



The following Glossary provides an overview of the basic terminology you are likely to encounter in relation to the use of videoconferencing technology.

Asynchronous technology

Technology which does not require communication systems at the originating and destination sites to be operating in real time. For example, recorded media such as video presentations.

Bit rate

The number of data bits per second that can flow in a communications circuit.

Bandwidth

A measure of the signal carrying capacity of a network line or channel, measured in bits per second. Bandwidth is decided as a specification at the time of installation of videoconferencing equipment. 'Business level' videoconferencing with near television picture resolution and minimal delays in audio signal is achievable using a bandwidth of 384kbps (the minimum standard currently employed across SRH sites). To create this bandwidth via ISDN requires the use of 3 dedicated digital telephone lines and is chargeable at commercial telco rates.

Bridge: see MCU

Buffering

The process by which a codec temporarily stores an advance supply of audio or video data, before encoding or decoding it. This compensates for momentary delays and thereby ensures regular and timely transmission or reception. In videoconferencing, buffering is very limited, since communications must take place in almost real-time, which allows for delays of only a fraction of a second.

Codec

Stands for Coder/Decoder (a telecommunications term) or Compressor/Decompressor (a computer term). A codec is a piece of hardware or software that compresses and decompresses digital audio and/or video making it a more transmissible format.

Coding/compression

Two terms used almost interchangeably in referring to processes used to reduce the bit rate of a digital signal, for transmission purposes

Content server

A dedicated computer which allows for recording of sessions for streaming live or for archiving of content, enabling later access either by videoconference or via media server to a lap top

Digital audio

Audio that has been encoded in a digital form for processing, storage or transmission.

Digital line

A digital telecommunication line with a capacity (Bandwidth) of 128kbps comprised of 2 channels of 64kbps each

Digital signals

Physical signals using numbers, usually called 'samples', to represent amplitude or intensity. The range of the numbers in a sample is the major determiner of the 'signal-to-noise ratio'

Document sharing

A software capability whereby participants in a videoconference may view and manipulate the same document

Document stand/presenter/camera

A device with a built-in camera for capturing images of paper documents and similar items for live video transmission to far end sites

Dual streaming

Where 2 video sources are transmitted in one call, usually the main video of the participants and a presentation, usually from a PC

Echo cancellation/suppression

Echo suppression is a feature of the audio components of the videoconferencing equipment. Its function is to prevent the speaker from hearing his own audio coming back from the other end of the circuit after a small time delay.

Ethernet

A popular standard (or protocol) for linking computers into a local area network (LAN, see below).

Gatekeeper

A network device which operates on IP. It controls access to the gateway and allocates and stores an addressing 'label' for videoconference clients. It can call these addresses using its own numerical system, without reference to the 9-digit IP number (which can be useful if a client changes their IP number). Gatekeepers operate on a globally agreed format allowing international participation. They can also provide call tracking and billing services

Gateway

Often part of a dedicated server, a component which permits videoconferencing systems using different language protocols to connect to each other. The most common example being systems operating on ISDN and IP protocols

ICT

Information and Communications Technology

IP

Internet Protocol, the basic language of the Internet. It was developed for use in networking multiple computer networks together and is given the code H.323

ISDN

Integrated Services Digital Network. This set of standards (code H.320) allows multiple digital channels at 64Kbps to be used on top of the standard Public Switched Telephone Network (PSTN) infrastructure.

ITU

International Telecommunications Union, the group which makes recommendations on standardisation for computers, radios, and other machines that communicate with each other.

LAN

Local Area Network. A way of linking computers, usually, in one building together so that they can share files, software, and peripherals such as a printer or CD-ROM.

Multimedia

Data that includes multiple forms of natural media, typically including audio and video.

Multiplexing

The process of combining separate streams or channels into one logical stream of data

Multipoint

The term given to conferencing involving more than 2 sites

Multipoint control unit (MCU)

Also known as a Bridge. MCUs facilitate connection between three or more videoconferencing sites (endpoints). Some installations contain a limited-capacity integrated bridge whilst others (as used by Monash SRH), sit on a network as a separate entity (Clayton campus).

Packet

A very small unit of information sent across a (packet-switched) network that is only a portion of all information sent.

PIP: picture in picture

A picture superimposed on the incoming video picture, usually at 1/9 the size of the full screen image eg people at other sites as a PIP while a Power Point presentation runs.

Program sharing

A conferencing mechanism allowing more than one person, each at different computers, to use the same copy of the same program, working with the same document and seeing the same displays on screen. Most commonly used in desk top conferencing.

Protocol

A standardized format (language) for transmitting data between two devices. The protocol determines error checking, data compression, and the formal beginning and end of messages. Protocols are set by the ITU and given an alpha-numeric code; in videoconferencing the related protocols are typically 3-digit numbers prefixed by the letters H, G, or T (ISDN = H.320, IP = H.323) Expanded information available at the web-sites listed at foot of this document

PTZ camera

Pan/Tilt/Zoom camera, a camera that can move sideways (Pan), up or down (Tilt) and Zoom in or Zoom out to give more control over the picture displayed or transmitted. Usually operated via a remote control.

Quality of service

A means by which digital information from multiple sources is assessed and prioritized to allow application of higher bandwidth to certain components, prioritizing the signals for optimum transfer to the receiving site. For example a videoconference signal being transmitted for real-time interactions would receive higher priority than packets of asynchronous data (i.e. email). The difference may only amount to a few seconds or minutes which are less noticeable to asynchronous users but very distracting for real-time users

Roll-about system

A medium-scale videoconference system intended for use by small groups in typical meetings. It can be transported from room to room, provided there are appropriate telephone and Local Area Network connections

Scheduling management tool

Internet (IP) based computer software which allows central management of all videoconferencing systems on one network. Works in conjunction with a 'Bridge' to schedule call-in of distant sites ahead of videoconference. Can generate extensive reports, for instance User profiles at sites, costs etc

Set-top videoconference device

Videoconferencing equipment which is designed to be placed on top of a TV monitor. It generally includes a PTZ camera and possibly the codec as an integrated device. It is controlled with a remote. Examples are a Polycom Viewstation, a Tandberg 880 or a Sony PCS-1600.

Streaming media

Sending video or audio over a network as needed, such as Real Audio/Video or Microsoft NetShow, instead of forcing the user to download the entire file before viewing it. Typically a few seconds of data is sent ahead and buffered in case of network transmission delays. (Although some data is buffered to the hard drive, it is written to temporary storage and is gone once viewing is complete.)

Synchronous technology

Technology which facilitates real time communication between distant sites, e.g. a videoconference.

Voice activated switching

Automatically switches the video feed to the strongest audio signal (usually the person speaking) in a multipoint videoconference. Usually a function of the MCU

VoIP

Voice over internet protocol. One of the standards used to transmit voice calls over a converged voice and data network. Just as IP has become the most commonly used standard for sending data, so VoIP is becoming more common for voice in a converged network.

Notes adapted from

Tandberg MXP User manuals

Videoconferencing Cookbook: http://www.vide.net/cookbook/cookbook.en/list_glossary.php

<http://www.ebusinessnortheast.co.uk/page/jargon.cfm>

Meulenberg P. An investigation into the effectiveness of implementing videoconferencing over IP. A thesis presented to Swinburne University downloaded from the Australian Digital Thesis Program (ADTP). Accessed 26-07-07, Available at: <http://adt.lib.swin.edu.au/uploads/approved/adtVSWT20051025.144820/public/01front.pdf>

Resources

AT & T Knowledge Network Explorer. Glossary available at: <http://www.kn.pacbell.com/wired/vidconf/glossary.html>

Videoconferencing Demystified: Making Video Services Work By Steven Shepard, Published 2002, McGraw-Hill Professional ISBN 0071400850