without unacceptable loss of information content due to attenuation, distortion or noise.

transmission level - Level of signal power, normally 1,000 Hz, which should be measured at a particular reference point.



Glossary of Telecommunications Terms

transmission speed - Number of pulses or bits transmitted in a given period of time, usually expressed as bits per second (bps) or words per minute (wpm).

transponder - Electronic device on-board a satellite to amplify signals prior to retransmitting them back to earth.

transport layer - In the OSI model, the network processing entity responsible for the end-to-end control of transmitted data and the optimized use of network resources; works in conjunction with the underlying network, data, link and physical layers.

tree - Type of bus topology in which the network branches out at certain points along its length to connect stations or clusters of stations; also called a branching bus.

truncation - (1) Removal of one or more digits, characters or bits from one end of a block of data when a string length or target variable has been exceeded. (2) To cut off at a specified spot.

trunk - (1) Group of circuits that carry call traffic in and out of the switch. (2) Circuit or channel connecting two exchanges or two switching devices. (3) Circuit capable of being switched at both ends and provided with the necessary terminating and signaling equipment.

trunk group - Arrangement of communications channels into an identical group.

trunk side - Circuit termination that connects other central offices and the toll network.

trunk type - Circuits that use the same type of equipment going to the same terminating location.

trunk utilization report (TUR) - A computer printout detailing the traffic on a trunk.

tuning - The process of adjusting system control variables to make the system divide its resources most efficiently for the workload.

two-way circuit - (1) A circuit in which information signals in both directions are carried by the same two-wire path. (2) A short-distance channel using a single send/receive pathway, usually two copper wires, connecting a telephone to a switch.

U

unattended operation - Transmission and/or reception that is controlled automatically and does not require a human operator.

uniform call distributor (UCD) - Device located at the telephone office or with a PABX which distributes incoming calls evenly among stations or agents.

uniform service order code (USOC) - Information encoded for billing purposes by the local telephone company; typically used on service orders and service equipment records.



Glossary of Telecommunications Terms

unipolar - (1) Neutral transmission of teletypewriter signals, where current indicates a mark and no current means a space signal. (2) Logical opposites are represented by the same electrical voltage polarity.

usage - (1) Measure of trunk or equipment occupancy in telephone traffic engineering. [One trunk busy for an hour carries one erlang of traffic. Usage is measured in CCSs (hundred-call seconds) where 36 CCS per hours = one erlang.] See erlang.

usage sensitive pricing (USP) - Charge for service based on the amount of use.

usage sensitive service - Pay-for-what-you-use method of charging for local calls.

V

value added network (VAN) - A public data communications network that provides basic transmission facilities (generally leased by the VAN vendor from a common carrier) plus additional, enhanced services such as computerized switching, temporary data storage, error detection and correction, electronic mail service and packet switching.

variance - Difference between the expected or planned and the actual.

vertical marketing - (1) Focusing resources on carefully selected industry groups. (2) Offers designed and marketed to appeal to a specific industry group, such as: financial which contains banks, mutual funds and insurance companies.

very severe burst (VSB) - Interval between 2.5 and 10 seconds in which the background error rate (BER) exceeds 10⁻²; can alternatively be defined as three to ten consecutive severely errored seconds (SES).

via net loss (VNL) - The lowest loss in decibel (dB) at which a trunk facility can be operated considering limitations of echo, crosstalk, noise and singing.

video - Data displayed on the screen of a CRT.

videoconferencing - Two-way telecommunications service with live transmission of pictures and speech of conference participants transmitted between two or more locations.

videotex - An interactive information network that enables a home user with a telephone line, a decoder and television to access a mainframe computer which then displays both text and graphic information.

virtual banding - (1) A means of assigning calls to bands determined by originating and terminating NPAs, rather than by assigned circuits. (2) A method of rating calls based on distance sensitive pricing developed for NPA-to-NPA pairs.

voice activation - Method in which spoken messages, rather than electrical signals from a telephone keypad, initiate call processing.



Glossary of Telecommunications Terms

voice connecting arrangement - An access arrangement provided by the telcos to accommodate the connections of non-carrier provided voice terminal equipment to the public switched telephone network.

voice frequency (VF) - Any of the frequencies in the 300 to 3400 Hz band which must be transmitted to reproduce the voice with reasonable fidelity.

voice grade - (1) An access line suitable for voice, low-speed data, facsimile or telegraph service. (2) A line that generally has a frequency range of about 300 to 3000 Hz.

voice grade facility (VGF) - Circuit designed to DDD network standards, making it suitable for voice, low-speed data, facsimile or telegraph service.

voice recognition - System of sound sensors that translate the tones of the human voice into computer commands to access or accomplish some service.

voice response unit (VRU) - Device that accepts a coded request for data, composes a coded response and interprets the coded response into locations of stored vocabulary as output.

voice syntheses - Computer generated sounds that simulate the human voice.

voice-grade channel - Typically a telephone circuit used for voice communications and accommodating frequencies from 300 to 3000 Hz. Up to 10,000 Hz can be transmitted.

voiceprint - (1) Technique for verifying an individual's identity by his or her speech pattern. (2) An individually distinctive pattern of certain speech characteristics that can be mapped electro-magnetically; the verbal equivalent of a fingerprint.

W

wait state - Condition of a central processing unit when all operations are suspended.

warm boot - Reloading the operating system or initializing the computer after it has been on, both without turning the computer off. See booting.

wats access line (WAL) - A line class marked as a WATS line, provided from an equal access end office. The WATS access line provides the same service and features as a normal business line (unless mixed interstate and intrastate usage is prohibited by the state regulatory body), but incurs access charges which are different from those incurred for a normal business line.

wats access line extension (WALE) - A WAL provided to a customer served by an end office which has not been converted to equal access through an end office which has been converted.

wide area telecommunications service (WATS) - A special direct distance dialing (toll) service whereby a subscriber installs a dedicated line arranged for either inward or outward calls (not both) between the customer's premises and a specific geographic area. Monthly charges are based on the size of the area in which the calls are placed, not on the number or length of calls.



Glossary of Telecommunications Terms

wideband - Facilities or circuits where bandwidths are greater than that required for one voice channel.

wire center - Physical structure that houses one or more central office switching systems.