Title: Glossary of Terms

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Glossary of Terms

A/D: Analog-to-Digital conversion. In this process an analog signal from a CCTV camera is sampled in time and a digital value is assigned to amplitude (voltage) of the analog signal.

All Digital: All images are digital all the time. From the output of the camera to the information stored in the archive, all images are captured, transmitted and stored digitally. In this system there is no analog signal losses introduced due to cable transmission, no A/D conversions on these degraded signals and no analog switching noise introduced in the switching matrix.

Archive: The files of stored images residing on the SurVIS for retrieval and review.

CCTV: Closed Circuit Television is an analog TV technology used for visual surveillance systems designed to monitor a variety of rooms, spaces and activities. CCTV is called a "closed circuit" because cameras and monitors are linked with a constant connection. Traditional CCTV networks stream analog video feeds to cassette tape VCRs.

CIF: Common Intermediate Format is used to mean a specific video resolution. One CIF is equal to one quarter of full TV resolution (D1). The Phased Alternate Line (PAL) TV standard of Europe defines the resolution of one CIF as being 352 x 288 pixels. The National Television System Committee (NTSC) in the U.S. defines the resolution of one CIF to be 352 x 240 pixels.

Compression: Compression is a signal processing algorithm that takes place on digital data (and therefore after the A/D process). It is a means of removing redundancies so that the resulting data takes up less storage space. There are two main forms of compression, lossy and lossless. Lossy compression will sacrifice some data permanently in order to achieve smaller data files.

D/A: Digital-to-Analog conversion. In this process digital data stored on a DVR is converted to an analog signal to view on an analog monitor.

DVR: A Digital Video Recorder is an appliance that will accept analog CCTV video feeds and store the information in a digital format on an internal hard drive. DVR's will perform the necessary A/D and then implement a compression algorithm before storing the image. The compression algorithm used is manufacturer dependent and maybe standards based or proprietary.

Ethernet: A local-area network (LAN) architecture and is one of the most widely implemented LAN standards currently supporting data rates of 1 gigabit (1,000 megabits) per second over copper twisted pair.

FPS: Frames per second, or frame rate, refers to the number of video images captured, transmitted, viewed and/or stored during a one second time interval. A frame is a still picture and may contain one or four CIF. The human eye can't see picture changes after the frame rate is more than approximately 24fps.

Hours per CIF: Number of hours of storage given a 1CIF/sec storage rate

LAN: Local Area Network

MAC Address: Media Access Control address. The physical address of a device connected to a network, expressed as a 48-bit hexadecimal number.

M-JPEG: Motion JPEG is a video format that uses JPEG picture compression in each frame of video. Frames of video do not interact with one another which results in very high quality image capture and retrieval.

MPEG-x: The Moving Pictures Expert Group has developed various standards for video compression. The compression method is based on re-using the existing frame material and using psychological and physical limitations of human senses. MPEG-x video compression method tries to use previous frame's information in order to reduce the amount of information the current frame requires.

Network: A group of interconnected computers, including the hardware and software used to connect them.

Pixel: An image is made up of tiny dots called pixels. For a NTSC CIF, the resolution is 352 x 240, which means that it is 352 pixels horizontally and 240 pixels vertically.

PMC: The Power+Media Controller is an electrical component that simplifies system installation and facilitates system maintenance and troubleshooting. There are several PMC models to support from one to two cameras at the edge side, and supports Cat 5/6 (10/100 Ethernet), Multimode Fiber (10/100/1000 Ethernet), and 802.11X wireless data transmission at the infrastructure side. The PMCs provide all of the power conversion and media interfacing.

PTZ: Pan, Tilt and Zoom.

RAID: Random Array of Independent Disks. There are several levels of RAID but RAID 5 (drive striping with parity) is widely accepted as the best combination of enhanced performance while providing maximum data protection amongst drive failure.

sLAN: A surveillance Local Area Network is a dedicated LAN used for the transmission, viewing and archiving of the video surveillance system. The sLAN is separate from the main IT infrastructure in order to avoid network integrity (video system traffic overwhelming the IT LAN) and security issues.

SNR: Signal-to-Noise Ratio is a measure of an analog signal's integrity. A higher SNR (measured in dB) means that an A/D of the video image will be more true to the actual image than an image that has a low SNR and is difficult to discern from the measured noise.

TCP/IP: The Transmission Control Protocol (TCP) on top of the Internet Protocol (IP). These protocols were developed by DARPA to enable communication between different types of computers and computer networks. The Internet Protocol is a connectionless protocol which provides packet routing. TCP is connection-oriented and provides reliable communication and multiplexing.

Transmission of analog CCTV images over transmission lines (co-axial cable) results in an SNR degradation - the longer the cable run the lower the resulting SNR at the A/D converter.

SurVIS™: The Surveillance Video Information Server controls the sLAN as well as acts as the archive repository for the video feeds. The SurVIS is an advanced computing video server capable of processing and storing a high volume of CIFs per second. Each SurVIS is custom configured to each application/installation's unique system requirements.

TruRecord™: TruRecord insures that each video image recorded in the archive exactly matches, is true to, the image viewed live at the time of archive. The image recorded is true to the image viewed as there is no post viewing analog signal degradation, A/D conversion loss, compression loss and subsequent D/A process needed for archive review.