



Training Academy Lexicon

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| 3G-SDI | (3 Gigabyte Serial Digital Interface) A type of digital connection that allows a speed of nearly 3 gigabits per second. |
| 4K | A resolution (like 1080P) 4K refers to the number of pixels on a horizontal plane. Also referred to as UHD (Ultra High Definition) |
| Analog | A type of communication signal where a continuous stream of data is sent from one source to another. Although an older technology, analog signals are still widely used due to their "infinite resolution," which only limits data through interference. |
| Bit | The smallest amount of data in computing. Either a 1 or 0. |
| Bit-Depth | The quality of the video or audio within a sample, bigger and larger numbers of bits are better in quality. |
| Bitmap | An image file-extension. |
| Bit-Rate | The number of bits received and processed in a certain amount of time. Bits are units of data for computers. (Read:1's, 0's, binary, machine language) |
| Blu-Ray | A type of high-definition digital storage using 1080P resolution with 60 frames per second. |
| BNC | (Bayonet Neill-Concelman) A type of connector for coaxial cable. (Standard on ProHawk HD-SDI and 4 Channel NTSC) |
| Byte | A collection of eight bits. (Eight 1's and 0's.) |
| Codec | A computer program used to take digital signals and convert them into usable data - allowing your computer to play the video and sound from a source or file. |
| Compression | Taking any form of data and shrinking it to a smaller size. This is done with video by taking colors and frames that are similar and making them the same, resulting in lower quality. |
| Concurrent | At the same time. |
| CPU | (Central Processing Unit) The chip located within a computer that allows information to be processed and manipulated. Example: Intel chipset, AMD chipset. |
| D1 Resolution | 704 x 480 Pixel resolution, standard on most CCTV systems. |
| DHCP | (Dynamic Host Configuration Protocol) A program located within a router or switch that assigns IP addresses to devices which are set to receive and accept them. The DHCP instructs a computer to have a certain IP Address, and then allows it to communicate with the internet through that address. |
| Di-Com | A proprietary, high bit-depth image format used to store medical images. |

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| Digital | A type of communication signal where a signal stream of data is sent from one source to another using binary. (Read: 1's, 0's, binary, machine language). Almost all connections are digital or digitalized from analog. |
| Digital Zoom | Zooming in to a video using a computer program as opposed to a lens or camera setting. Objects that are seen through digital zoom are usually lower quality and difficult to make out because the resolution remains the same. |
| DVI | (Digital Visual Interface) A type of connector used for transmitting video sources across devices. EG: Computer to Screen. |
| Ethernet | The cable for the internet - Ethernet cable is CAT5 and creates networks through houses or buildings hooked up to a router called a LAN (Local Area Network) |
| FPGA | (Field-Programmable Gate Array) The type of dedicated processor used in ProHawk products. It is much faster than a CPU, allowing instantaneous video processing. |
| frame-by-frame encoding | Encoding and compressing of video feeds using a frame-by-frame method such as MJPEG. |
| Germanium | A semiconducting element commonly used in electronics as well as the construction of lens devices. |
| H.264 | (The same as MPEG-4 AVC) One of the most common forms of video compression used for high definition - the standard compression for BluRay. |
| HDMI | (High Definition Media Interface) A type of connection that allows HD video and audio to be transferred between devices. |
| HD-SDI | (High Definition Serial Digital Interface) A standardized data rate for transmitting data between devices. |
| HDTV | (High Definition Television) Any format of HD television, eg: 1080p, 1080i, 720p |
| High Definition | Video of a higher quality with a greater number of lines than standard definition. (Usually 480 or higher) |
| i (Eg: 1080i) | Interlaced - the video format for color storage. |
| IP Address | The Network Address of a computer or a device that allows other devices to communicate with it via Ethernet. |
| IR | Infrared - A part of non-visible light that can be used to transmit information or illuminate an area. |
| JPEG | (Joint Photographic Experts Group) An image file-extension type where an image is compressed. |
| Laser IR | (Laser Infrared) Used for communication and in many devices, infrared lasers are used when reading CD's and transmitting information over the internet long-distance. |
| Latency | A time difference between devices. High latency between two devices mean that the wait time for a response or process is high, low is the exact opposite. |
| Loop through | A system that allows a video feed to pass through a device unmodified and untouched for side-by-side comparison or other uses. |
| Loss-less compression | A type of compression that allows files to be recreated without any loss in quality. |

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| Lossy compression | A type of compression that results in a loss of quality by removal of extraneous data. |
| Low Lux | Low light conditions. |
| M2TS | (MPEG-2 Transport System) A file extension used in Blu-Ray players and other devices to store audio and video. |
| MJPEG | (Motion JPEG) A video file extension for encoding video where every frame is saved as a JPEG image. |
| MP4 | (MPEG-4) A file extension used for storing video and audio in a compressed format. (This is usually undesirable, as resolution and quality is lost in this format) |
| MPEG | (Moving Picture Expenses Group) A company that is responsible for the creation of many different file-save types and codecs for encoding and decoding video and audio files. |
| MPEG-4 AVC | One of the most common forms of video compression used for high definition - this is the standard compression for BluRay. |
| MTS | (MPEG Transport Stream) A standard for transmitting and storing digital audio, video and system information. |
| Night Vision | The ability to see in low-light conditions. (Sometimes abbreviated to NV.) This is usually done via amplifying available light or by adjusting digital signals to reveal previously unseen things. |
| NTSC-M | (National Television Systems Committee) A communication standard developed for analog signal color encoding. NTSC-M uses 525 visible lines and a framerate of 30. |
| NTSC-N | (National Television Systems Committee) A communication standard developed for analog signal color encoding. NTSC-N uses 625 visible lines, and a framerate of 25 |
| Optical Zoom | A zoom that is accomplished using lenses - resulting in a resolution that is maintained, so long as the camera or input is still in focus. |
| p (Eg: 1080p) | Progressive scan - another video format for color storage. |
| PAL | (Phase Alternating Line) A communication standard developed for analog signal color encoding. PAL uses 576 visible lines, and a frame rate of 50i (interlaced) or 25p (progressive scan). |
| Pixel | The smallest amount of color and video information that can be displayed by a device in the form of a colored square. |
| Port | An extra part of the IP Address that tells a device whether to let data in or ignore it. |
| Post-processing | The alteration of a video or audio stream while playing so that it appears as though it is higher quality than it actually is. |
| PTZ | (Pan, Tilt, Zoom) Functions for camera control that allow a camera to pan - left and right movement, tilt - up and down movement, zoom - in and out. |
| Real-Time | When a computer or device provides feed-back nearly instantaneously, allowing for reaction or processing immediately. |
| RJ-45 | (Registered Jack - type 45) A type of connector used with modems and older industrial equipment for communications with a similar interface to Ethernet. |
| RS232C | A standard for serial communication and transmission of data. This is a legacy controller meant to support older CCTV environments. |

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| RS422 | A standard for serial communication and transmission of data. This is a legacy controller meant to support older CCTV environments. |
| SD Card | A flash-memory storage device similar to a USB flash drive, though more secure. |
| SDHC | (Secure Digital High Capacity) A format for storage on SD cards. |
| SECAM | (French acronym for Sequential Color with Memory) Another color-encoding technology similar to PAL and NTSC. It has 625 visible lines |
| Standard Definition | A non-high definition system. Standard definition is usually analog, but can be digital. PAL and NTSC are both standard definition standards. |
| Starlight | A software product developed for the military that increases visibility using technological means rather than IR-illumination. |
| SVGA | (Super Video Graphics Array) Another form of VGA with a higher resolution. |
| temporal encoding/compression | Encoding and compressing of video feeds by establishing static and moving objects, and reusing previous frames to maintain image integrity. |
| Thermal | A type of energy given off by people and things in the form of heat. Thermal energy is what causes the road to appear wavy in hot environments, and when viewed through a special camera, is showed through a blue and red or black and white scale for cold and hot, respectively. |
| VGA | (Video Graphics Array) A type of serial connection used for video output. |
| Video frame | A single moment from a video. The "FPS" or frames per second tells you how many frames are present in each second. |