**ActiveX**
ActiveX is a standard that enables software components to interact with one another in a networked environment, regardless of the language(s) used to create them. Web browsers may come into contact with ActiveX controls, ActiveX documents, and ActiveX scripts. ActiveX controls are often downloaded and installed automatically as required.

**AF (Autofocus)**
A system by which the camera lens automatically focuses on a selected part of the subject.

**Angle**
The field of view, relative to a standard lens in a 35mm still camera, expressed in degrees, e.g. 30°. For practical purposes, this is the area that a lens can cover, where the angle of view is determined by the focal length of the lens. A wide-angle lens has a short focal length and covers a wider angle of view than standard or telephoto lenses, which have longer focal lengths.

**ARP (Address Resolution Protocol)**
This protocol is used to associate an IP address to a hardware MAC address. A request is broadcast on the local network to discover the MAC address for an IP address.

**ASIC (Application Specific Integrated Circuit)**
A circuit designed for a specific application, as opposed to a general purpose circuit, such as a microprocessor.

**Aspect ratio**
A ratio of width to height in images. A common aspect ratio used for television screens and computer monitors is 4:3. High-definition television (HDTV) uses an aspect ratio of 16:9.

**Autoiris (or DC-Iris)**
This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

**AVI (Audio Video Interleave)**
A video format that supports simultaneous playback of audio and video.

**Bitmap**
A bitmap is a data file representing a rectangular grid of pixels. It defines a display space and color for each pixel (or “bit”) in the display space. This type of image is known as a “raster graphic.” GIF’s and JPEG’s are examples of image file types that contain bitmaps.

Because a bitmap uses this fixed raster method, it cannot easily be rescaled without losing definition. Conversely, a vector graphic image uses geometrical shapes to represent the image, and can thus be quickly rescaled.

**Bit rate**
The bit rate (in kbit/s or Mbit/s) is often referred to as speed, but actually defines the number of bits/time unit and not distance/time unit.

**Bluetooth**
Bluetooth is an open standard for wireless transmission of voice and data between mobile devices (PCs, handheld computers, telephones and printers).

**Bonjour**
Also known as zero-configuration networking, Bonjour enables automatic discovery of computers, devices, and services on IP networks. Bonjour allows devices to automatically discover each other without the need to enter IP addresses or configure DNS servers. Bonjour is developed by Apple Computer Inc.

**BOOTP (Bootstrap Protocol)**
A protocol that can automatically configure a network device (give it an IP address).
BOOTP is the basis for a more advanced network management protocol, the Dynamic Host Configuration Protocol (DHCP).

**Broadband**
In network engineering terms, this describes transmission methods where two or more signals share the same carrier. In more popular terminology, broadband is taken to mean high-speed data transmission

**CCD (Charged Coupled Device)**
This light-sensitive image device used in many digital cameras is a large integrated circuit that contains hundreds of thousands of photo-sites (pixels) that convert light energy into electronic signals. Its size is measured diagonally and can be 1/4", 1/3", 1/2" or 2/3".

**CGI (Common Gateway Interface)**
A specification for communication between a web server and other (CGI) programs. For example, a HTML page that contains a form might use a CGI program to process the form data once it is submitted.

**CIF (Common Intermediate Format)**
CIF refers to the analog video resolutions 352x288 pixels (PAL) and 352x240 pixels (NTSC). See also Resolution.

**Client/server**
Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfils the request. Typically, multiple client programs share the services of a common server program. A web browser is a client program that requests services (the sending of web pages or files) from a web server.

**CMOS (Complementary Metal Oxide Semiconductor)**
A CMOS is a widely used type of semiconductor that uses both negative and positive circuits. Since only one of the circuit types is on at any given time, CMOS chips require less power than chips using just one type of transistor. CMOS image sensors also allow processing circuits to be included on the same chip, an advantage not possible with CCD sensors, which are also much more expensive to produce.

**Coaxial cable**
Coaxial cable is the standard means of transmitting analog video in a CCTV system. Coaxial is also used by cable companies to distribute television in residential buildings.

**Codec**
In communications engineering, a codec is usually a coder/decoder. Codecs are used in integrated circuits or chips that convert e.g. analog video and audio signals into a digital format for transmission. The codec also converts received digital signals back into analog format. A codec uses analog-to-digital conversion and digital-to-analog conversion in the same chip.

Codec can also mean compression/decompression, in which case it is generally taken to mean an algorithm or computer program for reducing the size of large files and programs.

**Composite video**
A type of video signal in which the red, blue and green signals (sometimes audio signals too) are mixed together.

**Compression**
See Image Compression.

**Contrast**
Defines the degree of difference between the lightest and darkest parts of an image or video stream.

**Control unit**
If a CCTV system has more than one camera, there must be a way to control the video signals going to recorders and monitors. There are three basic types of Video Control Unit: Multiplexer, Switch and Quad.

**DC-Iris**
This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

**Decoder**
See video decoder.

**De-interlacing**
See interlacing.

**DHCP (Dynamic Host Configuration Protocol)**
DHCP is a protocol that lets network administrators automate and centrally manage the assignment of Internet Protocol (IP) addresses to network devices in a network.

HCP uses the concept of a "lease" or amount of time that a given IP address will be valid for a computer. The lease time can vary, depending on how long a user is likely to require the network connection at a particular location.

DHCP also supports static addresses for e.g. computers running web servers, which need a permanent IP address.

**DNS (Domain Name System)**
DNS is used to locate and translate Internet domain names into IP (Internet Protocol) addresses. A domain name is a meaningful and easy-to-remember name for an Internet address. For example the domain name www.example.com is much easier to remember than 192.0.34.166. The translation tables for domain names are contained in Domain name servers.

**Domain server**
Domains can also be used by organizations that wish to centralize the management of their (Windows) computers. Each user within a domain has an account that usually allows them to log in to and use any computer in the domain, although restrictions may also apply. The domain server is the server that authenticates the users on the network.

**Duplex**
See Full-duplex.

**Encoder**
See video encoder

**Ethernet**
Ethernet is the most widely installed local area network technology. An Ethernet LAN typically uses special grades of twisted pair wires. The most commonly installed Ethernet systems are 10BASE-T and 100BASE-T10, which provide transmission speeds up to 10 Mbps and 100 Mbps respectively.

**ETRAX (Ethernet Token Ring AXIS)**
The ETRAX chip is the cornerstone of Axis technology and the 'brain' in nearly all Axis products. A multipurpose Linux chip with integrated Ethernet networking and extremely flexible I/O options.

**Factory default settings**
These are the settings that originally applied for a device when it was first delivered from the factory. If it should become necessary to reset a device to its factory default settings, this will, for many devices, completely reset any settings that were changed by the user.

**Firewall**
A firewall works as a barrier between networks, e.g. between a Local Area Network and the Internet. The firewall ensures that only authorized users are allowed to access the one network from the other. A firewall can be software running on a computer, or it can be a standalone hardware device.

**Fixed iris**
In indoor environments where light levels may be constant, a fixed iris lens can be used. With fixed iris lenses, the iris opening cannot be adjusted and is fixed at a certain f-number. The camera can compensate for changes in the level of light by adjusting the exposure time or using gain.

**Focal length**
Measured in millimeters, the focal length of a camera lens determines the width of the horizontal field of view, which in turn is measured in degrees.

**FTP (File Transfer Protocol)**
FTP is an application protocol that uses the TCP/IP protocols, used to exchange files between computers/devices on networks.

**Frame**
A frame is a complete video image. In the 2:1 interlaced scanning format of the RS-170 and CCIR formats, a frame is made up of two separate fields of 262.5 or 312.5 lines interlaced at 60 or 50 Hz to form a complete frame, which appears at 30 or 25 Hz. In video cameras with a progressive scan, each frame is scanned line-by-line and not interlaced; most are also displayed at 30 and 25 Hz.

**Frame rate**
The frame rate used to describe the frequency at which a video stream is updated is measured in frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.

**Full-duplex**
Transmission of data in two directions simultaneously. In an audio system this would describe e.g. a telephone system. Half-duplex also provides bi-directional communication, but only in one direction at a time, as in a walkie-talkie system. See also Simplex.

**Gain**
Gain is the amplification factor and the extent to which an analog amplifier boosts the strength of a signal. Amplification factors are usually expressed in terms of power. The decibel (dB) is the most common way of quantifying the gain of an amplifier.

**Gateway**
A gateway is a point in a network that acts as an entry point to another network. In a corporate network for example, a computer server acting as a gateway often also acts as a proxy server and a firewall server. A gateway is often associated with both a router, which knows where to direct a given packet of data that arrives at the gateway, and a switch, which furnishes the actual path in and out of the gateway for a given packet.

**GIF (Graphics Interchange Format)**
GIF is one of the most common file formats used for images in web pages. There are two versions of the format, 87a and 89a. Version 89a supports animations, i.e. a short sequence of images within a single GIF file. A GIF89a can also be specified for interlaced presentation.

**OV (Group Of VOPs)**
A group of VOP's is the basic unit of an H.264 video stream. The GOV contains different types and numbers of VOP's (I-VOP's, P-VOP's, etc) as determined by the GOV length and GOV structure. See also VOP.

**GOV length**
The GOV length determines the number of images (VOP's) in the GOV structure. See also GOV and VOP.

**GOV structure**
The GOV structure describes the composition of an H.264 video stream, as regards the type of images (I-VOP's or P-VOP's) included in the stream, and their internal order. See also GOV and VOP.

**H.264**
Also known as MPEG-4 Part 10. This is the new generation compression standard for digital video. H.264 offers higher video resolution than Motion JPEG or MPEG-4 at the same bit rate and bandwidth, or the same quality video at a lower bit rate.

**Half-duplex**
See Full-duplex.

**HDTV (High-definition television)**
HDTV provides up to five times higher resolution than standard analog TV. HDTV has better color fidelity and a 16:9 format. The two most important HDTV standards today are SMPTE 296M and SMPTE 274M, which are defined by the Society of Motion Picture and Television Engineers, SMPTE.

**HTML (Hypertext Markup Language)**
HTML is the set of "markup" symbols or codes inserted in a file intended for display in web browser. The markup tells the browser how to display the page's words and images for the user.

**HTTP (Hypertext Transfer Protocol)**
HTTP is the set of rules for exchanging files (text, graphic images, sound, video, and other multimedia files) on the web. The HTTP protocol runs on top of the TCP/IP suite of protocols.

**HTTPS (Hypertext Transfer Protocol over SSL)**
HTTPS is a web protocol used by browsers and web servers to encrypt and decrypt user page requests and the pages returned by the server.

The encrypted exchange of information is governed by the use of an HTTPS certificate (issued by a Certificate Authority), which guarantees the authenticity of the server.

**Hub**
A (network) hub is used to connect multiple devices to the network. The hub transmits all data to all devices connected to it, whereas a switch will only transmit the data to the device it is specifically intended for.

**IEEE 802.11**
A family of standards for wireless LANs. The 802.11 standard supports 1 or 2 Mbit/s transmission on the 2.4 GHz band. IEEE 802.11b supports data rates up to11 Mbit/s on the 2.4 GHz band, while 802.11g allows up to 54 Mbit/s on the 5 GHz band.

**Image compression**
Image compression minimizes the file size (in bytes) of an image. Two of the most common compressed image formats are JPEG and GIF. See also MPEG, Motion JPEG and H.264.

**Interlacing**
Interlaced video is video captured at 50 pictures (known as fields) per second, of which every 2 consecutive fields (at half height) are then combined into 1 frame. Interlacing was developed many years ago for the analog TV world and is still used widely today. It provides good results when viewing motion in standard TV pictures, although there is always some degree of distortion in the image.

To view interlaced video on e.g. a computer monitor, the video must first be de-interlaced, to produce progressive video, which consists of complete images, one after the other, at 25 frames per second. See also Progressive scan.

**IP (Internet Protocol)**
The Internet Protocol is a method transmitting data over a network. Data to be sent is divided into individual and completely independent “packets.” Each computer (or host) on the Internet has at least one address that uniquely identifies it from all others, and each data packet contains both the sender's address and the receiver's address.

The Internet Protocol ensures that the data packets all arrive at the intended address. As IP is a connectionless protocol, which means that there is no established connection between the communication end-points, packets can be sent via different routes and do not need to arrive at the destination in the correct order.

Once the data packets have arrived at the correct destination, another protocol - Transmission Control Protocol (TCP) – puts them in the right order. See also TCP.

**IP address**
An IP address is simply an address on an IP network used by a computer/device connected to that network. IP addresses allow all the connected computers/devices to find each other and to pass data back and forth.

To avoid conflicts, each IP address on any given network must be unique. An IP address can be assigned as fixed, so that it does not change, or it can be assigned dynamically (and automatically) by DHCP.

An IP address consists of four groups (or quads) of decimal digits separated by periods, e.g. 130.5.5.25. Different parts of the address represent different things. Some part will represent the network number or address, and some other part will represent the local machine address. See also IP (Internet Protocol).

**IP camera**
The terms IP camera, network camera and Internet camera all refer to the same thing - a camera and computer combined in one unit. It operates as stand-alone unit and only requires a connection to the network.

**Infrared (IR)**
Infrared radiation is radiation at a longer wavelength than visible light, which means it cannot be seen by the naked human eye. As infrared radiation can be detected as heat, this can be shown on a screen or captured by a digital camera, with hotter objects showing up brighter against colder surroundings (e.g. a human body against a colder background).

As color cameras can "see" infrared radiation as well as visible light, these cameras are equipped with an IR-cut filter, to prevent distortion of the colors the human eye can see. To use the camera in very dark locations or at night, this filter can be removed, to allow infrared radiation to hit the image sensor and thus produce images.

An infrared lamp can be used for improved illumination for night surveillance, whilst not producing any extra visible light.

**Inputs/Outputs (I/O's)**
The digital I/Os on, for example, a network camera can be used to connect any device that can toggle between an open and a closed circuit.

If, for example, a door switch is used as an input device, opening the door could trigger the upload of video images and the sending of notification messages.
An output might, for example, be used to automatically start a siren when there is a motion detection trigger.

**SMA (Internet Streaming Media Alliance)**
ISMA has created a specification to facilitate interoperability between different clients and servers when transmitting MPEG-4 on a network. See: www.isma.tv

**I-VOP**
See VOP.

**JPEG (Joint Photographic Experts Group)**
Together with the GIF file format, JPEG is an image file type commonly used on the web. A JPEG image is a bitmap, and usually has the file extension '.jpg' or ".jpeg." When creating a JPEG image, it is possible to configure the level of compression to use. As the lowest compression (i.e. the highest quality) results in the largest file, there is a trade-off between image quality and file size.

**Kbit/s (kilobits per second)**
A measure of the bit rate, i.e. the rate at which bits are passing a given point. See also Bit rate.

**LAN (Local Area Network)**
A LAN is a group of computers and associated devices that typically share common resources within a limited geographical area.

**Light sensitivity**
See Minimum illumination.

**Linux**
Linux is an open source operating system within the Unix family. Because of its robustness and availability, Linux has won popularity in the open source community and among commercial application developers.

**Lux**
A standard unit of illumination measurement.

**MAC address (Media Access Control address)**
A MAC address is a unique identifier associated with a piece of networking equipment, or more specifically, its interface with the network. For example, the network card in a computer has its own MAC address.

**Manual iris**
This is the opposite of an autoiris, i.e. the camera iris must be adjusted manually to regulate the amount of light allowed to reach the image sensor.

**Mbit/s (Megabits per second)**
A measure of the bit rate, i.e. the rate at which bits are passing a given point. Commonly used to give the "speed" of a network. A LAN might run at 10 or 100 Mbit/s. See also Bit rate.

**Mininum illumination**
The smallest amount of light needed for the camera to produce an image of useable quality. Minimum illumination is presented in lux (lx), which is a measure of illuminance. In general, provided it is not overexposed, the image will be better the more light that is available in the scene. If the amount of light is insufficient, the image will be noisy or dark. The amount of light that is required to produce a good-quality image depends on the camera and how sensitive to light it is.

**Monitor**
A monitor is very similar to a standard television set, but lacks the electronics to pick up regular television signals.

**Motion JPEG**
Motion JPEG is a simple compression/decompression technique for network video. Latency is low and image quality is guaranteed, regardless of movement or complexity of the image. Image quality is controlled by adjusting the compression level, which in turn provides control over the file size, and thereby the bit rate.
High-quality individual images from the Motion JPEG stream are easily extracted. See also JPEG and GIF.

**Megapixel**
See Pixel.

**MPEG (Moving Picture Experts Group)**
The Moving Picture Experts Group develops standards for digital video and audio compression. It operates under the auspices of the International Organization for Standardization (ISO). The MPEG standards are an evolving series, each designed for a different purpose.

**MPEG-2**
MPEG-2 is the designation for a group of audio and video coding standards, and is typically used to encode audio and video for broadcast signals, including digital satellite and Cable TV. MPEG-2, with some modifications, is also the coding format used by standard commercial DVD movies.

**MPEG-4**
MPEG-4 is a group of audio and video coding standards and related technology. The primary uses for the MPEG-4 standard are web (streaming media) and CD distribution, conversational (videophone), and broadcast television. Most of the features included in MPEG-4 are left to individual developers to decide whether to implement them or not. This means that there are probably no complete implementations of the entire MPEG-4 set of standards. To deal with this, the standard includes the concept of "profiles" and "levels", allowing a specific set of capabilities to be defined in a manner appropriate for a subset of applications.

**Multicast**
Bandwidth-conserving technology that reduces bandwidth usage by simultaneously delivering a single stream of information to multiple network recipients. See also Unicast.

**Multiplexer**
A multiplexer is a high-speed switch that provides full-screen images from up to 16 analog cameras. Multiplexers can playback everything that happened on any one camera with no interference from the other cameras on the system.

**Network connectivity**
The physical (wired or wireless) and logical (protocol) connection of a computer network or an individual device to a network, such as the Internet or a LAN.

**NTSC (National Television System Committee)**
NTSC is an analog color encoding system used in television systems in Japan, the United States and other parts of the Americas. NTSC defines the video signal using 525 TV lines per frame, at a refresh rate equal to 30 frames per second. See also PAL.

**OEM (Original Equipment Manufacturer)**
This is a designation for companies that manufacture equipment that is then marketed and sold to other companies under their own names.

**ONVIF (Open Network Video Interface Forum)**
ONVIF is an open industry forum for the development of a global standard for the interface of network video products.

**PAL (Phase Alternating Line)**
PAL is an analog color encoding system used in television systems in Europe and in many other parts of the world. PAL defines the video signal using 625 TV lines per frame, at a refresh rate equal to 25 frames per second. See also NTSC.

**PEM (Privacy Enhanced Mail)**
An early standard for securing electronic mail. The PEM-format is often used for representing an HTTPS certificate or certificate request.

**Ping**
Ping is a basic network program used diagnostically to check the status of a network host or device. Ping can be used to see if a particular network address (IP address or host name) is occupied or not, or if the host at that address is responding normally. Ping can be run from e.g. the Windows Command prompt or the command line in Unix.

**P-Iris**
P-Iris is an automatic, precise iris control developed by Axis Communications of Sweden and Kowa Company of Japan. It involves a P-Iris lens and specialized software that optimize image quality.

**Pixel (Picture Element)**
A pixel is one of the many tiny dots that make up a digital image. The color and intensity of each pixel represents a tiny area of the complete image.

**PoE (Power over Ethernet)**
Power over Ethernet provides power to a network device via the same cable as used for the network connection. This is very useful for IP-Surveillance and remote monitoring applications in places where it may be too impractical or expensive to power the device from a power outlet.

**PPP (Point-to-Point Protocol)**
A protocol that uses a serial interface for communication between two network devices. For example, a PC connected by a phone line to a server.

**PPTP (Point-to-Point Tunneling Protocol)**
A protocol that allows corporations to extend their own corporate network through private "tunnels" over the public Internet. In this way a corporation can effectively use a WAN (Wide Area Network) as a large single LAN (Local Area Network). This kind of interconnection is known as a virtual private network (VPN).

**Pre/post alarm images**
The images from immediately before and after an alarm. These images are stored in a buffer for later retrieval.

**Progressive scan**
Progressive scan, as opposed to interlaced video, scans the entire picture, line by line every sixteenth of a second. In other words, captured images are not split into separate fields as in interlaced scanning.

Computer monitors do not need interlace to show the picture on the screen, but instead show them progressively, on one line at a time in perfect order i.e. 1, 2, 3, 4, 5, 6, 7 etc., so there is virtually no "flickering" effect. In a surveillance application, this can be critical when viewing detail within a moving image, such as a person running. A high-quality monitor is required to get the best from progressive scan. See also interlacing.

**Protocol**
A special set of rules governing how two entities will communicate. Protocols are found at many levels of communication, and there are hardware protocols and software protocols.

**Proxy server**
In an enterprise that uses the Internet, a proxy server acts as an intermediary between a workstation user and the Internet. This provides security, administrative control, and a caching service. Any proxy server associated with a gateway server, or part of a gateway server, effectively separates the enterprise network from the outside network and the local firewall. It is the firewall server that protects the enterprise network from outside intrusion.
A proxy server receives requests for Internet services (such as web page requests) from many users. If the proxy server is also a cache server, it looks in its local cache of previously downloaded web pages. If it finds the page, it is returned to the user without forwarding the request to the Internet. If the page is not in the cache, the proxy server, acting as a client on behalf of the user, uses one of its own IP addresses to request the page from another server

over the Internet. When the requested page is returned, the proxy server forwards it to the user that originally requested it.

**P-VOP**
See VOP.

**Quad view**
A Quad view displays images from up to four cameras on a single screen; where the images from each camera take up approximately a quarter of the display area.

**(QoS) Quality of Service**
QoS provides the means to guarantee a certain level of a specified resource to selected traffic on a network. Quality can be defined as e.g. a maintained level of bandwidth, low latency, no packet losses, etc. The QoS in Axis network video products marks the data packets for various types of network traffic originating from the product. This makes it possible for network routers and switches to e.g. reserve a fixed amount of bandwidth for these types of traffic.

**Resolution**
Image resolution is a measure of how much detail a digital image can hold: the greater the resolution, the greater the level of detail. Resolution can be specified as the number of pixel-columns (width) by the number of pixel-rows (height), e.g. 320x240.

Alternatively, the total number of pixels (usually in megapixels) in the image can be used. In analog systems it is also common to use other format designations, such as CIF, QCIF, 4CIF, etc.

**RS-232**
RS-232 is a long-established standard that describes the physical interface and protocol for low-speed serial data communication between devices. This is the interface that e.g. a computer uses to talk to and exchange data with a modem and other serial devices.

**RS-422**
RS-422 is a serial data communication protocol that specifies 4-wire, full-duplex, differential line, multi-drop communications. It provides balanced data transmission with unidirectional/non-reversible, terminated or non-terminated transmission lines. RS-422 does not allow multiple drivers, only multiple receivers. Maximum recommended range is 4,000 feet (1200 meters). Maximum recommended baud rate is 10Mbit/s.

**RS-485**
RS-485 is an upgraded version of RS-422 that supports up to 32 devices on the same connection. RS-485 is an electrical specification of a two-wire, half-duplex, multipoint serial connection. It enables the configuration of inexpensive local networks and multidrop communications links. It offers high data transmission speeds (up to 10Mbit/s), and as it uses a differential balanced line over twisted pair (like RS-422), it can span relatively large distances (4000 feet or 1200 meters). RS-485 only specifies the electrical characteristics of the driver and the receiver. It does not specify or recommend any data protocol.

**RTCP (Real-Time Control Protocol)**
RTCP provides support for real-time conferencing of groups of any size within an intranet. This support includes source identification and support for gateways like audio and video bridges as well as multicast-to-unicast translators.

It offers quality-of-service feedback from receivers to the multicast group as well as support for the synchronization of different media streams.

**RTP (Real-Time Transport Protocol)**
RTP is an Internet protocol for the transport of real-time data, e.g. audio and video. It can be used for media-on-demand as well as interactive services such as Internet telephony.

**RTSP (Real Time Streaming Protocol)**
RTSP is a control protocol, and a starting point for negotiating transports such as RTP, multicast and Unicast, and for negotiating codecs.

RTSP can be considered a “remote control” for controlling the media stream delivered by a media server. RTSP servers typically use RTP as the protocol for the actual transport of audio/video data.

**Router**
A device that determines the next network point to which a packet should be forwarded on its way to its final destination. A router creates and/or maintains a special routing table that stores information on how best to reach certain destinations. A router is sometimes included as part of a network switch. See also Switch.

**Server**
In general, a server is a computer program that provides services to other computer programs in the same or other computers. A computer running a server program is also frequently referred to as a server. In practice, the server may contain any number of server and client programs. A web server is the computer program that supplies the requested HTML pages or files to the client (browser).

**Sharpness**
This is the control of fine detail within a picture. This feature was originally introduced into color TV sets that used notch filter decoders. This filter took away all high frequency detail in the black and white region of the picture. The sharpness control attempted to put some of that detail back in the picture. Sharpness controls are mostly superfluous in today's high-end TVs. The only logical requirement for it nowadays is on a VHS machine.

**Simplex**
In simplex operation, a network cable or communications channel can only send information in one direction. See also Full-duplex.

**SMTP (Simple Mail Transfer Protocol)**
SMTP is used for sending and receiving e-mail. However, as it is "simple," it is limited in its ability to queue messages at the receiving end, and is usually used with one of two other protocols, POP3 or IMAP. These other protocols allow the user to save messages in a server mailbox and download them periodically from the server.

SMTP authentication is an extension of SMTP, whereby the client is required to log into the mail server before or during the sending of email. It can be used to allow legitimate users to send email while denying the service to unauthorized users, such as spammers.

**SNMP (Simple Network Management Protocol)**
SNMP forms part of the Internet Protocol suite, as defined by the Internet Engineering Task Force. The protocol can support monitoring of network-attached devices for any conditions that warrant administrative attention.

**Sockets**
Sockets are a method for communication between a client program and a server program over a network. A socket is defined as "the endpoint in a connection." Sockets are created and used with a set of programming requests or "function calls" sometimes called the sockets application programming interface (API).

**SSL/TLS (Secure Socket Layer/Transport Layer Security)**
These two protocols (SSL is succeeded by TLS) are cryptographic protocols that provide secure communication on a network. SSL is commonly used over HTTP to form HTTPS, as used e.g. on the Internet for electronic financial transactions. SSL uses public key certificates to verify the identity of the server.

**Subnet & subnet mask**
A subnet is an identifiably separate part of an organization's network. Typically, a subnet may represent all the machines at one geographic location, in one building, or on the same local area network (LAN). Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address.
The subnet mask is the part of the IP address that tells a network router how to find the subnet that the data packet should be delivered to. Using a subnet mask saves the router having to handle the entire 32-bit IP address; it simply looks at the bits selected by the mask.

**Switch**
A switch is a network device that connects network segments together, and which selects a path for sending a unit of data to its next destination. In general, a switch is a simpler and faster mechanism than a router, which requires knowledge about the network and how to determine the route. Some switches include the router function. See also Router.

**TCP (Transmission Control Protocol)**
TCP is used along with the Internet Protocol (IP) to transmit data as packets between computers over the network.

While IP takes care of the actual packet delivery, TCP keeps track of the individual packets that the communication (e.g. requested a web page file) is divided into, and, when all packets have arrived at their destination, it reassembles them to re-form the complete file.

TCP is a connection-oriented protocol, which means that a connection is established between the two end-points and is maintained until the data has been successfully exchanged between the communicating applications.

**Telnet**
Telnet is a simple method with which to access another network device, e.g. a computer. The HTTP protocol and the FTP protocols allow you to request specific files from remote computers, but do not allow you logon as a user of that computer. With Telnet, you log on as a regular user with whatever privileges you may have been granted for specific applications and data residing on that computer.

**TVL (TV Lines)**
A method of defining resolutions in analog video.

**UDP (User Datagram Protocol)**
UDP is a communications protocol that offers limited service for exchanging data in a network that uses the Internet Protocol (IP). UDP is an alternative to the Transmission Control Protocol (TCP). The advantage of UDP is that it is not required to deliver all data and may drop network packets when there is e.g. network congestion. This is suitable for live video, as there is no point in re-transmitting old information that will not be displayed anyway.

**Unicast**
Communication between a single sender and a single receiver over a network. A new connection is established for each new user. See also Multicast.

**UPnPTM**
A set of computer network protocols that allows the automatic peer-to-peer detection of devices on the network. UPnP is promoted by the UPnP Forum.

**URL (Uniform Resource Locator)**
An "address" on the network

**USB**
(Universal Serial Bus) A plug-and-play interface between a computer and peripheral devices (scanners, printers etc).

**VAPIX®**
VAPIX® is Axis' own open application programming interface (API) for cost-efficient, flexible, scalable and future-proof integration with other systems.

**Varifocal lens**
A varifocal lens provides a wide range of focal lengths, as opposed to a lens with a fixed focal length, which only provides one.

**Video encoder**
Video server.

**VPN (Virtual Private Network)**
This creates a secure "tunnel" between the points within the VPN. Only devices with the correct "key" will be able to work within the VPN. The VPN network can be within a company LAN (Local Area Network), but different sites can also be connected over the Internet in a secure way. One common use for VPN is for connecting a remote computer to the corporate network, via e.g. a direct phone line or via the Internet.

**VOP (Video Object Plane)**
A VOP is an image frame in an MPEG-4 video stream. There are several types of VOP:
- An I-VOP is complete image frame.
- A P-VOP codes the differences between images, as long as it is more efficient to do so. Otherwise it codes the whole image, which may also be a completely new image.

**WAN (Wide-Area-Network)**
Similar to a LAN, but on a larger geographical scale.

**W-LAN (Wireless LAN)**
A wireless LAN is a wireless local area network that uses radio waves as its carrier: where the network connections for end-users are wireless. The main network structure usually uses cables.

**Web server**
A Web server is a program, which allows Web browsers to retrieve files from computers connected to the Internet. The Web server listens for requests from Web browsers and upon receiving a request for a file sends it back to the browser.

The primary function of a Web server is to serve pages to other remote computers; consequently, it needs to be installed on a computer that is permanently connected to the Internet. It also controls access to the server whilst monitoring and logging server access statistics.

**WEP (Wired Equivalent Privacy)**
A wireless security protocol, specified in the IEEE 802.11 standard, which is designed to provide a wireless local area network (WLAN) with a level of security and privacy comparable to that usually expected of a wired LAN. Security is at two different levels; 40-bit and 128-bit encryption. The higher the bit number, the more secure the encryption.

**WINS (Windows Internet Naming Service)**
Part of the Microsoft Windows NT Server, WINS manages the association of workstation names and locations with IP addresses, without the user or administrator having to be involved in each configuration change.

**WPA-PSK (Wi-Fi Protected Access - Pre-Shared Key)**
This wireless encryption method uses a pre-shared key (PSK) for key management. Keys can usually be entered as manual hex values, as hexadecimal characters, or as a Passphrase. WPA-PSK provides a greater degree of security than WEP.

**Zoom lens**
A zoom lens can be moved (zoomed) to enlarge the view of an object to show more detail.