



Telecoms Glossary





A

Access Point (AP) A base station in a wireless LAN. Access points are typically stand-alone devices that plug into an Ethernet hub or server. Like a cellular phone system, users can roam around with their mobile devices and be handed off from one access point to the other.

ADSL Asymmetric Digital Subscriber Line. A DSL, or Digital Subscriber Line, commonly transfers data to and from a subscribers premises by 'piggybacking' onto existing infrastructure, most commonly a standard analogue BT telephone line. Existing mains power supply cabling is sometimes utilised, also satellite or proprietary cabled networks. The data transfer is carried out by means of a high-frequency 'carrier' which does not interrupt the normal working of the existing service used as the vehicle for transmission. Data transfer is divided into two components - transmission and reception. In Asymmetric transfer (ADSL), one (usually transmission) is carried out at a slower rate than the other.

AMPS Advanced Mobile Phone Service. The standard for analog cellular telephones, which uses a frequency-modulated transmission and frequency spacing to separate user transmission. AMPS operates in the 800 MHz band.

AMPS modem A wireless modem designed for analog cellular phones.

ANSI American National Standards Institute. A membership organization founded in 1918 that coordinates the development of U.S. voluntary national standards in both the private and public sectors. It is the U.S. member body to ISO and IEC. Information technology standards pertain to programming languages, EDI, telecommunications and physical properties of diskettes, cartridges and magnetic tapes.

B

Blockwiring The cabling and termination equipment installed between TJF and Distribution Cases on floors or in risers.



Bluetooth A new technology designed to be embedded in electronic devices in order to provide wireless and seamless connections over short distances. The idea is to provide an easier to use alternative to the cable-based interfaces currently in use to link computers and computer peripherals. Other devices in which Bluetooth chips could be embedded include mobile telephones, personal digital assistants, headsets and wristwatches.

Broadband A term applied to telecommunications systems capable of simultaneously supporting multiple information formats at relatively high speeds such as voice, high-speed data services and video services on demand. Overall transmission speeds are typically hundreds to thousands of times faster than those of Narrowband systems.

BSGL Branch Systems General License

BSI British Standards Institute, who are responsible for the drawing up of standards against which equipment is designed for sale in the UK.

C

Calling line identity (CLID) A digital network feature where identity information from the device making a call is interpreted by the device answering the call. This is usually given in that the form of the telephone number of the person who is calling you.

Cellular Radio Cellular Radio is the technology that has made wide scale mobile telephony possible – before cellular radio the problem with the mobile phone as a concept was how to get large numbers of users to share small amounts of radio spectrum. Cellular radio solved this problem by allowing the re-use of the same radio frequencies by assigning them to cells which were far enough apart to prevent noticeable interference.

Frequency Division Multiple FDMA was the basis for first generation cellular radio systems. Second generation cellular radio systems - the current generation - use digital techniques such as TDMA and CDMA to support high bit rate voice and limited data communications. Third generation (3G) systems will support voice and high bit rate data allowing mobile multimedia applications (see also Narrowband, Wideband).

Centrex A service provided by a PTO which uses the local telephone exchange to provide PABX facilities at the customer premises. (eg. BT Featureline)



CILE Call Information Logging Equipment.

Circuit-switching Means of creating telecoms connections by setting up an end-to-end circuit. The circuit remains open for the duration of the communication and a fixed share of network resources is tied up with no one else able to make use of them until the connection is closed. The main advantage of circuit-switching is that it enables performance guarantees to be offered. See also Packet Switching.

Class of Service (COS) The combination of PABX features allowed for a particular extension or group of extensions.

Computer Supported Telephony (CST) It is based on that the ability of the telephone system and computer to exchange information. One example of an application is the ability to present on screen information such as scripts, simultaneously with an incoming call. The scripts are based upon information gathered about the caller prior to the telephone being answered. This is generally achieved by either menu systems or by a identification are of the incoming line which the caller has dialled or his calling line identity.

D

DEL Direct Exchange Line.

Dialled Number Identification Service (DNIS) The ability to identify the number to which the call was made. In a call centre, for example the call may come into a specific DDI number. The call is answered by an agent in an ACD group, and the system uses the DNIS to present the agent with a screen containing a script associated with that DDI number.

Digital Access Signalling System (DASS) Protocols agreed as a standard for digital signalling between digital PBXs using PCM A-Law and digital public exchanges. Two versions are available:

- _single channel connection using 80 Kbps links (see IDA)
- _multi-channel (30 channels) connection using 2.048 Mbps links.

Digital Private Network Signalling System (DPNSS) Allows the transfer of PBX facilities between PBXs, even of different makes.

Direct Dialling Inward (DDI) DDI uses a small group of exchange lines to access a larger number of extensions. The first part of the number selects the line, whilst the last part gives the extension number. This method is very economical on exchange lines.



DTMF Dual Tone Multi Frequency See also MF.

E

Erlang A measure of the average activity on a line or group of lines, e.g. exchange lines, extension or operator consoles, over a period (usually an hour) expressed as a number of simultaneous calls. Figures are given in hours and hundredths of an hour, e.g. 4.46 Erlang = 4 hours 28 minutes of traffic.

Ethernet The most widely-installed LAN technology. Standardised as IEEE 802.3, an Ethernet LAN uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD) protocol (originally developed to manage radio based data communications - hence the name Ethernet) running over a coaxial cable or twisted pair wires. The most commonly installed Ethernet systems are called 10BASE-T and provide transmission speeds up to 10 Mbps. Fast Ethernet, or 100BASE-T10, provides transmission speeds of up to 100 Mbps and is typically used for LAN backbone systems, supporting workstations with 10BASE-T cards. Gigabit Ethernet provides an even higher level of backbone support at 1 Gbps.

Ethernet One of the oldest LAN technologies which has been highly successful and is still popular. It was originally developed by Xerox, Intel and DEC. It was developed to run over coaxial cable although it can now run over twisted pair. It uses CSMA/CD and is similar to the IEEE 802.3 standard in that they share the same cable specification and can communicate with each other. Ethernet can run at up to 10Mbps/s.

F

Fast Ethernet Any of the three versions of 100Mbps Ethernet competing to become an IEEE standard. Grand Junction Networks Inc., HP, and a consortium of vendors (including 3Com Corp., SynOptics Communications Inc., LAN Media, Intel Corp., and Sun Microsystems Inc.) are proposing solutions for the 100Mbps Ethernet standard.

Fixed Cellular Terminal (FCT) A fixed cellular terminal is a device that uses a sim card and the gsm mobile phone network to provide a wireless land line for the connection of analogue telephone devices such as PBX or fax machines to enable these devices to make and receive calls over the gsm network.. A fixed cellular terminal is also known as wireless landline, fct, gsm gateway, gsm router or gsm terminal.



Frame Relay High speed transmission method, switching packets of data through its network to their destination. Access to the network is via Frame Relay Access Devices (FRADs) which translate the data (eg Ethernet, Token Ring) into frame relay packets. The network sets up a virtual circuit which is a path to the destination. Frame relay is more popular in the US than in Europe, but the main European carriers offer frame relay service. Frame relay can operate at speeds of up to 45 Mbps, since it is a lightweight system without error correction, relying on the integrity of the fibre optic hardware.

G

General Packet Radio Services GPRS Packet Switched data radio technology for GSM networks. GPRS connections are always open giving mobile terminal users the same kind of network availability they may be used to from corporate networks. There are no set up and clear down times associated with data calls made via GPRS. Terminals can therefore effectively become a part of the Internet.

Global System for Mobile communications GSM TDMA-based second generation mobile Cellular Radio technology, originated in Europe but now used in over 100 countries around the world. GSM supports voice, data and text messaging and allows roaming between different networks – which means that GSM users can take their phones with them to many parts of the world. GSM systems currently operate at 800 MHz, 900 MHz, 1800 MHz or 1900 MHz.

H

HTTPS

Developed by Netscape, Hypertext Transfer Protocol over Secure Socket Layer (HTTP over SSL) is a Web Protocol built into a web browser that encrypts and decrypts user page requests and pages that are sent in response by the Web server

I

Integrated Services Digital Network ISDN A fully digital telecommunications network access method which works over copper wires. There are two types of ISDN, basic rate and primary rate. Basic rate ISDN provides subscribers with two 64 kbps information channels and a single 16 kbps control channel. Primary rate provides users with thirty 64 kbps information channels and a 64 kbps control channel.

Interactive Voice Response (IVR) The device which can interpret and react to voice or tone commands.



Internet A world-wide network of computer networks in which users at any one computer can, if they have permission, get information from any other computer. The idea was conceived by the Advanced Research Projects Agency (ARPA) of the US government in 1969 and was first known as Arpanet. Since then it has been demilitarised and commercialised and augmented by a series of inventions and innovations, not least of which is the web browser invented by a team led by Tim Berners-Lee in 1991 at CERN, the European Laboratory for Particle Physics. This is the basis for the World Wide Web which has been so successful that it is now often confused in popular conversation with the Internet itself.

Internet Telephony See IP Telephony

IP Telephony Also known as Internet Telephony or Voice over IP (VoIP). Use of Internet Protocol (IP, see TCP/IP) to carry and route two-way voice communications. IP Telephony can support telephone to telephone links through suitable adapters but also voice communications from telephone to IP terminal (such as a PC with sound card) or from IP terminal to IP terminal. The technique promises drastically reduced costs to carriers and therefore prices to end users – but it still suffers problems with quality.

ISDN Integrated Services Digital Network.

Internet Service Provider (ISP) Point of access to the Internet for small business and individual users. The ISP provides its customers with dial-up access to its router which relays traffic to web servers on the Internet.

J

JAVA

A high level, object-oriented programming language developed by Sun Microsystems, similar to C++, simplified to eliminate some language features thus avoiding common programming errors. Java is a general purpose programming language with a number of features that make it well suited for the Web.

K

Kbps Kilobits Per Second a measure of the speed of data capable of passing along a line expressed in thousands of bits.



L

Leased Line A permanent, reliable and cost-effective connection between business sites is essential when you communicate regularly. A digital leased line links two sites and ensures uninterrupted, private voice and data transfer. You pay a fixed fee for an agreed level of capacity, and you can make unlimited calls and data transmissions as there are no per minute charges. A leased line is suitable for any business that needs :

- a permanent connection between two business sites for phone, fax and e-mail.
- a permanent connection between two separate computer networks.
- a permanent connection to the Internet.
- a private connection to the public switched data network and beyond.
- to connect to the multimedia super highway that will act as the backbone for all Internet activity or carry all your existing network application traffic.

M

Main Distribution Frame (MDF) The frame on which incoming cables from a PTO are terminated.

Megabits Per Second (Mbps) A measure of the speed of data capable of passing along a line expressed in millions of bits.

Modem Abbreviation of modular/demodulator, the modem converts digital computer signals into analogue form for transmission over analogue telephone systems. Modems work in pairs, so at the other end of the channel the signal is returned to digital form. Remember, traditional telephone networks were designed for the human voice, which are analogue, not digital computers.

MPLS Multiprotocol label switching (MPLS) is a versatile solution to address the problems faced by present-day networks—speed, scalability, quality-of-service (QoS) management, and traffic engineering. MPLS has emerged as an elegant solution to meet the bandwidth-management and service requirements for next-generation Internet protocol (IP)-based backbone networks. MPLS addresses issues related to scalability and routing (based on QoS and service quality metrics) and can exist over existing asynchronous transfer mode (ATM) and frame-relay networks.

Multi-Frequency signalling (MF) A method of dialling using combinations of tones to denote different numbers. Widely used on PABX's, but now also used between PABX's or DELs and electronic public exchanges. Also known as MF4.



N

NETWORK A network is a collection of computers all linked together to share data. Classified according to their geographical extent: LAN (local area network); WAN (wide area network). LANs may be interconnected through WAN connections.

O

Office of Telecommunications (OFTEL) Non-ministerial government body monitoring the Telecoms industry in the UK. - renamed in 2004 to OFCOM (Office of Communications) www.ofcom.gov.uk

P

PABX A private automatic branch exchange (PABX) is an automatic telephone switching system within a private enterprise. Originally, such systems - called private branch exchanges (PBX) - required the use of a live operator. Since almost all private branch exchanges today are automatic, the abbreviation "PBX" usually implies a "PABX." Some manufacturers of PABX (PBX) systems distinguish their products from others by creating new kinds of private branch exchanges. Rolm offers a Computerized Branch Exchange (CABX) and Usha Informatics offers an Electronic Private Automatic Branch Exchange (EPABX).

Packet Switching The method used to move data on the Internet. In a packet switching network, all the data coming from a machine is broken up into chunks. Each chunk includes the addresses of both the origin and the destination. This enables chunks of data from many different sources to intermingle on the same lines and be sorted and directed along different routes. In this way, many people can use the same lines at the same time.

Private Automatic Branch Exchange (PABX) Now frequently known simply as PBX. A privately operated switching system with exchange lines to a public telecommunications system (e.g. BT or Mercury Networks) and capable of having an operator console connected to it. The term was originally devised to differentiate the PABX from the PMBX. It is now being superseded by the term PBX.

Private Exchange Master List (PXML) Lists of all the permissible uses of and attachment to a PABX.

PSTN Public Switched Telephone Network.



PTO Public Telecommunications Operator (e.g., Cable & Wireless or BT).

Pulse Code Modulation (PCM) A technique of encoding analogue voice signals into digital form.

Q

Qsig.

R

Recorded announcement device (RAD) A device which automatically answers a line and delivers a pre-recorded message. Often used to tell a caller that they are in a queue and will be dealt with as soon as possible. (eg. Multimessage RAD)

Router - (bridge, gateway, hub, switch) In packet-switched networks such as the Internet, a router is a device or, in some cases, software in a computer, that determines the next network point to which a packet should be forwarded toward its destination. The router is connected to at least two networks and decides which way to send each information packet based on its current understanding of the state of the networks it is connected to. A router is located at any gateway (where one network meets another), including each point-of-presence on the Internet. A router is often included as part of a network switch.

A router may create or maintain a table of the available routes and their conditions and use this information along with distance and cost algorithms to determine the best route for a given packet. Typically, a packet may travel through a number of network points with routers before arriving at its destination. Routing is a function associated with the Network layer (layer 3) in the standard model of network programming, the Open Systems Interconnection (OSI) model. A layer-3 switch is a switch that can perform routing functions.

An edge router is a router that interfaces with an asynchronous transfer mode (ATM) network. A brouter is a network bridge combined with a router.

For home and business computer users who have high-speed Internet connections such as cable, satellite, or DSL, a router can act as a hardware firewall. This is true even if the home or business has only one computer.

Many engineers believe that the use of a router provides better protection against hacking than a software firewall, because no computer Internet Protocol address are directly exposed to the Internet. This makes port scans (a technique for exploring weaknesses) essentially impossible. In addition, a router does not consume computer resources as a software firewall does.

Commercially manufactured routers are easy to install, reasonably priced, and available for hard-wired or wireless networks.



S

SDSL With SDSL the upload and download speeds are the same so if you are looking to upgrade your ADSL service or you find leased lines prohibitively expensive then SDSL broadband is for you.

There are a number of options available to meet most business requirements: from high quality 1:1 uncontended service to low price value for money 5:1 contended service. SDSL is available as standard in 512kbit/s, 1024 kbit/s and 2048 kbit/s and if 2 Mbits isn't fast enough you can also bond multiple SDSL lines together to achieve even faster upload and download speeds.

SPEED DIAL A feature on PBX phones allowing users to dial programmed numbers by simply pressing one button (or entering a two or three digit code).

T

Test Jack Frame (TJF)

A frame supplied by the PABX supplier providing a connection point for the exchange line and extension ports to the BDF. It acts as a demarcation point between these.

Third Generation 3G The next generation Cellular Radio for mobile telephony. Due to come on stream from 2001 onwards, 3G will be the first cellular radio technology designed from the outset to support wideband data communications just as well as it supports voice communications. It will be the basis for a wireless information society where access to information and information services such as electronic commerce is available anytime, anyplace and anywhere to anybody. 3G's technical and regulatory frameworks have been defined by the ITU with its International Mobile Telecommunications 2000 (IMT-2000) programme, including the establishment of open accessible standards and the identification of international allocated frequency spectrum.

Transmission Control Protocol/Internet Protocol (TCP/IP) Collective name for the set of protocols on which the Internet is based. TCP and IP are the best known of this set, but they are by no means the only ones. TCP guarantees that every byte sent from one port arrives at the other in the same order and without duplication or loss. IP assigns local IP addresses to physical network addresses providing a structure which can be recognised by Routers. Other members of the TCP/IP family include the Telnet protocol which allows a remote terminal to log in to another host, the Domain Name System (DNS) which allows users to refer to hosts by name rather than having to know their numeric IP addresses, the File Transfer Protocol (FTP) which defines a mechanism for storing and retrieving files, and HyperText Transfer Protocol (HTTP) which allows information to be transferred from host computers to computers equipped with web browsers.



U

Uninterruptible Power Supply (UPS) Equipment providing no break power supply for the duration of the reserves of its batteries in the event of failure of the primary source of power.

V

Virtual Private Network (VPN) Looks for all intents and purposes like a private network but is actually just access to a shared network. Careful management and guarantees of quality of service levels ensure that corporate customers get the privacy and facilities they want but at a lower cost.

VoIP See IP Telephony.

W

WAN - Wide Area Networks provide connections between LANs that are at different geographical locations and typically slower than LAN.

WiFi - Wireless Fidelity – A term for certain types of wireless local area networks (WLAN) that use specifications conforming to IEEE 802.11b. WiFi has gained acceptance in many environments as an alternative to a wired LAN. Many airports, hotels and other services offer public access to WiFi networks so people can log on to the Internet and receive emails on the move. These locations are known as hotspots.

Wireless Access Protocol WAP WAP was jointly developed in 1999 in the mainstream of Internet standardisation activities, with the broad support of many vendors. It provides the basis for a whole host of new wireless information applications by offering a gateway between the Internet and mobile telephones. If an application can be put on the Internet, it can be made available to mobile terminal users through WAP.

X

XML - Extensible Markup Language allows information and services to be encoded using semantics and structure understood by people and computers. Used for information exchange and easily extended to include user-specified and industry-specified tags