..:: Teaching and Learning with ICT project ::..

*Cooperation *for* Innovation and the Exchange of Good Practices

Dictionary of ICT Terminology

A

Absolute Link: A term used by Web authors. In an HTML document a Relative Link indicates the location of a file relative to the document, whereas an *absolute link* specifies the full URL. For example, the *relative link* of this Glossary to the ICT4LT homepage is **../en/en_glossary.htm** whereas it's *absolute link* is http://www.ict4lt.org/en/en_glossary.htm. It's generally better for Web authors to link to files within the same website using relative links rather than absolute links, as this makes site and file maintenance easier. See Section 5.4, Module 3.3, headed *Shared resources*.

Acceptable Use Policy (AUP): An AUP is a set of rules that define the ways in which ICT facilities can and cannot be used in a business or educational institution, including a description of the possible sanctions that can be applied if a user breaks the rules. Two of the most important topics covered by an AUP are (i) **e-safety** and (ii) **awareness of and compliance with copyright**. See Section 12.6, Module 1.5, headed *E-safety*, and General guidelines on copyright for further information about these topics.

Access: The name of a Database program forming part of the Microsoft Office suite of programs.

Accessibility: The fundamental issue regarding *accessibility* is that everyone should have access to the services provided by ICT, e.g. computer programs, Email and the World Wide Web, regardless of any visual, auditory, or other physical impairment they might have. Assistive Technology may be employed to increase access to such services, e.g. Text To Speech (TTS) screen readers, screen magnifiers, speech

recognition systems, hearing assistance devices, etc. Designers of computer programs and websites need to take account of accessibility when choosing colours, fonts and font sizes, etc: see Font. See Section 4, Module 3.5 regarding speech technologies and how they may help unsighted and partially sighted computer users and people with hearing impairments. See SENDA. See Section 6.3.1, Module 3.3, headed *HTML Validators*, regarding website accessiblity.

Action Maze: A type of computer program used in Computer Assisted Language Learning. See Maze for a more detailed explanation.

Active Matrix: A term used to describe the newer type of computer Display Screen that makes use of Thin Film Transistor (TFT) technology: see TFT. Active matrix screens have excellent colour resolution and can display motion accurately and rapidly. See Resolution.

Additive Colour: A term used mainly by graphic designers. *Additive colour* is produced by the addition of light from a luminescent primary source. A light bulb appears white because it emits light in all colours of the visible spectrum, which combine to produce white light. All the colours in the light spectrum add up to make white light. Computer monitors use three additive colours, Red, Green and Blue (RGB), which are combined in different ways to produce millions of other colours. See CMY, RGB, Subtractive Colour.

Address Book: Usually supplied as part of your Email software. An *address book* in this sense is used to keep a record of all the email addresses of people whom you may wish to contact by email.

ADSL: Abbreviation for Asymmetric Digital Subscriber Line. A high-speed digital telephone connection that operates over an existing copper telephone line, allowing the same line to be used for voice calls. ADSL lines offer transmission speed that are usually in the range 2Mbps to 8Mbps, and are used mainly for Internet access. The term *asymmetric* is used because the data flows more quickly from the telephone exchange to the user than from the user to the exchange - because most Web users are more interested in receiving data quickly from websites rather than uploading it to websites. The term *symmetric* is used for connections where the data flows at the same speed in both directions, which is essential for accessing websites where there is a high degree of interactivity. See Broadband, ISDN, Kbps, Leased Line, Mbps.

Adventure Game: Adventure games date back to the early days of mainframe computing. The early adventure games consisted entirely of written text, but modern adventure games incorporate elaborate graphics, sound and video sequences. The dividing line between an adventure game and a Simulation is rather fuzzy. In both sorts of programs there are a number of obstacles to overcome, and the player has to indulge in mind-stretching lateral thinking in order to overcome them. Adventure games are often set in a fantasy world, e.g. *Myst* or *Riven*, but some are more down-to-earth and can play an important role in language teaching and learning, e.g. *Who is Oscar Lake?* See Section 3.4.9, Module 2.2, headed *A simulation on CD-ROM*. See Maze, MOO, MUD, MUVE.

Adware is software that may have been installed on your computer by a remote computer, i.e. via the Web. Many free utilities that you download from the Internet will install hidden software that sends details of the websites you visit and other information from your computer (which can include your email address) to advertisers so they can target you with popup ads and spam. See http://www.camsoftpartners.co.uk/bugs.htm, where tools for removing *adware* and *spyware* are described. See Spam, Spyware.

AI: Abbreviation for Artificial Intelligence.

AJAX: Acronym for Asynchronous JavaScript and XML. AJAX is a Web programming tool (or rather a set of tools) that makes it possible to create interactive Web applications that work in much the same

way as computer applications on your computer's hard disc, i.e. more responsive, more spontaneous, so that when you click on something on the Web page there is very little time delay - as in your word-processor, for example. While you are browsing a Web page AJAX is working behind the scenes. AJAX allows your browser to fetch data from the Web and use it to update a fragment of the page without refreshing the whole page so that you don't have to wait for the whole Web page to refresh or reload each time you click on a button or initiate an action in some other way. This increases the Web page's interactivity, speed, functionality, and usability. Google Maps is a typical example of a Web application incorporating AJAX. Scroll around the map and watch it update itself with relatively little time delay. AJAX is a programming tool that is used extensively in what are known as Web 2.0 applications. See Section 2.1, Module 1.5, headed *What is Web 2.0?*

ALTE: Abbreviation for Association of Language Testers in Europe.

Alt Key: The *Alt keys* can be found on either side of the space bar on a computer keyboard. They are commonly used in conjunction with a set of numbers to enable foreign characters to be typed. See ASCII, ANSI. See Section 5, Module 1.3, headed *Typing foreign characters*.

Analogue: The basic meaning of analogue is "something that corresponds to something else". For example, in the context of equipment used for recording and playing back sound, analogue refers to the way in which the sound is recorded and reproduced. If you look closely at the groove of a 33 rpm vinyl gramophone record you will see that it is essentially a continuous wave, an undulating series of "hills". These "hills" correspond to the nature and volume of the sound that has been recorded. As the stylus of the record player moves along the wave it produces vibrations that are amplified and converted into sound. A parallel can be drawn with radio transmissions, where the sound signals are transmitted in the form of invisible waves. Early mobile phones worked in a similar way. Older tape recorders and videocassette recorders are based on the same principle, except that the signals representing the sound and moving images are imprinted onto a plastic tape coated with a magnetic powder. All analogue recordings suffer from background noise, and the quality of reproduction gradually degrades as the record or tape wears out. If the recording is copied, the copy will not be as good as the original, regardless of the quality of the equipment used to copy it. See the contrasting term Digital.

Anchor: A term used in connection with HTML, the coding system used for creating Web pages. An anchor is the target of a Hyperlink, i.e. a point in a Web document to which you jump when you click on a hyperlink.

Animation: The display of a sequence of images in a computer program or on a Web page to give the impression of movement.

ANSI: Abbreviation for American National Standards Institute. This is a system that specifies code numbers for all the characters that appear on a computer Keyboard, plus the extended character set used in *Microsoft Windows*. It includes all the ASCII codes plus many others. Each character on the keyboard of a computer is assigned a unique ANSI code number, e.g. A = ANSI 065. Characters that don't appear on the keyboard can be typed by holding down the *Alt key*, pressing a series of digits on the number pad, e.g. ALT + 0233, and then releasing the *Alt key*. 0233 is the ANSI code for é. See also Unicode. See Alt Key. See Section 5, Module 1.3, headed *Typing foreign characters*.

Anonymous FTP: An *anonymous FTP* is a convention whereby users are not required to identify themselves with an account number, user name or password when they access a website from which they wish to download publicly available programs or files. Users may, however, be required to enter their email address before accessing certain websites. The vast majority of publicly available Freeware and Shareware archives on the Web permit anonymous FTP. See FTP.

Anorak: A colloquial term that is often used to describe someone who is fascinated by the technology of computers but not particularly interested in their applications. A synonym is Trainspotter. Both terms are closely allied to Geek, Nerd and Techie - which have slightly different connotations.

Anti-virus Software: See Virus.

Apache: The most popular Web Server software on the World Wide Web. Apache runs mainly on Unix systems, although there is also a *Microsoft Windows* version. The Apache Project website is at http://www.apache.org

API: Abbreviation for Application Programming Interface. API is a so-called protocol of communication that enables different computer programs to communicate with one another. A good API makes it easier to develop a program by providing all the building blocks that the programmer needs. Although APIs are designed for programmers, they are also good for program users insofar as they guarantee that all programs using a common API will have similar interfaces. This makes it easier for users to learn new programs.

App: Abbreviation for Application.

Applet: A small program written in the Java programming language and embedded in a Web page. When you use your Browser to access a Web page, an applet may run "inside" the Web page, as it were, to perform an interactive animation, make a calculation or carry out another simple task.

Application: A computer program or a suite of computer programs that performs a particular function for the user, such as a word-processor, e.g. *Microsoft Word*, or a range of functions, such as *Microsoft Windows* or Microsoft Office. Commonly abbreviated to **app**, especially in the context of Web 2.0 and Mobile Assisted Learning (MALL) apps. See Computer Program, Operating System, Windows, Word-processor.

Archive: Used to describe documents or files that are not immediately needed but which should not be completely discarded. An *archive* may be stored on an external Hard Disc, CD-ROM, DVD or other Storage Device. Also used to describe stored messages that have been contributed to *discussion lists* or *blogs*. Also used as a verb. See Blog, Discussion List.

Artificial Intelligence (AI): The ability of a computer to mimic human attributes in finding a solution to a problem. *Artificial Intelligence* techniques are applied in various ways in computer applications in the language world, e.g. in Machine Translation (MT) programs and in grammar and style checkers. See Module 3.5, *Human Language Technologies (HLT)*, especially Section 6, headed *Human Language Technologies and CALL*, and Section 8 on *Parser-based CALL*. See ICALL (Intelligent CALL).

ASCII: Abbreviation for American Standard Code for Information Interchange. This is a system that specifies code numbers for all the characters that appear on a computer Keyboard, plus other specialised characters. Each character on the keyboard of a computer is assigned a unique ASCII code number, e.g. A = ASCII 65. Characters that don't appear on the keyboard can be typed by holding down the *Alt key*, pressing a series of digits on the number pad, e.g. ALT + 130, and then releasing the *Alt key*. 130 is the ASCII code for é. The ANSI character set (as used in *Microsoft Windows*) includes many more characters, Unicode includes even more and is becoming a standard coding system. See Unicode. See Alt Key. See Section 5, Module 1.3, headed *Typing foreign characters*.

ASF: Abbreviation for Advanced Streaming Format. This is Microsoft's own file format that stores both audio and video information and is specially designed to run over the Internet. ASF enables content to be delivered as a continuous stream of *streaming audio* or *streaming video* data.with little wait time before playback begins. This means that you no longer have to wait for your audio and video files to

fully download before starting to view them. See Streaming. See AVI, MOV, MPEG, RM, which are alternative video file formats. See Media Player. See Section 2.2.3.4, Module 2.2, headed *Video editing software*.

ASR: Abbreviation for Automatic Speech Recognition.

Assistive Technology: This term describes computer software or devices used by people with special needs to enable them to access the services provided by ICT, e.g. computer programs, Email and the World Wide Web. Technologies under this heading include Text To Speech (TTS) screen readers for the unsighted or partially sighted, alternative keyboards and mice for people who have problems in hand-eye coordination, head-pointing devices, speech recognition software, and screen magnification software. See Accessibility, Pointing Device, SENDA.

Association of Language Testers in Europe (ALTE): An association of providers of foreign language examinations: http://www.alte.org

Asynchronous: "Not at the same time". Often used to refer to communication by Email or via a Discussion List, where the recipients of the email or the participants in the discussion do not have to be present at the same time and can respond at their own convenience. A feature of *asynchronous learning* is that the teachers and learners do not have to be present at their computers at the same time. See Synchronous. See Section 14, Module 1.5, headed *Computer Mediated Communication (CMC)*.

Attachment: A term used in connection with Email. An attachment can be a File of almost any kind - a document file, an image file, a sound file or a video clip - that you can add, i.e. *attach*, to an email.

Attribute: A term used by Web authors. An attribute of an **HTML tag** controls how that tag operates. For example, in the HTML fragment **<img src="../images/home01.gif" alt="English home page">**, the required attribute **src** defines the image file to be displayed, and the optional attribute **alt** defines the text to be displayed when the Mouse moves over the image. Attributes can only exist within tags. See HTML, Tag.

Audio Card: See Sound Card.

Audioconferencing or **Audio Conferencing:** A computer-based communications system that allows a group of computer users at different locations to conduct a "virtual conference" in which the participants can hear one another as if they were in the same room participating in a real conference. Unlike Videoconferencing, audioconferencing systems do not allow the participants to see one another. See Conferencing. See Section 14.1.2, Module 1.5, headed *Audioconferencing: a synchronous communications medium*.

AUP: Abbreviation for Acceptable Use Policy.

Authoring Package / Authoring Program / Authoring Tool: These terms describe **content-free** software packages that allow the teacher to develop interactive learning and teaching materials without having to have a detailed knowledge of a computer Programming Language. These terms may also be applied to software packages used for creating Web pages, e.g. **Front Page** or **Dreamweaver**. See Module 2.5, *Introduction to CALL authoring programs*. See Module 3.2, *CALL software design and implementation*. See Module 3.3, *Creating a World Wide Web site*. See Content-Free.

Authorship Analysis Software: Authorship Analysis Software can help to identify authorship of texts. Such software has been used by literary and linguistic researchers for many years and is now widely used by security services in counter-terrorism activities.

Automatic Speech Recognition (ASR): A branch of Human Language Technologies devoted to the automatic processing of human speech. See Speech Recognition. See Section 4, Module 3.5, headed *Speech technologies*.

Avatar: A graphical representation of a real person, such as used in a MUVE or MMORPG, a kind of "virtual world". Participants in a MUVE or MMORPG choose a name and a visual representation of the character that they wish to adopt as an inhabitant of the MUVE or player in the MMORPG. See Section 14.2, Module 1.5, headed *Chat rooms, MUDs, MOOs and MUVEs*.

AVI: Abbreviation for Audio Video Interleave (or Interleaved). A file format for storing video recordings on a computer. See ASF, MOV, MPEG, RM, which are alternative video file formats. See Media Player. See Section 2.2.3.4, Module 2.2, headed *Video editing software*.

B

Backup or Back Up: Used as a verb, *to back up* means to copy a File or Folder from your computer to another Storage Device, e.g. a CD-ROM, as a precaution in case your Hard Drive fails or is infected by a Virus. A *backup*, used as a noun, or a *backup copy* describes a copy that you have made in this way. It is essential to back up new files and folders at regular intervals.

Bandwidth: The amount of data that can be sent from one computer to another through a particular connection in a certain amount of time, e.g. via a computer to the Internet and vice versa. The more bandwidth available, the faster you are able to access information. Bandwidth is usually measured in *kilobits per second* (Kbps) or *megabits per second* (Mbps). See ADSL, Broadband, Kilobit, Megabit, Narrowband.

Baud: A unit of measurement at which data can be transferred (i.e. the *baud rate*), for example over a telephone line via a Modem or from a computer to an external device such as a Printer. Rarely used nowadays, as transfer transfer rates are normally expressed in kilobits per second (Kbbs) or megabits per second (Mbps).

BBS: Abbreviation for Bulletin Board System. See Bulletin Board.

BECTA: British Educational Communications and Technology Agency, formerly known as NCET (National Council for Educational Technology), MESU (Microelectronics Education Support Unit) and the CET (Council for Educational Technology). BECTA is due to close down under the recently elected UK government (May 2010).

Binary: A number system using base 2 instead of the usual (human) base 10, which is normally referred to as the decimal system. Computers use base 2 because they can only recognise two values, 1 or 0. This is simulated electronically by using a device, such as a switch, which is either on (1) or off (0). All numbers are represented by combinations of ones and zeroes, thus the number 9 is represented as 1001, the right-most column being the units column and the other columns, moving from right to left, being 2, 4, 8. See Hexadecimal.

Binary File: Strictly speaking all computer files are Binary, consisting of a string of ones and zeroes, but the term *binary file* is often used to differentiate program files and data files from *text files*, which contain only unformatted printable ASCII characters. See ASCII, Text File.

BIOS: Acronym for Basic Input/Output System. This is a built-in ROM Chip on the Motherboard containing essential programs to manage the computer's input and output, which are loaded into memory during the boot process. See Boot, ROM.

Bit: Contraction of *binary digit*. A bit is the smallest measurement unit of computer memory or data transmission speed, e.g. via a Modem. See the entry on Measurement Units. See Byte, Kilobit, Kilobyte, Megabit, Megabyte.

Bitmap: A computer graphic or image composed of thousands of individual dots or *pixels*, each pixel being stored as a number. The image is displayed by specifying the colour of each pixel. Bit-mapped graphics can be imported into other applications, e.g. a word-processor, but they cannot be edited within these applications. When bit-mapped graphics are resized they usually suffer a loss of sharpness, whereas *vector graphics* can be resized without such loss. See BMP, Pixel, Resolution, Vector Graphic.

Blackboard: A commercial Virtual Learning Environment (VLE) package, i.e. a software package that integrates online communications software with content software enabling teachers to create courses that are delivered partially or entirely via the Web. Courses using *Blackboard* might be mainly text-based, but can be enhanced with images, audio and video. See: http://www.blackboard.com. *Blackboard* and *WebCT* announced an agreement to merge in October 2005.

Blended Learning: This term normally refers to combining Internet-based *distance learning* with face-to-face tuition but it may also be used to describe combining offline ICT-based materials with more traditional materials, such as books, audiocassettes and videocassettes. See Distance Learning, E-learning, Online Learning, Virtual Learning Environment (VLE). See Section 4, Module 2.3 under the heading *Hybrid systems and blended learning*.

Blog: Contraction of the term Weblog. A *blog* is essentially a website that contains discrete pieces of information posted by different users. New items of information are usually entered by contributors via a simple form, following the introduction of each new theme by a person who initiates the blog, and then submitted to the site, where they may be filtered by an administrator before being posted. A blog can contain news items, short essays, annotated links, documents, graphics, and multimedia. These posts are usually in reverse chronological order and often take the form of a journal or diary. A blog is normally accessible to any Internet user, but closed blogs may also be created, e.g. to document the thoughts and experiences of a group of students or to provide a means of communication between teachers and students following a particular course. The word *blog* is also used as a verb, and Blogger is used as a noun to describe someone who blogs (see next entry). A blog is usually distinguished from an Internet Discussion List (also known as a Forum), but the latter can function in a similar way insofar as it typically allows any user to post messages to it that can be viewed via the Web. See Moblog, RSS, Splog, Wiki. See Section 12, Module 1.5, headed *Discussion lists, blogs, wikis, social networking*. The ICT4LT website blog is at: http://ictforlanguageteachers.blogspot.com

Blogger: Normally used to refer to someone who *blogs*, i.e. who regularly writes *blogs*. Also used to describe a service that provides Web-based tools used by individuals to create a Blog or Weblog. See http://www.blogger.com

Bluetooth: *Bluetooth* is a technical industry standard for radio technology which facilitates the transmission of signals over short distances (up to around 10 metres) between telephones, computers and other devices without the use of wires. For example, a Bluetooth-enabled mobile phone can communicate with a Desktop Computer or Laptop Computer for the purpose of synchronising data, such as an appointments diary.

BMP: Abbreviation for Bitmap, a file format for storing images. This is the standard format used, for example, by *Windows Paint*. BMP image files occupy quite a lot of space compared to other formats. See EPS, GIF, JPEG/JPG, TIFF. See also Section 2.2.3.1, Module 2.2, headed *Image editing software*.

Bookmark: A *bookmark* is a facility within a Browser that enables you to keep a record of Web pages that you have visited and may wish to visit again. Bookmarks are stored in a subdirectory of the Windows directory on your computer. In *Internet Explorer* bookmarks are known as Favorites (sic - spelt the American way), which is also the name of the subdirectory in which they are stored. Bookmarks are also used to mark positions in a *Word* document, i.e. positions to which you can jump from other points in the document by clicking on them with the Mouse.

Boot: (verb) To start up a computer by loading the operating system into memory. The computer is regarded as *bootstrapping* itself into operation, i.e. picking itself up by its own bootstraps. The adjective *bootable* is often used to describe a backup disc that can be used to start a computer, e.g. when the hard disc fails or becomes corrupted for some reason. See Operating System.

Bot: Short for *Robot*. See Crawler.

bps: Abbreviation for *bits per second*, the smallest measurement of data transmission speed, e.g. via a Modem. Computer people normally measure data transmission speeds in *Kbps*, meaning *kilobits per second*, or *Mbps*, meaning *megabits per second*. If you have a 56Kbps modem (which is slow by today's standards) it means that your modem can transmit at speeds up to 56,000 bits of information per second. See Bit, Kilobit, Megabit.

Branching: The process of interrupting a sequence of instructions in a computer program in order to go to a different point. For example, in a CALL exercise the program might branch to one point if the learner is right but to another if the learner is wrong. This is a technique that is also used frequently in adventure games, mazes and simulations. See Adventure Game, Maze, Simulation.

Broadband: A general term used to describe a high-speed connection to the Internet. Connection speed is usually measured in Kbps (kilobits per second) and Mbps (megabits per second). Typically, a home user will have a broadband connection using an ADSL telephone line running at 2Mbps to 8Mbps. Educational institutions ideally need a symmetric connection of at least 8Mbps to ensure smooth trouble-free connections to the Internet when large numbers of students are accessing the Internet all at once. See ADSL, Bandwidth, ISDN, Kilobit, Leased Line, Megabit. Contrasted with Narrowband.

Browser: A software package installed on the hard disc of your computer that enables you to access and to navigate the World Wide Web - to "surf the Web" in colloquial terms. See Section 3, Module 1.5, headed *Using a browser: navigating the Web*.

Buddy Learning: See Tandem Learning (Buddy Learning).

Bulletin Board: A type of forum on the Internet or an intranet, where users can post messages by email or via the World Wide Web for other users to read and respond to. Bulletin Board Systems (BBSs) have largely been replaced by other types of online systems for communal communication, such as blogs, discussion lists and forums. See BBS, Blog, Discussion List, Forum.

Bug: Not a nasty insect but a logical fault in a computer program which causes it to malfunction. All computer programs contain bugs, some of which take years to come to light. It is rumoured that the term arose as a result of moths getting into the circuitry of an older Mainframe Computer, causing it to break down. See Debug, Millennium Bug.

Burn: When data is written to a CD, for example using a CD-Read/Write drive, a pattern of microscopic dots is etched with a laser beam in a spiralling track on the CD surface. This is a process often referred to as "burning a CD". See CD-ROM. See Section 1.2.1, Module 1.2.

Bus: Not the sort you get on to go into town. This is basically a set of parallel wires for connecting the Central Processing Unit (CPU) of a computer to all other input-output devices. Data can be transmitted in two directions, from and to the CPU.

Byte: A measurement of computer memory or disc capacity. A byte comprises 8 *bits*. See entry on Measurement Units. See Bit, Gigabyte, Kilobyte, Megabyte,

---

C

C&IT: Abbreviation for Communications and Information Technology. The same thing as ICT but the other way round! C&IT (Communications and Information Technology) is a peculiarly British term that arose in Higher Education as a result of the 1997 Dearing Report and never caught on outside the UK Higher Education environment. C&IT was incorporated in the name of the C&IT Centre for Modern Languages at the University of Hull, which in 2000 became the new name of the former CTICML (Computers in Teaching Initiative Centre for Modern Languages), which was established in 1989. The C&IT Centre (CTICML) was closed down in 2002. See ICT.

CAA: Abbreviation for Computer Aided Assessment

Cache: The *cache* contains information stored by a Web Browser on your hard disc, so that you don't have to download the same material repeatedly from a remote computer. Browsers keep copies of all the Web pages that you view so that the pages can be redisplayed quickly when you go back to them. The cache is normally stored under *Windows* in a folder called *Temporary Internet Files*. This folder can become enormous over time and can cause your hard disc to become overloaded and then your computer may lock up. The cache needs to be emptied at regular intervals - which you can do manually or using utility software such as *Window Washer*. You can set the maximum size of the *Temporary Internet Files* folder, using the *Tools* menu in your browser.

CAD/CAM: Abbreviations for Camputer Aided Design / Computer Aided Manufacturing. A process of drafting, designing and manufacturing with the aid of a computer. CAD enables the user to manipulate drawings, including 3D drawings, and viewing them from a variety of angles. CAM is a general term for computer support during the manufacturing process.

CAI: Abbreviation for Computer Assisted Instruction.

CALI: Acronym for Computer Assisted Language Instruction. A term which has now become almost obsolete, having been replaced by CALL in the 1980s. The term fell out of favour because it became associated with Programmed Learning. See CAI, CALL, CELL, TELL. See Section 1.1, Module 1.4, headed *What is CALL?* and Section 2, Module 1.4, headed *History of CALL*.

CALICO: Acronym for Computer Assisted Language Instruction Consortium, a US-based professional association, founded in 1982. CALICO originally incorporated CALI into its name, but it now favours the term CALL.

CALL: Abbreviation for Computer Assisted Language Learning. A term which came into favour in the early 1980s, replacing the older term CALI (Computer Assisted Language Instruction). Often associated (wrongly) with an old-fashioned approach to the use of ICT in language learning and teaching, but the leading professional associations, i.e. EUROCALL, CALICO and IALLT, interpret CALL as meaning the use of computers in the learning and teaching of foreign languages in the broadest sense, from the use of word-processors to the use of the Internet. See CALI, CELL, TELL. See Section 1.1, Module 1.4, headed *What is CALL?* and Section 2, Module 1.4, headed *History of CALL*.

Camcorder: A portable video camera, capable of recording live motion video for later replay through a videocassette recorder (VCR), DVD player or computer. Videos produced by a camcorder can be *uploaded* to a computer via a USB cable or Firewire, edited using special software such as *Windows Movie Maker*, and played on a computer using Media Player software. See Section 2.2.3.4, Module 2.2, headed *Video editing software*. See Digital Camera, Upload.

Can Do Statement: *Can do statements* are used as a means of describing what learners can typically do at different levels in a programme of studies, for example in the Common European Framework of Reference for Languages and in the syllabuses specified by bodies such as the Association of Language Testers in Europe (ALTE) and examination boards such as Asset Languages. See Section 2.2, Module 4.1. The ICT4LT website contains a *Word* document, ICT_Can_Do_Lists, which contains sets of can do statements relating to the ICT skills that language teachers should find useful.

Card: In computer jargon, a *card* is an electronic circuit board, usually one which can be slotted into your computer in order to fulfil a specialised function. See Sound Card, Video Card.

Cascading Style Sheets (CSS): Cascading Style Sheets are a feature of HTML that enables a range of styles for headers, body text, bullet points, links etc., to be specified for hypertext documents. This makes it possible to set up CSS file containing a library of styles that are used throughout a website, thereby facilitating consistency. If a style needs to be changed throughout a website it only needs to be changed once in the CSS file and then it will be applied automatically. CSS have a good deal in common with the *Styles and Formatting* feature in Microsoft Word.

Case Sensitivity: Used to describe how a computer program, e.g. a Browser, interprets upper and lower case letters, e.g. in the name of a program, the name of a folder stored on your computer, or the name of a website. Some computer programs may be *case sensitive*, in other words they make a distinction between capital letters and lower case letters so that, for instance, *Manchester* is perceived as different from *manchester*. Other programs may not make a distinction and perceive capital letters and lower case letters as one and the same. Be especially careful when typing the names of websites, as case sensitivity may be crucial and you may not be able to find the website if you fail to type capital letters in the right places.

Cathode Ray Tube (CRT): An older type of computer Display Screen or Monitor, in which beams of high-voltage electrons are fired at a screen causing thousands of Red, Green and Blue (RGB) dots to glow in different combinations and intensities, thus producing the full-colour image displayed on the screen. Cathode Ray Tubes are also used in older domestic TV sets. Newer types of display screens are of the LCD or TFT flat panel type - like many modern TV sets. They are much lighter, use less electricity and take up less room on your desk. See Section 1.1.2, Module 1.2 for further information and illustrations of different types of display screens.

CBT: Abbreviation for Computer Based Training.

CD-ROM: Abbreviation for Compact Disc Read Only Memory. A CD-ROM is an Optical Disc on to which data has been written via a laser - a process often referred to as "burning a CD": see Burn. A CD-ROM looks much the same as an audio CD, but can contain text, sound, pictures and motion video.

Once written, the data on a CD-ROM can be fixed and rendered unalterable, hence the term *read-only* - **but** modern computers are usually equipped with a read/write CD-ROM drive that enables new material to be stored on a special kind of CD-ROM: CD-R (recordable) or CD-RW (rewriteable). It is worthwhile investing in a read/write CD-ROM drive for making backups and storing your own multimedia materials. Blank CD-Rs or CD-RWs can be bought from computer media suppliers at a relatively low cost. You can store data on CD-Rs using a read/write drive, adding to it until it is full, and then you can format the CD-ROM so that it is fixed and can be read by a standard CD-ROM drive. You can also store data on CD-RWs in the same way, but these discs can only be read by a read/write CD-ROM drive. The advantage of CD-RWs is that they can be erased and used over and over again, but now that the cost of blank CD-Rs has fallen to such a low level it is questionable how useful CD-RWs are. See Combination Drive, Digital Video Disc (DVD). See Section 1.2.1, Module 1.2 and Module 2.2.

CEF: Shortened abbreviation for the Common European Framework of Reference for Languages.

CEFR: Abbreviation for the Common European Framework of Reference for Languages. Often shortened to **CEF** (see previous entry). See Common European Framework of Reference for Languages.

CELL: Acronym for Computer Enhanced Language Learning. An alternative term to CALL that aims to stress the role of the computer as a *tool* for the learner, making it less central in the learning process. See CALI, CALL, TELL.

Central Processing Unit (CPU): Also known as the Central Processor. In a modern computer the CPU is a single microprocessor Chip or Microchip, an intergated circuit which carries out information processing and calculations. In essence, the CPU is the computer's "brain". See Clock Speed, Microprocessor, Motherboard.

Central Processor: See Central Processing Unit (CPU).

CERN: Abbreviation for Centre Européen pour la Recherche Nucléaire, the European particle physics laboratory and the birthplace of the *World Wide Web*, which was invented there by Tim Berners-Lee.

CGI Script: A term used by Web authors. CGI is an abbreviation for Common Gateway Interface. A program residing on a Web Server, usually in a directory called **cgi-bin**, which processes data from an HTML form. CGI scripts can be written in any programming language suitable for handling text data, but Perl (http://www.perl.com) is the most popular scripting language.

Character User Interface (CUI): A *Character User Interface* describes a way in which a computer user communicates with a computer by entering commands as *text*, i.e. in order to run programs and to carry out other operations such as copying information from one Folder to another, deleting files, etc. Contrasted with a Graphical User Interface (GUI), e.g. *Microsoft Windows*, which allows the user to carry out such operations by clicking on *icons*, opening and shutting *windows* and dragging and dropping with a *mouse*. MS DOS and Unix are examples of CUIs. See Icon, Mouse, Operating System, Window, Windows.

Chat Room: A *synchronous*, mainly text-based communication facility, offering a Web-based environment where people either drop into or arrange to meet and *chat* at specific times. You type in your text online, it is seen almost immediately by others online at the same time who respond online in real time. When used for language learning chat rooms can put a great deal of pressure on students by requiring them to read fairly rapidly and to write, also fairly rapidly, with little time to reflect on the quality of the language used. A degree of caution is advised when joining a chat room. Some have been used for sinister purposes. See Synchronous. Section 14.2, Module 1.5, headed *Chat rooms, MUDs, MOOs and MUVEs*.

Chip: Short for Microchip or Silicon Chip.

Client: A computer that receives services from another computer. A stand-alone computer on your desk which you use to browse the Web is a *client*, and the computers from which World Wide Web files are downloaded to your computer are *servers*. Similarly, a computer (also known as a workstation) connected to a Local Area Network (LAN) is a *client* that can receive information from and send information to the *server* that controls the LAN. See Browser, Server, Web Server.

CLIL: Acronym for Content and Language Integrated Learning.

Clipart or **Clip Art:** A collection of image files that can be embedded or inserted into Web pages, word-processed documents, *PowerPoint* presentations, etc. Some clipart images are copyright-free or in the public domain but others may be subject to a licence fee if you wish to make them public, e.g. on a website. See Copyright.

Clipboard: A temporary storage area in a computer's memory. It may be used, for example, to store text that you are in the process of copying and pasting from one section of a word-processed document to another section in the same document or to another document. You should find a *clipboard viewer* program on your computer, which enables you to see what is currently being temporarily stored in the clipboard.

Clock Speed: The speed of a computer's Central Processing Unit (CPU), which is normally expressed in MegaHertz (= one million cycles per second) or GigaHertz, (= 1000 MegaHertz). This figure represents the number of instruction cycles the processor carries out each second. In simple terms this indicates how fast the computer runs - how powerful it is. Computers that run at 500 MegaHertz (500MHz) used to be considered fast, but modern computers now run at over one GigaHertz (1GHz). See Hertz, Microprocessor.

Cloze Procedure: Note the spelling: **Cloze** not **Close** - which is deliberate and was invented by Wilson Taylor: Taylor W.L. (1953) "Cloze procedure: a new tool for measuring readability", *Journalism Quarterly* 30: 415-433. *Cloze procedure* was originally conceived as a tool for measuring the readibility of a text or a learner's reading comprehension level and derives from the gestalt psychology term "closure", whereby people tend to complete a familiar but incomplete pattern by "closing" the gaps. In Cloze tests or exercises every nth word (usually 5th to 7th) or a certain percentage of a text is blanked out and the learner has to fill in the blanks with a suitable word, but not necessarily the original word that appeared in the text. In the days before computers the words had to be blanked out by hand, but now a computer can do the job in seconds, varying the word deletion interval. Cloze procedure is still widely used in language learning and teaching - including Total Cloze, where the whole text is blanked out - and figures in numerous CALL programs. See Section 4.6, Module 1.3, headed *Cloze procedure*. See Section 8, Module 1.4, headed *Text manipulation*. See Gap-filler, Text Manipulation.

CMC: Abbreviation for Computer Mediated Communication (CMC).

CMS: Abbreviation for *Content Management System*, a software package that makes it possible for non-technical users to publish content (text, images, etc) on a website. Also stands for Course Management System, a type of Virtual Learning Environment (VLE).

CMY: Abbreviation for Cyan Magenta Yellow. The scheme used in colour printing, where inks of the subtractive primary colours Cyan, Magenta and Yellow are combined to produce millions of other colours. Most colour printers also have a black ink cartridge, both for monochrome printing and to produce a true black in colour printing. See Additive Colour, RGB, Subtractive Colour.

CODEC: Short for **COmpressor / DECompresso**r or **COder / DECoder**. A CODEC is software that is used to compress or decompress a digital audio or video file. CODECs are additional pieces of software that operate in conjunction with different media players, and certain types of audio and video recordings will only play back if the relevant CODEC is running in conjunction with the media player that you are using. A CODEC can consists of two components, an encoder and a decoder. The encoder compresses the file during creation, and the decoder decompresses the file when it is played back. Some CODECs include both components, while other CODECs include only one. CODECs are used because a compressed file takes up less storage space on your computer or on the Web. When you play an audio or video file in your media player it will use a CODEC to decompress the file. See Section 2.2.1, Module 2.2, headed *Media players*.

Collaborative Writing: A process that involves the creation and editing documents using Web 2.0 tools designed for use by multiple authors, e.g. Google Documents or Zoho Writer. Such tools look, act and feel like normal word processors, but simplify the process of sharing and viewng documents.

Colour Depth: The number of colours that can be displayed at any one time on a computer Display Screen. Modern computers can display a range of millions of colours, producing very high quality images. See Resolution.

Combination Drive: A Disc Drive that is capable of reading and writing to CD-ROMs, audio CDs and DVDs. See Section 1.2.1, Module 1.2.

Common European Framework of Reference for Languages: Usually known simply as the **CEFR or CEF**. This is a scheme developed by the Council of Europe, dating back to the 1970s, with the aim of providing a basis for the mutual recognition of language qualifications, thus facilitating educational and occupational mobility. It is increasingly used in the reform of national curricula and by international consortia for the comparison of language certificates. See Section 2.2, Module 4.1.

Comms: Short for *communications*, as in Information and Communications Technology (ICT). Used to refer to ways in which computer systems communicate with one another, e.g. via a cable, a telephone line, satellite or wireless.

Compatiblity: Pieces of hardware and/or software which are capable of being used together are described as *compatible*.

Compiler: A program which converts programs written in a high-level *programming language*, i.e. as used by professional human programmers, into Machine Code, a language that can be "understood" by a computer. A *compiler* produces a *binary executable* program file after the programmer has completed the programming. Program files on personal computers can be recognised by their three-letter **.exe** or **.com** Extension after their filenames, e.g. **winfile.exe**. See Binary File, Executable, Interpreter, Programming Language.

Compression: A technique which reduces the amount of space required to store data, e.g. as used to reduce the amount of space needed to store an image, an audio recording, or a video recording.

Computer Aided Assessment (CAA): See Module 4.1, *Computer Aided Assessment (CAA) and language learning*.

Computer Assisted Instruction (CAI): A term used mainly in the business world. Implies a top-down, instructor-centred approach to teaching with computers and is closely associated with Programmed Learning. See CALI.

Computer Based Training (CBT): A term used mainly in the business world. Implies a top-down, trainer-centred approach to teaching with computers and is closely associated with Programmed Learning.

Computer Mediated Communication (CMC): *Computer Mediated Communication* is used as a term describing the use of the Internet as a means of fostering teaching and learning, especially the use of Email, Conferencing and Social Networking. See the entry under Web 2.0. See Section 14, Module 1.5, headed *Computer Mediated Communication (CMC)*.

Computer Program: A set of instructions that the computer carries out in sequence to perform a given task. Programs are written in English-like programming languages (e.g. C, Pascal), and are then converted into binary machine instructions via a compiler or an interpreter. See Compiler, Interpreter, Programming Language.

Concept Keyboard: An overlay or replacement for the traditional computer Keyboard. Concept keyboards are useful for small children or learners with special needs: for example, offering pictures or symbols as an alternative to the alphabetic keyboard.

Concordance Program: A *Concordance Program* (also known as a *Concordancer*) operates on a body of texts (a corpus) and is commonly used for compiling glossaries and dictionaries, e.g. by arranging every word in the text alphabetically or in order of frequency, together with its context. Concordance programs also play an important role in language learning and teaching, for example: (i) the teacher can use a concordance program to find examples of authentic usage to demonstrate a point of grammar, typical collocations, etc; (ii) the teacher can generate exercises based on examples drawn from a variety of corpora; (iii) language learners can work out rules of grammar and usage for themselves by searching for a particular key word in context (KWIC). Concordance programs form the basis of a methodology pioneered by Tim Johns, University of Birmingham, which he described as Data Driven Learning (DDL). See Module 2.4, *Using concordance programs in the Modern Foreign Languages classroom*, and Module 3.4, *Corpus linguistics*. See also Data Driven Learning.

Concordancer: See Concordance Program.

Condenser Microphone: This type of microphone is probably the best type to use in multimedia CALL programs as it provides a stronger signal when the learner is recording his/her own voice. Condenser microphones work only with sound cards that provide power to the microphone. Also known as a *powered microphone*. The other main type of microphone is known as a Dynamic Microphone, which provides a softer signal and may result in faint playback. See Microphone, Sound Card. See Section 1.2.4, Module 1.2 for further information on microphones. See also Module 2.2, *Introduction to multimedia CALL*.

Conferencing: Computer *conferencing* is a development of Email designed to support many-to-many communication, whereby computer users in different locations can take part in a "virtual conference". A conference usually consists of a group of participants who have a common interest in the conference subject matter. Computer conferencing software enables the organisation, storage, structuring and retrieval of messages. Messages may be organised under different topics, by author or by date of posting. Asynchronous conferencing may take place via a Blog, Discussion List, Forum or Wiki: see Section 12, Module 1.5, headed *Discussion lists, blogs, wikis, social networking*. Synchronous conferencing takes place in "real time", e.g. within a Chat Room. See also Audioconferencing, Videoconferencing.

Content and Language Integrated Learning (CLIL): A term used to describe learning a subject such as history or geography through the medium of a foreign language and thereby learning the foreign language at the same time.

Content-Free: Used to describe a computer program which is supplied as an "empty shell", i.e. without content such as texts, images, audio recordings, or video recordings. The user (i.e. the teacher) is expected to provide the content, and the program then enables to content to be manipulated in various ways, for example to set up exercises and activities for different groups of learners. See Authoring Package.

Content Management System (CMS): See also Course Management System.

Continuing Professional Development (CPD): Further study relevant to one's profession that most bodies encourage their members to undertake. This can take the form of seminars, research, training courses, etc. The materials at the ICT4LT website can serve the purposes of CPD.

Cookie: A piece of information stored on a user's computer by a Web Browser when the user visits a website for the first time. Websites use cookies to recognise users who have previously visited them. The next time that the user visits that site, the information in the cookie is sent back to the site so that the site can tailor what it presents to the user, e.g. tastes in music or shopping habits.

Copyright: New technologies have raised all kinds of new issues relating to copyright - mainly because it has become so easy to copy materials from a variety of digital sources. We have produced a Web page at the ICT4LT site: General guidelines on copyright.

Course Management System (CMS): A type of Virtual Learning Environment (VLE), e.g. Moodle.

Courseware: A set of computerised lessons, exercises, tests and reference material.

CPD: Abbreviation for Continuing Professional Development.

CPU: Abbreviation for Central Processing Unit.

Crash: A term describing what happens to hardware or software when it suddenly fails to work properly. The commonest symptom of a crash is the "frozen screen", i.e. when the keyboard and/or mouse goes dead with the result that nothing can be typed and the Cursor cannot be moved around the screen. Modern computers typically crash several times a day. Most crashes are not serious and are simply the result of faulty programming - i.e. most programming. Some kinds of crashes can be symptomatic of more serious problems, however, and should be investigated if they keep occurring. Operating systems themselves, e.g. *Microsoft Windows*, are particularly prone to crashes. See Operating System, Windows.

Crawler: A *crawler* is a program that searches the Web for new links, new content and changes in order to keep Search Engine results up to date. A crawler may also be called a *bot* (short for *robot*) or *spider*. Crawlers within search engines perform a useful indexing function, but there are also crawlers or bots that have more sinister motives, such as gathering addresses to be targeted by spammers. See Spam, Spambot, Spyware.

CRT: Abbreviation for Cathode Ray Tube.

Ctrl Key: The *Ctrl keys* can be found on either side of the space bar on a computer keyboard. They are used in conjunction with other keys as "shortcuts" for operations that would normally be carried out with a Mouse, e.g. Ctrl + S will save a file that you are working on. It is also possible to program the Ctrl keys to carry out operations that you specify yourself, e.g. for typing foreign characters. See Section 5, Module 1.3, headed *Typing foreign characters*.

CSS: Abbreviation for Cascading Style Sheets.

CUI: Abbreviation for Character User Interface.

Cursor: The pointer which appears on screen and is controlled by a *pointing device*, such as a *mouse*. The *cursor* usually has the shape of an arrow, but can also take other shapes: e.g. an *I-beam* in a document, an hourglass whilst an operation is under way, or the graphic image of a hand over a Hyperlink. See I-Beam, Mouse, Pointing Device.

Cyberspace: William Gibson coined this phrase in his novel *Neuromancer*, first published in 1984 - some years before the World Wide Web was invented: "Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding..." Today the word *cyberspace* is used to refer to the world of the Internet, more specifically the World Wide Web. See Internet, World Wide Web.

Cybersquatter: A term normally used to describe someone who registers the name of a popular Web address - usually a company name - with the intent of selling it to its rightful owner at a high price. Cybersquatters also watch out for registered domain names that become available when the owner has no further use for them, goes bankrupt, or simply forgets to pay their registration renewal fees. This can lead to perfectly harmless and legitimate sites being transmogrified overnight into sites containing offensive material. See Graham Davies's article on "Dodgy links": http://www.camsoftpartners.co.uk/DodgyLinks.htm. See also Linkrot.

D

Data: Strictly speaking the plural of "datum", but now usually considered as a collective noun in the singular, with the plural form "data items" or "items of data". Data is information in a form which can be processed by a computer. It is usually distinguished from a *computer program*, which is a set of instructions that a computer carries out. Data can be text or sets of figures on which a computer program operates. See Computer Program.

Database: A structured collection of data that can be used for a variety of purposes. Databases are usually stored on a Hard Disc inside your computer, on a CD-ROM, or at a website. A database may contain data relating to staff employed by a company or to students at an educational institution. Databases can also contain bibliographies, glossaries, vocab lists, etc. In order to set up and manage a database you need a database program such as Microsoft Access.

Data Driven Learning (DDL): An approach to language learning pioneered by Tim Johns, University of Birmingham, whereby learners of a foreign language gain insights into the language that they are learning by using concordance programs to locate authentic examples of language in use. In DDL the learning process is no longer based solely on the teacher's initiative, his/her choice of topics and materials and the explicit teaching of rules, but on the learner's own discovery of rules, principles and patterns of usage in the foreign language. In other words, learning is driven by authentic language data. See Concordance Program. See Module 2.4, *Using concordance programs in the Modern Foreign Languages classroom*, and Module 3.4, *Corpus linguistics*.

Data Projector: A device that enables the image displayed on a computer screen to be projected onto a wall screen or Interactive Whiteboard.

DBMS: Abbreviation for Database Management System. An Application enabling the storage, modification, retrieval, and querying of data in a Database.

DDL: Abbreviation for Data Driven Learning.

Debug: To test a program and remove all the bugs. Permanent bugs that defy eradication are often referred to ironically as "features". See Bug.

Default: A setting or value automatically assigned to a computer program or device in the absence of a choice made by the user. When you use a program for the first time, e.g. a Browser or Word-processor, all the settings will have been preset to their *default values* - many of which can be changed to settings that you prefer, e.g. the *default* font type and size. The term *default route* is used in connection with Computer Assisted Language Learning, meaning the route that the teacher believes to be optimal for the learner to follow in a computer program or suite of programs - but which can be overridden by the learner if s/he wishes to follow his/her own route: see Section 3.4, Module 2.1, headed *Modes of teaching and learning*.

Defrag: Short for *defragment*. A process run by a defragging program (usually supplied as part of *Microsoft Windows*) whereby parts of data files scattered around different segments of a computer hard disc are gathered together into continuous file segments. This makes applications run more efficiently and also frees up disc space.

Desktop: The main workspace in Windows is often referred to as a *desktop*, which is displayed on the screen that you see when *Windows* is started. This electronic desktop is a metaphor for the top of a real desktop, where jobs to be done are laid out in different folders symbolised by Icons, i.e. small images. Users open and work with programs by clicking on the icons on the desktop, and they can also store shortcuts to documents or websites there. But see also next entry, Desktop Computer.

Desktop Computer: A desktop computer is one that is designed to sit permanently on a desk, as opposed to a portable computer, e.g. Laptop Computer, Netbook, Notebook Computer and Tablet Computer, all of which can easily be carried around.

Desktop Publishing (DTP): An Application for laying out text, graphics and pictures in order to produce a professional-looking publication. Most modern word-processors can now achieve what older DTP packages were capable of producing. Examples of DTP applications are *QuarkXpress* and *PageMaker*, which have probably become too complex and technical for the inexperienced user and are now aimed at the professional graphic designer or layout artist. See Word-processor.

Device Driver: Software that enables a computer to communicate with a hardware device such as a Mouse, Printer or Scanner. Hardware devices must each have the proper *device driver* installed in order to enable them to run. Most hardware devices are supplied with small programs that are installed onto your hard drive when you use them for the first time and tell the computer how to communicate with that specific device.

Diacritic: A mark such as an acute, grave or circumflex accent, a cedilla, or an umlaut, which is added to a letter to give it a special phonetic value. Characters with diacritics can be typed on standard computer keyboards by using the Alt Key in combination with a sequence of numbers. Section 5, Module 1.3, headed *Typing foreign characters*.

DIALANG: See Section 2.2.1, Module 4.1, headed *The DIALANG diagnostic testing project*.

Dial-up Modem: An older type of Modem that connects a computer to the Internet via a standard telephone line. Typically a *dial-up modem* connects to the Internet at a very slow data transmission speed of only 56 Kbps, whereas a modern Broadband modem connects to the Internet at 512 Kbps or much higher. Because dial-up access uses normal telephone lines, the quality of the connection is often poor. See Kbps.

Digital: The essential meaning of this term is "based on numbers". The modern computer is a typical example of digital technology, so are CD-ROMs, DVD-ROMs, audio CDs and video DVDs, on which numbers are coded as a string of tiny pits pressed into a plastic disc. When a CD audio recording or a DVD video recording is played back, using equipment incorporating a laser as a reading device, the exact numeric values are retrieved and converted into sound or images. Digital recording is relatively free from noise and interference and gives a very high quality of reproduction. Data (including audio and video) or programs stored on CD-ROM or DVD can be read by a computer in a similar way. There are two major benefits to digital technology. Firstly, digital technology - because it is based on numbers - is more precise. Secondly, digital technology is becoming cheaper and more powerful. Digital technology is now used in radio and TV broadcasts. Digital recordings made from any source (audio- or videocassettes, television, radio, Internet, satellite TV, microphone or Camcorder) can be edited easily, then stored on a computer's Hard Disc, CD-ROM, DVD, Flash Drive, Memory Stick, etc. They can be copied without quality loss and, more significantly, can be used by more than one learner at the same time. See the contrasting term Analogue.

Digital Camera: A camera used for taking still photographs - but some digital cameras can also record short sequences of moving images. A digital camera looks much the same as an ordinary camera but stores photographs in electronic format so that they can be *uploaded* computer via a USB cable to a computer. The more expensive digital cameras achieve better results than can be achieved by using an ordinary camera and a *scanner*. See Camcorder, Scanner, Upload.

Digital Video Disc or **Digital Versatile Disc (DVD):** A *Digital Video Disc* or *Digital Versatile Disc* is an Optical Disc that is capable of storing high-quality video as well as other forms of data, e.g. programs, text, still pictures and graphics. It is possible that DVDs will completely replace CD-ROMs in the not-too-distant future. DVDs can be read or written to on multimedia computers equipped with a DVD drive or Combination Drive. See CD-ROM, See Section 1.2.1, Module 1.2 and Module 2.2.

Digitise / Digitize: To translate into a digital form, i.e. numbers. For example, scanners *digitise* images by translating them into *bitmaps*, i.e. thousands of individual dots or *pixels*. It is also possible to digitise sound and video by Sampling at discrete intervals. To digitise sound, for example, a device measures a sound wave's characteristics many times per second and converts them into numeric values which can then be recorded. See Analogue, Bitmap, Digital. Pixel.

Directory: A location on a disc containing a group of *files* and *subdirectories* grouped together for organisational purposes . The term is used synonymously with Folder, which has become a more common term since the introduction of Windows. Subdirectories are sometimes referred to as "child directories" of the "parent directory". The topmost directory on a computer, which is the parent of all directories on the disc, is known as the *root directory* and usually has the *pathname* C:\. See File, Pathname, Root Directory.

Discussion List: An electronic *discussion list* - also known as a Forum - is a way of sharing emails with the members of a group of people with a common interest. Members of a discussion list usually have to subscribe to the list by sending a message by email to the list server (the computer which manages the list), and thereafter they receive copies of all other messages sent to the list by other subscribers. The list administrator has control over list membership and, if necessary, the content of messages. The archives of discussion lists, i.e. previously posted messages, are usually made available at a website. See also

Blog, Bulletin Board, Forum, Newsgroup, Wiki. See Section 12, Module 1.5, headed *Discussion lists, blogs, wikis, social networking*.

Disc: Often spelt "disk", the alternative (mainly American) spelling. A *disc* may take several different forms and is used for the permanent or temporary storage of data that can be read by a computer. See CD-ROM, DVD, Floppy Disc, Hard Disc, Storage Device.

Disc Drive: A device within or connected to a computer that enables data to be read from and written onto a disc. See CD-ROM, Disc, DVD, Floppy Disc, Hard Disc. See Section 1.1.5, Module 1.2 for further information on disc drives

Display Screen: The screen on which output from a computer is displayed. Also referred to as a Monitor. Older computers used a Cathode Ray Tube, which is essentially the same as that used in older domestic TV sets. Newer types of display screens are of the LCD or TFT flat panel type - like many modern TV sets. They are much lighter, use less electricity and take up less room on your desk. See Section 1.1.2, Module 1.2 for further information and illustrations of different types of display screens.

Disruptive Technology / Disruptive Innovation: Terms that appear in Christensen C. (1997) *The innovator's dilemma*, Cambridge, Massachusetts: Harvard Business School Press and Christensen C. & Raynor M. (2003) *The innovator's solution*, Cambridge, Massachusetts: Harvard Business School Press. A disruptive technology is a technological innovation, product or service that eventually overturns the existing dominant technology in the market even though it may initially perform worse than its predecessors and cause a great deal of inconvenience in the course of adopting it. See http://en.wikipedia.org/wiki/Disruptive_technology

Distance Learning: A form of learning that takes place where the teachers and the students are in physically separate locations. *Distance learning* can be either Asynchronous or Synchronous. Traditional distance learning includes the mailing of printed materials, correspondence between teachers and students in writing, contact by telephone, and radio and television broadcasts. More recently, distance learning has included E-learning and/or Online Learning. The British Open University (OU) is one of the oldest established distance-learning establishments to have embraced existing technologies, i.e. radio and television, when it was set up in the 1960s. The OU continues to embrace new distance learning technologies as they become more widely available. See the OU Web page on What is distance learning? See also Blended Learning, Virtual Learning Environment (VLE).

Dithering: The technique of combining dots of primary colours to give the appearance of intermediate colours. Dots are combined in a square area, known as a *dither matrix*, to simulate a dot of an intermediate colour.

DNS: Abbreviation for Domain Name Server.

DOC: The standard three-letter Extension to a document file produced by *Microsoft Word*.

Domain Name: A unique name that identifies a Website. A domain name can be purchased from and registered by a *domain name* registration company, e.g. our name **ict4lt.org** was purchased from *Amenworld*: http://www.amenworld.com. Such companies also provide a service that will check if a required name is available for purchase. Domain names always have two or more parts, separated by dots. The part on the left side is specific and the one one the right is more general. Our website's domain name is divided into two parts, **ict4lt** and **org**, the former part being our project name and the latter indicating what kind of body we are: **org** = "organisation". Our domain name is therefore **ict4lt.org**. Universities' domain names in the UK always end in **ac.uk** = "academic UK". UK-based companies can often be identified by **co.uk**. See Section 6.1, Module 3.3, headed *Domain names*. See Host Name.

Domain Name Server (DNS): See Domain Name, Name Server.

DOS: Short for MS DOS.

Dot Matrix Printer: An older type of printer that works by firing sets of pins in different combinations at an ink ribbon located against a sheet of paper. Such printers produce text that looks "ragged". Laser printers and ink-jet printers are now much more common.. See Printer.

Download: To transfer a copy of data, a computer program, a text file, an image file, a sound file or video file from one computer to another computer. This is the main means of obtaining data and programs from the World Wide Web. See Upload, World Wide Web.

Download Accelerator: Downloading large files from the Web can be tedious. If you connect to the Internet via a slow Dial-up Modem then you might as well make yourself a cup of coffee or take the dog for a walk while you are waiting. You may, however, find that the download process has been timed out or crashed before it has been completed. A *download accelerator* is therefore essential if you use a dial-up modem, and it can help manage and speed up the process of downloading if you have a Broadband connection to the Internet. See Section 3.5.1, Module 2.3, headed *Delivering and receiving audio and video over the Internet*.

dpi: Abbreviation for **Dots Per Inch**. A measure of the of the quality of output, i.e. the number of dots per square inch produced by a *printer* or *scanner*, also referred to as its *resolution*. A resolution of at least 300 dpi is considered reasonable for the production of high-quality output by a printer and 1200 dpi by a scanner, but modern printers and scanners can produce many more dots per square inch. The resolution of a scanner may also be expressed by two numbers. These are mostly the same, e.g. 1200 x 1200, but you may also see 1200 x 2400, which means that the number of horizontal dots is different from the number of vertical dots. See Printer, Resolution, Scanner.

DTP: Abbreviation for Desktop Publishing.

DVD: Abbreviation for Digital Video Disc or Digital Versatile Disc

Dynamic Microphone: This type of microphone is often used in multimedia CALL programs when the learner has to record his/her own voice. The main drawback of this type of microphone is that it requires considerable amplification and may result in very faint playback on some systems. This type of microphone is often popularly referred to as a *karaoke microphone*. The other main type of microphone, the Condenser Microphone, provides a stronger signal. See Microphone, Sound Card. See Section 1.2.4, Module 1.2 for further information on microphones.

E

ECDL: Abbreviation for European Computer Driving Licence.

E-learning: *E-learning* (electronic learning) has become a buzzword in recent years, but it is widely misunderstood and often associated with a limited view of e-learning. Ask a dozen people what they understand by e-learning and most will probably say that it involves using a computer to access materials on the Web or to follow a distance-learning course using a Virtual Learning Environment (VLE). Here is the definition given in the UK government's consultation document *Towards a unified e-learning strategy*, July 2003:

> If someone is learning in a way that uses Information and Communications Technologies (ICTs), they are using e-learning. They could be a pre-school child playing an interactive game; they could be a group of pupils collaborating on a history project with pupils in another country via the Internet; they could be geography students watching an animated diagram of a volcanic eruption their lecturer has just downloaded; they could be a nurse taking her driving theory test online with a reading aid to help her dyslexia - it all counts as e-learning.

In other words, this is a catch-all definition relating to the use of ICT in teaching and learning: if you are using a computer to learn something then you are using e-learning. The whole of the ICT4LT website is, therefore, in this sense all about e-learning in the context of teaching and learning foreign languages, and this is one reason why you will not find a section headed specifically *E-learning* in the ICT4LT modules. Because of a lack of agreement on what e-learning is all about, it probably makes sense to use the term Online Learning when talking generally about distance learning on the Internet and to use CALL as a catch-all term for the use of ICT in language teaching and learning. See also Blended Learning, Distance Learning, Virtual Learning Environment (VLE). See the entry under **E-learning** in Section 1, Module 1.1, headed *Definitions of terms*.

Electronic Mail: See Email.

Electronic Whiteboard: More commonly referred to as an Interactive Whiteboard these days.

Email: Contraction of Electronic Mail. A system for creating, sending and receiving messages via the Internet. In order to send and receive email messages you have to register with an Internet Service Provider (ISP) that provides an *email service* and have *email software* such as Outlook or Eudora installed on your computer. Many ISPs also offer a Webmail facility, which provides an alternative means of creating, sending and receiving email messages using your Web Browser. See Section 14, Module 1.5, headed *Computer Mediated Communication (CMC)*.

Encryption: A system of coding that helps prevent access to private information on computer networks or on the Web.

End-user: The final user of a piece of Software or Hardware, i.e. the individual person for whom the product is created, as distinct from the people who create and produce the product.

EPS: Abbreviation for Encapsulated Postscript. A file format that is used mainly for printing images on a Postscript Printer. See also BMP, GIF, JPEG/JPG, TIFF, which are other image file formats.

Error Diagnosis: A feature of CALL programs whereby the computer attempts to diagnose the nature of errors the learner makes and to branch to remedial exercises. This approach to CALL appears to have fallen out of fashion in recent years. See Response Analysis, a term with a similar meaning.

Eudora: A popular Email program. Available at http://www.eudora.com

EUROCALL: The Europe-based professional association for CALL, founded in 1986: http://www.eurocall-languages.org

European Computer Driving Licence (ECDL): An internationally recognised qualification in ICT. See also the ECDL for Schools, which is designed specifically to help teachers, support staff and ICT coordinators develop practical computing skills for teaching and learning in the classroom and leads to an internationally recognised level of certification.

Excel: The name of a Spreadsheet program forming part of the *Microsoft Office* suite of programs.

Executable: This describes a program which has been converted (compiled) into binary machine code. If you double-click on an executable program name in *Windows Explorer*, it will immediately *execute* itself - i.e. run. Executables usually have the Extension **.exe** or **.com**. See Compiler, Machine Code.

Expansion Slot: A long, multi-pin socket on the computer's Motherboard into which an add-on card (such as a Sound Card) can be inserted to enhance the computer's capabilities.

Extension: In computer jargon an *extension* is an optional addition, usually consisting of a dot plus three or four letters, to the name of a File. The extension to the filename helps the computer (and the user) recognise what type of file it is and what it may contain, e.g. **.doc** is a *Word* document file, **.exe** is a computer program, **.jpg** or **.jpeg** is a picture file, and **.htm** or **.html** is a Web page file. See the following websites for further information on file extensions, what they mean, and links to sites offering utilities for managing and converting different types of files:

- **Dot What!?** http://www.dotwhat.net
- **File Extensions:** http://www.file-extensions.org
- **Fileinfo:** http://www.fileinfo.com

F

FAQ: Abbreviation for Frequently Asked Question. The ICT4LT project's list of FAQs is located here.

Favorites: A facility within the *Internet Explorer* Browser that enables you to keep a record of Web pages that you have visited and may wish to visit again. Also known as *bookmarks*: see Bookmark. *Favorites* are stored in a subdirectory of the Windows directory on your computer. Note the American spelling rather than British *Favourites*. This arose because *Internet Explorer* is a product of the American Microsoft Corporation.

Feedback: Feedback is an automatic response from a computer, which may take the form of text, image, audio, video or any combination of these, to a learner's input. Input from the learner may take various forms, e.g. (i) clicking with the mouse to select an answer in a multiple-choice exercise, (ii) typing an answer at the computer keyboard, or (iii) speaking an answer into a microphone. Feedback in interactive language learning materials should go beyond a "boing" (wrong) or "applause" (right) or "try again" message and attempt to mimic the "live" situation when using the language results in either a response from the other person or an action showing that the language used was appropriate. Feedback is often described as *intrinsic* (implicit) or *extrinsic* (explicit). See Section 7.2 , Module 1.1, headed *Feedback*, and Section 8, Module 2.5, headed *How to factor feedback into your authoring*, on the distinction between **intrinsic feedback** and **extrinsic feedback**.

File: A *file* in computer jargon can be used to describe many different things. It may be a Computer Program, a document file created with a Word-processor, an image file, an audio file, a video file, etc. Think of it in the same way as you would think of a file in a filing cabinet. A file has a name that describes what it is, and the file is stored in a place where you can easily find it. Files are usually grouped together on a computer's Hard Disc in *directories* or *folders* and, as well as their names, they usually have a three-letter Extension that tell you what their function is or what they contain, e.g. **fwtt.exe** is a program, **mystory.doc** is a *Word* document, **sally.jpg** is a picture, and **mydog.mpg** is a video file. Files may also be stored on CD-ROMs, DVDs and Flash Drives. See Directory, Extension, Folder, .

Filename: The name of a File on a computer.

File Permissions: Files stored on a computer usually have *permissions* governing which users are allowed to read, amend or execute them. This is particularly important in a a school, college or university network environment, where teachers and lecturers may have the permission to amend certain files, e.g. documents that they have created, but students are only allowed to read them. File permissions are usually determined by network managers.

File Transfer Protocol: See FTP.

Firewall: A *firewall* is a software package that sits between your computer and your Internet connection, keeping an eye on the traffic going to and fro. If anything suspicious appears, such as an unauthorised attempt from a remote computer to write information to your hard disc or to send information from your computer to a remote computer, it will block it and warn you. Firewalls have become essential these days because of the frequent attempts being made by *hackers* to grab confidential information from computers all around the world, e.g. your bank or credit card details, which may be stored in a file somewhere on your computer. Any computer is vulnerable while it is connected to the Internet. The author of this paragraph writes from personal experience: two attempts have been made by hackers to grab passwords from his computer. Both attempts were fortunately spotted by his Internet Service Provider and blocked, so no damage was done. If you access the Internet via a computer in a public or commercial organisation your ICT services department has almost certainly installed a firewall, but if you access the Internet via your personal computer then you should make sure that you install your own firewall. In addition you should install an *anti-virus package*. See Hacker, Virus.

Firewire: A *firewire* is in essence a facility that allows you to transfer video recordings very quickly from one device to another, e.g. from a Camcorder to a computer, using a special cable that connects to the computer's fireware socket. Many modern computers already have a firewire socket built in. If your computer does not have a firewire socket then you have to buy a firewire card and slot it in. See Section 2.2.3.4, Module 2.2, headed *Video editing software*.

Firmware: Software that has been written to a ROM (Read Only Memory) chip by the manufacturers. See *ROM, Silicon Chip*.

Flame: *Flame* is a term used to describe language that is rude, sarcastic or condescending, especially the language used in a Discussion List, Forum or Blog. See Troll. See Section 14.1.4, Module 1.5, headed *Netiquette*.

Flash Drive: A portable Storage Device. Flash drives look like a small flat pen, around 3cm to 5cm long, and are easily carried in your pocket. Their storage capacity is impressive; 4GB to 8GB is not unusual these days. They are used to store data that you wish to carry around, e.g. a *PowerPoint* presentation, and they can be plugged into any computer with a USB socket. Flash drives are also commonly referred to as *pen drives* or *memory sticks*. See Section 1.1.5.4, Module 1.2, which contains an illustration of a flash drive.

Flash Player: Software produced by Adobe for the development and viewing of animated and interactive sequences on the Web. See Plug-in. See also Section 6.8, Module 1.5, headed *Do you need plug-ins?*

FLV: Abbreviation for Flash Video, a proprietary file format used to deliver video over the Web using the Adobe Flash Player. See FLV.com.

Floppy Disc: A plastic disc covered in magnetisable material, enclosed in a case, on which data is stored magnetically. A typical 3.5-inch floppy disc can store up to 1.44MB of data. Floppy discs are used for carrying small amounts of data around from one location to another, e.g. a *Word* document or a *PowerPoint* presentation,, but they are now virtually obsolete and have been replaced by CD-ROMs, DVDs and Flash Drives.

Folder: An alternative word for a *directory* and which has become more common since the introduction of Windows. It describes a location on a disc which contains a set of related files. A folder can be divided into sub-folders. See Directory, Pathname.

Font: The terms *font* (also spelt *fount*) and *typeface* are often confused or interchanged. *Font* refers to a complete collection of letters, numerals, symbols and punctuation marks that have common characteristics, including their style and size. The two commonest fonts are Times New Roman, a Serif font, which is characterised by cross-lines that finish off the stroke of each letter, and Arial, a Sans Serif font that has no cross-lines. *Typeface* is the name given to the style of a particular set of letters, numerals, symbols and punctuation marks.

Formatting: The process of preparing a writeable disc for use. Formatting creates a structure on the disc which enables it to hold data.

Forum: Often used synonymously with Discussion List. An electronic forum on the Internet or an intranet enables users to post messages by email or via the Web for other users to read and respond to. See also Blog, Bulletin Board, Newsgroup, Wiki. See Section 12, Module 1.5, headed *Discussion lists, blogs, wikis, social networking*.

Fourth Generation Language (4GL): A programming language of a higher level than 3GLs such as C or Pascal - that is, the program code is closer to English, and a 4GL function might be the equivalent of many 3GL functions. 4GLs are used for writing software for specialised tasks, such as querying databases. See Programming Language.

Frame: A area in a Web page that scrolls independently of the rest of the Web page. A Web page can be divided into multiple frames. For example, a frame can include a navigation bar - as at the ICT4LT website - that always stays on the screen as the user moves around the other pages of the site.

Freeware: Software that can be copied and used without payment to the author(s), although there may be some restrictions on distribution. See Shareware.

FTP: Abbreviation for File Transfer Protocol. This is the method, i.e. a software standard, used for tranferring files from one computer to another via the Internet. FTP is also used as a verb in the sense "to transfer" (a file). See Anonymous FTP..

Fuzzy Matching: A matching technique which is used in programs when allowances have to be made for inaccuracies in spelling on the part of the learner. A good fuzzy-matching routine would enable a computer to recognise the learner's input of "sichiatriste" as "psychiatrist". This technique is incorporated into spelling checkers and Search Engines such as Google, and it can be useful in CALL programs where a broad interpretation of the user's input is necessary. See Matching, Partial Matching. See Section 1.2, Module 1.4, headed *Interactivity*.

G

Gap-filler / Gap-filling program: Still as popular as ever in CALL. Not to be confused with Cloze, which involves an automatic word deletion procedure. Gap-fillers are more flexible than Cloze programs. Gap-filling programs often consist of two parts: a teacher's program which allows the teacher to input a text and specify words, parts of words, or phrases that are to disappear, and a student's program which enables the learner to interact with the computer by filling in the gaps. See Authoring Package, Text Manipulation. See Section 8.2.3, Module 1.4, headed *Gap-filling*. See Module 2.5, *Introduction to CALL authoring programs*. See Section 5.2, Module 3.2, *headed Gap-filling exercises*.

Gateway: See Portal.

GB: Abbreviation for Gigabyte.

Geek: A colloquial term describing someone who is obsessed with computers and uses them at every opportunity in their free time, mainly for "social" purposes, e.g. communication via email and blogs, playing multi-user games, etc. See also Anorak, Nerd, Techie, Trainspotter.

Generic CALL: This term is normally used to describe an Authoring Package designed to cover all aspects of CALL program authoring and interaction, from simple gap-filling and multiple-choice exercises to exercises incorporating interactive multimedia, e.g. the **MALTED** authoring package as described by Paul Bangs in Module 2.5.

Generic Software / Generic Application: This term normally refers to general-purpose software applications that are not designed for use in a specific subject area, e.g. a word-processor (e.g. *Word*), spreadsheet package (e.g. *Excel*), presentation software (e.g. *PowerPoint*) or database package (e.g. *Access*). See previous entry, *Generic CALL*.

GHz: Abbreviation for GigaHertz.

GIF: Abbreviation for Graphic Interchange Format. A file format used for storing simple graphics. GIF files use a palette of 256 colours, which makes them practical for almost all graphics except photographs. Generally, GIF files should be used for logos, line drawings, icons, etc, i.e. images that don't contain a rich range of colours. A GIF file containing a small number of colours tends to be quite small, but it will be big if the image has a wide range of colours, e.g. a photograph.GIF files are commonly used for storing images on the Web. GIF files are also suitable for storing animated (i.e. moving) images. See BMP, EPS, JPEG/JPG, TIFF. See also Section 2.2.3.1, Module 2.2, headed *Image editing software*.

Gigabyte: Usually abbreviated to *GB*, or *gig* in common computer parlance. A unit of measurement of computer memory or disc capacity = 1,073,741,824 bytes. See the entry on Measurement Units. See Bit, Byte, Kilobyte, Megabyte.

GigaHertz: Usually abbreviated to *GHz*. A unit of measurement relating to the Clock Speed of a computer or, put simply, a measurement of how fast its Central Processing Unit (CPU) runs. Typical clock speeds of modern computers range from 500 MegaHertz (500MHz) upwards. Faster clock speeds are normally expressed in GigaHertz (= 1000MHz). See Hertz, Microprocessor.

Google: A popular Search Engine. Probably the most widely used search engine on the Web. You can also use Google to find definitions of words. Call up Google at http://www.google.co.uk/ and in the search box: type **define:** immediately in front of the word you would like to be defined. Google will then locate definitions of that word on the Web, e.g. try **define:bandwidth** or **define:ADSL**. If your term consists of two or more elements, e.g. *blended learning*, encase it in inverted commas, thus: **define:"blended learning"**. Blended Learning is also defined in this Glossary. See Section 4, Module 1.5, headed *Search engines: How to find materials on the Web*. "To Google" is even used as a verb in

the sense "to carry out a search on the Web". As well as offering a search facility, Google offers much more: maps, news, shopping, translation services, document sharing, etc.

Gopher: A pre-worldwide-Web method of presenting information on the Internet. Gopher servers present a hierarchical set of menus, descending from one main menu, which lead to files and documents. The spectacular rise of the World Wide Web is driving the gopher into extinction. See Internet, World Wide Web.

Graphical User Interface (GUI): An Interface, i.e. a software package, that enables human beings to control what happens on their computers. A GUI consists of graphical elements known as *icons* and enables the user to run programs and to carry out other operations such as copying information from one Folder to another, deleting files, etc by clicking on these *icons*, opening and shutting *windows* and dragging and dropping with a *mouse*. *Microsoft Windows* and the much older Apple Mac interface are GUIs. Contrasted with Character User Interface (CUI), an older type of interface which required the user to control the computer by typing commands at the Keyboard. See Icon, Mouse, Operating System, Window, Windows.

Graphics Card: An alternative name for a Video Card.

GUI: Abbreviation for Graphical User Interface.

H

Hacker: A person who spends their time trying to gain access to information stored on other people's computers all around the world. Some hackers are just harmless browsing types, but other have more invidious aims such as grabbing details of your credit cards or bank account, which may be stored in a file somewhere on your computer. If you access the Internet regularly you should consider installing a Firewall to protect yourself against hackers.

Hardcopy or **Hard Copy:** Printed output from a computer, as opposed to output on screen.

Hard Disc: A *hard disc* consists of a single rigid magnetic disc or a set of such discs enclosed within a metal case, i.e. a *hard disc drive*, which is mounted internally in your computer and is used for storing the computer programs and data that it needs in order to work. External hard disc drives can also be obtained for additional storage capacity or backup storage. Hard discs can contain vast amounts of data, usually measured in *gigabytes*. See CD-ROM, DVD, Floppy Disc, Gigabyte, Storage Device. See Section 1.1.5.1, Module 1.2 for further information.

Hardware: The physical elements of a computer system - the bits you can see, touch, drop, kick or fall over. Contrasted with Software. See Section 1, Module 1.2, which contains descrptions and images of many different *hardware* items.

HDD: Abbreviation for Hard Disc Drive. See Hard Disc.

Hertz: Usually abbreviated to *Hz*. A unit of measurement relating to the number of times something is repeated per second. In computer jargon this normally refers to the Clock Speed of a computer, i.e. in simple terms how fast the computer runs. One Hertz is one cycle per second. Computer clock speeds are normally expressed in MegaHertz (*MHz*) or GigaHertz (*GHz*). Named after the physicist and mathematician Heinrich Hertz (1857-1894), the discoverer of radio waves. The frequency of radio

waves is also expressed in Hertz. You will also find the term *Hertz* used in connection with programs for producing digital audio recordings, where Hertz refers to the Sampling Frequency (also called *sampling rate*) at which the recording is made or stored. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*.

Hexadecimal: A number system used in computers in which numbers are composed of combinations of 16 digits, using 0-9 then the letters A-F to represent 10-15. Hex allows binary numbers to be expressed in a more compact and comprehensible form. For example, 255 = FF (hex) = 11111111 (binary). See Binary.

Hit: A colloquial term which is often used to refer to a successful search for information on the Web, e.g. using a Search Engine, or the number of visits a site receives.

HLT: Abbreviation for Human Language Technologies.

Homepage or **Home Page:** This is the main Web page of a business, organisation or school, or of a personal website. From this page links are made to other pages on the same site and to external sites. Most people usually set up their Browser to open with this page when it starts up. See Website, World Wide Web. See Section 5.2, Module 3.3, headed *Homepage*.

Host: Short for *host computer*. Any computer that provides services to other computers that are linked to it, via a local network or via the Internet.

Host Name or **Hostname:** A *host name* is the unique name of a computer on the Internet, which is normally written as a series of letters, for example **www.hull.ac.uk**. A *host name* is the human-friendly form of the host's numerical IP address, i.e. it's an alias for the "real" Internet address of the host computer, e.g. **150.237.176.24**. See Domain Name, Host, Internet, URL, Website.

Housekeeping: This could be interpreted as going round with the feather duster and keeping your computer equipment free of dust, but in computer jargon it refers to organising and managing the software installed on your computer system.

HTML: Abbreviation for Hypertext Markup Language. The coding system used for creating pages on the World Wide Web. HTML enables the author to control how the page appears and to insert Hypertext links within one Web page or to other pages anywhere on the Web. Nowadays most Web authors and designers use an Authoring Tool such as *Front Page* or *Dreamweaver* to create World Wide Web pages. Web page files end with the Extension **.htm**. or **.html**. See Anchor, Hyperlink, URL, World Wide Web. See Module 3.3, *Creating a World Wide Web site*.

HTTP: Abbreviation for Hypertext Transfer Protocol. The transfer method (*protocol*) used by the World Wide Web to transmit and receive Web pages. This abbreviation normally precedes the name of a website, e.g. **http://www.ict4lt.org**, to tell your computer that this is the way in which you wish to communicate with other computers on the Internet. In practice, however, you can usually miss out the prefix **http://** as it is assumed to be the norm. See HTML, Hyperlink, Hypertext, Protocol, World Wide Web.

Hub: A common connection point for networked computers and other devices. Hubs are used to connect devices in a Local Area Network (LAN). See LAN.

Human Language Technologies (HLT): Since January 1999 this has been the European Commission's official term for what used to be described as *Language Engineering*. The term covers a range of applications of advanced technology to human languages, e.g. Automatic Speech Recognition (ASR),

Machine Translation (MT), etc. See Module 3.5, *Human Language Technologies*. See Natural Language Processing.

Hyperlink: A contraction of *hypertext link*, the essence of Hypertext and the HTML language used for creating pages on the World Wide Web. In a Web document a *hyperlink* can be a sequence of letters or an image. By clicking on the area designated as a *hyperlink* by the person who created the Web page, it is possible to jump quickly to another part of the page, a different page on the same website, or to a completely different website. See Hypermedia. See Section 2, Module 1.5, *headed What is the World Wide Web?* Hyperlinks can also be inserted into a *Word* document, enabling the reader to jump from one point in the document to another, or out of the document to a website. See Anchor.

Hypermedia: The extension of the *hypertext* concept to *multimedia*, describing the combination of multimedia information (text, images, audio, video, etc) in a meaningful configuration, which is especially useful for teaching and learning. See Hyperlink, Hypertext, Multimedia. See Module 2.2, *Introduction to multimedia CALL*.

Hypertext: A system for the non-sequential presentation of text, the fundamental concept of the World Wide Web, whereby the user can jump from one part of a text to another, from one Web page to another, or from one website to another, by clicking on highlighted (and usually underlined) *hyperlinks*. The concept of *hypertext* predates the Web by many years. Vannevar Bush is credited with inventing the concept of *hypertext* in his article "As we may think", which was written as early as 1945 and describes an imaginary machine called "Memex" - essentially a hypertext device that takes account of the way the human mind associates ideas and follows a variety of different paths rather than moving on sequentially. See Hyperlink, Hypermedia, HTML. See Section 2, Module 1.5, headed *What is the World Wide Web?*

I

I-Beam: The form that the Cursor takes when a document is being edited, e.g. in *Microsoft Word*. It looks a bit like a large letter I.

IC: Abbreviation for Integrated Circuit.

ICALL (Intelligent CALL): An approach to CALL that makes use of sophisticated programming techniques that mimic human intelligence. See Module 3.5, *Human Language Technologies (HLT)*, especially Section 6, headed *Human Language Technologies and CALL*, and Section 8 on *Parser-based CALL*. See Artificial Intelligence (AI).

Icon: A small symbol or picture used in a Graphical User Interface (GUI). The icons on the computer screen represent programs or files, e.g. a picture of a painter's palette might represent a program used for drawing and editing pictures, and a picture of a book with a question mark on its cover might represent the text of a manual or a help file. In a GUI the Mouse is used to move the Cursor so that it locates over an icon. Clicking a button on the mouse then causes the program that the icon represents to run or a file to be displayed.

ICT: Abbreviation for Information and Communications Technology. What the ICT4LT project is all about. See also C&IT and IT. ICT is the term that is currently favoured by most businesses and educational institutions. The "C" reflects the important role that computers now play in *communications*, e.g. by email, the Web, by satellite and cellphone (mobile phone). We always insist on the "s" at the end

of *communications*, which is a term that predates computer technology and was originally associated with morse code, radio, etc and often abbreviated to *comms*.

ILS: Abbreviation for Integrated Learning System.

ILT: Abbreviation for Information and Learning Technology. A term that has recently come into vogue, stressing the *learning* aspect rather than the *communications* aspect, as in ICT.

Ink Jet Printer: A type of Printer that fire little jets of ink at the page in order to form the characters and graphics. One of the commonest forms of printers currently in use and capable of producing high-quality output in black and white and in full colour.

Input: Anything that goes into a computer in order to be processed and/or stored. Also used as a verb. See Output.

Input Device: Any device that is capable of inputting information into a computer system, e.g. a Keyboard, Microphone, Mouse or Scanner.

Input Validation: Many programs contain *input validation* routines which prevent the user doing something silly while entering data at the keyboard. A good input validation routine will ensure that the computer sifts out the important information and does any necessary conversion work, e.g. eliminating spaces or unwanted characters, or converting letters to upper or lower case.

Install: A verb used to describe the process of *installing* or *setting up* a computer program or suite of computer programs on the computer's hard disc for first-time use. Programs are normally supplied on CD-ROM or DVD, but they may also be downloaded from the Web, either free of charge or on payment of a fee.

Install Program or **Installation Program:** A program that enables the user to *install* or *set up* a program or suite of computer programs on the computer's hard disc for first-time use. Also known as Setup Program. See Install, Uninstall, Uninstall Program.

Integrated Circuit: An electronic circuit etched onto a small piece of silicon which has been subjected, using photo-masking processes, to controlled "doping" with certain impurities. Particular areas of the chip can then be made to act like electronic components such as diodes, capacitors and resistors. See Microchip, Silicon Chip.

Integrated Learning System (ILS): A computer-driven system of learning in which the content is presented in tutorial format and which monitors and records the progress of the learner. See OILS.

Intel: The name of a manufacturer of *microprocessors* used in personal computers. Other companies make Intel-compatible microprocessors. See Microprocessor.

Intelligent CALL: See ICALL (Intelligent CALL).

Interactive Video (IV): A system consisting of a computer connected to a 12-inch *videodisc player*, allowing the presentation of still images or video clips combined with some kind of interactivity, e.g. carrying out a set of exercises linked to the images or to the video clips. Very popular in the 1980s but now technically obsolete and replaced by integrated multimedia computers incorporating DVD or CD-ROM drives. One of the best known educational interactive videodiscs was the *Domesday* videodisc, created by the BBC in 1986 to commemorate the 900th anniversary of the creation of the original Domesday Book. Now the BBC has re-launched the Domesday project online at

http://www.bbc.co.uk/history/domesday. See CD-ROM, Digital Video Disc, Multimedia Personal Computer (MPC), Videodisc. See Section 1.2, Module 2.2, headed *A brief history of multimedia*.

Interactive Whiteboard (IWB): Often abbreviated to IWB. A touch-sensitive projection screen that allows the teacher to control a computer directly by touching the screen, i.e. the whiteboard, rather than using a Keyboard or Mouse. A Data Projector has to be connected to the teacher's computer in order to project the image onto the interactive whiteboard and special software has to be installed on the computer in order for the whiteboard to become active and sensitive to touch - which may require the use of an "electronic pen" or it may work in reaction to one's finger or hand. See Section 1.3.4, Module 1.2 for further information and an illustration of an interactive whiteboard. See Section 4, Module 1.4, headed *Whole-class teaching and interactive whiteboards*.

Interface: An *interface* in computer jargon is a connection between two systems. It can be Hardware or Software. It may take the form of a plug, cable or socket, or all three, for example where a Printer or Scanner is connected to a computer, and then it's a hardware interface. There are also software interfaces that enable one program to link with another, passing across data and variables. The term *interface*, also known as *user interface*, also describes the software that is used to enable human beings to communicate with a computer, for example *Microsoft Windows*, which is a Graphical User Interface (GUI) in common use on personal computers. See Windows.

Internet: The *Internet*, or simply "the Net", is a computer network connecting millions of computers all over the world. It provides communications to governments, businesses, universities, schools and homes. Any modern computer can be connected to the Internet using existing communications systems. Schools and universities normally access the Internet via their own educational networks, but private individuals usually have to take out a subscription with an Internet Service Provider (ISP). Although the Internet is in fact a network of networks, it appears to users as a network of individual computers. The Internet dates back to the group of interconnected networks that evolved from the ARPANET of the late 60's and early 70's. It has grown from a handful of interconnected networks into a huge network of millions of computers. The main Internet services of interest to language teachers are Email and World Wide Web. See also Blog, Discussion List, Forum, Podcast. The World Wide Web is only part of the Internet, but many people treat both terms as synonyms. See Module 1.5, *Introduction to the Internet*, Module 2.3, *Exploiting World Wide Web resources online and offline*, Module 3.3, *Creating a World Wide Web site*.

Internet Explorer: A Browser produced by the Microsoft Corporation and supplied together with the Windows operating system.

Internet Service Provider (ISP): A company that provides a subscription service to enable you to access the Internet. An ISP has a network of computers permanently linked to the Internet. When you take out a subscription with an ISP they link your computer to their network, usually via an existing telephone line, but dedicated lines are also provided by some ISPs. ISPs also give you an Email address and space on the World Wide Web for setting up your own website.

Interpreter: Software which converts the human-readable Source Code of a program which has been written in a high-level programming language such as BASIC, one statement at a time, into machine instructions as the application is run. Interpreted applications need to be distributed with runtime programs and function libraries. See Compiler, Machine Code.

Intranet: A private network inside a company or educational organisation and used over its LAN (Local Area Network). A sort of local Internet. Contrasted with Internet, which is publicly available.

I/O: Abbreviation for Input/Output. See Input, Output.

IP Address: Short for Internet Protocol Address. The unique numerical address of a computer on the Internet, expressed as four sets of numbers (maximum 3 digits each) separated by dots: e.g. **150.237.176.24** for one of the computers at the University of Hull - where the ICT4LT website is located. Computers on the Internet are nearly always referred to by more memorable *domain names*, which are mapped onto their *IP addresses* by special Internet computers known as *name servers*. See Domain Name, Host, Host Name, Name Server.

iPod: The name of a portable (mobile) Media Player designed and marketed by Apple. The **iPod** first appeared in 2001. As well as being capable of storing and playing back audio recordings, newer models can also record and play back video. The iPod has become popular for storing recordings, mainly music, downloaded from the Web or transferred from audio CD to a computer and then moved across to an iPod using a software package known as iTunes. See Section 2.2.1, Module 2.2, headed *Media Players* .

ISDN: Abbreviation for Integrated Services Digital Network. A type of digital telephone service, used for transferring large chunks of data to and from the Internet without a Modem. Gradually falling out of use these days with the introduction of ADSL broadband services. ISDN lines normally operate at 128 Kbps, which is faster than a standard 56Kbps Dial-up Modem but slower than an ADSL connection, which runs at a speed of at least 1Mbps. See ADSL, Broadband, Kbps, Leased Line.

ISP: Abbreviation for Internet Service Provider.

IT: Abbreviation for Information Technology. Essentially, technology relating to information processing, i.e. computer technology, but see also ICT, C&IT, both of which describe the converging of information technology and communications technology. The term IT is rapidly being replaced by ICT in order to reflect the important role that information technology plays in communications by email, the Web, satellites and mobile phones.

IV: Abbreviation for Interactive Video.

IWB: Abbreviation for Interactive Whiteboard.

J

JANET: Acronym for Joint Academic Network. All further and higher education organisations in the UK are connected to the JANET network.

Java: A programming language, invented by Sun Microsystems, that is specifically designed for writing programs that can be downloaded to your computer through the Internet and immediately executed. Using small Java programs, called *applets*, Web pages can include functions such as animations, interactive sequences, etc. You need to set up your browser to enable it to interpret and run the Java applets. Java is similar to a programming language known as C++ but it has been considerably simplified. Not to be confused with Javascript. See Applet.

Javascript: *Javascript* is a script language, a system of programming codes that can be embedded into the HTML code of a Web page to add functionality, e.g. interactive sequences, questionnaires, etc. Although it shares many of the features and structures of the full Java language, Javascript is essentially quite different and was developed independently.

JISC: Acronym for Joint Information Systems Committee. The Joint Information Systems Committee supports further and higher education in the UK by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) in teaching, learning, research and administration. JISC is funded by all the UK post-16 and higher education funding councils: http://www.jisc.ac.uk

Joystick: A device that looks a bit like a gear lever in a car. This is connected to a computer and is used mainly for controlling the Cursor in fast action games.

JPEG or **JPG:** Abbreviation for Joint Photographic Expert Group. Pronounced "Jaypeg". A file format used for storing images. The JPEG/JPG format uses a palette of millions of colours and is primarily intended for photographic images. The internal compression algorithm of the JPEG/JPG format, unlike the GIF format, actually throws out superfluous information, which is why JPEG/JPG files containing photographic images end up smaller than GIF files containing photographic images. If you store an image, say, of a flag containing just three colours in JPEG/JPG format it may end up bigger than a GIF file containing the same image, but not necessarily a lot bigger - it depends on the type and range of colours it contains. JPEG/JPG files containing photographic images are normally smaller than GIF files containing photographic images. JPEG/JPG files are commonly used for storing images on the Web. See BMP, EPS, GIF, TIFF. See also Section 2.2.3.1, Module 2.2, headed *Image editing software*.

K

Kb: Abbreviation for Kilobit.

KB: Abbreviation for Kilobyte. The single letter *K* is also used.

Kbps: Abbreviation for *kilobits per second*. A unit of measurement of data transmission speed, e.g. via a Modem. See Bit, Megabit.

Karaoke Microphone: A popular name for a type of microphone that is more accurately described as a Dynamic Microphone. See Microphone. See Section 1.2.4, Module 1.2 for further information on microphones.

Keyboard: The keyboard of a computer is used to enter information which the computer displays or processes. It looks much the same as a typewriter keyboard, but has a few additional keys that have special functions. See Section 1.1.3, Module 1.2, which contains an illustration of a computer keyboard.

Key Word In Context (KWIC): A type of search carried out with a Concordance Program. See Module 2.4, *Using concordance programs in the Modern Foreign Languages classroom*.

Kilobit: Usually abbreviated to *Kb*. A unit of measurement consisting of 1,024 *bits*, mainly relating to data transmission speed. See Bit, Megabit.

Kilobyte: Usually abbreviated to *K or KB*. A unit of measurement of computer memory or disc capacity = 1,024 *bytes*. See entry on Measurement Units. See Bit, Byte, Megabyte, Gigabyte.

KWIC: Acronym for Key Word In Context.

L

LAN: Abbreviation for Local Area Network. A Network of computers at one site that provides services to other computers connected to it. A *LAN* is usually limited to an immediate area, for example the floor of a building, a single building or a campus. The most important part of a LAN is the Server that delivers software to the computers (also known as *workstations* or *clients*) that are connected to it. The *server* is usually the most powerful computer in the network Users of computers connected to a LAN can access their own files remotely and exchange information with the server and other users connected to the network. See Client, MAN, WAN, Web Server.

Language Aptitude Testing (LAT): See the entry under Modern Language Aptitude Testing (MLAT).

Language Engineering: The older term for a range of technologically advanced applications of ICT to natural (i.e. human languages), including Automatic Speech Recognition (ASR) and Machine Translation (MT). Since January 1999 the European Commission has favoured a new term, Human Language Technologies (HLT). See Module 3.5, *Human Language Technologies (HLT)*.

Laptop Computer: A *laptop computer* is a computer that is light and can easily be carried around. Contrasted with Desktop Computer. See also Netbook, Notebook Computer and Tablet Computer.

Laser Printer: A type of Printer that works by firing a laser at a rotating drum. Laser printers produce high-quality output at a reasonable speed.

LAT: Abbreviation for Language Aptitude Testing.

LCD: Abbreviation for Liquid Crystal Display. A technology used for producing a type of flat panel computer Display Screen, which is replacing the older type of Cathode Ray Tube display screen. A more advanced form of technology for producing flat panel display screens is known as TFT (Thin Film Transistor). LCD and TFT screens are also used in *digital cameras* and *camcorders*. See Camcorder, Digital Camera.

Learning Management System (LMS): See Virtual Learning Environment (VLE).

Learning Object: A self-contained piece of learning material with an associated learning objective. Essentially, a *learning object* should be capable of being reused in a variety of applications and may be described as a Reusable Learning Object (RLO). Examples include interactive sequences made up of different combinations of texts, images, audio and video clips, and self-contained exercises that might be incorporated into a website or Courseware created with the aid of an Authoring Tool, or a Virtual Learning Environment (VLE). See David Wiley, *The instructional use of learning objects*: http://reusability.org/read/

Learning Platform: A term used to describe the software and systems that are used to deliver E-learning. Some confusion surrounds this term: sometimes it is used synonymously with Virtual Learning Environment (VLE) and sometimes with Managed Learning Environment (MLE). Many people use it as a catch-all term to describe software and systems designed to manage, deliver and provide access to E-learning materials.

Learning Support System (LSS): See Virtual Learning Environment (VLE).

Leased Line: Also known as a *private circuit*, is a dedicated communications link between two sites. It is separate from the public telephone network and reserved exclusively for the use of the owner, usually at a fixed tariff regardless of usage levels. Leased lines are commonly used where there is high inter-site traffic, where there is a requirement for high Bandwidth, or where reliability and availability are critical considerations. See ADSL, Broadband and ISDN.

Linkrot: Linkrot describes the tendency of Hypertext links from one website to another to die as other sites cease to exist or remove or restructure their Web pages. Large companies, educational institutions and government organisations appear to be among the worst offenders. They are forever restructuring and leaving no indication of where the old pages have gone. Pages created by students, for example, often no longer work after the student graduates. *Linkrot* is a growing disease. It is estimated that over 25% of the links on the Web are dead! See the state of the Web survey at *All Things Web*: http://www.pantos.org/atw/35654.html. - a figure that is still increasing. There is a worrying new trend too: websites that die can be transmogrified overnight into sites containing offensive material. See Cybersquatter. See Section 9.1, Module 1.5, headed *Dead links - linkrot*, and Section 6.3.3, Module 3.3, headed *Checking for broken links - linkrot*.

Linux: A Unix-type Operating System, similar to Windows and the Apple Mac operating system. Linux was originally created by Linus Torvalds with the assistance of developers around the world. The Source Code for Linux is freely available to everyone. See Unix.

Liquid Crystal Display (LCD): See LCD.

LMS: Abbreviation for Learning Management System.

Local Area Network (LAN): See LAN.

LSS: Abbreviation for Learning Support System

Lurker: Mainly used in connection with a Discussion List, Forum or Blog. This term describes someone who prefers to read other people's messages rather than posting their own views. Discussion lists, forums and blogs often have thousands of readers but only a handful regularly post messages. The rest prefer to keep quiet and just *lurk* on the sideline.

LWULT Languages: The EC's official term for what many people called Minority Languages. It stands for Least Widely Used and Least Taught Languages. There is a website for European Minority Languages, some of which you may have never heard of before, e.g. Casubian and Nenets: http://www.smo.uhi.ac.uk/saoghal/mion-chanain/en/. How about Ulster Scots (Ullans): "Laird Laird, Heich Executive o tha Ulster-Scotch Agencie, said Juin at he trows tha role o tha Agencie is uphauldan Ulster-Scotch feks, an no takan thaim owre. He eikit 'Ulster-Scotch maun be an inclusiv cultur, no an exclusiv. Bein inclusiv is whit bein Scotch-Airis bes'". Got it? Have a look at the website of the University of Arizona's Critical Languages Series and the Linguanet Worldwide website if you are looking for learning and teaching materials.

M

Machine Assisted Translation (MAT): The use of computers to assist human beings in the process of translating natural language. MAT systems are normally used as only aids for human translators who have to intervene in the process of translation by machine, making corrections and amendments as

necessary. Contrasted with Machine Translation (MT), which normally describes a fully automatic process. See Translation Memory (TM). See Section 3, Module 3.5, headed *Machine Translation*.

Machine Code: The machine-readable form of a computer program, produced by conversion of the human-written program (source code) into binary code by a *compiler* or *interpreter*. See Compiler, Interpreter, Source Code.

Machine Translation (MT): The use of computers to translate natural language. A related term is Machine Assisted Translation (MAT), which normally implies that the computer does part of the job and human beings correct and amend the text that it produces. See Translation Memory (TM). See Section 3, Module 3.5, headed *Machine Translation*.

Macro: A sort of mini-program that can be incorporated into other programs, comprising a series of keystrokes that you may wish to use over and over again. For example, if you perform a task repeatedly in *Microsoft Word*, you can automate the task using a *macro*. A macro is a series of commands and instructions that you group together as a single command to accomplish a task automatically. Instead of manually performing a series of time-consuming, repetitive actions, you can create and run a single macro - in effect, a custom command that carries out the task for you. A macro can be saved and called up whenever you need it. A degree of caution needs to be exercised if you are given or sent a file, e.g. a *Word* DOC file, containing a macro, as macros can harbour *viruses*. Make sure you know where the file comes from. See RTF, Virus.

Mainframe Computer: Loosely speaking, a very large computer which can serve many users at remote terminals. See Microcomputer, Minicomputer.

Main Menu Bar: The *main menu bar* is normally located at the top of the screen when you are using an application such as a word-processor or Browser, consisting of a set of names of *drop-down menus* that enable a variety of different tasks to be carried out. See Menu Bar.

MALL: Abbreviation for Mobile Assisted Language Learning. See Section 5, Module 2.3, for further information on MALL.

MAN: Abbreviation for Metropolitan Area Network. A network of computers located at different sites within a large fixed area, such as a city. See LAN, WAN.

Mashup: A *mashup* is a Web page that brings together data from two or more Web services and combines the data into a new application with added functionality. Mashups are typical manifestations of Web 2.0. For further information on mashups see Section 2.1, Module 1.5, headed *What is Web 2.0?*

MAT: Abbreviation for Machine Assisted Translation.

Matching: In CALL programs, matching is the process of comparing the learner's inputs at the keyboard with what is stored in the computer. See Fuzzy Matching, Partial Matching. See Section 1.2, Module 1.4, headed *Interactivity*.

Maze: *Mazes*, also known as *action mazes* and *text mazes*, have been used by language teachers for many years for reading and comprehension activities and to stimulate conversation in the classroom. See, for example, Berer M. & Rinvolucri M., *Mazes: a problem-solving reader*, published by Heinemann in1981 and subsequently converted (with Heinemann's permission) into a BBC microcomputer program. An action maze is a collection of short pieces of text, each of which poses a problem and a set of alternative solutions. The learner can follow different paths through the maze but may end up in loops and blind alleys. The onus is therefore on the learner to read the texts carefully and to assess the situation accurately. Mazes are ideal for group work. Computerised versions of mazes can

be written very easily in HTML or with a suitable Authoring Tool, e.g. the *Quandary* package at http://www.halfbakedsoftware.com/quandary.php. Mazes can be run online and offline. See Adventure Game, Simulation.

Mb: Abbreviation for Megabit.

MB: Abbreviation for Megabyte.

Mbps: Abbreviation for *megabits per second*. A unit of measurement of data transmission speed, e.g. via a Modem. A typical Broadband connection to the Internet transmits data at 1 Mbps to 8 Mbps. See Bit, Kilobit.

MC: Abbreviation for Multiple Choice, as in Multiple Choice Exercise.

MCQ: Abbreviation for Multiple Choice Question. See Multiple Choice Exercise.

Measurement Units: There is still a good deal of confusion about what the terms Kilobyte, Megabyte, Gigabyte, etc mean. Traditionally, the terms *kilobyte*, *megabyte* and *gigabyte* are used to express the binary multiples of 1,024, 1,048,576 and 1,073,741,824 bytes but, because people are used to thinking decimal rather than binary, the International Electrotechnical Commission (IEC: http://www.iec.ch) approved in December 1998 a new standard for names and symbols for use in the fields of data processing and data transmission. This was adopted in January 1999 by the Institute of Electrical and Electronics Engineers (IEEE: http://www.ieee.org). Thus *kilobyte*, *megabyte* and *gigabyte* should now be used to express the decimal multiples 1,000, 1,000,000 and 1,000,000,000 bytes. New terms, *kibibyte*, *mebibyte* and *gibibyte*, were approved to be used to express the binary multiples 1,024, 1,048,576 and 1,073,741,824 bytes, but these still have not caught on among the general public. See http://physics.nist.gov/cuu/Units/binary.html. We are grateful to Daniel Thibault for drawing our attention to these changes.

Media (pl.) / Medium (sing.): In computer jargon this term has two main senses: (1) Storage Media, e.g. CD-ROMs, DVDs, Flash Drives, etc - also referred to as Storage Devices, (2) *Media* in the sense of audio and video recordings in Digital format that can be played back on a Media Player. See Multimedia and Module 2.2, *Introduction to multimedia CALL*.

Media Player: Used in two main senses: (1) a program that enables your computer to record, store and play back audio and video recordings; (2) a device such as the portable iPod *media player* that is also used to record, store and play back recordings. See Section 2.2.1, Module 2.2, headed *Media players*.

Megabit: Usually abbreviated to *Mb*. 1,024 *kilobits* or 1,048,576 *bits*, a unit of measurement, usually relating to data trasnmission speed. See Bit, Kilobit.

Megabyte: Usually abbreviated to *MB*. 1,024 *kilobytes* or 1,048,576 *bytes*. A unit of measurement of computer memory or disc capacity. Roughly 180,000 words of text - an average-sized novel. See entry on Measurement Units. See Bit, Byte, Kilobyte, Gigabyte.

MegaHertz: Usually abbreviated to *MHz*. A unit of measurement relating to the Clock Speed of a computer or, put simply, a measurement of how fast its Central Processing Unit (CPU) runs. Typical clock speeds of modern computers range from 500MHz upwards. Faster clock speeds are normally expressed in GigaHertz or *GHz* (= 1000MHz). See Hertz, Microprocessor.

Memory: Most people use this term to refer to a computer's temporary internal main memory or RAM. Memory may also refer to ROM (Read Only Memory), which is permanent and part of a a computer system as supplied by the manufacturer.

Memory Stick: A small electronic card, also known as a *memory card*, which is inserted into a Digital Camera or Camcorder for storing photographs or movie files that can then uploaded to a computer. This term is also used as an alternative to Flash Drive.

Menu: A list of options from which a computer user makes a selection in order to determine the course of events in a program. This usually involves keying in a single letter or number, or selecting text or an Icon with a Mouse. See Main Menu, Menu Bar, Toolbar.

Menu Bar: Most computer programs display a *menu bar* or set of menu bars at the top of the screen, from which choices can be made by the user to carry out certain operations, e.g. saving a File, printing a document, or setting up the program in different ways. See Main Menu Bar, Menu, Toolbar.

MFL: Abbreviation for Modern Foreign Languages. A term used mainly in the UK to describe foreign languages that are commonly taught in schools, e.g. French, Spanish and German - as well as more exotic languages such as Chinese and Arabic.

MHz: Abbreviation for MegaHertz.

Microblogging: An approach to Blogging in which very short texts are posted containing snippets of information about events, websites and other information. See JISC's **Web2practice** video on **Blip TV**: http://web2practice.jiscinvolve.org/microblogging/. Twitter is an example of a popular microblogging facility.

Microchip: Also referred to as Chip or Silicon Chip. Invented in 1958 by Jack St. Clair Kilby, while he was working at Texas Instruments, Dallas, Texas: http://www.ti.com/corp/docs/kilbyctr/jackstclair.shtml. An electronic circuit etched on to a small piece of silicon which has been subjected, using photo-masking processes, to controlled "doping" with certain impurities. Particular areas of the chip can then be made to act like electronic components such as diodes, capacitors and resistors. See Integrated Circuit.

Microcomputer: A generic name for a class of computers distinct from bigger mainframe computers and minicomputers. Two of the defining characteristics of a *microcomputer* are that it should be built around one Microprocessor and that it should be standalone, i.e. capable of operating independently from any other computer or computer Network to which it might be connected. Modern Desktop Computers and Laptop Computers computers fall into this category. See Mainframe Computer, Minicomputer.

Microphone: Essential for making sound recordings in multimedia CALL programs. Microphones used in multimedia applications are much the same as those used with standard audiocassette devices. Choosing the right kind of microphone is vital. See Condenser Microphone, Dynamic Microphone. See Section 1.2.4, Module 1.2 for further information on microphones. See also Module 2.2, *Introduction to multimedia CALL*.

Microprocessor: The *microprocessor* is the Central Processing Unit (CPU) of a computer, where all the data processing and calculations are carried out. It's a single silicon chip containing millions of transistors etched on to its surface, connected to the Motherboard by an array of pins at its base. See Silicon Chip.

Microsoft Office: A suite of programs produced by Microsoft Corporation, comprising a Word-processor (*Word*), a Spreadsheet (*Excel*), a Presentation Program (*PowerPoint*), an Email package (*Outlook*), a Database program (*Access*), and a Desktop Publishing package (*Publisher*).

Microsoft Windows: See Windows.

MIDI: Abbreviation for Musical Instrument Digital Interface. A format for synthesised music. Music in MIDI format is created and played through the use of synthesisers, unlike "real" music which is normally recorded in MP3, WMA or WAV format.

Millennium Bug: A flaw in computer programs which was thought likely to cause a breakdown in computer systems worldwide following the commencement of the Year 2000 - or Y2K in computer jargon. The Millennium Bug arose as a result of year dates having been stored in older computer programs as two digits, e.g. 89 instead of 1989. The bug was most likely to arise when one year date was compared with another, when 00 (instead of 2000) was perceived as older than 89 (instead of 1989). The Millennium Bug proved to be far less of a problem than was anticipated, but it did manifest itself in computerised stock control systems, resulting in batches of canned food with sell-by dates after 2000 being accidentally scrapped before their time. See Bug, Debug.

Minicomputer: Smaller than a Mainframe Computer and bigger than a Microcomputer. Small businesses often rely on minis. Minis can handle many users at once. Today's minis are much more powerful than yesterday's mainframes.

Minority Languages: See LWULT Languages.

MLAT: Abbreviation for Modern Language Aptitude Testing (MLAT).

MLE: Abbreviation for Managed Learning Environment. The totality of information systems in an educational institution, which may embrace a Virtual Learning Environment (VLE) or Course Management System (CMS).

MMOG: Abbreviation for Massively Multiplayer Online Game, a shortened version of MMORPG.

MMORPG: Abbreviation for Massively Multiplayer Online Role Playing Game, a type of Virtual World in which players adopt amazing characters to explore fantasy worlds. See MUVE. Often shortened to **MMOG** (see previous entry). See Wikipedia: http://en.wikipedia.org/wiki/MMORPG

Mobile Assisted Language Learning (MALL): See Section 5, Module 2.3, for further information on MALL.

Moblog: A contraction of *mobile* and *blog*. A Blog featuring posts sent mainly by mobile phone (cellphone) or PDA. Moblogs are often set up to enable people to post messages and photographs on the Web while they are travelling. See http://moblog.net/home/

Modem: Short for modulator/demodulator. A device which converts computer data to a signal that can be transmitted over a standard telephone line. It can also reconvert a signal coming into a computer via a telephone line so that it can be understood by the computer. Modems are used to connect computers with the Internet. See Section 1.3.2, Module 1.2 for further information and an illustration of a modem.

Modern Language Aptitude Testing (MLAT): A type of testing that aims to predict how well an individual can learn a foreign language in a given amount of time and under given conditions. See Section 6, Module 4.1, headed *Modern Language Aptitude Testing (MLAT).*

Monitor: The screen on which output from a computer is displayed. Also referred to as Display Screen. See Section 1.1.2, Module 1.2 for further information and illustrations of different types of display screens.

MOO: MOO stands for *Multi-User-Domain Object Oriented* and derives from the earlier MUD. A MOO is an object-oriented database housed on a remote server. Users from around the world can log

into a MOO to communicate with other MOO users or players, either *synchronously* (i.e. in real time) or *asynchronously*, and build their own landscape and objects within the MOO. MOOs are beginning to play a role in language learning. (See Asynchronous and Synchronous). See Adventure Game and MUVE, a Virtual World which can be considered a further development of the MOO concept. See Section 14.2, Module 1.5 under the heading *Chat rooms, MUDs, MOOs and MUVEs*.

Moodle: A Virtual Learning Environment (VLE), also described as a Course Management System (CMS). The Moodle website is at http://moodle.org. Moodle is Open Source software, which means you are free to download it, use it, modify it and even distribute it. Moodle has its own Moodle for Language Teaching Community: http://moodle.org/course/view.php?id=31

Motherboard: The main electronic circuit board of a microcomputer, to which other circuit boards (also known as *cards*) can be connected in order to fulfil special functions, e.g. a Sound Card or Video Card. Typically, the motherboard contains the BIOS, CPU, RAM, ROM and all the controllers required to control standard peripheral devices, such as the Display Screen, Keyboard and disc drives.

Mouse: A *pointing device* that is used by moving it around on your desk and pressing (clicking) a button. Most mice have two buttons (left and right) but some have three. Apple Mac computers use a mouse with just one button. Moving the mouse causes a pointer or Cursor to move around the the screen, and clicking a mouse button once or twice when the pointer is hovering over an icon or word activates a command, e.g. starts a computer program or initiates an action inside another program such as *Microsoft Word*. A mouse is used with computers that use a Graphical User Interface (GUI). See Pointing Device. See Section 1.1.4, Module 1.2, which contains an illustration of a mouse.

MOV: The format for storing and playing back audio and video files using the QuickTime media player on the Apple Macintosh, but also available for the multimedia PC. Economical in terms of storage space. See ASF, AVI, MPEG, RM, which are alternative video file formats. See Section 2.2.3.4, Module 2.2, headed *Video editing software*.

MP3: Abbreviation for MPEG Layer 3: see MPEG. MP3 is a file format for storing high-quality audio files that can be played back on computers and portable *media players* such as the iPod. MP3 has the advantage of taking up far less storage space than the WAV format without loss of quality. See also WMA, which is and alternative audio file format. See Media Player. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*. See MP4.

MP4: Abbreviation for the MPEG-4 file format. There are two basic types of MP4: **MP4 AAC (Advanced Audio Coding)** and **MP4 AVC (Advanced Video Coding)**. The MP4 AAC file format is used to store audio files in a more manageable size without affecting the quality. MP4 AAC's best known use is as the default audio format of Apple's **iPhone**, **iPod** and **iTunes Media Player**: http://www.apple.com/itunes/. The MP4 AVC file format is used to store video files in a more manageable size wihout affecting the quality. It is also increasingly being used for storing video on iPods and similar portable devices. See MPEG.

MPC: Abbreviation for Multimedia Personal Computer.

MPEG or **MPG:** Abbreviation for Motion Picture Expert Group. Pronounced "Empeg". A standard file format for storing movies in digital format and high-quality audio files in a variation known as MP3. Video files stored MPEG format can be recognised by the Extension **.mpg** or **.mpeg**. MP3 audio files can be recognised by the Extension **.mp3**. A newer file format is MP4. MP4 files that can be recognised by the Extension **.mp4**. See ASF, AVI, MOV, RM, which are alternative video file formats. See Section 2.2.3.4, Module 2.2, headed *Video editing software*. See http://www.mpeg.org, a reference site for MPEG, with explanations of different MPEG formats and links to sources of media players.

MPG: A contracted form of MPEG.

MS DOS: Abbreviation for Microsoft Disc Operating System. An *operating system* for the personal computer, written by Microsoft Corporation, but now superseded by *Microsoft Windows*. MS DOS is a character-based system, whereby the user has to type commands at a prompt. See Character User Interface, Operating System, Windows.

MT: Abbreviation for Machine Translation.

MUD: MUD is an abbreviation for *Multi User Domain* or *Multi User Dungeon*. A MUD is a type of real-time Web environment in which users not only email one another but also move around and manipulate objects in an imaginary world. MUDs were originally developed as role-playing adventure games to be engaged in across computer networks but they have developed into a facility for collaboration and education, including language learning. See Adventure Game and MOO. See also MUVE, a Virtual World which can be considered a further development of the MOO concept. See Section 14.2, Module 1.5 under the heading *Chat rooms, MUDs, MOOs and MUVEs*.

Multimedia: The integration of two or more types of information (text, images, audio, video, animation, etc.) in a single application. See Hypermedia, Media. See Module 2.2, *Introduction to multimedia CALL*.

Multimedia Personal Computer (MPC): An enhanced Personal Computer that is able to play sound and video and allows the user to make sound and video recordings. MPCs are virtually a standard nowadays. See Section 1.2 Module 1.2 for further information on the MPC. See also Module 2.2, *Introduction to multimedia CALL*.

Multiple Choice Exercise: See Module 2.5, *Introduction to CALL authoring programs*, See Section 5.1, Module 3.2, headed *Multiple-choice exercises*.

Multitasking: The execution of more than one program, apparently at the same time, on a computer. In reality, however, the computer rapidly switches its attention from one program to another, thus dividing its time. *Multitasking* makes it possible, for example, to print one word-processed document while working on another. Another form of multitasking allows you to open several different *windows* in which different programs can be run, but only one window is the *active window*. See Window and Windows.

Munge: The act of disguising your email address so it cannot be deciphered or cannot easily be deciphered by a Spammer. Normally used as a verb, "to munge". From MUNG: Mangle Until No Good.

MUVE: An abbreviation for Multi User Virtual Environment, also known as a Virtual World. This is a a further development of the MUD concept. Second Life is an example of a MUVE that allows undreds of simultaneous users to interact in a virtual world in which they each adopt a chosen character or Avatar. See MMORPG. See Section 14.2, Module 1.5 under the heading *Chat rooms, MUDs, MOOs and MUVEs*. MUVEs are closely associated with Web 2.0 applications

---

N

Name Server or **Nameserver:** Also known in full as Domain Name Server. A special type of Internet computer which converts a website's *domain name* into a unique numerical *IP Address* that identifies the

computer where the website is stored. When you try to connect to a website with a domain name such as **hull.ac.uk** (University of Hull), a request is first made to a *name server* to resolve this name into an *IP address*, which is then used to locate the computer where the website is stored and to establish a connection with it. See Domain Name, Host Name, IP Address.

Narrowband: A term used to describe a slow-speed connection to the Internet, normally via a Modem and less than or equal to 64 Kbps. Contrasted with Broadband. See Kbps.

National Grid for Learning (NGfL): An initiative by the UK Government's Department for Education and Employment..The aims of this initiative were set out in a consultation paper, *Connecting the Learning Society*, October 1997. The *NGfL* was designated as a provider of information and resources for all schools, colleges and universities in the UK, but it developed into a rather cumbersome website that users found difficult to Navigate. The NGfL website closed in April 2006.

Natural Language Processing (NLP): A general term used to describe the use of computers to process information expressed in natural (i.e. human) languages. See Human Language Technologies. See Module 3.5, *Human Language Technologies (HLT)*.

Navigation: This describes the process of finding your way, i.e. *navigating*, around a series of menus within a computer program or finding your way around the World Wide Web by means of a Browser.

Nerd: A colloquial term describing a computer boffin. Unlike other terms such as Anorak, Geek, Techie and Trainspotter, the term *nerd* has acquired mainly positive connotations in recent times, as in the 1996 TV series "Triumph of the Nerds: the Rise of Accidental Empires", which tells the history of the rise of the computer boffins such as Microsoft's Bill Gates and Apple's Steve Jobs, both of whom are described as *nerds*: see http://www.pbs.org/nerds/

Netbook: A netbook is a small, lightweight computer, smaller than a Laptop Computer, with a long battery life and ideal for travelling. Netbook computers have built in Wifi and are optimized for browsing the Web and Email.

Netiquette: Etiquette on the Internet. An code of behaviour for people communicating by email via the Internet. There are several useful publications relating to *netiquette*. See Section 14.1.4, Module 1.5, headed *Netiquette*.

Netizen: Derived from the term citizen, referring to a citizen of the Internet, or someone who uses networked resources. The term connotes civic responsibility and participation.

Netscape: An early Web Browser, which first appeared in 1994, shortly after the World Wide Web went public.

Network: A group of computers connected together, either by physical connections such as cables, or by wireless connnections (see Wifi). The Internet is a worldwide network of computers to which virtually any computer can be connected. See Intranet, LAN, MAN, WAN, World Wide Web. See Section 3, Module 1.2.

Newsgroup: A type of public online *forum* which anyone can read and contribute to. All users of a *newsgroup* can post messages, and every user can read all the messages that have been posted. Many newsgroups are distributed worldwide by the Usenet system: http://www.usenet.org.uk. Newsgroups have now been superseded to a large extent by blogs and electronic discussion lists. See Blog, Discussion List, Forum.

NGfL: Abbreviation for National Grid for Learning.

Ning: A platform that enables you to create your own Social Network. A Ning enables anyone to create a network focusing on a particular topic or catering for a specific membership, for example a group of teachers working together on an educational project. Typically, a Ning includes blogs, announcements of events, a forum, live chat and facilities for uploading photographs and video clips. Examples of educational Nings include EUROCALL/CALICO Virtual Worlds Special Interest Group, AVALON and NIFLAR: see Section 14.2.1 (iii), Module 1.5. The word "Ning" derives from the Chinese word for "peace": http://www.ning.com/. Section 12.4, Module 1.5, headed *Social networking*.

NLP: Abbreviation for Natural Language Processing.

Notebook Computer: A type of Laptop Computer, but lighter and thinner - and therefore easy to carry around. See Netbook, an even smaller and lighter computer.

O

OCR: Abbreviation for Optical Character Recognition.

Offline: Not connected to a computer or network of computers. Often used in the sense of working with software stored on a stand-alone computer. For example, if you use a package such as *Microsoft Word* you are working with *offline* software, and if you use learning materials stored on CD-ROM you are also working *offline*. Constrasted with Online. See Section 1, Module 2.3, headed *What is the difference between online and offline?*

OILS: Abbreviation for Open and Integrated Learning System.

Online: Connected to a computer or network of computers, especially the World Wide Web. Often used in the sense of working with software stored at a remote location. For example, if you use learning materials stored at a website you are working *online*. Constrasted with Offline. See Section 1, Module 2.3, headed *What is the difference between online and offline?*

Online Learning: The use of the Internet to follow a course that usually results in the award of a diploma or certificate. Closely associated with the concept of E-learning, which often - but not necessarily - implies some form of *online learning*, i.e. using Email and the World Wide Web. E-learning, i.e. electronic learning, is a broader term, embracing the use of ICT in general in teaching and learning as well as online learning. See also Blended Learning, Distance Learning.

Open and Integrated Learning System (OILS): A variant of Integrated Learning System. The word *Open* adds an extra dimension, indicating that the user can access the system freely and leave it at any time.

Open Source: Used to describe Software that is provided free of charge, along with the original Source Code used to create it so that anyone modify it to improve it and work in ways that reflect their own preferences. Moodle is a typical example of open source software.

Operating System (OS): A suite of programs that starts up when you switch on your computer and manages and runs all the other programs installed on the computer. *Windows* is the *operating system* developed and produced by the Microsoft Corporation. See *Windows*.

Optical Character Recognition (OCR): OCR software is used conjunction with a *scanner* to convert printed text into digital format. For example, a page from a printed book can be placed on the scanner and the OCR software will be used by the scanner to detect the individual words from which it is made up and then convert them into a form that can be stored on a computer, e.g. a *Word* document. A great time-saver! See Scanner.

Optical Disc: The generic name for a type of computer disc which uses a laser to read and write data. See CD-ROM, Digital Video Disc, Videodisc, all of which are *optical discs*.

OS: Abbreviation for Operating System.

Outlook: A popular Email program, part of the *Microsoft Office* suite of programs.

Output: Anything that comes out of a computer after being processed. Also used as a verb. See Input.

P

Package: Loosely speaking, a program or suite of programs such as *Microsoft Office*, but often has the sense of a set of programs designed to be used by people who wish to use the package in different ways.

Partial Matching: In CALL, a form of matching in which a character-by-character comparison of the learner's input at the keyboard is made with what is stored in the computer. This enables errors to be pinpointed with greater accuracy. See Fuzzy Matching, Matching. See Section 1.2, Module 1.4, headed *Interactivity*.

Pathname: The pathname of a File on a computer specifies exactly its position on disc, and consists of at least three parts: (i) drive letter, (ii) directory, and (iii) filename, e.g. **c:\windows\user.exe**. One or more subdirectories may also be included in a pathname, e.g. **c:\windows\system\user.exe**. See Directory, Folder.

PC: Abbreviation for Personal Computer.

PCB: Abbreviation for Printed Circuit Board.

PDA: Abbreviation for Personal Digital Assistant. A handheld device that combines computing, audio communication, browsing and networking features and serves as an organiser for personal information.

PDF: An abbreviation for Portable Document Format. This is a file type created by Adobe that allows fully formatted, documents to be transmitted across the Internet and viewed on any computer that has Adobe *Acrobat Reader* software - a proprietary software viewing program available for free at the Adobe website: http://www.adobe.com/uk/. Businesses and educational institutions often use PDF-formatted files to display the original look of their brochures or for publishing a complete magazine in electronic format. Using the full Adobe *Acrobat* software package, it is possible to create a high-quality piece of artwork or a brochure which preserves the look of the original, complete with fonts, colours, images, and formatting. Documents in PDF format can be published on the Web without having to be converted into HTML. PDF files can be distributed via *email*, *CD-ROMs* and *local area networks*. They can also contain *hyperlinks*, QuickTime movies and sound clips. See Hyperlink.

Pen Drive: An alternative term for Flash Drive.

Pentium: A generic name for a faster type of Personal Computer that superseded the earlier 486 range of slower computers. Essential for running modern multimedia software and accessing the Internet.

Peripheral Device: Often abbreviated to *peripheral*. Virtually any device which can be connected to a computer. This term includes modems, printers, scanners, interactive whiteboards, etc. See Interactive Whiteboard, Modem, Printer, Scanner. See Section 1.3, Module 1.2 for further information on peripheral devices.

Personal Computer: The generic term for IBM-compatible microcomputers. See Microcomputer, Multimedia Personal Computer.

Personal Digital Assistant: A handheld device that combines computing, audio communication, browsing and networking features and serves as an organiser for personal information.Usually abbreviated to **PDA**.

Personal Learning Environment (PLE): A PLE, unlike a Virtual Learning Environment (VLE), is an approach to using new technologies that enables learners to develop and control their own learning environment using a range of Social Networking tools. It may also be described as a **Personal Learning Network (PLN)**. A PLE or PLN does not preclude the presence of teachers, who may play the role of providing support for learners in setting their own goals and targets and helping them manage the content and process of learning. See the **ICT4LT blog** under the topic headed The VLE is dead. Long live the PLE! (July 2009). See also Section 12.4, Module 1.5, headed *Social networking*.

Pixel: A contraction of *picture element*. What you see on a computer Display Screen is made up of thousands of coloured *pixels* or small dots, which can be set according to the user's choice to produce either low-resolution output, medium-resolution output or high-resolution output, the usual combinations of pixels across each line of the screen (horizontal pixels) and down each line of the screen (vertical pixels) being 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024. Thus, the more pixels on the screen the higher the *resolution* (i.e. producing a finer, sharper image) and the greater the variety of colours that can be displayed. See Bitmap, Resolution, Vektor Graphic.

Platform: Often used as an alternative term for a computer system, including both the hardware and the software. Essentially this term describes something that is used to build something else. The term *platform-independent* - used to describe software - means that the software can be run on any computer. The term *learning platform* refers to the technology used to provide a single online location at which course resources can be made available to learners These resources can include course materials, communications tools such as Email and Conferencing, and a storage area for learners' work. The term Virtual Learning Environment (VLE) may also be used synonymously with the term Learning Platform.

PLE: Abbreviation for Personal Learning Environment.

PLN: Abbreviation for Personal Learning Network. See Personal Learning Environment.

Plug-in: An extra piece of software that a Web Browser needs to run certain elements of a Web page. Web pages incorporating multimedia files often need to use Flash Player, QuickTime, RealPlayer or Shockwave Player as *plug-ins*. Sites that require a plug-in usually provide a link to a site from which the essential plug-in can be downloaded. See Section 6.8, Module 1.5, headed *Do you need plug-ins?*

Podcast: A *podcast* is a broadcast digital audio recording, made available via the Web in a way that allows the recording to be downloaded for listening at the user's convenience. Cf. Vodcast, which is often used to describe a downloadable broadcast digital video recording. Many broadcasting stations now offer podcasts and vodcasts, e.g. the BBC: http://www.bbc.co.uk. The term *podcast* takes its name from a combination of iPod (Apple's portable digital Media Player) and *broadcasting*, but podcasts do

not necessarily require the use of an *iPod* or similar device. Podcasts can simply be downloaded to a computer and played using a standard Media Player program. See Section 3.5.2, Module 2.3, headed *Podcasting*. See RSS (Really Simple Syndication).

Pointing Device: A device which allows the user to control the position of the Cursor on a computer screen by physical manipulation of the device in different directions. See Joystick, Mouse, Trackball, all of which are pointing devices.

Pop-up: A small Window that appears within a program or over the top of a Web page to deliver additional information. Pop-ups on the Web can be annoying as they are often used for unwanted advertising material.

Portal: A Web page, website or service that acts as link or entrance to other websites on the Internet. Typically, a portal includes an annotated catalogue of websites and may also include a Search Engine, Email facilities, a Forum and other services. Also known as a Gateway.

Postscript Printer: A type of Printer which is compatible with the Postscript language, a Page Description Language (PDL) favoured by the printing profession for the production of high-quality printed publications..

Powered Microphone: See Condenser Microphone. See Section 1.2.4, Module 1.2 for further information on microphones.

PowerPoint: The name of a Presentation Program forming part of the Microsoft Office suite of programs. See Section 7, Module 1.3, headed *Using PowerPoint*, and Section 4, Module 1.4, headed *Whole-class teaching and interactive whiteboards*.

PPM: Abbreviation for Pages Per Minute. A measure of the output speed of printers.

PPP: Abbreviation for Presentation Practice Production.

Presentation Practice Production (PPP): A long-established approach to language teaching, consisting of three main phases: (i) the **presentation** phase, in which the teacher presents new language (e.g. vocabulary and grammar) to the students; (ii) the **practice** phase, in which the students demonstrate that they understand how to use the new language correctly (e.g. through controlled oral or written activities) with feedback from the teacher; (iii) the **production** phase, in which the students produce new utterances using what they have learnt.

Presentation Program / Presentation Software: Used to describe software such as PowerPoint, part of the Microsoft Office suite of programs. *Presentation Software* is used in conjunction with a Data Projector and a wall screen or Interactive Whiteboard in order to display a series of slides relating to a business presentation, a lesson or lecture. SeeSection 7, Module 1.3, headed *Using PowerPoint*, and Section 4, Module 1.4, headed *Whole-class teaching and interactive whiteboards*.

Printed Circuit Board (PCB): A thin ceramic plate on which electronic components are fixed by solder and connected via metal strips. PCs contain several PCBs, of which the most important is the Motherboard.

Printer: More or less self-explanatory. An external device attached to a computer for device for producing printed output or Hardcopy. See Dot Matrix Printer, Ink Jet Printer, Laser Printer, Postscript Printer. See Section 1.3.1, Module 1.2 for an illustration of a printer.

Printout: Anything produced on a printer after being processed by a computer program. See Hardcopy.

Processor: See Central Processing Unit (CPU), Microprocessor.

Program: The American spelling is standard in computer jargon, enabling a useful distinction to be made in British English between a *computer program* and a *programme* in the sense of a *programme of study*. A talk with the title "Turning programmes into programs" (or maybe it was the other way round) was presented by a British Council officer at the annual TESOL conference in the USA in 1987 - which puzzled the American audience but made sense to the British participants. See Computer Program.

Programmed Learning: Also referred to as *programmed instruction*. A teaching method involving a pre-constructed sequence of steps and associated feedback, based to a large extent on the behaviourist ideas of B.F. Skinner. The steps in the learning process are usually self-administered and self-paced, the learner being presented with information in small manageable pieces and only progressing to the next piece of information when s/he has successfully demonstrated that the current piece of information has been understood. Early Computer Assisted Instruction (CAI) was based to a large extent on programmed learning.

Programming Language: A formal, structured, English-like language in which computer programs are written. The instructions, known as *code*, are converted into binary machine instructions via a *compiler* or an *interpreter*. C++, Pascal, and BASIC, are examples of popular programming languages. See Compiler, Interpreter. Distinguished from Authoring Package, which enables a non-programmer to write CALL materials. See also Module 2.5, *Introduction to CALL authoring programs*, and Module 3.2, *CALL software design and implementation*.

Projector: See Data Projector.

Protocol: In Internet terminology *protocol* usually refers to a set of rules that define an exact format for communication between systems. For example the *HTTP* protocol defines the format for communication between Web *browsers* and Web *servers*. See also Browser, FTP, HTTP, Server.

Public Domain: Material that is copyright free, whose copyright has expired, or which cannot be copyrighted. Many people think that because something is on the Web it must be in the public domain. This is not so. A work is in the public domain only if it is explicitly stated to be so. You may be lucky to find material on the Web that is stated to be copyright-free or in the public domain, and then the terms of using it are much more liberal. Look for a clear statement saying "The materials on this website are in the public domain" or something similar. If you wish to use materials from someone else's website, check the terms of use, which you will usually find at the bottom of the Web page or via a clickable link at the bottom of the page. See Copyright.

PVP: Abbreviation for Portable Video Player. A hand-held device for storing and playing back movies.

Q

QR Code: Short for Quick Response Code. A QR Code is a two-dimensional barcode that can store a variety of different types of information, e.g. text, a website URL, a telephone number, an SMS message, an email address, an email message, contact details, information about an event, a Google Maps location, your social media profile (Facebook, Twitter, etc), an iTunes link, a YouTube link, etc. QR Codes can be read by barcode readers and Smartphone cameras. Instead of writing down the information relating to a website URL or map location etc, you just take a photo of the QR Code. QR Codes can be used in education to send students direct to a wesbite or they may be used as clues in a Webquest or to contain the answers to a test, which the student reveals having completed the test. The image on the right is the QR Code for the ICT4LT website. It was generated with the aid of the QR Stuff website: http://www.qrstuff.com/. See the ICT4LT blog, QR codes in education: Why all the fuss? (July 2011).	

QuickTime: Software used for viewing movies and listening to audio recordings: http://www.apple.com/quicktime/. **QuickTime** is often needed as a Plug-in, when you are accessing audio or video materials on the Web. See Section 6.8, Module 1.5, headed *Do you need plug-ins?*

R

RAM: An acronym for Random Access Memory, referring to the dynamic memory in the silicon chips in a computer. RAM chips are the memory chips used as the temporary working area for running and developing programs. Data in RAM can be read and written to (i.e. changed) in microseconds, as opposed to the much slower data access times for discs, but RAM's contents disappear the moment the computer is switched off. The more RAM a computer has, the more flexibility the user has. RAM used to be measured in *kilobytes (KB)* but now it is usually expressed in *megabytes* (*MB*) and even *gigabytes (GB)*. The amount of RAM a PC has could crudely be thought of as its "mental capacity". See Gigabyte, Kilobyte, Megabyte. See ROM. See Section 1.1.1.2, Module 1.2 on RAM on ROM.

Random Access Memory (RAM): See RAM.

RGB: Abbreviation for Red Green Blue. The name given to the Additive Colour system that is used to display colours on computer screens, where red, green and blue light of varying intensities is combined to produce millions of other colours. See CMY, Cathode Ray Tube, Substractive Colour.

Read Only Memory (ROM): See ROM.

RealPlayer: A Media Player used for listening to audio and video clips. See Plug-in. See also Section 6.8, Module 1.5, headed *Do you need plug-ins?*

Relative Link: A term used mainly by Web authors. In an HTML document a *relative link* indicates the location of a file relative to the document, whereas an Absolute Link specifies the full URL. For example, the relative link of this Glossary to the ICT4LT homepage is **../en/en_glossary.htm** whereas it's Absolute Link is http://www.ict4lt.org/en/en_glossary.htm. It's generally better for Web authors to

link to files within the same website using relative links rather than absolute links, as this makes site and file maintenance easier. See Section 5.4, Module 3.3, headed *Shared resources*.

Repurpose: To reuse content in a different way from that which was originally intended, e.g. materials for training French native skills in business management might be *repurposed* for teaching non-native speakers advanced level French. An example of repurposing is described here: Davies G. (1989) "Repurposing a videodisc for French language teaching". In Kécskés I. & Agócs L. (eds.) *New tendencies in CALL*, Debrecen, Hungary: Kossuth University. Available as a *Word* document: Debrecen.doc

Response Analysis: A feature of CALL programs whereby the computer attempts to diagnose the nature of errors the learner makes and to branch to remedial exercises. This approach to CALL appears to have fallen out of fashion in recent years. See Error Diagnosis, an alternative term with a similar meaning.

Resolution: A measure of the number of *pixels* or small dots displayed on a computer *display screen*, *printer* or *scanner*. One normally talks in terms of the quality of resolution, using the expression *low-resolution*, *medium-resolution* and *high-resolution*. The resolution of a computer *display screen* is normally expressed as two numbers representing the horizontal and vertical resolution, i.e. dots across each line of the screen and down each line of the screen: e.g. 640 x 480, 1024 x 768, etc. The resolution of a Printer is normally referred to by the number of *dots per inch (dpi)* - i.e. square inch. See Bitmap, Colour Depth, Display Screen, dpi, Pixel, Scanner, Vektor Graphic.

Reusable Learning Object (RLO): A self-contained piece of learning material with an associated learning objective and which is capable of being reused in a variety of applications. See Learning Object.

Rip: To extract or copy data from one format to another. The most common example is found in the phrase "to rip a CD", which means to copy audio tracks from an audio CD and save them to hard disc as WAV, MP3 or other audio files, which can then be played, edited or written back to another CD.

RLO: Abbreviation for Reusable Learning Object.

RM: A file format used for playing *streaming audio* and *streaming video* using the RealPlayer software. See Streaming. RM format enables content to be delivered as a continuous flow of data with little wait time before playback begins. This means that you do not have to wait for your audio and video files to fully downloaded before starting to view them. See ASF, AVI, MOV, MPEG, which are alternative video file formats. See Media Player. See Section 2.2.3.4, Module 2.2, *Video editing software*.

Robot: See Crawler.

ROM: Acronym for Read Only Memory. ROM chips in a computer contain data and programs as supplied by the manufacturer that can be accessed but not changed, i.e. they are *read-only*. ROM is also used to describe CD-ROMs. Originally CD-ROMs contained data and programs that could not be changed or erased, and new data and programs could not be stored on them, but modern CD-ROM and DVD drives allow certain types of CDs and DVDs to be *written to* as well as *read* - so the term has become a misnomer in this respect. See also RAM and Section 1.1.1 (iii), Module 1.2 on the difference between RAM and ROM.

Root Directory: The topmost directory in the directory hierarchy, from which all other directories are descended. On a PC's hard disc this has the pathname C:\. See Directory.

Router: A hardware device that connects computers to a Network or that connects one network with another network. *Routers* are now available at low prices and can be used for connecting two or more computers together in home networks, so that data can be exchanged between the computers on the network and so that all the computers in the network can access the Internet.

RSS (Really Simple Syndication): *RSS* is a development in Internet technology that enables users to subscribe to websites that change or add content regularly, for example news sites (such as the BBC) and sites containing Blogs, Nings, Podcasts and Wikis. RSS makes use of software that presents new additions to a website as list of subject headings or the first line or two of a news item, with a clickable link to the full article, blog posting or podcast. Thus, instead of the user having to browse websites for new information in which s/he is interested, an update of what is available is made available directly to the user, an *RSS feed* or *news feed.* An application known as an *aggregator* or *feed reader* (e.g. Google Reader) can check RSS-enabled websites and display any updated information that it finds. See Section 12.5, Module 1.5 and Section 3.5.4, Module 2.3 for further information.

RTF: Abbreviation for Rich Text Format, an alternative way of storing a document created with a Word-processor. RTF-formatted files can be moved relatively easily between different computer systems. RTF format is also recommended when transmitting an Attachment by Email as it is much safer than the *Microsoft Word* DOC format, which can harbour *Word* Macro viruses. RTF files preserve most of the formatting contained in DOC-formatted files. See Virus.

RTFM: Abbreviation for Read The Friendly/Fine/Fantastic Manual - but if you do a search via Google you'll find a much ruder interpretation of the abbreviation. Enter **define:RTFM** in Google's search box and you'll see what we mean!

S

Sampling: This term refers to taking the value of a waveform (e.g. a sound wave or video signal) at one instant, and recording the amplitude, or height, of the wave at that instant as a number so that a digital recording can be produced. This is the way in which audio files in digital format are produced. You will probably come across this term when using software for creating or editing sound files. See MP3, Sampling Frequency, WAV, WMA. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*.

Sampling Frequency or **Sampling Rate:** The number of times a waveform is *sampled* per second, usually expressed in *kiloHertz* (kHz). You will probably come across this term when using software for creating or editing sound files. The *sampling frequency* measurement usually ranges from 8kHz (a telephone quality recording) to 48kHz (CD quality recording or higher). The sampling frequency measurement is combined with another measurement, the *bit size* (usually 16 bits nowadays), to determine how much space an audio file consumes on a hard disc as well as how much processing time is required to play it. The higher the figure in kHz the better the quality of recording and how much space the recording occupies. Speech can be recorded adequately at 22.05kHz, but music is better recorded at 44.1kHz or higher. See Hertz, MP3, Sampling, WAV, WMA. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*.

Sans Serif: A type of Font, e.g. Arial, that is characterised by an absence of cross-lines (twiddly bits) on the ends of its letters and symbols. See Serif.

Scanner: A device used to convert hard copy, e.g. a printed page, photograph or photographic negative, into a form that can be stored on a computer. See Section 1.3.3, Module 1.2 for further information and an illustration. See Optical Character Recognition (OCR).

SCORM: Acronym for Shareable Content Object Reference Model. SCORM is a suite of technical standards that enable Web-based learning systems to find, import, share, reuse, and export learning content in a standardised way. Essentially, SCORM is a standard that ensures that when you buy a new piece of software it can easily be incorporated into your existing Web-based learning materials or VLE - which will probably remain a vain hope for the foreseeable future, at least until VLEs become compatible with one another. SCORM-compliance is, however, only essential if you are particularly interested in tracking students' performance. See this Web page created by Philip Dodds: http://adlcommunity.net/mod/resource/view.php?id=458

Screen: See Display Screen, Monitor.

Scroll: To move up and down or from side to side through a document or a Window to view or access all of its contents

Search Engine: A search facility provided at a number of sites on the *World Wide Web*. Search engines enable the user to search the whole of the Web for key words and phrases and to locate related websites. This is a useful facility for locating information. See Section 4, Module 1.5, headed *Search engines: How to find materials on the Web*.

Second Life: One of the fastest growing "virtual worlds" on the Web. See the entry in this Glossary under MUVE and see Section 14.2.1, Module 1.5. The Second Life website is at: http://secondlife.com. See also SLURL.

Semantic Web: The *Semantic Web* is not a new type of Web, but rather an extension of the Web whereby data available in different locations on the Web is linked together in a way that allows the user to search the Web in a more sophisticated way, e.g. by requesting information in forms such as "Tell me where I can find information about 21st-century writers who live within 50 miles of my home town": http://www.w3.org/RDF/FAQ. Listen to Sir Tim Berners-Lee on the BBC **Today** programme, 9 July 2008, talking about the Semantic Web: http://news.bbc.co.uk/today/hi/today/newsid_7496000/7496976.stm

Serif: A type of Font, e.g. Times News Roman, that is characterised by the presence of cross-lines (twiddly bits) on the ends of its letters and symbols. See Sans Serif.

SEN: Abbreviation for Special Educational Needs. See David Ritchie Wilson's website, which has a substantial section on teaching Modern Foreign Languages to SEN children: http://www.specialeducationalneeds.com

SENDA: Abbreviation for the Special Educational Needs and Disability Act (2001), which has a vital role in improving accessiblity for a wide range of computer users with special needs and obliges designers of educational websites "to make reasonable adjustments to ensure that people who are disabled are not put at a substantial disadvantage compared to people who are not disabled." See JISC's website on disability legislation: http://www.jisclegal.ac.uk/disability/accessibility.htm. See Accessibility, Assistive Technology, Text To Speech (TTS).

Server: A computer which provides services to other computers, which are known as *clients*. For example, when you click on a link in a Web page your Browser sends a request to a remote computer, known as a Web Server, that *serves* the requested page to your browser, which then displays it on your computer screen. A Local Area Network (LAN) has a *server* that delivers software to the computers

(also known as workstations) that are connected to it. It is usually the most powerful computer in the network Users connected to a LAN can access their own files remotely and exchange information with the server and other users connected to the network. See Client, Web Server.

Setup Program: A program that enables the user to set up a program or suite of programs on the computer's hard disc. Also known as Install Program or Installation Program.

Shareware: Try before you buy software. A Shareware application can be freely copied and used without payment to the author(s), but you are encouraged to pay a registration fee if you use it regularly. Shareware is often a cut-down copy of the fully-featured application, which can only be obtained by paying the registration fee. See Freeware.

Shockwave Player: Software developed by Adobe that enables Web pages containing interactive multimedia materials to be played on the Web. Such materials may contain games, product demonstrations and online learning applications. See Plug-in. See also Section 6.8, Module 1.5, headed *Do you need plug-ins?*

Silicon Chip: An encased piece of extremely pure silicon on to which electronic circuits are etched. The circuitry of modern computers is based on silicon chips that perform a vast range of different tasks. See Chip, Microchip, Microprocessor.

Simulation: A type of program that simulates a real-life situation, allowing the user to carry out experiments which could have dangerous consequences or which are impractical in a normal learning environment. An early example of a simulation for language language purposes was *Granville*, a program dating back to the 1980s in which the learner was asked to imagine that he/she had won a holiday in Granville, France, and had to survive for a number of days on a limited budget. The border line between simulations and *adventure games* is rather fuzzy. The latter tend to be set in fantasy worlds, whereas the former are more down-to-earth. See Adventure Game, Maze.

SLURL: Second Life URL. A special type of URL that enables you to find a location quickly in Second Life, simply by pasting the SLURL into your Browser. It is assumed that you have already downloaded and installed the Second Life software on your computer.

Smartphone: A *smartphone* is an advanced mobile phone that offers a wide range of appications. In addition to functioning as a mobile phone smartphones can be used as a media player, a camera, a GPS navigation device and a Web browser - and in many other ways. Apple's **iPhone** is a typical example of a smartphone, using a touchscreen for typing and to run applications.

Social Media: Term used to describe a variety of Web 2.0 applications that enable people to share images, audio recordings and video recordings via the Web and to initiate discussions about them. See JISC's **Web2practice** video on **Blip TV**: http://web2practice.jiscinvolve.org/social-media/

Social Networking: A term applied to a type of website where people can seek other people who share their interests, find out what's going on in their areas of interest, and share information one another. See Section 12.4, Module 1.5, headed *Social networking*.

Software: The opposite to Hardware. A generic term describing all kinds of computer programs, applications and operating systems. Software is not tangible, being a set of instructions written in a Programming Language comprising a set of instructions that the computer executes. See Application, Computer Program. See Section 2, Module 1.2.

Sound Card or **Soundcard:** A *card*, i.e. an electronic circuit board, inside a computer that controls output to speakers or headphones and sound input from a Microphone or other source. A sound card is

essential for multimedia applications. Also known as Audio Card. See Section 1.2.2, Module 1.2 for further information on sound cards.

Source Code: The human-readable form of a *computer program*, which is converted into binary computer instructions by a *compiler* or *interpreter*. See Compiler, Computer Program, Interpreter, Machine Code.

Spam: Unsolicited email advertisements, the Internet equivalent of junk mail.A *spammer* is someone who sends out spam. A spammer can email an advertisement to millions of email addresses, newsgroups, and discussion lists at very little cost in terms of money or time. The term *spam* comes from a sketch in the *Monty Python's Flying Circus* TV series. See Adware, Spambot, Spyware. See http://www.camsoftpartners.co.uk/bugs.htm.

Spambot: A *spambot* is a program designed to collect email addresses from the Internet in order to build mailing lists for sending Spam. A spambot is a type of Web Crawler that can gather email addresses from websites, discussion list and forum postings, and chat-room conversations.

Speech Recognition: A branch of Human Language Technologies (HLT) devoted to developing programs and devices that enable computers to recognise, analyse and transcribe human speech. See Automatic Speech Recognition (ASR), Speech Synthesis. See Section 4, Module 3.5, headed *Speech technologies*.

Speech Synthesis: A branch of Human Language Technologies (HLT) devoted to developing programs and devices that enable computers to generate human speech.. See Speech Recognition. See Section 4, Module 3.5, headed *Speech technologies*.

Spellchecker or **Spell-checker:** An electronic dictionary, usually part of a Word-processor, which scans the text entered by the user and highlights any word that it does not recognise. The author of the text is then given the option to correct, ignore or add any highlighted word to the dictionary. Spellcheckers can be set to accommodate different varietes of a language, e.g. British or American English, and many other languages. Many email packages also include a spellchecker. See Section 6.1, Module 1.3, headed *Spellcheckers, grammar checkers and style checkers*.

Spider: See Crawler.

Splog: A contraction of *spam blog*. See Spam and Blog. The splog site creator (splogger) begins by finding a subject that attracts lots of visitors. Then the splogger sets up a blog which plagiarises content from other sites dealing with this subject. Splogs may consist of hundreds of blogs with plagiarised content, containing multiple links to selected websites. This feeds search engines such as Google and Yahoo and creates artificially high search rankings for the linked sites and helps get them indexed. Splogs also contain clickable advertisements. In other words, it's spam in the form of a blog: Visit the splog site, click on a link that it contains or click on an advertisement at the site, and you're making money for the splogger.

Spreadsheet: Essentially an accounting program, e.g. *Excel*, which forms part of the Microsoft Office suite of programs. Such programs might, at first sight, not appear to have a great deal to offer the language teacher, but bear in mind that they can also be used for organising vocab lists and for maintaining students' marks or grades. See Section 4, Module 4.1, headed *Reporting and recording students' progress*.

Spyware is a term that may be used synonymously with *adware* but it implies more sinister motives on the part of the person who has dumped it onto your computer, e.g. with a view to stealing private information such as bank account numbers, credit card numbers, passwords, etc. See Adware, Spam.

See http://www.camsoftpartners.co.uk/bugs.htm, where tools for removing *adware* and *spyware* are described. *Spybot Search & Destroy (Spybot S&D)* is a free program designed to find and remove spyware stored without your knowledge on your computer: http://www.safer-networking.org

Storage Device: Equipment used for accessing and recording (i.e. *storing*) computer programs, texts, images, audio recordings and video recordings, etc in Digital format. Examples of storage devices include CD-ROMs, DVDs, Floppy Discs, Flash Drives. Older storage devices, such as the vinyl gramophone record, audiocassette tape, videocassette tape and 12-inch Videodisc, store information in Analogue format. The term Storage Medium is often used in the same sense as *Storage Device*.

Storage Medium (sing.) / Storage Media (pl.): A *medium* (pl. *media*) which is used to record (i.e. *store*) computer programs, texts, images, audio recordings and video recordings, etc. Examples include CD-ROMs, DVDs and Flash Drives. Often used in the same sense as Storage Device. although, strictly speaking, the *device* is the actual equipment, e.g. a CD-ROM drive, whereas the *medium* is the CD-ROM disc itself.

Streaming: Playing audio or video in real time from a website. In order to play streaming multimedia files you need a specific Plug-in program that links in with your Browser and plays the file as it is transmitted rather than downloading it to your computer first. Streaming requires a Broadband connection to the Internet since multimedia files are not stored on your computer but played in a continuous stream direct from the computer where they are stored. See Section 2.2.3.4, Module 2.2, *Video editing software*.

Subtractive Colour: A term used mainly by graphic designers. *Subtractive colour* is produced by the subtraction of colours from incident light. A tomato appears red in daylight because it absorbs all other colours in white light other than red, which it reflects. See Additive Colour, CMY, RGB.

SVGA: Abbreviation for Super Video Graphics Adaptor. An older type of Video Card or circuit board used to control the output on a computer Display Screen. See also VGA. See Section 1.1.1.4, Module 1.2, under the heading *Graphics card*.

Synchronous: "At the same time". Often used to refer to communication in a Chat Room or via Videoconferencing, where the participants have to be present at their computers at the same time. See Asynchronous, Conferencing. See Section 14, Module 1.5, headed *Computer Mediated Communication (CMC)*.

Sysadmin: A contraction of Systems Administrator, the person responsible for managing a computer system.

T

Tablet Computer: A *tablet computer* is compact portable computer that makes use of a Touchscreen instead of a keyboard for typing and running appklications. Apple's **iPad** is a typical example of a tablet computer.

Tag: *Tagging* has become more common in recent years as a result of the widespread use of Social Media for sharing images, audio recordings, video recordings, website references, etc. *Tags* are labels that briefly describe the what the media or references are all about and help other people find them quickly. Tags are also used in HTML, to define how the onscreen text is rendered by the browser: for

example the tag **ICT4LT** in HTML appears as ICT4LT, with the tag hidden to the person viewing the Web page. See Attribute.

Tandem Learning (Buddy Learning): A form of learning in which two language learners pair up in order to learn each other's language. This may take place face-to-face or via the Internet, including using virtual worlds such as Second Life. See Section 14.9, Module 1.5, headed *Tandem learning (buddy learning)*.

Task Based Learning (TBL): An approach to learning in which the learner acquires knowledge of the subject that is being studied by focusing on a specified task. Task Based Language Learning (TBLL) was originally developed by N.S. Prabhu in 1987 and based on the belief that students learn the target language more effectively when their minds are focused on the task rather than on the language they are using. TBLL often consists of a three-phase process: (i) pre-task - introduction to the topic and task, (ii) execution of the task, (iii) analysis and assessment of what has been learnt. Other models, including more phases, are alos possible. See (i) Prabhu N.S. (1987) *Second language pedagogy*, Oxford: Oxford University Press; (ii) Willis D. & Willis J. (2007) *Doing task-based teaching*, Oxford: Oxford University Press; (iii) See the Wikipedia article on Task Based Language Learning.

TBL: Abbreviation for Task Based Learning. See Task Based Learning.

TBLL: Abbreviation for Task Based Language Learning. See Task Based Learning.

TBT: Abbreviation for Task Based Teaching. See Task Based Learning.

TCP/IP: Abbreviation for Transfer Control Protocol / Internet Protocol. The main data transfer protocol used on the Internet. See Internet, Protocol.

Techie or **Tekkie:** A colloquial term that is used both positively and negatively. When used positively, it is closely allied to Nerd, suggesting someone who is highly skilled in computer technology. When used negatively, it is closely allied to Anorak or Trainspotter, suggesting somone who is interested in computers only for technology's sake rather then what they can be used for. See also Geek.

TELL: Acronym for Technology Enhanced Language Learning. A term which is felt to embrace a wider range of uses of technology in language learning and teaching than the more common term CALL. TELL figured in the name of the journal of CALL Austria, *TELL&CALL* (now defunct), and was also adopted by the TELL Consortium (now defunct), University of Hull. See CALI, CELL. See Section 1.1, Module 1.4, headed *What is CALL?* and Section 2, Module 1.4, headed *History of CALL*.

Telnet: A program which allows you to log in to a remote Host computer and carry out the same commands as if you were using a terminal at the host site.

Text File or **Textfile:** A data file consisting entirely of printable ASCII characters, i.e. plain unformatted text. Text files often have a **.txt** Extension after the filename (e.g. **readme.txt**) and their contents can be viewed using programs such as *Windows Notepad*. The term *text file* is also used to describe files, i.e. texts, created by authoring packages such as *Fun with Texts*, which then *manipulates* the texts into a set of activities for completion by the learner. See ASCII, Binary File. See next entry and see Section 8, Module 1.4, headed *Text manipulation*.

Text Manipulation: Text-manipulation programs have been popular with language teachers since the early 1980s. They consist of a set of activities for the learner, typically consisting of Cloze, gap-fillers, line re-ordering, decoding and total text reconstruction, also known as: Total Cloze. In most text manipulation programs the teacher inputs the text, and the computer then creates the activities - or most of them - automatically. See also Gap-filler. See Section 8, Module 1.4, headed *Text manipulation*.

Text Maze: See Maze.

Text to Speech (TTS): TTS software enables text to be read out loud from a computer screen by a synthetic voice. TTS softtware falls into the category of Assistive Technology, which has a vital role in improving Accessiblity for a wide range of computer users with special needs - which is now governed by legislation in the UK. The Special Educational Needs and Disability Act (SENDA) of 2001 covers educational websites and obliges their designers "to make reasonable adjustments to ensure that people who are disabled are not put at a substantial disadvantage compared to people who are not disabled." See JISC's website on disability legislation: http://www.jisclegal.ac.uk/disability/accessibility.htm. TTS technology is also used in satellite navigation (satnav) devices that are installed in cars, i.e. to give instructions and read out road and street names. See Section 4, Module 3.5, headed *Speech technologies*.

TFT: Abbreviation for Thin Film Transistor. A new technology used in manufacturing computer display screens of the flat panel type, which is replacing the older Cathode Ray Tube type of display screen. In TFT screens each pixel is controlled by one to four transistors. TFT screens produce high-quality resolution and better, brighter colours than LCD screens. TFT screens are sometimes referred to as Active Matrix screens. See Display Screen. See Section 1.1.2, Module 1.2 for further information.

TIFF or **TIF:** Abbreviation for Tag Image File Format. A file format for storing images on a computer. TIFF files can store very high-quality images with millions of colours, but they are very demanding in terms of storage space. See BMP, EPS, GIF, JPEG/JPG. See also Section 2.2.3., Module 2.2, *Introduction to multimedia CALL*.

TM: Abbreviation for Translation Memory.

Toolbar: A *toolbar* is a type of Menu Bar, normally located at the top of a computer screen, that contains *icons* for the most commonly-used commands in an application, e.g. in a word-processor or Browser. Typically, a toolbar appears under the Main Menu Bar, which normally consists of set of names of drop-down menus. See Icon.

Total Cloze: An activity in which a complete text is reduced to sets of blanks and which the learner has to reconstruct, either from memory or by using a variety of different strategies. *Total Cloze* dates back to the popular **Storyboard** program by John Higgins and figures in numerous CALL programs. See Cloze Procedure. See Section 8.3, Module 1.4, headed *Total text reconstruction: total Cloze*.

Touchscreen: A Display Screen which enables a computer to react to the touch of a finger. Touchscreens are commonly used in devices such as Smartphones and Tablet Computers.

Trackball or **Tracker Ball:** A Pointing Device. A sort of upside-down Mouse, with the ball facing upwards. The user manipulates the track of the Cursor on the screen by moving the ball with the palm of the hand or fingers.

Trainspotter: A colloquial term that is often used to describe someone who is fascinated by the technology of computers but not particularly interested in their applications. A synonym is Anorak. Both terms are closely allied to Geek, Nerd and Techie - which have slightly different connotations.

Translation Memory (TM): Used to describe a form of Machine Assisted Translation (MAT), which is based on matching texts to be translated with a large database of source texts and translations that have already been completed. See Section 3, Module 3.5, headed *Machine Translation*.

Trojan: Trojans are programs - usually malicious - that install themselves or run surreptitiously on a victim's machine. They do not install or run automatically but may entice users into installing another program. e.g. a game, that actually installs a hostile piece of software and causes considerable damage to

your computer. The name derives from Trojan Horse, the hollow wooden horse in which, according to legend, Greeks hid and gained entrance to Troy, later opening the gates to their army. See Virus, Worm.

Troll: A *troll* is someone who intentionally posts derogatory or provocative messages in an online community such as a Discussion List or Forum or Blog to bait other users into responding. See Flame, a term which may be used to describe the language used by trolls. See Section 14.1.4, Module 1.5, headed *Netiquette*.

TTS: Abbreviation for Text To Speech.

Twitter: A Microblogging facility that allows users to post very short texts (maximum 140 characters) containing snippets of information about what they are doing at a given moment, news items, links to websites or comments on events, e.g. conferences and courses.

Typeface: See Font.

U

Unicode: The Unicode Worldwide Character Standard is a character coding system designed to support the interchange, processing, and display of the written texts of the diverse languages of the modern world. In addition, it supports classical and historical texts of many written languages: http://www.unicode.org. See ASCII and ANSI. Section 5, Module 1.3, headed *Typing foreign characters*.

Uninstall: A verb used to describe the process of removing an unwanted application from your computer's hard disc. See Install, Installation Program, Uninstall Program.

Uninstall Program: Basically what it says: a program for removing (*uninstalling*) an unwanted application from your computer's hard disc. Install, Installation Program, Uninstall.

Universal Serial Bus (USB): A means of connecting a wide range of devices, e.g. Digital Cameras, Camcorders, iPods, mobile phones, Scanners and Printers, via a cable to a computer. *USB ports*, to which the cables are connected, are found on all modern computers A USB Port takes the form of a socket into which a plug at one end of the cable can be inserted. The plug at the other end varies according to the device that you are using. USB ports can also deliver power to devices that need it, so that separate power cables are not necessary.

Unix: An Operating System widely used on large computer systems in corporations and universities, on which many *Web servers* are hosted. A PC version of *Unix*, called *Linux*, is becoming increasingly popular as an alternative to *Windows*. See Web Server.

Upload: To transfer a copy of a computer program, a text file, an image file, a sound file or a video file from one computer to another computer. This term can also be used to describe the process of: (i) transferring a photograph from a digital camera to a computer, (ii) transferring a sound recording from a digital sound recorder to a computer, and (iii) transferring a video recording from a Camcorder or Digital Camera to a computer. See Download, which has the opposite meaning.

URL: Abbreviation for Uniform Resource Locator. Also known as a Web Address. A URL contains the location of a resource on the Internet. A URL specifies the address of the computer where the resource is located, which may be the homepage of a website, e.g. http://www.ict4lt.org, or a sub-page, e.g.

http://www.ict4lt.org/en/en_mod2-1.htm. The **http://** prefix can usually be omitted from a URL when it is entered in a Browser. See also SLURL and Website.

USB: Abbreviation for Universal Serial Bus.

User-friendly: Mainly used to describe Software. Software that is easy to use and offers guidance if the user does silly things is described as user-friendly. This term may also be applied to certain types of Hardware.

User Interface: See Interface.

V

VDU: Abbreviation for Visual Display Unit.

Vector Graphic: A method of creating graphic images on a computer by telling it to draw lines in particular positions. An advantage of a *vector graphic* is that it can be enlarged or reduced in size without loss of sharpness or distortion. Most modern image creation and edtiting packages can save images in vector graphic format. Vector graphics can be contrasted with *bit-mapped graphics*, which are made of a fixed number of pixels (small dots), and therefore sharpness may be lost when the image is resized. See Bitmap, Pixel.

VGA: Abbreviation for Video Graphics Adaptor. An older type of Video Card or circuit board used to control the output on a computer Display Screen. VGA cards were superseded by SVGA cards. See Section 1.1.1.4, Module 1.2, under the heading *Graphics card*.

Video Card: An electronic circuit board inside a computer, which controls the display on the Monitor, i.e. the computer screen. Video cards are usually add-on cards inserted into expansion slots, although sometimes video circuitry is incorporated into the Motherboard. Usually referred to as a *graphics card* these days. See Section 1.1.1.3, Module 1.2, under the heading *Graphics card*.

Videoconferencing or **Video Conferencing:** A computer-based communications system that allows a group of computer users at different locations to conduct a "virtual conference" in which the participants can see and hear one another as if they were in the same room participating in a real conference. See Section 14.1.3, Module 1.5, headed *Videoconferencing: a synchronous communications medium*. See Audioconferencing, Conferencing, Webcam.

Videodisc: A technically obsolete Storage Medium, an Optical Disc, 12 inches in diameter, used mainly to store still images or video clips. Now replaced by CD-ROMs and DVDs. See CD-ROM, Digital Video Disc, Interactive Video (IV).

Videodisc Player: Equipment used for accessing information - usually still images or video clips - stored on videodiscs. Now technically obsolete. See Videodisc.

Video Memory: The dynamic memory available for the computer's Display Screen. The greater the amount of memory, the greater the possible colour depth and resolution of the display. Also known as Video RAM (VRAM). See Colour Depth, RAM, Resolution.

Virtual Learning Environment (VLE): A VLE is a Web-based package designed to help teachers create online courses, together with facilities for teacher-learner communication and peer-to-peer

communication. VLEs can be used to deliver learning materials within an institution or within a local education authority. They may even address a wider constituency, and can even be used on a worldwide basis. VLEs have certain advantages in terms of ease of delivery and management of learning materials. They may, however, be restrictive in that the underlying pedagogy attempts to address a very wide range of subjects, and thus does not necessarily fit in with established practice in language learning and teaching. For this reason some critics argue in favour of a less restrictive Personal Learning Environment (PLE). The two most widely used VLEs in language teaching and learning are Blackboard and Moodle. VLEs may also be referred to as Course Management System (CMS), **Learning Management System (LMS)**, Learning Platform and **Learning Support System (LSS)**. Compare also Managed Learning Environment (MLE). See Blended Learning, Distance Learning, Online Learning. See the following ICT4LT modules:

- Section 7, Module 1.4 under the heading *Distance learning*
- Section 8, Module 1.5 under the heading *Distance learning and the Web: VLEs, MLEs, etc*
- Section 3.1, Module 2.3 under the heading *Web-based CALL*

Virtual Reality: The simulation of an environment by presentation of 3D moving images and associated sounds, giving the user the impression of being able to move around with the simulated environment. Users wear helmets and visors that convey the images and sound and gloves that give them the experience of touching objects. The film *Lawnmower Man* (1992) focused on a character experiencing virtual reality, albeit with negative consequences. Not to be confused with Virtual World, which is a completely different concept.See Wikipedia: http://en.wikipedia.org/wiki/Virtual_reality

Virtual World: A type of online three-dimensional imaginary world or game in which participants and players adopt amazing characters or *avatars* and explore the world, engaging in chat or playing complex games. See Avatar, MMORPG, MUVE. See also Section 14.2, Module 1.5 under the heading *Chat rooms, MUDs, MOOs and MUVEs*. Not to be confused with Virtual Reality, which is a completely different concept.

Virus: If you surf the Web, use email or Storage Media sent to you by other people, you need to be protected against virus invasions. A virus is a nasty program devised by a clever programmer, usually with malicious intent. Viruses can be highly contagious, finding their way onto your computer's hard drive without your being aware of it and causing considerable damage to the software and data stored on it. Viruses can be contracted from files attached to email messages, e.g. Microsoft Word files, or direct from the Web. Be very wary of opening an email attachment of unknown origin, as this is the commonest way of spreading viruses. Software used to protect your computer against the invasion of computer viruses is known as *anti-virus software*. See Firewall, Hacker, Worm. See http://www.camsoftpartners.co.uk/bugs.htm, where ways of combating viruses are described.

Visual Display Unit (VDU): A Monitor connected to larger computers. Usually referred to as VDU. Rather an old-fashioned term nowadays, Display Screen being the current favoured term.

VLE: Abbreviation for Virtual Learning Environment.

Vodcast: A contraction of Video Podcast. A type of Podcast that incoporates video as well as audio.

VoIP: Abbreviation for Voice over Internet Protocol, i.e. audio communication using the Internet instead of telephones. Skype and Ventrilo are examples of VoIP. See Section 14.2.2, Module 1.5, headed *Audioconferencing: a synchronous communications medium*. See also Wikipedia: http://en.wikipedia.org/wiki/VoIP

Volatile Memory: Used to describe the internal main Memory of a computer that loses its contents when power is switched off. RAM is *volatile memory* as the information is stored in memory chips as an electric charge. See RAM, ROM.

VR: Abbreviation for Virtual Reality.

W

W3C: Abbreviation for World Wide Web Consortium. An international non-profit organisation which acts as a resource centre for the World Wide Web, and is active in setting technical standards. The current Director of W3C is Tim Berners-Lee, the inventor of the Web. The W3C website can be found at the URL http://www.w3.org. See World Wide Web.

WAN: Abbreviation for Wide Area Network. A network of computers located at geographically separate sites. See LAN, MAN.

WAP: Abbreviation for Wireless Application Protocol. A system that enables you to browse online services, e.g. relating to information about the weather, traffic conditions, shopping, etc via a special type of mobile phone. WAP is the mobile phone equivalent of the World Wide Web. Newer mobile phones include WAP browser software to allow users access to WAP sites. See also Smartphone.

Warchalking: *Warchalkers* make chalk markings on walls or pavements to indicate that there is an insecure wireless access point nearby. The symbols not only mark the location of the wireless access point but also indicate the network type, name, and bandwidth. The markings are similar to the symbols used by tramps to communicate information to fellow itinerants about the friendliness of a place or its inhabitants. The term derives from the 1983 film *War Games* in which a teenager uses software to dial randomly selected telephone numbers, eventually managing to hack into a military computer and start World War III. People initiated in the ways of warchalking recognise the symbols and then all they need to do is take up a comfortable position with their laptop computer, suitably equipped with a wireless network card, and get online using someone else's bandwidth. See Wifi.

WAV: Short for Waveform Audio Format. A format for storing high-quality audio files. Somewhat hungry in terms of storage space compared to the MP3 and WMA audio file formats. See Media Player. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*.

Web: See World Wide Web.

Web 2.0: Contrary to what many people think, Web 2.0 is not a new version of the World Wide Web. The term arose as the name of a series of conferences, the first of which was held in 2004: http://www.web2summit.com. Essentially, Web 2.0 is an attempt to redefine what the Web is all about and how it is used, for example new Web-Based communities using Blogs, Podcasts, Wikis and Social Networking websites that promote collaboration and sharing between users - in other words, a more *democratic* approach to the use of the Web. In order to achieve this, Web-based applications have to work more like applications on your computer's hard disc, allowing you to use the Web in much the same way as you would use applications such as *Word* or *PowerPoint*. To what extent the concept of Web 2.0 is truly innovative is a matter of debate, as it is broadly in line with the concept of the Web as defined by its inventor, Tim Berners-Lee, way back in 1998. See Section 2.1, Module 1.5, headed *What is Web 2.0?*

Web Address: See URL.

Webcam: A camera connected to a computer that enables it to transmit images and videos to the Internet. For example, *webcams* can be set to transmit a live picture every few minutes from a location to a website, displaying a live view of a landscape, cityscape or interior of a building. Webcams are essential for Videoconferencing. See Section 1.2.6, Module 1.2 for an illustration of a webcam, and see Section 14.1.3, Module 1.5, headed *Videoconferencing: a synchronous communications medium*. Many laptop computers have an integrated webcam - which appears as a small "eye" in the top of the frame of the Display Screen.

WebCT: A Virtual Learning Environment (VLE). Blackboard and *WebCT* announced an agreement to merge in October 2005. Effectively, Blackboard has now taken over *WebCT*.

Weblog: The full form of the term Blog.

Webmail: A facility for creating, sending and and receiving messages via the Internet.*Webmail* offers an alternative to using email software such as such as Outlook or Eudora: see Email. In order to use webmail you have to register with an Internet Service Provider (ISP) and you can then access their email service via your Web Browser. See Section 14, Module 1.5, headed *Computer Mediated Communication (CMC).*

Webquest: A *webquest* is a task-oriented activity in which the learner draws on material from different websites in order to achieve a specific goal. The skills that are required in a webquest mainly involve reading and listening, but there may also be communicative speaking exercises. See Section 7.3.1, Module 1.5, headed *Webquests and scavenger hunts*.

Web Server or **Webserver:** A computer or a software package running on a computer that delivers, i.e. *serves*, Web pages to its *clients*: see Client and Host. Every *Web server* has an IP Address and possibly a Domain Name. For example, if you enter the URL **http://www.ict4lt.org/index.htm** in your Browser, this sends a request to the Server whose domain name is **ict4lt.org**. The server then fetches the page named **index.htm** and sends a copy of it to your browser. Any computer can be turned into a Web server by installing Web server software and connecting the machine to the Internet. By far the most popular Web server software in use worldwide is the Open Source Apache software: http://www.apache.org

Website: An area on the World Wide Web where an organisation or individual stores a collection of pages of material - **Web pages**. The pages are usually interlinked with one another and with other websites. Every website has a unique Web Address or URL. The full URL of the ICT4LT website is http://www.ict4lt.org

Webwhacking: This involves saving entire websites for use offline. It may breach copyright because it involves **copying** the website to a local drive, either a network server or a stand-alone computer's hard drive. See Section 4, General guidelines on copyright.

WELL: Acronym for Web Enhanced Language Learning. The WELL Projectwas co-ordinated by William Haworth, Liverpool John Moores University. It was set up in 1997 with assistance from the higher education Fund for the Development of Teaching and Learning (FDTL) in order to promote wider awareness and more effective use of the World Wide Web in Modern Foreign Languages teaching across higher education in the UK. The funding period came to an end in August 2001 and the website has been closed down.

Whiteboard: See Interactive Whiteboard.

Wide Area Network (WAN): See WAN.

Wifi: Wireless Fidelity, also known as *wireless networking*, a way of transmitting information without cables that is reasonably fast and is often used for laptop computers within a business or a university or school campus instead of a Local Area Network (LAN) that uses cable connections. *Wifi* systems use high frequency radio signals to transmit and receive data over distances of several hundred feet. Many hotels and airports now offer wifi access to people travelling with laptop computers.

Wiki: A website or similar online resource which allows anyone to set up a resource in which content can be created collectively. It's important feature is that it allows anyone who views the wiki to add to or edit the existing content as if they were adding to or editing, for example, someone else's *Word* document. Wiki also refers to the software used to create such a website. The word "wiki" derives from the Hawaiian "wiki-wiki", meaning "quick". **Wikipedia** is the best known example of a wiki. It's a collaboratively written encyclopaedia: http://www.wikipedia.org. There is an article on Computer Assisted Language Learning in Wikipedia, which you can add to or edit yourself: http://en.wikipedia.org/wiki/Computer-assisted_language_learning. It is also possible to set up a personal wiki that cannot be added to or edited by other people, e.g. here is Graham Davies's personal wiki: http://grahamdavies.wikispaces.com. Wikis may also be used for Conferencing: see Section 12, Module 1.5, headed *Discussion lists, blogs, wikis, social networking*.

Wild Card or **Wildcard:** In a question-answer dialogue which aims not to be over-sensitive about spelling, the teacher may decide to allow for aberrations by declaring certain characters "wild". For example, the answer "relitivaty" would match with 'r?l?t?v?t?', the question marks representing wild card characters: i.e. whatever the learner types in place of them is accepted. Conventionally, a question mark is used for a single character and an asterisk for a string of characters. A technique also used in programs that help you cheat at crossword puzzles! *Wildcards* can also be used in search engines such as Google when you are not sure of the spelling of the item you are searching for. See Section 4, Module 1.5, headed *Search engines: How to find materials on the Web*.

Window: An area of a computer screen set aside for a special purpose. Modern computers, such as the Macintosh and most personal computers, divide the screen into discrete sections, known as *windows*, within which different pieces of software can be run at the same time - although not necessarily strictly at the same time, as normally only one window is active: see Multitasking. The user can control the size, shape and positioning of each window. Data, e.g. a piece of text, a picture or numerical data, can be moved or copied and pasted from one window to another. See *Windows*.

Windows: The name of a range of several different Graphical User Interface (GUI) operating systems produced by the Microsoft Corporation. *Windows 3.0* and *Windows 3.1* were the first operating systems of this type, produced by Microsoft, to appear in the early 1990s. The Apple Macintosh computer, however, had been using a GUI (which was not known as *Windows*) from the mid-1980s. *Microsoft Windows* is currently the most widely used GUI for personal computers. It exists in various versions, e.g.Windows 95, 98, ME, NT, 2000 and XP. See MS DOS, Operating System.

Windows Explorer: Microsoft's tool, provided as part of *Windows*, that enables you to inspect and manage *folders* and *files* stored on your computer. *My Computer* is an alternative tool, also provided as part of *Windows*. See File, Folder.

Wireless Fidelity: See Wifi.

Wireless Mouse: A Mouse that does not require a cable connection to a computer, but which operates via infrared or radio signals.

Wizard: Software that guides the user step-by-step through a complex task, such as setting up software on a network or configuring a printer to output data in a special format, e.g. for printing labels from a database program.

WMA: Abbreviation for Windows Media Audio. Microsoft's audio encoding format which offers high-quality output with lower file sizes. See MP3, WAV, which are alternative audio file formats. See Media Player. See Section 2.2.3.3, Module 2.2, headed *Sound recording and editing software*.

Word: A popular word-processing package, produced by Microsoft. See Word-processor.

Word-processor: Probably the most widely used computer Application. Modern word-processors allow the user to create fine-looking documents including images, tables, photographs, and even sound and video recordings if they are to be viewed on screen rather than from the printed page. In many respects they are similar to Desktop Publishing applications. Word-processors normally include a spellchecker, a grammar checker, a style checker and a thesaurus, as well as tools for writing in HTML, the coding language used for producing Web pages.Word-processors have been widely used in teaching and learning foreign languages ever since they first appeared. See Module 1.3, *Using word-processing and presentation software in the Modern Foreign Languages classroom*.

Wordsnake: An exercise in which all the spaces in a sentence have been removed, the learner's task being to put the spaces back into the correct positions in the sentence. See Section 3.1, Module 1.3, headed *Using the space bar: Wordsnake exercises*.

Workstation: A term that is rather loosely used these days. Most people use it in the context of any computer that forms part of a Network. Formerly, this term was applied to a particular type of powerful computer used for scientific and engineering calculations, e.g. the *Sun Workstation*.

WorldCALL: The worldwide umbrella association for CALL. http://www.worldcall.org, which has the aim of helping countries that are currently underserved in the applications of ICT. The First World Conference on CALL was held at the University of Melbourne, Australia, in 1998. The Second World Conference on CALL took place in Banff, Canada, in 2003. The 2008 WorldCALL conference will take place in Japan.

World Wide Web: Usually referred to simply as **the Web**. This is the most powerful and fastest growing Internet service. The World Wide Web was the brainchild of Tim Berners-Lee, who in 1989 invented the HTML coding language that is the basis of the Web. The Web became a public service in 1993. It is a huge collection of resources of information, including learning materials, which is accessed by means of a computer program known as a Browser. The World Wide Web is only part of the Internet, but many people treat both terms as synonyms. See Module 1.5, *Introduction to the Internet*, Module 2.3, *Exploiting World Wide Web resources online and offline*, Module 3.3, *Creating a World Wide Web site*. See also Web 2.0.

Worldwide Web Consortium (W3C): An international non-profit organisation which acts as a resource centre for the World Wide Web, and is active in setting technical standards. The current Director of W3C is Tim Berners-Lee, the inventor of the Web. The W3C website can be found at the URL http://www.w3.org. See World Wide Web.

Worm: A computer worm is a self-replicating hostile computer program, similar to a computer Virus. A virus attaches itself to and becomes part of another program, but a worm is self-contained and does not need to be part of another program to propagate itself. Worms can cause considerable damage to computers. See Trojan.

WORM: Acronym for Write Once Read Many. Now a rather dated term, originally applied to a type of Optical Disc on which information could be written just once and could not be amended or erased.

Write Protect: To protect a Storage Device, File or Folder so that its contents cannot normally by altered or erased. This may be done physically, e.g. by moving a notch on a floppy disc's casing, or - more commonyl these days - through software that designates the device, file or folder as read-only.

WWW: Abbreviation for World Wide Web.

WYSIWYG: Acronym for What You See Is What You Get, dating back to the pre-*Windows* and pre-Mac period, when what you saw on the screen, e.g. in a *Word* document, was not necessarily what appeared on your Printer - something we now take for granted. See Windows.

X

XML: Abbreviation for eXtensible Markup Language. XML is a specification emanating from the World Wide Web Consortium (W3C) that allows Web designers to create their own language for displaying documents on the Web. XML is an extension to the standard language for creating Web pages, HTML, and makes it possible to create websites containing more complex interactivity.

Y

Yahoo: A popular Search Engine. See Section 4, Module 1.5, headed *Search engines: How to find materials on the Web*.

Y2K: Year 2000. See Millennium Bug.

YouTube: A website to which you can upload your own video clips and view video clips uploaded by others: http://www.youtube.com. See Section 2.2.3.6, Module 2.2, headed *Saving and converting streaming media for use offline*.

Z

Zip Disc: A portable type of disc used to store around 100Mb of data. Zip discs have become obsolete since the arrival of smaller and more convenient storage devices with much greater storage capacity, e.g. the increasingly popular Flash Drive or Memory Stick. See Storage Device.

Zip Drive: A type of disc drive that accepts portable *zip discs* (see above). Zip drives themselves are also portable and can be connected to almost any computer. See Zip Disc.

Zip: Used as a verb to describe the process of compacting files or programs in order to cut down the amount of storage space they require by compressing them into one tightly-packed file and thus to make it easier for them them to be transported on floppy discs or transmitted electronically to other locations, e.g. via the Internet. Proprietary programs, such as **WinZip** or **WinRar**, can be used to zip data and files. Zipped files are recognised by the Extension **.zip** or **.rar** (for files created with WinRar) and have to be unzipped before they can be used, again using proprietary programs.

ICT ACRONYM DEFINITIONS

-A-

A/D Analog to Digital
A&T Architecture & Transport (DSL Forum Committee, formerly ATM) A/TT Analog Tie Trunk (TIA-646-B)
AAA Authentication, Authorization and Accounting
AAC Advanced Audio Coding
AACCH Auxiliary Analog Control Channel
AAL ATM Adaptation Layer
AAL(D) Analog PSTN Access Line (Analog PBX Interface, TIA-646-B) AAL5-CU ATM Adaptation Layer 5 Composite User
AAP Alternative Approval Procedures
AASO Advanced Audio Server Override (package) AASS Advanced Audio Server Set (package)
AAU Advanced Audio Package
AAV Authentication Algorithm Version ABAC Aggregate Bearer Admission Control AbC Approval by Correspondence
ABM Aggregate Bearer Measurement ABNF Augmented Backus-Naur Form ABR Average Bit Rate
ABT Adaptive Block Transform
AC Advisory Circular
AC Alternating Current
AC Authentication Center
AC Auto Configuration (DSL Forum) AC Automatic Callback
ACA Adaptive Channel Allocation
ACBO Automatic Cross Band Operation
ACC Analog Control Channel ACCH Associated Control Channel ACD Automatic Call Distribution
ACE Advanced Coding Efficiency ACELP Adaptive CELP
ACF Authentication Control Function
ACG Automatic Code Gapping
ACIL Association of Independent Scientific, Engineering and Testing Firms
ACK Acknowledgment
ACKS Acknowledgments
ACM Address Complete Message
ACOS IEC Advisory Committee on Safety
ACR Absolute Category Rating ACR Alternate Carrier Routing ACR Anonymous Call Rejection
ACRE Authorization and Call Routing Equipment
ACS Automatic Configuration Service
ACSB Amplitude Companded Single Side Band
ACSE Association Control Service Element
ACT Activation
ACTA Administrative Council for Terminal Attachment (T1 and TIA) ACTE Approvals Committee for Terminal Equipment
ACTS Advanced Communications Technology Satellite
AD Administrative Domain
ADA Americans with Disabilities Act
ADAAG ADA Accessibility Guidelines
AD-BES Administrative Back-End Services
ADC Analog to Digital Converter
ADDS Application Data Delivery Service

ADHAG Ad Hoc Authentication Group (TR-45.2) ADI Analog Devices Inc.
ADL ADSL without underlying POTS or ISDN ADL All Digital Loop
ADL Automatic Determination of Location
ADLC Asynchronous Data Link Control
ADLG Automatic Determination of Location and Guidance
ADLNB Association of Designated Laboratories and Notified Bodies (European) ADP Answer Detection Pattern
ADPCM Adaptive Differential PCM ADS Asynchronous Data
ADSI Analog Display Services Interface (Bellcore) ADSL Asymmetric Digital Subscriber Loop (Line)
ADSLF ADSL Forum
ADSL-R Asymmetric Digital Subscriber Loop (Remote)
ADT Asynchronous Data Teleservice
AEC Acoustic Echo Controller
AECE Acoustic Echo Control Equipment
AES Advanced Encryption Standard-Rijndael
AFE Analog Front End
AFNOR Association francaise de normalisation (French Standardization) AG Access Grant
AGC Audiographics Conferencing AGC Automatic Gain Control AGCH Access Grant Channel
AGNI Advisory Group for Network Issues
AHAG Ad Hoc Authentication Group (TR-45) AHES Ad Hoc Emergency Services (TR-45.2) AHG Ad Hoc Group
aHIT! TIPIA merger into IMTC
AHMMG Ad Hoc Microcell/Microsystems Guidelines AHPAI Ad Hoc PCS Air Interface Joint Group
AHSOG Ad Hoc on Self Organization Group
AHWG Ad Hoc Working Group
AI Air Interface
AI Answer Indicator (V.8) AIC Advanced Intra Coding
AIG Administrators Interest Group
AIG Authentication Implementation Guide
AIIM Association for Information and Image Management
AIN Advanced Intelligent Network
AINI ATM Inter Network Interface
AIS Alarm Indication Signal AIV Alternative Inter VLC a.k.a. Also Known As
AL Answer List
AL1 H.223 Adaption Layer 1
AL-PDU Answer List - Protocol Data Unit AL-SDU Answer List - Service Data Unit ALC Automatic Level Control
ALCE Automatic Level Control Equipment ALE Automatic Link Establishment Radios ALF Application Level Framing
ALI Automatic Location Identification ALIT Automatic Line Insulation Test ALT Automatic Link Transfer
ALU Arithmetic Logic Unit AM Amplitude Modulation AM Assignment Message
AMA Adaptive Motion Accuracy
AMA/CDR Automatic Message Accounting/Call Detail Recording
AMD Amendment
AMF Authentication Management Function AMPS Advanced Mobile Phone Service AMR Adaptive MultiRate
AMR-WB Adaptive Multi-Rate Wideband
AN Access Network
AN Access Node
AN Advisory Note
ANAI Access Network Architecture and Interfaces ANATEL Agencia Nacional de Telecomunicacoes (Brazil) ANF Additional Network Feature

ANF-CMN Common Information Additional Network Feature (H.450.12) ANFP Access Network Frequency Plan
ANI Automatic Number Identification
ANOVA Analysis of Variance Procedure
ANS Answer Tone
ANSam Answer Tone, amplitude modulated (V.8) ANSI American National Standards Institute
ANT Access Network Transport (Q1/15) AOC Advice of Change
AOC Advice of Charge
AOC ADSL Overhead Channel
AOC-D Advice Of Charge during a call
AOC-E Advice Of Charge at the End of a call
AOD Audio on Demand AP Advanced Prediction AP Application Protocols
APCM Analog PCM Modem
APCO Associated Public Safety Communications Officers, Inc. APDU Application Protocol Data Unit
APE Application Protocols Entities
APEC Asian Pacific Economic Cooperation
API Application Programming Interface
APIC APCO Project 25 Interface Committee
APLAC Asian Pacific Laboratory Accreditation Cooperation
APON ATM PON
APP Application Marker
APS Asynchronous Protocol Specification
AR Adaptive Reception Control
AR Auto-Regressive
AR Automatic Recall
ARC Adaptive Reception Control ARC Alarm Reporting Control ARCH Access Response Channel
ARDB Administrative Reference DataBase
ARF Audio Resource Function
ARIB Association of Radio Industries and Businesses (accredited standards setting body in Japan) ARJ Admission Reject
ARLP Acoustic Reference Level Plan ARM Application Resource Manager ARQ Automatic Repeat Request ASAP As Soon As Possible
ASCII American Standard Code for Information Interchange
ASE Applications Service Element
ASIC Application Specific Integrated Circuit
ASID Access, Searching and Indexing of Directories
ASL Active Speech Level
ASN Abstract Symbol Notation
ASO Arbitrary Slice Ordering
ASOG Access Service Ordering Guidelines
ASP Application Service Provider
ASR Automatic Speech Recognition
ASTM formerly American Society of Testing and Measurement
ASVD Analog SVD
AT Access and Terminals (ETSI TC) AT Asynchronous Terminal
ATA Analog Terminal and Access Project
ATa Analog Working Group (ETSI TC AT)
AT-A ETSI Access and Terminals Analog Working Group
ATAAB Analog Technical Ad hoc Advisory Board
ATAc ATA's Conventional Technology WG ATAe ATA's Enhanced Technology WG
ATBCB Architectural and Transportation Barriers Compliance Board
ATC Analog Traffic Channel
AT-D ETSI Access and Terminals Digital Working Group

ATd Digital Working Group (TC AT) ATf Features Working Group (TC AT) ATF Administrative Task Force
AT-F ETSI Access and Terminals Features Working Group
ATG Access Transport Group (DSL Forum)
ATIA Australian Telecommunications Industry Association ATIS Alliance for Telecommunications Industry Solutions ATM Asynchronous Transfer Mode
ATMF ATM Forum
ATMOVE Adaptive-Template Movement
ATM-Utopia Universal Test and Operations Physical Layer Interface for ATM ATO Analog Tandem Office (TIA-646-B)
ATS Abstract Test Suite
ATS Assigned Time Slot
ATV Advanced Television AuF Authentication Function AV AudioVisual
AVC Audio Visual Coding
AVC Audiovisual Conferencing
AVD Alternating Voice Data
AVI Interactive Audiovisual Services AVIS Audio Visual Information Systems AVMMS AudioVisual and MultiMedia Services AVT Audio/Visual Transport
AWG American Wire Gauge
AWGN Additive White Gaussian Noise
AWI Alert With Info

-B-

B Bi-directionally predicted B2B Business-to-Business B2C Business-to-Consumer B2G Business-to-Government B&G Bits&Gains (Q4/15)
B&W Black and White BA Basic Access (ISDN) BAM Biconic Connector
BAPT Bundesamt fur Post und Telekommunikation
BARAS ETSI SAGE standard encryption algorithm for audiovisual services
BAS Bit rate Allocation Signal
BAU Base Audio Package
BB Bandwidth Broker BBN Bulk Billing Number BBS Bulletin Board System BC Basic Call
BC Bearer Channel
BCC Basic Control Channel
BCCA Board Committee on Conformity Assessment
BCCH Broadcast Control Channel
BCD Binary Coded Decimal
BCDF Broadband Content Delivery Forum
BCF Backward Control Field
BCF Bearer Control Function
BCH Bose, Chaudhuri, and Hocquengham
BCM Back Channel Message
BCTP Basic Call Transfer Protocol (SG11) BD-PSNR Bjøntegaard delta PSNR
BDS Blank Detail Specification
BE Border Element
BEM Big Emerging Markets
BER Bit Error Rate
BERT Bit Error Rate Test
BES Back-End Services
BEST Back-End Service Transaction
(B)FER Burst Frame Error Rate
BF Bearer Function
BFI Bad Frame Indicator
BFOC Bayonet Fiber Optic Connector

BFT Binary File Transfer
BGN Background Noise Conditions
B-HLI Broadband High Layer Information
BICC Bearer Independent Call Control
BICSI Building Industry Consulting Services International
BID Billing ID Numbers
BINTERMS Basic Interoperability for Terminals for Telematic Services
B-ISDN Broadband ISDN
B-ISUP Broadband ISDN User Part BITB Boulder Industry Test Bed BLER Block Error Rates
BLERf Error Free Block Rate
BLES Broadband Loop Emulation Service B-LLI Broadband Lower Layer Information BME Block based Motion Estimation
BMI Base Station, Mobile Switching Center, and Interworking Function
BMSC Base Station Manufacturer Code
BNC ID Backbone Network Connection Identifier
BNF Backus-Naur Form
B-NT Broadband Network Termination
BNT Binary File Transfer BNTF Bi-National Task Force BNTG Bi-National Task Group BNWG Bi-National Working Group BO Business Office
BOF Birds of a Feather
BoD Board of Directors
BOMA Building Owners & Managers Association BONDING Bandwidth On Demand Interest Group (TR-41) BOS Business Object Summit
BPI+ Baseline Privacy Interface Plus
B-PISN Broadband PISN
BPON Broadband Passive Optical Network
BPTC Block-Product-Turbo-Codes
B-QSIG Broadband QSIG BRA Basic Rate Access
BRAN Broadband Radio Access Networks (ETSI TC) BRAS Broadband Remote Access Server
BRI Basic Rate Interface
BRKACK Break Acknowledge frame (V.42) BRM Bit Repetition Message
BRQ Bandwidth Request
BS Base Station
BSC Base Station Controller
BSC Binary Symmetric Channels
BSMAP Base Station Management Application Part
BSMC Base Station Manufacturer Code
BSMI Bureau of Standards, Metrology and Inspection
B-SMS Broadcasts Short Message Service
BSN Broadband Service Node (Nortel) BSR Board of Standards Review (ANSI) BSS Base Station System
BSS Broadcasting-Satellite Service
BST Broadcast SMS Teleservice
BT British Telecom (United Kingdom PTT) BTA Basic Trading Area
BTC Business Telecommunications Committee (ETSI) BTM Basic Transfer Mode
BTS Base Transceiver System
B-UNI Broadband User Network Interface B-VOP Bidirectional Video Object Planes B/W Black and White
BWC Bandwidth Control
BWS Building Wiring Standard

-C-

C&I Commands and Indications

C&S Control and Signaling (ATM Forum Working Group) CA Channel Aggregation
CA Communication Application (T.611) CA Conformity Assessment
CAB Conformity Assessment Body
CABA North America's Home and Building Automation Association
CABAC Context-based Adaptive Binary Arithmetic Coding
CAC Carrier Access Code
CAC Connection Admission Control
CAD Computer Aided Design
CAGJES Canadian Advisory Group on Joint Electrical Safety Committee
CAI Common Air Interface
CAL Common Application Language
CALEA Communications Assistance for Law Enforcement Act
CAMA Centralized Automatic Message Accounting
CANACINTRA Camara Nacional de la Industria de Transformacion (Mexico)
CANIECE Camara Nacional de la Industria Electronica Y de Communicaciones Electricas (Mexico)
CAP Carrier-less Amplitude modulation Phase modulation
CAPI Common API
CAPCS Cellular Auxiliary Personal Communications Service
CARE Carrier Access Records Exchange
CAS Channel Associated Signaling
CAS Customer Alert Signal
CASCO Committee on Conformity Assessment (ISO) CASE Conformity Assessment System Evaluation (NIST) CASS Common Air Satellite Structure
CAT Cellular Action Team (ECSP committee)
CATS Consortium for Audiographics Teleconferencing Standards
CATV Cable Television
CAVE Cellular Authentication and Voice Encryption Algorithm
CAWG Conformity Assessment Working Group (Trilateral) CB Call Barring (TIA TR-34)
CB Certification Body
CB Citizen Band
CBC Call Bearer Control
CBC Cipher Block Chaining
CBEMA Computing Business Equipment Manufacturers Association (see ITI) CBP Coded Block Pattern (H.261)
CBPCM Coded Block Pattern - Chrominance CBPC Coded Block Pattern for Chrominance CBPY Coded Block Pattern for Luminance
CBR Constant Bit Rate
CC Call Control
CC Common Carrier
CC Communication Capability field
CC Conference Call
CC Continuity Check (Rec. I.610) CC Control Channel
CCA Common Cryptographic Algorithm
CCB Common Carrier Bureau
CCBS Completion of Calls to Busy Subscribers
CCIR Comite consultatif international des radiocommunications CCITT Comite consultatif international telegraphique et telephonique CCM Call Connection Management
CCR Call Connect Reliability
CCR Comparison Category Rating
CCS Common Channel Signaling
CCSN Common Channel Signaling Network
CCSRL Control Channel Segmentation and Reassembly Layer
CCT Channel Check Test

CCT Consultative Committee - Telecommunications (Trilateral) CD Committee Draft
CD Communication Device
CD-ROM Compact Disk-Read Only Memory
CDCP Call Detail Collect Point CDG CDMA Development Group CDGP Call Detail Generation Point
CDH Cooperative Document Handling CDIS Call Detail Information Source
CDL Coded Digital control channel Locator
CDMA Code Division Multiple Access CDN Content Distribution Network CDPD Cellular Digital Packet Data CDR Call Detail Recording
CDRP Call Detail Rating Point
CDS Caller Display Signaling
CDTAC FCC Consumer/Disability Telecommunications Advisory Committee
CDV Committee Draft for Vote, IEC CE Capabilities Exchange
CE Core Experiment
CEASD Common ETSI Approach to Standards Development
CeBIT Trade show in Hannover, Germany
CEBus Consumer Electronics Bus
CEC Canadian Electric Code
CEC European Committee for Standardization
CED Called Station Identification (T.30) CEG Card Expert Group (ETSI)
CEG Integrated Circuit Card Expert Group
CELP Code Excited Linear Prediction
CEN Commission Europeenne de Normalisation (European Standards Committee)
CENELEC Commission Europeenne de Normalisation Electrotechnique (European Electrotechnical Standards Committee)
CEOC Clear Embedded Operations Channel
CEPT Conference of European PTTs
CER Cell Error Ratio
CEXT Central Office End Crosstalk
CESID Caller Emergency Station Identification
CF Call Forwarding
CF Center Frequencies
CF Communication Functions
CFA Carrier Failure Alarms (s)
CFBL Call Forward Busy Line/ Don't Answer
CFI Calling Feature Indicator CFP Computer Fax Protocol CFP Cypher Feedback
CFR Code of Federal Regulations
CFR Confirmation to Receive
CFU Call Forwarding - Unconditional
CG Correspondence Group CGI Control Grid Interpolation CH Compare HDLC
CHAP Challenge Handshake Authentication Protocol
CHASE A class of algorithms for decoding block codes, after D. Chase
CHS Candidate Harmonized Standard
CI Call Indicator (V.8) CI Calling Identity
CI Characteristic Impedance
CI Count Indicator
CI Customer Installation
CI Customer Interface
C/I Carrier to Interference Ratio
CIA Calling subscriber Internet Address
CIAJ Communications Industry Association of Japan
CIB Configuration Information Base
CIC Circuit Identifier Code
CICES Canadian Interference Causing Equipment Standard

CID Caller Identification
CIDCW Calling Identity Delivery on Call Waiting
CIELAB a device-independent color space
CIF Common Intermediate Format
CIG Calling Subscriber Identification
CILC Canadian Interconnection Liaison Committee
CIM Common Information Model
CIP Component-Independent Palette
CIR Carrier to Interference Ratio
CISC CRTC Interconnection Steering Committee
CISPR International Special Committee on Radio Interference
CISPR/I Subcommittee of CISPR dealing with EMC of information technology, multimedia equipment, and receivers
CIT Charge-Rate Indication Teleservice
CITEL Comision Internanericana de Telecomunicaciones
CJ CM terminator
CL Capabilities Select (see CR) CLAD Cell Assembly/Disassembly
CLASS Bellcore service mark for signaling features such as Caller ID CLEC Competitive Local Exchange Carriers
CLEI Common Language Equipment Identifiaction
CLI Calling Line Identification
CLID Calling Line Identity
CLIP Calling Line Identification Presentation
CLIP Calling Line ID Parameter
CLLI Common Language Location Identifier (Telcordia) CLNP Connectionless Network Protocol
CLR Capabilities List Request
CLR Cell Loss Ratio
CLR Circuit Layout Record
CM Cable Modem CM Call Manager CM Call Menu
CM Channel Management
CM Common Mode
CM Connection Management
CMB CRC Message Block (TIA-464-C) CMC Common Mail Call
CMC Common Messaging Call
CME Circuit Multiplication Equipment
CME Communications Management Entity
CMI Controlled Mode Idle
CMIP Common Management Information Protocol
CMIS Common Management Information Services
CMISE Common Management Information Service Element
CMMR Common Mode Rejection
CMMRD Cellular Microcell/Microsystem Requirements Document
CMN Common information
CMODES Confidentiality Modes
CMOS Comparison Mean Opinion Score
CMOS Complimentary Metal Oxide Semiconductor CMRS Commercial Mobile Radio Services (U.S.)
CMS Call Management Server
CMS Call Management Signaling CMS Circuit Multiplication System CMT Cellular Messaging Teleservice
CMTSD Cellular Mobile Telephone Service Descriptions
CMY Cyan, Magenta, Yellow
CMYK Cyan, Magenta, Yellow, Black
CN Corporate Network

CNAD Calling Name Delivery CNAP Calling Name Presentation CNAR Calling Name Restriction
CNG Calling Tone (T.30)
CNG Comfort Noise Generator CNI Calling Number Identification CNI Comfort Noise Insertion
CNID Calling Number Identification
CNIP Calling Number Identification Presentation
CNIP Calling Name Identity Presentation
CNIR Calling Number Identification Restriction
CNP Connection Negotiation Protocol
CNR Carrier to Noise Ratio
CNRP Common Name Resolution Protocol
CO Central Office
COFETEL Comision Federal de Telecomunicaciones de Mexico
CoIP Conferencing over IP (IMTC Activity Group)
COMM comm.drv for Microsoft Windows CONNEG Content Negotiations (IETF) COO Cell of Origin
COPEE Council on Office Products Energy Efficiency
COPS Common Open Policy Service
CORBA Common Object Request Broker Architecture
CORD Cibernet On-line Roaming Database
COS Corporation for Open Systems
COS-OST Corporation for Open Systems Executive Industry Group
COSP Customer Owned Outside Plant
COST Co-Operation in the field of Science and Technology research
COTS Commercial Off-The-Shelf
CP Communications Protocol
CP Continuous Presence (H.243) CP Customer Premises
CP Cyclical Prefix
CPA Combined Paging/Access
CPAN Customer Premises Area Network CPAP Customer Premises Access Profile CPCS Common Part Convergence Sublayer CPE Customer Premise Equipment
CPEV City Pair Polyethylene PVC CPF Compatible Protocol Field CPH Call Party Handling
CP-IWF Customer Premises - InterWorking Function (ATM Forum) CPL Call Processing Language
CPM Continuous Presence Multipoint
CPN Calling Party Number
CPN Customer Premise Network
CPS Common Part Sublayer (ATMF)
CPSII Communications Protocol Stack Independent Interface
CPT Cellular Paging Teleservice
CPU Central Processing Unit
CQ CAS Signal
CQ Communication Quality
CQPSK Compatible Differential Offset Quadrature Phase Shift Keying (Digital Modulation) CR Capabilities Request (see CL)
CRe Capabilities Request sent by autoanswering station at call initiation
CRC Cyclic Redundancy Code
CRFP Cordless Radio Fixed Parts
CR-LDP Constraint-based Routed Label Distribution Protocol (a protocol within MPLS) CRP Command Repeat
CRT Cathode Ray Tube
CRT Chinese Remainder Theorem
CRTC Canadian Radio and Television Commission CRTS Cellular Radio Telecommunications Service
CRV Call Reference Value
CS Canadian Standard
CS Circuit Switched

CS1 BICC Capability Set 1
CS2 BICC Capability Set 2
CS-ACELP Conjugate Structure ACELP
CS-PDU Convergence Sublayer - Protocol Data Unit
CSA Called Subscriber Internet Address
CSA Canadian Standards Association
CSA Carrier Serving Area
CSC Call Signalling Channel
CSCI Computer Software Configuration Item CSD Coordinated Standards Document CSDN Circuit Switched Data Network
CSD-P Circuit Switched Data, Point-to-Point Service
CSE Communication Service Equipment
CSF Signaling Control Function
CSI Construction Specification Institute
CSMA/CD Carrier Sense Multiple Access/Collision Detection
CSN Circuit-Switched Network
CSO Curvature of the Second Order CSPP Computer System Policy Project CSR Communications Standards Review CSS Communications Standards Summary CSS Composite Source Signal
CSS Convolutional Spectral Shaping
CSTA Computer Supported Telecommunications Applications
CSU Customer Service Unit
CT Call Trace
CT2 Cordless Telephone 2 (ETSI)
CTA Council For Terminal Attachment
CTB Composite Triple Beat
CTE Connected Telecommunications Equipment
CTIA Cellular Telecommunications Industry Association
CTE Connected Telecommunications Equipment
CTE Connected Terminal Equipment
CTF Consumer Telephone Forum (Telcordia)
CTIA Cellular Telecommunications Industry Association
CTI Computer Telephony Integration
CTM Cordless Terminal Mobility
CTN Corporate Telecommunication Networks
CTO Chief Technical Officers
CTP Common Transport Protocol
CTR Common Technical Requirements
CTRMP Cordless Telephone Range Measurement Performance
CTX Centrex
CU Composite User CuT codec under test CV Code Violation
CVoADSL Channnelized Voice over ADSL CVoDSL Channnelized Voice over DSL
CVoSDSL Channnelized Voice over SDSL CVSD Continuous Variable Slope Detection CW Call Waiting
CW Continuous Wave
CWD Call Waiting Deluxe CWID Call Waiting ID CWP Cost Work Program
CYL Complex stutter dial report

-D-

D-AMPS Digital AMPS
D/A Digital to Analog
D/S Downstream
D/TT Digital Tie Trunk
DA Delegated Authority

DAA Data Access Arrangement
DAC D/A Converter
DAL Digital Access Line
DAM Diagnostic Acceptability Measurement
DANS Directory and Name Service DANS Distributed Access Node System DAP Document Application Profile
DAS Door Answering System
DAT Digital Audio Tape
DAVIC Digital Audio-Visual Council
DAWS Digital Advanced Wireless Service
DB Data Base
DBA Dynamic Bandwith Assignment
DBM Dual Bitmap
DBMS Data Base Management System
DBS Direct Broadcast Satellite
DC Data Compression
DC Direct Current
DC Directionality Classification DCA Dynamic Capacity Allocation DCC Data Country Code
DCC Digital Control Channel
DCCH Digital Control Channel
DCD Data Carrier Detect
DCE Data Circuit terminating Equipment
DCE Digital Cellular Equipment
DCF Disengage ConFirmation
DCME Digital Circuit Multiplication Equipment DCMS Digital Circuit Multiplication Systems DCN Disconnect (T.30)
DCP Digital Connectivity Probing
DCOR Draft technical Corrigendum (ISO/IEC) DCR Degradation Category Rating
DCS Digital Cellular System
DCS Digital Command Signal (T.30) DCT Data Calling Tone
DCT Discrete Cosine Transform
DCT-U Digital Cordless Telephone - U.S. DDI Direct Dialing In
DDoS Distributed Denial of Service DDR Document Discrepancy Report DDS Digital Data Service
DEC Digital Extended Command (proposed T.30 extended negotiations)
DECT Digital Enhanced Cordless Telecommunications (ETSI) DEG Draft ETSI Guide
DEN Directory Enabled Networks
DEO Digital End Office
DER Digital Extended Request (proposed T.30 extended negotiations) DES Data Encryption Standard (U.S.)
DES Digital Extend Signal (T.30)
DES Draft European Standard
DF Data Compression Format (T.class2) DF Deblocking Filter
DFD Displaced Frame Difference DFE Decision Feedback Equalizer DFP Distributed Functional Plane
DFPA Defense Fire Protection Association
DG Drafting Group
DGN Director General de Normas (SECOFI, Mexican Standards Organization) DGS Digital Station
DH Diffie-Hellman protocol
DHCP Dynamic Host Control Protocol (RFC 2131) DHE Document Handling Equipment
DI Digital Interface
DI Distribution Interface
DIAMETER IETF protocol used for authentication, authorization and accounting
DIC Delay Interval Compensation
DID Direct Inward Dialing

DIG ISDN compatible Digital Station and tie trunk (TIA-646-B) DIL Digital Impairment Learning
DIMRS Digital Integrated Mobile Radio System
DIN Deutsche Institut fur Normung (German Standardization Institute) DIS Digital Identification Signal
DIS Draft International Standard (ISO)
DISA Defense Information Systems Agency DISXML Extended Markup Language DJGPP MSDOS port of gcc
DKTS Digital Key Telephone Station
DLC Digital Loop Carrier
DLC Dynamic Load Control
DLCI Data Link Connection Identifier
DLL Dynamic Link Library DLP Data Protocol (H.DLP) DM Differential Mode
DMA Direct Memory Access
DMH Data Message Handler
DMI Desktop Management Interface
DMI Draft Miscellaneous Work Item (ETSI)
DMIF DSM-CC Multimedia Integration Framework
DMOS Degradation MOS
DMP Downlink Measurement Protocol
DMT Discrete MultiTone
DMT Discrete Multi-tone Carrier
DMTF Desktop Management Task Force
DMV Differential Motion Vector
DN Directory Number
DND Do Not Disturb
DNI Digital Negotiation Information Signal DNIS Dialed Number Identification Service DNK Digital Not acKnowledge
DNS Domain Name Server DoC Declaration of Conformity DOC Department of Commerce
DOC Department of Communications (Canada)
DOCSIS Data Over Cable Service Interface Specification
DoD Department of Defense (U.S.) DOE Department of Energy (U.S.) DOL Data Off-Loading
DoS Denial of Service
DOS Department of State (U.S.) DP Data Privacy
DP Data Pump
DP Dial Pulse
DPA Data Privacy Algorithm
DPA Document Printing Application
DPBX Digital PBX
DPCM Digital PCM Modem
DPI Dots Per Inch
DPL Digital Power Line (Q1/15) DPS Data Partitioned Slice
DPS Dynamic Power Save
DPNSS Digital Private Network Signaling System
DPSK Differential Phase Shift Keying DPT Distribution-Preserving Tomlinson DQoS Dynamic Quality of Service
DQUANT Field for modified quantization mode (H.263+) DR Discrepancy Report
DRA Dynamic Rate Adaptation DRC Dynamic Rate Change DRM Digital Rights Management
DRQ Disengage Request
DRP ear Drum Reference Point DRR Dynamic Rate Repartitioning DRT Diagnostic Rhyme Test
DRUMS Detailed Revision/Update of Message
DS0 64 kbit/s Channel
DS1 1.544 Mbit/s T1 Interface
DS3 44.736 Mbit/s T3 Interface
DSA Directory System Authentication

DSAA DECT Standard Authentication Algorithm
DSAP Data Services Access Profile DSAT Digital Supervisory Audio Tone DSC DECT Standard Cipher
DSCP Differentiated Services Code Point
DSI Digital Speech Interpolation
DSL Digital Subscriber Line DSL Document SeLection DSLAM DSL Access Multiplexer DSLF DSL Forum
DSM-CC Digital Storage Media - Command and Control DSMCC Digital System Multimedia Communication Control DSN Delivery Status Notification
DSN Disposition Service Notification
DSP Digital Signal Processing
DSR Data Set Ready
DSR Distributed Speech Recognition DSR Dynamic Symbol Reordering DSREQ Data Service Request
DSS1 Digital Subscriber Signaling 1
DSU Data Service Unit
DSV Distributed Speaker Verification
DSVD Digital SVD
DSX Digital Signal Cross-Connect
DT Dual Tone
DTA Digital Terminal and Access Project (ETSI) DTAAB DECT Technical Advisory Ad hoc Board
DTAM Document Transfer Access Method
DTAP Direct Transfer Application Part
DTC Digital Traffic Channel
DTC Digital Transmit Command DTD Document Type Definition DTE Data Terminal Equipment DTG Digital TV Group (UK)
DTIF Disabilities Issues Task Force
DTL Designated Transit List
DTM Dynamic synchronousTransfer Mode
DTMF Dual Tone Multi Frequency
DTR Data Terminal Ready
DTR Draft Technical Report (ETSI) DTS Definitive Telefax Standard
DTS Draft Technical Standard (ETSI) DTV Digital TV
DTX Discontinuous Transmission
DUT Device Under Test
DV Digital Video
DVB Digital Video Broadcasting
DVB-T DVB Terrestrial
DVCC Digital Verification Color Code
DVD Digital Versatile Disk (also Digital Video Disk) DVEM Differential Vector Error Magnitude
DWDM Dense Wavelength Division Multiplexing

-E-

E 20 bit sequence
E&M Ear and Mouth: Separate signaling lines
E2E End to End
EA European Accreditation
EBNF Extended Backus-Naur Form
EBU European Broadcasting Union
ebXML electronic business XML Consortium
EC Echo Canceled EC Echo Canceler EC Echo Control
EC Error Control (TR-29) EC Error Correction
EC European Commission EC Exchange Carriers ECB Electronic Codebook

ECC Expanded Control Channel
ECCA European Cable Communications Association
ECDC Error Correction / Data Compression
ECE Echo Cancellation Equipment
ECIC Electronic Communications Implementation Committee
ECM Error Correction Mode
ECMA European Communications Manufacturers Association
ECN Encoding Control Notation (ASN.1) ECS Emergency Calling Service
ECSD Enhancement of High Speed Circuit Switched Data
ECSP Electronic Communications Service Provider ECSQ Entropy Constrained Scalar Quantization
ECT Explicit Call Transfer
ECTA European Competitive Telecommunications Association
ECTEL European Telecommunications and Professional Electronics Industry
ECTF Enhanced Communication and Transport Service
ECTF Enterprise Computer Telephony Forum
ECTRA European Commission of Telecommunications Regulatory Authorities
EC-VBR Embedded Coding Variable Bit Rate
ECVQ Entropy Constrained Vector Quantization
EDACS Enhanced Digital Access Communications System
EDC Electronic Document Coordinator
EDD Electronic Document Distribution
EDGE Enhanced Data rates for GSM Evolution
EDH Electronic Document Handling
EDI Electronic Data Interchange
EDSL Emerging DSL (DSL Forum Study Group) EDSLSG Emerging DSL Study Group (DSL Forum)
EDT European Deaf Telephone
EE Equipment Engineering (ETSI Technical Committee) EEA European Economic Area
EEC European Economic Community
EEMAC Electrical and Electronic Manufacturers Association of Canada
EEP Equal Error Protection
EES Escrow Encryption Standard
EFIS Electronic Flight Instrument Systems
EFM Ethernet in the First Mile
EFR Enhanced Full Rate
EFRC Enhanced Full Rate Codec EFT Electrical Fast Transient EFTA European Free Trade Area EG ETSI Guide
EG Expert Group
EG AN ETSI Guide Access Network
EGDIR Expert Group DIRectory system (EWOS)
EGMHS Expert Group Message Handling System (EWOS) EGPRS Enhanced General Packet Radio System
EHS European Home Standards
EI Enhancement Intra (pictures, H.263) EI Error Indicator
EIA Electronic Industry Association
EIAJ EIA Japan
EIC Equipment Installer's Code
EICTA European Information and Communications Technology Industry Association
EICAS Engine Indicating and Condition Advisory System
EID Equipment Identifier EID Error Insertion Device eifax extended internet fax
EII European Information Infrastructure
EIRP Effective Isotropic Radiated Power
ELAWG EMC Laboratories Accreditation Working Group ELCP Emulated Loop Control Protocol (ATMF, ETSI) ELFEXT Equal Level Far-End Crosstalk

EM Electromagnetic
EMA Electronic Messaging Association EMC ElectroMagnetic Compatibility EMC Equipment Manufacturer's Code
EMCS ElectroMagnetic Compatibility Society
EME Electromagnetic Emissions
EMI Electromagnetic Interference
EMI Exchange Message Interface (Bellcore standard for data transmission between RBOC/LEC and the IC/IXC/IEC)
EMS Element Management System
EMS Emergency Services
EMT Electrical Metal Tubing
E-MTA Embedded Multimedia Terminal Adapter
EN Enterprise Network
EN European Norm
ENP Extended Negotiation Procedure
ENUM tElephone NUmbering Mapping (IETF) EOB End of Block
EOC Embedded Operations Channel
EOI End of Image
EOL End of Line (T.4)
EOM End of Message (T.30)
EOR/ERR End of Retransmission/ Response for End of Retransmission
EOS End of Selection EOS End of Sequence EOSBS End of Sub-Bitstream
EOS-PPS End of Selection for selective polling applications
EOT End of Transmission
E-OTD Enhanced Observed Time Difference EP Enhancement Predicted (pictures, H.263) EP Error Pattern
EP ETSI Project
EP Extended Protocol
EPA Environmental Protection Agency
EP-CN ETSI Project Corporate Network
EP-DTA ETSI Project Digital Terminal Access
EP-EASI ETSI Project-European ATM Services Interoperability EPHOS European Procurement Handbook for Open Systems EPIIC European Program on Information Infrastructure Committee
EPIISG European Project on Information Infrastructure Starter Group
EPL Echo Path Loss
EPM Enter Parameter Mode EPP ETSI Partnership Projects EPT Echo Protect Time
ERC European Radio Committees
EREC Error Resilient Entropy Code/Error Robust Entropy Code
ERF Emergency Related Forwarding
ERL Echo Return Loss
ERM ETSI committee on EMC and Radio spectrum Matters
ERP Ear Reference Point
ERP Effective Radiated Power
ERP EOC Register Protocol
ERPS Enhanced Reference Picture Selection
ES Echo Suppressor ES Elementary Stream ES Emergency Services ES Errored Seconds
ES Escape Sequence
ES Escape Signal
ES ETSI Standard
ES Express Swapping
ESD Echo Suppressor Devices ESD ElectroStatic Discharge ESF Extended SuperFrame
ESI Electronic Signatures and Infrastructures
ESI Emergency Services Interface

ESLR Equivalent SLR
ES/MS Escape Signal/Mode Select
ESMR Enhanced Specialized Mobile Radio ESMTP Extended Simple Mail Transfer Protocol ESN Electronic Serial Number
ESNX Expanded Electronic Serial Number ESPM Extended System Parameters Message ESRD Emergency Services Routing Digits
ESS Enhanced Signaling Systems eSTL evolving STL
ET (FCC) Office of Engineering and Technology
E-TDMA Extended Time Division Multiple Access ETIB European Telecoms Intelligence Bulletin
ETNO European Telecom. Network Organization ETNS European Telephony Numbering Space ETO European Telecommunications Office
ETP European Telecommunications Platform
ETR ETSI Technical Report
ETS European Telecommunications Standard (ETSI) ETSI European Telecommunications Standards Institute EU European Union
EU MRA European Union Mutual Recognition Agreements
EURESCOM European Institute for Research and Strategic Studies in Telecommunications
EUROBIT European Association of Manufacturers of Business Machines and Information Technology
EUT Equipment Under Test
EV Embedded VBR
EVRC Enhanced Variable Rate Codec
EWOS European Workshop on Open Systems
EXOR Exclusive OR
EXP Equal Erasure Protection
EZW Embedded Zero-tree Wavelet (coding)

-F-

FA Flexible Alerting
FAA Federal Aviation Administration (U.S.) FACCH Fast Associated Control Channel
FAMOUS Future Advanced Mobile Universal System
FAQ Frequently Asked Question
FAR Federal Aviation Regulations (U.S.) FAS Facility Associated Signaling
FAS Frame Alignment Signal
FBI Federal Bureau of Investigation (U.S.) FBM FEXT Bit Map mode (G.992.1, Annex C) FC Feature Code
FC Type of commercial fiber optic connector (Threaded)
FC-PH Fibre Channel Physical and Signaling Interface (ANSI X3) FCA Fixed Channel Allocation
FCAPS Faults, Configuration, Accounting, Performance and Security (ISO) FCC Federal Communications Commission (U.S.)
FCD Fast Track Committee Draft (ISO) FCF Facsimile Control Field (T.30)
FCF Forward Control Field
FCS Frame Check Sequence
FDA Food and Drug Administration (U.S.) FDAM Final Draft AMendment
FDD Frequency Division Duplexing FDDI Fiber Distributed Data Interface FDM Frequency Division Multiplexing
FDIS Final Draft International Standard (ISO) FDM File Diagnostic Messages
FDMA Frequency Division Multiple Access
FDX Full Duplex
FE Facilities Exchange
FE Functional Entities
FEAL Fast Encryption Algorithm FEC Forward Error Correction FEC Frame Erasure Concealment
FECC Far End Camera Control
FE-EC Far End - Echo Canceller

FEF Flat Equalized FEXT
FEI Federation of Electronic Industries (UK) FEQ Frequency Domain Equalizer
FER Frame Error Rate FEXT Far End Cross Talk FF Feed Forward
FFPIM Full-mode Facsimile Profile of Internet Mail
FFS For Further Study
FFT Fast Fourier Transform
FG Focus Group
FGS Fine Granularity Scalability
FHWA Federal Highway Administration (U.S.) FI Format Identifier
FIF File Interchange Format
FIFO First In First Out
FIPS Federal Information Processing Standard
FIR Finite Impulse Response
FL Facilities List
FLC Fixed Length Codeword
FLMTS Future Land Mobile Telephony Systems
FM Fault Management
FM Frequency Modulation
FMS Flight Management Systems
FMT Filtered MultiTone
FNA Functional Network Architecture
FNE Fixed Network Equipment
FNV Field Not Valid FNV Frame Not Valid FO Fiber Optic (TIA) FO Foreign Office
FOC Fiber Optic Connector
FOCIS Fiber Optic Connector Intermateability Standard
FoIP Fax over Internet Protocol
FOM Figure of Merit
FOREG Forced Registration Flag
FOTAG Fiber Optic TAG
FOTP Fiber Optic Test Procedure
FP Fixed Part
FPDAM Final Proposed Draft Amendment FPGA Field Programmable Gate Array FPH Freephone
FPLMTS Future Public Land Mobile Telephone Systems
FPP Frames Per Packet FPS Frames Per Second fps frames per second
FR Federal Regulation (US) FR Frame Relay
FRAPI-A An ISDN Architecture in use in Japan
FRC Full Rate Codec FRF Frame Relay Forum FRS Florida Relay Service FS Fixed Satellite
FS Frame Size
FS Full Service
FSA Framework Study Areas
FSAN Full Service Access Networks
FSK Frequency Shift Keying
FSM Finite State Machine (H.323 Gatekeeper) FSRA Fast Seamless Rate Adaptation
FSS Fixed Satellite Service
FS VDSL Full Service VDSL (FSAN Committee) FT Fixed Terminals
FT Fixed radio Terminal
FTAA Free Trade Area of the Americas
FTAM File Transfer, Access and Management
FTBP File Transfer Body Part
FTH Class 1 command HDLC transmit
FTP File Transfer Protocol
FTP Foiled Twisted Pair
FTRI Florida Telecommunications Relay, Inc. (www.ftri.org) FTT Failure To Train

FTTB Fiber To The Building FTTC Fiber To The Curb FTTCab Fiber To The Cabinet FTTEx Fiber To The Exchange FTTH Fiber To The Home
FTTO Fiber to the Office
FUNI Frame Based UNI
FVC Forward Voice Channel FWA Fixed Wireless Access FWI Flash With Info
FWUF Federal Wireless Users Forum (U.S.) Fx Crossover Frequency
FX Foreign eXchange
FXS Foreign Exchange Station
FYI For Your Information

-G-

G3FT G3 FX Teleservice
G3G Global Third Generation GA General Assembly (ETSI) GAL Graphics Adapter Language GAP Generic Access Profile
GASP Gatekeeper Synchronization Protocol
GAT Generic Application Template
GATT General Agreement on Trade and Tariffs
GBSC Group of Blocks Start Code
GCAC Generic CAC
GCC Generic Conference Control
GDMO Guidelines for the Definition of Managed Objects
GDMO Generic Definition of Managed Objects
GDR Global Desired Receive (PSD) GEF Generic Extensibility Framework
GETS Government Emergency Telecommunications Service
GF Generic Functional Procedures
GFID GOB frame identification
GFR Guaranteed Frame Rate (ATM Forum)
gi gains information
GI Graded Index
GIDS Global IP Directory Service
GIDS Global IP telephony Database Service
GII Global Information Infrastructure
GISN Global IP-Telephony Subscriber Number
GIT Generic Identifier Transport
GK GateKeeper
GLP Geographic Location Profile
GMC Global Motion Compensation
GMDSS Global Maritime Distress and Safety System
GMII Gigabit Media Independent Interface
GMM Global Multimedia Mobility GMR Geostationary Mobile Radio GMSK Gaussian Minimum Shift Keying GMVC Global Motion Vector Coding
GN GOB Number (H.263)
GNATT Generic Enhanced Teleservice Transport
GOB Group of Blocks (H.261, H.263) GOF Glass Optical Fiber
GONOW ETSI NA Task Force, Managed by European Projuction Information Infrastructure Coordination (EPIC) GOP Group of Pictures
GoS Grade of Service
GOSIP Government Open Systems Interconnection Profile
GOSS Guide to Open Systems Specification
G-PAD Generalized polling protocol - Packet Assembly/Disaaembly
GPCAS Global Product Conformity Assessment System
GPM General Page Message GPS Global Positioning System GRJ Gatekeeper Reject

GRP Good Regulatory Practices GRQ Gatekeeper Discovery Request GPRS General Packet Radio Service GSA General Services Administration GSC GOB Start Code
GSM Global System for Mobile Communications
GSN Global Subscriber Number GSO Geostationary Satellite Orbit GSS Generalized Spectral Shaping
GSS Generic Security Application Programming Interface
GSS Generic Security Service
GSS Generic Supplementary Services
GSTN General Switched Telephone Network (i.e., PSTN) GT Global Title
GTA Global Title Address
GTAAB GSM Technical Advisory Ad hoc Board
GTAI Global Title Address Information
GTT Global Title Translation
GUI Graphical User Interface
GUP Gatekeeper Update Protocol
GW GateWay
GWC GateWay Controller
GWLOC Gateway Location protocol

-H-

H/W Hardware
HAC Hearing Aid Compatible
HAM Amateur Radio
HAN Home ATM Network
HATIS Hearing Aid Telephone Interconnect System
HATS Head and Torso Simulator
HC Header Counter
HDLC High level Data Link Control
HDLU High speed Dynamic Link Unit
HDML Handheld Device Markup Language, a forerunner of WML HDSL High-rate Digital Subscriber Line
HDTV High Definition Television
HDX Half Duplex
HE High End
HE-LPC Harmonic Excitator Linear Predictive Coder
HEMP High Energy Electromagnetic Pulses
HES Home Electronic System
HF High Frequency
HF Human Factors
HFC Hybrid Fiber Coax
HFCI The H.323 Firewall Control Interface
HFR Hybrid Fibre Radio
HFT Hands Free Telephone HFTP Hybrid-Fiber Twisted Pair HFX Hawthorne Facsimile Cipher
HHR Half-Horizontal Resolution (352 by 480 or 576) HI High Impedance
HIA Hearing Industries Association
HINE Heterogeneous In-house Networking Environment HIPERLAN High Performance Radio Local Area Network HIPPI High-Performance Parallel Interface
HKM Hawthorne Key Management HLC Higher Layer Compatibility HLF Home Location Function
HLI High Layer Information
HLR Home Location Register HLTF High Level Task Force HLTG High Level Task Group
HMAC Keyed-Hashing for Message Authentication
H-MLP High Speed Multi Layer Protocol
HNI Home Network Identity
HNS Hughes Network Systems

HNOS Home NetWork Operating System
HNW Home NetWork (VESA) HO Hand Off
HomePNA Home Phoneline Networking Alliance
HPC High Probability of Completion
HPCI Harmonized Programmable Communications Interface
HPF High Pass Filter
HPL Home-Phone LAN
HPLI Higher Layer Protocol Identifiers HPNA Home Phoneline Network Alliance HPUX Unix in HP workstations
HRC Half Rate Codec
HRD Hypothetical Reference Decoder
HRDJ1 Hardwired Jack
HS Harmonized Standards
HSCSD High Speed Circuit Switched Data
HSD High Speed Data Channel
HSM High Speed Modem
HSP Host Signal Processing
HSSG High Speed Study Group (IEEE) HSSI High Speed Serial Interface
HSTU-C High Speed Transceiver Unit - Central HSTU-R High Speed Transceiver Unit - Remote
HTML Hyper Text Markup Language
HTTP HyperText Transport Protocol
HTU-C Handshake Transceiver Unit - Central Office End HTU-R Handshake Transceiver Unit - Remote Terminal End HW Hardware
HWCI Hardware Configuration Item

-I-

I Intra (Q6/16, VCEG)
I&I Interworking and Interoperability
I/G Implementors Guide
I/O Input/Output
IA Implementation Agreement
IA Interoperability Agreements
IAA I Am Alive (emergency system)
IA5 International Alphabet No. 5, now called International Reference Alphabet (IRA) IAC Industry Advisory Committee/Council
IACM Industry Advisory Committee Meeting (UL) IAD Integrated Access Device
IAEI Israel Association of Electronics Industries
IAF Internet Aware Fax (T.38) IAM Initial Address Message
IANA Internet Assigned Number Authority
IAP Intercept Access Point
IAS Industrial Applications Society (IEEE) IAT Internet access time
IB Indicator Bits
IBS Intelligent Building Systems
IC Impairment Combination
IC Industry Canada
IC Interexchange Carrier
ICA Information Communication Architecture
I-CAN Integrated Customer Access Network
ICANN Internet Corporation for Assigned Names and Numbers
ICC International Coordination Committee (ISO) ICCID Integrated Circuit Card ID
ICCF Industry Carriers Compatibility Forum
ICD International Code Designator
ICEA Insulated Cable Engineers Association

ICF InfoConfirm
ICFA International Computer Facsimile Association
ICG Intersector Coordination Group
ICI Inter Carrier Interference
ICO Intermediate Earth Orbit
ICS Digital line interface to ISDN Compatible Station meeting requirements of TIA/EIA-579
ICS Incoming Call Screening
ICS Implementation Conformance Statement
ICS Interoperability Compliance Statement (DSL Forum) ICT Information and Communication Technology (ETSI) ICT Integer Cosine Transforms
I-CTR Interim Common Technical Requirements
ICTSB Information and Communication Technology Standards Board
ICV Integrity Check Value
ICWWG Interagency Cellular and Wireless Working Group
ID delay impairment value
ID Identification
IDB J2366 ITS Data Bus
IDCT Inverse Discrete Cosine Transform
IDEA International Data Encryption Algorithm (Proprietary, from Ascom Tech. AG) IDFT Inverse Discrete Fourier Transform
IDL Interface Design Language
IDLC Integrated Digital Loop Carrier IDRA Integrated Dispatch Radio System IDS Integrated Directory Service
IDSL ISDN Digital Subscriber Line
IE protocol discriminator Information Element
IEB Industrial Electronic Bulletin
IEC International Electrotechnical Commission
IECEE Compliance with IEC for Electrical Equipment IEEE Institute of Electrical and Electronic Engineers IEMS International Emergency Multimedia Services
IEPS International Emergency Preference Scheme (ITU-T E.106 [2000]) IESG Internet Engineering Steering Group
IETF Internet Engineering Task Force
I-ETS Interim ETS (ETSI Standard) IF Intermediate Frequency
IF Isolation Filters
IF Isolation Function
IFA Informal FTP Area
IFAST International Forum on AMPS Standards Technology (CTIA) IFAX Internet Facsimile
IFBCA Internet Fax and Business Communications Association
IFFT Inverse Fast Fourier Transform
IFP Internet Facsimile Protocol
IFTP Informal FTP area IG Implementer's Guide IG Interoperability Group
IGMP Internet Group Management Protocol
IIF Interworking Interoperability Function
IIP Itinerant Internet Protocol
IIR Institute for International Research
IIS Inteface Implementation Specifications (Telemanagement Forum) IITF Information Infrastructure Task Force
ILC Identifier Length Content
ILD Insertion Loss Deviation
ILEC Incumbent Local Exchange Carriers
ILMI Integrated Local Management Interface (ATMForum) IM Instant Messaging
IM Inter-modulation
IM Internet Multimedia (3GPP)

IMA Interactive Multimedia Association
IMA Inverse Multiplexing for ATM IMBE Improved MultiBand Excitation IMC Internet Mail Consortium
IMD Inter Modulation Distortion
IME ILMI Management Entity
IME Interface Management Entity
IMEI International Mobile Equipment Identifier
I-mode Idle mode
IMP Internet Modem Protocol
IMPP Instant Messaging and Presence Protocol (IETF) IMRS Interactive Multimedia Retrieval Services
IMS Interactive Multimedia Services
IMSF IS-41 Message Security Forum
IMSI International Mobile Subscriber Identity
IMT International Mobile Telecommunications (IMT-2000) IMTC International Multimedia Teleconferencing Consortium IN Intelligent Networking
INAA Integrated Network Access Arrangement INAP Intelligent Network Application Profile IN/B Intelligent Network/Broadband
INC International Carrier
INF IN Forum
INMD In-service Non-intrusive Measurement Device
INMETRO Instituto Nacional de Metrologia, Normalizacion e Qualidad Industrial (Brazil)
iNOW interoperability NOW!
INTAP Interoperability Technology Association for Information Processing (Japan) INTSERV Integrated Services
IOL InterOperability Laboratory (University of New Hampshire) IOS Inter-Operability Specifications
IP Intellectual Property
IP Intelligent Peripheral
IP Internet Protocol
IPAD Internet Packet Assembler Disassember
IPAT Internet Protocol Access Terminal
IPB Improved PB
IP BCP Internet Protocol Basic Call Processing (SG11) IPBCP IP Bearer Control Protocol
IPBX Internet PBX
IP-CME Circuit Multiplication Equipment optimized for IP-based Networks
IPCP Internet Protocol Control Protocol (RFC1332) IPDC IP Device Control
IPDR IP Detail Record (Consortium) I-PDU Information PDU
IPFN IP Federating Network (SPAN14 and TIPHON project)
IPN Intelligent Packet Network
IPNS ISDN PBX Network Specification
IPP Internet Printing Protocol IPR Intellectual Property Rights IPSEC IP Security (IETF)
IPT Internet Protocol Telephony
IPTD IP Packet Transfer Delay
iptel Internet Protocol Telephony (IETF Working Group) IPUI International Portable User Identity
IPUI R International Portable User Identity for public/GSM IRA International Reference Alphabet
IRA Internet Routing Address
IRDA Infrared Interface Committee
IREG ITU-T Recommendation Experiment Group
IRM International Roaming MIN
IRQ Interworking Service Request identifier
IRR Information Request Response IRS Intermediate Reference System IS Interim Standard (U.S.)
IS International Standard (ISO)
ISA Industry Standard Architecture
ISC International Softswitch Consortium

ISC International Switching Center
ISCI Inter-Symbol and Channel Interference
ISCRI International Special Committee on Radio Interface
ISD Independent Segment Decoding
ISD Integrated Services Digital (TIA-646-B)
ISD International Standards Development ISDN Integrated Services Digital Network ISDN-BA ISDN Basic Access
ISDN BRA ISDN Basic Rate Access
ISDN-PA ISDN Primary Access
ISD/TT Integrated Services Digital/Tie Trunk
ISI Inter Symbol Interference
ISIS Information Society Initiatives in Standardization
ISLP Intersystem Link Protocol ISM Industrial, Scientific, Medical ISN Interface Service Node
ISN Interface Serving Node (SG11)
ISO International Organization for Standardization
ISOC Internet Society
ISOL Integrated Services Over Low speed serial inks
ISP International Standardized Profile
ISP Internet Selective Polling
ISP Internet Service Provider
ISPBX Integrated Services Private Branch Exchange
ISPT Italian PTT
ISRF Internet Screenphone Forum
ISS Inter-Satellite Service
ISSG Internet Services Study Group (MSAF) ISSLL Integrated Services over Specific Links
ISSLOW Integrated Services System for Low Bitrate Environments
IST Integrated Services Trunk
IST ISDN tie trunks
ISTO Industry Standards and Technology Organization
ISTP IPCablecom Signaling Transport Protocol
IST/TT IST and other Tie Trunk
ISUP ISDN User Part
ISWG Interoperability Sub-Working Group (ADSL Forum) IT Information Technology
IT Intermediate Trunk
ITAAB ISDN Technical Advisory Ad hoc Board
ITAAG ISDN Technical Advisory Ad hoc Group
ITAC Information Technology Association of Canada
ITAC ITU-T Advisory Committee
ITAD Integrated Telephone Answering Device ITAR International Traffic in Arms Regulations ITD Interface Telecom Domotique
ITE Information Technology Equipment
ITI Information Technology Industry Council (formerly CBEMA) ITIC Information Technology Industry Council
ITL Independent Testing Labs
ITM Informative Test Methods
ITOC Independent Telephone Operating Company
ITS Institute for Telecommunications Sciences
ITS Intelligent Transport System
ITSB Image Technology Standards Board ITSI Individual TETRA Subscriber Identity ITU International Telecommunication Union ITU-R ITU Radiocommunications Sector ITU-T ITU Telecommunications Sector
ITU-TSB ITU Telecommunications Standardization Board
ITUDOCS Electronic Document Service of ITU ITV Interactive Television

IUT Implementation Under Test
I-V Current - Voltage
IV Initialization Vector
IVCD Initial Voice Channel Designation
IVN Intervening Networks
IVP Integrated Voice Protocol
IVPC Integrated Voice Protocol and Commands
IVR Interactive Voice Response IVS Integrated Video Services IWF Inter-Working Function
IWU Interworking Unit

-J-

JADSL ADSL for ISDN
JBIG Joint Binary Image Group
JC Joint Capabilities
JCCR Joint Committee on Cellular Roaming
JCG Joint Coordination Group
JDC Japan Digital Cellular
JEEC Joint ETSI/ECMA Committee
JEM Joint Experts Meeting
JFIF JPEG File Interchange Format JITC Joint Interoperability Test Center JM Joint Menu
JPC Joint Project Committee
JPT Joint Project Team
JPEG Joint Photographics Expert Group
JPG Joint Presidents Group (CEN/CENELEC/ETSI) JQG Joint Question Group
JRG Joint Rapporteurs Group
JSC Joint Sectoral Committee JSD Joint Standards Documents JTACS Japanese TACS System JTAPI
JAVA Telephony API
JTC Joint Technical Committee
JURA JPEG Utilities Registration Authority
JUSTINTAC Joint User Supplier TIA ICEA NEMA Technical Advisory Committee
JWG Joint Working Group

-K-

KLT Karhunen-Loeve Transform
KTA Key Technical Areas
KTS Key Telephone System
KY totally protected key systems (FCC Part 68 Form 730)

-L-

L2TP Tunneling Protocol, standardized encapsulation capable of carrying multiple PPP sessions l2tpext Layer 2 Tunneling Protocol Extensions (IETF)
LA Local Application (T.611) LA Look Ahead
LAC L2TP Access Concentrator
LAC Link Access Control
LADC Local Area Data Channels
LAES Lawfully Authorized Electronic Surveillance
LAIC Lawfully Authorized Intercept Capability
LAN Local Area Network
LANE LAN Emulation
LAP Link Access Protocol
LAPB Link Access Protocol B (ISDN-B Channel) LAPD Link Access Protocol D (ISDN-D Channel)
LAPF Link Access Protocol - Frame

LAPM Link Access Protocol for Modems (V.42) LAPV Link Access Protocol - Video Telephone LAR Log Area Ratio
LATA Local Access Transport Area
LB Letter Ballot
LB Loop Back (Rec. I.610) LBC Low Bit rate Coder LBO Line Build Out
LBS Location Based Service
LC Last Call (ITU, IETF) LC Logic Channel
LCAP Large Cell Access Profile
LCD Liquid Crystal Display LCD Loss of Cell Delineation LCF Location Confirm
LCFO Line Current Feed Open
LCF-PMD Low Cost Fiber-Physical Medium Dependent
LCL Longitudinal Conversion Loss
LCN Logical Channel Number
LCP Link Control Protocol
LCTL Longitudinal Conversion Loss Transfer
LD Long Distance
LDAP Lightweight Directory Access Protocol
LDCELP Low Delay CELP
LDDS Limited Distance Data Service
LDLL Limited Degradation of the Long Loop
LDM Limited Distance Modem (CS-03) LDP Label Distribution Protocol
LDPA Light Document Printing Architecture
LDPC Low Density Parity Check
LE Local Exchange
LEC Local Exchange Carrier
LEO Low Earth Orbit
LES Loop Emulation Service
LHS Left Hand Side
LI Lawful Interception
LISN Line Impedance Stabilization Network
LL Leased Line
LLC Logical Link Control
LLI Lower Layer Information
LLID Loopback Location Identifier (Rec. I.610) LMCO Lockheed Martin Corporation and Ericsson
LMCS Local Multipoint Communications System LMDS Local Multi-point Distribution Service
LMF Location Management Function
LMR Land Mobile Radio
LMS Land Mobile Service
LMS Loop Management System LMSI Local Mobile Station Identity LNP Local Number Portability
LNS L2TP Network Server
LO Local Oscillator
LOI Letter of Intent
LON Local Operating Networks LOO Likelihood of Occurrence LOS Loss of Signal
LOSQ Listening Only Speech Quality
LPC Linear Predictive Coding
LPF Low Pass Filter
LPIC Primary / Presubscribed Interexchange/IntraLATA Carrier
LR Loudness Rating
LRCC Last Registration Control Channel
LRE Low bit Rate Encoding
LRF Location Registration Function
LRFD Load and Resistance Factor Design
LRJ LocationReject

LRN Location routing number for LNP LRQ Location Request
LS Lossless and near Lossless
LSAS Line-Side Answer Supervision
LSB Least Significant Bit
LSD Low Speed Data channel
LSO Loopback Service Options (cdma2000) LSOG Local Service Ordering Guidelines LSP Line Spectral Pair
LSP Local Service Provider
LSSGR LATA Switching Systems Generic Requirements (Bellcore) LSTR Listener Sidetone Rating
LT Line Termination
LTP Long Term Prediction LTU Line Terminating Unit LU Logical Unit
LUS Location Update Service
LVD Low Voltage Directive
LVDS Low Voltage Differential Signaling
LW Long Wave
LZJH Lempel-Ziv-Jeff.Heath
LZW Lempel-Ziv-Welch algorithm

-M-

MA Moving Average
MA Mobile Service
MAC Management Ad Hoc Committee (TR-41) MAC Media Access Control
MACA Mobile Assisted Channel Allocation
MAH Mobile Access Hunting MAHO Mobile Assisted Handoff MAP Media Access Procedure
MAP Mobile Application Part
MAPI Messaging API MAPI Microsoft API
MASA Multimedia Services Affiliate Forum
MATV Master Antenna Television
MAWG Message Attachment Work Group
MB Macro Block
MBA Macroblock Address (H.263) MBE Multi-Byte Extension
MBFT Multipoint Binary File Transfer
MBMP Modem Bank Management Protocol
MBN Multiservice Broadband Networks
MC Message Center
MC Multipoint Controller (H.323)
MCBPC Macroblock type & Coded Block Pattern for Chrominance
MCC Mobile Country Code
MCC Modem Control Channel
MCCC Multiple Concatenated Convolutional Codes
MCD Mobile Communications Division MCF Message Confirmation (T.30) MCID Multi-line Caller Identification MCM Multi-Carrier Modulation
MCP Motion Compensated Prediction
MCPE Motion Compensated Prediction Error MCNS Multimedia Cable Network System Mcps Megachips per second
MCS Multi-point Control Services (T.122) MCU Multi-point Control Unit
MCV Multipoint Command Visualization
MD-IS Mobile Data Intermediate System
MD Manufacturer Defined
MDBS Mobile Data Base Station
MDC Manufacturer Declaration of Conformity
MDC Multiple Description Coding MDCP Media Device Control Protocol MDCR Minimum Desired Cell Rate

MDELFEXT Multiple-Disturber Equal-Level Far-End Crosstalk
MDF Mux Data Frame
MDI Medium Dependent Interface
MDLP Mobile Data Link Protocol
MDN Message Disposition Notification
MDN Mobile Directory Number
MDTP Multi-network Datagram Transmission Protocol
MDU Multi-Dwelling Unit ME Mobile Equipment ME Motion Estimation
MED Multiplexer Entry Descriptor
Megaco MEdia GAteway Control Protocol (IETF) Megacop MEdia GAteway COntrol Protocol
MEI Multiple Extension Interworking
MEI Multiple Extension In use (TIA/EIA-777-A) MELP Mixed Excitation Linear Prediction
MER Message Error Rate
MERS Minimal Essential Requirements
M-ES Mobile End System
MES Mobile Earth Station
MF fully protected hybrid systems (FCC Part 68 Form 730) MF Multi-tone Frequency
MFJ Modified Final Judgment
MFP Multi-Function Peripheral
MFPA Multi-Function Peripheral Association MFPI Multi-Function Peripheral Interface MFPL Multi-Function Peripheral Language MFPP Multi-Function Packet Protocol
MG Management Group
MG Media Gateway
MGC Media Gateway Controller
MGCP Media Gateway Control Protocol
MGT Mobile Global Title
MH MultiHypothesis motion pictures (H.26L)
MHEG Multimedia and Hypermedia Experts Group
MHP Multimedia Home Platform
MHS Message Handling System X.400
MI Miscellaneous Work Item (ETSI) MI Mode Indicator
MIB Management Information Base
MIGG MRA Implementation Guide Group
MIF Management Information File
MII Ministry of Industry Information (China) MIM Man in the Middle
MIME Multipurpose Internet Mail Extension
MIMO Multi-Input-Multi-Output
M-IN Multimedia Intelligent Networking
MIN Mobile Identification Number MIN Mobile Intelligent Network MIP Mobile Internet Protocol
MIPS Million Instructions Per Second
M-IRS Modified IRS
MIRS Multimedia Information Retrieval Services
MIV Multipoint Indication Visualization
ML Maximum Likelihood
MLC Multiple Logical Channel
MLP Multi-Layer Protocol
MLPP Multi-Level Precedence and Preemption
MLT Modulated Lapped Transform
MLTS Multi-Line Telecommunications Systems
M-LVDS Multipoint Low Voltage Differential Signaling
MLWW Multi Layered Winding Wire
MM Mass Media (FCC) MM Mobility Management MM MultiMedia
MM Multimode

MMAP Mobility Management Application Protocol (T1S1) MMBAN Multi Media Broadband Access Nodes
MMC Multiple Modulus Conversion
MMCF Multimedia Communications Forum
MMCOI Multimedia Communications Community of Interest
MMDS Multichannel Multipoint Distribution Service
MMF Multi Mode Optical Fiber
MMG Multimedia Management Group (ETSI)
MMH-MAC Multilinear Modular Hash - Message Authentication Code
MMI Man-Machine Interface (TTT Services) MMI Modem Management Interface
MMITS Modular Multifunction Information Transfer System mml mobile multilink
MMO Modem Managed Objects MMoMBN Multimedia over MBN MMR Modified Modified Read
MMRA Model Mutual Recognition Agreement
MMS Multimedia Messaging Service
MMUSE Multiparty Multimedia Session Control MMUSIC Multiparty Multimedia Session Control (WG) MNA Management Network Architecture
MNC Mobile Network Codes
MNE Mobile Network Entity
MNLP Mobile Network Location Protocol (IS-732-501) MNP4 Microcom Networking Protocol
MNRP Mobile Network Registration Protocol
MNRU Modulated Noise Reference Unit
MO Mobile Originated
MOCS Managed Objects Conformance Statements
MODB Macroblock mode for B-blocks
MoDSL Modems over DSL MOH Modem on Hold
MoIP Modems over Internet Protocol MOPS Million Operations Per Second MOS Mean Opinion Score
MoU Memorandum of Understanding
MOU Memorandum of Understanding
MP Modulation Parameter
MP Multipoint Processor (H.323) MPC Mobile Position Center
MPCI Mobile Protocol Capability Indicator
MPD Mode Power Distribution
MPE Maximum Permissive Exposure MPEG Motion Picture Experts Group MPI Minimum Picture Interval
MPh Half Duplex Modulation Parameters in the V.34 negotiation
MPL Multiplex Payload Length field
MPLS Multi-Protocol Label Switching
MP-MLQ Multi-Pulse - Maximum Likelihood Quantizer
MPOP Main Point of Penetration (where phone lines enter the residence) MPPC Microsoft Point to Point Compression
MPS Minimum Performance Specification
MPU Multiple Port Unit
MQ Modified Quantization
MQLVS Multi-Quality Layered Video Service
MR Mode Request MR Modified Read MR MultiRate
MRA Mutual Recognition Agreements
MRC Mixed Raster Content
MRD Market Requirements Document MRM Meeting Room Management MRP Markov Renewal Process
MRPC Multipoint Remote Procedure Call
MRU Maximum Receive Unit MS Management Services MS Mobile Station
MS Mode Select
MSAF Multimedia Services Affiliate Forum

MSB Manufacturer Specified Blocks
MSB Most Significant Bit
MSBN MultiService Broadband Network
MSC Message Sequence Chart
MSC Mobile Switching Center
MSC-BC Mobile Switching Center - Base Center
MSCID Mobile Switching Center Identification
MSCIN Mobile Switching Center Identification Number MSC-VBR Multi-mode Source Controlled Variable Bit-Rate MSD Master Slave Determination
MSD Minimum Significant Difference
MSDL MPEG-4 Syntactic Description Language
MSDN Multi-Service Data Network
MSE Mean Squared Error
MSF Multiservice Switching Forum
MSI Manufacturer Specific Information
MSI Maximum Symbol Inversion
MSID Mobile Station Identity
MSIN Mobile Station INput (GSM)
MSIN Mobile Subscriber Identification Number
MSISDN Mobile Station ISDN MSJ Multiple Selective Reject MSLT Minimum Scan Line Time MSN Microsoft Network
MSN multiple subscriber numbering
MSO Markov Service Option (cdma2000) MSR Multi-Selective Reject
MSR Market Service Requirement
MSS Mobile Satellite Services
MSSF Multi Service Switching Forum
MST MESSAGE TYPE field
MSWG Mobile Services Working Group (NAFTA/CCT) MT Mobile Terminal
MT Mobile Terminated
MT Mode Toggle
MT Type of commercial fiber optic connector
MT2 Cellular User's Mobile Termination
MTA Major Trading Area
MTA Multimedia Terminal Adapter (SG9) MTA Multimedia Terminal and Applications MTH Module Telecom Home
MTIE Maximum Time Interval Error
MTM Mobile Test Model MTP Message Transfer Part MTP Message Transfer Point
MTP Multicast Transport Protocol
MTP/SO Multiple Transport Protocol/Self Organizing
MTS Methodology of Test Suites
MTS Methods for Testing and Specification (ETSI TC) MTSO Mobile Telephone Switching Office
MTTCM Multi-tone Turbo Trellis Coded Modulation
MTU Maintenance Terminating Unit
MTU Maximum Transfer Unit
MTU Multiple Terminal Unit (DSL Forum) MUB Multi-Use Bearer Service
MUT Modem Under Test
MUTOA Multi-User Telecommunications Outlet Assemblies
MUX Multiplexer
MV Membership Vote (ETSI) MV Motion Vector
MVA Multipoint Visualization Achieved
MVC Mobile Video Coder
MVC Multipoint Visualization Capability
MVD Motion Vector Data

MVNO Mobile Virtual Network Operator
MVPD Multi-channel Video Programming Distributor
MVR Multipoint Visualization Refused/Revoked
MVV Multirate/VAD VBR MW Mid Wave
MWC Multi-Way Calling
MWI Message Waiting Indication MWIF Mobile Wireless Internet Forum MWN Message Waiting Notification

-N-
N Newtons
NA Network Aspects (ETSI TC) NA North America
NAB National Association Of Broadcasters
NACK Negative Acknowledgment
NACLA National Cooperation for Laboratory Accreditation
NAFTA North American Free Trade Agreement
NAG Network Architecture Group (DSL Forum)
NAG Network Reference Models, Acronyms and Definitions, and Guide to Standards Ad Hoc (TIA TR-45)
NAI Network Access Identifier (RFC 2468) NAK Negative Acknowledgment
NAK-NS Negative Acknowledgment - Not Supported NAK-NU Negative Acknowledgment - Not Understood NAL Network Adaptation Layer
NALAG Network Adaptation Layer Ad hoc Group
NAM Number Assignment Module
NAMPS Narrowband AMPS
NANC North American Numbering Council
NANP North American Numbering Plan
NANPA North American Numbering Plan Administrator
NAP Network Access Provider
NAPT Network Address Port Translation
NAPTR Naming Authority Pointer
NAR Numbering, Addressing and Routing Committee of ETSI NA2
NASNA National Association of State 9-1-1 Administrators
NAS Network Access Servers
NASRNG Network Access Server Requirements
NAT Network Address Translation
NATA North American Telephone Association
NATO North Atlantic Treaty Organization
NAVDEC Network Access Server and Voice on IP Device Control
NA/WCPE North American WCPE NB Narrow Band
NBC Non-backward Compatible
NBDG New Business Development Group
NBS Net Broadcast Service NBS Network Based Solution NBSP NarrowBand Signal Power NC Network Codes
NCA Non-Call Associated
NCAG Network Commonality Ad Hoc Group NCG Number Consulting Group (Bellcore) NCaps Capabilities with No sub-fields
NCAS Non-Call Associated Signaling
NCITS National Committee for Information Technology Standards
NCP Network Connection Point
NCRP National Council of Radiation Protection and Measurement
NCS Network-based Call Signaling
NCS Nurse Call System

NCTA National Cable Television Association NCTE Network Circuit Terminating Equipment ND NSF Message data Indication
NDA Non-Disclosure Agreement
NDB Networked DataBase Service
NDC National Destination Code (ITU)
NDIS Network Driver Interface Specification NDSS Network Directed System Selection NE Network Element
NE Network Entity
NEBS Network Equipment Building System, a Bellcore environmental requirements specification
NEC National Electric Code (U.S.)
NECA National Electrical Contractors Association
NECQ National Electronic Components Quality Assessment System
NE-EC Near End - Echo Canceller
NEMA National Electrical Manufacturers Association NENA National Emergency Number Association
NESC National Electric Safety Code
NET Norme Europeenne de Telecommunication
NEW FORUM Former COCOM NEXT Near End Cross Talk
NFPA National Fire Protection Agency ng Next Generation
NGDLC Next Generation Digital Loop Carrier
NGN Next Generation Network
NGN SG Next Generation Network Starter Group
NGOF Next Generation Optical Fiber
NGOSS New Generation Operations Support Systems (TM Forum)
NGSO Non-Geostationary Satellite Orbit
NHRP Next Hop Resolution Protocol
NHTSA National Highway Traffic Safety Administration
NI National ISDN
NI Network Interface
NIA Network Indicate Address (H.230)
NIBS National Institute for Building Standards
NIC Network Interface Card
NID Network Identification
NID Network Interface Device
NID Network Interface or Demarcation NIDAB Narrow Band Digital Broadcasting NII National Information Infrastructure
NIO Network Input Output
NIP Number Identification Presentation
NISDN National ISDN
NIST National Institute of Standards and Technology
N-ISDN Narrowband ISDN
N-ISUP Narrowband ISDN User Part
NIU Network Interface Unit
NIUF North American ISDN Users Forum
NLD Non-Linear Distortion
N-LLC Narrowband Logical Link Control
NLP Non-Linear Processor nm Nanometer
NM Network Management
NMAG Network Management Ad hoc Group
NMC Network Management Center
NMC Network Model Coverage
NMDS Narrowband Multi-service Delivery System
NMF Network Management Forum
NMS Network Management System

NMSI National Mobile Station Identification
NMT Nordic Mobile Telephony
NMX Normas Mexicanas (non-mandatory Mexican standard) NNI Network to Network Interface
NOF Network Operations Forum
NOI Notice of Inquiry
NOM Mexican National Standards
NO PROBLEM NOn PROprietary reliaBLe Electronic Mail
NP Network Provider
NP Non-Public
NP Number Portability
NPA Network Provider Access
NPA Numbering Plan Area
NPI Numbering Plan Indicator
NPID Network Provider Identification
NPR Noise Power Ratio
NPRM Notice of Proposed Rule Making (FCC)
NPRP Number Portability Routing Protocol (ETSI TIPHON Project) NR Noise Reduction
NR Nordstrom-Robinson (FEC) NRA National Regulatory Authority
NRC Negotiated Rulemaking Committee
NRC Network Reliability Council
NRIC National Reliability and Interoperability Commission
NRM Network Reference Model
NRTL Nationally Recognized Testing Laboratory
NRZ Non-Return to Zero
NRZI Non-Return to Zero on Ones
NS-cap Non-Standard capability
NS/EP National Security and Emergency Preparedness
NSA National Security Agency (U.S.) NSAP Network Service Access Point NSB National Standardization Body NSC Non-Standard Facilities Command
NS/EP National Security/Emergency Preparedness
NSF Network-Specific Facilities
NSF Non-Standard Facilities
NSIE Network Security Information Exchange NSMA National Spectrum Managers Association NSO National Standard Organization
NSP Network Service Provider
NSRA Normal Seamless Rate Adaptation NSRP Numbered SRP response frames NSS Non-Standard Setup
NSTAC National Security Telecommunications Advisory Committee
NT Network Termination
NTCA National Telephone Cooperative Association
NTE Network Terminating Equipment
NTIA National Telecommunications and Information Administration
NTP Network Termination Point NTP Network Time Protocol NTQ Near Toll Quality
NTR Network Timing Reference
NTR Network Timing Reference marker
NTRAC New Technical Regulations Approval Committee (former TRAC), ETSI NTSC National Television System Committee
NTU Network Terminating Unit
NVCASE National Voluntary Conformity Assessment System Evaluation
NVLAP National Voluntary Laboratory Accreditation Program
NVOD Near Video on Demand
NVRAM Non-Volatile RAM
NWK Network, Layer 3 of the WCPE protocol stack

NYCE Certification Body accredited by SECOFI (Mexico)

-O-

O&M Operations and Maintenance
O&NM Operations and Network Management working group (DSL Forum) O&P Ordering & Provisioning Committee (ATIS)
OA&M Operations, Administration, and Maintenance
OAA On Air Activation
OAM Operations, Administration, and Maintenance
OAM&P Operations, Administration, Maintenance & Provisioning
OAN Optical Access Network
OAP One step Approval Procedure (ETSI) OAS Organization of American States OATS Over-the-Air Activation TeleService
OBMC Overlapped Block Motion Compensation
OBF Ordering and Billing Forum
OBP On-Board Processing
OC Operation Channel
OCCS Overall Construction Classification System
OCD Out of Cell Delineation (UNI 3.0) OCDMA Orthogonal CDMA
OCG Operational Coordination Group (ETSI) OCG Overall Coordination Group
OCI Open Circuit Interval
OCR Optical Character Recognition ODA Open Document Architecture ODBC Open DataBase Connectivity ODL Object Definition Language
ODP Open Distributed Processing
ODP Originator Detection Pattern (V.42) ODTC Office of Defense Trade Controls (US) OEM Original Equipment Manufacturer
OET Office of Engineering and Technology (FCC) OFB Output Feedback
OFDM Orthogonal Frequency Division Multiplexing
OFS Operational Fixed Service (Microwave) OFSTP Optical Fiber Systems Test Procedure Oftel British Office of Telecommunications OGM Out-Going Message
OHG Operator Harmonization Group
OI Outline of Investigation
OID Object Identifiers
OIW Open Systems Implementers Workshop
OJ Official Journal
OJEC Official Journal of the European Communities
OLC Open Logical Channel OLR On-Line Reconfiguration OLR Overall Loudness Rating OLT Optical Line Termination OM Object Model
OM Optical fiber Multimode category
OMCI Operation, Management and Control Interfaces
OMG Object Management Group
OMT Overhead Message Train
ONE Other Network Entities (Omega Networks) ONP Open Network Provision
ONS On Premise Station
ONT Optical Network Termination
ONU Optical Network Unit
OOB Out of Band
OOF Out of Frame
OPASTCO Organization for the Promotoion and Advancement of Small Telecommunications Companies
OpenVoB Voice over Broadband http://www.openvob.org
OPS Off Premise Station
OPTIS Overlapped PAM Transmission with Interlocking Spectra

OPTS Over-the-Air Programming Teleservice
O-QAM Orthogonally multiplexed QAM ORDQ Order Qualification
ORREQ Origination Request
OS Operating System
OS Optical fiber Singlemode category
OSH Occupational Safety and Health
OSHA Occupational Safety and Health Administration (U.S.) OSI Open Switching Interval
OSI Open System Interconnection
OSN One Stop Notification
OSP Open Settlement Protocol
OSP OutSide Plant
OSPF Open Shortest Path First OSS Operations Support Systems OTA Over-the-Air Activation
OTAFG OTA Focus Group
OTAPA Over-the-Air Parameter Administration
OTAR Over-the-Air Rekeying (APCO Project 25) OTASP OTA Service Provisioning
OTDR Optical Time Domain Reflectometer
OTFI One Time Feature Indicator
OTI Open Telecom Infrastructure

-P-

P Predicted (Q6/16, VCEG)
P&A Privacy and Authentication
PA Partial Agreement
PA Pass Along (Operation code)
PABX Private Automatic Branch eXchange
PAC Program Advisory Committee
PACA Priority Access and Channel Assignment
PACA-E Enhanced Priority Access and Channel Assignment Supplement Service
PACC Partition, Aggregation and Conditional Coding
PACS Personal Access Communications System, Licensed Band PAC-U Personal Access Communications System, Unlicensed Band PAD Packet Assembler Disassembler
PAG Practical Application Guidelines PAGODA Profile Alignment Group on ODA PAL Phase Alteration Line
PAM Pulse Amplitude Modulation
PAMS Perceptual Analysis/Measurement System
PAR Peak to Average Ratio
PAR Pixel Aspect Ratio
PAS Publicly Available Specification
PASC PCS Access Service for Radio Controllers
PB Personal Base
PB Predicted and Bi-directional
PBNM Policy Based Network Management
PBO Power Back Off
PBS Personal Base Station PBX Private Branch Exchange PC Personal Computer
PC_SSN Point Code Sub-System Number
PCA Password Call Acceptance PCA Policy Group proposal on CA PCB Power Cut Back
PCC Per Call Control
PCC Pre-activation Communications Channel
PCC Private Control Channel
PCC 1 Permanent Consultative Committee (CITEL) PCCA PCMCIA Communication Card Association
PCCA Portable Computer Communications Association PCCC Parallel Concatenated Convolutional Codes
PCF Personal Call Forwarding PCF Picture Clock Frequency PCH Paging Channel

PCI Peripheral Component Interconnect
PCI Programmable Communications Interface
PCI Protocol Capability Indicator
PCIC Petroleum and Chemical Technical Conference (IEEE IAS) PCI SIG Peripheral Component Interconnect Special Interest Group PCIA Personal Communications Industry Association
PCL Power Line Communication
PCM Pulse Code Modulation
PCMCIA Personal Computer Memory Card International Association
PCME Packet Circuit Multiplication Equipment
PCN Personal Communications Network
PCR Program Clock Reference
PCS Personal Communication Services
PCSAP PCS Application
PCSC Personal Communications Switching Center PCSD Personal Communications Services Description PCT Pairwise Correlating Transform
PD Plugfest Document PD Powered Device PD Proposed Draft
PDAM Proposed Draft Amendment
PDC Personal Digital Cellular
PDD Post Dial Delay
PDE Position Determining Entity
PDE Primary Designated Engineer (UL) PDF Portable Document Format
pdf probability distribution function
PDH Plesiocronous Digital Hierachy
PDH Primary Digital Hierachy
PDL Polarization Dependent Loss
PDN Packet Data Network
PDS Phase Dithering Sequence
PDU Protocol Data Unit
PDTR Proposed Draft Technical Report PDU-MUX Protocol Data Unit Multiplexer PDV Packet Delay Variation
PE Policy Enforcement element
PE Poly Ethylene
PE Public Inquiry (ETSI)
PEAQ Perceptual Evaluation of Audio Quality (ITU-R rec. BS.1387) PED Portable Electronic Device
PEF Proxy Element Function PER Packed Encoding Rules PER Parameter Error Rate
PESQ Perceptual Evaluation of Speech Quality
PEX ETSI Help Desk for Conformance
PEXT Premises End Crosstalk
PF Presence Function
PFD Power-flux Density
PHB Per-Hop forwarding Behavior PHCF Hard Polymer Clad Fiber PHP Personal Handy Phone
PHS Personal Handyphone System
PHY Physical Layer
PIB Personal Information Base
PIC Primary / Presubscribed Interexchange Carrier PICS Protocol Implementation Conformance Statement PID Protocol ID
PIN Personal Identification Number
PIN T.30 procedural interupt negative
PINS Project Initiation Notification System (TIA) PINT PSTN Interworking (IETF)
PINX Private Integrated Network Exchange
PIP T.30 procedural interupt positive
PISN Private Integrated Services Network PIXIT Profile Initialization for Test Cases PKCS Public Key Cryptography Standards PKI Public Key Infrastructure

PL Physical Layer
PL Preferred Language
PL Program Lock
PLAR Private Line Auto Ring PLC Power Line Communication PLI Power Line Interference
PLL Phase Locked Loop
PLMN Public Land Mobile Network
PLMTS Public Land Mobile Telecommunications System
PLOAM Physical Layer Operations, Administrations and Maintenance
PLS Physical Layer Specification
PLT PowerLine Telecommunications
PM Phase Modulation
PM Performance Management
PM Processable Mode
PMC Packet Mode Channel
PMC Project Management Committee (ETSI) PMCC Packet Mode Channel Connect
PMCE Packet Mode Channel Element PMCH Packet Mode Channel Call Control PMCH Packet Mode Channel Handler PMD Physical Media Dependent layer
PMD Polarization Mode Dispersion
PMM Protocol Management Module
PMMS Power Measurement Modulation Session
PMP Point to MultiPoint PMR Peak-to-Mean Ratio PMS Physical Media Specific
PMS-TC Physical Media Specific - Transmission Convergence
PMT Program Management Team
PN Project Number (TIA)
PNE Production of Norms in Europe
PNNI Private Network to Network Interface
P-n-P Plug and Play
PNT Phone-line Network Transceiver
POC Points of Contact (LBC) POC Postal Operations Council POC Proof-of concept
POC Public Operator's Code
POCSAG Post Office Code Standardization Advisory Group (UK) PoD Packet transport over DSL
PoDSL Packet over DSL POF Plastic Optical Fiber
POF Private Operating Frequencies
PON Passive Optical Network
POPs Points of Presence
POS Packet-over-SONET
POTS Plain Old Telephone Service
PoV Packet over VDSL
PoV-TC Packet over VDSL - Transmission Convergence Layer
PoW Poor or Worse
PP Portable Part
PPD Proposal Package Description PPDN Public Packet Data Network PPI PCS to PCS Interference
PPM Parts Per Million
PPP Point-to-Point Protocol
PPPoA PPP over ATM
PPPoE Point to Point Protocol over Ethernet pps pulses per second
PQ Priority Queuing
PR Public Relations
PR&A Project Request and Authorization
PRA Primary Rate Access
PRBS Pseudo-Random Bit Sequence
PRC Premium Rate Charging
PRC Private Channel

PRD Pseudo-Random Downstream Sequence
PRI Primary Rate Interface (ISDN) PRM Performance Report Messages PRNS Pseudo Random Noise Sequence PRO Planning and Reporting Officer
PROM Programmable ROM
PS PCSC ISDN Switch
PS Product Safety
PSA Polled SubAddress
PSAP Public Safety Answering Point
PSC Picture Start Code
PSD Power Spectral Density
PSDN Public Switched Data Network PSDS Public Switched Digital Service PSE Power Source Element
PSE Power Sourcing Equipment
PSELFEXT Power Sum Equal Level Far-end Crosstalk
PSI-CELP Pitch Synchronous Innovation CELP PSID Private System ID
PSIDS Private System ID Service
PSK Phase Shift Key
PSN Private Switched Network
PSNEXT Power Sum Near-end Crosstalk
PSNR Peak Signal to Noise Ratio
PSP Public Service Profiles
PSPDN Packet Switched Public Data Network
PSQM Perceptual Speech Quality Measure (ITU Rec. P.861) PSS1 Private Network Signaling System 1, defined by ISO PSTN Public Switched Telephone Network
PSWG Product Safety Working Group (Trilateral) PT Portable radio Terminal
PT Project Team (ETSI)
PTC PictureTel Transform Coder
PTCC Pex & Testing Competence Center (ETSI) PTM Packet Transfer Mode
PTN Public Telecommunications Network (TIPHON) PTN Private Telecommunications Organizations
PTNO Public Telecommunications Network Operator (TIPHON) PTO Private Telecommunications Organizations
PTPCP Peer-To-Peer Control Protocols
PTS Pay Terminals and System
PTS Payphone Terminals and System
PTS Pay Terminal System
PTSP PNNI Topology State Packet PTT Public Telephone and Telegraph PTT Push to Talk
PUA Personal User Agent
PUC Public Utilities Commission
PUM Personal User Mobility PVC Permanent Virtual Circuit PVC Poly Vinyl Chloride
PWA Password Access PWD Password (T.30) PWG Printer Work Group
PWT Personal Wireless Telecommunications
PWT-E Personal Wireless Telecommunications - Enhanced Interoperability Standard

-Q-

Q&A Question and Answer
QADM Quadrature Audio Data Modulation (VoiceSpan [TM]) QAM Quadrature Amplitude Modulation
QBD QoS Bearer Descriptor
QC Quick Connect
QCA Quick Connect Acknowledge
QCELP Qualcomm's proprietary version of CELP QCIF Quarter CIF
Q-Mode Quiescent Mode (Q4/15) QoS Quality of Service (also QOS) QoSM Quality of Service Manager QP Quantization Parameter (H.262)

QPSK Quadrature Phase Shift Keying
QS Quality Scalability
QSDG Quality of Service Development Group
QSIG The signaling protocol used at the Q-interface between two switches in a private network. ECMA/ISO have defined a set of QSIG standards.
QUANT Quantization parameter
QUEST Quality Excellence for Suppliers of Telecommunications

-R-

R&O Report and Order
R&TTE Radio and TTE (Telecommunications Terminal Equipment) Directive
RAB Registrar Accreditation Board RACF Radio Access Control Function RACH Random Access Channel
RADIUS Remote Access Dial-In User Server
RADSL Rate-Adapting ADSL RAI Remote Alarm Indication RAL Restricted Access Location RAM Random Access Memory
RAM Remote Access Multiplexer (DSL Forum)
RAMA Resource Auction Multiple Access
RAN Radio Access Network
RAND Random Challenge Memory
RAS Registration, Administration, and Status
RAS Remote Access Server
RASC Radio Access System Controller RAST Receive And Send Terminal RATERQ Rate Request
RB Radiocommunications Bureau (ITU-R) RBAF Radio Bearer Adaptation Function RBB Residential BroadBand
RBER Residual Bit Error Rate
RBTESC Routing, Bridging, and Transfer of Emergency Service Calls
RBOC Regional Bell Operating Company
RBS Robbed-bit signaling RBW Resolution BandWidth RCC Return Channel for Cable
RCDD Registered Communications Distribution Designer
R-CELP Renewal CELP RCELP Residual CELP
RCF Radio Control Function (T1P1) RCF RegistrationConfirm
RCF Registration Control Field
RCF Remote Call Forwarding RCH Random Access Channel RCP Radio Control Protocol
RCPC Rate Compatible Punctured Convolutional
RD or R-D Rate Distortion
RDC Remote Device Control
RDI Remote Detect Indication (VC-RDI)
RDQ Rate-Distortion constrained Quantization
RDS Requirements Definition Study REA Rural Electrification Association REC RECeive alarm
REJ Reject
RELP Residual Excited Linear Prediction
REN Ringer Equivalence Number REQ-MP Request Mode Proposal REQ-MR Request Mode Request
RES Radio Equipment Systems
RESNA Rehabilitation Engineering and Assistive Technology Society of North America
RESCAP Resource Capabilities discovery
REVAL Procedure for Evaluation of Radio Technologies for FPLMTS RF Radio Frequency
RF Resolution Function (TIPHON)
RFC Designation for an IETF Standard
RFC Remote Feature Control
RFC Request for Comments (IETF)
RFDB Resolution Function Data Base (TIPHON) RFER Residual Frame Error Rate
RFI Radio Frequency Interference

RFI Request for Information RFO Remote Foreign Office RFP Radio Fixed Parts
RFP Request for Proposal
RFQ Request for Quotation
RFT Remote Feeding Telecommunication (circuits)
RFT-C Remote power Feeding Telecom - Current limited RFT-V Remote power Feeding Telecom - Voltage limited RG Residential Gateway
RGB Red Green Blue
RGIP Residential Gateway Internal Protocol
RH Multiple HDLC Receive
RIP Request In Process
RIPE Regional Internet Registry for Europe
RJ Registered Jack
RL Return Loss
RLAN Radio Local Area Network
RLP Radio Link Protocols
RLR Receive Loudness Rating RM Simple Facsimile Receive RMI Remote Method Invocation
RMMIE Remote Modem Management Information Exchange
RMOA Realtime Multimedia Over ATM (ATM Forum)
RM-ODP Reference Model for Open Distributed Processing
RMP Reliable Multicast Protocol
RMS Root Mean Square
RNR Receiver Not Ready
ROAMOPS Roaming Operations Task Force
ROC Report on Comments
ROLR Receive Objective Loudness Rating
ROM Read Only Memory
ROP Report On Proposals
ROSE Remote Operations Service Element (X.219 and X.229) ROT Receive Only Terminal
RP Radio Ports
RP Reference Points
RP-AS Ringing, Pulse-Alerting Signal
RPC Remote Procedure Call
RPCU Radio Port Control Unit RPE Regular Pulse Excitation RPF Remote Power Feed
RPP Reverse-Pair Positioning
RPR Reference Picture Resampling
RPS Reference Picture Selection
RPWM Rules of Procedure and Working Methods
RQV Running Quality Value
RR Resource Record (TIPHON) RR Registration Reject
RRJ Registration Reject
RRQ Registration Request
RRU Reduced Resolution Update
RS Radio System
RS Radiocommunications Sector - ITU- (CCIR) RS Reed-Solomon (code)
RS Rectangular Slice
RS Resolution Services (TIPHON)
RSA Public Key Cryptosystem invented by Rivest, Shamir and Adleman
RSA Rural Service Area
RSDN Regional Switched Digital Network
RSF Residential Standards Forum
RSGCP Reliable Signaling Gatway Control Protocol
RSGP Reliable Signaling Gateway Protocol
RSID Residential System Identification

RSL Reference System Lab
RSSI Received Signal Strength Indication
RSVP Resource Reservation Setup Protocol (IETF) RT Remote Terminal
RT Round Trip
RTC Return to Control (T.4)
RTCA Radio Technical Commission for Aeronautics
RTCP Real-time Transport Control Protocol
RTD Round Trip Delay
RTE Remote Terminal Equipment
RTF Radio Terminal Function
RTLM Real Time Link Management
RTP Real Time Transport Protocol (IETF) RTR Revised Technical Report (ETSI) RTS Request to Send
RTS Revised Technical Specification (ETSI) RTS-CTS Request to Send - Clear to Send RTSP Real-Time Streaming Protocol
RTT Radio Transmission Technologies
RTTE Radio and Telecommunication Terminal Equipment
RTU Right to Use
RTX Request Retransmission
RTYPE Rounding Type
RUFP Reflected Unique Findable Pattern RVLC Reversible Variable Length Codes RX Receive
RZ-SSB Return to Zero SSB

-S-

S&R Segmentation and Re-assembly
S/ATT Satellite Analog Tie Trunk (TIA-646-B) S/DTT Satellite Digital Tie Trunk (TIA-646-B) S/N Signal-to-Noise
S/T Logical interface between xTU-R and user terminal equipment
SA1 Systems Aspects - Services (3GPP Committee)
SAA-AMS Service Aspects and Applications - Audio/Visual Multimedia Services
SAAC Syntax-Based Adaptive Arithmetic Coding
SABM Set Asynchronous Balanced Mode
SABME Set Asynchronous Balanced Mode Extended
SAC Service Access Code
SAC Subscriber Access Control
SAC Syntax-based Arithmetic Coding SACCH Slow Associated Control Channel SAD Sum of Absolute Differences
SAE Society of Automotive Engineers
SAFE SeAmless, Fixed-overhead Efficient (framing) SAFER Secure and Fast Encryption Routine
SAGE Security Algorithms Group of Experts
SAID Serving Area ID
SAM Synchronous Access Mode (V.80)
SAMPS System Assisted Mobile Positioning through Satellite (TDMA Third Generation Wireless)
SANC Signaling Area Network Code
SAP Segmentation Application Part
SAP Service Access Point
SAP System Application Procedure SAPI Service Access Point Identifier SAR Segmentation And Re-assembly SAR Specific Absorption Rate
SAS Smart Antenna Savvy
SAS Subscriber Alerting Signal
SASET Secure Audio SET SAT Satellite
SAT Satellite ATM
SAVD Simultaneous or Alternating Voice Data
SBC Southern Building Code
S-BCCH Short Message Service Broadcast Control Channel

SBE Single Byte Extension SBI Sub-Bitstream Indicators SBID Stuff Bit ID
SBM Single Bitmap
SBSD Supplementary and Bearer Service Description (T1S1) SC Steering Committee
SC Service Capability
SC Subscriber Confidentiality
SC Type of commercial fiber optic connector (Push-Pull) SCA Selective Call Acceptance
SCaps Capabilities with Sub-fields
SCC Standards Coordinating Committee (IEEE) SCC Standards Council of Canada
SCCC Serial Concatenated Convolutional Code
SCCH Single Cell Control Channel
SCCP Signaling Connection Control Part (SS7)
SCD Service Capability Definition
SCELP Spike Code Excited Linear Prediction
SCF Service Control Function
SCF Shared Control with Feedback
SCF Supervisory and Control Function
SCF Synchronization and Convergence Function
SCF System Communication Function
SCM Single-Carrier Modulation
SCM Station Class Mark
SCM Sub-Carrier Multiplexing
SCN Switched Circuit Network
SCOT Steering Committee on Telecommunications
SCP Service Control Point
SCR Selective Call Rejection
SCSA Signal Computing System Architecture
SCSC SubCommittee on Standards and Conformance (APEC) SCSI Small Computer System Interface
SCT Strathclyde Compression Transform
SCT Simple Control Transmission Protocol
SCT Mexican Ministry of Communications and Transports
SCTE Society of Cable Television Engineers
ScTP Screened Twisted Pair
SCTP Stream Control Transmission Protocol
SCV Specialized Codec VBR SD Spectral Data
SD Super Domain
SDB Switched Digital Broadcast
SDC Supplier's Declaration of Conformity (also SDOC) SDCC Supplementary Digital Color Code
SDCCH Standalone Dedicated Control Channel
SDD Stutter Dialing Device
SDF System Directory Function SDH Synchronous Digital Hierarchy SDL Structure Description Language SDMT Synchronized DMT
SDO Standards Development Organization
SDoC Suppliers Declaration of Conformity (also SDC) SDP Session Description Protocol
SDPng SDP Next Generation
SDR Sequence Determined Redundancy
SDSAF Switched Digital Services Applications Forum
SDSL Simultaneous DSL
SDSL Symmetrical high bit rate Digital Subscriber Line
SDSS Server Display And Script Services
SDT Stutter Dial Tone SDU Service Data Unit SE Synchronous Editing
SEAD Software Encryption Algorithm for Data Services
SEBCH Systematic Extended Bose, Chaudhuri, and Hocquengham
SEC ETSI Security Technical Committee

SECOFI Mexican Ministry of Commerce and Industrial Development
SEI Supplemental Enhancement Information
SELV Low Voltage associated with digital circuits (IEC 950) SEP Selective Polling (T.30)
SERVNOT Service Notification
SES Severely Errored Second
SES Standards Engineering Society
SET Simple Endpoint Types
SF Single Frequency
SF Superframe
SF Synchronization Flag
SfDLy Superframe reconfiguration Delay number (Q4/15) SFF Small Form Factor
SFlgSf Synch Flag Superframe number (Q4/15) SFR Special Function Registers
SG Signaling Gateway
SG Study Group (ITU)
SGCI Simple Gateway Control Interface
SGCP Simple Gateway Control Protocol
SGFS Special Group for Functional Standards
SGMM MultiMedia Study Group SGSN Serving GPRS Support Node SHDSL Single-line High Speed DSL SHO Soft Handoff
SI Signaling Intelligence
SI Still Image
SIA Security Industry Association
SIA Semiconductor Industry Association
SID Send Identifier
SID Silence Insertion Descriptor
SID System Identification
SIF Standard Interchange Format SIG Special Interest Group SIGTRAN Signaling transport (IETF)
SIM Subscriber Identity Module
SIMD Single-Instruction, Multiple Data
SIN System Identification Network
SIO Scientific or Industrial Organization (ITU member) SIP Session Initiation Protocol (IETF)
SIPTEL Session Initiation Profile for Internet Telephony, an IETF BoF group, which was a precurser to the IETF Working Group iptel (IP Telephony)
SIR Signal to Interference Ratio
SIRD Service Independent Requirements Definition
SIT Special Information Tone SIU Subscriber Interface Unit SLA Service Level Agreement
SLB Sequential Link Bring-up (V.MoIP) SLC Subscriber Loop Carrier
SLC Start of Layer Data
SLD Second Level Domain
SLE Screen List Editing
SLER Signal to Listener Echo Ratio
SLIC Subscriber Line Integrated Circuit
SLIM Simple Legislation for the Single Market
SLP Service Location Protocol SLR Send Loudness Rating SM Service Management
SM Single Mode
SM Spectrum Management
SMALL Short Multiplexed AAL
SMATV Satellite Master Antenna Television
SMD Short Message Delivery
SMDB Short Message Delivery Broadcast SMDBACK Short Message Delivery Backward SMDFWD Short Message Delivery Forward
SMDM Short Message Delivery Multipoint Bearer Service SMDPP Short Message Delivery Point-to-Point Bearer Service SMDS Switched Multi-megabit Data Service

SME Short Message Entity
SME Signaling Message Encryption
SME Small-to-Medium sized Enterprises
SME Subject Matter Expert
SMEKEY Short Message Encryption Key
SMG Special Mobile Group
SMI Structure of Management Information SMM Spectrum Management Methodology SMMI Single Man Machine Interface
SMPTE Society of Motion Picture and Television Engineers
SMR Specialized Mobile Radio SMS Service Management System SMS Short Message Service
SMSA Standard Metropolitan Statistical Area
SM-SC Short Message Service Center SMSC Short Message Service Center SMSC SMS-call
SMSREQ Short Message Service Request
SMTP Simple Mail Transfer Protocol
SMV Selectable Mode Vocoder
SN Scaling Number
SN Service Node
SNA Synchronous Network Architecture
SNDCP Sub Network Dependent Convergence Protocol
SNHC Synthetic-Natural Hybrid Coding
SNI Service Node Interface SNI SMS Notification Indicator SNI Standard Network Interface
SNMP Simple Network Management Protocol (IETF) SNR-LP SNR scalable coding with Leaky Prediction SNR Signal to Noise Ratio
SOA Semiconductor Optical Amplifier
SOC System Operator Code SOHO Small Office Home Office SOI Start of Image
SOM Self-Organizing Multicast
SONET Synchronous Optical Network SOP Standard Operating Procedure SOS Speech Option Selection
SOT Send Only Terminal
SOVA Soft Output Viterbi Algorithm
SP Service Provider
SP Standards Proposal (TIA Industry Ballot) SP Study Point (ETSI)
SP Switchable-P [frames] SPA Service Provider Access
SPACH Short Message Service, Paging Channel and Access Response Channel
SPAI Service Provider Access Interfaces
SPAN Services and Protocols for Advanced Networks (ETSI TC) SPAR Service Provider Access Requirements (ETSI SPAN)
S-PCN Satellite Personal Communications Network
S-PDU Supervisory PDU
SPH Service Profile at the Home location spi spots per inch
SPI Standard Programmatic Interface
SPIFF Still Picture Interchange File Format
SPINA Subscriber Personal Identification Number Access SPINI Subscriber Personal Identification Number Intercept SPC Single Parity Check
SPC System Programming Code
SPIRITS Service in the PSTN/IN Requesting InTernet Service (IETF) SPL Sound Pressure Level
SPNE Signal Processing Network Equipment
S-PRBS Single cycle - Pseudo Random Bit Sequence
SPRT Simple Packet Relay Transport
SPS Signaling Protocols and Switching
SPS Signaling Protocol And System Technical Committee (ETSI)
SPS5 SPC Signaling, Protocols and Switching Stored Program Controller (ETSI) SPTT Signal Processing Transmission Terminals

SPV Service Profile at the Visited location
SPVC Switched Permanent Virtual Circuit
SPWG Service Provider-focused Working Group (Trilateral) SQ Scalar Quantization
SQCIF Sub-QCIF
SQEG Speech Quality Expert Group
SQL Structured Query Language
S/R Suspend/Resume
SR Special Report (Telcordia) SRA Seamless Rate Adaptation
SRC Strategic Review Committee (ETSI) SRD Standards Requirements Document SRDB Selective Routing Data Base
SREJ Selective Reject
SRF Service Resource Function
SRGB Standard RGB (Red Green Blue) SRL Secure Radio Link
SRL Software Release Letter
SRL Structural Return Loss
SRM Standards Related Matters
SRP Scalable Resource reservation Protocol
SRP Server Requester Protocol
SRTS Synchronous Residual Time Stamp
SRU Signal Regenerator Unit
SRU-R Signal Regenerator Unit - Remote
SS Slice Structured
SS Steady State
SS Supplementary Services
SS#5 Signaling System 5
SS#7, SS7 Signaling System 7
SS-CD Supplementary Services Call Deflection
SS-CFB Supplementary Services Call Forwarding Busy
SS-CFNR Supplementary Services Call Forwarding No Reply
SS-CFU Supplementary Services Call Forwarding Unconditional
SS-CI Supplementary Service - Call Intrusion
SSCOP Service Specific Connecction Oriented Protocol SSCQE Single Stimulus Continuous Quality Evaluation SSCS Service Specific Convergence Sublayer
SSD Shared Secret Data
SSDSL Synchronized Symmetric Digital Subscriber Line
SSE Sum of Squared Error
SSF Service Switching Function SSFP Service Specific Face Plate SSG Special Study Group (ITU) SSI Signal Strength Indicator
SSL Secure Sockets Layer
SS-MCM Supplementary Services - Message Center Monitoring
SS-MID Supplementary Services - Mailbox Identification
SSN Sub-System Number
SSO Speech Service Option
SSOVP Solid State Primary Protectors
SSP Service Switching Point
SSPR System Selection for Preferred Roaming
ST Type of commercial fiber optic connector (Bayonet) STANAG NATO Standardization Agreement
STAG Security Techniques Advisory Group
STB Set Top Box
STC Sub-Technical Committee (ETSI) STD Simplified Trellis Decoder
STDT Stutter Dial Tone
STE Secure Terminal Equipment STF Specialist Task Force (ETSI) STG Special Task Group
STG Special Topic Group

STI Service Transport Interface
STIT IEEE Subcommittee on Telephone Instrument Testing
STL Software Tool Library
STM Synchronous Transmission Mode
STMR Sidetone Masking Rating
STN Switched Telephone Network
STP Set of Transmission Parameters (TM6) STP Shielded Twisted Pair
STP Signaling Transfer Point STP Standards Technical Panel STQ Speech Transmission Quality
STRE Side-Tone Reference Equipment
STU Secure Terminal Unit
STU SHDSL Transceiver Unit
STU-C SHDSL Transceiver Unit - Central office end
STU-R SHDSL Transceiver Unit - Remote Terminal End
STU-III Secure Terminal Unit - III STS Short Term Stationary
SU Subscriber Units
SUB Sub-address (T.30) SUD Single Use Device SUR Survivability
SVB Switched Video Broadcast SVC Switched Virtual Circuit SVD Simultaneous Voice Data
SVF Simultaneous Voice and Facsimile
SW Software
SWELP Switched Excited Linear Predictive
SWG Sub-Working Group

-T-

T&E Technical & Engineering Committee (Telocator)
T&I Testing & Interoperability (DSL Forum Working Group) T&IWG Testing & Interoperability Working Group (ADSL Forum) T&R Tip and Ring
TA Technical Assembly
TA Terminal Adapter
TA Transmit Additional information
TAAB Technical Ad hoc Advisory Board
TAAC Telecommunications Advisory Committee
TAB Tone above Band
TABD Trans-Atlantic Business Dialog
TAC Terminal-Aggregator Communication
TAC Terminal Attachment Council
TACS Total Access Communications Systems
TAF Terminal Adoption Function
TAG Technical Advisory Group
TAP Traditional Approval Process (ITU, via Resolution 1) TAP Two-step Approval Process (ETSI)
TAPAC Terminal Attachment Program Advisory Committee
TAPI Telephony API
TASA Telecommunications Access System Act
TAWG Terminal Attachment Working Group
TB Technical Body (ETSI) TB Turbo Block
TBB Telecommunications Bonding Backbone
TBCD Telephony Binary Coded Decimal
TBD To be Determined
TBG Technical Basis for Globalization
TBH Technical Basis for Harmonized conformance
TBI Ten Bit Interface
TBR Technical Basis for Regulation (ETSI) TBRL Terminal balance return loss
TC Technical Committee
TC Telecommunications Closet

TC Test Case
TC Transaction Capabilities
TC Trellis Coded
TC Turbo Convolutional
TCAM Telecommunication Conformity Assessment and Market Surveillance Committee (ETSI) TCAP Transaction Capabilities Application Part
TC AT Technical Committee Access and Terminals (ETSI) TCB Telecommunications Certification Bodies
TCBC Telecommunications Certification Bodies Council
TCC Technical Correlating Committee (NEC) TCC Borland Turbo C++ Compiler
TC-ERM ETSI Technical Committee on EMC and Radio spectrum Matters
TCF Training Check (T.30)
TCH Transparent Circuit Handling
TC HF Technical Committee Human Factor (ETSI) TCIF Telecommunications Industry Forum (ATIS)
TCL Transverse Conversion Loss
TCLw Terminal Coupling Loss weighted
TCM Time Compression Multiplex
TCM Trellis Coded Modulation
TCM-ISDN Time Compression Multiplexed ISDN
TC-NA ETSI Technical Committee on Network Aspects
TCOEF Transform Coefficient
TCON Telenor Research's error concealment decoder
T-CONT Traffic Container (G.983.dba) TCP Terminal Connection Point
TCP Transmission Control Protocol
TCPA Telephone Consumer Protection Act (1991) TC-PAM Trellis Coded Pulse Amplitude Modulation TCP/IP Transmission Control Protocol/Internet Protocol TC SP Technical Committee Speech Processing
TC-SPS ETSI Technical Committee on Signaling Protocol and System
TC-TM Technical Committees on Transmission and Multiplexing
TCR-TR Technical Committee Report-Technical Report
TCTL Tranverse Conversion Transfer Loss
TD Temporary Document (ITU et al)
TDD Task Data Descriptions (T.611 e-mail) TDD Telecommunications Devices for the Deaf TDD Time Division Duplexing
TDF Transportable Document Format
TDM Time Division Multiplex
TDMA Time Division Multiple Access
TDOA Time Difference of Arrival
TDSO Test Data Service Option (cdma2000) TE Terminal Equipment (ETSI TC)
TE Traffic Engineering
TE2 Cellular User's Terminal Equipment
TEC-LA Telecommunications and Electronic Consortium for Latin America
TEDPA Telecommunications Equipment Distribution Program Association (www.tedpa.org) TEL Telephony (APEC WG)
TELR Talker Echo Loudness Rating
TEM TE Management Meeting TEM Transverse Electro Magnetic TEN Trans-European Networks
TEN-Telecom Trans-European Telecommunications Networks
TEP Talk Echo Protection
TEQ Time Domain Equalizer
TES Telecommunication Equipment Safety TETRA Trans European Trunked RAdio TFIG Task Force Implementation Group TFO Tandem Free Operation
TFTP Trivial File Transfer Protocol (RFC 1350)
TG Task Group

TGB Telecommunications Grounding Busbar
TGCP Trunking Gateway Control Protocol
TH Tomlinson-Harashima
THD Total Harmonic Distortion
THL TransHybrid Loss
TIA Telecommunications Industry Association TICS Transport Information and Control Systems TIES Telecom Information Exchange Services (ITU) TIES Time Independent Escape Sequence
TIFF Tagged Image File Format
TIFF-F Tagged Image File Format-Fax
TIFF-FX Tagged Image File Format-Fax (RFC 2301)
TIGIN Transport Network Equipment for Interconnecting GSTN and IP Networks
TILU Telecommunications Industry Liaison Unit (FBI) TIMS Transmission Impairment Measurement System
TINA Telecommunications Information Networking Architecture
TIP Transport and Internetworking Package
TIPIA TIPHON IP telephony Implementation Agreement
TIPHON Telecommunications and Internet Protocol Harmonization Over Networks (ETSI TC) TIWG Testing & Interoperability Working Group
TLA Three Letter Acronym TLC Test Loop Combination TLD Third Level Domain
TLDN Temporary Local Directory Number
TLP Test Level Point
TLS Transport Layer Security
TLV Type Length Value
TM TeleManagement (Forum)
TM Transmission and Multiplexing (ETSI TC) TMCC TM Chairman's Coordination committee TMF TeleManagement Forum
TMGB Telecommunications Main Grounding Busbar tML telecommunications Markup Language
TML Test Model
TMN Telecommunication Management Network
TMN1 Temporal Reference Model for the Near Term 1
TMN8 Video Codec Test Model, Near-Term, Version
TMSI Temporary Mobile Station Identity
TNR Transmit Not Ready
TNS Transit Network Selection
TNV Telephone Network Voltage (IEC 950) TO Telecommunications Outlet
TOA Time of Arrival
ToC Table of Contents
TOC Terminated Open Circuit
TOLR Transmit Objective Loudness Rating
TOM Telecom Operations Map (TeleManagement Forum) TON Type of Number
ToR Terms of Reference
TOSCA Text and Office Systems Content Architecture
TOSQA Telecommunication Objective Speech Assessment, algorithm of T-Nova Berkom
TP Test Protocol
TP Test Purposes
TPDU Transport Protocol Data Unit (X.224) TPS Transport Protocol Specific
TPS-TC Transport Protocol Specific-Transmission Convergence
TPKT Transport Packet (T.123)
TPUI Temporary Portable User Identity
T/R Tip/Ring
TR Technical Report
TR Technical Requirements (TIA committee) TR Telecommunications Room
TR Temporal Reference

TR Transmit Ready
TR2TF Technical (TR- Committee) Regulatory Reform Task Force TRAC Technical Recommendations Application Committee (ETSI) TRC TIPHON Resolution Capability
TREG Telecommunications Regulatory Email Grapevine
TRIC TIA Regulatory Issues Committee
TRIO TIPHON Remote InterOp
TRIP Telephony Routing Information Protocol
TRL Transmit Loudness Rating
TRMMDS Technical Requirements MultiMedia Distribution Systems
TRP Temporal Reference for Prediction
TRRTF Technical (TR- Committee) Regulatory Task Force TRWNT Technical Requirements Wireline Terminals TRWST Technical Requirements Wireless Terminals
TS Technical Specification
TS Time Slot (Q6/15)
TS PCR Transport Stream Program Clock Reference
TSA Transmitting Subscriber internet Address
TSACC Telecommunication Standards Advisory Council of Canada TSAG Telecommunication Standardization Advisory Group (ITU) TSAPI Telephony Server API
TSB Telecommunications Standardization Board (ITU) TSB Telecommunications Systems Bulletin (TIA)
TSG Technical Specification Group
TSI Transmitting Subscriber Identification
TSP Telephony Service Provider
TSS ITU-Telecommunications Standardization Sector (CCITT) TSS Test Suite Specification
TSSC Technical Standards Subcommittee (TIA) TSSS Temporal, SNR, and Spatial Scalability TSV Transport Area (IETF)
TSWG Transport Sub Working Group (DSL Forum) TT ANSI Translation Type
TTC Telecommunication Technology Committee (Japan) TTC TIA Technical Committee
TTCM Turbo Trellis Coded Modulation
TTCN Tree and Tabular Combined Notation TTE Telecommunications Terminal Equipment TTF Technical Task Force
TTIB Transparent tone in band
TTL Time To Live
TTP Trusted Third Party
TTT Trans-European Network Telecom (TIPHON) TTY Teletype
TU-C Transceiver Unit - Central Office End
TUP Telephony User Part
TV Television
TWA Time Weighted Average
TWAIN Scanner Interface API: Technology Without An Interesting Name (MFPI work) TWP Technical Working Procedures (ETSI)
TX Transmit

-U-

U/S Upstream
UA User Agent
UAP Unified Accelerated Procedure
UART Universal Asynchronous Receiver Transmitter
UAS Unavailable Seconds (Rec. G.997.1) UAWG Universal ADSL Working Group UB Unlicensed Band
UBC Uniform Building Code
UBC University of British Columbia
UBIC Unbilled Itemized Calls UBR Unspecified Bit Rate UBS User-Based Solution

UC-PAM Ungerboeck Coded PAM
UCAN User Circuit mode Access to Network (T1S1) UCF Unregistration Confirm
UCI Universal Communications Identifier
UCS Universal Character Set
UCS Universal multiple octet coded Character Set
UDDI Universal Description, Discovery and Integration (industry initiative) UDI Unrestricted Digital Information
UDLC Universal Digital Loop Carrier UDP User Datagram Protocol (IETF) UEP Unequal Error Protection
UDP User Datagram Protocol
UDPTL Facsimile UDP Transport Layer protocol
UGST User's Group on Software Tools
UHF Ultra High Frequency
UI Unit Interval
UI User Interface
UI Unnumbered Information transfer format
UIH Unnumbered Information with Header check
UIM User Identity Module
UL Underwriters Laboratories
ULM Unified Management Framework
ULP Uneven Level Protection
Um Radio (Air) Interface between Mobile and Base Station
UME UNI Management Entity
UML Unified Modeling Language
UMTS Universal Mobile Telecommunications System
UMV Unrestricted Motion Vector (H.263) U-N User-Network
UNAA Universal Network Access Arrangement
UN/ECE United Nations Economic Commission for Europe
UNERM Unacknowledged Non-Error Recovery Mode
UNH University of New Hampshire
UNI User-Network Interface
UP User Part
UPBO Upstream Power Back-Off
UPC Usage Parameter Control
U-PCS, UPCS Unlicensed PCS
UPED User Premises Equipment Division uPnP Universal Plug and Play Forum
UPR Users Performance Requirements
UPS Uninterrupted Power Supply
UPT Universal Personal Telecommunications (ITU)
UPTSP Universal Personal Telecommunications Service Providers
UPU Universal Postal Union
UQ Utility Quality
URI Unified Resource Identifier
URI User Premises Equipment Regulatory Issues
URL Uniform Resource Locator
URQ Unregistration Request
US Under Study
US1 TDMA Wireless Speech Coder USAG United States Advisory Group USB Universal Serial Bus
USCEL United States Council of EMC Laboratories
USH University of Sherbrooke
USIM Universal Subscriber Identity Module (3GPP Working Group T3)
uSMS universal Short Message Service USNC United States National Committee USOC Uniform Service Order Codes USTA United States Telecom Association USTR US Trade Representative

UT Upper Tester (TIPHON)
UTAM Unlicensed Transition and Management
UTC Universal Time Code
UTF UCS (Universal Character Set) Transformation Format
UTL Utility
UTP Unshielded Twisted Pair
UTRAN UMTS Radio Access Network
UU, U-U User to User
UUI User-User Interface
UUIE User-to-User Information Element
UUT Unit Under Test
UVG Universal Voice Grade
UVLC Universal Variable Length Codeword
UWCC Universal Wireless Communications Consortium
UXP Unequal Erasure Protection

-V-

V&M Voice and Multimedia WG (ATM Forum) V&V Validate and Verify
VA Viterbi Algorithm
VAD Voice Activity Detector VADSL Very high speed ADSL VAF Voice Activity Factor
VAME Voice on ATM Multiplication Equipment
VAR Value Added Resellers
VBD Voice Band Data
VBRnrt Variable Bit Rate non-real time
VBRrt Variable Bit Rate real time
VBSMC Variable Block-Size Motion Compensation
VBV Video Buffer Verification
VC-RDI Virtual Circuit-Remote Detect Indicator
VC Video Control
VC Virtual Channel
VC Virtual Circuit (Rec. I.610) VC Virtual Connection
VC Virtual Container
VC Volume Control
VCC Virtual Channel Connection
VCEG Video Coding Experts Group (Q6/16) VCELS Vertical Cavity Surface Emitting Laser VCOM vcom.drv for Microsoft Chicago
VCI Virtual Channel Identifier
VCL Video Coding Layer
VCR Video Cassette Recorder VCS Voice Controlled Services VDC Volts DC
VDI Verification and Demonstration Implementation
VDI Verification, Design and Implementation
VDMA German Telefax Association, Verband Deutscher Maschinen und Anlagenbau
VDSL Very high speed DSL
VDTI Voiceband Data Transmission Interface
VED Voice Enhancement Devices
VEMMI Versatile MultiMedia Interface (ETSI)
VEMMI Videotex Enhanced Man Machine Interface Service
VERA Video Error Resilience Algorithm VESA Video Electronic Standard Association VHE Virtual Home Environment
VHF Very High Frequency
VHN VESA's Home Networking
V-I Voltage - Current
VIA Vendors ISDN Association

VICS Vehicle Information and Communications System Service (Japan) VIM Vendor Independent Messaging
VIMP Virtual Interoperability Meeting Place
VISIONng Voice over IP Service IntroductiON - new generation
VLAN Virtual Local Area Network
VLBR Very Low Bit Rate
VLBVT Very Low Bit rate Video Telephony
VLC Variable Length Coding
VLCD Variable Length Coding and Decoding
VLD Variable Length Decoding VLDB Very Large Database VLF Visitor Location Function VLR Visitor Location Register
VLRIN Visitor Location Register Identification Number
VLSI Very Large Scale Integration
VM Verification Model
VMAC Voice Mobile Attenuation Code
VMLA Virtual Mobile Location Area
VMM Virtual Meeting Management
VMOA Voice and Multimedia over ATM (ATM Forum WG) VMS IBM operating system
VMS Voice Mail System
VMWI VoiceMail Waiting Indication
VoADSL Voice over ADSL VoATM Voice over ATM VoB Voice over Broadband
VOC VDSL Operations Channel
VOD Video on Demand VoDSL Voice over DSL VoI Voice over Internet
VoIP Voice Over Internet Protocol
VoMBN Voice over Multi-Service Broadband Networks
VoMPLS Voice over MPLS
VoMSDN Voice over Multi-Service Data Networks
VON Voice on Network Coalition
VON Voice On the Net
VOP Video Object Planes
VOP Voice over Packet (Network)
VoSTM Voice over Synchronous Transfer Mode
VOX Voice Operated Transmission
VP Virtual Packet
VP Virtual Path (ATM Forum) VPF Virtual Private Facility VPI Virtual Path Identifier
VPIM Voice Profile for Internet Mail
VPM Voice Privacy Mask VPMASK Voice Privacy Mask VPN Virtual Private Network VQ Vector Quantization
VQEG Video Quality Experts Group
VQmon ETSI TS101 329-5 Annex E, Method for Determining an Equipment Impairment Factor using Passive Monitoring
VR Vertical Resolution
VSAT Very Small Aperture Terminal satellite services
VSB Vestigial Side Band
VSC Vertical Service Codes
VSELP Vector Sum Excited Linear Predictive Coding
VTOA Voice and Telephony Over ATM
VTQME Voice Transmission Quality Mouth to Ear (ETSI) VTR Video Tape Recorder
VTS Voice Tone Support
VTU VDSL Transceiver Unit
VTU-C VDSL Transceiver Unit - Central
VTU-O VDSL Transeiver Unit at the Optical network unit
VTU-R VDSL Transceiver Unit - Remote Terminal

V-UNI Virtual UNI
VWC Vector Wavelet Coding

-W-

W3C World Wide Web Consortium
WACS Wireless Access Communication Systems
WAN Wide Area Network
WAP Wireless Application Protocol
WARC World Administrative Radio Conference
WB Wide Band
WBS Wireless Business System
WCAT Wireless Cellular Action Team
WCDMA Wideband Code Division Multiple Access
WCPE Wireless CPE
WCS Wireless Communications System WD Wireless communications Devices WD Working Document
WDM Wavelength Division Multiplexing
WDS Wireless Data Service WEB-CAM Web Camera WER Word Error Rate
WFOM Wait for Overhead Message
WFQ Weighted Fair Queuing
WG Working Group
WI Waveform Interpolation
WI Work Item
WIDE Widely Integrated Distributed Environment WIMS Wireless Multimedia and Messaging Services
WIN Wireless Intelligent Network
WINS BT's Wideband Impulsive Noise Survey
WLAN Wireless LAN
WLL Wireless Access Local Loop
WLNP Wireless Local Number Portability
WML Wireless Markup Language (used in WAP) WMOPS Weighted MOPS
WOSA Windows Open Services Architecture
WOT World Ordering Team (TeleManagement Forum) WP Working Party (ITU)
WPA Working Party A W-PBX Wireless PBX
WPT Wireless Personal Terminal
WRC World Radiocommunication Conference
WRE Wireless Residential Extension WSC World Standardization Conference WT Working Text (DSL Forum)
WTLR Wireless Terminal Location Registration
WTPF World Telecommunication Policy Forum (ITU)
WTSA World Telecommuncations Standardization Assembly (ITU) WTSC World Telecommunication Standardization Conference (ITU) WUPE Wireless User Premises Equipment (TR-41.6)
WWW World Wide Web (Internet)

-X-

XAPI eXtensive Application Programming Interface
XAPIA X.400 API Association
xDSL All the different Digital Subscriber Line technologies
xGCP Gateway Control Protocol including MGCP, SGCP and IPDC XID eXchange IDentification
XIWT Cross-Industry Working Team XML eXtended Markup Language XNI Customer Network Interface
xoIP FoIP, MoIP, VoIP XOR eXclusive OR
XRS Message not understood
XTI X-open Transport Interface

xTAAB Advisory Board on Other Access Technologies xTU-C All the different Transceiver Units - Central
xTU-R All the different Transceiver Units - Remote

-Y & Z-

ZHP Z = input impedance of the ADSL transceiver; HP = high pass (ETSI RTS_TM-06006) ZLP Zero Loss Plan

---

APPENDIX A:

In electronic mail, some of the following "smiley faces" rather than words, are used to express the writer's feelings. Turn your head to the side to read them.

:-) Smile :-D Laughing
:) Smile :-} Grin
:-] Smirk :-(Frown
;-) Wink :-X Close-mouthed
8-) Wide-eyed :-O Open-mouthed
:-|) I wear a :-Q But I don't inhale moustache
:-o Oh, no!
Also used: <g> Grin
<ggg> Wide Grin
<g....g> Very wide grin
