

**Forensic Imaging And Multi-media Glossary
Covering Computer Evidence Recovery (CER), Forensic Audio
(FA), Forensic Photography (FP), And Forensic Video (FV)**

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**A Joint Project Of
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Administrative Notes

Fonts used: The original of this document was formatted in Microsoft Word 2003 using a Times New Roman true type font set at 12 points for the body, 14 points for subheadings, and 16 points for the main heading. The use of any other font may result in formatting problems.

How To Submit Suggestions: (scope of document) When submitting suggestions, please remember that this is intended to be a living document that is to be as inclusive as possible so that it can be as useful as possible to individuals at all levels and within all subspecialties of the Forensic Imaging Profession. The English language is very complex and the specific definition of a technical term may be context sensitive. Therefore, multiple definitions may be provided for some words. Also, more than one term may have been used by the profession to describe the same thing. Therefore, whenever possible, references to words with the same or similar meaning will be listed at the end of the definition for a given term. In this context, every reasonable attempt will be made to ensure that this document reflects the current majority view and that whenever a definition is unique to a subspecialty, the subspecialty will be identified.

(submission procedure) All suggestions should be written in a separate document that does not include the entire glossary. An e-mail message or a text file is preferred. Please, include your name, telephone number, e-mail address, the page in the glossary you are referring to, and only the change or addition that you are proposing. E-mail your suggestions to Robert C. Sanders at sandersrc@doj.state.wi.us. **(everything and everyone is important)** Every definition and the opinion of every person in our profession is important. If you have any doubt, about whether to send in a suggestion, it probably needs to be sent in.

Disclaimer: The definitions included in this document are the current majority view and/or significant minority views of the members of the forensic imaging profession and may evolve, especially in light of the rapid advances made in this scientific field. When reading and using this glossary, please remember that the English language can sometimes be ambiguous and the meaning of a word or term may be context and/or discipline specific.

Abbreviations For Forensic Computer and Multi-Media Evidence Subspecialties:

- FP** Forensic Photography (photographs from film, electronic/digital sources, and still images exported from a video source).
- FV** Forensic Video
- FA** Forensic Audio (audio only and the audio portion of a video recording)
- CER** Computer/Digital Evidence Recovery

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Definitions

A

Aberration

(FP, FV) A lens flaw, defect, or design limitation that causes an inaccurate reproduction of the image passing through the lens. Common aberrations include barrel distortion, pincushion distortion, and color fringing.

Abort

(CER, FA, FP, FV) A running computer program stops before its task is complete either due to user intervention or a malfunction.

Abrasion Marks

(FA) Scratches on photographic negatives and/or transparencies.

A/B Roll

(FV) This is also referred to as A/B roll editing or A/B roll linear editing. The most common configuration is to have the output from two (2) video player decks (A and B decks) connected to the inputs of a video switcher and the input of one (1) videotape recorder deck connected to the output of the switcher. The editing is done by recording on the one (1) videotape recorder deck while the switcher is used to switch between the outputs of the A and B decks. In this configuration, the switcher also can usually be configured to provide a transition effect when switching between the A and B deck.

Absolute Colorimetric

(FP) A rendering intent that aims to maintain numeric color accuracy at the expense of preserving relationships between colors (visual appearance). With absolute colorimetric rendering intent, colors that fall inside the destination gamut remain unchanged, while out-of-gamut colors are clipped.

Absolute Time Code

(FV) Absolute time code (ATC) is generally recorded in the subcode or control track region of any digital tape. This is the code that digital tape machines use to locate specific points on a tape for autolocation or other functions. In some machines it is even used to synchronize the tape to other equipment. ATC is very accurate and usually conforms to the IEC standard which is easily converted to the more commonly used SMPTE time code. Unlike SMPTE, ATC always begins at zero at the beginning of a digital tape. Some DAT machines have the ability to function without ATC on a tape while others simply will not play a tape without it. Almost all current machines record it automatically so it should always be on every tape.

Absolute White

(FP, FV) For calibration and quality control purposes, this usually refers to a solid white tone on a test target used for calibration or quality control purposes. In software used to process digital photographs this usually refers to the brightest white value the digital image file format is capable of recording. For a 24-bit RGB photographic image absolute white is usually considered

to be Red 255, Green 255, and Blue 255. For a 24-bit RGB NTSC video image this is usually considered to be any white in which the value for all three RGB channels are equal to or greater than 215.

Absorption

(FA) The ability of a surface, usually expressed as an absorption coefficient, to soak up sound. This is a major factor in the design of audio recording studios to prevent both unwanted external sounds and internal reflections that could distort a recording. (FP) In photography this usually refers to the selective absorption of different colors of light and/or the relative amount of absorption of all colors of light. In terms of color, an object is perceived as having a specific color based on which colors are absorbed and which colors are reflected by the object.

Absorption Coefficient

(FA) A measure of the relative amount of sound energy absorbed by a material when a sound strikes its surface.

AC Bias

(FA) The alternating current, usually at a frequency several times higher than the highest signal frequency to be recorded, that is fed to a record head in addition to the signal current. AC bias serves to linearize the recording process and is universally used in analog recording.

Accelerator

(FP, FV, CER) Graphic accelerators function like microprocessors whose purpose is to work in conjunction with a PC's host microprocessor to rapidly display graphics on a computer monitor. (FP) This is any chemical added to a photographic developer to speed up the slow working action of the reducing agents in the photographic developer.

Acceptance test

(FA, FP, FV, CER) This refers to any procedure used when a new product is received, or a product is returned from maintenance, to verify that a product or software is performing according to the manufacturer's specifications for a specific use. Common examples include but are not limited to: the use of diagnostic software to test a new computer before it is used to process evidence, and the processing of a set of known standards to verify that the known standards can be processed within an acceptable range of results.

Accessory Shoe

(FP) This usually refers to the part on the top of a photographic camera used to mount an electronic flash or some device used to trigger an electronic flash. (FV) This usually refers to part on the top of a video camcorder used to mount an interview light, microphone, or other accessory.

Access Bus

(CER) This motherboard slot standard provides two-way communications between peripherals and the CPU. Access bus eliminates the need to install complex files or drivers.

Access Time

(CER, FV) This is a measure of the time it takes to retrieve valid data from a digital storage device such as a hard disk drive.

Accuracy

(CER, FA, FP, FV) (1) This can refer to the overall range of values within which the actual value obtained is considered to be within tolerance or acceptable. For example in the early days of color printing, machine prints (amateur quality you get from the 1-hour mini lab today) were considered to be acceptable if the color balance was within ± 30 CCs of the ideal color balance. However, for custom (professional lab) printing the acceptable range of variation was ± 5 CCs of the ideal color balance. (2) This can refer to how close the actual value obtained is to the range of acceptable values. For example, is the color balance close enough to the optimal color balance so that it can be considered a fair and accurate photographic reproduction. (3) This can refer to the margin of error in measuring something.

ACE-V

(FP, FV) (Majority viewpoint in the forensic science community in general.) This is an abbreviation for Analyze, Compare, Evaluate, and Verify. It is the accepted scientific forensic comparative analysis protocol *also* utilized in other disciplines such as latent print and toolmark analysis. The Analysis step begins with a detailed examination of the class characteristics, and individualizing characteristics observed in a questioned (also called unknown) image (photograph or video) along with an assessment of any relevant limitations of the imaging technology used to reproduce the questioned image. Class characteristics are the visible features reproduced in an image that are common to a group of objects. Individualizing characteristics are the observable features of an object that are reproduced in an image that are unique to one, and only one, original object to a reasonable degree of scientific certainty. The Comparison step begins with a detailed examination of the class and individualizing characteristics of the known objects that may or may not be depicted in the questioned image. Following this examination of the known objects, the examiner compares and contrasts the class and individualizing characteristics of the object depicted in the questioned image with the visible class and individualizing characteristics of all the known objects. At this point the examiner determines if all of the class and individualizing characteristics in both the questioned image and the known object or objects either are consistent or not consistent. The Evaluation step begins with an *assessment of the previous* comparison of the visible class and individualizing characteristics observed in the questioned image and known objects to determine *an opinion* to a reason degree of scientific certainty to reach one of three conclusions about each known object. The known object is the object depicted in the questioned image, the known object is not the object depicted in the questioned image, or similarities were observed but it cannot be determined if the known object is or is not the object depicted in the questioned image. The Verification step consists of an independent analysis, comparison and evaluation by a second qualified examiner. This includes a review of the written findings in a written report or its equivalent to determine whether or not the findings are consistent to a reasonable degree of scientific certainty with the evidence examined, any tests conducted, and examination notes. It is this repeatability in the verification step that is the foundation for all valid scientific protocols.

ACE-VR

(FV) (Minority viewpoint in the forensic science community in general.) This protocol adds report writing as a separate step to the ACE-V protocol.

Acetate Base

(FP) The flexible non-flammable base support for film emulsions which replaced the highly flammable cellulose nitrate film base.

Acetate Filters

(FP) A colored piece of acetate sheeting used over light sources as compared to optical quality filters used over camera lenses. This type of filter is also used above the condenser in a condenser enlarger.

Acetic Acid

(FP) In a diluted concentration, this chemical called a stop bath because it stops the action of the alkaline developer when developing black and white film or printing paper. This is normally placed between the developer and the fixer and it often omitted in roller transport type automated processors.

Acetone

(FP) A solvent used in certain processing solutions that contain materials not normally soluble in water.

Achromatic Lens

(FP, FV) This is a lens that has been corrected for chromatic aberration. This is also described as a lens that can focus red, green, and blue light at the same point.

Acid

(FP) A substance with a pH below 7. In black and white processing, since an acid neutralizes an alkali, a stop bath is usually an acidic solution that stops the action of the alkaline developer.

Acid Free

(FP) Specially prepared mounting boards, album pages, tissues, and storage boxes designed to long term, or archival storage.

Acid Hardener

(FP) This is a chemical component of a black and white fixer that helps harden the gelatin of the emulsion during the fixing process to reduce scratching and other physical damage.

Acoustic Echo Cancellation

(FA) Full-duplex audio technology; used for the elimination of acoustically-coupled return echoes within a teleconference room.

Acoustic Shadow

(FA) An area in which sound waves are attenuated due to the presence of an acoustic absorber or reflector in the path of the sound waves.

Acoustic Suspension

(FA) A type of speaker design using a sealed cabinet. Primarily used for low frequency enclosures (sometimes call woofers), acoustic suspension designs use the air mass within the cabinet as a “spring” to help return the relatively massive speaker to the rest position.

Action

(FA, FV) In Photoshop this is the equivalent of a macro. An action is created by using the action pallet to first record a series of commands. The action can be played either in batch processing of multiple images, or can be used to process an individual active image. This is especially useful when the same process has to be applied to large numbers of images.

Action Safe Area

(FV) This is the area of a video image signal which must be visible on a standard television set under normal operating conditions. It is also call the picture safe area.

Activator

(FA) 1. A solution used in rapid access processors to activate developing agents present in developer incorporated black and white photographic printing paper.

Active Horizontal Lines

(FV) The line number refers to the total number of horizontal lines associated with a given video format. In NTSC video this 525 line per video frame. The active horizontal lines is the subset of the total number of horizontal lines that contain image or image related data. In NTSC video there are 480 active horizontal lines.

Active Line Time

(FV) The time duration of the part of the video waveform which contains the visible part of the signal within each active horizontal line, excluding sync, blanking or burst). This is also called the active video time or active picture period.

Active-Matrix Display

(FP, FV) A liquid crystal display (LCD) made from a large array of liquid crystal cells using active-matrix technology. The active matrix is a method of addressing an array of simple LC cells--one cell per pixel. Active-matrix displays are used most frequently in laptop and notebook computers because of their thin width and are notable for their high-quality color displays, which are viewable from a relatively wide viewing angle, unlike passive-matrix displays.

Active Picture Area

(FV) The part of a TV picture that contains actual picture data as compared to sync or other data. The inactive area, or anything not included in the active picture area is called blanking.

Active Picture Period

(FV) The time duration of the part of the video waveform which contains the visible part of the signal within each active horizontal line, excluding sync, blanking or burst). This is also called the active video time or active line time.

Active Pixel Region

(FA, FV, CER) On a computer display, the area of the screen used for actual display of pixel information. (Tektronix Glossary of Video Terms and Acronyms)

Active Video

(FV) This is the part of a video signal which lies above the blanking level and that contains picture data. This is also called picture signal

Active Video Lines

(FV) The line number refers to the total number of horizontal lines associated with a given video format. In NTSC video this 525 line per video frame. The active horizontal lines is the subset of the total number of horizontal lines that contain image or image related data. In NTSC video there are 480 active horizontal lines.

Active window

(FP, FV, CER) When working in a computer program that is capable of displaying multiple on-screen windows, this is the window that will be affected by current cursor movements, commands, and/or text entry.

Activity Detection

(FV) This is the capability in some multiplexers to detect significant movement within the camera's field of view which can then be used to trigger a preprogrammed change in the operation of the mutliplexer.

Actual Size

(FP) This is a 1:1 or 1X enlargement. In a 1X enlargment a 12 inch ruler would be 12 inches long.

Acutance

(FP) This refers to a measure of the sharpness with which the film can reproduce the edge of an object.

Adaptation

(FP, FV) This refers to the ability of the human eye to adapt to wide variations in light levels and wide variations in kelvin temperature.

Adapter Ring

(FP, FV) This is a circular mount, available in several sizes enabling filters and close-up lenses to be used with lenses of different diameters.

Adaptive Compression

(CER, FA, FP, FV) This refers to any data compression software that is written to continually analyzes and adjust its compression algorithm, depending on the type and content of the data and/or the storage medium.

Adaptive Filter

(FA) A filter which uses a reference signal or a continuous analysis of the input signal to change its parameters on a continual basis to guarantee a constant or desired output value.

A-D converter

(FA, FV) n. A device that converts a continuously varying (analog) signal, such as audio or video, and converts it into binary code for use by a computer.

Additive Color

(FP, FV) This is any process that reproduces color by adding the primary colors of Red, Green and Blue.

Additive Color Model

(CER, FP, FV) The color model in which all visible colors are produced by combining various percentages of red, green, and blue light. In the additive color model, white is produced by mixing 100% of each primary color, whereas black is produced the absence of each primary color.

Additive Mix

(FV) An output video signal which is equal to the weighted sum of the input video signals.

Address

(CER) A memory location in a computer's that is usually referred by a hexadecimal value. (FV) A precise frame location on a videotape identified by a unique time code number.

Addressability

(CER, FP) Addressability is a measure of the resolution of film recorders, and is the maximum number of pixels that can be recorded across the widest dimension of the film output. Film recorders depart from convention by expressing their resolution in 'K' rather than dots per inch. K refers to the number 1024 (kilo...), typical values being 2K, 4K and 8K. for example, a 2K film recorder will expose 2048 pixels in the 1.5 inch (35 mm) length of 35 mm film.

Adhesion

(FP, FV) A measurement of the degree to which the emulsion coating sticks to the base film.

Administrative Review

(CER, FA, FP, FV) This is a review, usually performed by a supervisor, of the report and all case related documentation to verify the clerical accuracy. In some jurisdictions this may also include having the administrative reviewer sign the report to verify that the report being sent out is an accurate copy of the report that is on file as an official public record.

Advanced Photo System

(FP) A standard film format for consumer photography developed by Kodak and four other System Developing Companies - Canon, Fuji, Minolta and Nikon. It is intended to provide for mid-roll changes in negative format and rapid loading without the threading problems sometimes

associated with loading 35mm film. The film canister is also used to store the negatives after the film is processed.

AF

(FP, FV) Abbreviation for " Autofocus ".

AF Illumination Lamp

(FP, FV) An infrared or visible beam of light that the camera uses to assist in auto focusing in low lighting conditions.

AF Sensor

(FP, FV) The sensor used to detect focus in cameras equipped with an autofocus capability.

AGC

(FA, FV) Automatic Gain Control. An electronic circuit designed to

Agitate

(FP) To move a photographic processing solution over the surface of photographic film or printing paper during processing so that fresh liquid is brought into contact with the surface of the emulsion. In a roller transport design of automated film processor this is achieved by a combination of movement of the photographic film or printing paper and a circulation pump. In a rapid processor such as the old Kodak Royal Print processor there is a flat hollow plate with vents. The processing chemicals are continuously pumped through these vents directly onto the emulsion. This helps to achieve even development and prevent spotting or staining. This is also called agitation.

AGP

(CER, FP, FV) Abbreviation for Accelerated Graphics Port. It is a bus specification for computer video display cards that enables personal computers to quickly display 3-D graphics.

.aiff

(FA, FV) The file extension that identifies audio files in the 8-bit monaural sound format originally used on Apple and Silicon Graphics (SGI) computers. This is also abbreviated AIFF.

Airbrush

(FP) (1) A device used by commercial artists and photographic retouchers to retouch and/or draw in details on a photograph. (2) A digital tool in graphics or photographic processing software which gives the visual effect of spraying a paint over a image.

Air Bubbles

(FP) Clear areas on or in a film's emulsions which are produced by bubbles of air trapped on the film's emulsion during development. They are caused by insufficient agitation while developing the film.

Albumen

(FP) Egg white which was used in early photographic emulsions as a coating for glass plates and, more commonly, for printing paper.

ALC

(FP, FV) An abbreviation for Automatic Light Control. It is the electronic circuit in an automatic iris lens that performs a function similar to backlight compensation in photography.

Algorithm

(CER, FA, FP, FV) (1) A set of rules or processes for solving a problem in a finite number of steps. (2) A step-by-step procedure for the solution to a problem. First the problem is stated and then an algorithm is devised for its solution. (3) In computer software this refers to the each individual set of written instructions that control a specific step-by-step procedure for solving a problem or accomplishing some specific outcome.

Alias, Aliasing

(FP, FV) (1) In digital images it is something other than what it appears to be due to an inadequate number of samples taken to record detail. Stairsteps on what should be a smooth diagonal or curved line are an example of spatial alias. In video this is also sometimes called raster scan aliasing and can appear as sparkling or pulsing effects in sharp horizontal lines. Wagon wheels appearing to move backwards are an example of temporal alias. Aliases are caused by insufficient sampling and can be reduced by pre-filtering, which can appear to have a blurring effect. Defects in the picture typically caused by this insufficient sampling are considered a violation of the Nyquist sampling rate, especially in the analog to digital conversion process or poor filtering of digital video. (2) In analog video it is typically caused by interference between two frequencies such as the luminance and chrominance frequencies or the chrominance and field scanning frequencies. It appears as a moire or herringbone pattern. The visual effect is that straight lines become wavy, there may be color fringing or rainbow colors.

Alignment

(FA, FV) Usually this refers to record or erase head adjustment, but it is also sometimes used to describe the process of adjusting any component in a recording or playback system for optimum performance.

Alkali

(FP) Any chemical with a pH above 7. Black and white photographic developers are usually alkaline solutions.

Alpha Channel

(FP, FV) A channel used to specify an alpha value for each color pixel. The alpha value is used to control the blending, on a pixel-by-pixel basis, of two images.

Alpha Mix

(FV) This is a way of combining two images. How the mixing is performed is determined by the alpha channel.

Alphanumeric

(CER, FA, FP, FV) The set of all alphabetic and numeric characters.

Alpha Plane

(FP, FV) The image component containing transparency information for an image or video frame.

Ambient

(FP, FV) This is the light available in the scene before any additional light sources are added. This is also called ambient light, ambient lighting, available lighting, or existing lighting.

Ambient Sound

(FA, FV) A representative sample of background audio that exists at a specific shooting location at a specific time period. Ambient sound is gathered in the course of a production to aid the sound editor in making cuts or filling in spaces between dialog. This is also called Room Tone.

Ambient Temperature

(FP) In photographic processing this refers to normal room temperature.

Ambrotype

(FP) A collodion wet-plate photographic process in which the emulsion was coated on a glass plate. The negative image produced was visible as a positive image when the glass was backed with a dark material.

Amplitude

(FA, FV) The magnitude of a signal in voltage or current. It is frequently expressed in terms of peak, peak-to-peak, or RMS values.

Amplitude Modulation (AM)

(FA, FV) A method of superimposing information on a carrier signal, such as a sine wave, by varying its amplitude.

Analog

(CER, FA, FP, FV) Pertaining to or being a device, recording media, or signal having the property of continuously varying in strength or quantity, such as a voltage, an audio signal, a video signal, or photographic film.

Analog Component

(FV) Another name for component video, such as RGB or Y, R-Y, B-Y, as compared to digital component video.

Analog Component Island

(FV) A set of analog component equipment within a non-component facility.

Analog Recording

(FA, FV) The common form of magnetic recording where the recorded waveform signal continuously maintains the shape of the original waveform signal.

Analog Signal

Representation of data by continuously varying quantities in the electrical signal.

Analog-to-digital converter

(CER, FA, FV) A device that converts a continuously varying (analog) signal, such as sound, video, or voltage, from an analog device to a binary code for use by a computer. This is also called an A-D converter.

Analog Video

(FV) A video signal represented by a smooth and infinite number of video levels.

Analysis

(FP, FV) *See Analyze.*

Analyze

(FP, FV) This is the first step in the ACE-V and ACE-VR scientific protocols for comparative analysis. It is a detailed examination of the class characteristics, and individualizing characteristics observed in a questioned (also called unknown) image (photograph or video) along with an assessment of any relevant limitations of the imaging technology used to reproduce the questioned image. Class characteristics are the visible features reproduced in an image that are common to a group of objects. Individualizing characteristics are the observable features of an object that are reproduced in an image that are unique to one, and only one, original object to a reasonable degree of scientific certainty.

Anamorphic Squeeze

(FV) A change in picture geometry to compress one direction (usually horizontal) more than the other. Anamorphic squeeze lenses made CinemaScope possible. Occasionally, when widescreen movies are transferred to video, an anamorphic squeeze will be used (usually only in credits) to allow the smaller aspect ratio of television to accommodate the larger movie aspect ratio.

Anamorphic Video

(FV) This is found on a large number of DVDs where anamorphic video squeezes a 1.78:1 picture shape into a 1.33:1 image area. If you view an anamorphic video image on a 1.33 set, the characters will look tall and thin. This format is designed for the 1.78 aspect ratio TV sets where the horizontal is stretched back out to the full width of the set. Unsqueezing an anamorphic image on a 1.33 set is accomplished by squeezing the vertical size. The advantage of the anamorphic video system is that there is 33% more vertical information in a widescreen picture.

Anastigmat

(FP, FV) A compound lens which has been corrected for the lens aberration "astigmatism".

Anchor Frame

(FV) A video frame that is used for reference. I-frames and P-frames are generally used as anchor frames, but B-frames are never used as anchor frames.

Anchor Point

(FV) A bit stream location that serves as a random access reference point. In the MPEG video format, I-frames are the most commonly used anchor points.

Angle Of Incidence

(FP, FV) When light strikes a surface it forms an angle with an imaginary line known as the normal, which is perpendicular to the surface that the light strikes. The angle created between the incident ray and the normal is referred to as the angle of incidence.

Angle Of Flash Coverage

(FP) The measurement in degrees of the angle formed by lines projecting from the center of the flash to the extremities of the field of coverage. This can be expressed in degrees or the focal length of the shortest lens with which the flash will provide even lighting at normal shooting distances.

Angle Of View

(FP, FV) The maximum angle of acceptance of a lens which is capable of producing an image on the film or image sensor. This is also called field of view.

Angstrom

(FA, FP, FV) A unit of measure equal to one 10-billionth (10⁻¹⁰) of a meter or one 250-millionth of an inch. Light wavelengths are sometimes measured in angstroms. Most photographers will be more familiar with light wavelength (specific colors of visible light) being measured in millimeters.

Angular Field

(FP, FV) The angle subtended at the lens by the diameter of the largest circle of illumination within which the lens gives an image of acceptable sharpness and even illumination at the film plane or image sensor. This is a measure of the largest negative or image sensor that can be used with a specific lens. This is critical for the selection of view camera lens and for lens for digital cameras.

Anhysteresis

(FA, FV) The process whereby a material is magnetized by applying a unidirectional field upon which is superimposed an alternating field of gradually decreasing amplitude. One form of this process is analogous to the recording process using AC Bias.

Animated GIF

(CER, FP) A series of graphic images in GIF format, displayed sequentially in a single location to give the appearance of a moving picture.

Animation

(CER, FV) The illusion of movement created by using a succession of static images. In computer graphics, the images can all be drawn separately, or starting and ending points can be drawn with the intervening images provided by morphing software.

Anti-Aliased Fonts

(CER, FP, FV) Computer generated fonts that have been digitally rounded for smoother edges.

Anti-Alias Filter

(FA, FV) A filter (typically a lowpass filter) used to limit the signal bandwidth to less than half the sampling rate before sampling.

Anti-aliasing

(CER, FP, FV) A software technique for smoothing the jagged appearance of curved or diagonal lines caused by low resolution on a display screen. Methods of anti-aliasing include surrounding pixels with intermediate shades, and manipulating the size and horizontal alignment of pixels.

Anti-fogging Agent

(FP) A component of a photographic developer that inhibits or reduces fogging during the development step in film processing.

Antihalation Backing

(FP, FV) It is a dye used on the back of most films (still and motion picture) capable of absorbing light which passes through the emulsion. This reduces the amount extraneous light can be reflected from the camera back through the emulsion.

Antireflection Coating

(FP, FV) One or more thin layers of refractive material (often magnesium fluoride) coated upon the surface of a lens to minimize surface reflection. It is usually deposited on the lens by vaporization of the metal in vacuum.

Aperture

(FP, FV) (1) The hole or opening formed by the metal leaf diaphragm inside the lens or the opening in a camera lens through which light passes to expose the film or image sensor. The size of this opening can be adjusted to control the intensity of the light passing through the lens and the depth of field and depth of focus of the image. (FV) This refers to the finite size and shape of the point of the electron beam in a camera or picture tube. This also refers to the size of the electron beam used to create the visible image on a CRT monitor or television set.

Aperture Control

(FP, FV) (1) The ring on the camera lens, or dial on a camera body, that, when turned, adjusts the size of the opening in the iris diaphragm. (FV) (2) An adjustment on video studio monitors that controls the size of the electron beam striking the phosphors on the CRT to form the visible image. This is also called an aperture ring.

Aperture Correction

(FV) Signal processing that compensates for a loss of detail caused by the aperture being too large to adequately record the details. It is a form of image enhancement that adds artificial sharpness and has been used for many years to produce subjective improvement in image quality.

Aperture Delay

(FA, FV) In ADCs, aperture delay is the time from an edge of the input clock of the ADC until the time the part actually takes the sample. The smaller this number, the better.

Aperture Jitter

(FA, FV) The variation in the aperture delay. This means the aperture delay time changes a little bit over time, and that little bit of change is the aperture jitter. (Tektronix Glossary of Video Terms and Acronyms)

Aperture Priority

(FP) A programmed mode on an automatic or autofocus camera that lets you set the aperture while the camera sets the shutter speed for proper exposure.

Aperture Ring

(FP, FV) A ring, located on the outside of the lens usually behind the focusing ring, which is linked mechanically to the diaphragm to control the size of the aperture; it is engraved with a set of numbers called f-numbers or f-stops. Also called aperture control.

APL (average picture level)

(FV) The average level of the active video (portion of video between blanking pulses), expressed as a percentage or in IRE values.

Aplanat

(FP, FV) A lens which has been corrected for spherical aberration.

Achromatic

(FP, FV) A highly corrected lens, and usually very expensive, that can focus all colors of visible light at the exact same location on the film plane.

Append Mode

(FV) In video devices capable of creating key frame effects, a mode that permits new key frames to be added to an existing key frame effect to make the effect longer. (Dictionary by Grass Valley)

Application

(CER, FA, FP, FV) A software program that runs on a computer and is not usually considered a part of the operating system.

Application Window

(CER, FA, FP, FV) The main or home window displayed by a software application from which other subordinate windows are accessed.)

Architecture

(CER, FA, FP, FV) Internal organizational structure of circuits of an electronic device.

Archival Image

(FP) An image recorded on a media intended for long-term storage.

Archival Processing

(FP) Processing designed to protect a photographic print, photographic transparency, or photographic negative as much as possible from premature deterioration.

Archive

(CER, FA, FP, FV) Off-line storage of video/audio intended for long-term storage and retrieval.

Archive Copy

(CER, FA, FP, FV) A copy of data placed on media suitable for long-term storage and retrieval..

Archive Image

(FP) Any image placed on media that is suitable for long-term storage and retrieval. (CER) A bit stream duplicate of the original data placed on media that is suitable for long-term storage and retrieval.

Archiving

(CER, FA, FP, FV) Long-term storage of data.

Artifact

(FA, FP, FV) 1. A visual/aural aberration in an image, video, or audio recording resulting from a technical or operational limitation. Examples include speckles in a scanned picture or “blocking” in images compressed using the JPEG standard. In a video recording some of the most common examples are cross color and cross luminance. (CER) Information or data created as a result of the use of an electronic device that shows past activity.

Artificial light

(FA, FP, FV) Light not originating from a natural source such as the sun.

ASA

(FP) Original system of rating the sensitivity of photographic materials to exposure to light, which was devised by the American standards Association. The ISO rating system is now used in place of the ASA.

ASCII

(CER, FP) American Standard Code for Information Interchange. A standard code for transmitting data, consisting of 128 letters, numerals, symbols, and special codes each of which is represented by a unique binary number.

ASIC Application-Specific Integrated Circuit

(FP) A custom silicon chip that is dedicated to one particular function, such as to graphics processing, or to a specific program, such as Photoshop.

Aspect ratio

(FP) Ratio of width to height in photographic prints. The ratio is 2:3 in 35 mm negatives which produces photographs most commonly measuring 3.5 x 5 inches or 4 x 6 inches. (FV) The ratio of television picture width to height. In NTSC and PAL video, the present standard for full screen video is 4:3.

Aspherical Lens

(FP, FV) Lens with a curved, non-spherical surface. Used to reduce aberrations and enable a more compact lens size.

Aspherical Surface

(FP, FV) A lens surface that possesses more than one radius of curvature. The aspherical elements compensate for the multitude of lens aberrations common in simpler lens designs.

Assemble Edit (Assemble Mode)

(FV) An editing mode that replaces all signals on the record tape with new signals.

Astigmatism

(FP, FV) A lens aberration or defect that is caused by the inability of a single lens to focus oblique rays uniformly. Astigmatism causes an object point to appear as a linear or oval-shaped image.

Asymmetric Compression

(CER, FA, FP, FV) Compression in which the encoding and decoding require different processing power. The encoding normally requires more processing power as compared to the decoding. (Tektronix Glossary of Video Terms and Acronyms)

Asynchronous

(FA, FV) A video and/or audio signal lacking synchronization. In video, a signal is asynchronous when its timing differs from that of the system reference signal.

Attic Folder

(FV) The folder containing backups of your files or bins.

ATM

(CER, FV) Asynchronous Transfer Mode. A data transmission scheme using self-routing packets of 53 bytes, 48 of which are available for user data. (FP, FV) Abbreviation for automatic teller machine. These machines open contain a CCTV video surveillance camera or a digital camera for taking images of the user of the machine.

Atomic Frequency Standard

(FV) In television, an extremely accurate means of timing using an atomic clock. The timing signal transmitted by the national atomic clock is used by some clocks to control the accuracy of the time displayed. This clocks can be used to verify the accuracy of the time and date set in multiplexers and time-lapse VCRs in a CCTV video surveillance system.

ATR

(FA) This is the abbreviation for audio tape recorder.

ATSC

(FV) This is an abbreviation for Advanced Television Systems Committee (USA). A group is to develop voluntary national standards for high definition television.

Attenuation

(FA, FV) The weakening of a transmitted signal as it travels farther from its source. Attenuation is usually measured in decibels.

Attenuator

(FA, FV) A circuit that is designed to intentionally reduce signal amplitude.

Audio Enhancement

(FA) Processing of audio recordings for the purpose of increased intelligibility, attenuation of noise, improvement of understanding the recorded material and/or improvement of quality or ease of hearing.

Authentication

(FA, FP, FV) The process of determining whether a recording or image is original, continuous, and free from unexplained alterations (e.g., additions, deletions, edits, or artifacts) and is consistent with the stated operation of the recording device used to make it.

Authoring (program)

(FA, FP, FV) A computer application designed for creating presentations such as multimedia products.

Auto balance

(FP, FV) A system for detecting the white balance of a scene and setting what is presumed to be the correct white balance for a video camcorder, or digital still camera.

Auto Bracketing

(FP) A system that automatically makes a series of exposures at different exposure settings when the shutter is released, to increase the chances of obtaining a correctly exposed image.

Autochrome

(FP) Early commercial color photography process in which the principals of additive color synthesis were applied.

Auto-exposure

(FP, FV) The camera has a built-in light meter and computer that measures available light and sets exposure. Most serious amateurs and professionals want to be able to occasionally turn off (or "override") the auto-exposure feature for those situations where they want to manually set a special exposure. Similarly, many auto-exposure cameras allow you to select "aperture-priority" or "shutter-priority" for exposure. Recently, this function has been extended to providing TTL (through the lens) capability for what are referred to as dedicated electronic flash units.

Auto Exposure Lock

(FP) A push-button, switch, or lever that locks in the exposure after the initial reading has been made, regardless of a change in camera position or light conditions after the lock is activated.

Autofocus (AF)

(FP, FV) A component of a camera lens and/or the camera body which automatically focuses the image of a selected part of the picture subject.

Auto Levels

(FP) This is a very basic automatic correction technique employed by scanning and image processing software. Usually, the process takes an Integrated reading of the image and attempts to adjust the image by targeting a neutral scale for all values. This only works in a perfectly neutral image.

Auto-load

(FP) A camera that has a design that is intended to be a simple way to load film. There are many different approaches depending on the camera. Generally, you drop the film canister into the camera, pull out an extra inch of film to a certain mark, and close the camera. Gears and a motor in the camera then grab the film and advance it to the spool.

Automatic Color Correction (ACC)

(FV) A circuit found in many consumer viewing devices that attempts to adjust the color balance. This circuit can go far beyond the Auto Tint function in that it changes color saturation as well as type of color. In most cases where ACC is present, it cannot be defeated.

Automatic exposure

(FP, FV) A mode of camera operation in which the camera automatically adjusts the aperture, shutter speed, or both for proper exposure based on the camera's exposure meter reading. There are three main types: aperture priority, when the photographer sets the aperture and the camera selects the appropriate speed; shutter priority, when the photographer chooses the speed and the camera sets the correct aperture; and programmed, when the camera sets both aperture and shutter speed. Aperture priority is advantageous when you want to control depth of field; shutter priority comes into its own particularly in action photography; and programmed exposure can be useful when the photographer has to react quickly.

Automatic Flash

(FP) An electronic flash unit with a light-sensitive cell that determines the length of the flash for proper exposure by measuring the light reflected back from the subject. A more advanced form is a dedicated flash which may include through the lens (TTL) metering.

Automatic Focus

(FP, FV) A feature on some digital still camera and some video cameras and camcorders that using either a sensor in the camera with available light to focus the camera. In low lighting conditions some still cameras have an infrared light source that sends out a beam of light that is reflected back to an infrared sensor to determine the point of focus.

Automatic Frequency Control (AFC)

(FA, FV) This is an electronic circuit that is used to lock onto and track a desired frequency.

Automatic Gain Control (AGC)

(FA, FV) A circuit that is used to maintain output signals at constant levels when there are widely varying input signal levels within the range of variation for which the circuit was designed.

Automatic Iris

(FV) A feature on most video cameras and camcorders that automatically sets the lens aperture for the correct exposure level as the lighting conditions change.

Automatic Level Control (ALC)

(FA) A circuit that is used to automatically adjust the audio recording level to compensate for variations in input volume within the range of volume levels for which the circuit is designed.

Automatic Picture Stop

(FV) Encoding in the vertical interval on a video disk that will automatically switch the player from the play mode to a still frame mode.

Automatic Shut-Off

(FA, FV) A device in most tape recorders that automatically stops the machine when the recording tape runs out or breaks.

Autowinder

(FP) A spring driven or motorized device for 35mm and medium format cameras which moves the film to the next unexposed frame each time after the shutter closes so that the camera is ready to take the next picture.

Available Light

(FP, FV) The light that is present in a scene that is not added by the photographer. It is also called ambient light or existing light.

.avi

(FA, FV) The file extension that identifies an audiovisual interleaved data file.

AVI

(FA, FV) Acronym for Audio Video Interleaved. The Video for Windows® file format for digital video and audio. An AVI (.avi) file is a RIFF file format used with applications that capture, edit and playback audio/video sequences.

AVR (Avid Video Resolution)

(FV) The compression level at which visual media is stored by the Avid system. The system creates media in a particular AVR using proprietary conversion algorithms to convert analog video to digital form.

Axis

(FV) An imaginary line through the video image used as a reference point for rotation and movement. The three axes are H (horizontal), Y (vertical) and A (depth).

Axis Lighting

(FP) Light pointed at the object from a position along the axis of the lens. This is usually achieved by placing a piece of glass at a 45 degree angle in front of the lens to bounce the light onto the object being photographed. This has to be done in a dark room or enclosure to prevent unwanted reflections on the glass. This is also called axial lighting.

Azimuth

(FA, FV) The angle of a tape head's recording gap relative to the tape.

Azimuth Alignment

(FA, FV) Alignment of the recording and reproducing gaps so that their center lines lie parallel with each other and at right angles to the direction of head/tape motion. Misalignment of the gaps causes a loss in output at short wavelengths.

Azimuth Loss

(FA, FV) High frequency losses caused by head misalignment.

B

B

(FP) B is an abbreviation for Bulb setting on the shutter speed dial. In the bulb setting the shutter will stay open for as long as the shutter release is pressed. It gets its name from the air bulb that was used in early shutter release cables. As long as the bulb on the air driven shutter release cable was pressed, the air pressure would hold the shutter release pressed down and thus keep the shutter open.

Back Focus

(FP, FV) Distance between the back surface of the lens and the image plane, when the lens is focused at infinity. (FV) In some video cameras this is a adjustment to move the image sensor into the correct image plane.

Background (Program Video)

(FV) The image shown behind the main subject in a picture.

Background Color

(FP) When the background layer is a solid color, this is the color that appears when part of a layered image is erased, cut or deleted.

Background Color Cancellation (BCC)

(FP, FV) A chroma key feature which detects the color of the chroma key background and replaces it in the chroma key scene with a complementary color. As a result, the two colors cancel each other. This helps to eliminate the undesirable halo or fringing effect surrounding the foreground object in the chroma key.

Background Color Suppression (BCS)

(FV) A chroma key feature which senses the color of the chroma key backing and replaces it with an adjustable luminance level. This helps prevent any of the backing color from showing in the chroma key.

Background Generator

(FV) A video generator that produces a solid-color output which can be adjusted for hue, chroma, and luminance.

Background Mix

(FV) A dissolve between two background (program) video pictures in which one gradually replaces the other.

Background Processing

(CER, FA, FP, FV) To the extent that your computer is capable of supporting this function, this refers to any operation that occurs without little or no visible indication on the computer monitor while you are working in an active computer application. A common example of background processing is the printing of a photograph in the background while you are processing another image in an image editing program.

Background Transition

(FV) A transition between signals selected on the preset background and program background buses of a video switcher.

Background Video

(FV) Video that forms a background scene into which a key may be inserted.

Background Wash

(FV) A color matte effect in which the matte color graduates from dark to light or from one color to another.

Background Wipe

(FV) A transition in which a background (program) video picture is added, removed, or replaced with another video picture as a geometric pattern moves across the screen.

Backing

(FV) The dark coating applied on the back of a film to reduce halation. The backing dye is chemically removed during the processing of the film.

Backlight Control

(FV) An exposure compensation introduced when the subject of a picture is lit from behind. This feature is usually activated by pressing and hold a lever or button on the camera body.

Back-Lighting

(FP, FV) Light coming from behind the subject. This is also referred to as a subject that is back lit.

Back Porch

(FV) The portion of a video signal that occurs during blanking from the end of horizontal sync to the beginning of active video. The blanking signal portion which lies between the trailing edge of a horizontal sync pulse and the trailing edge of the corresponding blanking pulse. The color burst signal is located on the back porch.

Backspacing

(FV) The process of rewinding a videotape from the desired edit-in point, to facilitate the VCR time to bring the videotape up to the proper speed and synchronization.

Backtiming

(FV) A method of calculating the edit-in point by subtracting the duration of the edit from the edit-out point.

Baffle

(FV) A shield that prohibits light from entering an optical system.

Balanced Fill-Flash

(FP) This refers to adjusting the output of the output of the electronic flash so that it lightens the shadows without eliminating them.

Banding

(FP) A visible stepping of shades in a gradient. An artifact of color gradation in computer imaging, when graduated colors break into larger blocks of a single color, reducing the smooth look of a proper gradation. This can happen when an image is processed that lacks sufficient head room for the processing that was performed on the image.

Bandpass Filter

(FA, FV) A filter with a single transmission band that attenuates the frequencies on either side of the range of frequencies for which it was designed to transmit.

Bandwidth

(FA, FV) The complete range of frequencies over which a circuit or electronic system can function with minimal signal loss.

Barrel Distortion

(FP, FV) One of the common forms of lens aberration where straight lines at the edge of the field are caused to bend outward into the shape of a barrel.

Baseband

(FV) The frequency band occupied by a signal that modulates a carrier before it combines with the carrier in the modulation process.

Baseline Shift

(FA, FV) A form of low-frequency distortion resulting in a shift in the DC level of the signal.

Baud

(CER, FP) The frequency of switching (and so bits) per second in a communications channel.

Baud rate

(CER, FP) A measurement of the speed at which information is transmitted by a modem over a telephone line. Baud rates are in terms of bits per second (bps).

Bayer pattern

(FP, FV) A pattern of red, green, and blue filters placed in front of the image sensor in most single layer, single chip digital still cameras and video cameras. There are twice as many green filters as the other colors because the human eye is more sensitive to green and therefore green resolution and color accuracy are more important.

BBS

(CER, FP, FV) Bulletin Board Service that can accessed by an internet connection. Many companies, like Epson and Fargo, provide bulletin boards so their customers may download the latest printer or scanner drivers.

BCC

(FV) Abbreviation for background color cancellation.

BCS

(FV) Abbreviation for background color suppression.

Bearding

(FV) Video distortion that appears as short black lines extending to the right of bright objects within a scene.

Beeper

(FV) A device that makes a clicking or chirping sound to alert the user that a control knob has reached a limit.

Bel

(FA, FV) A measure of voltage, current, or power gain. One bel is defined as a tenfold increase in power. If an amplifier increases a signal's power by 10 times, its power gain is 1 bel or 10 decibels (dB). If power is increased by 100 times, the power gain is 2 bels or 20 decibels. This is most commonly used to measure audio volume levels.

Bellows

(FP) A flexible, light-tight and usually accordion-folded part of a view camera, folding field camera, or press camera. The lens board is mounted at the front end and the focusing screen and place to insert film holders is mounted on the back end. A bellows mount is also used in 35mm cameras and medium formats as an attachment used between the lens and the camera body for close-up photography.

Bellows Factor

(FP) The exposure compensation necessary when focusing on subjects close to the lens with the use of a bellows or extension tube. In close-up photography with a bellows or extension tubes, the rear element of the lens which is like the light source inside the camera, is moved significantly far enough away from the film that there is a noticeable decrease in the brightness level at the film plane.

Between-The-Lens Shutter

(FP) A shutter whose blades operate between two elements of the lens. The maximum shutter speed is usually 1/500 second. However, even at the highest shutter speed the entire negative is exposed at the same time so that an electronic flash can be synchronized with this type of shutter even at the highest shutter speeds. This type of shutter is not normally found in a 35mm SLR, although it is common in 35mm range finder cameras. It is common in medium format and larger format cameras.

Bézier Curve

(FP) A mathematical curve that describes a vector path. In Photoshop Bézier curves are created by plotting anchor points with the pen tool.

Bi-concave Lens

(FP) A simple lens or lens shape within a compound lens, whose surfaces curve toward the optical center. Such a lens causes light rays to diverge.

Bit density

(CER, FP) A measure of the amount of information per unit of linear distance or surface area in a storage medium or per unit of time in a communications pipeline.

Bit depth

(CER, FP) The number of bits per pixel allocated for storing indexed color information in a graphics file.

Bitmap

(CER) A data structure in memory that represents information in the form of a collection of individual bits. A bit map is used to represent a bit image. Another use of a bit map in some systems is the representation of the blocks of storage on a disk, indicating whether each block is free (0) or in use (1).

Bitmapped font

(CER) A set of characters in a particular size and style in which each character is described as a unique bit map (pattern of dots). Macintosh screen fonts are examples of bitmapped fonts.

Bitmapped graphics

(CER,FP) Computer graphics and photographs represented as arrays of bits in memory that represent the attributes of the individual pixels in an image (one bit per pixel in a black-and-white display, multiple bits per pixel in a color or gray-scale display). Bitmapped graphics are typical of paint and image processing programs, which treat images as collections of pixels rather than as shapes.

Bit Resolution

(FP) Often called color depth, measures the number of bits of information a pixel can store and determines how many colors can be displayed and/or recorded by each pixel.

Bits-per-second (bps)

(CER) A measurement of communication speed.

Blanking

(FV) The brief suppression of a display signal as the electron beam in a raster-scan video monitor is moved into position to display the next new line. After tracing each scan line, the beam is at the right edge of the screen and must return to the left (horizontal retrace) to begin a new line. The display signal must be turned off during the time of the retrace (horizontal blanking interval) to avoid overwriting the line just displayed. Similarly, after tracing the bottom scan line, the electron beam moves to the top left corner (vertical retrace), and the beam must be turned off during the time of this retrace (vertical blanking interval) to avoid marking the screen with the retrace path. Synchronizing pulses which control the retrace of scanning beam are active during the blanking period.

Black Level

(FV) The lowest transmittable luminance level that can occur during the active picture portion of a video signal.

Blanking Level

(FV) The voltage level equal to or below the black level that acts as a signal to turn off the scanning beam of a camera or monitor.

Blanking Processor

(FV) A circuit which strips blanking, sync, and sometimes burst from a signal and replaces them with clean blanking, sync, and burst from a reference source.

Blanking Width

(FV) The specific length of time during which blanking takes place.

Bleed Mount

(FV) To mount a print so that there is no border between the edges of the print and the edges of the mounting surface.

Blind Proficiency Test

(CER, FA, FP, FV) A test in which the analyst(s) and technical support personnel are not aware they are being tested to evaluate the competence of analysts, technical support personnel, and the quality performance of an agency.

Blocked Up

(FP, FV) Describes highlight areas that lack normal texture and detail. This can be caused by overexposure of the original, the brightness range of the subject exceeding the luminance range the film or sensor can record, or subsequent processing.

Blooming

(FP, FV) Excessively bright overexposed areas that have the appearance of bleeding over into adjoining parts of the image. In a video or computer display this can be caused by the brightness and contrast levels being set too high.

Blotters

(FP) Sheets of absorbent paper made expressly for drying fiber based photographic prints. With the wide spread use of RC enlarging papers, this is mainly of historic interest.

Blue screen

(FP, FV) A technique used in film matte special effects and video special effects, in which one image is superimposed on another image. Action or objects are filmed against a blue screen. The desired background is filmed separately, and the shot containing the action or objects is superimposed onto the background. The result is one image where the blue screen disappears. This is also used in portrait photography whereby the subject is photographed in front of a green

or blue background so the subject can be easily selected from the background to make it easier to paste the subject on top of another background.

.bmp

(FP) The file extension that identifies raster graphics stored in bit map file format.

BNC connector

(FV) A connector for coaxial cables that locks when one connector is inserted into another and rotated 90 degrees. BNC connectors are often used with closed-circuit television. It was named after its inventor, Bayonet Neill-Concelman.

Boot Up

(CER, FA, FP, FV) To start up a computer.

Border

(FP) The solid color around the edge of a photograph. (FV) An effect where a color or monochrome edge is produced around a key or a wipe pattern.

Borderline

(FV) A key enhancement option that produces a black, white, or colored border or drop shadow around the key or changes the key into a matte-filled outline.

Bounce

(FV) Overshooting of the proper DC level of the video signal due to multiple AC couplings in a signal path. Causes a sudden brightness in the picture.

Bounce Flash

(FP) Flash illuminating a subject by reflected the light from the flash off of another surface as compared to direct flash, in which the flash is aimed straight at the subject. This is also called Bounce lighting.

Bounce Free

(FV) A characteristic of a circuit or equipment where overshooting of the blanking DC levels does not occur.

Bounce Light

(FP, FV) Light that does not travel directly from its source (bounce flash) to the subject but is first reflected off another surface. This technique softens the light by directing it at a ceiling, wall, board, or similar surface before it reaches the subject.

Box Mask

(FV) A rectangular key mask which is adjustable for width and height.

Bracket

(FP) To make several exposures, some greater and some less than the exposure that is calculated to be correct. Bracketing allows for error and permits selection of the best exposure after development.

Breakup

(FV) Disturbance in the video or audio signal, often caused by loss of sync or videotape damage.

Breezeway

(FV) In an analog video signal, that portion of the "back porch" between the trailing edge of the sync pulse and the start of the color burst.

Brick Wall Filter

(FA, FV) A low-pass filter with a steep cut-off, such that a negligible amount of higher frequency information passes.

Brightness

(FV) In NTSC and PAL video signals, the brightness information at any particular instant in a picture is conveyed by the corresponding instantaneous peak level of active video.

Brightness Resolution

(FP, FV) This refers to the number of bits of stored information per pixel. A pixel with 1 bit of information has only two possible values, white or black. A pixel with a bit depth of 8 has a possible 2^8 , or 256 values, while a pixel with a bit depth of 24 has a possible 2^{24} , or over 16 million possible values. (Third Edition Digital Imaging For Photographers)

Broadband

(CER, FV) (1.) A transmission system capable of handling frequencies greater than those required for high-grade voice communications (higher than 3 to 4 kilohertz). (2.) For computer internet connections this refers to DSL or Cable modem connections.

Broad Lighting

(FP) This is a form of portrait lighting where the majority of the person's face is lighted by the main light. This form of lighting is usually used for persons with a slender face.

Bruch Blanking Sequence

(FV) A PAL blanking sequence named after its inventor. The sequence ensures that each field starts with the same burst phase as the burst at the end of the previous field.

Built-in meter

(FP) This is usually a reflected-light exposure meter built into a camera so that light readings can be made directly from camera position.

Bulb

(FP) This is a setting on the shutter speed dial. In the bulb setting the shutter will stay open for as long as the shutter release is pressed. It gets its name from the air bulb that was used in early

shutter release cables. As long as the bulb on the air driven shutter release cable was pressed, the air pressure would hold the shutter release pressed down and thus keep the shutter open.

Bundled

(CER, FA, FP, FV) This refers to accessories or software that is included in the purchase of the main item such as a computer or a major software application.

Burning In

(CER) An extensive diagnostic testing procedure to ensure that a new computer is working correctly. (FP) This is a darkroom printing technique in which you use your hands or a piece of opaque material with a hole cut in it to expose part of the print to darken that part of the print.

Burst (Color Burst)

(FV) Seven to nine cycles (NTSC) or ten cycles (PAL) of subcarrier, placed near the end of the horizontal blanking to serve as the phase (color) reference for the modulated color subcarrier. The burst serves as the reference for establishing the picture color.

Burst Flag (BF)

(FV) A pulse used to gate the color reference subcarrier (burst) onto the back porch of each horizontal blanking interval. Also called burst gate (BG).

Burst Vector

(FV) In composite video signals, this is the amplitude and angle of the color reference signal.

Bus

(CER, FA, FP, FV) This is an electronic pathway for sending data within a computer or between a computer and an external device.

Butterfly Lighting

(FP) Portrait lighting in which the main source of light is placed high and directly in front of the face. This lighting style gets its name from the butterfly like shadow pattern created under the nose of the person being photographed.

C

C-41

(FP) Kodak processing chemicals for processing color negative film.

Cable Equalization

(FV) The process of altering the frequency response of a video amplifier to compensate for high-frequency losses in coaxial cable.

Cable Loss

(CER, FA, FV) Signal loss caused by passing the signal through a coaxial cable. Losses are the result of resistance, capacitance, and inductance in the cable.

Cable Release

(FP) It is a flexible cable used for tripping a camera shutter, when the camera is mounted on a tripod, without causing any camera movement when pressing the shutter release with your hand could cause camera vibrations and blurring of the photograph.

CABSC

(FV) Canadian Advanced Broadcast Systems Committee. A committee formed to coordinate new standards for high definition television.

Cache

(CER, FA, FP, FV) An area of high speed memory chips set aside to keep frequently needed data readily available. This allocation speeds up the overall operation of computer processing.

Cache Card

(CER) A card that can be added to a computer to increase its performance. It contains certain common instructions and data in a special form of memory that the computer's processor can access quickly.

Calibration Bars

(FP) An 11-step grayscale in 10% increments from 0% to 100% that prints along the edge of a page. When outputting color separations a progressive color bar is also printed. Calibration bars can be read with a densitometer to insure accurate output and printing.

Calotype

(FP) The first successful negative/positive photographic process; it produced an image on paper.

Camera

(FP) A device for taking photographs consisting of a lens or pinhole, a shutter, a light tight enclosure, and some means of holding film or an electronic sensor to record the image projected on it. (FV) A generic term meaning the video camera head, containing the lens and pickup tubes, used to focus on and scan a scene. It also refers to completely self-contained cameras in which the entire camera chain is present in one unit.

Camera angles

(FP, FV) Various positions of the camera with respect to the subject being photographed, each giving a different viewpoint and perspective.

Camera Chain

(FV) All of the parts of a multi-part video camera, including the head, control unit, power supply, etc.

Camera Control Unit (CCU)

(FV) A separate electronics frame that supplies power and control to a camera head. The CCU also provides encoding and/or processing of the video signal. Operator controls available at the CCU usually include video levels, color balancing, and iris control.

Camera Flare

(FP) Defects in an image usually created by internal lens reflections often in the shape of the aperture opening. (FV) Color flashes or halos in the video picture caused by too much light shining directly into or reflecting into the camera lens. An adjustment called Flare on some GVG chroma keyers helps remove camera flare from the chroma key foreground.

Camera Head

(FV) The portion of a video camera containing the lens and pickup tubes which focus on and scan a scene.

Camera Obscura

(FP) Latin for “dark Chamber”: a darkened room or box, with a pin hole sized opening, or a lens, through which rays of light could enter and form an image of the scene. Initially these devices were used by artists to sketch objects and scenery.

Camera-Ready

(FP) In publishing, of or pertaining to the stage at which a document, with all typographic elements and graphics in place, is suitably prepared to be sent to a printing service.

Camera shake

(FP) Movement of the camera caused by an unsteady hold or support resulting in blurred photographs.

Caption

(FP) Descriptive information usually placed below the image area of a photograph. (FV) Text or titles to be inserted in video.

Caption Camera

(FV) A camera dedicated to imaging text or titles.

Capture

(CER, FA, FP, FV) The process of recording data, such as an image, video sequence, or audio stream.

Capture card/frame grabber

(FA, FV) A piece of computer hardware that accepts an analog or digital signal and outputs the signal as digital data that can be processed in the computer.

Capture Device

(FA, FP, FV) A device used to record audio, photographic, graphic, or video data.

Carrier Wave

(FA, FV) A single-frequency wave which, when transmitted, is modulated by another wave containing information.

Carte-de-visite

(FP) A small portrait popular during the 1860's.

Carve

(CER) The extraction of a portion of data for the purpose of analysis.

Cassette

(FA, FV) A self-contained plastic housing holding video or audio tape.

Cast

(FP) This refers to an overall color shift that makes the photograph look unnatural.

Catchlight

(FP) The reflection of a light source in the subject's eyes in a portrait.

Cathode Ray Tube (CRT)

(CER, FA, FP, FV) This is a picture tube design that creates a visible image by scanning a cathode ray onto a coated phosphor coated surface.

CAV (component analog video)

(FV) A video format in which three separate video signals represent luminance and color information. Each signal consists of an analog voltage that varies with picture content. This is also called analog component.

CCD

(FP, FV) This is an abbreviation for Charge Coupled Device. This is one of the main types of image sensors used in digital cameras. When a picture is taken, the CCD is struck by light coming through the camera's lens. Each of the thousands or millions of tiny photodiodes that make up the CCD convert this light (photons) into charge (electrons). The number of electrons collected is proportional to the light intensity. Charge packets are transferred off of the CCD and converted to digital values. This last step occurs outside the CCD, in a camera component called an analog-to-digital converter. High-end CCDs are cooled to reduce the amount of noise generated by readout - the process of transferring the charges off the sensor. CCDs are relatively

insensitive to blue light and therefore higher amplification is required. As a result, "Blue Noise" is a common artifact when using CCD sensors.

CC Filters

(FP) This is an abbreviation for color control filters. They come in Yellow, Magenta, Cyan, Red, Green and blue colors and range in density from 0.025 to 0.50. Their main uses are for the critical color balancing of color transparencies, motion pictures, and in slide duplication.

CCH

(FP) This is a Corel Chart graphics file format.

CCIR

(FA) This is an abbreviation for the International Radio Consultative Committee which was an international standards committee that is no longer in operation and has been replaced by the International Telecommunications Union (ITU).

CCIR-601

(FV) This is a video standard that is now called ITU-R BT.601-2. It is an international standard for component digital television from which was derived the SMPTE 125M and EBU 3246E standards. This International Telecommunications Union (ITU) standard defines the sampling systems, matrix values, and filter characteristics for both Y, B-Y, R-Y and RGB component digital television.

CCIR-656

(FV) This is a video standard that is now called ITU-R BT.656. ITU-R BT.656 defines the parallel connector pinouts as well as the blanking, sync, and multiplexing schemes used in both parallel and serial interfaces.

CD

(CER, FA, FP, FV) This is an abbreviation for compact disc. It is an optical storage medium for digital data.

CD Burner

(CER, FA, FP, FV) A device used to write CD-Rs. It is also called a CD recorder.

CD/DVD (compact disc/digital versatile disc)

(CER, FA, FP, FV) Optical disc formats designed to be used as digital storage media.

CD-I

(CER, FA, FP, FV) This is an abbreviation for compact disc-interactive. It is a hardware and software standard for a form of optical disc technology that can combine audio, video, and text on high-capacity compact discs. CD-I includes such features as image display and resolution, animation, special effects, and audio. The standard covers methods of encoding, compressing, decompressing, and displaying stored information.

CDR

(CER, FP) This is an abbreviation for the Corel Draw graphics file format.

CD-R

(CER, FA, FP, FV) This is an abbreviation for compact disc-recordable. It is an optical storage medium for digital data.

CD-ROM

(CER, FA, FP, FV) This is an abbreviation for compact disc read-only memory.

CD-RW

(CER, FA, FP, FV) CD-Rewritable: similar in virtually all respects to a CD-R, except that a CD-RW disc can be written and erased many times. This makes them best suited to many backup tasks, but not for long term storage. Therefore they are not normally considered to be archival quality media.

Center Weighted

(FP) This refers to the area of the picture that the camera will meter for exposure. When making an auto exposure the camera is programmed to look at a number of spots in the scene, and if the camera was designed to use center weighted metering, most of those spots will be in the center area of the picture.

Central processing unit

(CER, FA, FP, FV) This is the computational and control unit of a computer. The central processing unit is the device that interprets and executes instructions. By definition, the central processing unit is the chip that functions as the "brain" of a computer. In some instances, however, the term encompasses both the processor and the computer's memory or, even more broadly, the main computer console.

CEPS

(FP) This is an abbreviation for color electronic publishing systems, which is a dedicated, computerized system used by printers for color management.

CFR

(FP) This is an abbreviation for Color Film Recorder. It is a device photographs digital images on photographic film. All desktop film recorders work in essentially the same way: a camera is enclosed in a small box and is focused on a very high resolution monitor. It makes three exposures of the image, each through separate red, green, and blue filters to produce the final image.

CGI

(FP, FV) This is an abbreviation for computer-generated image. This is any electronic or digital image created in the computer as compared to a photograph of a real person or thing. In some sex-related crimes, it may be necessary to prove that a photograph is of a real person and not a computer-generated image.

CGM

(FP) This is an abbreviation for computer graphics metafile.

Chain Of Custody

(CER, FA, FP, FV) The chronological documentation of the movement, location and possession of evidence.

Changing Bag

(FP) This is a light proof black fabric bag that permits film and other light-sensitive materials to be handled in normal room light. It usually has a double zipper on one end and two armholes with elastic sleeves on the other.

Channel

(FP) Photoshop uses the term Channels to describes black and white and color image data. In Photoshop, one channel is typically defined as having up to 8, 16, or 32 bits of grayscale image information. A black and white grayscale image has one channel. An RGB color image has three channels. A CMYK color image has four channels.

Characteristic Curve

(FP) A graphic representation of the relationship of the film's exposure to light and the density of the resulting image. Also called the D log E curve, since density is plotted against the logarithm of the exposure.

Characterization

(FP) The process of creating an ICC profile that describes the unique color characteristics of a particular device such as a camera, monitor, scanner, or color printer. ICC profiles are used as part of the calibration process to ensure accurate color reproduction.

Chroma

The quality of a color that is the combination of hue and brightness. In the Munsell system of color notation, chroma indicates the purity of a color as measured along an axis; the farther from the axis, the purer the color. (Digital Exposure Dictionary, <http://www.digitalexposure.ca/sub1.html>)

Chroma Crawl

An artifact of encoded video also known as dot crawl or cross luminance. Occurs in the video picture around the edges of highly saturated colors as a continuous series of crawling dots and is a result of color information being confused as luminance information by the decoder circuits. Also called color crawl (Dictionary by Grass Valley)

Chroma Gain (Chroma, Color, Saturation)

In video, the gain of an amplifier as it pertains to the intensity of colors in the active picture. (Dictionary by Grass Valley)

Chroma Key (Color Key)

A video key effect in which one video signal is inserted in place of areas of a particular color in another video signal. For example, a weatherman stands in front of a blue wall with a camera

focused on him. The camera signal feeds a chroma keyer which detects the blue in the blue wall and replaces it with video from another camera, such as video of a weather map. Thus, the finished key makes the weatherman appear to be standing in front of the weather map. (Dictionary by Grass Valley)

Chroma Key Aperture

(FV) The range of colors accepted by a chroma keyer for use in creating a chroma key.

Chromatic Aberration Or Axial Chromatic Aberration

(FP, FV) The color shifts or fringing that occur as a result of light from a source passing through a lens, but resulting with different wavelengths focusing at different depths. This can either be observed as the images in different color channels being of different sizes, or of sources at different distances. In the case of human vision, blue light tends to focus before the retina and "blue blocker" sunglasses are commonly used to improve the sharpness of vision by blocking this out-of-focus colored light.

Chromaticity

(FP, FV) The color aspect of light including hue and saturation, but not intensity. The color perceived is determined by the relative proportions of the three primary colors.

Chromatte™

(FV) This is the chroma keying system used in some GVG digital video switchers.

Chrome

(FP) A photographic color transparency.

Chrominance

(FV) That portion of the video signal which contains the color information (hue and saturation). Video picture information contains two components: luminance (brightness and contrast) and chrominance (hue and saturation).

Chrominance/Luminance Inequality

(FV) A video specification that compares delay and gain differences between chrominance and luminance.

Chrominance Nonlinear Gain

(FV) An undesirable change in chrominance gain caused by a change in chrominance amplitude. It appears in a TV picture as incorrect color saturation.

Chrominance Nonlinear Phase

(FV) This is an undesirable change in chrominance phase caused by a change in chrominance amplitude. It appears in a TV picture as a shift in hue as the color saturation level increases.

Chrominance Signal

(FV) The sidebands of the modulated chrominance subcarrier that are added to the luminance signal to convey color information.

Chrominance-To-Luminance Intermodulation (Crosstalk, Cross-Modulation)

(FV) An undesirable change in luminance amplitude caused by superimposition of some chrominance information on the luminance signal. It appears in a TV picture as unwarranted brightness variations caused by changes in color saturation.

Chromogenic Film

(FP) Film in which the final image is composed of dyes rather than silver. The most common examples are black and white negative films intended for processing in Kodak C-41 color negative processing chemicals.

CIE

(FV) this is an abbreviation for Commission Internationale de l'Eclairage. It is an international group set up to produce color standards. It is also the name given to a color space model.

CIE LAB (L*a*b*)

(FP) This is a color space model to approximate human vision. The model consists of three variables: L* for luminosity, a* for one color axis, and b* for the other color axis. One advantage of this color space when using unsharp mask in Photoshop is that the luminosity channel contains most of the visible detail, while the a and b channels have a higher percentage of the image noise. This means that you can apply the unsharp mask to the L channel and a slight blur to the a and b channels.

Circle Of Confusion

(FP) The tiny circle of light formed by a lens as it projects the image of a single point of a subject. The smaller the diameters of all the circles of confusion in an image, the sharper the image will be.

CISC

(CER) This is an abbreviation for Complex Instruction Set Computing. See RISC.

Clamp, Clamping

(FV) The circuit or process that restores the DC component of a signal. A video clamp circuit, usually triggered by horizontal synchronizing pulses, re-establishes a fixed dc reference level for the video signal.

Clarification

(FP, FV) Any process intended to improve the visual appearance of an image. This is also called image enhancement or enhancement.

Class characteristics

(FP, FV) These are the visible features reproduced in an image that are common to a group of objects.

Clean Edges

(FV) Optimum chroma and luminance transitions that define where one object ends and another begins.

Clean Edits

(FV) Edit transitions that are synchronized accurately in phase and in color.

Clean Feed

(FV) An output of a switcher consisting of Program video without any down-stream key.

Clip Art

(FP, FV) A collection--either in a book or on a disk--of proprietary or public-domain photographs, diagrams, maps, drawings, and other such graphics that can be "clipped" from the collection and incorporated into other documents. This gets its name from the old clip art books in which an artist would literally clip (cut) out a drawing and paste it onto a background as part of a total art work.

Clipboard

(CER, FA, FP, FV) 1. A special memory resource maintained by windowing operating systems. The clipboard stores a copy of the last information that was "copied" or "cut." A "paste" operation passes this data from the clipboard to the current active window.

Clip Library

(FP, FV) see Clip Art.

Clip Photography

(FP) Stock photographs stored on disks or CDs, and that can be copied into an application.

Clipping Level

(FA, FV) This is an electronic limit to avoid overdriving the audio or video portion of the television signal.

Clipping Path

(FP) A polygon or curve that is used to mask an area in an electronic/digital image or graphic.

Clock Frequency

(FV) The master frequency of periodic pulses that are used to synchronize the operation of video equipment.

Clock Jitter

(FV) Undesirable random changes in clock phase.

Clock Phase Deviation

(FV) A fixed deviation from proper clock phase that commonly appears in D1 digital video equipment. This is also called clock skew.

Clock Recovery

(FV) The reconstruction of timing information from digital data.

Clock Skew

(FV) A fixed deviation from proper clock phase that commonly appears in D1 digital video equipment. This is also called clock phase deviation.

Clock Wipe

(FV) A wipe that uses a circular pattern like the hand of a clock.

Closed captioning (CC)

(FV) As the video plays, text captions are displayed that transcribe, although not always verbatim, what is said and by whom and indicate other relevant sounds. The term "closed" in closed captioning means that not all viewers see the captions—only those who decode or activate them. This allows deaf and hard of hearing /hearing impaired people, people learning English as an additional language, people first learning how to read, people in a noisy environment, and others to read a transcript or dialogue of the audio portion of a video, film, or other presentation.

Close-up Lens

(FP) A lens attachment placed in front of a camera lens to permit taking pictures at a closer distance than the camera lens alone will allow.

CLUT

(FP) This is an abbreviation for color look up table.

CMOS

(CER, FP, FV) This is an abbreviation for complementary metal-oxide semiconductor. Generally used for RAM and switching applications, these devices have very high speed and extremely low power consumption. They are, however, easily damaged by static electricity.

CMOS Camera Sensor

(FP, FV) A camera sensor made with a CMOS (complimentary metal-oxide semiconductor) process rather than a CCD. It works by charging up all of the sensor wells to a known charge. This charge is then bled-off as photons strike it. Because the sensor is made with CMOS, all of the traditional silicon processes can be used making it possible to integrate the analog-to-digital converter with the chip. Also, CMOS fabrication is considerably cheaper than CCD fabrication. Unfortunately, CMOS sensors are less sensitive to light and have more noise problems than their CCD cousins. CMOS sensors are relatively insensitive to blue light and therefore higher amplification is required. As a result, "Blue Noise" is a common artifact when using CMOS sensors.

CMOS RAM

(CER, FA, FP, FV) Random access memory made using complementary metal-oxide semiconductor technology. CMOS chips consume extremely little power and have high tolerance for noise from the power supply. These characteristics make CMOS chips, including CMOS RAM chips, very useful in hardware components that are powered by batteries, such as

most microcomputer clocks and certain types of scratchpad RAM that are maintained by the operating system.

CMOS Setup

(CER, FA, FP, FV) A system configuration utility, accessible at boot time, for setting up certain system options, such as the date and time, the kind of drives installed, and port configuration.

C-mount

(FP) A standard size threaded lens mount used on motion picture cameras.

CMS

(FP) This is an abbreviation for Color Management Systems are software and/or hardware based systems that are used to match the color you see on your monitor to the output device so that what you see on the screen is what you get as output. The software alone is useless unless you have device profiles for the monitors and output devices you use.

CMX

(FP) This stands for Corel Presentation Exchange graphics file format.

CMY

(FP) This is an abbreviation for cyan-magenta-yellow. This is a color space model for describing colors that are produced by absorbing light, as by ink on paper, rather than by emitting light, as on a video monitor. The three kinds of cone cells in the eye respond to red, green, and blue light, which are absorbed by cyan, magenta, and yellow pigments, respectively. Percentages of pigments in these subtractive primary colors can therefore be mixed to get the appearance of any desired color. Absence of any pigment leaves white unchanged; adding 100 percent of all three pigments turns white to black.

CMYK

(FP) This is an abbreviation for cyan-magenta-yellow-black. This is a color model that is similar to the CMY color model but produces black with a separate black component rather than by adding 100 percent of cyan, magenta, and yellow.

Coated Lens

(FP, FV) A lens with air-glass surfaces which have been coated with magnesium fluoride, or other substances, to reduce lens flare. A coated lens is faster, meaning it transmits more light, compared to an uncoated lens.

Coaxial Cable

(FV) A cable which has a metallic noise shield surrounding a signal-carrying conductor. In television, the cable impedance is 75 ohms.

Codec

(FA, FV) This refers to the computer algorithm that controls the compression/decompress and/or encoding and decoding of audio and video files. It is possible for multiple file formats to utilize multiple codecs.

Cognitive Image Analysis

(FP) This is the process used to extract visual information from an image.

Code Notch

(FP) Individually distinctive notches located near one corner on photographic sheet of film for product identification purposes and to tell which side of the film is the emulsion side.

Coherence

(FP) In optics it is the property of some electromagnetic waves whereby all the waves are in phase with one another. Light from a laser is a common example.

Cold Boot

(CER, FA, FP, FV) n. A startup process that begins with turning on the computer's power. Typically, a cold boot involves some basic hardware checking by the system, after which the operating system is loaded from disk into memory.

Cold Colors

(FP) They are colors at the blue end of the spectrum that are considered to suggest a cool atmosphere.

Cold Fault

(CER, FA, FP, FV) A fatal error that occurs immediately upon or shortly after startup as a result of the misalignment of components in the system. The process of running and shutting down any computer induces a series of thermal expansions and contractions in its internal components. Over time, these changes in the dimensions of components can create a microscopic crack in a chip or loosen a pin in a socket; thus, the system crashes when cold, but the problem seems to disappear after the machine is warm. For this reason some users leave the system unit (but not the monitor) of a computer running from day to day, rather than turning the machine on only when needed.

Cold-light Enlarger

(FP) A diffusion enlarger that uses a fluorescent tube instead of a tungsten bulb as the light source.

Cold Start

(CER, FA, FP, FV) To start up a system by turning power on.

Collodion

(FP) A transparent, syrup solution of pyroxylin (nitrocellulose) dissolved in ether and alcohol. Used as a basis for the emulsion in the wet-plate process.

Color

(FP, FV) In physics, the component of the human perception of light that depends on the frequency of the light wave. For light of a single frequency, color ranges from violet at the high-

frequency end of the visible-light band (a small portion of the total electromagnetic spectrum) to red at the low-frequency end.

Color Background

(FV) A solid color used as a background in a video picture.

Color Background Generator

(FV) An electronic device that generates a full-field solid color for use as a background in a video picture.

Color Balance

(FP) The overall accuracy with which the colors in a photograph match the original scene. (FP, FV) Adjustment of the intensity of each primary color to achieve the best possible representation of the entire color spectrum. White is used as a reference for setting color balance referred to as setting white balance.

Color Banding

(FP) The appearance of visible bands of colors that replace subtle gradations in order to accommodate a reduced palette. This is also a defect in printing with an ink jet printer usually to a clogged printer.

Color Bars

(FV) This is a video test signal widely used for system and monitor setup. It contains bands of color with fixed amplitudes and saturations.

Color Bits

(FP, FV) A predetermined number of bits assigned to each displayable pixel that determines its color when it is displayed on a monitor or other output device.

Color Black

(FV) A composite video signal that produces a black screen when viewed on a television monitor.

Color Black Locking

(FV) Synchronizing a piece of equipment to a color black video input.

Color Burst

(FV) A technique used to encode color in a composite video signal, originally developed so that black-and-white television monitors could display programs broadcast in color. The color burst consists of a combination of the red, green, and blue intensities (used by black-and-white displays) and two color-difference signals that determine separate red, green, and blue intensities.

Color Calibration

(FP) The process of ensuring accurate reproduction of color for images. Full color calibration is usually a three-step process: calibrating your input device, calibrating your monitor, calibrating

your output device. By calibrating input devices, monitors, and output devices correctly, color is accurately captured by your scanner or camera, accurately viewed on your monitor, and is reproduced faithfully on your printer as well.

Color Cast

(FP) The effect of one color adversely dominating the overall look of an image.

Color Channel

(FP) Refers to the Red, Green and Blue components from which colors are created.

Color Compensating Filters

(FP) Gelatin filters that can be used to adjust the color balance during picture taking or in color printing. They are more expensive than acetate color printing filters.

Color Conversion Filters

(FP) Colored filters that enables color film to be used with light of a different color temperature than it was intended. The 80-series filters are blue in color and are intended to be used with daylight balanced color film with tungsten light. The 85-series are amber in color and are intended to be used with tungsten color film with daylight or electronic flash.

Color Correction

(FV) Correction of a video signal for level, hue, and luminance shifts.

Color Correction Filter

(FP) Colored filters used with Black-and-white film to control the reproduction of specific colors as lighter or darker shades of gray. A common forensic application is the use of a Wratten #61 green filter to darken a magenta color latent print developed with ninhydrin. Another common forensic use is the use of a Wratten #29 red filter to lighten a red bank stamp when trying to take a black and white photograph of a signature that has been over-stamped with a red bank stamp.

Color Crawl

(FV) An artifact of encoded video also known as dot crawl or cross luminance. It occurs in the video picture around the edges of highly saturated colors as a continuous series of crawling dots and is a result of color information being decoded as luminance information by the decoder circuits. It is also called chroma crawl.

Color Densitometer

(FP) 1. (1.) A piece of equipment used by press personnel to determine the density of the ink color being laid down on the printed sheet. It has a numerical digital read out and the higher the readout on the densitometer, the greater the amount of ink that is being laid down on the sheet. (2.) A device used to measure photographic process control strips used to verify whether or not photographic color processing chemicals are within the manufacturer's recommendations. (3.) A device used to measure test patterns on a monitor to record color values used to create an ICC profile for the monitor. (4.) A device used to measure test patterns reproduced on a specific

printed to record color values used to create an ICC profile for the specific combination of printer, paper and inks used.

Color Depth

(CER, FP, FV) This is the number of bits assigned to each pixel in the image and the number of colors that can be created from those bits. True Color in RGB uses a minimum of 24 bits per pixel to render 16 million colors.

Color Engine

(FP) This is the color matching method used in a color management system to convert the image data from the color space of the source profile to the color space of the destination profile.

Color Field

(FV) In the NTSC system, the color subcarrier is phase-locked to the line sync so that on each consecutive line, the subcarrier phase is changed 180 degrees with respect to the sync pulses.

Color Field Sequence

(FV) The sequence of color fields that make one complete color frame.

Color Frame

(FV) In color television four (NTSC) or eight (PAL) properly sequenced color fields compose one color frame.

Color Frame ID (Identification)

(FV) An identification pulse that indicates the beginning of a complete color frame.

Color fringing

(FV) An artifact in CCDs where color filtering conflicts with information in the subject.

Color Gamut

(FV) The range of colors that can be formed by all possible combination of colorants in any color input system.

Color Head

(FP) A device on a enlarger that contains adjustable built-in filters for color printing. A subtractive color printing head uses cyan, magenta, and yellow filters. An additive color printing head uses red, green, and blue filters.

Colorimeter

(FP) A device that evaluates and identifies colors in terms of a standard set of synthesized colors.

Colorimetry

(FP) The quantification of the color of an object.

Color Look-Up Table

(FP, FV) A table stored in a computer's video adapter, containing the color signal values that correspond to the different colors that can be displayed on the computer's monitor. When color is displayed indirectly, a small number of color bits are stored for each pixel and are used to select a set of signal values from the color look-up table. This is also called a color map, color table, or video look-up table.

Color Management

(FP) The overall process of producing accurate, consistent color using any of a variety of output devices.

Color Management System

(FP) A technology developed by Kodak and licensed to many other software vendors that is designed to calibrate and match colors that appear on video monitors and computer monitors and those that appear in any printed form.

Color Map

(FP) Another name for color look-up table.

Color Matching Method (CMM)

(FP) A routine used by a color management system to apply transformations to color data.

Color Match RGB

(FP) The RGB working space that is the native color space of Radius Press view monitors. This space provides a smaller gamut alternative to Adobe RGB (1998) for print production work.

Color Model

(FP) Any method or convention for representing color in desktop publishing and graphic arts. In the graphic arts and printing fields, colors are often specified with the Pantone system. In computer graphics, colors can be described using any of several different color systems: HSB (hue, saturation, and brightness), CMY (cyan, magenta, and yellow), CMYK (cyan, magenta, yellow, and black) and RGB (red, green, and blue).

Color Monitor

(CER, FP, FV) A video display device designed to work with a video card or adapter to produce text or graphics images in color. A color monitor, unlike a monochrome display, has a screen coated internally with patterns of three phosphors that glow red, green, and blue when struck by an electron beam. To create colors such as yellow, pink, and orange, the three phosphors are lighted together in varying degrees..

Color Negative

(FP) Film processed as a negative image from which positive color prints can be made.

Color Palette

(FP) Things are displayed on your monitor according to a specified number of colors in a color palette. The theory is that more colors equals a more vivid and lifelike picture quality.

Color Printing Filters

(FP) Acetate filters used to adjust the color balance in color printing. They must be used with an enlarger that can hold filters between the enlarger lamp and the negative.

Color Ramp

(FV) A background color that graduates from light to dark or from one color to another.

Color Range

(FP) The range of colors that can be detected by a sensor.

Color Resolution

(FP) This is the number of simultaneous colors that can be recorded or display. It is determined by the number of bits associated with each pixel in the display memory. The more bits per channel, the more colors that can be recorded or displayed.

Color Saturation

(FP, FV) This is the amount of a hue contained in a color; the more saturation, the more intense the color.

Color Separation

(FP) This applies to printing press applications in which a separate output file is produced for each of the CMYK channels.

Color Space

(FP) A two or three-dimensional model where the three attributes of color: hue, saturation and brightness (HSV) can be graphically represented. Examples of such models include, but are not limited to, RGB, LAB, CMYK, and Indexed color.

ColorSync

(FP) A color management system from Apple Computer.

Color Temperature Meter

(FP, FV) This is a device for measuring the color temperature of a light source to determine which color compensating filters will be needed for critical color balance when taking photographs on transparency films.

Color Timing

(FV) It is the synchronization of the burst phase of two or more video signals. This ensures that no color shifts occur in the picture when the signals are mixed in a switcher or other video device.

Color trapping

(FP) A printing term referring to the solution to slight mis-registrations in the printing process. If two colors are mis-registered, a white line will appear around the object. Trapping is the process of adding extra color to fill in the gap created. Programs such as Photoshop have trapping capabilities.

Colour

(FP, FV) British spelling of color.

COM

(CER, FP) A name reserved by the MS-DOS operating system for serial communications ports.

COM1

(CER, FP) A serial communications port in IBM compatible computers. COM1 is usually specified by the I/O range 03F8H, and is usually associated with interrupt request line IRQ4, and in many systems is used to connect an RS232 serial mouse or a dial-up modem. Some photographic densitometers also use this port to transfer density readings directly to a computer with the appropriate computer software to automatically analyze and plot the measurements for quality control or other purposes.

COM2

(CER, FP) A serial communications port in IBM compatible computers. COM2 is usually specified by the I/O range 02F8H, is usually associated with interrupt request line IRQ3. In many systems it is used to connect a modem if COM1 is in use for something else.

COM3

(CER, FP) A serial communications port in IBM compatible computers. COM3 is usually specified by the I/O range 03E8H, and is usually associated with interrupt request line IRQ4. In many systems is used as an alternative to COM1 or COM2 if the latter is being used by some other peripheral.

Coma

(FP, FV) This is a lens aberration or defect that causes rays of light that pass obliquely through the lens to be focused at different points on the film plane. This defect causes point light sources to take on an oval or teardrop like shape.

Comb Filter

(FA, FV) An electrical filter circuit that passes a series of frequencies and rejects the frequencies in two or more notches in between, producing a frequency response similar to the teeth of a comb. In addition to audio applications, this filter is used on encoded video to select the chrominance signal and reject the luminance signal, thereby reducing cross chrominance artifacts, or conversely, to select the luminance signal and reject the chrominance signal, thereby reducing cross luminance artifacts. Comb filtering successfully reduces artifacts but may also cause a certain amount of resolution loss in the picture.

Combiner

(FV) In digital picture manipulators, this is a device that controls the way in which two or more channels work together. Under software control, it determines the priority of the channels (which picture appears in front and which ones go in back) and the types of transitions that can take place between them.

Compact Disc

(CER, FA, FP, FV) It is an optical storage medium for digital data.

Compact Disc-Erasable

(CER, FA, FP, FV) A technological improvement in compact discs whereby information can be repeatedly changed on the CD. Contemporary CDs are "write once, read many," in that the information originally written cannot be changed, but can only be appended to.

Compact Disc-Interactive

(CER, FA, FP, FV) This is an abbreviation for compact disc-interactive. A hardware and software standard for a form of optical disc technology that can combine audio, video, and text on high-capacity compact discs. CD-I includes such features as image display and resolution, animation, special effects, and audio. The standard covers methods of encoding, compressing, decompressing, and displaying stored information.

Compact Disc Player

(CER, FA, FP, FV) A device that reads the information stored on a compact disc. A compact disc player contains the optical equipment necessary for reading a disc's contents and the electronic circuitry for interpreting the data as it is read. Normally this refers to a device for playing audio compact disks.

Compact Disc-Recordable And Erasable

adj. Of or pertaining to hardware and software for interfacing computers with both compact disc-recordable and compact disc-erasable devices. See also compact disc-recordable.

Compact Disc-Rewritable

(CER, FA, FP, FV) A technological improvement in compact discs whereby information can be repeatedly changed on the CD. Contemporary CDs are "write once, read many," in that the information originally written cannot be changed, but can only be appended to.

Compact Flash™

(CP) A common type of digital camera memory card, about the size of a matchbook. There are two types of cards, Type I and Type II. They vary only in their thickness, with Type I being slightly thinner. Type II card slots are also compatible with microdrives.

Comparative Analysis or Comparative Image Analysis

(FP) A scientific technique that objectively compares unknown images, vehicles, persons, or objects to known or other unknown images, vehicles, persons or objects.

Compare

(FP, FV) This is the second step in the ACE-V and ACE-VR scientific protocols for comparative analysis. It is a detailed examination of the class and individualizing characteristics of the known objects that may or may not be depicted in the questioned image. Following this examination of the known objects, the examiner compares and contrasts the class and individualizing characteristics of the object depicted in the questioned image with the visible class and individualizing characteristics of all the known objects. At this point the examiner

determines if all of the class and individualizing characteristics in both the questioned image and the known object or objects either are consistent or not consistent.

Compatibility

(CER, FA, FP, FV) The degree to which a computer, an attached device, a data file, and/or a program can work as an integrated unit without any errors.

Complementary Colors

(FP) Any two colors of light that when combined include all the wavelengths of visible light and thus produce white light.

Component Video

(FV) It is the unencoded output of a camera, videotape recorder, etc., consisting of 3 primary color signals: red, green, and blue (RGB) that together convey all necessary picture information. In some component video formats, these three components have been translated into a luminance signal and two color difference signals, for example, Y, R-Y, B-Y.

COM Port

(CER, FA, FP, FV) Short for communications port, the logical address assigned by MS-DOS (versions 3.3 and higher) and Microsoft Windows (including Windows 95 and Windows NT) to each of the four serial ports on an IBM Personal Computer or a PC compatible.

Composite Digital

(FV) A digitally encoded video signal, such as NTSC or PAL video, that includes horizontal and vertical synchronizing information.

Composite Display

(FV) A display, characteristic of television monitors and some computer monitors, that is capable of extracting an image from a composite signal. A composite display signal carries on one wire not only the coded information required to form an image on the screen but also the pulses needed to synchronize horizontal and vertical scanning as the electron beam sweeps back and forth across the screen.

Composite Sync (CS)

(FV) It is a video synchronizing signal that contains horizontal and vertical synchronizing information. This is often referred to simply as sync.

Composite Video

(FV) An encoded video signal that also includes horizontal and vertical synchronizing information.

Compound Lens

(FP, FV) It is a lens system consisting of two or more elements. Compound lens designs allow the lens designer to reduce lens aberrations, making maximum apertures larger and improve resolution.

Compress

(CER, FA, FP, FV) To reduce the size of a set of data, such as a file or a communications message, so that it can be stored in less space or transmitted with less bandwidth. Data can be compressed by removing repeated patterns of bits and replacing them with some form of summary that takes up less space; restoring the repeated patterns decompresses the data. Lossless compression methods must be used for text, code, and numeric data files; lossy compression may be used for video and sound files.

Compressed Digital Video

(FV) The compression of video images for high-speed transmission.

Compressed Disk

(CER, FA, FP, FV) A hard disk or floppy disk whose apparent capacity to hold data has been increased through the use of a compression utility.

Compressed Drive

(CER, FA, FP, FV) A hard disk or floppy disk whose apparent capacity to hold data has been increased through the use of a compression utility.

Compressed File

(CER, FA, FP, FV) A file whose contents have been compressed by a special utility program so that it occupies less space on a disk or other storage device than in its uncompressed (normal) state.

Compression

(CER, FA, FP, FV) The process of reducing the size of a data file. (FV) 1. Improper video signal level caused by non-linearity in a circuit transfer function. Results in lack of detail in either the black or white areas of the video picture. Can also be caused by pointing a video camera at a scene that has a total black-to-white range wider than a standard television signal can handle. (FA) Non-linear reduction in the dynamic range of an audio signal.

Compression Artifacts

(CER, FA, FP, FV) Compacting of a digital signal, particularly when a lossy compression algorithm is used, may result in errors when the signal is decompressed. These errors are known as "artifacts," or unwanted defects and are worse at higher compression settings.

Compression Ratio

(CER, FA, FP, FV) The size of a data file before compression divided by the file size after compression.

Computer Forensics

(CER) A sub-discipline of Digital & Multimedia Evidence, which involves the scientific examination, analysis, and/or evaluation of digital evidence in legal matters.

Computer Graphics

(FP) The display of "pictures," as opposed to only alphabetic and numeric characters, on a computer screen. Computer graphics encompasses different methods of generating, displaying, and storing information.

Computer Graphics Metafile

(FP) A software standard related to the widely recognized GKS (Graphical Kernel System) that provides applications programmers with a standard means of describing a graphic as a set of instructions for re-creating it.

Computer-Readable

(CER) Of, pertaining to, or characteristic of information that can be interpreted and acted on by a computer.

Condenser

(FP) This is an optical system which concentrates light rays from a wide source into a narrow beam. Condensers are used in spotlights and enlargers.

Condenser Enlarger

(FP) an enlarger that uses specular light and has several lenses (condensers) to concentrate the light and increase the illumination. It produces images with more contrast and sharper detail than a diffusion enlarger.

Configuration

(CER) In reference to a single microcomputer, the sum of a system's internal and external components, including memory, disk drives, keyboard, video, and generally less critical add-on hardware, such as a mouse, modem, or printer.

Configuration File

(CER) A file that contains machine-readable operating specifications for a piece of hardware or software or that contains information on another file or on a specific user, such as the user's logon ID.

Constant Duration Mode

(FV) The addition of key frames to an existing key frame effect in such a way that the overall length of the effect does not change.

Contact Print

(FP) An image made by placing a negative in tight contact with a sheet of photographic paper or other piece of film, then exposing it to light. Although it is usually done with a photographic negative to make a positive.

Contact Printer

(FP) Is an apparatus used for making contact prints.

Contact Printing

(FP) The process of placing a negative in contact with sensitized material, usually paper, and then passing light through the negative onto the material. The resulting image is the same size as the negative.

Contact Sheet (Contact Proof)

(FP) A gang sheet made by placing film directly in contact with the photographic paper. All images appear on one sheet of paper in the same size as the film.

Contamination

(FP) Traces of chemicals that are present where they don't belong, causing loss of chemical activity, staining, or other problems.

Context-Sensitive Help

(CER, FA, FP, FV) A form of assistance in which a program that provides on-screen help shows information to the user concerning the current command or operation being attempted.

Context-Sensitive Menu

(CER, FA, FP, FV) A menu that highlights options as available or unavailable depending on the context in which the option is called.

Continuity

(FP) In digital picture processing software, it is the characteristic of location/positioning that determines whether the motion path continues smoothly, without interruption.

Continuous Tone

(FP) An image, such as a original photographic transparency or print, in which the tones or colors blend smoothly from one to another.

Continuous Tone (CT) Device

(FP) A device that renders images by using tone values of different densities without applying halftone dots.

Continuous-Tone Image

(FP) An image, such as a photograph, in which color or varying shades of gray are reproduced as gradients rather than as clustered or variably sized dots, as in traditional book or newspaper printing.

Continuous-Tone Printer

(FP) A printer that produces an image using smoothly blended levels of continuous ink for gradations of gray or color.

Contouring

(FP) (1.) In computer graphics, such as CAD models, it is the representation of the surface of an object . (2.) In image processing, it is the loss of detail that occurs in an image when too few gradations of gray are used to reproduce a graphic, such as a photograph. In photography and

graphic arts, this phenomenon is sometimes called posterization. (FV) Digital video picture defect caused by quantizing at too coarse a level.

Contrast

(FP, FV) (1.) The degree of difference between light and dark extremes of color on a monitor or on a printed output. 2. The control knob by which the contrast of a monitor is changed. (FV) The contrast control is an adjustment of video gain.

Contrast Filter

(FP) A colored filter used on a camera to lighten or darken selected colors in a black and white photograph. For example, a green filter used to darken a magenta colored latent print developed on paper with ninhydrin.

Contrast Grade

(FP) Numbers (usually 1-5) of the contrast grades of photographic papers, to enable you to get good prints from negatives of different contrasts. Use a low-numbered contrast paper with a high contrast negative to get a print that most closely resembles the original scene. Use a high-numbered paper with a low-contrast negative to get a normal contrast print.

Contrasty

(FP, FV) Describes a scene, negative, or print with very great differences in brightness between light and dark area.

Control Monitor

(FV) A monitor employed primarily for decisions on subject matter, composition, and sequences to be selected in real-time. It is frequently one of several monitors mounted together in close proximity as in a studio – for example, to display multiple sources that are to be compared, selected, and combined in editing for immediate, direct routing to display.

Control Panel

(CER) (1.) (Macintosh) A Control Panel is a small program that does something specific for your computer system or application. Each utility has its own panel for controlling various features or settings. (2.) (Windows) In Microsoft Windows, the Control Panel window contains many small utilities that allow you to customize the way your interface looks, as well as adjusting the settings of hardware and software.

Control Signal

(FV) A signal used to perform an alteration of or transition between video signals.

Control Strip

(FP) An equipment calibration tool used to determine the corrections needed to restore accuracy by comparing recorded data against known values. In photographic processing, this refers to a photographic material, such as film or printing paper, that is precisely exposed for processing as a known standard to monitor the activity of a photographic process. This standard material is processed in the appropriate chemicals and then measured with a densitometer to determine if the

chemical activity level is within an acceptable Tolerance based on the manufacturer's specifications.

Control Track

(FV) The area on a videotape where frame pulses are recorded.

Control Track Frame Pulse

(FV) A pulse laid down on videotape by a videotape recorder to identify the frame locations on the videotape. This enables the VTR to lock up correctly to a specific video frame during playback.

Convergence

(FP) In a 2 dimensional photograph, this is the natural appearance of perspective in which parallel lines running from the foreground to the background appear to form straight lines that point towards a common point called a vanishing point.

Converter

(CER, FA, FV) Any device that changes electrical signals or computer data from one form to another. For example, an analog-to-digital converter translates analog signals to digital signals.

Cookie

(CER) On the World Wide Web, a block of data that a Web server stores on a client system. When a user returns to the same Web site, the browser sends a copy of the cookie back to the server. Cookies are used to identify users, to instruct the server to send a customized version of the requested Web page, to submit account information for the user, and for other administrative purposes.

Cookie Filtering Tool

(CER) A utility that prevents a cookie from relaying information about the user requesting access to a Web site or it prevents a cookie from being written to a person's computer.

Cool or Cold Colors

(FP) Refers to bluish colors that, by association with common object (water, ice, and so on), give an impression of coolness.

Copy

(CER, FP) An accurate reproduction of information.

Correction Filter

(FP) A filter which alters the color rendition of a scene to match the color response of the film.

Corrective Maintenance

(CER) The process of diagnosing and correcting computer problems after they occur.

Correlated Noise

(FP, FV) A recognizable pattern of change in an image file, based on an increase or a decrease in the brightness of the pixels compared to what they should be. Vertical patterns of correlated noise are often called streak noise and are common problems with CCD technology. It is also called periodic noise.

Corruption

(CER) A process wherein data in memory or on disk is unintentionally changed, with its meaning thereby altered or obliterated.

Cost-Benefit Analysis

(CER) The comparison of benefits to costs for a particular item or action. Cost-benefit analysis is often used in MIS or IS departments to determine such things as whether purchasing a new computer system is a good investment or whether hiring more staff is necessary.

Covering power

(FP) the area at the focal plane over which a lens projects an image that is acceptably sharp and uniformly illuminated.

CPU

(CER) The processing and control center of a computer. This is also used to refer to the box containing the motherboard with the CPU on it.

Crawl

(FV) Text or graphics moving horizontally across the screen.

Crop

(FP) To cut off part of an image, such as unneeded sections of a graphic or extra white space around the borders. This is usually done so that in the finished photograph the main subject matter is emphasized by making it larger and by removing distracting materials. It is also done for esthetic reasons to improve the composition of the photograph.

Cropping

(FP) Omitting or deleting parts of an image when making a print or copy negative in order to improve the composition of the final image.

Crop Marks

(FP) Lines drawn at the edges of pages to mark where the paper will be cut to form pages in the final document. 2. Lines drawn on photographs or illustrations to indicate where they will be cropped, or cut.

Cross Chrominance (Cross Color)

(FV) Moire or rainbow artifacts in an encoded video picture caused when the video encoder or decoder misinterprets luminance detail as color information.

Crossed Polarization

(FP) A system of using two polarizing filters, one over the light source and one between the subject and the lens. With certain materials crossed polarization causes bi-refrangent effects which are exhibited as colored bands. Used in investigations of stress areas in engineering and architectural models. With plastic bags on a roll, this technique can be used to photograph stress patterns in the plastic bags to show an indication of common source. It is also sometimes used to photograph latent prints on smooth surfaces.

Crossfade

(FV) A transition between two pictures where the first picture dissolves to black, and then black dissolves to the second picture.

Crosshatch

(FV) A video test signal containing a grid pattern used for convergence and linearity adjustments and on-screen alignment of graphics.

Cross-Hatching

(FV) Shading made up of regularly spaced, intersecting lines. Cross-hatching is one of several methods for filling in areas of a graphic.

Cross Luminance (Dot Crawl, Chroma Crawl)

(FV) A video artifact that occurs when the decoder in a monitor or receiver misinterprets areas of high color saturation as luminance information. This causes tiny colored dots to creep along the vertical or horizontal edges of objects.

Crosspoint

(FA, FV) An electronic switch, usually part of an array of switches, that allows video or audio to pass when the switch is closed.

Crosstalk

(FA, FV) Undesired transmission of signals from one circuit into another circuit in the same system. Usually caused by unintentional capacitive (AC) coupling. (FV) Signal interference from one part of a videotape to another.

CRT

(FV) This is an abbreviation for a cathode ray tube, which is the imaging system for a monitor or television.

Cryptoanalysis

(FA, FV) The decoding of electronically encrypted information for the purpose of understanding encryption techniques.

Cryptography

(CER) The use of codes to convert data so that only a specific recipient will be able to read it, using a key. The persistent problem of cryptography is that the key must be transmitted to the intended recipient and may be intercepted.

CSI Effect

(CER, FA, FP, FV) This is the unreasonable expectations about the capabilities of crime scene technicians and forensic scientists to always find and analyze physical evidence in an impossibility short period of time. This unreasonable expectation is based on the public's observations of over dramatized depictions of forensic capabilities in a television show called "CSI".

Cue

(FV) Video editing term meaning to position a videotape at a specific point.

Cue Ahead

(FV) Video editing term meaning to fast forward or rewind a VTR to the next edit point in preparation for an edit.

Current Key Frame

(FV) A digital picture manipulation term. The current key frame for each channel is the key frame in the current effect at which the channel is presently positioned.

Current Time

(FV) A digital picture manipulator term. The current time is the current position in the current effect. This time is the "glue" which binds multichannel effects and is expressed in terms of seconds and frames from the start of the effect. Negative times indicate events before the start of the effect.

Cursor

(CER) Symbol with which the user selects and draws on-screen.

Curvature Of Field

(FP) Where light rays passing through a lens causing the lens to focus on a curved plane versus a flat plane. This causes out-of-focus pictures.

Curve

(FP) (1.) A graphical representation of the contrast and color of an image. Most image processing programs offer the capability of modifying the image using the 'curves' control. Sometimes referred to as 'gamma curve'. (2.) In reference to photographic film this usually refers to a graphic representation of light sensitivity, contrast, and or color sensitivity of the emulsion.

Curvilinear Distortion

(FP) Optical distortion consisting of curved lines.

Custom Color Printing

(FP) The art of producing, from one's knowledge of color, a print that looks better and is more pleasing than a print that can be made purely by a machine.

Cut

(FV) A transition between two video pictures which is instantaneous, without any gradual change.

Cut-and-paste

(FP) Procedure in graphics or text editing for deleting part of one image and copying it into another.

Cyan

(FP) Blue-green subtractive primary color which absorbs red and transmits blue-green.

D

D1

(FV) A component digital video recording format that uses data conforming to the ITU-R BT.601-2 (CCIR-601) standard. It records on 19mm magnetic tape.

D2

(FV) A composite digital video recording format that uses data conforming to SMPTE 244M. It records on 19mm magnetic tape.

D3

(FV) A composite digital video recording format that uses data conforming to SMPTE 244M. It records on 1/2" magnetic tape.

D5

(FV) A component digital recording format that uses data conforming to the ITU-R BT.601-2 (CCIR 601) standard. It records on 1/2" magnetic tape.

D6

(FV) A digital HDTV recording format using D1 tape.

DAC

(FA, FV) This is an abbreviate for a digital-to-analog converter.

Daguerreotype

(FP) The first practical photographic process, invented by Daguerre and described by him in 1839. The process produced a positive image formed by mercury vapor on a metal plate coated with silver iodide.

Darkcloth

(FP) An opaque cloth, usually black, used to cover the photographer's head and camera to block surrounding light in order to better view the image on the camera's ground glass viewing screen.

Darkroom

(FP) This is a light tight room used for processing and printing photographic materials. It usually incorporates safe lighting suitable for the materials in use.

.dat

(CER) A generic file extension for a data file.

DAT

(FA) This is an abbreviation for digital audio tape.

Data

(CER, FA, FP, FV) Information in analog or digital form that can be transmitted or processed.

Data Acquisition

(CER) The process of obtaining data from another source, usually one outside a specific system.

Data Analysis

(CER) The assessment of the information contained within the media.

Database

(CER) A collection of information stored in the computer in such a way that it can be retrieved in an organized and/or summarized manner.

Data Capture

(CER) The collection of information at the time of a transaction.

Data Extraction

(FA, FV) The identification and recovery of information contained within a recording, which may not be immediately apparent through visual/aural inspection.

Data File

(CER) A file consisting of data in the form of text, numbers, or graphics, as compared to a program file of commands and instructions.

Data integrity

(CER) The accuracy of data and its conformity to its expected value, especially after being transmitted or processed.

Date stamping

(CER) A software feature that automatically inserts the current date into a document.

Daylight Balance

(FP) This refers to a film that will produce natural colors when exposed by sunlight and/or when exposed by electronic flash.

Daylight Film

(FP) Film balance to give correct rendition when shooting under average daylight and electronic flash illumination of approximately 5500K.

dB

(FA) This is an abbreviation for decibel. It equals one tenth of a bel (named after Alexander Graham Bell), and is a unit used in electronics and other fields to measure the strength of a sound or signal. Decibel measurements fall on a logarithmic scale and compare the measured quantity against a known reference.

DB connector

(CER) Any of various connectors that facilitate parallel input and output. The initials DB (for data bus) are followed by a number that indicates the number of lines (wires) within the connector.

dCode

(FV) Software designed to screen capture video that plays within any type of onscreen viewing software. This software has the capability to save the captured video in an uncompressed AVI file format.

DC Coupling

(FA, FV) A method of coupling one circuit to another so as to transmit the static (DC) characteristics of the signal as well as the varying (AC) characteristics. Any DC offset present on the input signal is maintained and will be present in the output.

DC Offset

(FA, FV) The amount that the DC component of the signal has shifted from its correct level.

DC On Blanking Level

(FV) The absolute DC value of the blanking signal's voltage.

DC Restoration

(FV) The re-establishment of the DC and low-frequency components of a video signal which have been lost by AC transmission.

DC Signal Bounce

(FV) Overshoot of the proper DC voltage level due to multiple AC couplings in a signal path.

DCT

(CER) This is an abbreviation for discrete cosine transform. This is a mathematical transformation used in many compression technologies.

Decibel

(FA) This is an abbreviation for decibel. It equals one tenth of a bel (named after Alexander Graham Bell), and is a unit used in electronics and other fields to measure the strength of a sound or signal. Decibel measurements fall on a logarithmic scale and compare the measured quantity against a known reference.

Deck

(FA, FV) This usually refers to an audio or video tape cassette recorder.

Decoder

(FA, FV) A device or program routine that converts coded data back to its original form. This can mean changing unreadable or encrypted codes into readable text or changing one code to another, although the latter type of decoding is usually referred to as conversion.

Decompress

(CER, FA, FP, FV) To uncompress a compressed file to return it essentially to its original uncompressed condition.

Decryption

(CER, FA) The process of restoring encrypted data to its original form.

Dedicated

(FA, FV) A control which is assigned to perform only one function, i.e., dedicated to that function, as opposed to delegated to several functions. (FP) In reference to electronic flash units, this refers to an electronic flash that is designed to provide automatic functions, such as through the lens (TTL) metering, with a specific make and model of camera.

Dedicated Flash

(FP) Electronic flash that must be used with specific cameras to automatically adjust the camera's exposure controls to produce the correct exposure.

De-emphasis

(FA) Reducing the level of higher audio frequencies during FM reception to compensate for pre-emphasis that was applied during transmission.

Default

(CER, FA, FP, FV) The setup condition existing when a device is first powered-up. In computer application software, this refers to the configuration settings that will be used automatically unless they are overridden.

Default Channel

(FV) A term used for a digital picture manipulator having one or more control panels that can be assigned (delegated) to control any of several manipulation channels. The default channel is the one to which a control panel is delegated at power-up.

Defocus Effect

(FV) A digital picture manipulation term meaning a controlled blurring of the picture.

Defragmentation

(CER) The process of rewriting parts of a file to contiguous sectors on a hard disk to increase the speed of access and retrieval. When files are updated, the computer tends to save these updates on the largest continuous space on the hard disk, which is often on a different sector than the other parts of the file. When files are thus "fragmented," the computer must search the hard disk each time the file is accessed to find all of the file's parts, which slows down response time.

Degauss

(FA, FV) 1. To demagnetize (erase) all recorded material on a magnetic medium, such as video or audio tape. (CER, FA, FP, FV) This is to demagnetize the shadow mask in a color picture tube to correct for localized color impurities on part of the CRT display due to a localized magnetic field.

Degausser

(FA, FV) A device used to remove magnetization from a video monitor or tape recorder head and to erase information from magnetic storage media, such as tapes and disks.

Degeneration

(FA, FV) 1. Loss of quality on an audiotape copy or a videotape copy typically due to multiple generations of copying the material. 2. To reduce the gain of an amplifier stage by applying negative feedback (feedback that is 180 degrees out of phase) to the input.

Degradation

(FA, FV)n. In communications, a deterioration of signal quality. (CER) In computer systems, a reduction in level of performance or service. (FA, FV) In reference to videotape playback, this refers to the gradual deterioration of the visual quality of the video image and audio due to repeated playback and or pausing of the videotape. In a consumer VCR, this deterioration can be observed after the video tape has been played about 30 times. This deterioration can occur faster in a time-lapse recorder where the tape is transported at a slower speed and when a videotape is paused.

Deinterlacing

(FV) Separating an interlaced video frame into two discrete video fields.

Delay

(FV) The time required for a signal to pass through a device or conductor.

Delay Line

(FA, FV) An electronic component that delays a signal by a specified amount of time.

Delay Line Response Error

(FA, FV) Frequency loss or overshoot caused by delay lines.

Delay Distribution Amplifier

(FV) An amplifier that can introduce adjustable delay into a video signal path.

Demonstrative Comparison

(FV) A method of presenting the similarities and/or differences among images and/or objects without rendering an opinion about the significance of these visible characteristics.

Demultiplexer (Demux)

(FA, FV) A device used to separate two or more signals that were previously combined by a compatible multiplexer and are transmitted over a single channel. This usually refers to a software program or hardware device that can take a multiplexed video recording where two or more cameras are recorded in sequence at the field level with a different camera being recorded on each field of the same video frame. This device can also decode any alpha-numeric data encoded into the blanking area by a compatible multiplexer and display this data as a text overlay.

Dense

(FP) This describes an area of a negative in which a large amount of silver has been deposited. A dense negative transmits relatively little light.

Densitometer

(FP) Instrument (or software tool) for measuring the density (brightness/darkness) of small areas of an image. This is usually used for quality control purposes to read a photographic control strip or in digital photography to read the values in a printed test pattern. These values are then entered into a software application that uses these values to create an ICC profile for the printer that was used to print the test pattern.

Density

The relative amount of silver in various areas of film or paper after exposure or development.

Depth of field

(FP, FV) This is the distance between the nearest point and the farthest point in the subject which is perceived as being in acceptably sharp focus. You can control depth of field by varying three factors; the size of the aperture; the distance of the camera from the subject; and the focal length of the lens. If you decrease the size of the aperture, the depth of field increases; If you focus on a distant subject, depth of field will be greater than if you focus on a near subject; and if you fit a wide-angle lens to the camera, it will give you greater depth of field than a normal lens when viewing the same scene from the same camera position.

Depth Of Field Scale

(FP) It is a scale on a lens barrel showing the approximate near and far limits of depth of field when the lens is set at any particular focus and aperture.

Depth Of Focus

(FP, FV) Depth of focus refers to the zone in front of and behind the focal plane in which the film or image sensor must be placed for the image to be in focus on the film or image sensor.

Descreening

(FP) Removal of halftone dot patterns during or after scanning printed matter by defocusing the image. This is done to avoid moiré patterning and color shifts during subsequent halftone reprinting.

De-skewing

(FP) Straightening an image that as been scanned crookedly, or straightening type that is slanted.

Desktop

(CER, FA, FP, FV) On a computer monitor display this is the background area of the screen on which icons and windows appear.

Desktop Color Separation.

(FP) An image file format consisting of four separate CMYK PostScript files at full resolution plus a fifth EPS master for placement in documents.

Desktop Computer

(CER, FA, FP, FV) Computer small enough to fit on a normal desk. The two most common types are the PC and Macintosh.

Desktop video

(FV) The use of a personal computer to display video images. The video images may be recorded on video tape or on a laser disc or may be live footage from a video camera. Live video images can be transmitted in digital form over a network in video conferencing. Acronym: DTV.

De-speckle

(FP) To remove or reduce speckles or dust spots introduced during scanning or image processing.

Developer

(FP) A chemical solution that changes the invisible, latent image produced during exposure into a visible one.

Development

(FP) The entire process by which exposed film or paper is treated with various chemicals to make an image that is visible and permanent.

Device

(CER, FA, FP, FV) Any form of hardware unit that can be attached to a computer to handle, store, and/or process data, such as a scanner, external hard drive, printer, or modem.

Diagonal Resolution

(FV) Picture detail in the diagonal direction versus horizontal and vertical resolution. Many video encoders and decoders sacrifice diagonal resolution in favor of enhanced horizontal and vertical resolution, resulting in blurring.

Diagnostics

(CER, FA, FP, FV) A program which tests the functionality of a device and reports the results. It is used as an aid in troubleshooting or to verify that a device is working correctly.

Dialog Box

(CER, FA, FP, FV) In a software application it is an on-screen box for entering settings to complete a procedure.

Diaphragm

(FP, FV) This is commonly a system of curved, overlapping metal blades that form a roughly circular opening similar to the iris of the eye. It varies in size to control the intensity of light and the depth of field.

Dichroic Head

(FP) A subtractive color enlarger head that contains yellow, magenta, and cyan filters that can be moved in calibrated stages into or out of the light beam to change the color balance of the enlarging light. In an additive color printing head, red, green and blue filters are used.

Differential focusing

(FP, FV) Setting the camera controls to produce minimum depth of field, so that image sharpness is limited to a particular subject element.

Diffraction Filter

(FP) A colorless filter inscribed with a network of parallel grooves. These break white light up into its component colors, giving a prism-like effect to highlights.

Diffuse

(FP, FV) Scattered or soft lighting, such as sunlight on a cloudy day.

Diffused Light

(FP, FV) Light that has been reflected or passed through a translucent material to soften the light to reduce glare and sharp shadows.

Diffuser

(FP, FV) A material that softens light passing through it.

Diffusion Disk

(FP) A flat glass with a pattern of lines or concentric rings that breaks up and scatters light from an enlarger or camera lens and softens detail in a photograph.

Diffusion Enlarger

(FP) An enlarger that illuminates the negative by scattering light from many angles evenly over the surface of the negative. detail is not as sharp as with a condenser enlarger; however negative blemishes are minimized.

Digital audio tape

(FA) A magnetic tape storage medium for recording digitally encoded audio information.

Digital audio/video connector

(FA, FV) An interface on some high-end video cards or TV tuner cards that allows the simultaneous transmission of digital audio and video signals.

Digital camera

(FP) A type of camera that stores and records photographed images electronically in a digital format instead of on traditional film.

Digital Camera System

(FP) The name for Kodak's digital camera range, based on the MegaPixel imager attached to a conventional Nikon and other cameras.

Digital CCTV Retrieval

(FV) The process of retrieving video/images from digital CCTV systems.

Digital computer

(CER) A computer in which operations are based on two or more discrete states. Binary digital computers are based on two states, logical "on" and "off," represented by two voltage levels, arrangements of which are used to represent all types of information--numbers, letters, graphics symbols, and program instructions.

Digital Data

(CER, FA, FP, FV) Information stored as binary digits, 0 or 1, that can be transmitted or processed.

Digital Evidence

(CER) Information of probative value that is stored or transmitted in binary form.

Digital Image

(FP) A photographic image that is represented by discrete numerical values organized in a two-dimensional array. Each discrete block is called a pixel.

Digital image processing

(FP) A method of image editing in which a picture is reduced to digital information that can be read and manipulated by a computer, and subsequently reformed as a visible image.

Digital Photographic Evidence

(FP) Images of possible probative value that is stored or transmitted in binary form.

Digital photography

(FP) Photography by means of a digital camera. Digital photography differs from conventional photography in that a digital camera does not use a silver halide-based film to capture an image. Instead, a digital camera captures and stores each image electronically.

Digital recording

(CER, FA, FP, FV) The storage of information in a binary-encoded (digital) format. Digital recording converts information--text, graphics, sound, or pictures--to strings of 1s and 0s that can be physically represented on a storage medium.

Digital-to-analog converter

(CER, FA, FP, FV) A device that translates digital data into an analog signal. A digital-to-analog converter takes a succession of discrete digital values as input and creates an analog signal whose amplitude corresponds, moment by moment, to each digital value.

Digital versatile disc

(CER, FA, FP, FV) this is the current generation of optical disc storage technology. A standard single-layer, single-sided digital video disc can store 4.7 GB of data; a dual-layer standard increases the single-sided disc capacity to 8.5 GB. Digital video discs can be double-sided with a maximum storage of 17 GB per disc. This is commonly called a DVD or digital video disk.

Digital video disc

(CER, FA, FP, FV) This is the current generation of optical disc storage technology. A standard single-layer, single-sided digital video disc can store 4.7 GB of data; a dual-layer standard increases the single-sided disc capacity to 8.5 GB. Digital video discs can be double-sided with a maximum storage of 17 GB per disc. This is commonly called a DVD or digital versatile disk.

Digital video disc-recordable

(CER, FA, FP, FV) This is the current generation of optical disc storage technology utilizing a dye layer that can be recorded to by a laser. A standard single-layer, single-sided digital video disc can store 4.7 GB of data. This is commonly called a DVD-R.

Digital Zoom

(FP, FV) Digital zoom refers to using the central part of the sensor and enlarging the image by interpolation. This results in a lower image quality as compared to the image quality with an optical zoom that utilizes the entire sensor.

Digitize

(CER, FA, FP, FV) To convert any continuously varying (analog) source of input, such as the lines in a drawing or a sound signal, to a series of discrete units represented in a computer by the binary digits 0 and 1. To convert an analog source into a digital signal or a digital file.

Digitizer Tablet

(FP) A computer drawing and input device that is basically a flat rectangular board with electronic circuitry that is sensitive to the pressure and location of a stylus and/or mouse.

DIMM

(CER) This is an abbreviation for Dual Inline Memory Modules that have RAM chips mounted on both sides of the circuit board. This means the motherboard can have more memory with the same number of slots for RAM.

DIN

(FP) A numerical rating used in Europe to describe the sensitivity of film to light. The DIN rating increases by 3 as the sensitivity of the film doubles.

Dingbat

(CER, FP) A small graphical symbol shaped font character used for decorative purposes in a document. Some fonts, such as Zapf Dingbats, are designed to present sets of dingbats.

Diopter

(FP) This is an optical term for the power of a lens. Photographically, it is typically used to indicate the magnification and focal length of close-up lenses.

Diopter Correction

(FP, FV) This is like a focus adjustment that matches the focus of the camera's optical viewfinder to the user's eyesight without glasses. Viewfinders that are designed to be used both with and without eye glasses are called high eyepoint viewfinders.

Direct Light

(FP, FV) Light shining directly on the subject and producing strong highlights and dark sharply defined shadows.

Directory Listing

(CER) This is a list of all the files on a specific digital storage media. It may also contain other information such as the size and dates of the files.

Directory tree

(CER) A graphic display listing the directories and subdirectories on a hard disk with subdirectories shown as branches of the main directory.

Disk striping

(FV) The procedure of combining a set of the same-sized disk partitions that reside on separate disks (from 2 to 32 disks) into a single volume. This forms a virtual "stripe" across the disks that the operating system recognizes as a single drive. Disk striping enables multiple I/O operations in the same volume to proceed concurrently, thus offering enhanced performance. This increases the efficiency of writing and reading to the drives which is important to reduce the possibility of dropping a frame when recording video.

Disk striping with parity

(FV) The technique of maintaining parity information across a disk stripe so that if one disk partition fails, the data on that disk can be recreated using the information stored across the remaining partitions in the disk stripe.

Dispersion

(FP, FV) Light rays of different wavelengths deviate different amounts through a lens causing a rainbow effect around points and edges.

Display CRT Luminance Range

(FV) The luminance range that can be displayed on a CRT is the ratio of maximum to minimum luminance on the tube face. The maximum practical output is determined by beam current, phosphor efficiency, shadow-mask distortion, etc. The minimum is the luminance of that portion of the tube face being scanned with beam current set to cut-off. The contributions from room illumination and external reflections can greatly affect the visible appearance of the luminance range. It is these external factors that must also be kept constant if you are using a calibrated monitor to evaluate

Disposition

(CER, FA, FP, FV) (Evidence and Derived Evidence) In a laboratory setting this refers to what the requester receives back from the examiner after all examinations are complete. This may include, but is not limited to, the evidence submitted, derived evidence, recordings made during the examination, and photographs. In a local agency this may refer to the legal process for the destruction, or return to the owner, of evidence after the evidence is no longer legally required to be retained.

Distortion

(FA, FV) Undesired changes in the waveform of a signal. (FA, FV) This can be an optical defect in which straight lines are not rendered perfectly straight in a picture. There are two types of distortion, barrel distortion and pincushion distortion.

Distribution Amplifier (DA)

(FA, FV) A device used to replicate an input signal to provide multiple outputs, each of which is identical to the input. This is often used to enable the real time reproduction of multiple copies from a master tape.

Dither

(FA, FV) Typically, a random, low-level signal (oscillation) which may be added to an analog signal prior to sampling. Usually consists of white noise of one quantizing level peak-to-peak amplitude.

Dithering

(FP) Altering the values of adjacent dots or pixels on a digital output device to create the appearance of a increased number of tonal values or colors.

Diverging Lens

(FP) A lens which causes rays of light coming from the subject to bend away from the optical axis. A diverging lens is commonly used on the output end of a fiber optics cable attached to a LASER to spread out the laser beam into a uniformly lit circle of light for photographing latent print evidence that has be dye stained with a laser dye.

.dll

(CER) A file extension for a dynamic-link library file.

DMA

(CER) This is an abbreviation for direct memory access. Expansion cards installed in a PC use it to access system memory directly without going through the CPU.

DMax Maximum Density

(FP, FV) This is the darkest tone that can be recorded by a device or film.

DMin Minimum Density

(FP, FV) This is the brightest tone that can be recorded by a device or film.

.doc

(CER) A file extension that identifies document files formatted for a word processor. This is the default file extension for Microsoft Word document files.

Dodge (Dodging)

(FP) This is the process of physically blocking the enlarger light from exposing a section of the photograph during part of the exposure to lighten that area of the photograph. This is usually accomplished a the darkroom technician using their hands or an opaque object mounted on a

strong thin wire. What ever is used for dodging is moved during the dodging process to reduce the creation of sharp lines. The purpose of dodging is lighten the shadow details recorded in the negative so that they are visible in the finished photograph.

Dongle

(CER, FA, FP, FV) This is an anti-piracy hardware key that must be present for a specific computer application to function correctly. Older devices were designed to be plugged into a serial port. Current devices plug into a USB port. In operation the computer application will read some data stored on the dongle during the start up of the program. If the wrong information is there, or the dongle is not present, the computer application will fail to start.

Dodging

(FP) Selectively lightening part of a photo with an image editing program or by blocking the light from reaching a part of the enlarging paper during the exposure in a wet chemistry darkroom.

DOS

(CER) This is an abbreviation for Disk Operating System.

Dot gain

(FP) The increase in the size of the halftone dot when it is printed onto paper with ink. The effect is caused by the ink spreading into the paper.

Dot pitch

(CER, FP) In printers, the distance between dots in a dot-matrix. See also dot-matrix2. (FV) It is a measure of image clarity in video displays. A video display's dot pitch is the vertical distance, expressed in millimeters, between like-colored pixels. A smaller dot pitch generally means a crisper image, although the difference between two displays can vary because some manufacturers use different methods to determine the dot pitch of their products. A display's dot pitch is an integral part of the design of the product and cannot be altered.

Dots per inch (dpi)

(CER, FP, FV) This is a measure of screen and printer resolution that is expressed as the number of dots that a device can print or display per linear inch.

Double Exposure

(FP) Two pictures taken on one frame, or two images printed on one piece of photographic paper.

Download

(CER) The process of receiving data from another digital source.

Downsize

(FP) To reduce the file size of an image, by lowering the resolution and/or reducing the print size of the image.

Down-sampling

(FP) The reduction in resolution of an image, necessitating a loss in detail. This is usually done for one of two purposes: to match the lower resolution of an output device, or to enable faster transfer of the image over the internet or e-mail.

dpi

(FP) This is a measure of screen and printer resolution that is expressed as the number of dots that a device can print or display per linear inch. It should not be confused with pixels per inch, which is a resolution measurement for digital input devices and digital image files in digital form.

dPlex

(FV) Separating multiple cameras that have been recorded sequentially.

Drag

(CER) Moving an icon or a selected image across the screen, normally by moving the mouse while keeping its button pressed.

Drag and Drop

(CER) This is a feature of a graphical user interfaces (GUI) that lets users perform different operations by using the mouse to drag an icon representing a document or photograph on top of another icon.

DRAM

(CER) This is an abbreviation for dynamic Random Access Memory. DRAM cannot hold information for a long time and requires that the computer refreshes it every few thousandths of a second. DRAM is the typical RAM chip found in SIMMs.

Drawing program

(FP) A program for manipulating object-oriented, or vector graphics, as opposed to manipulating pixel images. In a drawing program, for example, the user can manipulate an element, such as a line, a circle, or a block of text, as an independent object simply by selecting the object and moving it. An examples of drawing programs include, but are not limited to Adobe Illustrator and Corel Draw.

Drift

(FV) Gradual shift or change in the output over a period of time due to change or aging of circuit components. This change is often caused by thermal instability of components. The practical effect of drift is that any monitor used to evaluate an image should be calibrated on a regular schedule of operator maintenance.

Drive

(CER) A computer hardware device containing one or more disks for the storage of digital data.

Driver

(CER, FA, FP, FV) A hardware device or a program that controls or regulates another device. A line driver, for example, boosts signals transmitted over a communications line. A device driver in a computer is a device-specific control program that enables a computer to work with a particular device, such as a printer or a disk drive.

Drop-Frame Time Code

(FV) SMPTE time code format that continuously counts 30 frames per second but drops 2 frames from the count every minute except for every tenth minute (drops 108 frames every hour) to maintain synchronization of time code with clock time. This is necessary because the actual frame rate of NTSC video is 29.94 frames per second rather than an even 30 frames.

Drop in

(CER) To read a spurious signal during a data read/write operation. This produces erroneous data.

Drop out

(FA, FV) A momentary loss or deterioration of video or audio during playback on a tape machine. It can be caused by momentary loss of tape contact with the playback head or by flaws in the tape.

Dropout Compensator

(FV) A circuit within a videotape recorder that detects dropouts and replaces them with information from the previous scan line.

Drop Shadow

(FV) A Borderline(R) mode which places a border below and on one side of a title key insert, giving a shadow effect. (FP) This is an effect for text in which a second image of the text is offset in a different color (usually black or dark gray), to simulate a shadow effect.

Drum scanner

(FP) A type of scanner where the medium being scanned, such as a photographic negative or transparency, is rotated around a stationary scan head. This is normally associated with high quality, high resolution scans. It usually requires the negative or transparency to be mounted between two sheets of flexible transparent material using a special oil to prevent Newton rings.

.drv

(CER) The file extension for a driver file.

Dry Down

(FP) To become very slightly darker and less contrasty, as most photographic printing papers do when they dry after processing. This explains why the final evaluation of a photograph must be done after it is dried.

Dry Mount

(FP) To attach a print to another surface by placing a sheet of dry-mount tissue between the print and the mounting surface. This sandwich is placed in a heated mounting press to melt the tissue.

DSC

(FP) (1.) See Digital Camera system. (2.) See Desktop color separation.

Dual boot

(CER) A computer configuration that allows a user to boot from a choice of two operating systems on a PC. This may be necessary because of compatibility issues with software applications that may not work correctly on newer operating systems.

Dual processors

(CER) Two processors used in a computer to speed up its operation, provided the software application supports the use of a dual processor.

Dual-scan display

(CER, FP) This is a passive matrix LCD-type display used in laptop computers. The screen refresh rate is twice as fast in dual-scan displays as in standard passive matrix displays. Compared with active matrix displays, dual-scan displays are more economical in terms of power consumption but have less clarity and a smaller viewing angle.

Duplicate

(FA, FP, FV) An acceptably accurate and complete reproduction of all data objects independent of the physical media.

Duration Accuracy

(FV) When adjusting the playback speed of a time-lapse recording that was captured from a standard VCR, this is similar to Real Time, but it is not necessarily accurate between individual time stamp segments or individual frames. This is the time between first frame and last frame and it is accurate based on the total elapsed time.

DVD

(CER, FA, FP, FV) This is an abbreviation for digital versatile disk or digital video disk.

DVD-R

(CER, FA, FP, FV) This is an abbreviation for digital versatile disk or digital video disk. This is the current generation of optical disc storage technology utilizing a dye layer that can be recorded to by a laser. A standard single-layer, single-sided digital video disc can store 4.7 GB of data.

DVR

(FV) This is an abbreviation for Digital Video Recorder. This is a device that records video directly to digital media, a digital storage device or a computer using any one of a variety of formats, codecs and/or compressions schemes. It is a generic term and is applied to any device that records digital video.

DX Coding

(FP) A checkered code or bar code printed on some film cassettes. This code can be automatically scanned by a suitable equipped camera for such information such as film speed and number of frames. The bar code is read by automatic film processing equipment for film type.

Dye-Sublimation Printer

(CER, FP) A type of continuous tone printing which process a vibrant color photograph. The pixels are printed by a thermal print heat that sublimates (vaporizes) the dye from a colored saran wrap like ribbon onto the dye-sublimation paper. The hotter the element on the thermal printed head, the darker the spots of color.

Dynamic Range

(FP, FV) The difference between the brightest highlight and darkest value that a sensor or film can detect and record in a single image. Generally the number of bits determines the maximum dynamic range of a scanner or digital camera. For example a 36-bit scanner has a higher dynamic range than a 24-bit scanner. A digital camera set to capture a 16 bit per channel RGB image has a higher dynamic range than a camera set to capture 8 bits per channel. Adobe has recently introduced very limited support in Photoshop for high dynamic range (HDR) images with 32 bits per channel. The main use of this file format is to combine bracketed exposures of a scene to produce an image that can be later down sampled to a 16 bit or 8 bit per channel image. (FA, FV) The ratio of the strongest (undistorted) signal to that of the weakest (discernible) signal in a unit or system as expressed in decibels (dB). This is a way of stating the maximum signal to noise ratio.

E

E-6

(FP) Photographic processing chemicals for most color-reversal (slide) films.

Easel

(FP) A holder to keep sensitized material, normally paper flat and in position on the baseboard of an enlarger during projection printing. There are four basic designs. One design has adjustable or fixed borders to frame the image to various sizes. A second design has angled brackets to hold the paper in place for borderless photographs. A third design uses a vacuum box with holes in the top to suck the paper down to hold it in place. A fourth design uses a motor drive to position the next section of a long roll of photographic paper for the next exposure. This last design is intended for high volume printing of large numbers of photographs from each negative.

EBU (European Broadcasting Union)

(FV) This is an organization of European broadcasters. It was created in 1950 and headquartered in Geneva, Switzerland. The EBU is the world's largest professional association of national broadcasters. The EBU assists its members in all areas of broadcasting, briefing them on developments in the audio-visual sector, providing advice and defending their interests via international bodies.

EBU Timecode

(FV) The timecode system created by the EBU for use with SECAM or PAL video recordings.

ECC/EDC (Error Correction Code/Error Detection Code)

(FV) Allows data that is being read or transmitted to be checked for errors and, when necessary, corrected on the fly. It differs from parity-checking in that errors are not only detected but also corrected.

Edge Curl

(FV) This usually occurs on the outside one-sixteenth inch of the videotape. If the tape is sufficiently deformed it will not make proper tape contact with the playback heads which can adversely affect audio and/or video playback.

Edge Damage

(FV) Physical distortion or mutilation of the top or bottom edge of the magnetic tape.

Edge Enhancement

(FP, FV) Creating hard, crisp, high-contrast edges by the use of hardware and/or a computer application such as the edge sharpening filter in Adobe Photoshop.

Edge Filter

(FA) A filter that creates hard, crisp, high-contrast edges. (FV) A filter that applies anti-aliasing to graphics created in a video title tool.

Edge numbers

(FP) Reference numbers printed by light at regular intervals along the edge of 35mm films, roll films and motion picture films during manufacture.

Edit

(FA, FV) Anything done to alter an audio or videotape recording from the original. The end product of editing is often an edited master, or simply master, that is duplicated to reproduce the final distribution copies so that every distribution copy will be identical.

Edit Control

(FV) A connection on a VCR or camcorder which allows direct communication with external edit control devices. These connections provide the communications link for the control of the VCR or camcorder by an external device during the editing process.

Edit Controller (Editor, Editing Computer)

(FV) This is an electronic device, which is often computer-based, that allows an editor to precisely control, the playback and recording to various video equipment during the editing process.

Edit Decision List (EDL)

(FV) This is a list of all the information needed to perform an edit such as the in and out points for each source and the location of each source.

Edit Master

(FV) This is the first generation of a final edited tape which is usually used for the reproduction of distribution copies.

Edit Point

(FV) This is the location in a video where a change occurs as compared to the original recording.

Edit Rate

In compositions, a measure of the number of editable units per second in a piece of media data such as 30 fps for NTSC.

Edit Sequence

(FV) This is an assembly of clips in the order that they are to be played to record the master.

Edit Suite

(FV) This a room where editing is done.

Editing

Production of finished videotape from source tape. This usually involves the use of a computer-based non-linear editing system to select scenes and audio from multiple video and audio sources and record them into a finished master on a single videotape. In broadcast television, the

finished video may be sent directly to the television station's transmitter such as for live news programs.

Editing Control Unit (ECU)

(FV) This is a microprocessor that controls two or more video decks or VCRs and facilitates frame-accurate editing.

Editor

(FV) 1. An editing system operator. 2. The informal term used for an edit controller.

EDL

(FV) This is an abbreviation for edit decision list.

EEPROM

(CER) This is an abbreviation for electrically erasable programmable read only memory. A type of memory chip that can hold data even when power is removed. The memory can be erased electronically so that new data can be stored.

Effect

(FV) This refers to one or more manipulations of the video image to produce a desired result.

Effective Resolution

(FP) The final appearance of a scan that has been enhanced by interpolation to produce more data than the scanner can record optically. For forensic applications it is recommended that scanning be limited to the optical resolution of the scanner.

Effects

(FA, FV) The process of combining one or more manipulations of the video image and/or audio to produce a desired result. On older systems effects usually have to be rendered because most older video systems cannot accommodate multiple video streams in real time.

Effects Dissolve (Effects Transition)

(FV) This is an automatic smooth transition of analog control settings in a mixer from some initial setting to a different end setting.

Effects System

(FV) The portion of the switcher that performs mixes, wipes and cuts between background and/or affects key video signals.

EGA (Enhanced Graphics Adapter)

(CER, FP) A display standard for the IBM PC. It has been replaced by VGA.

EIA (Electronics Industries Association)

(FV) A trade organization that has created recommended standards for television systems and other electronic products, including industrial television systems with up to 1225 scanning lines. EIA RS-170A is the current standard for NTSC studio equipment.

EIA RS-170A

(FV) The timing specification standard for NTSC broadcast video equipment.

E-IDE (Enhanced Integrated Drive Electronics)

(CER, FV) Extensions to the IDE standard providing faster data transfer and allowing access to larger drives, including CD-ROM and tape drives, using ATAPI. E-IDE was adopted as a standard by ANSI in 1994. ANSI calls it Advanced Technology Attachment-2 (ATA-2) or Fast ATA. These high speed drives are commonly used in non-linear video editing systems.

EISA (Enhanced Industry Standard Architecture)

(CER) In 1988 a consortium of nine companies developed 32-bit EISA which was compatible with AT architecture. The basic design of EISA is the result of a compilation of the best designs of the whole computer industry rather than (in the case of the ISA bus) a single company.

EISA Slot

(CER) Connection slot to a type of computer expansion bus found in some computers. EISA is an extended version of the standard ISA slot design.

Electromagnetic Interference (EMI)

(CER, FA, FV) Interference caused by electrical fields.

Electromagnetic Spectrum

(FA, FP, FV) The forms of radiant energy arranged by size of wavelength ranging from billionths of a millimeter (gamma rays) to several miles (radio waves). The visible spectrum is the part that the human eye sees as light; wavelengths of 400 to 700 nanometers.

Electronic Cinematography

(FV) Photographing motion pictures with television equipment. Electronic cinematography is often used as a term indicating that the ultimate product will be seen on a motion picture screen, rather than a television screen.

Electronic Flash

(FP) A small device either built into a camera, or available as an accessory, that emits a brief burst of daylight balanced light to illuminate poorly lit scenes. Unlike a flashbulb, an electronic flash unit is reusable. It is also called a strobe.

Electronic photography

(FP) Photography by means of a digital camera. Digital photography differs from conventional photography in that a digital camera does not use a silver halide-based film to capture an image. Instead, a digital camera captures and stores each image electronically.

Electronic retouching

(FP) Correcting a defective photographic image with editing software, such as by repairing tears and/or scratches, and by removing facial blemishes in a formal portrait.

Electrophotographic printers

(CER, FP) Printers in a category including laser, LED, LCD, and ion-deposition printers. In such a printer, a negative image is applied to an electrically charged, photosensitive drum. A photosensitive drum develops a pattern of electrostatic charge on its surface representing the photo negative of the image the drum will print. Powdered ink (toner) adheres to the charged areas of the drum, and the drum presses the ink onto the paper. Heat then binds the toner to the paper.

Electrophotography

(FP) The production of photographic images using electrostatic charges. This method is used in photocopiers and laser printers. It is also called xerography.

Electrostatic Pickup

(FA, FP, FV) Pickup of noise generated by electrical sparks such as those caused by fluorescent lights and electrical motors. (FP) This technology is used in a device called an electro static lifter to lift dust prints from evidence at a crime scene. The long term preservations of the resulting dust lifts is accomplished by photographing them.

Element

(FP, FV) A single lens shaped piece of glass or plastic that forms part of a compound lens.

ELF

(CER) This is an abbreviation for extremely low frequency radiation produced by computer monitors.

Embedded Audio

(FA, FV) Digital audio that is multiplexed onto a serial digital video data stream.

Embedded profile

(CER, FP) An ICC profile stored inside a TIFF, EPS, PDF, PSD, image file. This profile defines the color space in which the image data is to be interpreted.

EMI

(CER, FA, FP, FV) This is an abbreviation for electromagnetic interference. This is any undesirable electromagnetic waves that are radiated unintentionally from an electronic circuit or device into other circuits or devices, disrupting their operation. Allowable limits are governed by the FCC.

Emphasis

(FA) It is a filtering of an audio signal before storage or transmission to improve the signal-to-noise ratio at high frequencies.

Emulator

(CER) Hardware or software designed to make one type of computer or component act as if it were another. By means of an emulator, a computer can run software written for another machine.

Emulsion

(FP) The light-sensitive layer of film or paper.

Emulsion Side

(FP) The side of the film coated with an emulsion.

Enable

(CER, FA, FP, FV) To turn on a feature, function, and/or device.

Encode

(FV) The process of combining analog or digital video signals into one composite signal.

Encoded Chroma Key

(FV) A chroma key that uses an encoded video signal instead of separate RGB or Y, Cr, Cb signals for deriving the key.

Encoder

(FV) In video, a device that forms a single, composite color signal from a set of component signals.

Encoding (Process)

(FV) A process that reads a stream of input pictures or audio samples and produces a valid coded bit output stream.

Encryption

(FA, FV) The process of coding data so that a specific code or key is required to restore the original data. In broadcast, this is used to make transmission secure from unauthorized reception as is often found on satellite or cable systems.

End Point

(FV) The finish of the transition in a dissolve or wipe.

Enhanced Graphics Display

(CER) A PC video display capable of producing graphic images with resolutions ranging from 320×200 to 640×400 pixels, in color or in black and white.

Enhanced IDE

(CER) This is short for Enhanced Integrated Drive Electronics. An extension of the IDE standard, Enhanced IDE is a hardware interface standard for disk drive designs that house control circuits in the drives themselves. It allows for standardized interfaces to the system bus while providing for advanced features, such as burst data transfer and direct data access.

Enhancement

(FA) Any process performed on an audio recorded to improve its sound characteristics. (FP, FV) Any process intended to improve the visual appearance of an image or specific features

within an image. This is also called image enhancement or clarification.

Enhancing

(FA) Any process performed on an audio recorded to improve its sound characteristics. (FP, FV) Electronically adjusting the quality and sharpness of a video image to improve its visual appearance.(Dictionary by Grass Valley)

Enlargement

(FP) An image that is printed or produced larger than the original negative, slide or digital image.

Enlarger

(FP) This is an optical device for producing prints by projecting a negative or transparency on light photographic sensitive paper.

Enlarger Head

(FP) The part of an enlarger that contains the light source, the negative carrier and the lens. An enlarger head may also house a filter drawer or a built-in filtration system.

EPROM

(CER) This is an abbreviation for erasable programmable read-only memory. It is a nonvolatile memory chip that is programmed after it is manufactured. These chips can be reprogrammed by removing the protective cover from the top of the chip and exposing the chip to ultraviolet light. They are also called reprogrammable read-only memory (RROM).

.eps

(CER, FP) The file extension that identifies Encapsulated PostScript files.

EPS

(FP) This is an abbreviation for Encapsulated PostScript.

EPSF

(CER, FP) This is an abbreviation for Encapsulated PostScript file. (*Microsoft Press Computer Dictionary, 3rd ed., 1997*).

EQ

(FA, FV) This is an abbreviation for equalization. It is the process of altering the frequency response of a video amplifier to compensate for high-frequency losses in coaxial cable to improve the sound quality in audio by increasing or decreasing the gain of the signal at various frequencies.

Equalization

(FA, FV) It is the process of altering the frequency response of a video amplifier to compensate for high-frequency losses in coaxial cable to improve the sound quality in audio by increasing or decreasing the gain of the signal at various frequencies.

Equalizer

(FA, FV) It is a device that compensates for undesired amplitude-frequency and/or phase-frequency shifts in a signal.

Equalizing DA

(FV) It is a distribution amplifier that incorporates cable equalization.

Equalizing Pulses

(FV) In an encoded video signal, a series of twice-line-frequency pulses occurring during vertical blanking before and after the vertical synchronizing pulse. Different numbers of equalizing pulses are inserted into different fields to ensure that each field begins and ends at the right time to produce proper interlace. The twice line rate also serves to maintain horizontal synchronization during vertical blanking.

Equipment Noise

The noise produced by all the components of the system, with the exception of the tape.

Equivalent Input Noise

(FA, FV) Any noise created by the input stage of an amplifier which appears in the output of the amplifier increased in level by the gain of the amplifier.

Erased File Recovery

(CER) The process for recovering deleted files.

Erase Head

(FA, FV) A device used to remove recorded signals from magnetic tape.

Error Concealment

(FV) This is a technique that is used when error correction fails. In this technique, erroneous data is replaced by data synthesized from surrounding pixels.

Error Correction

(FV) In digital video recording systems this is a scheme that adds overhead to the data to permit a certain level of errors to be detected and corrected.

Error Detection and Correction

(CER, FV) Coding schemes incorporated into the information before it is transmitted (or stored) in such a way that errors which may arise in transmission can be detected and corrected before restoration or retrieval.

Error Rate

(FV) The ratio of the number of bits incorrectly transmitted to the total number of bits of information received.

Error Resilience

(FV) The ability to handle transmission errors without corrupting the content beyond the ability of the receiver to properly display it. MPEG-4 supports error resilience through the use of resynchronization markers, extended header code, data partitioning, and reversible VLCs.

Etch

(FP) To remove a small, dark imperfection in a print or negative by scraping away part of the emulsion.

Ethernet

(CER) A type of high-speed network for interconnecting computing devices.

Evaluate

(FP, FV) This is the third step in the ACE-V and ACE-VR scientific protocols for comparative analysis. It begins with an assessment of the previous comparison of the visible class and individualizing characteristics observed in the questioned image and known objects to ascertain an opinion to a reasonable degree of scientific certainty to reach one of three conclusions about each known object. The known object is the object depicted in the questioned image, the known object is not the object depicted in the questioned image, or similarities were observed but it cannot be determined if the known object is or is not the object depicted in the questioned image.

Evaluator

(FV) Equipment that evaluates physical and magnetic quality of tape, usually provided as an adjunct to a winder/cleaner. In contrast to a certifier, it does not stop when it detects an error.

Even Field

(FV) In a 2:1 interlaced system, the field that begins with a broad pulse halfway between two line syncs.

Examination Quality Photographs

(FP) High quality photographs taken of latent prints, inked prints, footwear impressions, the soles of shoes, tire track impressions, or the tread pattern of tires, for the purpose of comparative analysis. These photographs are taken with the film or image sensor plane parallel with the plane of the evidence and a flat scale placed in the plane of the evidence next to the evidence.

Export

(FA, FP, FV) To move information from one system or program to another. Files that consist only of text can be exported in ASCII (plain text format). For files with graphics, however, the receiving system or program must offer some support for the exported file's format.

Exposure

(FP) The amount of light allowed to act upon a film and or digital light sensor to produce an image or photograph.

Exposure Compensation

(FP) Many camera have the ability to force the camera to overexpose or underexpose an image during capture. This can be done for effect or to make up for some particular lighting situation. This is often referred to as EV compensation.

Exposure Factor

(FP) A number by which the exposure indicated for an average subject and/or processing should be multiplied to allow for non-average conditions. This is usually applied to filters. This is not normally used with through-the-lens exposure meters.

Exposure Index (EI)

(FP) This is a film speed rating similar to an ISO rating.

Exposure Latitude

(FP) The range, in f-stops, that deviates from the optical exposure but will still produce acceptable results on a specific film or digital camera sensor.

Exposure Meter

(FP) An instrument used to determine the correct exposure by measuring either the amount of light falling on a subject (incident-light meter), or the amount of light reflected from a subject (reflected light meter).

Exposure Value

(FP) A system originally intended to simplify exposure calculations by assigning standardized number values to f-stop and shutter speed combinations.

Extended Graphics Array (XGA)

(CER, FP) An advanced standard for graphics controller and display mode design, introduced by IBM in 1990. This standard supports resolutions up to 1,024 x 768 pixels.

Extended VGA (SVGA or Super VGA)

(CER, FP) An enhanced set of Video Graphics Array (VGA) standards that is capable of displaying an image of from 800 × 600 pixels to 1600 × 1200 pixels and that can support a palette of up to 16.7 million colors. This palette approaches the 19 million colors that a normal person can distinguish, so it is considered a digital standard for color realism that parallels analog television.

Extensions (IBM)

(CER) In DOS and Windows, file names are divided into two parts. The first part (before the period) is the file name, and the extension (after the period) indicates the kind of file it is.

Extension Tubes

(FP) Metal rings that can be attached between a camera body and lens for close-up work. They extend the lens farther than normal from the film plane so that the lens can focus closer than normal to an object to take close-up photographs.

External Background

(FV) Background matte video that is coming from a source outside of the equipment in question.

External Fill

(FV) Fill video that is coming from a source outside of the equipment in question.

External Key

(FV) A video key that uses an external key signal (a signal coming from a source outside the device in question) to cut the key hole and a separate fill signal to fill the hole.

External Mask

(FV) A mask signal that is coming from a source outside of the equipment in question.

External Proficiency Test

(CER, FA, FP, FV) A test conducted by an agency independent of the agency being tested to evaluate the competence of analysts, technical support personnel, and the quality performance of an agency.

External Reference

(FV) A source of timing information from a source external to the system in question.

External Video

(FV) A video input signal to the device in question from some external source. Used as a key source and/or fill.

Extraction

(FV) This is the procedure by which specific parts of a file are removed and used elsewhere, such as an audio quote, or an excerpt.

Extrude, Extrusion

(FP, FV) This is a 3-D technique for extending a 2-D object along a third axis.

Eye Pattern

(FV) This is a waveform used to evaluate channel performance in digital video systems.

Eyepiece Shutter

(FP, FV) A built-in device that prevents light from entering the viewfinder eyepiece.

F

Factor

(FP) A number that tells how many times exposure must be increased to compensate for loss of light such as due to the use of a filter. This is also called a filter factor.

Fade

(FV) The gradual disappearance of a picture to black (fade, fade-out, fade-to-black), or the gradual appearance of a new picture from black (fade-in, fade-up).

Fade-To-Black

(FV) A transition (dissolve) of the video picture to black.

Fader

(FV) The console control which allows an operator to perform manual dissolves, fades and wipes.

Fader Arm (Lever Arm, Fader Bar)

(FV) Typically a "T" shaped handle that is used for video transitions on a production switcher. Moving the fader arm between two limits of an arc creates a change in voltage or digital data that is used to control the transition.

Fall Time

(FA, FV) The length of time during which a pulse decreases from 90 to 10 percent of its maximum amplitude.

False Colors Effect

(FV) A digital picture manipulator effect that permits user adjustment of colors in the picture.

Farmer's reducer

(FP) A solution of potassium ferricyanide and sodium thiosulfate that is used to decrease the amount of silver in a developed image. This was used to reduce the density of an overexposed or overdeveloped black and white negative.

Fast

(FP) 1. This describes a film or paper that is very sensitive to light. 2. This describes a lens that can open to a very wide aperture which is usually within the range of F0.95 to F1.2.

Fast film

(FP) Film which has an emulsion that is very sensitive to light and usually has an ISO rating of 800 or above.

Fast Forward

(FP) The provision on a tape recorder permitting tape to be run rapidly through it in normal play direction, usually for search purposes.

Fast Forward Playback

(FV) The process of displaying a sequence, or parts of a sequence, of pictures in display-order faster than real-time.

Fast Fourier transform (FFT)

(FA, FP) A set of algorithms used to compute the discrete Fourier transform of a function, which in turn is used for solving series of equations, performing spectral analysis, and carrying out other signal-processing and signal generation tasks.

Fast lens

(FP) Lens with a wide maximum aperture (low f-stop number).

Fast Reverse Playback

(FV) The process of displaying the picture sequence in the reverse of display order faster than real-time.

FAT

(CER) This is an abbreviation for File Allocation Table. This is a file system used on MS-DOS and Windows computers.

Fatware

(CER) Large, overweight programs that consume more RAM and more hard disk than the previous version of the same program.

Extrude, Extrusion

(FP) 3-D technique for extending a 2-D object along a third axis.

Feathering

(FP) A technique in many image editing programs that allows for the softening of the edge around a selection, usually by blending two adjacent tonal values instead of having a sharp edged border.

Feed

(FV) A television signal source, typically from a remote location, such as a network feed or a satellite feed.

Feedback

(FA, FV) A loop caused by audio or video signal being fed back into itself. In video the effect is caused when a camera is directed at its receiving monitor. In audio the effect, manifested as an echo or squeal, is caused when a microphone is aimed at a speaker.

Female Connector

(CER, FA, FV) A connector that has indentations or holes into which you plug a male connector. An example of a female connector is an electrical wall outlet that accepts an electrical plug.

Ferrichrome

(FA) A relatively recent word describing the technique of dual coating with both a layer of gamma ferric oxide and a layer of chromium dioxide. An intermediate level bias position used only for ferrichrome tapes.

Ferrotypes

(FP) To give a glossy fiber printing paper a very high sheen by drying the print with its emulsion pressed against a smooth metal plate, usually the hot metal drum or plate of a heat dryer. This cannot be used with rc coated printing paper.

FFT (Fast Fourier Transform)

(FA, FP) A mathematical means of converting time domain information to frequency domain information.

Fiber-Base Paper

(FP) Formerly the standard type of paper available; that has been replaced by resin-coated papers.

Field

(FV) 1. An element of a video signal containing alternate horizontal lines. For interlaced video, the scanning pattern is divided into two sets of spaced lines (odd and even) that are displayed sequentially. Each set of lines is called a field, and the interlaced set of the two sets of lines is a video frame.

Field Alias

(FV) An alias caused by interlaced scanning.

Field Blanking

(FV) Refers to the part of the signal at the end of each field that makes the vertical retrace invisible. It is also called vertical blanking.

Field Curvature

(FP) A lens aberration or defect that causes the image to be formed along a curve instead of on a flat plane.

Field DA

(FV) This is a distribution amplifier designed for use in adverse conditions typically found in remote applications.

Field Dominance

(FV) This refers to the design of the videocassette recorder which determines which field will be played back as a complete video frame if the two fields are recorded from different video sources. This explains why if you play a time-lapse recording recorded at the field level with a different source recorded on each field on an odd or even field dominant consumer VCR, that you will only be able to view half of the images recorded on the time lapse recording.

Field Frequency

(FV) The rate at which one complete field is scanned, normally 59.94 times a second in NTSC or 50 times a second in PAL.

Field Period

(FV) The reciprocal of twice the frame rate.

Field Picture

(FV) A picture in which the two fields in a frame are coded independently. Field pictures always come in sets of two fields, which are called even field and odd field, respectively.

Field Programmable

(FV) Any device that is capable of being programmed at the customer's site.

Field Rate

(FV) Number of fields per second.

Field-Time Linear Distortion

(FV) An unwarranted change in video signal amplitude that occurs in a time frame of 16 ms.

Field Upgrade

(FV) A product upgrade that takes place at the customer's site.

FIF

(FP) this is an abbreviation for Fractal image format. An image file format which uses the principles of fractal mathematics for compressing the data.

FIFO (First-In-First-Out)

(CER, FV) 1. A memory structure in which data is entered at one end and removed from the other. A FIFO is used as a buffer to connect two devices that operate asynchronously. 2. A storage device (parallel shift register) which operates as a Turing machine to buffer asynchronous data where the first data stored is the first data read out. FIFOs are used to store video and act as "rubber-band" type buffers to keep a steady video stream where memory and system clock speeds do not match. FIFOs have less delays than standard shift registers as input and output are controlled by separate clocks.

File compression

(CER, FA, FP, FV) The process of reducing the size of a file for transmission or storage.

File conversion

(CER, FA, FP, FV) The process of transforming the data in a file from one format to another without altering its contents. For example, converting an image from an Adobe Photoshop psd file format to a TIFF file format.

File Format

(CER) The structure by which data is organized in a file.

File fragmentation

(CER, FA, FP, FV) 1. The breaking apart of files into small, separate segments for storage on a hard disk. The condition is a natural consequence of enlarging files and saving them on a crowded hard disk that no longer contains contiguous blocks of free space large enough to hold them. File fragmentation is not an integrity problem, although it can eventually slow read and write access times if the disk is very full and storage is badly fragmented. Software products are available for defragmenting (optimizing) file storage to reduce fragmentation. A regular schedule of hard disk defragmentation is especially important in video non-linear editing systems.

File recovery

(CER) The process of reconstructing lost or unreadable files on any digital storage media. Files are lost when they are inadvertently deleted, when on-disk information about their storage is damaged, or when the media is damaged.

File retrieval

(CER) The act of transferring a data file from a storage location to the machine where it is to be used.

File Slack

(CER) The space between the end of file marker and the end of the last storage unit for that file. For example in the FAT file system, this is the space between the end of the file marker and the end of the cluster. The forensic significance is that the file slack area may still contain fragments of data from previous files that can be recovered.

Fill

(FV) In video keying, the fill is the video signal that is inserted into the "hole" cut in the background video by a key signal.

Fill-flash

(FP) A technique that uses flash illumination as a supplement to ambient light without overpowering the ambient light. Useful when photographing subjects that are backlit, with very high-contrast lighting or in shadow.

Fill-in

(FP, FV) Secondary light source used to fill in the shadows created by the main or key light.
(FP) This is called fill-in flash when electronic flash is used.

Fill light

(FP, FV) Source of illumination that lightens shadows. Fill lights, sometimes referred to as "scoops", provide a soft-edged field of light used to provide additional subject illumination to reduce harsh shadows or areas not highlighted by the key light.

Film

(FP) A photographic emulsion usually coated on a flexible, transparent base that records images or scenes. Film is produced as positive (slide) or negative stock in various size and light sensitivity formats. Although rare today, some special purpose scientific films are produced using glass as a base.

Film at 11

(FV) The term came from the early days of television in the United States before the invention of video tape recorders, where video from a live news feed from the east coast on EST was recorded on the west coast on motion picture film for rebroadcast during PST.

Film Chain

(FV) An arrangement of a film projector and a video camera to convert a film image into a video signal. This is also called a telecine.

Film Holder

(FP) A light-tight container to hold the sheet film.

Film Loop

(FV) A piece of motion picture film, quite short, which is to be played repeatedly.

Film Mode

(FV) Videotape editing done without time code.

Film Recorder

(FP) A device used to output digital files onto film materials. CRT film recorders use a cathode ray tube and RGB filters to create the film image. Drum-based film recorders/writers include sheet-fed and roll-fed models and use white light or lasers to record the image on film.

Film Scanner

(FP) A device that scans slides and negatives to create a digital image.

Film Speed

(FP) A numeric value that indicates the relative sensitivity to light of a given film.

Film Timecode

(FV) Timecode added to the film negative during the film shoot via a film timecode generator. Film timecode numbers are synced to the film key numbers on the dailies during the telecine transfer process. A special key link reader is required for viewing the film timecode.

Filter

(FA, FV) In communications and electronics, hardware or software that selectively passes certain elements of a signal and eliminates or minimizes others. A filter on a communications network, for example, must be designed to transmit a certain frequency but attenuate (dampen) frequencies above it (a lowpass filter), those below it (a highpass filter), or those above and below it (a bandpass filter). (FP) (1.) In computer graphics, a special effect or production effect that is applied to bitmapped images. Some filters are built into a graphics program, such as a

paint program or an image editor. Others are separate software packages that plug into the graphics program. (2.) In film based photography, this refers to any material intended to selectively pass and/or block specific colors and/or characteristics of the light spectrum for the purpose of enhancing the visual appearance of the finished photograph. For forensic applications this can include ultraviolet light, visible light, and infrared light.

Filter Artifacts

(FV) Defects in the video picture caused by filtering. Most commonly appear as ringing and loss of resolution.

Filterbank

(FP, FV) A set of bandpass filters covering the entire media frequency range.

Filter Factor

(FP) The increased exposure needed to compensate for the amount of light absorbed by a filter. A factor of two indicates you need to give the film one stop more exposure; a factor of three needs two stops and a factor of six needs three stops more.

Filtering

(FP) A process used in both analog and digital image processing to reduce bandwidth. Filters can be designed to remove information content such as high or low frequencies, for example, or to average adjacent pixels, creating a new value from two or more pixels.

Filter Pack

(FP) Several filters used together, as in an enlarger for color printing or when duplicating slides, in order to obtain the best or desired color in the image.

Film

(FP) A silver-halide based light sensitive media used to record photographic images. Scientific films sometimes use a glass base, while most modern flexible films use a transparent plastic like material with an anti-halation coating on the back and the light sensitive layer or layers bound in gelatin.

Fine Grain

(FP) Film or developer that produces images in which areas of uniform tone appear smooth, with the visual appearance of the magnified silver particles that form the image being relatively small. The advantage of fine grain films is that they are capable of recording smaller details.

Fine H Phase

(FV) A horizontal phase control designed to make adjustments very precisely over a relatively narrow range.

Finite Impulse Response Filter (FIR)

(FA, FV) A digital filter that is in general, better than analog filters but also more complex and expensive. Some specialized filter functions can only be accomplished using a FIR.

FireWire

(CER, FA, FP, FV) This is sometimes referred to as IEEE 1394. This is a special high-speed bus standard capable of over 100 megabits/sec sustained data rate. It is commonly used as a connector for video transfer, external digital media storage, and connecting other high speed devices.

Firmware

(CER, FA, FP, FV) Software routines stored in read-only memory (ROM).

First-Frame Analysis

(FV) A transparency technique wherein the first frame of the video file is a dummy frame that supplies the color or range of colors to be rendered as transparent such as the color of the chroma-key background.

First Generation

(FP, FV) The first copy of a videotape or still image. A copy of that copy is termed second generation.

Fish-eye Lens

(FP) Extreme wide-angle lens with an angle of view exceeding 100 degrees and sometimes in excess of 180 degree. The name of the lens probably is derived from the appearance of a photograph that looks like a view of the world as a fish might see it.

Fit to Fill

(FV) An insert edit where an incoming source clip replaces an existing segment (or gap) in the record clip. If the source clip has a different length than the segment it replaces, the source clip is shortened or lengthened proportionally to fit the duration of the replaced segment.

Five-Step Staircase

(FV) This is a video test signal commonly used to check luminance gain linearity.

Fixed Focal Length Lens

(FP, FV) This is a lens with a set focal length.

Fixed Focus

(FP) A camera lens which is permanently focused at a set distance and is commonly used in inexpensive point and shoot cameras.

Fixed lens

(FP) Cameras that have fixed, stationary lenses and a flat film plane.

Fixer

(FP) A photographic chemical solution that makes black and white photographic media insensitive to light. It dissolves unexposed silver halide crystals while leaving the developed silver image in a black and white negative. It is also called hypo.

Flash

(FP) 1. A light source, such as a flashbulb or electronic flash, that emits a very brief, bright burst of light. 2. To blacken an area in a print by exposing it to white light, such as from a penlight flashlight. (FV) Momentary interference to the picture of a duration of approximately one field or less, and of sufficient magnitude to totally distort the picture information.

Flash bar or flash cube

(FP) A lighting device, intended mainly for consumer point and shoot cameras, containing several very small flashbulbs and producing several separate flashes before the unit is discarded.

Flashbulb

(FP) A bulb containing a mass of aluminum wire, oxygen, and an explosive primer. When the primer is electrically fired, it ignites the wire, which emits a brief burst of brilliant light. A flashbulb is used once and then discarded. These have been almost totally replaced by electronic flash.

Flash Card

(FP) A removable memory card that uses flash memory, allowing the digital camera to retain data after the system has been turned off.

Flash Duration

(FP) Refers to the amount of time that light is emitted from an electronic flash. Flash duration typically varies from about 1/1000 to 1/20,000 sec.

Flash EEPROM

(FP) A programmable memory IC that can be reprogrammed while it remains in a circuit. This device can usually be reprogrammed many times.

Flash Factor

(FP) Is a number, based on a combination of the ISO film speed and the light output of the electronic flash, which provides a guide to correct exposure when using Flash. Typically you divide the guide number by the distance from the flash to the subject to determine the correct F-stop setting.

Flash Frame

(FV) After a long, complex piece is edited, small bits of video might be accidentally left in a sequence. When the Timeline is zoomed to 100 percent, these small, unwanted, pieces might not be visible. An editor can find these bits using the Find Flash Frame command.

Flashing

(FP) 1. Pre-exposing the paper to a very diffused white light in order to reduce the contrast level between the highlights and shadows and extend the tonal range. 2. Pre-exposing film to its threshold exposure level to effectively increase its ISO rating by up to four times. Back in the 1980's there was one company that would custom install four small lights in 35mm cameras so that sports photographs could pre-flash individual exposures to increase the effective ISO rating of Tri-X from ISO 400 to ISO 1600.

Flash Memory

(CER, FP) This is a type of nonvolatile memory. Flash memory is similar to EEPROM memory in function but it must be erased in blocks, whereas EEPROM can be erased one byte at a time. Because of its block-oriented nature, flash memory is commonly used as a supplement to or replacement for hard disks in portable computers. In this context, flash memory either is built into the unit or, more commonly, is available as a PC Card that can be plugged into a PCMCIA slot.

Flash Meter

(FP) This is an exposure meter that measures the brightness of the brief duration of light emitted from an electronic flash to determine the correct exposure for a particular setup.

Floodlight

(FP) An electric light designed to produce a broad, relatively diffused beam of continuous light.

FlashPix

(FP) A multi-resolution image format in which the image is stored as a series of independent arrays. It was developed by Kodak, Hewlett-Packard, Live Picture, Inc. and Microsoft and introduced in June 1996.

Flash Range

(FP) The maximum distance from which a flash can effectively illuminate a subject.

Flash shooting Distance Range

(FP) The maximum distance from which a flash can effectively illuminate a subject.

Flash Sync

(FP) A special socket on a camera that allows the attachment of an auxiliary strobe light for flash pictures. It is synchronized to the camera's shutter so the light goes off at the right time to expose the negative. An M flash sync setting is used for flashbulbs. In the past, there was a special type of flashbulb designed as FP which indicated the flashbulb had a longer burn time for use at higher shutter speeds with a focal plane camera. An X flash sync setting is for use with electronic flash. With a focal plane shutter, the maximum usable shutter speed is limited to the highest shutter speed at which the entire negative area is exposed. Most modern cameras have only X sync flash.

Flat

(FP) A scene, negative, or print with very little difference in brightness between light and dark areas.

Flatbed scanner

(FP) A scanner for both reflective and transparency materials, using a linear array CCD. It gets its name from the flat surface on which the items are placed for scanning.

Flat light

(FP, FV) Light that produces very little contrast or modeling on the subject and a minimum of shadows.

Flat Response

(FA, FV) Output signal amplitude of a system is a faithful reproduction of the input amplitude for some range of specified input frequencies.

Flatten

(FP) To combine together multiple layers and other elements of a digitally manipulated or composite image into one. Usually the final step of working with layers prior to saving images in standard image format.

Flicker

(FV) 1. Flicker occurs when the refresh rate of the video is too low and the light level on the display begins to decrease before new information is written to the screen to maintain the light level. To prevent the human eye from seeing flicker, the screen refresh rate needs to be at least 24 frames per second. 2. A rapid visible change in brightness, not part of the original scene.

Flicker Filter

(FV) Video data from a VGA is not interlaced. This data must be converted into interlaced format for display on a TV. If every second line is discarded of the non-interlaced data, flicker may occur if, for example, video information is contained in just one noninterlaced line. Flicker will also be perceptible at the top and bottom of multilane objects. A flicker filter overcomes these problems in computing a weighted average of two or three adjacent lines (noninterlaced) for each line of output (interlaced).

Flicker Frequency

(FV) The minimum rate of change of brightness at which flicker is no longer visible. The flicker frequency increases with brightness and with the amount of the visual field being stimulated.

Flip

(FP, FV) Special effect in which the picture is either horizontally or vertically reversed.

Flip-Flop

(FV) A video transition where the sources selected on the program and preset buses exchange places at the end of the transition.

Flip

(FV) A digital picture manipulator transformation which appears to turn the picture around its Y axis.

Floodlight

(FP) An electric light designed to produce a broad, relatively diffused beam of light.

Floppy Disk

(CER) The name given to a 3.5 inch disc used for storing relatively small amounts of computer data. There are two capacities available, double density (storing approximately 700 Kb) and high density (storing approximately 1.4 Mb).

Floptical

(CER) The name given to a 3.5 inch magneto-optical disc.

Flowchart or Flow Diagram

(CER) Graphical representation of program logic. Flowcharts enable the designer to visualize a procedure. A complete flowchart leads directly to the final code.

Fluid Head

(FV) Refers to a tripod mount that contains lubricating fluid which decreases friction and enables smooth camera movement.

Flutter

(FA) Distortion which occurs in sound reproduction as a result of undesired speed variations during recording or reproducing. Flutter occurring at frequencies below approximately 6 Hz is termed “wow”.

Flux

(FA, FV) Magnetic field generated by a record head, stored on magnetic tape, and picked up by the playback head.

Flyback (Retrace)

(CER, FV) The electron beam movement of the camera or television monitor back to the starting point for the next line or field.

Flying Erase Head

(FV) The erase head mounted on the spinning (flying) video head drum. Facilitates smooth, seamless edits whenever the camcorder recording begins. Without a flying erase head, a video “glitch” may occur at scene transitions.

Flying Head

(FV) A video head that engages when the video deck is on “pause”, providing a clear still-frame image.

Flying Key

(FV) The movement of a keyed insert through a composite image.

FM

(FA) This is an abbreviation for frequency modulation.

FM Recording

(FA) The data signal is used to modulate the frequency of a “carrier” having a frequency much higher than any spectral component of the data signal. It permits the recording of DC or very low signal frequencies.

F-Number

(FP, FV) In lenses with an adjustable irises, the maximum iris opening is expressed as a ratio (focal length of the lens)/(maximum diameter of aperture). This maximum iris will be engraved on the front ring of the lens. The F-stop setting is the number resulting when the focal length of a lens is divided by the diameter of the aperture.

Focal Length

(FP, FV) The distance, usually given in millimeters, between the optical center of a lens and the point at which rays of light from objects at infinity are brought to focus.

Focal Plane

(FP) The plane on which the image of a subject is brought to focus behind the lens. To produce a sharp picture, the lens must be focused so that this plane coincides with the plane on which the film or image sensor sits. This is also called the film plane.

Focal-Plane Shutter

(FP) A camera mechanism that admits light to expose film by moving a slit or opening in a roller blind just in front of the film (focal) plane.

Focal point

(FP, FV) The point on a focused image where the rays of light intersect after reflecting from a single point on a subject.

Focus

(FP) Moving the lens relative to the film plane to bring a specific subject into sharp focus.

Focusing Cloth

(FP) A dark opaque cloth used in focusing a view camera.

Focusing Screen

(FP) A specially ground glass or plastic placed at the same distance from the back of the lens as the film plane and is used to view the image for focusing and composing the image.

Focus Range

(FP) The range within which a camera is able to focus on the selected picture subject.

Focus-Priority For Autofocus

(FP) With this setting, the shutter cannot be released until the subject is in focus.

Fog

(FP) An overall density in the photographic image caused by unintentional exposure to light or unwanted chemical activity.

Foldover

(FA, FV) Recording tape that has folded over resulting in the oxide surface facing away from the heads.

Following (or Trailing) Blacks

(FV) A term used to describe a picture condition in which the edge following a white object is overshadowed toward black. The object appears to have a trailing black border. Also called “trailing reversal”.

Following (or Trailing) Whites

(FV) A term used to describe a picture condition in which the edge following a black or dark gray object is overshadowed toward white. The object appears to have a trailing white border. Also called “trailing reversal”.

Font

(FP) A style of type.

Foot Candles

(FP) A measure of the amount of light falling on an object. This is a measure only of the light energy that can be seen by the human eye (becoming an obsolete unit; replaced by the Lux).

Foot Lamberts

(FP) A measurement of the brightness of an object. If 100 foot candles are illuminating a 60% white chip, then its brightness will be 60 foot lamberts, regardless of viewing distance.

Footage Encoder Time Code Generator

(FV) An electronic device which takes the input from a reader of keycode numbers, decodes this information and correlates the numbers with the SMPTE time code it generates. These data, along with 3:2 pull-down status of the transfer, footage count, and audio time code (if applicable) are made available for window burn-ins, VITC-LTC recording and output to a computer.

Forced Foreground

(FV) Some keyers use a mask to force key fill video to appear wherever the mask occurs and completely inhibit background video. Useful for correcting the poor quality key (mixed background and fill) that results when the keying image is poorly differentiated from other images in the key source picture.

Foreground

(FP, FV) Area in an image that is closer than the main subject.

Foreground Color

(FP) This is the color that is used when painting, filling, and creating text.

Forensic

(CER, FA, FP, FV) The use or application of scientific knowledge to a point of law, especially as it applies to the investigation of crime.

Forensic Audio

(FA) A subdiscipline of Digital & Multimedia Evidence, which involves the scientific examination, analysis, comparison, and/or evaluation of audio.

Forensic Video Analysis

(FV) - (definition developed and accepted by practicing forensic scientists/examiners) Forensic Video Analysis is the scientific examination, comparison, and/or evaluation of video in legal matters. This is also called Forensic Video Analysis. (ASCLD-LAB - category definition for accreditation purposes only) A subdiscipline of Digital & Multimedia Evidence which involves the examination, analysis, and/or evaluation of video.

Format

(FV) One or several combined elements that may be used to describe the video recording method. These include tape width (e.g. 8mm, ½ inch, ¾ inch, 1 inch), signal form (e.g. composite, Y/C, component), media (e.g. VHS tape, DVD, CD), data storage type (e.g. analog/digital, AVI/MPEG), and signal standard (e.g. NTSC, PAL, SECAM). (SWGIT) 2. In television, the specific form of the signals that make up the video signal. For example, component versus composite format. 3. The organizational method of a particular electronic medium, such as videotape in C format or D1 format. 4. To prepare or pre-program a storage medium, such as a floppy disk, so that it can receive and store data.

Format Conversion

(FA, FP, FV) To transfer audio and/or video information from one media type to another and/or from one recording method to another.

Format Converter

(FA, FV) A device that allows the reformatting of a digital data stream originating from one sampling structure (lines per frame, pixels per line) into a digital data stream of another sampling structure for the purposes of recording or passing the original data stream through distribution devices designed to accommodate the latter structure. Since the data still represents the original sampling structure, this is not the same as standards conversion.

Format Disk

(CER) The process of preparing a disk for data storage by determining where data is to be placed and how it is to be arranged on disk.

Fourier transform

(FA, FP) A mathematical method, developed by the French mathematician Jean-Baptiste-Joseph Fourier (1768-1830), for signal processing and signal generation tasks such as spectral analysis and image processing. The Fourier transform converts a signal value that is a function of time, space, or both into a function of frequency. The inverse Fourier transform converts a function of frequencies into a function of time, space, or both.

FPO

(FP) This is an abbreviation for “for position only”. This is a low resolution version of an image used to indicate its placement within a document.

FPS (Frames Per Second)

(FV) A measure of the film or video display rates.

Fractal Image

(FP) An image that is created by mathematically generated geometric shapes containing an infinite amount of image detail.

Fragile Watermark

(FP) A watermark designed to be destroyed by any form of copying or encoding other than a bit-for-bit digital copy. Absence of the watermark indicates that a copy has been made.

Fragmentation

(CER) The scattering of parts of the same file over different areas of the disk. Fragmentation occurs as files on a disk are deleted and new files are added. Such fragmentation slows disk access and degrades the overall performance of disk operations, although usually not severely. Utility programs are available for rearranging file storage on fragmented disks.

Frame

(FP) 1. This is each individual image recorded on motion picture film. 2. In the past, this was used to refer to an individual negative in a strip of negatives or an uncut roll of process film.

(FV) 1. This is one complete video image. 2. For interlaced video, a frame consists of two fields, one of odd lines and one of even lines, displayed in sequence. 3. For progressive scan (non-interlaced) video, the frame is written through successive lines that start at the top left of the picture and finish at the bottom right.

Frame Accurate

(FV) Editing which utilizes time codes to be able to edit accurately at the individual frame level.

Frame Buffer

(FV) Memory used to store a complete frame of video.

Frame Capture (Frame Grabber)

(FP) Taking one frame of video and storing it on a hard drive for use in various video effects.

Frame Grab

(FP, FV) The electronic capture of a single frame from a video sequence.

Frame Grabber

(FP, FV) A device that enables the real-time capture of a single frame of video. The frame is captured within a temporary buffer for manipulation or conversion to specified file format.

Frame Lock

(FV) Synchronization of the video signal with SMPTE time code.

Frame Offset

(FV) A way of indicating a particular frame within the group of frames identified by the edge number on a piece of film. For example, a frame offset of +12 indicates the twelfth frame from the frame marked by the edgecode.

Frame Picture

(FV) A picture in which the two fields in a frame are merged (interlaced) into one picture which is then coded.

Frame rate

(FV) The speed at which full, single-screen images are transmitted to and displayed by a raster-scan monitor.

Frame Rate Conversion

The process of converting one frame rate to another. Examples include converting the (M) NTSC frame of 29.97 frames per second to the PAL frame rate of 25 frames per second.

Frame Roll

(FV) A momentary vertical roll.

Frames per second

(FV) The speed at which full, single-screen images are transmitted to and displayed by a raster-scan monitor.

Frame Store

(FV) Term used for a digital full-frame temporary storage device with memory for only one frame of video.

Frame Switcher

(FV) Another name for a simple multiplexer, which can record multiple cameras on a single VCR (and play back any camera in full screen).

Frame Synchronizer

(FV) A digital buffer that, by storage, comparison of sync information to a reference, and timed release of video signals, can continuously adjust the signal for any timing errors.

Free-Run

(FV) Condition in which a sync generator is not locked to any outside source but is providing sync on the basis of its own internal clock.

Free-Run Stability

(FA, FV) The accuracy of a sync generator's output during free-run.

Free Space

(CER) Data storage areas available for use by the computer. The area may already contain previously stored information. This is also referred to as Unallocated Space.

Freeze

(FV) In digital picture manipulators, the ability to stop or hold a frame of video so that the picture is frozen like a snapshot.

Freeze Frame

(FV) 1. The storing of a single frame of video. 2. A special effect in which the picture is held as a still image. It is possible to freeze either one field or a whole frame. Freezing one field provides a more stable image if the subject is moving, however, the resolution of the video image is half that of a full frame freeze.

Frequency

(FA, FV) The number of complete cycles of a periodic waveform that occur in a given length of time. Usually specified in cycles per second (Hertz).

Frequency Division Multiplexing

(FV) A method of transmitting two FM carriers of different center frequencies by combining them and transmitting them as a composite.

Frequency Modulation (FM)

(FA) Modulation of a sine wave or "carrier" by varying its frequency in accordance with amplitude variations of the modulating signal.

Frequency Response

(FA, FV) The range of frequencies that a piece of equipment can process and is directly related to the system's ability to uniformly transfer signal components of different frequencies over the entire video spectrum without affecting their amplitudes.

Frequency Response Curve

(FA, FV) The curve relating the variation in output with frequency of a piece of equipment or magnetic tape when the input is kept constant.

Frequency Response Roll Off

(FA, FV) A distortion in a transmission system where the higher frequency components are not conveyed at their original full amplitude.

Frequency Synthesizer

(FA, FV) An electronic circuit that generates a number of frequencies from a fixed-reference frequency. Some frequency synthesizers generate only a relatively small number of frequencies; others generate hundreds of different frequencies.

Fresnel

(FP) Pattern of a special form of condenser lens consisting of a series of concentric stepped rings. This type of lens is used on focusing screens to distribute image brightness evenly over the screen.

Fringe

(FP, FV) A usually-unwanted border effect to a selection, where the pixels combine some of the colors inside the selection and some from the background.

Fringing

(FP, FV) This occurs when a digital image is sharpened. The term usually refers to a white fringe that is apparent on the edges of objects in the picture. Fringing can also occur as a result of compression.

Front Porch

(FV) The blanking signal portion which lies between the end of the active picture information and the leading edge of horizontal sync.

Front Timing

(FV) In video editing, to calculate a clock time by adding running times of the edits to the show start time.

Front-to-Back Ratio

(FA) The ratio between a cardioid microphone's sensitivity to sounds arriving from the front and from the rear, a measure of its directionality.

F stop

(FP) A number that equals the focal length of the lens divided by the diameter of the aperture.

FTB

(FV) This is an abbreviation for fade-to-black.

Full-Color Mode

(FP) In digital photography this refers to an RGB color image with 8 bits per color channel.

Full Field Color Bars

(FV) A test signal using color bars which extend from the top to the bottom of the raster.

Full rotation

(FP) Rotating panoramic cameras, which are also referred to as slit scan or scanning cameras, are cameras that are similar to the short rotation cameras, but are capable of a 360 degree angle of rotation or more. A clockwork mechanism rotates the camera continuously and evenly and simultaneously pulls the film through the camera, in such a way that the speed of the film matches the speed with which the image moves across the image plane. Exposure is made through a narrow slit. Using only the central part of the image field produces a very sharp picture whose characteristics are very even from edge to edge.

Full-Scale

(FP) Describes a print having a wide range of tonal values from deep, rich black through many shades of gray to brilliant white.

G

Gain

(FA, FV) The increase in the amplitude of a signal, as of voltage, current, or power, that is produced by a circuit. Gain can be expressed as a factor or in decibels.

Gain/Frequency Distortion

(FV) A circuit defect in which a change in frequency causes a change in signal amplitude. When this happens to a television signal, it can cause serious distortions in color saturation, as well as a lack of vertical line resolution due to luminance pulse ringing.

Gamma

(FP, FV) Since picture monitors have a nonlinear relationship between the input voltage and brightness, the signal must be correspondingly predistorted. Gamma is a transfer characteristic. In the photographic system, adjusting the gamma of an image allows you to change brightness values of the middle range of gray tones without dramatically altering the shadows and highlights.

Gamma Correction

(FP, FV) The RGB data is corrected to compensate for the gamma of the display.

Gamma Ferric Oxide

(FA, FV) The common magnetic constituent of magnetic tapes in the form of a dispersion of fine acicular particles within the coating.

Gamut

(FP) The range of colors and tones a device or color space is capable of recording or reproducing. (FV) The range of valid voltages allowed for a video signal, or a component of a video signal. Signal voltages outside of the range (i.e., exceeding the gamut) may lead to clipping, crosstalk, or other distortions.

Gap Smear

(FV) This is due to head wear and is the bridging or shorting out of the record or reproduce gap as the result of flowing of the pole face material in the direction of tape motion.

Gap Width

(FA, FV) The dimension of the gap measured in the direction parallel to the head surface and pole faces. The gap width of the record head governs the track width. The gap widths of reproduce heads are sometimes made appreciably less than those of the record heads to minimize tracking errors.

Garbage

(FV) Incorrect or corrupted data.

Garbage in, garbage out

(CER, FA, FP, FV) A computing axiom meaning that if the data put into a process is incorrect, the data output by the process will also be incorrect. In forensic applications this refers to the fact that the ability to enhance an audio file, a photograph, or a video file is limited by the quality of the input file. If the quality of the original multimedia evidence is so poor, it will be impossible to significantly enhance the evidence.

Gas-discharge display

(CER) A type of flat-panel display, used on some portable computers, containing neon between a horizontal and a vertical set of electrodes.

Gauss

(FA, FV) The metric unit of magnetic flux density equal to one Maxwell per square centimeter.

Gaussian Blur

(FP) An image softening effect utilizing a bell shaped gaussian distribution to apply the softening effect.

Gaussian Filter

(FP) An image softening effect utilizing a bell shaped gaussian distribution to apply the softening effect.

GB

(CER) GigaByte -- Approximately one billion bytes (actually 1,073,741,824).

Gelatin

(FP) A substance produced from animal skins and bones, it is the basis the modern photographic emulsions. It holds light-sensitive silver halide crystals in suspension.

Gelatin Filter

(FP) Are filters cut from dyed gelatin sheets and held in front of the lens or studio light.

General Public License

(CER) The agreement under which software is distributed by the Free Software Foundation. Anyone who has a copy of such a program may redistribute it to another party and may charge for distribution and support services, but may not restrict the other party from doing the same. A user may modify the program, but if the modified version is distributed, it must be clearly identified as such and is also covered under the General Public License. A distributor must also either provide source code or indicate where source code can be obtained.

Generation

(FA, FP, FV) This refers to a copy. A first generation copy is a copy of the master tape. A second generation copy is a copy of the first generation copy.

Generation Loss

(FP, FV) The loss of quality that occurs in any type of analog duplication. Digital images do not necessarily have this kind of loss of quality when duplicated in a digital format.

Gen-Lock (Genlock)

(FV) The process of locking both the sync and burst of one signal to the burst and sync of another signal making the two signals synchronous.

Gen-Lockable Master

(FV) A main facility sync pulse generator that is capable of locking to an outside source of video.

Gen-Lock Module

(FV) A module that can phase-lock to another source of video or sync.

Geometric Distortion

(FP) Any aberration which causes the reproduced picture to be geometrically dissimilar to the perspective plane projection of the original scene.

Ghost

(FV) In a television picture, a duplicate image offset from the main picture image.

Ghost Cancellation Reference (GCR) Signal

(FV) ITU-R BT.1124 standard reference signal found on lines 19 and 282 of (M) NTSC systems and on line 318 (B, D, G, H, I) of PAL systems. This signal allows for the removal of ghosting from TVs by filtering the entire transmitted signal based on the condition of the transmitted GCR signal.

Ghost Image

(FP) In time exposure photography, an object that is only partially recorded on the film and therefore has a translucent, ghost-like appearance.

Ghosting

(FV) A weak, secondary, ghost-like duplicate video image in a video signal caused by the undesired mixing of the primary signal and a delayed version of the same signal.

GHz

(FA, FV) This is an abbreviation for Gigahertz, which is one thousand megahertz.

Gibbs Effect

(FP) The mirage-like haze at the boundaries of picture objects, seen in DCT-based compression algorithms at high compression ratios. The effect is most noticeable around text and high-contrast geometrical shapes.

.gif

(FP) The file extension that identifies GIF bit map images.

GIF

(FP) This is an abbreviation for Graphics Interchange Format. This is a graphics file format developed by CompuServe and used for transmitting raster images on the Internet. An image may contain up to 256 colors, including a transparent color.

Gigabyte

(CER) One thousand megabytes (1,000 × 1,048,576 bytes).

Glare filter

(CER) A transparent mask placed over the screen of a video monitor to reduce or eliminate light reflected from its glass surface.

Glitch

(FV) A general term used for a wide variety of momentary signal discontinuities, such as tears, rolls, momentary loss of picture, etc.

Global operation

(FP) An operation, such as a search and replace, that affects an entire document, program, or other object such as a digital image. In image processing, this refers to any processing of the image that affects the entire image as opposed to a local operation that affects only part of the image.

Glossy

(FP) Describes a printing paper with a great deal of highly reflective surface.

GMT (Greenwich Mean Time)

(CER) Greenwich, England has been the home of Greenwich Mean Time (GMT) since 1884. GMT is sometimes called Greenwich Meridian Time because it is measured from the Greenwich Meridian Line at the Royal Observatory in Greenwich.

GPS (Global Positioning System)

(CER) The GPS (Global Positioning System) is a “constellation” of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. Accuracy can be pinpointed to within one meter with special military-approved equipment. GPS equipment is widely used in science and has now become sufficiently low-cost so that almost anyone can own a GPS receiver.

Graded-Contrast Paper

(FP) A printing paper that produces a fixed contrast. To produce less or more contrast, a change has to be made to another grade of paper.

Graininess

(FP) In an enlarged image, a speckled or mottled effect caused by clumps of silver in the negative.

Graphic Equalizer

(FA) An equalizer which indicates its frequency response graphically through the position of its controls. When the controls are in a straight line at the 0 position, the response is flat.

Graphics accelerator

(CER) A video adapter that contains a graphics coprocessor. A graphics accelerator can update the video display much more quickly than the CPU can, and it frees the CPU for other tasks.

Graphics adapter

(CER) A computer video adapter capable of displaying graphics as well as alphanumeric characters.

Graphics Interchange Format

(FP) This is a graphics file format developed by CompuServe and used for transmitting raster images on the Internet. An image may contain up to 256 colors, including a transparent color.

Graphics tablet

(FP) A device used to input graphics position information in engineering, design, and illustration applications. It is a flat rectangular plastic board that is equipped with a mouse or a stylus and sensing electronics that report the position of the mouse or stylus to the computer, which translates that data into a cursor position on the screen. This is also called digitizing tablet.

Gray Balance

(FP, FV) The balance between CMY colorants required to produce neutral grays without a color cast.

Gray Card

(FP) A card that has a gray side reflecting 18 percent and a white side reflecting 90 percent of the light. Used to provide a known gray tone in color work.

Gray Level

(FP, FV) A shade of gray assigned to a pixel. The shades are usually positive integer values taken from the gray-scale.

Gray Market

(FP) Dealers and distributors who sell equipment without proper authorization from the manufacturer.

Gray Scale

(FP) A known standard sequence of shades ranging from black through white.

Grounded Electrical Outlet

(CER, FA, FP, FV) An electrical wall outlet that accepts a plug that has a grounding prong.

Ground Glass

(FP) Frosted glass used as a viewing mechanism in cameras. The glass is placed so that the lens projects the image against the glass for focusing and composition purposes.

Ground Loop

(FA, FV) A condition when two or more paths to ground exist and a voltage is induced unequally in these paths, causing interference, such as hum, buzz, or noise.

GUI

(CER) This is an abbreviation for Graphical User Interface. A computer interface that allows the user to perform tasks by pointing to icons or graphic objects on the screen.

Guide Number

(FP) A number used to calculate the f-setting (aperture) that correctly exposes a film of a given sensitivity (film speed) when the film is used with a specific flash unit at various distances from flash to subject. To find out the f-setting, divide the guide number by the distance.

Gum-Biochromate Process

(FP) An early photographic process revived by contemporary photographers. The emulsion is a sensitized gum solution containing color pigments. The surface can be altered by hand during the printing process.

Gutter

(FP) The blank space or inner margin between two facing pages of a bound document.

H

Hairline

(FP) This is the smallest amount of visible space or the narrowest line that is displayable on a printed page.

Halation

(FP) Is a diffused ring of light typically formed around small brilliant highlighted areas in the subject. It is caused by light passing straight through the emulsion and being reflected back by the film base on the light sensitive layer. This records slightly out of register with the original image.

Halftone

(FP) A printed reproduction of a photograph or other illustration, using evenly spaced spots of varying diameter to produce apparent shades of gray. The darker the shade at a particular point in the image, the larger the corresponding spot in the halftone.

Halftone Image

(FP) An image reproduced through a special screen made up of dots of various sizes to simulate shade of gray in a photograph. This is typically used for newspaper or magazine reproduction of images.

Halftone Screen

(FP) A pattern of dots of different sizes used to simulate a continuous tone photograph, either in color or black and white.

Halo

(FV) Most commonly, a dark area surrounding an unusually bright object, caused by overloading of the camera tube. Reflection of studio lights from a piece of jewelry, for example, might cause this effect.

Handle

(FP) Icons used in an object oriented draw program which, when selected with the cursor, can be used to manipulate a picture element. They usually appear on-screen as small black squares.

Handles

(FV) Material outside the IN and OUT points of a clip in a sequence. The handles are used for dissolves and trims with the new, shorter master clips.

H And V lock time

(FV) The length of time it takes for a device to lock to horizontal and vertical sync.

H&D Curve

(FP) Another name for the D/log E curve, after its originators, Ferdinand Hurter and Vero C. Driffield.

Hanger

(FP) A frame for holding sheet film during processing in a tank.

Hanover Bars

(FV) An undesirable artifact of interlaced scanning that looks like line-crawling venetian blinds.

Hard

(FP) (1.) Describes a scene, negative, or print of high contrast. (2.) Describes a printing paper emulsion of high contrast such as grades 5 and 6.

Hard Black Clip

(FV) Stops the composite video going below a predetermined level.

Hard Copy

(FP) Printed output on paper, film, or other permanent medium.

Hard disk

(CER) A device containing one or more inflexible platters coated with material in which data can be recorded magnetically, together with their read/write heads, the head-positioning mechanism, and the spindle motor in a sealed case that protects against outside contaminants. The protected environment allows the head to fly 10 to 25 millionths of an inch above the surface of a platter rotating typically at 7200 to 10,000 rpm.

Hard disk drive

(CER) A device containing one or more inflexible platters coated with material in which data can be recorded magnetically, together with their read/write heads, the head-positioning mechanism, and the spindle motor in a sealed case that protects against outside contaminants. The protected environment allows the head to fly 10 to 25 millionths of an inch above the surface of a platter rotating typically at 7200 to 10,000 rpm.

Hardware

(CER) Term used generically for equipment as compared to software.

Hardware key

(CER, FA, FP, FV) This is an anti-piracy hardware key that must be present for a specific computer application to function correctly. Older devices were designed to be plugged into a serial port. Current devices plug into a USB port. In operation the computer application will read some data stored on the dongle during the start up of the program. If the wrong information is there, or the dongle is not present, the computer application will fail to start.

Hardware monitor

(CER) A separate board-level circuit used to oversee the performance of a hardware/software system. A hardware monitor can detect the cause of a fatal error such as a system crash, whereas a software monitor or debugger cannot.

Hard-Wired

(CER) Electrical devices connected through physical wiring.

Harmonic

(FA) A periodic wave having a frequency that is an integral multiple of the fundamental frequency.

Harmonic Distortion

(FA) The production of harmonics at the output of a circuit when a periodic wave is applied to its input. The level of the distortion is usually expressed as a percentage of the level of the input.

Harmonics

(FA) Whole number multiples of a frequency. Fx1 is called the fundamental or first harmonic; Fx2 is the second harmonic; Fx3 is the third harmonic; etc. A pure sine wave is free of harmonics. Adding harmonics to a fundamental frequency will change its wave shape. A square wave contains a fundamental frequency plus all the odd harmonics of that frequency.

Hash

(CER) A mathematical formula that generates a numerical identifier based on input data. If any bit of the input data used to calculate the numerical identifier changes, the output number changes.

H Blanking Width

(FV) The width in terms of time occupied by horizontal blanking. This is the period of time from the end of active video of one line to the beginning of active video of the next line. During this time, the electron beam in a camera or monitor is turned off as it returns or retraces to the other side of the raster to begin a new scan.

H Drive (Horizontal Drive)

(FV) A pulse used to trigger the next horizontal line. Generally a 2-4 volt negative-going pulse that typically starts at the beginning of horizontal blanking and ends at the trailing edge of sync.

Head

(CER) The read/write mechanism in a disk or tape drive. It converts changes in the magnetic field of the material on the disk or tape surface to changing electrical signals and vice versa.

Head Alignment

(FA, FV) Mechanical adjustment of the spatial relationships between the head gaps and the tape.

Head Block

(FA, FV) An assembly holding an erase, record and playback head in a certain physical alignment.

Head-cleaning device

(FA, FV) An apparatus for applying a small amount of cleaning fluid to a magnetic head to remove accumulated debris.

Head Clogging

(FA, FV) The accumulation of debris on one or more heads usually causing poor picture clarity during playback. Clogging of the playback head with debris causes dropouts.

Head crash

(CER) A hard disk failure in which a read/write head, normally supported on a cushion of air only millionths of an inch thick, comes into contact with the platter, damaging the magnetic coating in which data is recorded. Still more damage occurs when the head picks up material gouged out of the surface and pushes it. A head crash can be caused by mechanical failure or by heavy shaking of the disk drive. If the crash occurs on a directory track, the whole disk may become instantly unreadable.

Head Demagnetizer or Degausser

(FA) A device used to neutralize possible residual or induced magnetism in heads or tape guides.

Header

(CER) A block of data in the coded bit stream containing the coded representation of a number of data elements pertaining to the coded data that follow the header in the bit stream.

Headlight Spread Pattern Analysis

(FP, FV) This is the scientific comparison of the class and individualizing characteristics of the visible light pattern of a questioned and one or more known vehicle headlights to determine if one of the known vehicle headlights is the questioned headlight recorded on video or a still image.

Headroom

(FA) The number of dB increases possible above the operation level (0 VU) before unacceptable distortion occurs.

Helical Recordin

(FV) A video recording method in which the information is recorded in diagonal tracks.

Helical Scan

(FV) A method of recording video information diagonally on a tape, used in home and professional VCRs. High speed rotating video heads scan these diagonal video tracks, giving an effective tape speed much higher than the actual tape speed allowing more information to be recorded on a given length of magnetic tape.

Heliography

(FP) An early photographic process, invented by Niépce, employing a polished pewter plate coated with bitumen of Judea, a substance that hardens on exposure to light.

Hertz

(FA, FV) This is a measure of electrical vibrations per second. The old days of radio remember the term as "cps" or cycles per second.

Hexadecimal

(CER) Using 16 rather than 10 as the base for representing numbers by digits. The hexadecimal system uses the digits 0 through 9 and the letters A through F (uppercase or lowercase) to represent the decimal numbers 0 through 15.

High Frequency Loss

(FA, FV) Loss of signal amplitude at higher frequencies, caused for example, by passing a signal through a coaxial cable.

Highlight

(FP, FV) (1.) This is a very bright area in a scene, print, or transparency; or a very dense, dark area in a negative. This is also called a high value.

Highlights

(FP) Shiny areas that suggest intense reflections of light sources.

Highpass Filter (HPF)

(FA, FV) A filter that passes only high frequencies. Frequencies below the cutoff frequency are reduced in amplitude to eliminate them.

High-persistence phosphor

(FV) A phosphor that glows for a relatively long time after being struck by electrons. High-persistence phosphors are used in direct view storage tubes, but most CRTs (cathode-ray tubes) use phosphors of relatively low persistence so that their images can be changed quickly without "ghosts" of earlier images remaining on the screen.

High resolution

(FP) The capability for reproducing text and graphics with clarity and fine detail. High resolution is achieved by using a large number of pixels (dots) to create an image in a given area.

High-Speed Shutter

(FV) A feature on video cameras and camcorders that allows detail enhancement of fast-moving objects by electronically dividing the CCD into imaging sections.

Hiss

(FA) The most common audible noise component in audio recording, stemming from a combination of circuit and tape noise. Several noise reduction systems are available, such as Dolby™, DBX, DNR (Dynamic Noise Reduction), DNL (Dynamic Noise Limiter), to help alleviate such problems.

Histogram

(FA, FP) A chart consisting of horizontal or vertical bars, the widths or heights of which represent the values of certain data.

History

(FP) A list of the user's actions within a program.

H Lock Time

(FV) The length of time it takes for a device to lock to horizontal sync.

HMI

(FP) This is an abbreviation for hydrargyrum medium arc iodide. It is a special type of light source which is continuous and flicker free, and is recommended for certain digital cameras such as digital scanning backs.

Hologram

(FP) A three-dimensional image record created by holography. The hologram consists of a light interference pattern preserved in a medium such as photographic film. When suitably illuminated, it produces an image that changes its appearance as the viewer changes viewing angle.

Holography

(FP) A method of reproducing three-dimensional visual images by recording light interference patterns on a medium such as photographic film, creating a hologram.

Horizontal (Hum) Bars

(FV) Relatively broad horizontal bars, alternately black and white, which extend over the entire picture. They may be stationary, or may move up or down. Sometimes referred to as a "Venetian blind" effect. Caused by approximate 60 cycle interfering frequency, or one of its harmonic frequencies.

Horizontal Blanking

(FV) Includes the entire time between the end of the active picture time of one line and the beginning of the active picture time of the next line.

Horizontal blanking interval

(FV) The time period between lines of active video.

Horizontal Displacements

(FV) Describes a picture condition in which the scanning lines start at relatively different points during the horizontal scan.

Horizontal Drive

(FV) A pulse at the horizontal sweep rate used in TV cameras. Its leading edge is coincident with the leading edge of the horizontal sync pulse and the trailing edge is coincident with the leading edge of the burst flag pulse.

Horizontal flyback

(FV) The movement of the electron beam in a raster-scan video display from the right end of one scan line to the left end (the beginning) of the next. During horizontal retrace, the electron

beam is turned off, so the time required for the beam to move is called the horizontal blanking interval.

Horizontal Interval

(FV) The time period between lines of active video.

Horizontal Lock

(FV) A subsystem in a video receiver/decoder which detects horizontal synchronizing pulses, compares them with the on-board video clock in the video system and uses the resultant data to stabilize the incoming video by re-synching to the system clock.

Horizontal Resolution

(FV) The amount of resolvable detail in the horizontal direction in a picture. It is usually expressed as the number of distinct vertical lines, alternately black and white, which can be seen in three-quarters of the width of the picture.

Horizontal retrace

(FV) The movement of the electron beam in a raster-scan video display from the right end of one scan line to the left end (the beginning) of the next. During horizontal retrace, the electron beam is turned off, so the time required for the beam to move is called the horizontal blanking interval.

Horizontal Scan Frequency

(FV) The frequency at which horizontal sync pulses start the horizontal retrace for each line.

Horizontal Scan Rate

(FV) The rate at which the screen's scanning beam is swept from side to side.

Horizontal Sync

(FV) The portion of the video signal that occurs between the end of one line of signal and the beginning of the next. A negative going pulse from the blanking signal used to genlock (synchronize) equipment. It begins at the end of front porch and ends at the beginning of back porch.

Horizontal synchronization

(FV) On raster displays, the timing produced by a signal that controls the sweep of the display's electron beam as it moves from left to right and back again to form an image line by line. The horizontal synchronization signal is usually controlled by a timing mechanism known as a phase-locked loop, which allows signals to be synchronized so that a clear image is formed.

Horizontal Sync Pulse

(FV) The synchronizing pulse at the end of each video line that determines the start of horizontal retrace.

Hot insertion

(FV) The insertion of a device or card while there is power to the system.

Hot Shoe

(FP) A bracket on the top of the camera that attaches a flash unit and provides an electrical connection to synchronize the camera shutter with the firing of the flash.

Housekeeping

(CER) Any routine operator maintenance performed on a computer on a regular basis such as defragging a hard drive and removing unneeded files.

H Phase

(FV) The horizontal phase relationship of one piece of equipment to another for studio timing purposes.

.htm

(CER) This is a file extension that identifies Hypertext Markup Language (HTML) files, most commonly used as Web pages.

.html

(CER) This is a file extension that identifies Hypertext Markup Language (HTML) files, most commonly used as Web pages.

Hub

(CER) In a network, a device joining communication lines at a central location, providing a common connection to all devices on the network.

hue

(FP, FV) One of the characteristics that distinguishes one color from another. Hue defines color on the basis of its position in the spectrum-i.e., whether red, blue, green, or yellow, etc. Hue is one of the three characteristics of television color.

Hue, Saturation and Brightness (HSB)

(FP) With the HSB model, all colors can be defined by expressing their levels of hue (the pigment), saturation (the amount of pigment) and brightness (the amount of white included), in percentages.

Hue, Saturation and Intensity (HSI)

(FP) Color space system based on the values of Hue, Saturation and Intensity. Intensity, analogous to luma, is the vertical axis of the polar system.

Hue, Saturation and Lightness (HSL)

(FP) Nearly identical to HSI except Intensity is called Lightness. Both serve the same function.

Hue, Saturation and Value (HSV)

(FP) Nearly identical to HSI and HSL except Intensity and Lightness are called Value. All three serve the same function.

H Phase (Horizontal Phase)

(FV) The horizontal blanking interval used to synchronize the timing of two or more video signals.

Hum

(FA, FV) Undesirable coupling of 50 Hz (PAL) or 60 Hz (NTSC) power sine wave into other electrical signals.

Hum Bars

(FV) Horizontal black and white bars that extend over the entire TV picture and usually drift slowly through it. They are caused by a power line interfering frequency or one of its harmonics.

Hum-Bucker

(FV) A circuit (often a coil) that introduces a small amount of voltage at power line frequency into the video path to cancel unwanted AC hum.

Hum Rejection

(FA, FV) In circuits, the ability to cancel interference in a video or audio signal, often at the 50 or 60 Hz power line frequency.

Hum Suppression

(FA, FV) The cancellation of power line hum.

Hybrid Imaging

(FP) Electronic imaging systems that mix traditional silver-halide technologies with digital imaging technologies.

Hypercardioid

(FA) A directional pickup pattern where maximum discrimination occurs at more than 90 and less than 180 degrees off axis.

Hyperfocal Distance

(FP) Nearest point to the camera which is considered acceptably sharp when the lens is focused on infinity. When a lens is focused on the hyperfocal point, depth of field extends from a distance halfway between this point and the camera to infinity.

Hyperfocal point

(FP) Nearest point to the camera which is considered acceptably sharp when the lens is focused on infinity. When a lens is focused on the hyperfocal point, depth of field extends from a distance halfway between this point and the camera to infinity.

Hypo

(FP) A common name for any fixer; from the abbreviation for sodium hyposulfite, the previous name for sodium thiosulfate (the active ingredient in most fixers).

I

IBM-Compatible

(CER) Refers to a computer made by any manufacturer that follows the standards set by IBM when they introduced their first personal computer.

ICC

(FP) International Color Consortium, an industry group that works to advance cross-platform color communications and has established base-level standards and protocols in the form of the ICC Profile Format specifications, to build a common foundation for communication of color information.

Icon

(CER) A small picture that represents a file, directory, or application.

Iconoscope

(FV) A camera tube in which a high velocity electron beam scans a photo-emissive mosaic which has electrical storage capability.

IDE (Interface Device Electronics)

(CER) Software and hardware communication standard for interconnecting peripheral devices to a computer, such as a hard disk, a CD burner, or a DVD burner.

IEEE

(FA, FV) This is an abbreviation for International Electrical and Electronic Engineers.

IEEE 1394

(CER, FA, FP, FV) A high-speed “daisy-chained” serial interface. Digital audio, video and data can be transferred with either a guaranteed bandwidth or a guaranteed latency. It is hot-pluggable, and uses a small 6-pin or 4-pin connector, with the 6-pin connector providing power. It is also called a firewire connector.

I-Frame (Intra Frame)

(FV) One of the three types of frames that are used in MPEG-2 coded signals. The frame in an MPEG sequence, or GOP (Group of Pictures), that contains all the data to recreate a complete image.

Ikegami

(FV) A broadcast equipment manufacturer.

Ilfochrome

(FP) Formerly Cibachrome. A type of color printing paper designed for printing positive prints directly from transparencies.

iLink

(FV) Sony’s name for their IEEE 1394 interface.

Illegal Video

(FV) A video signal that falls outside the appropriate gamut for that format.

Illuminance

(FP) The strength of light falling on a given area of a surface. Measurable by an incident-light (illuminance) meter.

Image

(CER) A bit stream duplicate of the original data. -(FP, FV) An imitation or representation of a person or thing, drawn, painted, or photographed.

Image Analysis

(FP, ASCLD/LAB) A sub-discipline of Digital & Multimedia Evidence, which involves the application of image science and domain expertise to examine and interpret the content of an image and/or the image itself in legal matters.

Image Averaging

(FP, FV) The process of averaging similar images, such as sequential video frames, to reduce noise in stationary scenes.

Image Capture

(FA, FP, FV) The transducing of the information in a real image into the photographic or electronic medium. Normally in motion-reproducing systems, synchronous audio information is simultaneously transduced.

Image Color Matching

(FP) The process of image output correction to match the same colors as were scanned or input.

Image Comparison (Photographic Comparison)

(fp) The process of comparing images of questioned objects or persons to known objects or persons or images thereof, and making an assessment of the correspondence between features in these images for rendering an opinion regarding identification or elimination.

Image Compression

(FP) The use of a data compression technique on a graphical image. Uncompressed graphics files tend to use up large amounts of storage, so image compression is useful to conserve space.

Image Content Analysis

(FP, FV) The drawing of conclusions about an image. Targets for content analysis include, but are not limited to: the subjects/objects within an image; the conditions under which, or the process by which, the image was captured or created; the physical aspects of the scene (e.g., lighting or composition); and/or the provenance of the image.

Image Data Recovery

(FP, FV) The process of retrieving viewable image(s) from a data set.

Image Editing

(FP) The process of changing or modifying a bitmapped image, usually with an image editor.

Image-editing Program

(FP) Software that makes it possible to enhance and alter a scanned image.

Image Editor

(FP) An application program that allows users to modify the appearance of a bitmapped image, such as scanned photos, by using filters and other functions.

Image Enhancement

(FP, FV) Any process intended to improve the visual appearance of an image or specific features within an image. This is also called enhancement or clarification.

Image Enhancer

(FV) A device used to sharpen transition lines in a video picture.

Image File

(FP) A digital format for storing digital images. To save disk space, images are compressed in a binary file. The image format is contained in a file header which is read by all the programs. The header contains: the image name, the resolution, the type of image.

Image File Descriptor

(FP) The descriptor is a block of data that enhances the utility of the main data for the user. It may contain, in standardized format, data concerning production, ownership, access, previous processing, etc., relevant to the basic interpretation of the data.

Image File Format

(FP) The form in which an image is handled and stored electronically, there are many such formats, each developed by different manufacturers and with different advantages according to the type of image and how it is intended to be used.

Image File Header

(FP) The header is a very compact label that can be decoded by a universally accepted algorithm. Specific objectives are: identify encoding standard, specify length of the file, indicate whether a readable descriptor is included, permit random interception of data stream, and offer optional error protection.

Image File Header/Descriptor

(FP) A standard introductory identification directing access to a digital image file. The header provides a brief image file identification, universally decodable, indicating the format and length of the data block. The (optional) descriptor conveys additional information improving the usefulness of the data block to the user, such as cryptographic, priority, or additional error-protection information as well as source, time, authorship, ownership, restrictions on use, processing performed, etc.

Image Output

(FP) The means by which an image is presented for examination or observation.

Image Processing

(FP) Any activity that transforms an input image into an output image.

Image Processing Log

(FP) A record of the steps used in the processing of an image.

Image Resolution

(FP) The fineness or coarseness of an image as it was digitized, measured in Dots Per Inch (DPI), typically from 200 to 400 DPI. In the practical sense, resolution is usually judged by imaging test targets bearing sets of spaced black-and-white lines in a square-wave pattern, and determining the minimum spacing for which the lines are distinguishable in the resultant image.

Imagesetter

(FP) A high resolution device producing output on film or photographic paper usually at resolutions greater than 1000 dpi and it is usually a PostScript device..

Image Stabilization

(FP, FV) A camcorder and digital still camera feature which takes out minor picture shakiness, either optically or electronically.

Image Synthesis

(FP, FV) Any process that renders an image, using computer graphics techniques, for illustrative purposes.

Imaging

(FP) The processes involved in the capture, storage, display, and printing of graphical and/or photographic images.

Imaging Device

(FP FV) The part of the video camera, camcorder, or digital still camera that converts light into electrical signals from which an image can be created.

Imaging Technology

(FP, FV) Any system or method used to capture, store, process, analyze, transmit, or produce an image. Such systems include film, electronic sensors, cameras, video devices, scanners, printers, computers, etc.

Image Transmission

(FP, FV) The act of moving images from one location to another.

Impedance (Z)

(FA, FV) The opposition of a device to current flow. It is a combination of resistance, inductive reactance and capacitive reactance. When no capacitance or inductance is present, impedance is the same as resistance.

Impedance Matching

(FV) A video signal occupies a wide spectrum of frequencies, from nearly DC (0 Hz) to 6 MHz. If the output impedance of either the video source, cable or input impedance of the receiving equipment are not properly matched, a series of problems may arise. Loss of high frequency detail and color information as well as image instability, oscillations, snow, ghost images and component heat-up may result.

Import

(FA, FP, FV) To bring information from one system or program into another. The system or program receiving the data must somehow support the internal format or structure of the data.

Improved Definition Television (IDTV)

(FV) IDTV is different from HDTV in that it uses the standard transmitted (M) NTSC or (B, D, G, H, I) PAL signal. IDTV improves the display of these signals by doing further processing of the signal before displaying it. IDTV offers picture quality substantially improved over conventional receivers, for signals originated in standard 525-line or 625-line format, by processing that involves the use of field store and/or frame store (memory) techniques at the receiver. One example is the use of field or frame memory to implement de-interlacing at the receiver in order to reduce interline twitter compared to that of an interlaced display. IDTV techniques are implemented entirely at the receiver and involve no change to picture origination equipment and no change to emission standards.

Impulsive Noise

(FA, FV) Short, high-level, unwanted signals that tend to cause a sparkling effect in the picture and/or a percussive effect in the sound.

Incandescent Lamp

(FP, FV) An electrical lamp in which the filament radiates visible light when heated in a vacuum by an electrical current. (Digital Exposure Dictionary, <http://www.digitalexposure.ca/sub1.html>)

Incandescent Light

(FP, FV) Continuous light emitted when a substance is heated by electricity such as the tungsten filament in an ordinary light bulb.

Incident Light

(FP) The light actually falling on a subject, which may not be the same as the amount of light being reflected by the subject.

Incident-light Meter

(FP) An exposure meter that measures the amount of light falling on a subject.

Incident Meter

(FP) An exposure meter that measures the amount of light falling on a subject.

Indeo

(FV) Intel's series of compressor and decompressor technologies for digital video, capable of producing software-only video playback.

Indeo Video Interactive

(FV) Intel's latest compressor and decompressor for digital video, incorporating such special features as transparency, scalability, and local decode.

Index

(CER) In a database, this is an internal table that speeds up searches.

Indexed Color

(FP) There are two kinds of indexed color images: ones with a limited number of colors and pseudocolor images. The number of colors of the first type is usually 256 or less. Pseudocolor images are really grayscale images that display variations in gray levels in color rather than shades of gray and are typically used for scientific and technical work.

Individual Characteristics

(FP, FV) These are the observable features of an object that are reproduced in an image that are unique to one, and only one, original object to a reasonable degree of scientific certainty.

Individualizing Characteristics

(FP, FV) These are the observable features of an object that are reproduced in an image that are unique to one, and only one, original object to a reasonable degree of scientific certainty.

Industrial/Professional

(FV) The grade of audio and video equipment that falls between consumer (low end) and broadcast quality. Industrial/professional equipment is characterized by its durability, serviceability, and more-professional end-result.

Inertia Idler

(FV) A rotating guide attached to a heavy flywheel to reduce the effect of varying supply reel friction on tape speed.

Infection

(CER) The presence of a virus or Trojan horse in a computer system.

Infinity

(FP) The farthest position (marked ∞) on the distance scale of a lens.

Infrared

(FP, FV) Having a frequency in the electromagnetic spectrum in the range just below that of red light. Objects radiate infrared in proportion to their temperature. Infrared radiation is traditionally divided into four somewhat arbitrary categories based on its wavelength.

Infrared port

(CER) An optical port on a computer for interfacing with an infrared-capable device.

Initialization

(CER) Setting a system or software application to a known state.

Initialize

(CER) An auto sequence that causes a machine upon power up to arrive at a default condition. It may also be the completion of the start up sequence of a software application.

Initializing

(FV) The setting of the computer edit program to proper operating conditions at the start of the editing session.

Ink cartridge

(FP) A disposable module that contains ink and is typically used in an ink-jet printer.

Ink-jet printer

(FP) A nonimpact printer in which liquid ink is vibrated or heated into a mist and sprayed through tiny holes in the print head to form characters or graphics on the paper.

In-Point

(FV) The beginning of an edit; the first frame that is recorded.

Input

(FA, FV) The terminals, jack or receptacle provided for the introduction of an electrical signal or electric power into a device or system.

Input/Output (I/O)

(CER) Typically refers to sending information or data signals to and from devices. It also refers to lines or devices used to transfer information outside the system.

Insert

(FV) An edit mode meaning to record a new video over a certain section of an existing video where the entry and exit are both defined and no new time code of control track is recorded.

Insert Edit (Insert Mode)

(FV) An edit mode meaning to record a new video over a certain section of an existing video where the entry and exit are both defined and no new time code of control track is recorded.

Insert Editing

(FV) An edit mode meaning to record a new video over a certain section of an existing video where the entry and exit are both defined and no new time code of control track is recorded.

Insertion Loss

(FA, FV) The decrease in level which occurs when a piece of equipment is inserted into a circuit so that the signal must flow through it.

Instant Film

(FP) A film that contains the chemicals needed to automatically develop an image after exposure without the need for darkroom development.

Institute of Electrical and Electronics Engineers

(FA, FV) The Institute of Electrical and Electronics Engineers (IEEE) is the world's largest technical professional society.

Instruction

(CER) Single command within a program. Instructions may be arithmetic or logical, may operate on registers, memory, or I/O devices, or may specify control operations. A sequence of instructions is a program.

Instruction Cycle

(CER) All of the machine states necessary to fully execute an instruction.

Instruction Decoder

(FV) Unit that interprets the program instructions into control signals for the rest of the system.

Instruction Register

(CER) Register inside the microprocessor that contains the opcode for the instruction being executed.

Instruction Set

(CER) Total group of instructions that can be executed by a given microprocessor. Must be supplied to the user to provide the basic information necessary to assemble a program.

Intensification

(FP) A process increasing the darkness of an already developed image. Used to improve negatives that have too little silver density to make a good print.

Intensity

(FP) Synonymous with luminance.

Interactive

(CER, FV) Allowing random access to information.

Interactive Television (ITV)

(FV) TV programming that features interactive content and enhancements, blending traditional TV viewing with the interactivity of a personal computer.

Interactive Video

(CER, FV) The fusion of video and computer technology. A video program and a computer program running in tandem under the control of the user. In interactive video, the user's actions, choices, and decisions affect the way in which the program unfolds.

Interactive Videodisc

(FV) Interactive videodisc is another video related technology, using an analog approach. It has been available since the early 1980s, and is supplied in the U.S. primarily by Pioneer, Sony, and IBM.

Interchangeable Lens

(FP, FV) A lens that can be removed from the camera and replaced with another lens.

Interface

(CER) This is a circuit that enables two hardware devices to communicate.

Interference

(FA, FV) 1. In a signal transmission path, extraneous energy which tends to interfere with the reception of the desired signals. 2. Defect of signal reproduction caused by a combination of two or more signals that must be separated, whether all are desired or not.

Interlace

(FV) Technique for increasing picture repetition rate without increasing base bandwidth by dividing a frame into sequential fields. When first introduced, it also had the characteristic of making the scanning structure much less visible. This was necessary when there was not enough bandwidth to send a complete frame fast enough to create a non-flickering image.

Interlace Artifacts

(FV) Picture defects caused by interlacing. These include twitter, line crawl, loss of resolution, and motion artifacts.

Interlaced

(FV) Display system in which two interleaved fields are used to create one frame. The number of field lines is one-half of the number of frame lines.

Interlaced Scan

(FV) A technique of combining two television fields in order to produce a full frame. The two fields are composed of only odd and only even lines, which are displayed one after the other but with the physical position of all the lines interleaving each other, hence interlace.

Interlaced Scanning

(FV) A technique of combining two television fields in order to produce a full frame. The two fields are composed of only odd and only even lines, which are displayed one after the other but with the physical position of all the lines interleaving each other, hence interlace.

Interlaced Sequence

(FV) Sequence of pictures, that can be either field pictures or frame pictures.

Interlaced Video Mode

(FV) A technique of combining two television fields in order to produce a full frame. The two fields are composed of only odd and only even lines, which are displayed one after the other but with the physical position of all the lines interleaving each other, hence interlace.

Interlacing

(FV) A technique of combining two television fields in order to produce a full frame. The two fields are composed of only odd and only even lines, which are displayed one after the other but with the physical position of all the lines interleaving each other, hence interlace.

Interline Flicker

(FV) Twitter.

Intermediate Storage

(FA, FP, FV) Any media or device on which data is temporarily stored for transfer to permanent or archival storage.

Intermodulation Distortion (IMD)

(FA) Distortion that results when two or more pure tones produce new tones with frequencies representing the sum and/or difference of the original tones and their harmonics.

Internal Proficiency Test

(CER, FA, FP, FV) A test conducted by the agency itself to evaluate the competence of analysts, technical support personnel, and the quality performance of an agency.

Internegative

(FP) A negative created directly from a color-reversal (positive) or black-white positive film. It is the negative copy of the camera original.

Internal Sync

(FV) The internal generation of sync pulses in a camera using a crystal controlled oscillator.

International Organization for Standardization (ISO)

(FP, FV) This is a Geneva based organization for many of the national standardization bodies. Together with the International Electrotechnical Commission, IEC, ISO concentrates its efforts on harmonizing national standards all over the world. The results of these activities are published as ISO standards.

Internet

(CER) The worldwide network which links computer systems together.

Internet Worm

(CER) A string of self-replicating computer code that was distributed through the Internet in November 1988. In a single night, it overloaded and shut down a large portion of the computers connected to the Internet at that time by replicating itself over and over on each computer it

accessed, exploiting a bug in UNIX systems. Intended as a prank, the Internet Worm was written by a student at Cornell University.

Interpolated Resolution

(FP) A process that enlarges an image by adding extra pixels. These additional pixels are added around each pixel based on a preset analysis of adjoining or nearby pixels

Interpolation

(FP, FV) The creation of new pixels in the image by some method of mathematical analysis of the values of neighboring pixels.

Interpolation (Line)

(FV) In television standards conversion, the technique for adjusting the number of lines in a 625-line television system to a 525-line system (and vice versa) without visibly impairing the picture quality.

Interpolation (Movement)

(FV) A technique used in standards conversion to compensate for the degrading effects of different field frequencies on pictures which contain movement.

Interpolation (Spatial)

Simply replicating or removing pixels causes unwanted artifacts. With interpolation, the new pixels are calculated by making suitably weighted averages of adjacent pixels, giving more transparent results. The quality depends on the techniques used and the area of original picture, expressed as a number of pixels or points.

Interpolation (Temporal)

(FP, FV) Interpolation between the same point in space on successive frames. It can be used to provide motion smoothing and is extensively used in standard converters to reduce the defects caused by the 50/60 Hz field rate difference. This technique can also be adapted to create frame averaging for special effects.

Inverse Square Law

(FP) A law of physics that states that light from a point source falls off inversely to the square of the distance. As an example, if a light is 10 feet from your subject and you move it to 20 feet, you'll only have 1/4 the lighting intensity. If you move the light to 40 feet, it will now have only 1/16th the intensity. This assumes that the light is not collimated, like the raw beam from a Laser.

IR (Infrared)

(FP, FV) An invisible band of radiation that starts at the middle of the microwave spectrum and goes up to the beginning of visible light. Infrared transmission requires an unobstructed line of sight between transmitter and receiver. It is used for wireless transmission between computer devices as well as most remote controls for TVs and stereo equipment. In forensic photography it is useful for detecting and demonstrating alterations to documents and to photograph gunshot residue patterns on clothing. In CCTV applications a black and white camera may have the IR

filter removed to increase its sensitivity to low lighting conditions and/or to allow for the use of IR light sources. This creates a possible problem in that clothing may appear different when videotaped with an IR sensitive camera as compared to a black and white video camera not sensitive to IR light.

IR Light

(FP, FV) An invisible band of radiation that starts at the middle of the microwave spectrum and goes up to the beginning of visible light.

IRE

(FV) This is an abbreviation for Institute of Radio Engineers. The Institute of Radio Engineers, the predecessor to the IEEE.

IRE Scale

(FV) An oscilloscope or waveform monitor scale conforming to IRE Standard 50, IRE 23.S1 and the recommendations of the Joint Committee of TV Broadcasters and Manufacturers for Coordination of Video Levels.

IRE Units

(FV) A linear scale for measuring the relative amplitudes of the various components of a television signal. Reference white is assigned a value of 100, blanking a value of 0.

Iris

(FP, FV) A means of controlling the size of a lens aperture and therefore the amount of light passing through the lens.

IRIS

(CER) Any graphics workstation manufactured by Silicon Graphics, Inc.

IRQ

(CER) An interrupt request line is a communication channel between any card installed in a IBM-PC compatible computer and the CPU.

ISA Slot

(CER) Connection slot to a type of computer expansion bus formerly found in most computers. It is larger in size than the PCI slots found on most Pentium based computers and provides connections to the slower ISA bus.

ISDN

(CER) This is an abbreviation for Integrated Services digital Network. A telecommunications standard allowing digital information of all types to be transmitted via telephone lines.

ISO

(FP) This is an abbreviation for International Standards Organization. Used instead of ASA as prefix to film speeds. The scale is identical to the ASA scale.

Isometric view

(FP) A display method for three-dimensional objects in which every edge has the correct length for the scale of the drawing and in which all parallel lines appear parallel. An isometric view of a cube, for example, shows the faces in symmetrical relation to one another and the height and width of each face evenly proportioned; the faces do not appear to taper with distance as they do when the cube is drawn in perspective.

ISO Speed

(FP) The international standard for describing film sensitivity. The emulsion speed (sensitivity) of the film as determined by the standards of the International Standards Organization. In these standards, both arithmetic (ASA) and logarithmic (DIN) speed values are expressed in a single ISO term. For example, a film with a speed of ISO 100/21° would have a speed of ASA 100 or 21 DIN. The higher the number, the greater the sensitivity, and vice versa.

IT8

(FP) This is an industry standard color reference chart used to help calibrate scanners and printing devices.

ITU-R BT.601-2

(FV) Formerly known as CCIR 601. An international standard for component digital television from which was derived SMPTE 125M (was RP-125) and EBU 3246E standards.

ITU-R BT.656

(FV) Formerly known as CCIR 656. The physical parallel and serial interconnect scheme for ITU-R BT.601-2 (CCIR 601). ITU-R BT.656 defines the parallel connector pinouts as well as the blanking, sync, and multiplexing schemes used in both parallel and serial interfaces.

J

Jaggies

(FP, FV) Slang for the stair-step aliasing that appears on diagonal lines. It is caused by insufficient filtering, a violation of the Nyquist Theory, and/or poor interpolation.

Jam Sync

(FV) Process of locking a time-code generator to existing recorded time code on a tape in order to recreate or extend the time code. This may be necessary because, beyond a given point on tape, time code may be non-existent or of poor quality.

Jam Syncing

(FV) The process of synchronizing a secondary timecode generator with a selected master timecode.

Java

(CER) A highly portable, object-oriented programming language developed by Sun Microsystems. Not to be confused with JavaScript.

JavaScript

(CER) A programming language originally created by Netscape with specific features designed for use with the Internet and HTML, and syntax resembling that of Java and C++.

Jerky Motion In Time Lapse Recordings

(FV) In the standard VHS videotape recording there are approximately 30 video frames or approximately 60 video fields recorded each second. When played back at the normal NTSC rate of approximately 30 video frames or approximately 60 fields per second, it appears like normal fluid motion. In a typical time lapse recording in a 24 hour mode only about 5 to 20 fields are recorded each second depending on the time-lapse recorder. If you also add a multiplexer to record multiple cameras it is not unusually to only record 1 image from each camera every 1 or 2 seconds. One practical example of the time compression effect of time-lapse recording is on the evening news when only 1 video frame is recorded each second or every few seconds. When this is played back at the normal NTSC frame rate of approximately 30 video frames per second, the weather person can show in a few seconds the changes in the clouds over several hours. If instead of each consecutive frame being recorded from the same camera, it is recorded from a different camera, the effect is slightly different. This is why if you play a multi-camera multiplexed time lapse recording in a standard VHS videotape recorder, it looks like a lot of rapidly changing images flashed briefly on the screen. However, if this same time-lapse recording is played back on the time-lapse VCR and multiplexer used to record it, the system can be set to play back the images from any one camera at a time. Further, if only 1 video field is recorded per second, this video field will be repeated for about 59 video fields to fill in the time gap created by only 1 video field instead of 60 video fields being recorded from this camera each second. In practical terms, if you were to place your right fingertips on your left shoulder and in approximately 1 second pivot your right arm at your right elbow until it was extended to your right and parallel with your shoulders, a standard NTSC videotape recorder would record approximately 60 video fields to produce a video recording that would show the

continuous motion of your arm. However, a multi-camera multiplexed time-lapse recording might only record 1 video field of your fingertips touching your shoulder immediately followed by a 2nd video field of your arm extended to the right side of your body. It is the time gap in the recording of these 2 images from the same camera in a time-lapse recording that results in the appearance of jerky motion. This time gap also explains why in a time-lapse recording it is not unusual for a person to either suddenly appear or disappear from a specific camera view. (RCS)

Jewel Box

(CER, FA, FP, FV) The plastic clamshell case that holds a CD or DVD.

Jitter

(FV) An undesirable random signal variation with respect to time. A tendency toward lack of synchronization of the picture. It may refer to individual lines in the picture or to the entire field of view. Besides a monitor or connector malfunction, jitter can be caused by a slow refresh rate.

Jog, Jogging

(FV) Process of moving the videotape forward or backward one or more fields or frames at a time.

Jog/Shuttle Wheel

A dial on many video decks, VCRs and editing control units that controls jog and shuttle functions.

Joint Photographic Expert Group (JPEG)

(FP, FV) Compression technique for still images, such as photographs, a single video frame, etc. JPEG can be used to compress motion video however it is not as efficient as MPEG which has been optimized for motion video compression applications.

Joystick

(FV) A device used to affect control over X, Y and Z parameters. Typical uses are switcher pattern positioner, ADO positioner/controller, ACE switcher preview controller.

.jpeg

(FP) The file extension that identifies graphic images files in the JPEG format.

JPEG

(FP) This is an abbreviation for Joint Photographic Experts Group. It is also ISO/ITU standard for storing images in compressed form using a discrete cosine transform. JPEG trades off compression against loss; it can achieve a compression ratio of 100:1 with significant loss and possibly 20:1 with little noticeable loss. In many instances it is used to refer to a graphic stored as a file in the JPEG format. JPEG2000 is a new evolution in the JPEP file format that has not become popular in spite of the decrease in compression artifacting and the addition of a lossless compression at the highest quality setting.

.jpg

(FP) The file extension that identifies graphic images encoded in the JPEG File Interchange Format, as originally specified by the Joint Photographic Experts Group (JPEG).

Judder

(FV) Jerkiness of motion associated with moving images when the image is sampled at one frame rate and converted to a different frame rate for display. As a result, motion vectors in the display may appear to represent discontinuously varying velocities. The subjective effect of the artifact becomes more obvious when the frame-rate conversions are made by simple deletions or repetitions of selected frames (or fields). It may become less obvious when interpolated frames (or fields) are generated by employing predictive algorithms.

Jukebox

(FA) Software that is designed to play a list of sound files in a user-specified order reminiscent of jukeboxes used to play vinyl records.

Jump Cut

(FV) In videotape editing, a jarring cut from one scene to another.

K

Kb

(CER) An abbreviation for kilobit. A data unit of 1,024 bytes.

KB

(CER) An abbreviation for kilobit. A data unit of 1,024 bytes.

Kelvin (K)

(FP) Unit of measurement on the absolute temperature scale, used to describe the color content of continuous spectrum light sources.

Kerning

(FP, FV) The spacing between text characters in print media, such as titles.

Key

(FV) 1. A signal that can electronically “cut a hole” in the video picture to allow for insertion of other elements such as text or a smaller video picture.

Key Fill

(FV) In key effects, the video signal that is said to "fill the hole" cut in the background video by the key source.

Key-frame

(FV) A frame containing all the data representing an image, rather than just the data that has changed since the last frame. The first frame of every video file is a key frame; in addition, they occur throughout the file to refresh image quality and permit certain operations, such as random user access.

Key Light

(FP, FV) The term used to describe a subject’s main source of illumination. When shooting outdoors, the key light is usually the sun.

Keyframe Duration

(FV) The length of the keyframe; the time from the start of the keyframe to the start of the next frame.

Keyframing

(FV) The process of creating an animated clip wherein by selecting a beginning image and an ending image the software automatically generates the frames in between. See also Tweening.

Keystoning

(FP) The distortion of a projected slide or movie caused by the projector lens axis not being at a 90 degree angle to the screen. The image will appear wider at one edge than on the opposite edge and the image may not be uniformly sharp.

kHz (Kilohertz)

(FA, FV) One thousand cycles per second.

Kilobit

(CER) A data unit equal to 1,024 bits.

Kilobyte

(CER) A data unit of 1,024 bytes.

Kilohertz

(FA, FV) Abbreviated kHz. A measure of frequency equivalent to 1,000 hertz, or 1,000 cycles per second.

Kinescope

(FV) A film recording of a video image displayed on a specially designed television monitor. Only means of recording TV programs before video recorders and tape were invented.

Kinescope Recording

(FV) Motion pictures taken of a program photographed directly from images on the face of a kinescope tube.

Knee

(FV) By convention, the circuitry introducing white compression into the opto-electric transfer function and thereby modifying the curve for a more gradual approach to white clip.

Known Object

(FP, FV) This is a physical item or person which is to be compared with a questioned image to determine if this physical item or person is the one depicted in the questioned image.

Kodak PhotoCD

(FP) A CD-ROM containing digital images; the CD is created with technology developed by Kodak; each scanned image on the disk is available in five sizes; about 1000 images will fit on a single PhotoCD.

Kyread

(FA, FV) This is the trade name for one brand of magnetic tape developer. This is a suspension of very fine iron filings in a carrier solution used for the visible development of recordings on magnetic tape.

L

Lab

(FP) A three-dimensional color model based on human perception, with a wide color gamut.

Lag Time

(FP) The delay from pressing the shutter release to the camera actually taking the shot.

LAN

(CER, FV) This is an abbreviation for local area network. This is a network of computers that is restricted to a single geographic location.

Landscape mode

(FP) A horizontal print orientation in which text or images are printed "sideways".

Landscape monitor

(FP) A monitor that is wider than it is high.

Lap Dissolve

(FV) A slow dissolve in which both pictures are actually overlapped for a very brief period of time. It is also called a Dissolve.

Laptop

(CER) A small, portable personal computer that runs on either batteries or AC power, designed for use during travel.

Laser

(FP) This is an abbreviation for light amplification by stimulated emission of radiation. A device that uses certain quantum effects to produce coherent light, which travels with greater efficiency than noncoherent light because the beam diverges only slightly as it travels. Lasers are used in forensic photography to photograph latent print evidence that has been dye stained with a laser dye.

Laser printer

(CER) An electrophotographic printer that is based on the technology used by photocopiers. A focused laser beam and a rotating mirror are used to draw an image of the desired page on a photosensitive drum. This image is converted on the drum into an electrostatic charge, which attracts and holds toner. A piece of electrostatically charged paper is rolled against the drum, which pulls the toner away from the drum and onto the paper. Heat is then applied to fuse the toner to the paper. Finally, the electrical charge is removed from the drum, and the excess toner is collected. By omitting the final step and repeating only the toner-application and paper-handling steps, the printer can make multiple copies.

Lasso

(FP) A selection tool used to draw an outline around an area of the image.

Latent Image

(FP) The invisible image formed in a camera or printer by the action of light on a photographic emulsion.

Lateral Reversal

(FP) A mirror image where the scene appears flipped from left to right.

Lathing

(FP) A 3-D technique in which a 2-dimensional image plane is rotated around one of the axes, just like a piece of wood being turned on a lathe.

Latitude

(FP) In a photographic process, the range of exposure over which substantially correct reproduction is obtained.

Lavalier

(FA, FV) A microphone designed to hang from a person's neck.

Layer

(CER) The plane of a DVD or CD disc on which information is recorded. (FP) In image editing software, like Adobe Photoshop, this is the electronic equivalent of translucent overlays placed on a background layer to affect the appearance of the background layer without altering the background. (FV) A term used to describe which video is on top of which background.

Layer 0

(CER) In a dual-layer disc, this is the layer closest to the optical pickup beam and surface of the disc, and the first to be read when scanning from the beginning of the disc's data. Dual-layer discs are 10% less dense than single layer discs due to crosstalk between the layers.

Layer 1

(CER) In a dual-layer disc, this is the deeper of the two layers, and the second one to be read when scanning from the beginning of the disc's data.

Layering

(FP) In computer graphics, the grouping of logically related elements in a drawing. Layering enables a program user to view, and work on independently, portions of a graphic instead of the entire drawing.

Layer-to-Layer Adhesion

(FA, FV) The tendency for adjacent layers of recording tape in a roll to adhere to each other.

Layer-to-Layer Signal Transfer

(FV) The magnetization of a layer of recording tape in a roll by the field from a nearby recorded layer, which is sometimes referred to as "print-thru".

LCD

(FP) Is an abbreviation for Liquid Crystal Display. It is a flat screen display used in digital cameras and some monitors. A liquid crystal solution held between two clear polarizing sheets is subject to an electric current, which alters the alignment of the crystals so that they either pass or block the light.

LCD projector

(CER, FP, FV) A device that casts an image of a computer's video output from a liquid crystal display onto a screen.

Leader

(FA, FV) Special non-magnetic tape that can be spliced to either end of a magnetic tape to prevent damage and possible loss of recorded material and to indicate visually where the recorded portion of the tape begins and ends. (FP) A long length of any kind of film which is used to establish the film path in a processing machine before the use of the machine for processing film.

Leading

(FP) The space, expressed in points, between lines of type, measured from the baseline (bottom) of one line to the baseline of the next. The term is derived from the traditional typesetting practice of inserting a thin bar of lead between lines of metal type.

Lead ion battery

(CER) An energy storage device that is based on the conversion of chemical to electrical energy as ions flow from one terminal to another through an acid medium in which lead and copper are suspended. This type of battery is used in laptop and notebook computers.

Leading Blacks

(FV) A term used to describe a picture condition in which the edge preceding a white object is overshadowed toward black. The object appears to have a preceding or leading black border.

Leading Whites

(FV) A term used to describe a picture condition in which the edge preceding a black object is overshadowed toward white. The object appears to have a preceding or leading white border.

Leaf Shutter

(FP) A camera mechanism that admits light to expose film by opening and shutting a circle of overlapping metal leaves. When side-lighting a shoe print impression with electronic flash this type of shutter allows you to use the highest speed setting so that you can expose for the electronic flash as your main light even in bright sunlight. This is because at even the highest shutter speeds, unlike the focal plane shutter in most 35mm cameras, the entire negative is exposed even at the highest shutter speeds.

Leakage

(FA) A term describing the signal picked up by a mike which is intended to pick up other signals only.

Learning Curve

(CER, FA, FP, FV) An algebraic metaphor for the amount of time a learner needs to learn a new task. This is most commonly used to refer to the relative amount of time it takes to learn a new software application before a person can begin to effectively be productive with it. A high learning curve refers to complex software applications that usually take a relatively long time to learn how to use.

LED (Light Emitting Diode)

(CER, FA, FP, FV) A light on a piece of hardware that indicates the status or error conditions. (FP) They can be used as a lamp in a flashlight. (FP, FV) Infrared LED's are now commonly used as an infrared light source in CCTV cameras used to record black and white video under low light conditions.

Legacy

(CER, FA, FP, FV) This usually refers to an older protocol or hardware that is still in use, but that is being replaced with more advanced protocols or hardware.

Legacy Files

(CER, FP) Files created in an earlier version of an application that may not include support, or may include less support for some features of the newer version of the application.

Legal Signal

(FV) A signal in which each component remains within the limits specified for the video signal format.

Lempel Ziv algorithm

(CER, FP) A mathematical algorithm designed to reduce a data file's size without sacrificing its integrity. This is a form of lossless compression used in the compressed version of the TIFF graphics file format.

Lens

(FP, FV) A piece or several pieces of optical glass shaped to focus an image of a subject. In cheap point and shoot cameras, plastic is substituted for glass.

Lens Shade

(FP, FV) A shield that fits around a lens to prevent unwanted light from hitting the front of the lens and causing flare. This is also called a lens hood.

Level

(FA, FV) A defined set of constraints on the values which may be taken by some parameters within a particular profile. A profile may contain one or more levels.)

Level Setting

(FA, FV) Adjustment of video or audio signal levels.

Lift

(FV) To remove selected frames from a sequence and leave black or silence in the place of the frames.

Lightness

The brightness of an area judged subjectively relative to the brightness of a similarly illuminated area of known intensity.

Light-Tight

(FP) This refers to condition of any container or room that is protected by an opaque material, overlapping panels, or some other system through which light cannot pass. This is typically used to describe a camera body, film storage container, or photographic darkroom.

Limiter

(FA, FV) A device that prevents the voltage of an audio or video signal from exceeding a specified level, to prevent distortion or overloading of the recording device.

Limiting

(FA, FV) The use of special circuitry to prevent the voltage of an audio or video signal from exceeding a specified level.

Line Blanking

(FV) The blanking signal at the end of each horizontal scanning line. It is used to turn off the scanning beam to make the horizontal retrace invisible. This is also called horizontal blanking.

Line Compensation

(FV) Use of a video line amplifier to pre-compensate for high frequency video signal transmission losses resulting from long distance cable runs by boosting those signal frequencies most effected. Without such compensation, deterioration of the video image is seen in the loss of fine details and color distortion.

Line Count

(FV) The total number of horizontal lines in the picture.

Line Frequency

(FV) The number of horizontal scans per second, which is normally 15,734.26 times per second for NTSC color systems and 15,625 in PAL.

Line Interpolation

(FV) An advanced mechanism used in some line doublers that calculates the value of scanning lines to be inserted between existing ones.

Line Locked

(FV) In CCTV, this usually refers to multiple cameras being powered by a common alternating current (AC) source (either 24 VAC, 110 VAC or 240 VAC) and consequently have field frequencies locked to the same AC source frequency, which is 50 Hz in CCIR systems and 60 Hz in EIA systems.

Line Pair

(FP) A measure of resolution often used in film and print media. (FV) However, in television, horizontal scanning lines are used instead.

Line Pairing

(FV) A reduction in vertical resolution caused when a display (or camera) does not correctly space fields, resulting in an overlap of odd and even numbered scanning lines.

Line Print

(FP) An image resembling a pen-and-ink drawing, with black lines on a white background (or white lines on a black background). It is made with high-contrast lith film.

Line Sync

(FP) The sync signal pulse transition that defines the start of a scan line. Line sync may be the start of a normal sync or the start of an equalization or broad pulse.

Line Time Linear Distortions

(FV) In large pictures details, this distortion produces brightness variations between the left and right sides of the screen. Horizontal streaking and smearing may also be apparent.

Linear (Assembly) Editing

(FV) Editing using media, like tape, in which the material must be accessed in order.

Linear Distortion

(FV) Distortion that is independent of signal amplitude. These distortions occur as a result of the system's inability to uniformly transfer amplitude and phase characteristics at all frequencies. When fast signal components such as transitions and high frequency chrominance are affected differently than slower line-rate or field-rate information, linear distortions are probably present. These distortions are more commonly caused by imperfect transfer characteristics in the signal path. However linear distortions can also be externally introduced. Signals such as power line hum can couple into the video signal and manifest themselves as distortions.

Linear Editing

(FV) A type of tape editing in which you assemble the program from beginning to end. If you require changes, you must re-record everything downstream of the change.

Linear PCM

(FA) One of the allowed types of audio formats for DVD. It may have up to 8 channels and provide very high sample rates and sample depths.

Linear Pulse Distribution Amplifier (Linear Pulse DA)

(FA, FV) A linear pulse distribution amplifier will handle 4 Vp-p signals (pulses) but is limited to amplifying and fanning out the signal.

Linear Time Code (LTC)

(FV) Time code recorded on a linear analog track on a videotape. This type of time code can be read only while the tape is moving.

Linearity

(FA, FV) The measurement of how accurately a piece of electronic equipment processes a signal.

Lines

(FV) The combined maximum number of black and white lines that might be perceived in a particular direction is the number of lines of resolution. Vertical resolution is measured with horizontal lines; horizontal resolution is measured with vertical lines; diagonal resolution is measured with diagonal lines.

Lip Synchronization

(FV) The absence of noticeable lag or lead between the video and the audio playback.

Liquid crystal display

(CER) A type of display that uses a liquid compound having a polar molecular structure, sandwiched between two transparent electrodes. When an electric field is applied, the molecules align with the field, forming a crystalline arrangement that polarizes the light passing through it. A polarized filter laminated over the electrodes blocks polarized light. In this way, a grid of electrodes can selectively "turn on" a cell, or a pixel, containing the liquid crystal material, turning it dark. In some types of liquid crystal displays, an electroluminescent panel is placed behind the screen to illuminate it. Other types of liquid crystal displays are capable of reproducing color.

Lith Film

(FP) A type of film made primarily for use in graphic arts and printing. It produces an image with very high contrast.

Lithium ion battery

(CER) An energy storage device based on the conversion of chemical to electrical energy in "dry" chemical cells. Despite the higher cost, the laptop industry is quickly adopting lithium ion batteries because of their increased storage capacity over both nickel cadmium and nickel metal hydride batteries, in response to the demand for greater power brought on by higher processor speeds and the use of devices such as CD-ROM drives.

Live

(FA, FV) Actually presented in the studio, with cameras feeding out to the lines as the performance is done.

Load Resistance

(FV) The impedance or resistance (load) that a cable places on a signal being transmitted through it. In the case of a high frequency signal, signal-to-cable matching is essential to prevent signal deterioration. The cable should be terminated by a specific load resistance, usually 50 or

75 ohms. Improper cable loading results in signal distortion, ghost images, color loss and other adverse phenomena. Most video inputs have the proper termination built in.

Local Workstation, Drive, Disk, File System, or Printer

(CER) The physical workstation whose keyboard and mouse you are using, all hardware that is connected to that workstation, and all software that resides on that hardware or its removable media.

Lock

(FV) 1. A software security feature that requires a key or dongle in order for the application to run correctly. 2. A mechanical device on some removable storage medium that prevents the contents from being overwritten.

Locked

(FV) A video system is considered to be locked when the receiver is producing horizontal syncs that are in time with the transmitter.

Locked file

(CER) 1. A file on which one or more of the usual types of manipulative operation cannot be performed--typically, one that cannot be altered by additions or deletions.

Logarithm

(CER, FA, FV) A logarithm is the power to which a base (usually 10) must be raised in order to arrive at the desired value.

Logarithmic Scale

(CER, FA, FV) A mathematical function which spreads out low values and squeezes together higher values.

Log File

(CER, FP, FV) A record of actions, events, and related data.

Logic Board

(CER) The main circuit board in a computer that carries the CPU, other chips, RAM and expansion slots.

Logical

(CER) An artificial structure or organization of information created for convenience of access or reference, usually different from the physical structure or organization.

Logical Copy

(CER) An accurate reproduction of information contained within a logical volume.

Logical Hard Drive, or Logical Volume

(CER) This is usually a section of a physical hard drive called a partition that is used by the operating system and assigned a drive letter.

Long Lens

(FP, FV) A lens whose focal length is longer than the diagonal measurement of the film with which it is used. The angle of view with such a line/film size combination is narrower at that given distance than the angle that the human eye sees.

Long Shot

(FV) Camera view of a subject or scene, usually from a distance, showing a broad perspective.

Long Time Linear Distortions

(FV) Long time distortions are slow enough that they are often perceived as flicker in the picture.

Longitudinal Time Code (LTC)

(FA, FV) Audio rate time code information that is stored on its own audio track. This audio rate signal allows the editing system to track the position of the tape even at high shuttle speeds where VITC data could not be used.

Loop Through

(FV) A video signal entering a piece of equipment is returned to the outside world for further use. Loop through circuitry requires careful design to prevent signal degradation.

Looping

(FV) A term used to describe the chaining of a video signal through several video devices (distribution amplifiers, VCRs, monitors, etc.).

Loss

(FA, FV) Reduction in signal strength or level.

Lossy Compression

(FA, FP, FV) Compression in which data is lost and cannot be retrieved in its original form. Such compression is still useful because the human eye is more sensitive to some kinds of information than others, and therefore does not necessarily notice the difference between the original and the decompressed image. c) Reducing the total data rate by discarding data that is not critical. Both the video and audio for DTV transmission will use lossy compression.

Lossless (Compression)

(FP) Image compression where the recovered image is identical to the original.

Low Impedance Mike

(FA) A mike designed to be fed into an amplifier or transformer with input impedance of 150 to 250 ohms.

Low-Frequency Distortion

(FV) Distortion effects which occur at low frequency. Generally considered as any frequency below the 15.75 kc line frequency.

Low level oblique

These aerial photographs are taken from 1500 ft or less and view the subject at an oblique angle (not vertical).

Lowpass filter

(FA, FV) A filter specifically designed to remove frequencies above the cutoff frequency, and allow those below to pass unprocessed is called a lowpass filter. The effect of a lowpass filter is to reduce the amplitude of high frequencies.

Low resolution

(FP) Appearing in relatively coarse detail, used in reference to text and graphics in raster-oriented computer displays and printing.

lpi

(FP) This is an abbreviation for lines per inch. The scale used by printers when specifying the halftone screen used in a printing process.

Luggable computer

(CER) The first portable computers, produced in the early to mid-1980s. These early units, all of which had built-in CRT-based displays, weighed over 20 pounds and were the size of a medium suitcase--hence their name.

Luma Bandpass

(FV) A filter used to pass luma information only. It is used for the same purpose as a chroma bandpass filter.

Lumen (lm)

(FP, FV) A light intensity produced by the luminosity of one candela in one radian of a solid angle.

Luminance

(FP) The perceived brightness component of a given color, as opposed to its hue or its saturation.

Luminance decay

(FV) A characteristic of some light-emitting materials, such as the phosphors used in CRTs, that causes an image to be retained for a short while after being irradiated, as by an electron beam in a CRT.

Luminance Noise

(FV) Noise which manifests itself in a video picture as white snow, typically caused by one of the following situations: low signal level due to poor lighting conditions, poor video signal processing, low quality videotapes, excessively long video cables used without pre-compensation, dirt on the video recorder heads which interferes with reading and writing, and/or over-enhancement of the video signal.

Luminance Nonlinearity

(FV) Present if luminance gain is affected by luminance levels. This amplitude distortion is a result of the system's inability to uniformly process luminance information over the entire amplitude range. This distortion is also called differential luminance. The amount of luminance nonlinearity distortion is expressed as a percentage. Measurements are made by comparing the amplitudes of the individual steps in a staircase signal as shown. In black and white pictures, luminance nonlinearity will cause loss of details in shadows and highlights which are caused by the crushing or clipping of the white or black portions of the signal. In color pictures, luminance nonlinearity will cause colors in the high luminance portions of the picture to be distorted.

Luminance Range

(FV) The range in measured luminance between the lightest and the darkest elements of a luminous scene or its display.

Luminescence

(FP) The absorption of energy by matter and its following emission as light. If the light follows and then completes itself quickly after absorption of the energy, the term fluorescence is used. If the process is of a longer and more persistent length, the term phosphorescence is applied.

Luminosity

(FP) Brightness or intensity of either a light source or a reflective surface.

LUT

(FP) This is an abbreviation for look up table.

Lux

(FP, FV) A measurement of light. Lux is used in television production to determine the minimum amount of light (lux rating) needed for camera operation. Hence, a "2 lux" camcorder requires less light than a "4 lux" camcorder.

M

Machine Error

(CER, FV) A machine hardware malfunction.

Machine Language

(CER) Binary language (often represented in hexadecimal) that is directly understood by the processor. All other programming languages must be translated into binary code before they can be entered into the processor.

Machine Operator

(FV) A person trained in the operation of a specific machine.

Macro

(CER, FP) A single command, usually a combination of keystrokes, that sets in motion a string of operations. Used for convenience when the operations are run frequently. This is similar to an action in Adobe Photoshop.

Macro Attachment

(FP, FV) These are supplementary elements attached to the front of a normal lens to give an extreme close-up facility.

Macro lens

(FP, FV) A lens specially designed to give accurate resolution of a very close subject without the need for supplementary attachments. Most macro lenses can focus from infinity to 1/4X or closer.

Macrophotography

(FP) Photography which produces an image on the negative or image sensor that is between approximately 1/4X to 10X, without the use of a microscope.

Macrovision

(FV) An analog protection scheme developed by Macrovision for the prevention of analog copying. It is widely used in VHS videotapes and has now been applied to video DVDs.

Magenta

(FP) The complimentary color to green. It is composed of blue and red light.

Magnetic Tape

(CER, FA, FP, FV) With a few exceptions, magnetic tape consists of a base film coated with magnetic particles held in a binder.

Magneto-Optical

(CER) Recordable disc technology using a laser to heat spots that are altered by a magnetic field. Other formats include dye-sublimation and phase-change.

Magnification

(FP) It is a numerical value usually equal to the size of the image of an object divided by the size of the original object itself.

Main Light

(FP, FV) It is the principal source of light, usually in a studio, and generally the brightest light on a subject or scene.

Male Connector

(FA, FV) A connector that has raised edges, pins, or other protruding parts that you plug into a female connector. An example of a male connector is an electrical plug that you plug into a wall outlet.

MAN

(CER, FV) This is an abbreviation for metropolitan area network. It is a data network that spans a campus or city and may join LANs and/or a WAN link to the internet.

Manual Exposure

(FP) A mode of camera operation in which the photographer sets both the shutter speed and the aperture.

Manual Flash

(FP) A mode of flash operation in which the photographer controls the exposure by adjusting the size of the camera aperture and/or the power setting of the electronic flash.

Manual Iris

(FP, FV) A variable lens's aperture which can be physically adjusted by the photographer.

Mark In

To select the point where an edit will begin (the first frame that will be recorded). (Dictionary by Grass Valley)

Mark IN/OUT

(FV) The process of entering the start and end time codes for a clip to be edited into a sequence.

Mark Out

(FV) To select the point where an edit will end.

Mask

(FP) A greyscale template that hides part of an image. One of the most important tools in editing an image, it is used to make changes to a limited area. A mask is created by using one of the several selection tools in an image-editing program; these isolate a picture element from its surroundings, and this selection can then be moved or altered independently. In a data base, a mask controls the way that data is entered in a field: for instance, it may limit entry to a 'Y' or 'N' (for Yes/No).

Masking

(FP, FV) The process of blocking out portions of a picture area/signal.

Mass Storage

(CER) Any device for the storage of large amounts of data.

Master

(FV) The final edited tape recording from a session from which copies will be made.

Master Clip

(FV) A media file recorded or digitized from tape or other sources.

Master Shot

(FV) The shot that serves as the basic scene, and into which all cutaways and close-ups will be inserted during editing. A master shot is often a wide shot showing all the characters and action in the scene.

Master/Slave

(FP) In editing, the process in which one or more VTRs (slaves) are controlled by another VTR (master).

Master Timing

(FV) The main sync pulse generator used as the reference for any number of slave generators. A facility should have only one active master sync generator to feed synchronizing signals around the facility.

Mat

(FP) A cardboard rectangle with an opening cut in it that is placed over a print to frame it.

Mathematically Lossless Compression

(FP, FV) A method of compressing still images and video so that when uncompressed it is identical to the original before compression.

Mat Knife

(FP) A short knife blade used for cutting cardboard mounts for prints.

Matte

(FP) Describes a printing paper with a relatively dull, nonreflective surface.

Mavica

(FP, FV) This camera name stands for Magnetic Video Camera. It was the first 'still video' camera, produced by Sony in 1981.

MCA

(CER) Micro Channel Architecture is an obsolete bus design found only on some IBM brand PS/2 machines and only a few others.

Media

(CER, FA, FP, FV) 1. (Hardware) Objects on which data can be stored. 2. (Presentation) The video, audio, graphics, and rendered effects that can be combined to form a sequence or presentation.

Media Characterization

(CER) The process of inspecting, identifying, and noting the properties of the media. (SWGIT)

Media Clip

(FV) A video segment usually interleaved with an audio segment.

Media Conversion

(FA, FV) The process of converting data from one type of media to another.

Media Data

(CER, FA, FP, FV) Audio, video, photographic, and/or graphics recorded on a device designed to store this type of information.

Media Files

(FA, FV) 1. 2. Files containing the compressed digital audio and video data needed to play Avid clips and sequences.

Media Object

(FA, FV) A representation of a natural or synthetic object that can be reproduced aurally and/or visually.

Median Filter

(FP) (1.) A median filter creates a new grayscale image from an old by using the following procedure at each pixel within the source image: (a.) find the brightness values within the specified neighborhood radius, (b.) sort them into order by brightness, (c.) make the new value for that location in the new image be the middle or MEDIAN value from the sorted list. (2) With color images instead a Vector Median is computed which is the pixel that has the least difference to all of the other pixels within each neighborhood radius. (FV) An averaging technique used to take an average of lines in the current and previous fields to optimize resolution and avoid motion artifacts without using motion compensation.

Medium

(FA, FV) The substance through which a wave is transmitted.

Medium Shot

Camera perspective between long shot and close-up, whereby subjects are viewed from an intermediate distance.

Mega

(CER) This is a prefix for one million.

Megabit

(CER) This is usually 1,048,576 bits; however it is sometimes interpreted as 1 million bits.

Megabyte

(CER) This is usually 1,048,576 bytes; however it is sometimes interpreted as 1 million bytes.

Megahertz (MHz)

(CER, FA, FV) It represents one million cycles per second. In addition to being a common unit of frequency used to measure the frequency of the carrier frequency and bandwidth of audio and video transmissions, it is a measurement of the clock speed of a computer's CPU.

Memory

(CER) In strict terms, this is the hardware used for the temporary storage of data while the computer is powered up. In broad terms some authors include any type of computer data storage within the meaning of this term.

Memory Effect

(FA, FP, FV) Loss of power storing capability in NiCad batteries which occurs when batteries are habitually discharged only partially before recharging. To avoid the memory effect, always fully discharge NiCad batteries before recharging.

Metadata

(FP) Text information frequently embedded within a file that describes information about or related to the film within which it is embedded. In a digital image this can include, but is not limited to exposure, camera used, a record of processing performed on the image, and copy right notices.

M-Format

(FV) A component video format invented by Panasonic for use in videotape recorders. The signal set consists of separate Y, I, and Q signals. The M refers to the way in which the tape is routed through the recording mechanism.

MHz

(CER, FA, FV) This is an abbreviation for Mega Hertz. It represents one million cycles per second. In addition to being a common unit of frequency used to measure the frequency of the carrier frequency and bandwidth of audio and video transmissions, it is a measurement of the clock speed of a computer's CPU.

Microdrive

(FP) This is a miniature hard disk designed to fit in the Compact Flash II memory card slot of a digital camera.

Middle Gray

(FP) This is a standard average gray tone of 18 percent reflectance. It is the gray tone reproduced on a standard Kodak Gray Card.

MIDI

(FA) It is pronounced “middie” and stands for Musical Instrument digital Interface, a standard that describes how computers and MIDI-compatible musical instruments interface. MIDI is both a hardware item that refers to plugs and connectors allowing these instruments to be connected to your computer or sound board, and a set of rules for how music should be encoded so that the instruments and computer can communicate.

Mid-tone

(FP) The brightness level of a image that is approximately midway between the highlights and shadows.

Midtones

(FP) The brightness range of a image that is approximately midway between the highlights and shadows. The brightness range of a digital image is grouped into three vaguely defined ranges, highlights, mid-tones, and shadows. Some processes in image processing applications such as Adobe Photoshop, can be set to work on only one of these three ranges at a time.

MII Format

(FV) A second-generation component video format invented by Panasonic for use in videotape recorders. The signal set consists of separate Y, scaled R-Y and scaled B-Y signals.

Millisecond (ms)

(CER, FA, FV) This represents one thousandth of a second.

MJPEG

(FV) This is a lossy compressed video format.

Mode

(FP, FV) One of a number of alternative operating conditions for a program. For instance, in an image-editing program, color and grayscale are two possible modes.

Modeling Light

(FP) A light built into a flash unit that remains on while the flash is turned on or in a standby mode, permitting the photographer to the lighting effects that will be created when exposing the film by flash.

Modem

(CER) Modulate and Demodulate. A device for converting digital signals into analogue signals for the purpose of sending data over telephone lines or cable networks.

Modulation Noise

(FA, FV) The noise arising when reproducing a tape which has been recorded with a given signal, and which is a function of the instantaneous amplitude of the signal. This is related to DC noise and arises from the same causes.

Moire

(FP, FV) In digital photographs and video, it appears as a wavy pattern that appears as an artifact in the picture. In video it is caused by two high frequency signals in the picture that mix together to create a visible low frequency beat pattern. In a digital photograph it appears as a artifact in the area where very fine patterns were photographed. In digital photographs it is sometimes attributed to either inadequate resolution or the result of interpolation of colors necessary in a single layer sensor which uses a bayer filter array in front of the sensor.

Moiré Pattern

(FP) An undesirable screen pattern in color printing that results from screen angles of overprinting halftone. Moiré usually results when you scan a halftone or when you scan images taken directly from magazines.

Monitor

(FA) A speaker intended for the performer or audio engineer to be able to hear and subjectively evaluate an audio signal. (FV) This is a high quality television which does not have a tuner and is usually used in a television and/or video production studio. More expensive monitors have features for evaluating the video signal and for viewing the underscan area of the video image.

Monitor Calibration

(FP) The process of correcting the color rendition settings of a monitor to match selected colors of a know standard digital image file. (FV) The process of correcting the color settings of a video monitor using the SMPTE color bars as a standard.

Monitor Head

(FA) A separate playback head on some audio tape recorders that makes it possible to listen to the material on the tape an instant after it has been recorded and while the recording is still in progress.

Monitor Outputs

(FV) A separate set of outputs from a switcher or video recorder for the specific purpose of feeding a video monitors (although not limited to that purpose).

Monochrome

(FP, FV) Literally means a single color and is usually used to indicate black and white.

Monochrome Signal

(FV) A “single color” video signal which is either a black and white signal or the luminance portion of a composite or component color signal.

Monochrome Transmission (Black and White)

(FV) The transmission of a signal wave which represents the brightness values in the picture but not the color (chrominance) values in the picture.

Morphing

(FV) A technique for making an object change into the shape of another.

Mosaic

(FV) An effect that “blurs” an image by copying pixels into adjacent pixels both horizontally and vertically. This gives the image a blocky appearance, often used to hide people’s identities on television.

Mosquito Noise

(FV) Caused by quantizing errors between adjacent pixels, as a result of compression. As the scene content varies, quantizing step sizes change, and the quantizing errors produced manifest themselves as shimmering black dots, which look like “mosquitoes” and show at random around objects within a scene.

Motherboard

(CER) This refers to the main circuit board in a computer into which everything else is connected.

Motion Artifacts

(FV) Picture defects that appear only when there is motion in the scene. Interlaced scanning has motion artifacts in both the vertical and horizontal directions. There is a halving of vertical resolution at certain rates of vertical motion (when the detail in one field appears in the position of the next field one sixtieth of a second later), and horizontally moving vertical edges become segmented (reduced in resolution) by the sequential fields. This is most apparent when a frame of a motion sequence is frozen and the two fields flash different information. Techniques for avoiding motion artifacts include median filtering and motion adaptation or compensation. In all temporally-sampled systems (i.e., both photographic and electronic), realistic motion reproduction is achieved only with sampling above the Nyquist limit. Motion artifacts most frequently observed have their origins in the following: image components with velocity functions extending beyond the Nyquist limit (such as rotating, spoked wheels), motion samples with such short exposures there is noticeable frame-to-frame separation of sharply defined images (such as synchronized flash illumination), asynchronous sampling of intermittent motion (such as frame-rate conversions). A considerable number of motion artifacts appear so frequently as to be accepted by most viewers.

Motion Compensation (MC)

(FV) This is the use of motion vectors to improve the efficiency of the prediction of pel values in MPEG. The prediction uses motion vectors to provide offsets into the past and/or future reference pictures containing previously decoded pel values that are used to form the prediction error signal.

Motion Effect

(FV) An effect that speeds up or slows down the presentation of media in a track. This is commonly used in forensic video analysis when a time-lapse recording is captured from a standard VCR and appears to play too rapidly to be of any use. To adjust the playback speed to normal time, a motion effect is applied to the captured video clip to slow it down to normal speed, usually by converting each video field into a full video frame and then replicating as

many of these converted video frames as needed to create approximately 30 frames per second for playback.

Motion Estimation (ME)

(FV) The process of determining changes in video object positions from one video frame to the next. Object position determination is used extensively in high compression applications. For instance if the background of a scene does not change but the position of an object in the foreground does, it is advantageous to just transmit the new position of the object rather than the background or foreground. In Forensic Video Analysis this explains why in an in-car compressed digital video recording system used to record a night time traffic accident you may get the visual effect where a passing patrol car or other emergency vehicle is reproduced as an invisible vehicle with only the lights reproduced.

Motion Jitters

(FV) Jerky movements in a clip, often caused by gate slip when film is converted into video.

Motion JPEG

(FV) This is a lossy compression standard for storing motion video, proposed by the Joint Photographic Experts Group (JPEG), that uses JPEG image compression for each frame. Even though a video signal is being processed, each field is still individually processed.

Motion Stabilization

(FP, FV) In still photography this is an optical or electronic compensation in which movement of the camera and/or lens is measure and an adjustment is made automatically to compensate for this movement to enable taking a sharp photograph without a tripod at lower shutter speeds. This may also be called a vibration reduction lens. (FV) In video applications there are two additional options. The first option is to mount the camcorder on a gyro stabilizer that physically counteracts the attempted short jerky movements of a camera and can be used for hand holding a camcorder while walking through a scene. The second option is in post production in a non-linear editing system. Some software editing packages provide a limited capability that gives a final result similar to that of a gyro stabilizer. Some forensic application software goes farther in that the forensic video analyst can select an object in several frames that is to be positioned at the same location when played back even if only a small part of the video image is displayed. This can be very useful when trying to track a person as the person moves about in a given scene or when a video surveillance is being done from a moving vehicle or aircraft.

Motion Tracking

(FV) The process of generating position information that describes motion in a clip, for example, the changing position of a moving vehicle. Motion tracking data is used to control the movement of effects.

Motion Video

(FV) Video that displays real motion by displaying a sequence of images (video frames) rapidly enough that the eyes see the image as a continuously moving picture.

Mouse

(FV) An input device that is moved to control the location of a computer cursor, for drawing functions in a computer application, for making selections in a computer application, and for performing drag and drop operations in a computer application.

.mov

(CER, FV) This is a filename extension for a movie file in Apple's QuickTime format.

Moving Picture Experts Group (MPEG)

(FA, FV) This is an international group of industry experts set up to standardize compressed moving pictures and audio.

Moving Picture Experts Group 1 (MPEG-1)

(CER, FA, FV) ISO/IEC CD 11172 is the first of the standards designed for handling highly compressed moving images in real-time. It accepts periodically chosen frames to be compressed as in JPEG-1, predicts the content of intervening frames, and encodes only the difference between the actual and the prediction. Audio is compressed synchronously. The encoder includes a decoder section in order to generate and verify the predictions. At the display, a much simpler decoder becomes possible. MPEG-1 is optimized for a data rate of up to 1.5 Mbps.

Moving Picture Experts Group 2 (MPEG-2)

(CER, FA, FV) MPEG-2 expands the MPEG-1 standard to cover a wider range of applications.

Moving Picture Experts Group 3 (MPEG-3)

(CER, FA, FV) MPEG 3 was originally intended for HDTV applications but has since been incorporated into MPEG 2.

Moving Picture Experts Group 4 (MPEG-4)

(CER, FA, FV) The goal of MPEG-4 is to establish a universal and efficient coding for different forms of audio-visual data, called audio-visual objects.

Moving-Coil

(FA) A microphone whose generating element is a coil which moves within a magnetic gap in response to sound pressure on the diaphragm attached to it, rather like a small loudspeaker in reverse. This is the most common type of Dynamic Microphone.

MP3

(FA) This is a commonly used audio compression format for music to be played by consumers on a device specifically designed to play this audio file format. It is a commonly used term for the MPEG-1 Layer 3 (ISO/IEC 11172-3) or MPEG-2 Layer 3 (ISO/IEC 13818-3) audio compression formats. MPEG-1 Layer 3 is up to two channels of audio and MPEG-2 Layer 3 is up to 5.1 channels of audio. MP3 is not the same as MPEG-3.

.mpeg or .mpg

(FV) The file extension that identifies graphic image files in the MPEG format specified by the Moving Pictures Experts Group.

MPEG -SUBSTITUTE FOR CURRENT MPEG

(FV) This is an abbreviation for Moving Pictures Experts Group. This refers to a set of standards for audio and video compression adopted by the Joint ISO/IEC Technical Committee on Information Technology. The MPEG standard has different types that have been designed to work in different situations. MPEG uses the similarity between frames to create a sequence of I, B and P frames. Only the I frame contains all the picture data. The B and P frames only contain information relating to changes since the last I frame. In Forensic Video Analysis this explains why in an in-car MPEG compressed digital video recording system used to record a night time traffic accident you may get the visual effect where a passing patrol car or other emergency vehicle is reproduced as an invisible vehicle with only the lights reproduced.

MPEG-1

(CER, FA, FV) ISO/IEC CD 11172 is the first of the standards designed for handling highly compressed moving images in real-time. It accepts periodically chosen frames to be compressed as in JPEG-1, predicts the content of intervening frames, and encodes only the difference between the actual and the prediction. Audio is compressed synchronously. The encoder includes a decoder section in order to generate and verify the predictions. At the display, a much simpler decoder becomes possible. MPEG-1 is optimized for a data rate of up to 1.5 Mbps.

MPEG-2

(CER, FA, FV) MPEG-2 expands the MPEG-1 standard to cover a wider range of applications.

MPEG-3

(CER, FA, FV) MPEG 3 was originally intended for HDTV applications but has since been incorporated into MPEG 2.

MPEG-4

(CER, FA, FV) The goal of MPEG-4 is to establish a universal and efficient coding for different forms of audio-visual data, called audio-visual objects.

MPEG Audio

(FA) This refers to audio compressed according to the MPEG perceptual encoding system.

MPEG Video

(FV) This refers to video compressed according to the MPEG encoding system.

.mpg or .mpeg

(FV) The file extension that identifies graphic image files in the MPEG format specified by the Moving Pictures Experts Group.

MS-DOS

(CER) This is the Microsoft Disk Operating System used by IBM-PC compatibles prior to the latest versions of Windows. A version of this operating system was also available on the Atari home computers that were perceived by many as only being game machines, even though their hardware and software capabilities were similar to, and in some ways were superior to, an Apple IIe.

Multimedia

(FA, FP, FV) This covers the use of any combination of text, sound, graphics, animation, and/or video to communicate or display information.

Multipath Distortion

(FV) A form of interference caused by signal reflections. Signals that are reflected more take a longer path to reach the receiver than those that are reflected less. The receiver will synchronize to the strongest signal, with the weaker signals traveling via different paths causing ghostly images superimposed on the main image.

Multiplex

(FV) To combine multiple video signals for recording in such a way that they can be separated again later when the recording is played back through a compatible demultiplexer. In a CCTV system this is the process used to simultaneous capture and synchronize inputs from multiple cameras with the output consisting of images, usually at the field level, sent in sequence from each camera to a VCR. In this type of system a time-lapse VCR is usually used.

Multiplexer/Demultiplexer

(FV) A device used to combine multiple video signals into a single signal or separate a combined signal. These devices are frequently used in security and law enforcement applications for recording and/or displaying multiple camera images simultaneously or in succession.

Multiplexer channel

(FV) One of the inputs to a multiplexer.

Multiplexer (MUX)

(FV) Device for combining two or more electrical signals into a single, composite signal.

Multiplexing

(FV) To combine multiple video signals for recording in such a way that they can be separated again later when the recording is played back through a compatible demultiplexer. In a CCTV system this is the process used to simultaneous capture and synchronize inputs from multiple cameras with the output consisting of images, usually at the field level, sent in sequence from each camera to a VCR. In this type of system a time-lapse VCR is usually used.

Multimedia Evidence

(FA, FP, FV) Analog or digital media, including, but not limited to, film, tape, magnetic and optical media, and/or the information contained therein.

Multiscan

(CER) A multiscan monitor automatically synchronizes to the signal sent to it by the graphics card.

Multisync

(CER) A trademark of NEC Technologies for multiscan.

Multi-track Soloing Of Audio Tracks

(FV) In a multitrack recording this allows you to select two or more audio tracks to be played back. It has the same affect as if you manually turned off all the other audio tracks.

N

NAB (National Association of Broadcasters)

(FV) This is a station owner and/or operator's trade association.

Nanometer

A unit of measurement of light wavelength. A nanometer is one millionth of a millimeter. (*Aerial Photograph Glossary* from *Airview Photography*, 2003)

Nanosecond

(CER) One billionth of a second. A nanosecond is a time measure used to represent computing speed, particularly the speed at which electrical signals travel through circuits within the computer.

National Television System Committee (NTSC)

(FV) The organization that formulated the "NTSC" system. This is usually taken to mean the NTSC color television system itself, or its interconnect standards. NTSC is the television standard currently in use in the U.S., Canada and Japan. NTSC image format is 4:3 aspect ratio, 525 lines, 60 Hz and 4 MHz video bandwidth with a total 6 MHz of video channel width.

Native File Format

(CER, FP) The original form of a file. This usually refers to a file format that is associated with and unique to a specific software application program. For example, psd is a native file format for Adobe Photoshop.

Native Resolution

(FV) The resolution at which the video file was captured.

Nearest Neighbor

(FP) Type of interpolation in which the value of the new pixel is an average of the neighboring pixels.

Negative

(FP) The image produced on a photographic emulsion by the product of exposure and development, in which tones are reversed so that highlights appear dark and shadows appear light.

Negative Carrier

(FP) A frame that holds a negative flat in an enlarger.

Negative Effect

(FV) Special effect in which either blacks and whites are reversed or colors are inverted. For example, red becomes a blue-green, green becomes purple, etc. The Video Equalizer and Digital Video Mixer includes a negative effect which can be used to generate electronic color slides from color negatives.

Negative Film

(FP) Film that produces a negative image on exposure and development.

Negative Image

(FV) Refers to a picture signal having a polarity which is opposite to normal polarity and which results in a picture in which the white areas appear as black and vice versa.

Network

(CER) A group of computers and other devices (such as printers) that can all communicate with each other electronically to transfer and share information.

Network Administrator

(CER) The individual responsible for setting up, maintaining, and troubleshooting the network, and for supplying setup information to system administrators of each system.

Network Interface Card (NIC)

(CER) A device that connects a dumb terminal or computer to a network. This type of card is also used to connect to a broadband modem such as a cable or DSL modem.

Neutral

(FP) An RGB color with equal amounts of Red, Green and Blue light. (FA, FV) The zero or null setting for anything that can be varied from negative to positive values.

Neutral Colors

(FP, FV) The range of gray levels, from black to white, but without color. For neutral areas in the image, the RGB signals will all be equal; in color difference formats, the color difference signals will be zero.

Neutral Density Filter

(FP) Describes a gray camera filter which has a equal opacity to all colors of the visible light spectrum and so does not affect the colors in the final image. It is used to reduce the amount of light entering the camera when apertures or shutter must remain constant.

Newton Rings

(FP) A series of concentric circles that appear on a scanned image when a thin layer of air exists between the glass scanner bed and the image being scanned. Newton rings appear when light waves are reflected from both top and bottom surfaces of the air between the glass and the image, interfering with the resulting scan.

Nippon Hoso Kyokai (NHK)

(FV) The Japan Broadcasting Corporation, principal researchers of HDTV through the 1970s, developers of the 1125 scanning-line system for HDEP and of all the MUSE systems for transmission.)

NIST (National Institute of Standards and Technology)

(CER, FA, FP, FV) This is the North American regional forum at which OSI implementation agreements are decided. It is equivalent to EWOS in Europe and AOW in the Pacific.

Noise

(FP) Pixels on the image sensor that misread the light or random signals generated by the electronic components that are connected to the image sensor. (FV) Unwanted disturbance within an electronic system resulting in random white specks or a grainy like appearance in a video picture.

Noise Bars

(FV) White streaks in a picture, usually caused when video heads trace parts of the tape that have no recorded signal.

Noise Filter

(FP) (1.) Imaging software that is designed to reduce noise artifacts in an image. (2.) Imaging software that adds noise for an effect, usually either a speckling or to conceal artifacts such as banding.

Noise Floor

(FA, FP, FV) The level of background noise in a signal or the level of noise introduced by equipment or storage media below which the signal can't be isolated from the noise.

Noise Gate

(FA, FV) A device used to modify a signal's noise characteristics. In video, noise gates provide optimal automatic suppression of snow (signal noise level). In audio, a noise gate provides a settable signal level threshold below which all sound is removed.

Noise Pulse

(FA, FV) A spurious signal of short duration that occurs during reproduction of a tape and is of magnitude considerably in excess of the average peak value of the ordinary system noise.

Noise Reduction

(FA, FV) The amount in dB that the noise added to a signal by transmission or storage chain, especially a tape recorder, is reduced from the level at which it would be if no noise reduction devices were used.

Noise Reduction Systems

(FA) Refers to electronic circuits designed to minimize hiss level in magnetic recording.

Noisy

(FV) A description of a picture with abnormal or spurious pixel values. The picture's noise is a random variation in signal interfering with the information content.

Noisy Video

(FV) Noisy video (e.g., video from low quality VTRs) is more difficult to code than the cleaner version of the same sequence. The reason is that the video encoder spends many bits trying to

represent the noise as if it were part of the image. Because noise lacks the spatial coherence of the image, it is not coded efficiently.

Noncomposite Video

(FV) A video signal that includes blanking but no sync.

Non-Drop Frame

(FV) System of time code that retains all frame numbers in chronological order, resulting in a slight deviation from real clock time.

Non-Drop Frame Time Code

(FV) SMPTE time code format that continuously counts a full 30 frames per second. Because NTSC video does not operate at exactly 30 frames per second, non-drop frame time code will count 108 more frames in one hour than actually occur in the NTSC video in one hour. The result is the incorrect synchronization of time code with clock time. Drop frame time code solves this problem by skipping or dropping two frame numbers per minute except at the tens of the minute count.

Noninterlaced

(FV) Method of scanning video in which the entire frame is scanned at once rather than interleaved. The rate of scan must be fast enough that the average light level of the scene does not decrease between scans and cause flicker. Another term for a non-interlaced system is progressive scan.

Nonlinear

(FA, FV) A term used for editing and the storage of audio, video and data. Information (footage) is available anywhere on the media (computer disk or laser disc) almost immediately without having to locate the desired information in a time linear format.

Nonlinear Distortion

(FA, FV) Amplitude-dependent waveform distortion. This includes APL and instantaneous signal level changes. Analog amplifiers are linear over a limited portion of their operating range. Signals which fall outside of the linear range of operation are distorted. Nonlinear distortions include crosstalk and intermodulation effects between the luminance and chrominance portions of the signal.

Nonlinear Editing (NLE)

(FV) The process of editing using rapid retrieval (random access) computer controlled media such as hard disks, CD-ROMs and laser discs. Its main advantages are: allows you to reorganize clips or make changes to sections without having to redo the entire production and very fast random access to any point on the hard disk (typically 20-40 ms). Nonlinear editing is also non-destructive, the video is not changed but the list of how the video is played back is modified during editing.

Nonlinear Editor

(FV) An editing system based on storage of video and audio on computer disk, where the order or lengths of scenes can be changed without the necessity of reassembling or copying the program.

Nonlinear Encoding

(FV) Relatively more levels of quantization are assigned to small amplitude signals, relatively fewer to the large signal peaks.

Nonlinearity

(FV) The amount by which a measured video signal output differs from a standard video signal output. The greater this deviation, the greater the video signal distortion and possibility of luminance and chrominance problems. Having gain vary as a function of signal amplitude.

Nonsilver Process

(FP) A printing process that does not depend on the sensitivity of silver to form an image. For example, the cyanotype process, in which the light-sensitive emulsion consists of a mixture of iron salts.

Normal lens

(FP) A lens whose focal length is about the same as the diagonal measurement of the film with which it is used. The angle of view with this lens/film size combination is roughly the same at a given distance as the angle that the human eye sees clearly.

Notch Filter

(FA, FV) An arrangement of electronic components designed to attenuate a specific frequency band. This is also called a "band stop filter."

Notching Code

(FP) Notches cut in the margin of sheet film so that the type of film and its emulsion side can be identified in the dark.

NTFS (New Technology File System)

(CER, FP) A file system used on Windows computers.

NTSC

(FV) This is an abbreviation for National Television Standards Committee.

NTSC Artifacts

(FV) Defects associated with NTSC recordings.

NTSC Color

(FV) The color signal TV standard set by the National Television Standards Committee of the USA.

NTSC Color Bars

(FV) The pattern comprising eight equal-width color bars generated by an NTSC generator. The color bars are used for calibration and as a reference to check transmission paths, signal phase, recording and playback quality, and monitor alignment.

NTSC Composite

(FV) The video signal standard proposed by the NTSC and adopted by the FCC for broadcast television in the U.S. The signal is an interlaced composite video signal of 525 lines and 60 fields per second (30 frames per second), with a bandwidth limited to 4 MHz to fit into a 6 MHz broadcast television channel without interfering with adjacent channels.

NTSC Format

(FV) A color television format having 525 scan lines (rows) of resolution at 30 frames per second (30 Hz).

NTSC RGB

(FV) Interlaced red, green, and blue video signals timed to NTSC standards. Refers to the three monochrome signals that represent the primary colors of an image.

NTSC Standard

(FV) Documentation of the characteristics of NTSC. NTSC is defined primarily in FCC Part 73 technical specifications. Many of its characteristics are defined in EIA-170A. NTSC is also defined by the CCIR. NTSC is a living standard; as problems with it are discovered, they are corrected. For example, a former EIA standard, RS-170, omitted any phase relationship between luminance and chrominance timing, resulting in blanking problems. EIA-170A defines that relationship (called SC/H for subcarrier to horizontal phase relationship).

O

Objective Image Quality

(FP, FV) The evaluation obtained as a result of objective measurement of the quantitative image parameters (including tone scale, contrast, linearity, colorimetry, resolution, flicker, aliasing, motion artifacts, etc.).

Object-oriented

(FP) A graphics application, such as Adobe Illustrator, using mathematical points based on vectors to define lines and shapes.

Oblique Lighting

(FP) When an object or person is viewed from the camera position, this refers to any light source which illuminates the object or person from the side and not from the front or back of the object or person. It is used to emphasize the texture of the object or person being photographed. It is also called texture lighting or oblique lighting.

OCR

(FP) This is an abbreviation for Optical Character Recognition. This is a technique used by scanning software to convert scanned text documents into a form that can be edited with a word processor. In other words, OCR software "optically recognizes" characters scanned in, essentially changing graphics into words.

Offline

(FV) This refers to any audio or video file that is stored on a storage media that is not currently connected to your non-linear editing computer.

Ohm

(FA, FV) This is a unit of resistance. The electrical resistance between two points of a conductor where a constant difference of potential of 1 V applied between these points produces in the conductor a current of 1 A, the conductor not being the source of any electromotive force.

One-shot developer

(FP) A developer used once and then discarded.

Opacity

(FP) The light stopping power of a material. The greater the opacity of a substance, the more light it stops. In photography, opacity is expressed as a ratio of the amount of light falling on the surface of the material to the amount of light transmitted by it. In image editing software that uses layers, an opacity setting is used to control the degree to which a given layer affects the appearance of the finished photographic image.

Open Captioning

(FV) As the video plays, text captions are displayed that transcribe, although not always verbatim, what is said and by whom and indicate other relevant sounds. The term "open" in open captioning means that all viewers see the captions as the video plays.

Open Proficiency Test

(CER, FA, FP, FV) A test to evaluate the competence of analysts, technical support personnel, and the quality performance of an agency. In this test the analyst(s) and technical support personnel are aware they are being tested.

Open up

(FP, FV) To increase the size of a lens aperture.

Optical Effects

(FV) Trick shots prepared by the use of an optical printer in the laboratory, especially fades and dissolves.

Optical Filter

(FP, FV) An optical filter is any material that will not distort the visual appearance of the properties of light for which the filter was designed to transmit.

Optical glass

(FP, FV) Used for manufacturing lenses and prisms. It is specially manufactured to be free of defects and distortion, and to withstand heat and humidity. Each type of optical glass is classified according to its refractive index and light dispersive quality. Two or more types of optical glass are typically used in the component elements of photographic lenses.

Optical Line Pair

(FP, FV) In optical measurements and specifications, resolution is specified in terms of line-pairs per unit distance or unit angle, a line pair consisting of one "black" plus one "white" line. Thus one line pair corresponds to two television lines.

Optical Resolution

(FP) The true resolution of an image based on the number of pixels on the surface of the image sensor. The true resolution of a scanner and the key factor in determining the amount of detail visible in a image. This is determined by the number of pixels in the scanning array.

Opticals

(FV) The effects created in a film lab through a process called A-roll and B-roll printing. This process involves a specified manipulation of the film negative to create a new negative containing an effect. The most common opticals used in film editing are fades, dissolves, and superimpositions.

Optical Scanner

(FP) A device that changes images from either reflection or transparency medium to digital data.

Optical viewfinder

(FP) A viewfinder system that shows a similar view to that seen by the camera lens.

Optical Zoom

(FP, FV) This is a variable focal length lens that is made to bring you closer to your subject, without you having to move. Zooms are constructed to allow a continuously variable focal length, without disturbing focus. To achieve this, the optical zoom uses a combination of lens elements that magnify the image prior to being registered at high resolution by the sensor or film. While the digital zoom only changes the presentation of existing data, the optical zoom actually augments the data collected by the sensor. Optical zooms are superior to digital zooms.

Optics

(FP, FV) The science and technology dealing with the behavior of light.

Original Image

(FP) An accurate and complete replica of the primary image, irrespective of media. For film and analog video. In some jurisdictions, any fair and accurate reproduction of the image is considered as an original to include prints from either a negative or a digital image file.

Original Negative

(FP) The actual film stock used in the camera to photograph a scene.

Orthicon (Conventional)

(FV) A camera tube in which a low-velocity electron beam scans a photoemissive mosaic on which the image is focused optically and which has electrical storage capability.

Orthicon (Image)

(FV) A camera tube in which the optical image falls on a photo-emissive cathode which emits electrons that are focused on a target at high velocity. The target is scanned from the rear by a low-velocity electron beam. The return beam modulation is amplified by an electron multiplier to form an overall light-sensitive device.

Orthicon Effect

(FV) One or more of several image orthicon impairments that have been referred to as “Orthicon Effect” such as follows: edge effect, meshbeat or Moiré, ghost, halo, burned in image.

Orthochromatic

(FP) Black-and-white film emulsions that are sensitive to blue and green light and not sensitive to red light. Before it was discontinued, Contrast Process Ortho film was used with a Yellow filter to photograph magenta color ninhydrin developed latent prints. The theory is that magenta is a mixture of red and blue light. Since the orthochromatic black and white film was not sensitive to red light, and only sensitive to blue and green light, either a yellow or green filter could be used with this film to darken the latent prints in the final photograph. A yellow filter with a filter factor of 1 was usually chosen over a green filter with a filter factor of 3½.

Orthogonal Projection

(FP) With orthogonal projection, parallel receding lines do not converge. The process of projecting from 3D to 2D is particularly simple, simply throw away the Z-value of each coordinate.

Orthogonal Sampling

(FV) Sampling of a line of repetitive video signal in such a way that samples in each line are in the same horizontal position.

Oscilloscope

(CER, FA, FV) This is an electronic device that produces a visual trace of an electrical signal or voltage level.

OUT Point

(FV) The end point of an edit, or a mark on a clip indicating a transition point. Also called a Mark OUT. See also IN Point, Mark IN/OUT.

Output

(FA, FP, FV) (narrow definition) The device or media on which an image can be viewed.
(broad definition) This can also refer to the physical connector or jack from which an audio, video, or image, signal, and or file can be transferred out of a hardware device into another hardware device.

Out-Of-Focus

(FP, FV) Refers to an image created when the rays of light passing through a lens fall upon a plane in front of or beyond the point at which they converge to form a sharp image. Out-of-focus images appear blurred or fuzzy.

Overdevelop

(FP) To give more than normal the amount of development.

Over-exposure

(FP) An expression used to indicate that the light sensitive material has been excessively exposed.

Overlay

(FP) (1.) A section of a program designed to reside on a designated storage device, such as a disk, and to be loaded into memory when needed, usually overwriting one or more overlays already in memory. Use of overlays allows large programs to fit into a limited amount of memory, but at the cost of speed. (2.) A printed form positioned over a screen, tablet, or keyboard for identification of particular features. (3.) In computer graphics, to superimpose one graphic image over another. (FV) In video, to superimpose a graphic image generated on a computer over video signals, either live or recorded.

Oversampling

(FA, FV) Sampling data at a higher rate than normal to obtain more accurate results or to make it easier to sample.

Overscan

(FV) A video monitor condition in which the raster extends slightly beyond the physical edges of the CRT screen, cutting off the outer edges of the picture.

Overshoot

(FV) The first maximum excursion of a pulse beyond the 100% level. That portion of a pulse that exceeds its defined level temporarily before settling to the correct level. Overshoot amplitude is expressed as a percentage of the defined level.

Oxidation

(FP) Loss of chemical activity due to contact with oxygen in the air.

Oxide (Magnetic Oxide)

(FA, FV) The magnetizable particle used in the manufacture of magnetic tape.

Oxide Buildup

(FA, FV) The accumulation of oxide or, more generally, wear products in the form of deposits on the surface of heads and guides.

Oxide Coating

(FA, FV) The magnetic material coated on base film.

Oxide Loading

(FA, FV) A measure of the density with which oxide is packed into a coating. It is usually specified in terms of the weight of oxide per unit volume of the coating.

Oxide Shed

(FA, FV) The loosening of particles of oxide from the tape coating during use.

P

Paintbrush

(FP) An artist's tool in a paint program or another graphics application for applying a streak of solid color to an image. The user can usually select the width of the streak.

Paint program

(FP) An application program that creates graphics as bit maps. A paint program, because it treats a drawing as a group of dots, is particularly appropriate for freehand drawing. Such a program commonly provides tools for images requiring lines, curves, and geometric shapes but does not treat any shape as an entity that can be moved or modified as a discrete object without losing its identity.

PAL

(FV) The TV standard used in the UK and much of Western Europe using 625 lines/50 fields.

Palette

(FP) 1. In paint programs, a collection of drawing tools, such as patterns, colors, brush shapes, and different line widths, from which the user can choose. It can also be a central location for user-selectable buttons, which you can map to various functions for ease of use.

PAL Format

(FV) A color television format having 625 scan lines (rows) of resolution at 25 frames per second (25 Hz).

Pan

(FV) Term used for a type of camera movement, to swing from left to right across a scene or vice versa.

Pan and Scan

(FV) A method of transferring movies with an aspect ratio of 16:9 to film, tape or disc to be shown on a conventional TV with a 4:3 aspect ratio. Only part of the full image is selected for each scene.

Pan and Tilt Head (P/T Head)

(FV) A motorized unit permitting vertical and horizontal positioning of a camera and lens combination.

Panchromatic (Pan)

(FP) Is a photographic emulsion sensitive to all the colors of the visible spectrum and to a certain amount of ultra-violet light. The sensitivity is not uniform throughout the spectrum.

Panning

(FP) A photography technique in which the camera follows a moving subject. Done correctly, the subject is sharp and clear, while the background is blurred, giving a sense of motion to the photo.

Panorama

(FP) A picture presenting a continuous view of the landscape, produced either by using a panoramic camera or from a composite of several images.

Panoramic Camera

Camera with a special type of scanning lens which rotates, or a static camera lens with an exceptionally wide field of view.

Pan Tilt Zoom (PTZ)

(FV) A device that can be remotely controlled to provide both vertical and horizontal movement for a camera, with zoom. This is common in more advanced CCTV systems in which this type of camera may be programmed to follow a preset path.

Pantone Matching System

(FP) In graphic arts and printing, a standard system of ink color specification consisting of a swatch book in which each of about 500 colors is assigned a number. Pantone also manufactures color matching software and hardware for the calibration of computer monitors and printers.

Pan Unit

(FV) A motorized unit permitting horizontal positioning of a camera.

Parallax

(FP) The difference in point of view that occurs when the lens (or other device) through which the eye views a scene is separate from the lens that exposes the film.

Parallax Error

(FP) This is a viewing error associated with optical viewing systems that do not use the lens used to take the photograph. It occurs when shooting very close up photographs. The photographer does not see an accurate indication of the subject's position relative to the lens, so parts of the subject that he or she thinks will be photographed are missing on the final photograph. This is because the optical viewfinder sees a slight viewpoint as compared to the viewpoint of the camera lens. This difference in viewpoint becomes greater as the photographer focuses on objects closer to the lens. Parallax error is overcome in more expensive compact and viewfinder cameras which adjust the viewfinder to compensate for the distance the subject is away from the camera. In the case of a twin-lens reflex camera, there are special tripod mounts used to shift the position of the taking lens into the exact position of the viewing lens prior to taking the photograph.

Parallel port

(CER) A port on the computer that is used by printers.

Parallel Video Processing

(FV) A mixing architecture where the outputs of several video multipliers are summed to create a composite effect.

Parameter

(FA, FP, FV) A variable which may be set within a set range of values.

Parental Level

(FV) A mechanism that allows control over what viewers may see depending on the settings in the DVD player, the parental code on a DVD and the structure of the material on the DVD. Some cable companies offer this same capability for controlling what can be viewed over cable television.

Parental Management

(FV) An optional feature of DVD-Video that prohibits programs from being viewed or substitutes different scenes within a program depending on the parental level set in the player. Some cable companies offer this same capability for controlling what can be viewed over cable television.

Parity

(CER) An extra bit appended to a character as an accuracy check when transmitting data.

Partition

(CER) This is a user defined section of electronic media. The most common used is a user defined logical section of a hard disk that can be formatted and assigned an individual drive letter.

Passive matrix display

(CER) An inexpensive, low-resolution liquid crystal display (LCD) made from a large array of liquid crystal cells that are controlled by transistors outside of the display screen. These displays are difficult to view from any angle other than straight on, unlike active matrix displays. However, computers with passive matrix displays are considerably cheaper than those with active matrix screens.

Paste

(FP) Placing a copy image (or other digital) element into an open file. In a windows based system, this usually refers to coping to the current active file, the last text or image copied to the windows clipboard.

Password Recovery

(CER) The process of locating and identifying a series of characters used to restrict access to data.

Patch

(CER) Any update to a computer application or operation system that is intended to fix a defect in the current application or operating system. (FA, FV) To connect the output of one device to the input of another device with a connecting cable.

Patch Panel (or Bay, Board, Rack)

(FA, FV) A manual method of routing signals using a panel of receptacles for sources and destinations and wire jumpers to interconnect them.

Pattern Noise

(FV) If there is a specific pattern being added to each image, either as a watermark, a lens flare, vignetting, or some other static source. It can sometimes be isolated by capturing a blank frame and then removed either by subtraction or division depending upon the type of image sensor. If the pattern is periodic, it can be isolated without requiring a blank frame.

Pattern recognition

(CER, FP, FV) A broad technology describing the ability of a computer to identify patterns. The term usually refers to computer recognition of visual images or sound patterns that have been converted to arrays of numbers. In forensic applications, the two most common applications are the Automated Fingerprint Identification Systems (AFIS), and the still experimental Facial Identification Systems.

PC card

(CER) This is a name for devices that were originally called PCMCIA cards.

PCD

(FP) This is an extension used in the IBM-PC environment to describe Kodak's Photo CD graphics file format. PC users also use .PCD as a file extension for Photo CD image files.

PC-Dos

(CER) This is IBM's version of MS-DOS and for all practical purposes is completely identical to MS-DOS.

PCI

(CER) This is an abbreviation for Peripheral Component Interface.)

PCI local bus

(CER) Personal Computer Interconnect is the faster successor to the VL bus and often will sit alongside an ISA slot on a motherboard. Until recently, PCI slots were limited to IBM and compatible machines. In their next generation of Power Macintosh computers, Apple Computer is abandoning their propriety NuBus slot architecture in favor of the PCI bus. If you can't beat 'em join 'em.

PCI Slot

(CER) Connection slot to a type of expansion bus found in most newer personal computers.

PCMCIA

(CER) This is an abbreviation for Personal Computer Memory Card International Association. It usually refers to a standard format for credit-card size expansion cards used to add storage capacity or peripherals such as modems to a computer.

PC Terminal

(FP) The socket on a camera or flash unit into which a PC connector (synch cord) is inserted.

.pcx

(FP) The file extension that identifies bitmapped images saved in a PC Paintbrush file format.

PDL

(FP) This is an abbreviation for page description language, e.g. PostScript. This is a set of computer instructions which relays to the output device information relating to the placement of images, text and other data.

.pdf

(CER) The file extension that identifies documents encoded in the Portable Document Format developed by Adobe Systems.

PDP (Plasma Display Panel)

(CER) It is a flat-screen technology that contains an inert ionized gas sandwiched between x- and y-axis panels. A pixel is selected by charging one x- and one y-wire, causing the gas in that vicinity to glow. Plasma displays were initially monochrome, typically orange, but color displays have become increasingly popular with models 40 inches diagonal and greater being used for computer displays, high-end home theater and digital TV.

Peak Boost

(FA, FV) A boost which is greater at the center frequency than either above or below it.

Peak Indicator

(FA) A visual indication of the highest level that an audio signal reaches.

Peak Magnetizing Field Strength

(FA, FV) The positive or negative limiting value of the magnetizing field strength. (Tektronix Glossary of Video Terms and Acronyms)

Peak-To-Peak (P-P)

(FA, FV) The amplitude (voltage) difference between the most positive and the most negative excursions (peaks) of an electrical signal.

Peak Value

(FA, FV) The maximum positive or negative instantaneous value of a waveform.

Peak White

(FV) The highest point in the video waveform that the video level can reach without clipping highlight details.

Peaking Equalization

(FA) Equalization which is greater at the center frequency than at either side of center.

Peak-Reading Meter

(FA) A type of Recording Level Meter that responds to short transient signals.

Peer/Technical Review

(CER, FA, FP, FV) (Quality Control Context) This is a scientific evaluation of the evidence examinations and conclusions reached by a qualified forensic scientist. This scientific evaluation is conducted by a second qualified forensic scientist. At a minimum this scientific evaluation should include a review of examinations performed, original evidence, reports, notes, data, conclusions, and any other relevant documents. This evaluation should be comprehensive enough so that the reviewer would be competent to testify in court in place of the forensic scientist who did the original examinations. If needed this procedure can include a re-examination of the original evidence and each agency should also have written procedures to resolve any disagreement in the findings or analysis of the evidence. (Professional Journal Context) Professional articles are submitted to the editor. These articles may or may not have been reviewed by others before submission. The first step in the peer review process is to send the article or research to the appropriate member or members of the editorial review board for a technical review. Some persons refer to this first step as a technical review. The members of an editorial review board are selected because they are subject matter experts within a specific forensic discipline. Anonymity is normally accomplished by removing all indications of the Author's identity and the author's affiliations on the copy of the article sent to the reviewer. Plus, the reviewer agrees not to utilize or disclose any information in the article until after the article is published. The author does not know the name of the author's peer who will be performing the review. The reviewer must begin by determining whether or not the article is within the reviewer's area of expertise. If not the article will be returned immediately to the Editor to be sent to the appropriate subject matter expert for review. If it is within the reviewer's area of expertise, the reviewer will review the article within guidelines established by the Editor. Next, if accepted for publication by the Editor after any necessary corrections, the second step is the actual publication in the relevant professional journal for the author's scientific discipline. The third step is the reading of the article in a professional journal by other persons qualified in that scientific discipline (peers). The fourth step is the opportunity for the publication of responses to the published article or research. If the author's peers find any disagreement their response is sent to the Editor of the Journal, who will publish the response if it appears valid. If no responses are received from the author's peers, no assumptions can be drawn about peer acceptance of the article or research from this lack of response. However, publication in a professional peer reviewed journal can be taken into consideration by a court as one of several factors in determining if a scientific procedure is new and novel or accepted by the relevant scientific community. The fifth step is acceptance by the author's peers as demonstrated by the author's peers implementing or embracing the technique, such as the implementation of new work strategies or citing the published work as a credible source.

Pedding

(FV) Raising or lowering the camera while the camera remains level and is the vertical equivalent of a horizontal dolly move.

Pedestal

1. In the video waveform, the signal level corresponding to black. Also called setup. 2. A pulse (usually with a flat peak) that elevates the base level of another waveform. (Dictionary by Grass Valley)

Pedestal Level

(FV) The voltage level equal to or below the black level that acts as a signal to turn off the scanning beam of a camera or monitor. It is also called blanking level.

Perceived Image Quality

(FP, FV) The evaluation obtained as a result of subjective judgment of a displayed image by a human observer.

Perceived Resolution

(FV) The apparent resolution of a display from the observer's subjective point of view, based on viewing distance, viewing conditions, and physical resolution of the display.

Periodic Noise

(FA, FV) Unlike Random Noise, this is a pattern that has a systematic period (1/frequency) so that it occurs at regular intervals. It is only noise in the sense that it is undesired. Rather, consider it a periodic pattern within an image that can sometimes be isolated or removed on the basis of that period.

Peripheral

(CER) Any hardware device connected externally to a computer that adds more functionality.

Peripheral Camera

(FP) This is a special camera and linked turntable used to photograph latent prints on cylindrical objects such as the side of cans and cigarettes to reproduce a photograph of the latent prints as if the latent print had been left on a flat surface. To take this type of photograph, the object is placed on the turntable and photographed through a slit with the film being moved in the camera by a gear or belt drive in sync with the movement of the object on the turntable.

Peripheral Photography

(FP) This refers to a specialized, non-destructive photographic technique used to record a flat image of a latent print just as if the cylindrical object had been flattened out before the latent print was photographed. This is also called rollout photography.

Permanent Elongation

(FA, FV) The percentage elongation remaining in a tape or length of base film after a given load, applied for a given time, has been removed and the specimen allowed to hang free, or lightly loaded, for a further period.

Persistence

(CER, FV) A characteristic of some light-emitting materials, such as the phosphors used in CRTs, that causes an image to be retained for a short while after being irradiated, as by an electron beam in a CRT.

Perspective

(FP, FV) The relationship of size and shape of three-dimensional objects represented in two-dimensional space that gives the perception of a third dimension in a two-dimensional image.

Phantom Power

(FA) Electricity provided by some broadcast and industrial/professional quality audio mixers and/or mic pre-amplifiers for use by condenser microphones instead of using an internal battery.

Phase

(FA, FP, FV) A fraction of a wave cycle measured from a fixed point on the wave.

Phase Adjust

(FV) The phase of the chroma information is adjusted relative to the color burst and affects the hue of the picture.

Phase Comparator

(FV) Circuit used in a phase locked loop to tell how closely the phase locked loop reference signal and the PLL output are in phase with each other. If the two signals are not in phase, the Phase Comparator generates an error signal that adjusts the PLL frequency output so that it is in phase with the reference signal.

Phase Distortion

A picture defect caused by unequal delay (phase shifting) of different frequency components within the signal as they pass through different impedance elements, such as filters, amplifiers, or ionospheric variations. This defect causes color fringing at the edges of the video image where the contrast changes abruptly.

Phase Error

(FV) A picture defect caused by the incorrect relative timing of a signal in relation to another signal.

Phase Inversion

(FV) The condition whereby the output of a circuit produces a wave of the same shape and frequency but 180 degrees out of phase with the input.

Phase Lock

(FV) The phase of a signal follows exactly the phase of a reference signal.

Phase Locked Loop (PLL)

(FV) A circuit containing an oscillator whose output phase or frequency locks onto and tracks the phase or frequency of a reference input signal. To produce the locked condition, the circuit detects any phase difference between the two signals and generates a correction voltage that is applied to the oscillator to adjust its phase or frequency.

Phase Shift

(FV) The movement of one signal's phase in relation to another signal.

Phasing

(FV) Adjusting the delay of a video signal to match a reference video signal.

Phase Shift

(FV) The movement in terms of the measurement of the phase of a signal in relation to the phase of another signal.

Photo CD

(FP) Kodak's proprietary system of recording film images onto a CD.

Photo-composition

(FP) (1.) This can refer to the selection of camera viewpoint so that the objects within a picture form a logical arrangement that emphasizes the main subject of the photograph. One example is the rule of thirds that suggests that the ideal placement of the subject is dictated by dividing the viewfinder into thirds, with the four intersections representing the ideal placement points for a subject. (2.) The traditional, film based method of combining different picture elements into a single, new image, generally using physical film masks and/or multiple exposures. The electronic techniques that replace it are selection, cut and paste, and the various paint tools for blending the edges between picture elements.

Photo Log

(FP) This is a written, typed, or electronic record of photographs taken at a crime scene. At a minimum this includes a negative or photograph number and a brief description of what was photographed.

Photoflood

(FP) An incandescent lamp that is designed to cover a relatively wide area for photography purposes and has a kelvin temperature of either 3200^o or 3400^o K.

Photogram

(FP) An image formed by placing non-photographic material directly onto a sheet of sensitized film or printing paper and then exposing the sheet to light.

Photogrammetry

(FP, FV) The art, science, and technology of obtaining reliable information about physical objects and the environment through the processes of recording, measuring, and interpreting photographic images and patterns of electromagnetic radiant energy and other phenomena. In forensic applications, this is the mathematically based scientific principles used to extract dimensional information from images, such as the height of subjects depicted in surveillance images and accident scene reconstruction.

Photogrammetric Analysis

(FP, FV) The process of obtaining dimensional information regarding objects and people depicted in an image.

Photographic Comparison

(FP) The process of comparing images of questioned objects or persons to known objects or persons or images thereof, and making an assessment of the correspondence between features in these images for rendering an opinion regarding identification or elimination. This is also referred to as image comparison. The two accepted forensic protocols are ACE-V and statistical analysis.

Photography

(FP) This term is derived from the Greek words Photos and Graphos, which literally translates as writing with light. The mix of art and science for the creation of images on a light sensitive surface or by electronic means, such as the use of a digital camera.

Photometry

(FP) The measurement of light values of objects in an image.

Photomicrograph

(FP) A photograph that is taken through a compound microscope.

Photomontage

(FP) A composite image made by cutting out and assembling parts of several photographs.

Photon

(FP) A particle of light energy.

Photoshop

(FP) This is an image editing software application.

Photosite

(FP) A small area on the surface of an image sensor that captures the brightness value for a single pixel in the image.

Physical Copy

(CER) An accurate reproduction of information contained on the physical device.

Physical Damage

(FV) Any mutilation of the magnetic tape which prevents proper head-to-tape contact and is therefore detrimental to the tape playback. These mutilations can include, but are not limited to, edge damage, wrinkles, cinches, and tape stretch.

Physical Hard drive

(CER) An individual device containing one or more inflexible platters coated with material in which data can be recorded magnetically, together with their read/write heads, the head-positioning mechanism, and the spindle motor in a sealed case that protects against outside contaminants. The protected environment allows the head to fly 10 to 25 millionths of an inch above the surface of a platter rotating typically at 7200 to 10,000 rpm.

Physical Image

(CER) A bitstream duplicate of data contained on a physical device.

PIC

(FP) This is a standard file format for animation files.

Pick-up device

(FP) (FV) A camera tube or solid state image-sensor that converts light on its target into an electrical signal.

.pict

(FP) This is a file extension that identifies graphic images in the Macintosh PICT file format.

PICT

(FP) A Macintosh file-format standard for encoding graphical images, both object-oriented and bitmapped.

Picture

(FP) A fair and accurate photographic representation of an original object, person, and or scene.

(FV) For progressive video and for interlaced video recorded at the frame level, this is an individual video frame. For interlaced video recorded at the field level, especially if a different camera is recorded on each field, this is a video field. In interlaced video, frame coding is preferred when a lot of details, but little motion is present, and field coding is best for fast movements. In interlaced video it is also important to realize that when the coded material originates from film, the two fields cover the exact same time, but when the source material comes from a video camera, the two fields relate to different moments in time.

Picture Element

(FV) The smallest area of a television picture capable of being delineated by an electric signal passed through the system or part thereof.

Picture Safe Area

(FV) This is the area of a video image signal which must be visible on a standard television set under normal operating conditions. It is also call the action safe area.

Picture Sharpness

(FV) This is a subjective evaluation of the relative ability to record fine details and is based on a combination of actual details and contrast of the video image.

Picture Signal

(FV) This is the part of a video signal which lies above the blanking level and that contains picture data. This is also called active video area.

Piezoelectric Microphone

(FA, FV) A microphone whose generating element is a crystal or ceramic element, which generates a voltage when bent or stressed by movement of the diaphragm.

Pigeons

(FV) Video noise observed on picture monitors as pulses or bursts of short duration, at a slow rate of occurrence. This is a type of impulse noise.

Pinch roller

(FA, FV) A rubber or neoprene wheel which presses the tape against the capstan during recording or play.

Pincushion distortion

(FP, FV) A lens aberration or defect that causes straight lines to bow inward toward the center of the image.

Pinhole

(FP) (1) a small clear spot on a negative usually caused by dust on the film during exposure or development or by a small air bubble that keeps developer from reaching the film during development. (2) The tiny opening in a pinhole camera that passes light to produce an image.

Pinhole Lens

(FV) A tiny fixed focal length lens, for viewing through a very small opening. It is used in covert surveillance situations. The lens normally has no focusing control but may offer a choice of iris functions.

Pink Noise

(FA) Pink noise can be created by passing white noise through a filter having a 3 dB/octave slope.

PIP (Picture In Picture)

(FV) A digital special effect in which one video image is inserted within another allowing two or more images to share a single screen. In consumer televisions this feature allows you to view a full screen image of one channel with audio, while inserting a smaller image from a second television channel.

Pitch Control

(FA) A circuit which permits the speed of a tape transport's motor to be varied slightly to raise and lower the musical pitch of the recording.

Pixel

(FP, FV) This stands for pixel element. It is the smallest building block used to form a digital image.

Pixel Aspect Ratio

(FP, FV) Computer pixels are normally square in shape, therefore they have an aspect ration of 1. Video pixels are normally rectangular in shape, with a height of 1 unit and a width of 0.9

units. Therefore they have an aspect ratio of 0.9. The practical impact is that if you create a title for full screen uncompressed analog NTSC video you would work with a file that is 720 pixels wide by 540 pixels high. The high of the final title would be resampled down to 486 pixels high for import into a digital non-linear editor. If you export an individual uncompressed video frame as a TIFF file at 720X486 pixels, for use in a computer image editing program, you would have to downsample the width from 720 to 648 pixels to convert from the video pixel aspect ratio to a square computer aspect ratio.

Pixel Depth

(FP) The number of bits of color information per pixel. A system using 24 bits per pixel can display over 16.7 million colors. Twenty-four-bit color is often called true color.

Pixel Drop Out

(FV) This is a common source of image artifacts that appear as black spots in the video image, either stationary or moving around. Several things can cause pixel drop out, such as the ADC not digitizing the video correctly or pixel timing being incorrect anywhere in the system.

Pixel Dropping

(FP) This is a subsampling technique used to reduce the number of pixels in an image by dropping every *n*th pixel from the image.

Pixelization

(FP) An effect seen when you enlarge a digital image too much and the individual pixels become visible. This can commonly be seen in the stair-stepped appearance of a curved or angled line in digital imaging. The smaller the pixels, and the greater their number, the less apparent the "pixelization" of the image.

Pixels Per Inch

(FP) See PPI.

Pixel Skipping

(FP) This is a means of reducing image resolution by simply deleting pixels throughout the image.

Pixographer

(FP, FV) A term coined by some would-be Lewis Carroll at a computer trade show to describe photographic artists who are taking George Lucas' quote ("As digital imaging comes into wider usage, we are gradually moving this medium (motion picture) away from a strict photographic interpretation of reality into one that is more painterly.") to heart by creating images that extend Ansel Adams concept of "previsualization" to the next level.

PJ

(FV) This is an abbreviation for Phase Jitter. This is a short term instability of the amplitude and/or phase of a signal. It is also called Jitter.

Plane Of Critical Focus

(FP) The part of a scene that is most sharply focused.

Plane Of Focus

(FP) The point inside a camera where all the light rays converge, forming a sharp image. In a camera, this corresponds to the film plane or the location of the imaging sensor.

Plate

(FP) In early photographic processes, this was the sheet of glass or metal on which the emulsion was coated.

Platform

(CER) This refers to the type of computer system that is used.

Platinum print

(FP) A photograph in which the final image is formed in platinum rather than silver.

Playback

(FA, FV) Recorded material viewed and heard as recorded.

Playback Demagnetization

(FA, FV) A gradual loss of magnetization and thus a degradation of recorded information caused by repeated playing of a recorded tape.

Playback Head

(FA, FV) This is a transducer which converts magnetic flux into electrical current as a previously recorded tape is moved over the transducer.

Playback Optimization

(FA, FV) The process of determining the most suitable equipment and settings for analyzing the output signal.

Plotter

(FP) Any device used to draw charts, diagrams, and other line-based graphics.

Plug-in

(FA, FP, FV) A software application intended to be used only within a larger application to perform a specific function, such as a scanner or filter plug-in for an image processing application. When installed, the plug-in becomes an item on one of the main application's menus.

Plumbicon

(FV) This is a thermionic vacuum tube developed by Philips, using a lead oxide photoconductive layer. It has been replaced in many devices by a CCD.

PMT

(FP) This is an abbreviation for photomultiplier tubes which are a type of imaging sensor used in drum scanners.

PNG

(FP) This is an abbreviation for Portable Network Graphics file format.

PNP

(CER) This is an abbreviation for Plug and Play. This refers to any peripheral device that is automatically recognized and configured by a PC compatible computer when the peripheral is connected to the computer.

Point Source

(FP) Light that emanates from a given point with equal intensity in all directions.

Polarization

(FP) The use of specific filters to control the orientation in which light waves travel. The most common uses are the reduction of glare and reflections, reveal stress patterns in transparent materials, and the saturation of colors.

Polarizing filter

(FP) A transparent piece of glass or plastic that allows only the light waves in one plane along the axis of propagation to pass through it.

Port

(CER) An electrical connection on the computer into which a cable can be plugged so the computer can communicate with another device.

Portrait mode

(FP) Turning the camera to take a vertically oriented photograph. When you format a document graphic, or image for printing, the shortest dimension is parallel to the top and the longest dimension is parallel to the sides.

Positive

(FP) A photograph or transparency in which the light and dark tones, or colors correspond to the tonal range of the original subject.

Posterize, Posterization

(FP) 1. A special effect in which the picture is reduced to a smaller number of colors or luminance levels removing any fine gradations of color and brightness resulting in color steps where there should be smooth graduations. This can also be an unintentional defect in a digital photograph that results from the processing of a digital photograph that lacks adequate headroom. (FV) A digital video effect where all possible colors are converted to a smaller number of colors, removing gradations and creating color steps.

Post Production

(FV) All production work done after the raw video footage and audio elements have been captured.

Postroll

(FV) To continue to roll videotape after the out-point during an edit preview. This is useful in viewing how well the edit was performed.

PostScript

(FP) A programming language created by Adobe Inc. that defines all of the shapes in a file as outlines and interprets these outlines by mathematical formulae call Bezier (Bez-e-ay) curves.

Power-On Diagnostics

(CER, FV) In computers this is called a power on self-test. This refers to any series of tests that automatically check hardware components of a system each time the system is turned on.

Power-on self test

(CER) A set of routines stored in a computer's read-only memory (ROM) that tests various system components such as RAM, the disk drives, and the keyboard to see if they are properly connected and operating. If problems are found, these routines alert the user by sounding a series of beeps or displaying a message, often accompanied by a diagnostic numeric value, to the standard output or standard error device (usually the screen). If the power-on self test is successful, it passes control to the system's bootstrap loader.

PPA

(FP) This is an abbreviation for the Professional Photographers of America. This is the largest professional photography organization in the United States. At one time, the Evidence Photography International Council (EPIC) was affiliated with this organization.

Ppi

(FP) This is an abbreviation for Pixels Per Inch. It is a measure of resolution for a bitmapped image.

Precision Transforms

(CER, FP) These are also called PTs. These are device profiles defined as software and are used in color management systems.

Pre-Equalization (Pre-Emphasis)

(FA, FV) To emphasize certain frequencies in a signal, usually before transmission, in order to improve the signal-to-noise ratio or to reduce distortion of the signal.

Preroll

(FV) A specific amount of time allowed for tape machines to run prior to an edit in order to get them up to speed and synchronized for the edit.

Presence

(FA) This is a subjective terms referring to how near the sound source seems to be with respect to the listener.

Preset Black

(FV) A transition mode in which one video signal is faded to the color black before the other video signal is faded up.

Presoak

(FP) To soak the film briefly in water prior to immersing it in developer. This is done in some processing situations to ensure that the film is wet and can rapidly and evenly absorb the developer.

Press camera

(FP) This is a portable handheld sheet film camera that was widely used by press photographers, until it was replaced by medium format and 35mm cameras. It is equipped with a viewfinder and a hand grip so it can be used without being mounted on a tripod. Almost all of these cameras have been replaced by digital cameras.

Preventive maintenance

(CER, FA, FP, FV) Routine servicing of hardware intended to keep equipment in good operating condition and to find and correct problems before they develop into severe malfunctions.

Preview Monitor

(FV) A video output device which displays the picture from a video source. It is used to evaluate a video source before selecting it.

Preview screen

(FP) A small LCD display screen on the back of a digital camera used to compose or look at photographs.

Primary Colors

(FP, FV) In the RGB color space, this refers to the colors of red, Green and blue.

Primary Image

(FP, FV) This refers to the first instance in which an image is recorded onto any media that is a separate, identifiable object. Examples include a digital image recorded on a flash card or a digital image downloaded from the Internet.

Print

(FP) A final hard copy of a photograph.

Printing

(FP) A process used to make one or a number of images on photographic or digital printing paper.

Printing frame

(FP) It is a holder designed to keep sensitized material, usually photographic paper, in direct contact with a negative during contact printing.

Print-Thru

(FA, FV) The effect of signals being magnetically impressed on adjacent portions of tape. This is the effect of magnetic induction and its cause can be excessive spooling or heat.

Print-to-Tape

(FV) Outputting a digital video file for recording onto a videotape.

Processed Image

(FP, FV) Any image that has undergone enhancement, restoration or other operation.

Processing

(CER, FA, FP, FV) This is any activity that transforms an input image and/or signal into an output image and/or signal.

Processing Amplifier (Proc Amp)

(FV) A device that can make other adjustments to the video signal and may include a time base corrector.

Processor

(CER, FA, FP, FV) A silicon chip containing millions of micro-switches, designed for performing specific functions in a computer or digital camera.

Production Aperture

(FV) This defines an active picture area produced by signal sources such as cameras, telecines, digital video tape recorders, and computer-generated pictures.

Production Switcher

(FA, FV) A device and/or software used to mix video and/or audio signals from two or more sources for dissolves, wipes, and other transition effects.

Proficiency Test

(CER, FA, FP, FV) A test to evaluate the competence of analysts, technical support personnel, and the quality performance of an agency.

Program

(CER) A list of coded instructions that makes the computer perform a specific task.

Programmed automatic

(FP) A mode of automatic exposure in which the camera sets both the shutter speed and the aperture to produce the correct exposure.

Progressive Scan

(FV) Display scan pattern where each line of the frame is scanned out sequentially.

Progressive Scanning

(FV) A display mode for electronic imaging in which all of the scanned lines are presented successively.

Projection printing

(FP) The process of projecting an image of a negative onto sensitized material, usually paper. The image may be projected to any size, usually larger than the negative.

Projector

(FP) This is an optical instrument for forming the enlarged image of a transparency or a motion picture on a screen.

PROM

(CER) This is an abbreviation for Programmable Read Only Memory.

Prompt

(CER) A cue to help the operator choose the next action.

Proof

(FP) A test print made for the purpose of evaluating density, contrast, color balance, and subject composition. It may also be used to refer to a contact print or contact proof sheet.

Proprietary File Format

(CER) Any file format that is unique to a specific manufacturer or product.

Protocol

(CER) A set of conventions governing the format and timing of message exchanges to control data movements and correct errors. (CER, FA, FP, FV) This can refer to the set of printed steps to be taken to process a specific category of evidence.

PTZ Camera

(FV) This refers to a Pan, tilt and zoom camera. In a CCTV system the camera may be captioned PTZ.

Pulling

(FP) The method of underrating the normal ISO speed of a film to produce an overexposed latent image.

Pull Processing

(FP) Decreasing the effective speed of film, often to compensate for a mistake in setting ISO. It is usually done by decreasing the development time or the temperature of the developer.

Pulse Edge

(FA, FV) The leading or trailing edge of a pulse is defined as the 50% point of the pulse rise or fall.

Pulse Fall Time

(FA, FV) The interval of time required for the edge of a pulse to fall from 90% to 10% of its peak amplitude.

Pulse Level

(FA, FV) The voltage amplitude of a pulse.

Pulse Regenerator

Device which accepts reference color black or another composite color video input and processes it to produce sync, blanking, and subcarrier reference pulses.

Pulse Rise Time

(FA, FV) The interval of time required for the leading edge of a pulse to rise from 10% to 90% of its peak amplitude.

Pulse Width

(FA, FV) The interval measured between the 50% amplitude points of the leading and trailing edges.

Push

(FP) To expose film at a higher film speed rating than the normal, and then to compensate in part for the resulting underexposure by giving greater development than normal.

Pushing

(FP) To expose film at a higher film speed rating than the normal, and then to compensate in part for the resulting underexposure by giving greater development than normal.

Push Processing

(FP) Extending development time, usually to compensate for underexposure caused by a film being upgraded to permit a faster shutter than the light allows.

Q

Quality Assurance

(CER, FA, FP, FV) A system of procedures carried out to ensure that a product or a system is working normally for its intended use. It is also called quality control.

Quality Control

(CER, FA, FP, FV) A system of procedures carried out to ensure that a product or a system is working normally for its intended use. It is also called quality assurance.

Quantitative Image Analysis

(FP, FV) The process used to extract measurable data from an image.

Quantizing Error

(FP, FV) Inaccuracies in the digital representation of an analog signal. These errors occur because of limitations in the resolution of the digitizing process.

Quantization Noise

(FP, FV) Inaccurate digital representations of an analog signal that occurs during the analog-to-digital signal processing. Typically, the digital interpretation of video resolution is limited through the digital sampling of the analog video input signal.

Quantization

(FA, FV) The process of sampling an analog waveform to convert its voltage levels into digital data.

Quantum

(FP) The smallest indivisible unit of radiant energy.

Questioned Image

(FP, FV) This is a photograph or video recording of an object that is to be compared with known objects to determine if any of the known objects is the object depicted in the questioned photograph or video recording.

QuickDraw

(FP) System software that controls color graphics in a Macintosh computer.

QuickTime

(FV) QuickTime is a software application and a video/audio file format from Apple. QuickTime files have the file extension “.mov”.

QuickTime for Windows

(FV) Apple’s multimedia playback application for the Microsoft’ Windows operating system.

QXGA

(CER) This refers to a video graphics resolution of 2048 x 1536.

QWERTY Keyboard

(CER) A keyboard layout named for the six leftmost characters in the top row of alphabetic characters on most keyboards. This is the standard layout of most typewriters and computer keyboards.

R

Rack

(FA, FV) This refers to a standard sized cabinet designed for holding equipment in an efficient manner. In video, a standard equipment rack is 19 inches (48.26 cm) wide at the front.

Rack Unit (RU)

(FA, FV) This is a unit of measure of vertical space in an equipment rack. One rack unit is equal to 1.75 inches (4.45 cm).

RAID

(CER, FV) This is an abbreviation for Redundant Array of Independent Disks. It is the combining of Multiple hard drives as a group to improve performance, Cost, and/or data integrity.

RAID 0

(CER, FV) This technique has striping but no redundancy of data. It offers the best performance but no fault-tolerance.

RAID 1

(CER, FV) This type is also known as disk mirroring and consists of at least two drives that duplicate the storage of data. There is no striping. Read performance is improved since either disk can be read at the same time. Write performance is the same as for single disk storage. This provides the best performance and the best fault-tolerance in a multi-user system.

RAID 2

(CER, FV) This type uses striping across disks with some disks storing error checking and correcting information. It has no advantage over RAID-3.

RAID 3

(CER, FV) This type uses striping and dedicates one drive to storing parity information. The embedded error checking (ECC) information is used to detect errors. Data recovery is accomplished by calculating the exclusive OR (XOR) of the information recorded on the other drives. Since an I/O operation addresses all drives at the same time, RAID-3 cannot overlap I/O. For this reason, RAID-3 is best for single-user systems with long record applications.

RAID 4

(CER, FV) This type uses large stripes, which means you can read records from any single drive. This allows you to take advantage of overlapped I/O for read operations. Since all write operations have to update the parity drive, no I/O overlapping is possible when writing data. RAID-4 offers no advantage over RAID-5.

RAID 5

(CER, FV) This type includes a rotating parity array, thus addressing the write limitation in RAID-4. Thus, all read and write operations can be overlapped. RAID-5 stores parity information but not redundant data (but parity information can be used to reconstruct data).

RAID-5 requires at least three and usually five disks for the array. It's best for multi-user systems in which performance is not critical or which do few write operations.

RAM

(CER) This is an abbreviation for random access memory. This is generally understood to refer to volatile memory that can be written to as well as read. This is different from virtual memory in which a part of a hard disk is used to emulate RAM.

RAM Disk

(CER) This is an abbreviation for random access memory disk. A simulated disk drive whose data is actually stored in RAM memory. A special program allows the operating system to read from and write to the simulated device as if it were a disk drive. RAM disks are extremely fast, but they require that system memory be given up for their use.

Ramp

(FV) A video test signal that graduates from low luminance to high luminance and is used to measure luminance linearity.

Random Noise

(FP, FV) (1.) This is unpatterned noise. There are many kinds of randomness such as: Gaussian, Poisson, and 1/Brightness. They are derived from a number of sources such as: counting statistics, thermal sources, leakage within a camera or transmitting wire, and optics. The primary characteristic of this noise is that it is considered random. Successive frames of the same field of view will have different values, but the average over time will approach a "true" value. (2.) This is also called thermal noise. It is a transmission or recording impairment that manifests itself as snow in a picture and hiss in sound.

Rangefinder

(FP) This is an optical focusing device included on some cameras. To focus the camera you adjust the focus of the lens until the two images of the subject overlap each other.

Raster

(FV) This is a predetermined pattern of scanning the screen of a CRT which forms the illuminated video image.

Raster Display

(FV) A video monitor (typically a CRT) that displays an image on the screen as a series of horizontal scan lines from top to bottom.

Raster Graphics

(FP) A method of generating graphics that treats an image as a collection of small, independently controlled pixels arranged in rows and columns. This is also called Bitmapped Graphics.

Raster Image Processor

(FP, FV) A device, consisting of hardware and software, that converts vector graphics or text into a raster or bitmapped image. This is also called a RIP.

Rasterization

(FP) The conversion of vector graphics to equivalent images composed of pixel patterns that can be stored and manipulated as sets of bits.

Raster streak

(FP) A dark streak in photographs of television-screen or computer-monitor images, caused by using too fast a shutter speed.

Rate Conversion

(FA, FV) The process of converting from one digital sample rate to another. It is often used incorrectly to indicate both resampling of digital rates and encoding/decoding.

Raw Data or Raw File Format

(FP) The data as it comes directly off the CCD which is encoded into a camera specific file format for storage with no other in-camera processing is performed. The disadvantage is that a Raw File has to be processed into a standard graphics file format such as TIFF or JPEG. This adds one more step in the image processing work flow. The advantage is that in the conversion to a standard file format you have a wide range of adjustments to include fine tuning of the white balance and exposure adjustments. Adobe is promoting an open RAW file format called Adobe Digital Negative to overcome the limitations of proprietary RAW file formats.

Ray Tracing

(FP) A sophisticated and complex method of producing high-quality computer graphics. Ray tracing calculates the color and intensity of each pixel in an image by tracing single rays of light backward and determining how they were affected on their way from a defined source of light illuminating the objects in the image. Ray tracing is demanding in terms of processing capability because the computer must account for reflection, refraction, and absorption of individual rays, as well as for the brightness, transparency level, and reflectivity of each object and the positions of the viewer and the light source.

RCA Connector

(FA, FV) A connector used for attaching audio and video devices.

Read-Only

(CER) Capable of being retrieved (read) but not changed (written). A read-only file or document can be displayed or printed but not altered in any way; read-only memory (ROM) holds programs that cannot be changed; a read-only storage medium, such as CD-ROM, can be played back but cannot be used for recording information. Compare read/write.

Read-Only Attribute

(CER) In Windows and OS/2, this is a file attribute that indicates whether or not a file may be changed or erased. When the read-only attribute is off, the file can be modified or deleted. When it is on, the file can only be displayed.

Read out register

(FP, FV) The part of a CCD image sensor that reads the charges built up during an exposure.

Real Audio

(CER, FA, FV) A proprietary software application that streams prerecorded or live audio and/or video to a client, such as a Web browser, by decompressing it on the fly so that it can be played back in the Web browser user in real time. Many radio stations now broadcast on the Internet using Real Audio.

Real-Time

(CER, FA, FV) Real-time operations are those in which the machine's activities match the human perception of time or those in which computer operations proceed at the same rate as a physical or external process. A transmission that occurs right away, without any perceptible delay. Very important in video conferencing, as much delay will make the system very unusable. When duplicating an audio or video recording this refers to any duplication process in which the original is played at its normal playback speed and the duplicate is recorded within this same time period. This is the recommended method for evidence duplication because it provides a higher quality duplicate as compared to high speed duplicators. Therefore high speed duplicators are not recommended for evidence duplication.

Real-Time Animation

(FV) Computer animation in which images are computed and updated on the screen at the same rate at which the objects simulated might move in the real world. Real-time animation allows dynamic involvement by the user because the computer can accept and incorporate keystrokes or controller movements as it is drawing the next image in the animation sequence.

Real-Time Multilayering

(FV) The ability to assemble several layers of video in real time.

Rear nodal points

(FP, FV) The point in a lens from which the lens focal length (distance from lens to image plane) is measured.

Reciprocity Failure

(FP) Films are designed to be exposed within a limited but practical brightness range. Reciprocity failure occurs when a film is exposed under conditions that are not within its design range. As a result of reciprocity failure, color balance will shift and colors will seem less natural looking. In terms of overall exposure, reciprocity failure refers to how much you have to increase the exposure to compensate for nonlinear sensitivity to light when exposed outside the brightness range for which the film was designed.

Reciprocity Law

(FP) The theoretical relationship between length of exposure and intensity of light, stating that an increase in one will be balanced by a decrease in the other. For example, doubling the light intensity should be balanced exactly by halving the exposure time. In fact, the law does not hold

true for very long or very short exposures. This reciprocity failure or reciprocity effect causes underexposure unless the exposure is increased. It also causes color shifts in color materials.

Reconstruction

(CER, FA, FP, FV) The process of repairing damaged media in order to allow the retrieval of data.

Recorded Luminance Range

(FP, FV) This is the span of brightness values that have been recorded. This usually represents a part of the brightness values present in the original scene.

Rectangular Pixel

(FV) This is a picture element that has different vertical and horizontal sample spacing. Rectangular pixels are usually used by video equipment.

Recycle time

(FP, FV) The time it takes to process and store a captured image.

Redaction

(FA, FP, FV) This is the intentional removal of information that is usually done under the order of a court, usually because the removed information has been determined by the court to be inadmissible as evidence. Redactions can be video, audio, or image based. The remainder of the information is left without any further modification.

Red eye

(FP) The appearance of deep red dots in the eyes of human and animal photographic subjects. Redeye is caused by the flash reflecting off the retina in their eyes. It can be prevented by adjusting the camera angle, being sure the subject does not look straight at the flash, or with a redevye-reducing pre-flash. The pre-flash causes the subjects' pupils to contract, reducing the visible retina and thus the possibility of light reflecting from it.

Red-Eye Reduction Mode

(FP) A special flash mode whereby a pre-flash or a series of low-powered flashes are emitted before the main flash goes off to expose the picture. This causes the pupil in the human eye to close and helps eliminate red-eye.

Reducing agent

(FP) The active ingredient in a developer. It changes exposed silver halide crystals into dark metallic silver. It is also called the developing agent.

Reduction

(FP) (1.) This is a photograph that is smaller than the size of the negative or smaller than 1X.
(2.) A process that decreases the amount of dark silver in a developed image. Negatives are usually reduced to decrease density. Prints are reduced locally (only in certain parts) to brighten highlights.

Reel

(FP) A metal or plastic reel with spiral grooves into which roll film is loaded for development.

Reference Materials

(CER, FA, FP, FV) Refers to items such as published literature, hardware and software documentation, hash sets, header sets, etc.

Reference Monitor

(FV) This is a reference monitor used for making decisions on image quality.

Reference Tape

(FV) A tape used as a standard against which the performances of other tapes are compared. The use of a reference tape is necessary in specifying most performance characteristics because of the difficulty of expressing these characteristics in absolute terms.

Reference Video

(FV) (1.) Video signal which is used to synchronize different pieces of video equipment by providing a common timing signal. It is generated from a single source and distributed. (2.) A composite video signal used to compare all other video signals to for timing purposes.

Reflected-light meter

A device that measures the amount of light reflected or emitted by a subject.

Reflected Light Reading

(FP) It is a measurement by a light meter of the amount of light reflected from a subject.

Reflection

(FP, FV) Occurs when rays of light strike a surface and bounce back again. Specular reflection occurs on even, polished surfaces; diffuse reflection occurs on uneven surfaces, when reflected light scatters.

Reflections

(FP, FV) Rays of light which strike a surface and bounce back again. Specular reflection occurs on even, polished surfaces; diffuse reflection occurs on uneven surfaces, when light scatters.

Reflective liquid-crystal display

(CER) A liquid crystal display that is not equipped with edge or back lighting to enhance readability but instead depends on reflecting ambient light, making it difficult to read in brightly lit environments such as the outdoors.

Reflector

(FP, FV) Any material or surface that reflects light . Reflectors are often used in photography to soften the effect of the main light or to bounce illumination into the shadows.

Reflex

(FP) A single lens reflex camera is one that utilizes a mirror system to reflect the light, and therefore the image, coming through the taking lens, to a visible screen. The image seen in the camera's viewfinder then is the same image entering the taking lens. This system provides the most accurate framing and focusing. The single lens reflex system avoids the parallax problem that plagues most direct view cameras. A twin lens reflex camera is one that utilizes a mirror system to reflect the light, and therefore the image, coming through a lens mounted above the taking lens. A twin lens reflex camera does have a parallax problem when taking close-up photographs.

Reflex camera

(FP) A single lens reflex camera is one that utilizes a mirror system to reflect the light, and therefore the image, coming through the taking lens, to a visible screen. The image seen in the camera's viewfinder then is the same image entering the taking lens. This system provides the most accurate framing and focusing. The single lens reflex system avoids the parallax problem that plagues most direct view cameras. A twin lens reflex camera is one that utilizes a mirror system to reflect the light, and therefore the image, coming through a lens mounted above the taking lens. A twin lens reflex camera does have a parallax problem when taking close-up photographs.

Reflex Lens

(FP) This is an alternative term for mirror lens.

Refraction

(FP, FV) The bending of light as it passes through areas of different density, such as from air through ice crystals or through a camera lens.

Refractive Index

(FP, FV) Is a numerical value indicating the light bending power of a medium such as glass. The greater the bending power, the greater the refractive index.

Refresh Rate

(CER, FV) This measures, in Hz (Hertz), how often an image is redrawn on your screen. If the refresh rate is too slow, you get flicker. (FV) The frequency, usually measured in seconds or images per second, at which a multi-camera CCTV surveillance system will capture and/or record a new image from any given camera. Until the camera is refreshed, the CCTV system will typically playback the last recorded image.

Region Coding

(CER, FV) Encoding of a geographic region code on DVD's used as an anti-piracy measure. Unless, you have a region free DVD player, you can only play commercial movie DVD's encode for the same geographic region as your DVD player.

Region of Interest

(FV) The part of an image that the user identifies as the target for a motion tracking operation.

Regional Code

(FV) A code identifying one of the world regions for restricting DVD-Video playback for anti-piracy purposes.

Regional Management

(FV) A mandatory feature of DVD-Video to restrict the playback of a disc to a specific geographical region. Each player and DVD-ROM drive includes a single regional code, and each disc side can specify in which regions it is allowed to be played. Regional coding is optional—a disc without regional codes will play in all players in all regions. Little known are the region free DVD players intended only for international travellers.

Registration Marks

(FP) Small crosshair on film used to align individual layers of film negatives.

Reliability

(CER, FA, FP, FV) The extent to which information can be depended upon.

Removable Media

(CER, FP) Storage media that can be removed from the camera and/or computer.

Rendering

(FP, FV) The process of drawing the graphical database, making it visible, is called rendering. There are many ways to render the same database; as a “wireframe”, as a wireframe with “hidden” lines removed, or as a solid with various types of “shading”. (FV) This is the process by which the video editing software and hardware convert the raw video, effects, transitions and filters into a new continuous video file. (Video Terms and Acronyms) The process of performing the calculations necessary to create a 2-D image from a 3-D model.

Replenisher

(FP) A substance added to some types of developers after use to replace exhausted chemicals so that the developer can be used again.

Replication

(FP) A form of image re-sampling where the exact colors of neighboring pixels are copied. (FA, FP, FV) To reproduce an exact copy of a photograph, audio recording, or video recording.

Report

(FV) (minority viewpoint in all other forensic disciplines) This is the final step in ACE-VR and basically adds report writing as a final step to the ACE-V protocol.

Reproducibility

(CER, FA, FP, FV) The extent to which a process yields the same results on repeated processing.

Res

(FP) A term used in place of ppi to define image resolution. Res 12 equals 12 pixels per millimeter.

Re-sampling

(FP) Changing the resolution of an image either by removing pixels (lowering resolution) or adding them by interpolation (increasing resolution).

Residue

(CER) Data that is contained in unallocated space or file slack. (FA) The residue of a filtered signal is the algebraic difference between the filter output and its signal input.

Resin-coated paper

(FP) Printing paper with a water-resistant coating that absorbs less moisture than uncoated paper, consequently reducing some processing times.

Resizing

(FP) Changing the size of an image without altering the resolution. Increasing the size will lead to a decrease in image quality.

Resolution

(FP, FV) (1.) (spatial) The capability of a photographic or video reproduction to record two separate but adjacent parts such as elements of detail in an image. In still photography resolution is commonly measured in line pairs for film and pixels per inch for digital files. (2.) (spatial) The ability of a recording system to record and reproduce fine detail. In digital imaging, the resolution of the final image depends upon the resolution of the image capture device (camera, scanner, etc), any change made during image processing by computer, and the resolution of the output device. The term 'image resolution' refers to the number of pixels within an image, and is measured in pixels per inch. Printers resolutions are usually give as dots per inch, e.g. 300 dpi. CRT resolution are usually give as number of pixels per scan line, and the number of scan lines, e.g. 640 x 480 (NTSC), 768 x 512 (PAL). (2.) (brightness) This refers to the number of bits of stored information per pixel. A pixel with 1 bit of information has only two possible values, white or black. A pixel with a bit depth of 8 has a possible 2^8 , or 256 values, whilst a pixel with a bit depth of 24 has a possible 2^{23} , or over 16 million possible values. (FA) The minimum amplitude increment into which the analog to digital converter of a discrete time system can divide an audio signal. Video resolution is given as lines per picture height, e.g. 625 lines.

Resolution Independent

(FP, FV) A term to describe equipment that can work in more than one resolution. Dedicated TV equipment is usually designed to operate at a single resolution. By their nature, computers can handle files of any size, so when applied to imaging, they are termed resolution independent.

Resolving power

(FP) The ability of an imaging system to record fine detail, usually measured by its ability to maintain separation between close subject elements such as fine lines which are usually stated as 'line pairs per millimeter'.

Restoration

(CER) The process of restoring data from an image. (FP) The process of reversing damage done to an image due to a known cause (such as defocus or motion blur) so that the effects of the damage can be removed or reduced.

Reticulation

(FP) The formation of a coarse, crackled surface on the emulsion coating of a film during improper processing. If some process solution is too hot or too alkaline, it may cause excessive swelling of the gelatin which may fail to dry down as a smooth homogeneous layer.

Retrace

(FV) The return of the electron beam in a CRT to the starting point after scanning. During retrace, the beam is typically turned off. All of the sync information is placed in this "invisible" portion of the video signal. May refer to retrace after each horizontal line or after each vertical scan (field).

Return Loss

(FV) A measure of the accuracy of the impedance match between a signal source (such as a cable) and its terminating load. An unequal impedance match causes some of the power from the source to be reflected back to the source, resulting in signal distortion. The ratio of the signal voltage at the load to that voltage reflected back to the source is defined as the return loss. This ratio is generally expressed in decibels (dB).

Reversal

(FP) A process for making a positive image directly from film exposed in the camera. It can also refer to making a negative image directly from a negative or a positive image from a positive transparency. In forensic photography this can refer to the process of reversing the tones in a photograph of a latent lift where latent print was developed with white fingerprint powder and lifted with a black opaque lifter. This results in black ridge details on a light toned background that some examiners find easier to compare with a record inked fingerprint card.

Reversal film

(FP) Film that produces a positive image (a transparency) on exposure and development.

Reversal Process

(FP) Any photographic process in which an image is produced by secondary development of the silver halide grains that remain after the latent image has been changed to silver by primary development and destroyed by a chemical bleach. In the case of film exposed in a camera, the first developer changes the latent image to a negative silver image. This is destroyed by a bleach and the remaining silver halide is converted to a positive image by a second developer. The bleached silver and any traces of halide may now be removed with hypo. In forensic photography this can refer to the process of reversing the tones in a photograph of a latent lift where latent print was developed with white fingerprint powder and lifted with a black opaque lifter. This results in black ridge details on a light toned background that some examiners find easier to compare with a record inked fingerprint card.

Reverse Projection Photogrammetry

(FP, FV) This is a scientific examination performed to determine the height of a person or size of an object recorded on film, by a digital still camera, and/or a CCTV video surveillance system. First, using the image or video recording of the person or object in question, verify that the camera to be used for the examination has the same field of view and view point as the camera used to record the person or object in question. Known recordings are then made of a measuring device and a known person. The known person is used to determine margin of error and the measuring device is superimposed on an image of the unknown person to determine height from the bottom of the footwear to the top of head, hair, or hat. Some examiners will videotape three known persons and move the measuring device next to an object of known height as additional known values. The three known persons would be selected so that 1 is shorter than, 1 is about the same height as, and one is taller than the height of the unknown person. A similar procedure is used for physical objects, such as a sawed off shotgun.

RGB

(FP, FV) This is an abbreviation for red, green, and blue. It is an additive color space model for describing colors that are produced by emitting light, as on a video monitor, rather than by absorbing it, as with ink on paper.

R, G, B Color Space

(FP, FV) An additive color space with colorimetric coordinates based on red, green, and blue stimuli or primaries. Color values are negative in certain areas outside the gamut defined by the R, G, B primary colors. The R, G, B values used are intensities.

RGB monitor

(CER, FP, FV) A color monitor that receives its signals for red, green, and blue levels over separate lines. An RGB monitor generally produces sharper and cleaner images than those produced by a composite monitor, which receives levels for all three colors over a single line.

Ribbon Mike

(FA, FV) A mike which uses a thin metal foil ribbon which moves in a fixed magnetic field in response to sound waves and thus generates an output for the mike.

RIFF

(FP) This is an abbreviation for raster image file format. An image file format for grayscale images. It has the chief advantage of offering significant disc space savings by using data compression techniques.

Rimlighting

(FP, FV) Lighting in which the subject appears outlined by light against a dark background. Usually the light source is above and behind the subject, but rimlit photographs can look quite different from conventional backlit images, in which the background is usually bright.

Ring Flash

(FP) A circular-shaped electronic flash unit that fits around a lens and provides shadowless, uniform frontal lighting, which is especially useful in close-up photography.

Ringling

(FV) A common filter artifact, manifesting itself in television pictures as ghost-like images with sharp edges.

Ring Light

(FP) A circular lamp or bundles of optical fibers arranged around the perimeter of an objective lens and provides shadowless, uniform frontal lighting, which is especially useful in close-up photography.

RIP

(FP) This is an abbreviation for raster image processor. A device which converts a page description language (PDL) such as PostScript into the raster form necessary for output by an imagesetter, film recorder or printer.

RISC

(CER) This is an abbreviation for reduced Instruction Set computing. RISC chips, like the PowerPC, are programmed with fewer, simpler instructions and since they break each operation down into small, simpler steps, it can perform these operations faster.

Rise Time

(FA, FV) Time required for a pulse edge to rise from 10% to 90% of the final value.

Roll film

(FP) Film that comes in a roll, protected from light by a length of paper wound around the film. Loosely applies to any film package in a roll rather than in flat sheets.

Rollout Photography

(FP) This refers to a specialized, non-destructive photographic technique used to record a flat image of designs and/or artworks on the sides of cylindrical objects such as vases that visually appear as if the cylindrical object had been flattened out before the designs and/or artworks were photographed.

Routing Switcher

(FA, FV) A device and/or software used to direct the path of one or more signals into one or more devices.

RMS

(FA, FV) This is an abbreviation for root mean square. A measure of effective (as opposed to peak) voltage of an AC waveform. For a sine wave it is 0.707 times the peak voltage. For any periodic waveform, it is the square root of the average of the squares of the values through one cycle. This is considered to be equal to the value of continuous (direct current) signal that would produce the same power as the wave in question.

RMS Value

(FA, FV) This is the effective value of a wave. This is an abbreviation for root mean square. A measure of effective (as opposed to peak) voltage of an AC waveform. For a sine wave it is

0.707 times the peak voltage. For any periodic waveform, it is the square root of the average of the squares of the values through one cycle. This is considered to be equal to the value of continuous (direct current) signal that would produce the same power as the wave in question.

Roll

(FV) (1.) To start playing a videotape. (2.) To scroll credits or graphics vertically up or down the screen. (3.) A lack of vertical synchronization which causes the picture as observed on the picture monitor to move upward or downward.

Roll film

(FP) Film that comes in a roll, protected from light by a length of paper wound around the film. This is also sometimes used to refer any film package in a roll rather than in flat sheets.

Rolloff (Slope)

(FA, FV) A gradual decrease in signal voltage, usually associated with an increase in frequency.

Rollout Photography

(FP) This refers to a specialized, non-destructive photographic technique used to record a flat image of a latent print just as if the cylindrical object had been flattened out before the latent print was photographed. This is also called peripheral photography.

ROM

(CER) This is an abbreviation for read only memory. It is a memory device that is programmed only once with a permanent program or data that cannot be erased.

Rotation

(FV) (1.) In digital picture manipulators this refers to turning an image on one of its axes. (2.) In video switchers this refers to turning a wipe pattern around a point on the picture surface.

Rough Cut

(FV) In editing this is a preliminary version of the edit decision list.

RS-170

(FV) The Electronics Industries Association standard for the combination of signals required to form an NTSC monochrome (black and white) video.

RS-170A

(FV) The Electronics Industries Association standard for the combination of signals required to form NTSC color video. It has the same base as RS170, with the addition of color information. It is now called EIA-170A.

RSC

(FP) The device-independent reference color space used by color management systems to establish the characteristics of a particular color device.

RTF (Rich Text File)

(CER) A standard method of encoding text and graphics using only 7-bit ASCII characters. The format includes font sizes, type faces, and styles as well as paragraph alignment, justification, and tab control.

Rubber-stamp

(FP) A paint tool in a image-editing program that is used to clone one selected area of the picture onto another. It allows painting with a texture rather than a single tone/colour, and is particularly useful for extending complex textures such as vegetation, stone, brickwork, and so on.

S

Sabattaier effect

(FP) A partial reversal of tones that occurs when film or paper is reexposed to light during development. This is also called solarization.

Safe Action Aperture

(FV) As defined by a test pattern, a safe action aperture indicates the safe action image area within which all significant action must take place to ensure visibility of the information on the majority of home television receivers which are overscanned. This amounts to about 90% of the total picture area. It is symmetrically located inside of the picture border.

Safe Action Area

(FV) This amounts to about 90% of the total picture area. It is symmetrically located inside of the picture border. Home sets are overscanned. The safe action area is designated as the area of the picture that is “safe” to put action that the viewer needs to see.

Safe Area

(FV) This allows the material positioning of video images to be checked. Both safe title and safe action boundaries are included. It is symmetrically located inside of the picture border. Home sets are overscanned. The safe action area is designated as the area of the picture that is “safe” to put action that the viewer needs to see. The safe title area is designated as the area of the picture that is “safe” to put text that the viewer needs to see. The safe title area amounts to about 80% of the total active picture area, while the same picture area amounts to about 90% of the total active picture area.

Safe Color Limiting

(FV) The process of adjusting color values in a finished program so that they meet broadcast standards for luminance, composite signal or RGB gamut.

Safelight

(FP) A special darkroom lamp whose light is of color and intensity that will not affect light-sensitive photographic material within certain limits.

Safe Title Area

(FV) In general it is the center 80% of the entire active video image area which will display legible titles regardless of how a TV monitor is adjusted.

Safety Film

(FP) A photographic film whose base is fire-resistant or slow burning.

Sampling

(FP) In statistics, this is the gathering of data from a representative subset of a larger group, called a population, for the purpose of being about to generalize the findings to the larger group. There are many statistical procedures for estimating how accurately a given sample reflects the behavior of a group as a whole. (FA, FV) 2. The conversion of analog signals to a digital

format; samples are taken at periodic intervals to measure and record some parameter, such as a signal from a temperature sensor or a microphone. Analog-to-digital converters are used in computers to sample analog signals as voltages and convert them to the binary form a computer can process. The two primary characteristics of this type of sampling are the sampling rate (usually expressed in samples per second) and the sampling precision (expressed in bits; 8-bit samples, for instance, can measure an input voltage accurate to 1/256 of the measured range).

Sampling Frequency

(FA, FV) The number of discrete sample measurements made in a given period of time. This is often expressed in megahertz for video.

Sampling Rate

(FA, FV) The frequency with which samples of a physical variable, such as sound, are taken. The higher the sampling rate (that is, the more samples taken per unit of time), the more closely the digitized result resembles the original.

Saturated color

(FP, FV) A pure color hue, undiluted by other colors.

Saturation

(FA, FV) (1.) In a switching device or amplifier, this is the operating condition under which the device is passing the maximum possible current. (FP, FV) In color graphics, color photography and color video, this refers to the amount of a color in a specified hue, often specified as a percentage. (FV) In video signal terms, saturation is determined by the ratio between luminance level and chrominance amplitude. It should be noted that a vectorscope does not display saturation: the length of the vectors represents chrominance amplitude. In order to verify that the saturation of the colors in a color bar signal is correct, you must check luminance amplitudes with a waveform monitor in addition to observing the vectors.

Saturation Flux Density, BS

(FA, FV) The maximum intrinsic flux density possible in a sample of magnetic material.

Saturation Noise

(FA, FV) The noise arising when reproducing a uniformly saturated tape. This is often some 15 dB higher than the bulk erased noise and is associated with imperfect particle dispersion.

Scale

(FP, FV) A horizontal or vertical line on a graph that shows minimum, maximum, and interval values for the data plotted or displayed. (FP) 1. To enlarge or reduce a graphic display or photograph. In forensic applications, this most commonly refers to printing a latent print at 1X, or life size, for examination or input into an AFIS system.

Scaling

(FP) The actions taken to change the image size relative to the size of the original object or relative to a standard format size such as an 8"X10" photograph.

Scan

(CER, FV) In television and computer display technologies this refers to moving an electron beam across the inner surface of the screen, one line at a time, to light the phosphors that create a displayed image. (FP) To move a light-sensitive electronic device across an image-bearing surface, such as a page of text or photographic negative, to convert the image into binary digits that can be processed by a computer.

Scan back or scanning back

(FP) This is a linear (or tri-linear) array CCD placed in the focal plane of a camera, to scan the image projected by a lens, and record the image in terms of digital data rather than in analogue form on film.

Scan Converter

(CER, FV) This is a device that converts a computer's VGA output to video, so it can be displayed on a TV or recorded on a VCR. (FV) A device that changes the scan rate of a video signal and may also convert the signal from non-interlaced to interlaced mode.

Scan Line

(FV) An individual horizontal sweep across the face of the display. It takes 525 of these scan lines to make up a single frame of an NTSC picture and 625 for PAL.

Scanner

(FP) An input device that moves a light-sensitive electronic device across an image-bearing surface, such as a page of text or photographic negative, to convert the image into binary digits that can be processed by a computer.

Scan Rate

(CER, FV) The length of time it takes to electronically draw on a monitor one line of the screen (horizontal scan rate), or to repeat one entire screen (vertical scan rate).

Scene Luminance Range

(FP, FV) The luminance range of original scenes varies from outdoor scenes in sunlight with a range possibly exceeding 10000:1, to indoor scenes with controlled lighting, where the range may be reduced to 10:1 or even less. Adjustment of or accommodation to the luminance range, scene is one of the conditions to be evaluated in determining how the scene is to be recorded.

Scheimpflug Rule

(FP) A useful rule when using view camera movements is that when the planes of the film and lens mounting board are not parallel, the planes of the subject, the lens mounting board, and the film plane are made to coincide at a single point, everything in the plane of the subject will be in focus.

SC/H Phase (Subcarrier To Horizontal Phase)

(FV) In NTSC video, the phase relationship of the subcarrier to the leading edge of horizontal sync. SC/H phase is correct when the zero crossing of subcarrier is aligned with the 50% point of the leading edge of sync. In PAL video, the SC/H phase is defined as the phase of the EU

component of the color burst extrapolated to the half amplitude point of the leading edge of synchronizing pulse of line 1 of field 1.

SC/H Phase Error

(FV) This is an incorrect phase relationship of the subcarrier to the leading edge of horizontal sync.

SC/H Phased (Timed)

(FV) This is the time relationship of the subcarrier to the leading edge of the horizontal sync is correct.

Schwarzschild effect

(FP) Conventional silver halide based film has a linear sensitive to light over the range of exposure times for which it was designed. For daylight film this range is usually from 1 second to about 1/4000 second. Outside of this range of exposure times, a film's sensitivity to light is not linear. This non-linear sensitivity is referred to as the Schwarzschild effect. This is also called reciprocity failure.

Scitex CT

(FP) This is an image file format developed for use with the Scitex Prepress system (CT = Continuous Tone.).

Screen Angle

(FP) The angle at which the dots in a halftone screen are printed. A correct angle will minimize blur and other undesirable effects, such as moiré patterns.

Screen Dump

(CER) This is a print-out of the current display on the monitor screen.

Screen Capture

(CER, FA, FP, FV) On a PC compatible computer this refers to pressing the print screen key to copy the visible display, except for a video overlay, to the windows clipboard as a bitmap image. This bitmap image can then be pasted from the clipboard into any windows based application such as Word or Photoshop. A computer program written for this purpose may be required to copy only a selected part of the computer display and/or a video overlay.

Screen Frequency

(FP) This is the number of lines or dots per inch in a halftone screen.

Screen Pitch

(CER, FP, FV) This is a measurement of a computer monitor's screen density, representing the distance between phosphors on the display. The lower the number, the more detail that can be displayed clearly. For example, a .28-dot-pitch screen has better resolution than one with .32.

Screen Refresh

(CER) The re-display of an image on the computer screen.

Screen Shot

(CER, FP, FV) An image that shows all or part of a computer display.

SCSI port

(CER, FP, FV) This is an abbreviation for Small Computer System Interface. It is a port that's faster than the serial and parallel ports but slower and harder to configure than the newer USB-2 and firewire ports. SCSI ports are commonly used for high speed hard drives, scanners, and film recorders.

SD Card

(FP) This is an abbreviation for Secure Digital card. This is a type flash memory card used in some digital cameras.

SECAM

(FV) This is a color television system with 625 lines per frame and 50 fields per second developed by France and the U.S.S.R.

Seek Time

(CER) The time required to move a disk drive's read/write head to a specific location on a disk.

Segmented Panorama

(FP) Stitched photographs are reproduced by joining of multiple conventional photographs with slightly overlapping fields of view so as to create a larger, panoramic image once they are assembled. In the days before digital photography photographers attempted to create panoramic views in this way and found that the craftsmanship needed to match the images and hide the seams was very difficult. However, modern digital cameras and software are capable of stitching multiple images together with results depending largely on skill and software used.

Selective Focus

(FP) This is a composition technique that involves choosing a lens opening that produces a shallow depth of field and carefully focusing on the subject. Usually this is used to emphasize a subject by causing most of the other elements in the scene to be blurred.

Self-Demagnetization

(FA, FV) The process by which a magnetized sample of magnetic material tends to demagnetize itself by virtue of the opposing fields created within it by its own magnetization. Self-demagnetization inhibits the successful recording of short wavelengths or sharp transitions in a recorded signal.

Sensitivity

(FA) The magnitude of the output when reproducing a tape recorded with a signal of a known magnitude and frequency. The sensitivity of an audio or instrumentation tape is normally expressed in dB relative to the sensitivity of a reference tape measured under the same recording conditions. (FP) In terms of film this is a measure of the relative amount of light that is needed to properly expose the film. This measurement is normally stated as the film's ISO or DIN

value. Most still digital cameras also refer to this measurement as an ISO setting that is identical to film. (FV) In terms of video cameras this is usually expressed in the minimum lux value for which the video camera can record an image. Low lux value video cameras are useful for video surveillance and for videotaping crime scenes.

Sensitometer

(FP) An instrument with which a photographic emulsion is given a graduated series of exposures to light of controlled spectral quality, intensity, and duration. Depending upon whether the exposures vary in brightness or duration, the instrument may be called an intensity scale or a time scale sensitometer.

Sensitometry

(FP) This is the scientific study of the response of photographic materials to exposure and development. It includes the scientific methods used to establish emulsion speeds and recommended processing times.

Sepia

(FP) This describing the shades of brown found in photographs processed with a sepia toner. A similar effect can be obtained in many image processing applications, such as Adobe Photoshop.

Serial

(CER) A port for connecting an external device such as a modem, to a computer.

Serial port

(CER) A very slow port on the computer used mainly by dial-up modems and bar code readers.

Set-In

(FV) An editor command meaning to enter a beginning point in a clip or other video media.

Set-In/Set-Out

(FV) A method of video editing using precise beginning and ending point selection as opposed to on-the-fly editing. In professional equipment, the accuracy is down to the frame level. In consumer equipment, the accuracy usually ranges between 5 to 30 frames. In both professional and consumer computer based non-linear editors, the accuracy is usually down to the frame level.

Set-Out

(FV) An editor command meaning to enter an ending point in a clip or other video media.

Setup (Black Reference, Black Level)

(FV) The specified base of the visible shadow details in the active picture signal which is at reference black level. It is called setup because it is placed 7.5 IRE units above blanking (zero IRE) in NTSC video.

Shading

(FV) This is to adjust the contrast and color levels of a camera.

Shadow Key

(FV) This is a chroma key that retains the shadows cast by the foreground object.

Shaping, Shaped Video

(FV) This refers to video that has already been multiplied by a key signal, usually resulting in a video shape that appears over a black matte. Typically, shaped video is the output of a character or graphics generator, together with a matching key signal. Both signals have "soft" anti-aliased edges. The two signals may be used in the keyer of a production switcher, where the key signal cuts a hole in the background and the shaped video fills the hole to create an anti-aliased key.

Shareware

(CER) The shareware method of distribution permits you to "try before you buy," but does not entitle you with a license to use the software beyond the trial period. The trial period is typically 30 days, and if you would like to continue using the product after that time, you must register (pay for) the software.

Sharp

(FP, FV) Describes an image or part of an image that is perceived to be in focus and reproduce crisp, precise texture and detail.

Sharpness

(FP, FV) (1.) The amount of detail that can be perceived in an image as being in focus. The subjective visual appearance of whether or not something is in focus is affected by a combination of focus and contrast. The higher the contrast, the more the object appears to be sharp. (2.) Sharpness is the casual, subjective evaluation of detail clarity in an image. It is often assumed that sharpness and resolution are directly related, in that images possessed of greater sharpness are assumed to have greater resolution. An increase in subjective sharpness is usually reported when objects are more clearly delineated from each other and from background having hard, sharply-defined edges.

Sheet Film

(FP) Film that is cut into individual flat pieces. This is also called cut film. The two most common sizes still used in forensic applications are 4"X5" and 8"X10". As the demand for this film decreases and the manufactures cease production, the forensic applications for film will be forced to convert to digital photography, if they have not already done so.

Shedding

(FA, FV) This refers to a magnetic tape's giving off of oxide or other particles from its coating or backing, usually causing contamination of the tape transport and, by redeposit, on the tape itself.

Sheet film

(FP) Film that is cut into individual flat pieces. Also called cut film.

Shelf Life

(FP) This is the length of time unused photographic materials or chemicals will remain usable in conformance with the manufacturer's specifications.

Shielded Cable

(FA, FV) This is a cable with a conductive covering, that is usually grounded, which reduces the possibility of interference with radio, television, and other devices.

Shift

(FP) This refers to a lateral or vertical adjustment on a camera which can eliminate or reduce converging angles by allowing the photographer to take a photograph at an angle to the object while still keeping the film plane parallel to the plane of the object photographed.

Short rotation

(FP) This is a term used to define cameras that have a lens that rotates around the camera's rear nodal point (the optical point from which the focal length is measured) opposite a curved film plane. As the photograph is taken, the lens pivots around its nodal point while, at the same time, a slit exposes the vertical strip of film that is aligned with the axis of the lens. The entire exposure usually takes only a fraction of a second and the camera's function is similar to that of viewing a scene by turning your head from side to side on a steady level. This is also referred to as a rotating lens, or a swing lens, this method often encompasses a very wide angle of view, similar to that of the fisheye lens, but without the extreme distortion of lines which is often seen in extreme wide-angle lenses. Typically, these cameras offer a field of view between 110 to 140 degrees and an aspect ratio of 2:1 to 4:1.

Silhouette

(FP, FV) A scene or photograph in which the background is much more brightly lit than the subject.

Silver halide

(FP) The light-sensitive part of common photographic emulsions, which include the compounds silver chloride, silver bromide, and silver iodide.

Shooting Modes

(FP) The amount of control you have in choosing how your film based or digital camera captures an image. All digital cameras usually have an Auto mode in which the camera decides for you the best shutter speed/aperture settings. In a Shutter Priority mode you select the shutter speed and the camera sets the aperture. In Aperture Priority mode you select the aperture and the camera sets the shutter speed. In Manual mode you set both the shutter speed and aperture.

Short Lens

(FP, FV) A lens whose focal length is shorter than the diagonal measurement of the film or image sensor with which it is used. This is also called a wide-angle or wide-field lens.

Short Lighting

(FP) A portrait lighting setup in which the main source of light illuminates the side of the face partially turned away from the camera. This is also called narrow lighting and is used to make a broad or rounded face have an appearance of being more slender.

Short Time Linear Distortion

(FV) In video, this is an unwarranted change in amplitude or phase that occurs in a short time frame (0.1 to 1 microsecond). The resulting TV picture will have dulled luminance transitions (fuzzy vertical lines) and color bleeding of areas adjacent to the vertical lines.

Shot

(FV) A continuous sequence of images recorded by a video camera.

Shot Log

(FP, FV) A listing of information about what was recorded on a roll or film or a videotape, usually listed in chronological order.

Shotgun Microphone

(FA, FV) Long, highly directional microphone designed to pick up sounds directly in front of the microphone at a distance from the microphone, rejecting sound from other directions. It was named for its appearance.

Shoulder

(FP) On the characteristic curve for a photographic material (the plot of density vs. log exposure) it is that portion representing a nonlinear response at the higher densities.

Shutter

(FP) The mechanical device in a camera that controls the amount of time light is allowed to reach the film.

Shutter Lag

(FP) The time between pressing the shutter and actually capturing the image. This is due to the camera having to calculate the exposure, set the white balance and focus the lens and is a very serious problem in lower cost digital cameras.

Shutter priority

(FP) A camera exposure mode that allows the photographer to choose a shutter speed while an electronic processor in the camera sets a corresponding aperture for exposure.

Shutter speed

(FP) It is the time period in which the shutter is set to be open to exposure the film or image sensor. Each setting is half the duration of the preceding one in a constant scale, marked on the shutter speed dial or displayed electronically.

Shuttle

(FV) In videotape machines, this is a high-speed tape-running mode that permits fast cuing or rewinding of the tape.

Side Information

(FV) Information in the video bit stream necessary for controlling the decoder.

Side Lighting

(FP) When an object or person is viewed from the camera position, this refers to any light source which illuminates the object or person from the side and not from the front or back of the object or person. In commercial photography this is commonly called texture lighting because it emphasizes the texture of the object or person being photographed. It is also called oblique lighting.

Signal

(FA, FV) An electronic waveform used to convey information from one point to another.

Signal Conditioning

(FA, FV) The processing of a signal so as to make it compatible with a given device.

Signal Generator

(FA, FV) A test oscillator that can be adjusted to provide an audio and/or video test signal at some desired frequency, voltage, modulation, and waveform.

Signaling Rate

(CER) The bandwidth of a digital transmission system expressed in terms of the maximum number of bits that can be transported over a given period of time. The signaling rate is typically much higher than the average data transfer rate for the system due to software overhead.

Signal Processing

(FA, FV) The conditioning of a signal so as to make it compatible with a given device.

Signal-To-Noise Ratio

(FA, FP, FV) The amount of power, measured in decibels, by which the signal exceeds the amount of channel noise at the same point in transmission. If there is a low signal-to-noise ratio, the picture can appear grainy, snowy and sparkles of color maybe noticeable. Video equipment will not be able to synchronize to extremely noisy signals.

Silence

(FA) Blank space in the audio tracks in a timeline that contains no audio material.

Silhouette

(FP, FV) A scene or photograph in which the background is much more brightly lit than the subject and the subject is reproduced as black or very dark shadow details.

Silver halide

(FP) This is the light-sensitive part of common photographic emulsions; the common compounds silver chloride, silver bromide, and silver iodide.

SIMM

(CER) This is an abbreviation for Single In-Line Memory Module. It is a small printed circuit board with several chips that contain additional megabytes of random-access memory (RAM).

Sine Wave

(FA, FV) A periodic wave in which the waveshape is proportional to the sine of the time variable.

Single lens reflex (SLR)

It is a camera in which a system of mirrors and prisms shows the user the image precisely as the lens renders it.

Sizing

(FP) The operation of setting the output dimensions of a digital image, usually for output to a specific printer or film recorder. (FV) The operation of shrinking or stretching video data between a system's input and display. Normally, a combination of scaling and zooming.

Skew

(FP) Term used for to describe when rectangular shapes in the original are reproduced as a trapezoids in the finished photograph. (FV) (1.) This can be a digital picture manipulator effect in which the picture is slanted along its horizontal or vertical axis. (2.) It is a curve at the top of the picture resulting from improper VTR tape tension. (3.) The passage of tape over a head in a direction other than perpendicular to the height of the gap.

Skewed Key Frame

(FV) In digital picture manipulators, this is the condition when a key frame in one channel does not line up with a key frame in another channel with respect to time.

Slate

(FA) A brief statement at the beginning and/or ending of an audio recording to identify what the audio recording is. In some jurisdictions, an audio slate may be necessary for audio tape recordings intended to be used as evidence. (FP) Any information photographed on a roll of film to identify who photographed the images and/or what was photographed. In forensic applications this can be useful to identify which case the film is relevant to, especially if the film processing is contracted out. (FV) Term used for a frame of video text usually recorded after bars prior to the countdown sequence at the top of a commercial or program containing information on date recorded, ad agency, direction, etc.

Slave

(CER, FP, FV) Component in a system that does not act independently, but only under the control of another component.

Slave Eye

(FP) This is a sensor that detects light to trigger a slave flash unit.

Slave Port

(FV) This is a controlling port for subordinate equipment.

Slave Sync Generator

A sync generator that receives a reference signal from the master sync generator and produces all the appropriate sync pulses. A slave generator is normally used to feed each major area of the video facility.

Slave Unit

(FP) A visible light sensitive, infrared sensitive, or radio controlled trigger device used to synch strobes and flashes without an electronic synch cord. The visible light sensitive and infrared sensitive slaves have the disadvantages of being triggered by any compatible flash and they usually have to be operation on a line of site basis. The radio controlled slaves are usually much more expensive, but are not likely to be triggered by another photographer's flash unit. Also, radio controlled slaves do not have to be placed in a line of sight to work.

Slewing

(FV) The synchronizing of decks in computerized editing systems.

Slew Rate

(FV) The maximum rate of change of the output voltage of an amplifier operated within its linear region.

Slide

(FP) A positive transparency mounted in a square cardboard or plastic frame.

Slide Effect

(FV) A video effect in which a picture slides across the monitor from one screen position to another.

Slow film

(FP) A film that has an emulsion with low sensitivity to light and usually has high resolving power.

SmartMedia™

(FP) A wafer-thin, matchbook size removable memory card used in some digital cameras. This is also a flash-memory based storage medium.

Smear

(FV) A picture condition in which objects appear to be extended horizontally beyond their normal boundaries in a blurred or "smeared" manner.

Smoothing

(FP) An editing tool which averages pixels with their neighbors to reduce contrast and simulate an out-of-focus image.

SMPTE

(FV) This is an abbreviation for the Society of Motion Picture and Television Engineers. It is a professional organization that sets standards for American television.

SMPTE 259M

(FV) This is the SMPTE recommended practice for 525 line serial digital component and composite interfaces.

SMPTE Time Code

(FV) This is any time code that conforms to SMPTE standards. It consists of an eight-digit number specifying hours, minutes, seconds, and frames. Each number identifies one frame on a videotape. SMPTE time code may be either the drop-frame or non-drop frame type.

Snow

(CER) In computer displays, this is a specific type of distortion characterized by the blinking on and off of random pixels that can occur when the microprocessor and the display hardware interfere with each other by attempting to use the computer's video memory at the same time.

(FV) In television, this is a temporary distortion of a displayed image caused by interference, usually in a weak signal, that takes the form of random white spots.

Sodium Thiosulfate

(FP) This is the active ingredient in most photographic black and white fixers.

Soft

(FP) (1.) This refers to an image that is blurred or out of focus. (2.) This can be used to describe a scene, negative, or print with low contrast. (3.) This can refer to a printing paper emulsion with low contrast.

Soft Black Clip

(FV) Any time that the luminance video is stopped from going below a predetermined level.

Soft Border

(FV) A wipe pattern border that is blended on the edges to give a graduated effect.

Soft display

(CER, FP, FV) The display of images on computer monitors or television screens.

Soft Edge

(FV) A pattern edge between two video signals in which the signals are mixed together for a graduated transition effect.

Soft Focus

(FP) This is a diffused image. This can be achieved at the camera or enlarging stage, and is usually done for artistic reasons in portrait photography. If done in the camera, it is usually accomplished by the use of a soft focus filter or a soft focus portrait lens.

Software

(CER) Computer programs; instructions that make hardware work. Two main types of software are system software (operating systems), which controls the workings of the computer, and applications, such as word processing programs, spreadsheets, and databases, which perform the tasks for which people use computers. Two additional categories, which are neither system nor application software but contain elements of both, are network software, which enables groups of computers to communicate, and language software, which provides programmers with the tools they need to write programs. In addition to these task-based categories, several types of software are described based on their method of distribution. These include packaged software (canned programs), sold primarily through retail outlets; freeware and public domain software, which are distributed free of charge; shareware, which is also distributed free of charge, although users are requested to pay a small registration fee for continued use of the program; and vaporware, software that is announced by a company or individuals but either never makes it to market or is very late.

Soft White Clip

(FV) Stops the luminance video from going above a predetermined level.

Solarization

(FP) A digital picture manipulator effect, based on the effect obtained when a conventional photograph is exposed to light during processing, in which the luminance levels are reversed, resulting in a picture that looks like an abstract version of a photographic negative.

Soloing An Audio Track

(FV) In a multitrack recording this allows you to select one audio tracks to be played back. It has the save affect as if you manually turned off all the other audio tracks. In Forensic applications this could be useful such as when an interviewee in recorded on one audio channel and the interviewer is recorded on a second channel.

Source Code

(CER) The list of instructions written in a programming language used to construct a computer program.

Spatial

(CER, FP, FV) Relating to a specification of the area of an image. Video can be defined by its spatial characteristics (information from the horizontal plane and vertical plane) and its temporal characteristics (information at different instances of time).

Spatial Compression

(FV) This is a compression method that reduces the data contained within a single video frame by identifying areas of similar color and eliminating the redundancy.

Spatial Domain

(FV) Waveforms are two dimensional functions of location in space, $f(x,y)$.

Spatial Encoding

(FV) This is the process of compressing a video signal by eliminating redundancy between adjacent pixels in a frame.

Spatial Resolution

(FP, FV) The number of pixels in an area or on the screen, in a digital image file, or in a finished digital photograph. In digital photography it is usually specified as pixels per inch or pixels per cm. In video it is typically specified as pixels per scan line and scan lines per frame. When looking at the resolution of imaging devices, in particular scanners, it is important to distinguish between 'optical resolution' i.e. the actual number of picture elements on the CCD, and higher resolution created by the process of interpolation. A scanner may be advertised as having a resolution of 1200 dpi, when in actual fact it has an optical resolution of 600 dpi, interpolated to 1200 dpi by the scanning software.

Spatial Sampling

(FV) Where an image changes a given number of times per unit distance and is sampled at some other number of times per unit distance as opposed to temporal sampling where the input changes with respect to time at some frequency and is sampled at some other frequency.

Spatio-Temporal Filtering

(FV) This refers to filtering in both space and time.

Special Effects

(FV) Artistic effects added to a video production in order to enhance the production by creating drama, enhancing the mood or furthering the story. Special effects may vary from the limited addition of patterns or the mixing of several video images together, to sophisticated digital effects such as picture compression, page flipping and three dimensional effects.

Special Effects Generator

(FV) A video component that processes video signals and has the ability to manipulate the signals with a variety of wipes and distortions.

Spectral Analysis

(FA, FV) An objective and scientific examination of an audio or video waveform signal with respect to wavelength and intensity.

Spectral Color

(FV) In video, this is the hue represented by a single wavelength in the visible spectrum.

Spectral Response

(FP, FV) This is a scientific measure measurement of the sensitivity of film or a sensor both to specific hues of color and the relative intensity of each hue.

Spectrophotometer

(FP) This is a device that captures colors as spectral data, thereby providing maximum accuracy in measuring and specifying colors.

Spectrum

(FP) (1.) The range of frequencies of wavelengths of a particular type of radiation. (2.) It is usually used in reference to the visible part of the electro-magnetic spectrum. Visible light is typically represented by the color bands produced by diffraction, and arranged according to wavelength, when white light is passed through a prism.

Spectrum Analyzer

(FA, FV) An electronic device that can show the spectrum of an electric signal.

Specular Highlight

(FP) This is a bright reflection from a light source containing little or no detail.

Specular Reflection

(FP) Light rays that are reflected at the same angle as the angle of incidence of the light source. Observation at this angle allows the viewer to "see" a direct reflection of the light source. This type of lighting is sometimes useful to photograph latent prints on a smooth shiny surface.

Speed

(FP) (1.) In photography, this refers to the sensitivity of a photosensitive material or electronic sensor. This is expressed as either an ASA, ISO or DIN value. (2.) In terms of lenses this refers to a vague classification of lenses based on their minimum aperture. Lenses with a minimum F-stop opening of approximately 0.75 to 1.4 are sometimes called fast lenses because at the minimum F-stop opening you have use a faster shutter speed to obtain the correct exposure as compared to a slow lenses with a minimum F-stop opening of 4.5.

Spherical Aberration

(FP, FV) This is the blurring that occurs when light from a source passing through a lens does not focus at the same distance behind the lens.

Splice

(FA, FV) A physical join between pieces of tape or film. An edit in which the material already on the video or audio track is lengthened by the addition of new material inserted in at any point in the sequence.

Splicing Tape

A special pressure-sensitive, non-magnetic tape used for joining two lengths of magnetic tape.

Split Screen

(FV) A video effect in which two scenes are on screen at the same time, separated by a wipe pattern.

Spot

(FP) Retouching done to remove small imperfections in a print caused by dust specks, small scratches, or the like.

Spotlight

(FP) A focused light source which can project a narrow beam of light. (FV) A highlight effect produced by superimposing a full-strength video signal shaped by a wipe pattern over an attenuated (darkened) signal from the same video source.

Spot Meter

(FP) A reflected-light exposure meter with a very small angle of view, used to measure the brightness of a small portion of a subject.

Sprocket

(FP, FV) A toothed driving wheel used to move film through various machines by engaging with the perforation holes.

Spurious Signal

(FA, FV) Any portion of the signal that is not part of the fundamental video signal. Spurious signals include transients, noise, and hum.

Square Pixel

(CER, FP) Picture element with equal vertical and horizontal sample spacing, having an aspect ratio of 1:1. Square pixels are used by computers, and the software expects the use of square pixels for proper operation.

Square Pixels

(CER, FP) Picture element with equal vertical and horizontal sample spacing, having an aspect ratio of 1:1. Square pixels are used by computers, and the software expects the use of square pixels for proper operation.

Square Wave

(FA, FV) A blocklike waveform that is generated by a source that changes instantly between alternate states, usually at a single frequency.

Squeal

(FA, FV) Audible tape vibrations, primarily in the longitudinal mode, caused by frictional excitation at the heads and/or guides.

Squeeze

(FV) A change in aspect ratio. Anamorphic lenses sometimes squeeze a widescreen scene by a factor of two horizontally, so it will fit on a 1.33:1 aspect ratio frame. In projection, another anamorphic lens “expands” the squeeze (squeezes vertically) to restore the original aspect ratio. When a widescreen film is presented on television without being expanded, it is said to be squeezed. An unexpanded film print is said to be a squeeze print (the opposite is “flat”).

Stabilization

(FP) In black and white printing, this referred to a processor that used an activator chemical to active the developer chemical incorporated into stabilization printing paper. (FV) A specialized form of motion tracking used to eliminate unwanted motion such as camera movement from a

clip. Stabilization works by tracking an inherently unmoving object in the clip and repositioning each frame or field of video to keep that object stationary.

Stabilize

(FV) Remove motion jitter and unwanted camera movement from a clip by tracking an image in a clip.

Stack

(CE) Block of successive memory locations that is accessible from one end on a last-in-first-out basis (LIFO). For most processors, the stack may be a block of successive locations in the read/write memory.

Stack Pointer

(CER) Contains the address of the top of the stack. In general, the stack pointer is decremented immediately following the storage in the stack of each byte of information. Conversely, the stack pointer is incremented immediately before retrieving each byte of information from the stack.

Staircase

(FV) A pattern generated by the TV generator, consisting of equal width luminance steps of 0, +20, +40, +60, +80, and +100 IRE units and a constant amplitude chroma signal at color burst phase. Chroma amplitude is selectable at 20 IRE units (low stairs) or 40 IRE units (high stairs). The staircase pattern is useful for checking linearity of luminance and chroma gain, differential gain and differential phase.

Stairstepping

(FP) A rough outline like the steps of a stair in a graphic line or curve that should be smooth. This is also called aliasing, or jaggies.

Standard Lens

(FP) Lens with a focal length approximately equal to the diagonal of the film format or electronic sensor with which it is used.

Standards Converter

(FP, FV) A device for converting signals from one standard to another. Converting between different color schemes with the same scanning structure is called transcoding. Converting between different scanning structures requires line and field interpolation, which usually introduces artifacts.

Standard Conversion

(FV) The transformation of one television system signal to another, such as converting from NTSC to PAL.

Star Trail

(FV) A trail effect in which random pixels turn off, creating a blinking or starry appearance.

Static Resolution

(FV) Detail in a stationary image.

Statistical Multiplexing

(FV) Increases the overall efficiency of a multichannel digital television transmission multiplex by varying the bit-rate of each of its channels to take only that share of the total multiplex bit-rate it needs at any one time. The share apportioned to each channel is predicted statistically with reference to its current and recent-past demands.

Steady Gate

(FV) This is a pin-registered device manufactured by Steady Film for precise telecine transfer. Provides more stable images than EPR, but does not operate in real time.

Steady-State

(FA, FV) This is a condition in which the circuit values remain essentially constant, occurring after all initial transients or fluctuating conditions have settled down.

Step

(FV) A digital picture manipulator term meaning to advance a key frame effect one video frame or field at a time.

Step-Rate Time

(CER) The time required to move a disk actuator arm from one track to the next.

Stereograph

(FP) A pair of photographs taken side by side and seen separately by each eye in viewing them through a stereoscope. The resulting image looks three-dimensional.

Stereoscopic Camera

(FP) A camera designed to take simultaneous images of the same subject from viewpoints separated by approximately the same distance as that between the eyes.

Stick Slip

(FA, FV) The process in which the tape sticks to the recording head because of high friction; the tape tension builds because the tape is not moving at the head; the tape tension reaches a critical level, causing the tape to release from and briefly slip past the read head at high speed; the tape slows to normal speed and once again sticks to the recording head; this process is repeated indefinitely. Characterized by jittery movement of the tape in the transport and/or audible squealing of the tape.

Sticky Shed

(FA, FV) (1.) The gummy deposits left on tape path guides and heads after a sticky tape has been played. (2.) The shedding of particles by the tape as a result of binder deterioration that causes dropouts on VHS tapes.

Sticky Tape

(FV) Tape characterized by a soft, gummy, or tacky tape surface. Tape that has experienced a significant level of hydrolysis so that the magnetic coating is softer than normal.

Still Frame

(FP, FV) A single frame of video repeated so it appears to have no motion or a single frame of video that has been exported as an individual still image, usually in a bmp or tiff file format.

Still Picture

(FV) A single frame of video repeated so it appears to have no motion.

Still Store

(FV) Device for storage of individual specific frames of video.

Stochastic screening

(FP) A new alternative to conventional screening that separates an image into very fine, randomly placed dots as opposed to a grid of geometrically aligned halftone cells.

Stock solution

(FP) A concentrated chemical solution that is diluted immediately before use.

Stop

(FP) The aperture of a camera or enlarging lens.

Stop bath

An acid solution used in black and white hand processing between the developer and the fixer to stop the action of the developer and the preserve the effectiveness of the fixer.

Stop down

(FP, FV) To decrease the size of a lens aperture, usually to increase the depth of field.

Stopping down

(FP, FV) To decrease the size of a lens aperture, usually to increase the depth of field.

Storage Media

(CER) Any object on which data is preserved. (FP) The digital medium that replaces film. A number of competing storage media cards are offered, such as Compact Flash (CF) and Smart Media.

Streaking

(FV) This is a term used to describe a picture defect in which objects appear to be extended horizontally beyond their normal boundaries. This will be more apparent at vertical edges of objects when there is a large transition from black to white or white to black.

Streaming

(CER, FA, FV) The process of sending audio and/or video over the Web or other networks to allow playback on the desktop as the video is received, rather than requiring the entire file to be downloaded prior to playback.

Streaming Media

(CER, FA, FV) Sending video or audio over a network as needed, such as Real Audio/Video, instead of forcing the user to download the entire file before viewing it.

Streaming Video

(CER, FV) Sending video over a network as needed, such as Real Video, instead of forcing the user to download the entire file before viewing it.

Stripe

(FV) To record SMPTE time code onto a tape.

Striping

(FV) Preparing a tape for editing by recording continuous control track, timecode, and a video signal (e.g., black). This is also called a Black Stripe.

Striping a Tape

(FV) Preparing a tape for editing by recording continuous control track, timecode, and a video signal (e.g., black). This is also called a Black Stripe.

Strobe

(FP) (1.) This describes a light source that provides a series of brief pulses of light in rapid succession. (2.) It is sometime used loosely to refer to any electronic flash.

Subcarrier (SC)

(FV) In NTSC or PAL video, a continuous sine wave of extremely accurate frequency which constitutes a portion of the video signal. The subcarrier is phase modulated to carry picture hue information and amplitude modulated to carry color saturation information. The NTSC subcarrier frequency is 3.579545 MHz, and the PAL-I frequency is 4.4336187 MHz. A sample of the subcarrier, called color burst, is included in the video signal during horizontal blanking. Color burst serves as a phase reference against which the modulated subcarrier is compared in order to decode the color information.

Subclip

(FV) This is created by marking IN and OUT points in a clip and by saving the frames between these points. The subclip does not contain pointers to media files. The subclip references the master clip, which alone contains pointers to the media files.

Subject

(FP) The person or object being photographed.

Sublimation

(FP) The process by which a solid becomes a gas without first passing through a liquid phase.

Submaster

(FA, FV) A high quality copy of a master tape used to make additional copies.

Subtitles

(FV) In the U.S. and Canada, "captions" are distinguished from "subtitles." In these countries, "subtitles" assume the viewer can hear but cannot understand the language, so they only translate dialogue and some onscreen text. "Captions" aim to describe all significant audio content, as well as "non-speech information," such as the identity of speakers and their manner of speaking. The distinction between subtitles and closed captions is not always made in the UK and Ireland, where the term "subtitles" is a general term.

Subtractive color

(FP) (1.) A way to produce colors by mixing dyes that contain varying proportions of the three subtractive primary colors of cyan, magenta, and yellow. (2.) A color print head that uses cyan, magenta, and yellow filters to adjust the color balance of a photograph during printing.

Subtractive Color System

(FP) A color print head that uses cyan, magenta, and yellow filters to adjust the color balance of a photograph during printing.

Super Black

(FV) A luminance level between standard black and sync level. Super black is inserted into the background of a video signal to improve its utility as a source for luminance self keying. It is useful when the foreground of the signal contains some black, which would make a good-quality luminance key difficult to obtain.

Super CCD

(FP) This is a CCD in which the pixels are oriented as diamonds. Processing the read-out of each line of pixels requires some interpolation, but is reported to give a resolution higher than the pixel count.

Super VHS

S-VHS is an enhancement to regular VHS video tape. S-VHS provides better resolution and less noise than VHS by recording a separate luma (Y') and chroma (C) video signal.

Supplementary lens

(FP) A lens that can be added to a camera lens for close-up work, wide-angle photography or telephoto photography.

Surge Protector

(CER, FA, FP, FV) An electronic device which protects electronic equipment from power fluctuations.

SV

(FP) This is an abbreviation for still video. An electronic still camera employing a solid state pick up device in the focal plane, and recording the analogue signal on an SV floppy disc (or memory card) for subsequent playback. The discs can record 50 fields, or 25 frames, together with a limited amount of audio. The discs can be erased and re-recorded.

SVGA

(CER, FP) This is a specification for an image resolution of 800 x 600 pixels.

S-VHS (Super VHS)

(FV) S-VHS is an enhancement to regular VHS video tape. S-VHS provides better resolution and less noise than VHS by recording a separate luma (Y') and chroma (C) video signal.

S-Video (Separated Video)

(FV) This is the standard for the way a signal is carried on the video cable itself. The industry has adopted a 4-pin mini plug connector. S-Video does not have any relation to the resolution or refresh rate of the signal. Do not confuse S-Video with S-VHS. S-VHS is a tape/signal standard. S-Video is a hardware standard that defines the physical cable jacks. S-Video allows you to bypass the comb filter in a device. Generally, less processing of the signal results in a better picture. The comb filter separates the chroma (color) and luma (brightness) components of a video signal into separate parts. This is also called Y/C, where Y represents brightness and C color. When color and brightness are not separated and are combined in the signal, it is called a composite signal.

Switcher

(FV) This is a general term for a device used to select different signals (audio, video or RF) from various sources.

SXGA

(CER) This is a video graphics resolution of 1280 x 1024 pixels.

Symmetrical Compression

(CER) A compression system which requires equal processing capability for compression and decompression of an image. This form of compression is used in applications where both compression and decompression will be utilized frequently.

Sync

(FV) The portion of an encoded video signal that occurs during blanking and is used to synchronize the operation of cameras, monitors, and other equipment. Horizontal sync occurs within the blanking period in each horizontal scanning line, and vertical sync occurs within the vertical blanking period.

Sync Add

(FV) A function of a video device that adds sync to the video signal.

Sync Buzz

(FV) This is a noise containing harmonics of 59.94 Hz, heard on television set speakers under certain signal and transmission conditions. One such condition is the transmission of electronically generated characters of high level and resolution greater than can be carried in NTSC. The ringing resulting when those signals hit an NTSC filter causes the television carrier to momentarily disappear. Since the characters are within a television field, the rate of appearance and disappearance is a multiple of the field rate, 59.94 Hz.

Sync cord

(FP) This is an electrical cord connecting a flash unit with a camera so that the electronic flash can be synchronized with the camera's shutter.

Sync Generator

(FV) This is a device that generates synchronizing pulses needed by video source equipment to provide proper equipment or studio timing. Pulses typically produced by a sync generator include subcarrier, burst flag, sync, blanking, H & V drives, color frame identification, and color black.

Synchronize

(FP) To cause a flash unit to fire at the same time as the camera shutter is fully open.

Synchronizer

(FV) This is a device that ensures audio and video signals from varying sources are coordinated by timing them against a reference signal and advancing or delaying them as needed.

Synchronizing Pulse Generator

(FV) Equipment that generates synchronizing pulses needed by source equipment.

Synchronous

(CER) This is a transmission procedure by which the bit and character stream are slaved to accurately synchronized clocks, both at the receiving and sending end.

Synchro-sun

(FP) This is the photographic procedure of setting the shutter speed and f-stop settings so that the exposure from the electronic flash is about 1 stop less than the exposure from the sun so that the light from the electronic flash serves as a fill light to lighten the shadow details without overpowering the lighting effect created by the sunlight.

Sync Level

(FV) This refers to the level of the tips of the video synchronizing pulses.

Sync Noise Gate

(FV) This is a circuit designed to define an area within the video waveform where the sync stripper is to look for the sync pulse.

Sync Pulse

(FV) These are the timing pulses added to a video signal to keep the entire video process synchronized in time.

Sync Restoration

(FV) This is a process which replaces distorted and missing sync information by checking incoming sync, analyzing the frequencies involved and generating new fully restored sync.

Sync Stripper

(FV) Circuit which removes the sync information from the composite signal.

Syquest

(FP) This is a trade name for a brand of now obsolete removable hard discs that were at one time an industry standard for the temporary storage of digital image and graphics files.

.sys

(CER) This is a file extension for system configuration files.

System Administrator

(CER) This is the individual responsible for setting up, maintaining, and troubleshooting a network of workstations.

System Noise

(FA, FV) The total noise produced by the whole recording system, including the tape.

T

T1

(CER) In telecommunications, the paired cable used to transport DS1 service. This is also called a T1 line.

Tagged Image File Format

(FP) This is a standard file format commonly used for scanning, storage, and interchange of graphic and photographic images.

Tacking iron

(FP) A small, electrically heated tool used to melt the adhesive in dry-mounting tissue, attaching it partially to the back of the print and to the mounting surface. This keeps the print in place during the heat mounting procedure.

Taking lens

(FP) This is the lens on a camera through which light passes to expose the film or electronic image sensor.

Tally

(FV) This is a lamp which lights to indicate that the associated video source is in use. Typical locations of tally lamps are on the front of video cameras and in the crosspoint pushbuttons of video switchers.

Tank

(FP) This is a container for photographic processing chemicals into which film is placed for development.

Tape Noise

(FA, FV) The noise that can be specifically ascribed to the tape.

Tape Skew

(FV) This is the deviation of a tape from following a linear path when transported across the heads, causing a time displacement between signals recorded on different tracks and amplitude differences between the outputs from individual tracks owing to variations in azimuth alignment. The adjectives static and dynamic are used to distinguish between the continuous and fluctuating components of tape skew.

Tape Transport

(FA, FV) This is the mechanism that extracts magnetic tape from a storage device, moves it across magnetic heads at a controlled speed, and then feeds it into another storage device. Typical storage devices are tape loops, bins, reels and magazines (cassettes, cartridges).

Tape-to-Head Speed

(FA, FV) The relative speed of tape and head during normal recording or replay. The tape-to-head speed coincides with the tape speed in conventional longitudinal recording but is

considerably greater than the tape speed in systems where the heads are scanned across or along the tape.

TBC

(FV) This is an abbreviation for time base corrector. It is an electronic device used to correct timing inconsistencies and stabilize the playback of the video signal for optimum quality. It also synchronizes video sources allowing image mixing.

Tearing

(FV) This is a lateral displacement of the video lines due to sync instability. Visually it appears as though parts of the images have been torn away.

Technical/Peer Review

(CER, FA, FP, FV) (Quality Control Context) This is a scientific evaluation of the evidence examinations and conclusions reached by a qualified forensic scientist. This scientific evaluation is conducted by a second qualified forensic scientist. At a minimum this scientific evaluation should include a review of examinations performed, original evidence, reports, notes, data, conclusions, and any other relevant documents. This evaluation should be comprehensive enough so that the reviewer would be competent to testify in court in place of the forensic scientist who did the original examinations. If needed this procedure can include a re-examination of the original evidence and each agency should also have written procedures to resolve any disagreement in the findings or analysis of the evidence. (Professional Journal Context) Professional articles are submitted to the editor. These articles may or may not have been reviewed by others before submission. The first step in the peer review process is to send the article or research to the appropriate member or members of the editorial review board for a technical review. Some persons refer to this first step as a technical review. The members of an editorial review board are selected because they are subject matter experts within a specific forensic discipline. Anonymity is normally accomplished by removing all indications of the Author's identity and the author's affiliations on the copy of the article sent to the reviewer. Plus, the reviewer agrees not to utilize or disclose any information in the article until after the article is published. The author does not know the name of the author's peer who will be performing the review. The reviewer must begin by determining whether or not the article is within the reviewer's area of expertise. If not the article will be returned immediately to the Editor to be sent to the appropriate subject matter expert for review. If it is within the reviewer's area of expertise, the reviewer will review the article within guidelines established by the Editor. Next, if accepted for publication by the Editor after any necessary corrections, the second step is the actual publication in the relevant professional journal for the author's scientific discipline. The third step is the reading of the article in a professional journal by other persons qualified in that scientific discipline (peers). The fourth step is the opportunity for the publication of responses to the published article or research. If the author's peers find any disagreement their response is sent to the Editor of the Journal, who will publish the response if it appears valid. If no responses are received from the author's peers, no assumptions can be drawn about peer acceptance of the article or research from this lack of response. However, publication in a professional peer reviewed journal can be taken into consideration by a court as one of several factors in determining if a scientific procedure is new and novel or accepted by the relevant scientific community. The fifth step is acceptance by the author's peers as demonstrated by the

author's peers implementing or embracing the technique, such as the implementation of new work strategies or citing the published work as a credible source.

Telecine

(FV) This is a device used to convert movie film to video.

Teleconferencing

(CER, FV) This is an electronically-linked meeting conducted among people in separate geographic locations.

Teleconverter

(FP) An optical system mounted between a camera body and the lens to increase the effective focal length of the lens.

Telephoto effect

(FP) A change in perspective caused by using a long focal length lens very far from all parts of the scene. Objects closer together than they really are when viewed directly from a normal viewing distance without the aid of any optical device.

Telephoto Lens

(FP) This is a lens with a long focal length that is significantly longer than the diagonal of the film format used.

Teleprompter

(FV) This is a device for displaying large, readable text on a partially transparent screen for a speaker to be able to read from while being videotaped. The teleprompter uses a monitor mounted under the camera lens, facing up, and a mirrored glass which reflects the monitor's image toward the talent. Since the camera shoots through the mirrored glass and the mirrored glass is transparent to the camera, the talent can look directly into the camera lens as they read the script from the glass.

Teleprompting

(FV) This refers to text shown on a television monitor to assist a performer or speaker.

Television Lines

(FV) Television images are scanned in a sequence of horizontal lines, beginning at the upper left corner, and reaching the bottom right corner at the end of the field in interlaced video. Then the scan is returned to the upper left corner to begin the next field in interlaced video. As a consequence of the line structure, all television images are sampled vertically. Within a line, the signal may remain analog or be sampled digitally. A television line is also a measure of time, representing the interval allocated to one line.

Television Luminance

(FV) When television was monochrome and sensors were in approximate conformance to CIE Photopic Spectral Luminous Efficiency Function, it became common to think of the video signal as the luminance signal. With the introduction of color, a matrix was designed to develop a

luminance function by weighting the R, G, B signals in accordance with the CIE Photopic Spectral Luminance Efficiency Function, producing a video signal compatible with monochrome receivers.

Temporal

(FV) This is something that relates to time. For example, the temporal component of motion video is broken into individual still pictures. Because motion video can contain images that do not change much over time, typical video has large amounts of temporal redundancy.

Temporal Aliasing

(FV) This is a defect in a video picture that occurs when the image being sampled moves too fast for the sampling rate. A common example occurs when the rapidly rotating spokes of a wagon's wheels appear to rotate backwards because of video scanning that moves more slowly than the spokes. This is also described as an alias caused by violation of the Nyquist limit on sampling in time with frames.

Temporal Compression

(FV) This is a compression method that reduces the data contained within a single video frame by identifying similar areas between individual frames and eliminating the redundancy.

Temporal Resolution

(FV) This is a measure of the shortest moments of time that can be perceived in a particular system. It is not the same as dynamic resolution, which is spatial resolution when an image is changing. As an example, suppose a spoked wheel is turning. If the spokes are a blur when the wheel is not turning, the system has poor static resolution; if they are clear, it has good static resolution (for the spokes). If they are a blur when the wheel is turning, the system has poor dynamic resolution and poor temporal resolution. If they are clear when the wheel is turning, the system has good dynamic resolution. If, though clear, they appear to be stationary, or turning in the wrong direction, or turning at the wrong speed, or flashing rapidly in different positions so it is impossible to tell which way or at what speed they are turning (a temporal blur), the system has poor temporal resolution. A great deal of evidence indicates that the human visual system cannot simultaneously perceive high spatial resolution and high temporal resolution.

Tenting

(FP) This is a lighting technique used to light a highly reflective object, in which an enclosure, called a tent, consisting of large sheets of paper or translucent material is placed around the object and lighted so that the object reflects them and not the lamps, camera, and other items in the studio.

Terabyte

(CER) This is 1 trillion bytes.

Test Pattern

(FP, FV) This is a chart with a special design. In still photography this would be a design intended for used in determining lens/file resolving power, generating an ICC profile for a digital camera, or to provide a known color reference under the current lighting conditions. In video it

is placed in front of a television camera to create a known video reference signal that can be used to adjust the camera and all the equipment downstream from the camera.

Test Point

(CER,FA, FV) This is typically a metal post in a circuit that can a probe can be attached to measure a parameter of the circuit.

Test Signal

(FA, FV) This is a known electronic signal with standard characteristics used to test the capability and/or adjust electronic equipment.

Test Signal Generator

(FA, FV) This is an electronic device that generates known audio and/or video signals used for aligning, troubleshooting, and testing audio and/or video equipment.

Texture Lighting

(FP) When an object or person is viewed from the camera position, this refers to any light source which illuminates the object or person from the side and not from the front or back of the object or person. It is used to emphasize the texture of the object or person being photographed. It is also called side lighting or oblique lighting.

Texture Mapping

(FV) This is the ability of a digital picture manipulator to create textured surfaces that can be applied to shapes.

TGA

(FP) This stands for Targa. It is a raster graphics file format from Truevision, Inc., that handles 16-, 24-, and 32-bit color.

Thin

(FP) This describes a negative or an area of a negative where relatively little silver has been deposited.

Thin Negative

(FP) A negative that is underexposed or underdeveloped (or both). A thin negative appears less dense than a normal negative.

Thumbnail

(CER, FP) This is a small, low resolution version of a photograph or graphic image.

.tif

(CER, FP) This is the file extension that identifies bitmap images that are saved in a Tagged Image File Format (TIFF).

TIFF

(CER, FP) This is an abbreviation for Tagged Image File Format or Tag Image File Format. It is a standard file format commonly used for scanning, storage, and interchange of gray-scale and color graphic images. TIFF has evolved and can record layers and may use lossless compression.

Tiling

(FP) This is a method of creating or reproducing a large image area by adding adjacent sections all in the same basic shape, usually a square. For instance, a texture can be extended across the entire screen by copying a small square of the texture and joining up the copies. One essential is that the joins are seamless, to give the appearance of being continuous.

Time

(FP) This is a shutter setting marked T. At the T setting, the shutter remains open until the cable release is pressed a second time.

Time-base Corrector (TBC)

(FV) It is an electronic device used to correct timing inconsistencies and stabilize the playback of the video signal for optimum quality. It also synchronizes video sources allowing image mixing.

Time Code

(FA, FV) This is an electronic control code recorded on audio or videotape to give each frame or position in time a unique number so as to ensure exact transitions during editing.

Time Code Generator

(FV) This is a signal generator designed to generate and transmit SMPTE time codes.

Time Delay

(FA, FV) This is the time required for a signal to travel through an electronic circuit.

Time Lapse VCR (TL VCR)

(FV) This is a video recorder, most often in VHS format, that can prolong the video recording on a single tape up to 960 hours (this refers to a 180-minute tape). This type of VCR is often used in CCTV systems. The principle of operation is very simple. Instead of having the video tape travel at a constant speed of 2.275 cm/s (which is the case with the domestic models of VHS VCRs), it moves with discrete steps that can be controlled and usually can record at the field level. Time lapse VCRs have a number of other special functions very useful in CCTV, such as external alarm trigger, time and date superimposed on the video signal, and alarm search.

Time Lapse Video Recording

(FV) This is a process by which images are recorded at less than the standard rate of frames per second (NTSC – 29.97; PAL – 25.00), thus extending the period of time that can be recorded on the storage medium.

Timeline/Sequence Reconstruction

(FA, FV) This is the process of relating images, audio, or other data to one another in a chronologically ordered succession. In Forensic Audio and Forensic Video Analysis this is used to show the relationship of a complex series of events recorded on multiple audio and video sources.

Time Stamp

(FV) This is a visual reference on video that is based on a clock-setting on the recording device. In a videotape recording, this visual reference is recorded either as a permanent part of the video in the form of a video burn, or as a video overlay that is encoded in the blanking area of the video signal.

Tintype

(FP) This is a collodion wet-plate process in which the emulsion was coated onto a dark metal plate. It produced a positive image.

Tone

(FA) A sound with a pure primary frequency. (FP) This is a chemical process used to change the color of a photograph by immersing it in a chemical solution. (FP, FV) This refers to the relative lightness or darkness of a particular area. For example, A highlight is a light one and a shadow is a dark tone.

Tool

(FP) This refers to a subroutine in an image editing application that performs a specific imaging processing function.

Toolbox

(FP) This refers to the graphic representation of several tools, with each tool being selected by clicking on the graphic that represents a specific tool.

Trackball

(CER, FP) This is an alternative input device to a computer mouse. Mechanically, it works as an upside-down mouse, with a moveable ball embedded in a case or the keyboard.

Tracking

(FV) This is the angle and speed at which the tape passes the video heads. Due to small differences in head-to-tape alignment between VCRs, it is sometimes necessary to adjust the tracking control on a VCR when playing a tape recorded on another deck.

Traditional Enhancement Techniques

(FP) This refers to the techniques used in traditional photographic darkrooms to improve the visual appearance of a finished photograph.

Transcoder

(FV) This is an electronic device that converts one component format to another, such as to convert (Y, R-Y, B-Y) signals to (RGB) signals.

Transcoding

(FV) This refers to converting a data stream from one format to another, such as MPEG-1 to H.263, or an H.320 video conferencing session to H.323.

Transducer

(FA, FV) This is an electronic device which converts energy from one medium to another.

Transparency

(FP) (1.) This is a positive photographic image in black and white or color, which is produced on transparent film. (2.) Defines the amount of incident light that passes through a surface. Both ambient and diffuse light falling on a transparent polygon are transmitted through the polygon, but highlights are not.

TRIAD

(FP) This refers to the three pixel clump of red, blue, and green pixels.

Tripod

(FP, FV) This is a three legged camera support used to steady a camera to reduce or prevent unwanted camera movement.

True Color

(CER) This refers to a 24-bit RGB image on a computer monitor that is capable of including up to 16 million colors.

TTL Flash

(FP) Through the lens (TTL) automatic flash output control uses a light sensor that measures the flash intensity through the lens, as reflected by the subject on the film or sensor and then shuts off the flash when the measurement indicates a correct exposure.

Tungsten Film

(FP) This is often called Type B. Film that is balanced to record color correctly under tungsten lighting at approximately 3200 degrees Kelvin.

Tungsten Light

(FP) Light that is roughly 3200 degrees Kelvin in color temperature, and is a continuous light source such as a photoflood lamp containing a thin tungsten wire that becomes incandescent (emits light) when an electric current is passed through it. It is also called incandescent light.

Tv

(FP) This is an abbreviation for time value. It is used on some camera information displays as a shorten way to refer to shutter speed settings.

TWAIN

(CER, FP) This is a protocol for exchanging information between application and devices such as scanners and digital cameras.

Twin-Lens Reflex

(FP) This is a camera design in which two lenses are mounted above one another. The top lens is used for viewing and the bottom lens is used to take the photograph. This system has the advantage that the image is always visible in the viewfinder. However, in close-up photography some means of compensation for parallax error must be made.

Type A Film

(FP) Color film balanced to produce accurate color renditions when the light source that illuminates the scene has a color temperature of about 3400K.

Type B Film

(FP) Color film balanced to produce accurate color renditions when the light source that illuminates the scene has a color temperature of about 3200K.

U

Ultra High Frequency (UHF)

(FA, FV) This refers to a frequency band used for usually more expensive professional wireless microphones that is less susceptible to interference as compared to wireless microphones that operate in the VHF frequency band. (FV) The frequency band (300 MHz-3,000 MHz). In television, UHF refers to a subset of that band, the range from 470 MHz to 890 MHz, once allocated to TV channels 14 through 83.

Ultra SCSI

(CER, FA, FV) An extension of the SCSI-2 standard that doubles the transfer speed of Fast-SCSI to allow a transfer rate of 20 megabytes per second (Mbps) on an 8-bit connection and 40 megabytes per second (Mbps) on a 16-bit connection.

Ultraviolet

(FP) This is the part of the electromagnetic spectrum just beyond the visible color of violet. Ultraviolet light is invisible to the human eye but strongly affects photographic materials. Ultraviolet light has several forensic photography applications. Ultraviolet fluorescent photography is used to photograph fluorescent fingerprints powders used to develop latent prints on multi-colored surfaces that do not fluoresce. Reflected long wave ultraviolet photography is used to photograph bite marks and other pattern injuries on human skin. Ultraviolet photography has been used to detect and demonstrate alterations to documents. Shortwave ultraviolet photography, which requires the use of a special UV quartz lens, has been used on a limited basis to photograph latent prints developed with superglue fuming techniques because the superglue does not reflect shortwave UV light. This can result in dark ridge details on a light background when the latent prints are developed on white paper by the superglue fuming technique.

Unallocated Space

(CER, FP) Data storage areas available for use by the computer. The area may already contain previously stored information that has not been overwritten yet. This is also called Free Space. This area is important for forensic analysis because it may contain digital image files that can still be recovered as long as they have not been overwritten.

Unbalanced Audio Signal

(FA) Unbalanced systems use a signal and signal ground components. Shield conductors are sometimes employed as well. Interconnection of unbalanced signals is simple using relatively inexpensive cables and connectors such as the RCA phono jack.

Uncompress

(CER) To restore the contents of a compressed file to its original form. This is also called decompress.

Uncompressed Video

(FV) This is a recorded or digitized video stream that is not processed by a data compression scheme. The video signal remains uncompressed at all stages of the process: input, storage, and output. Uncompressed video conforms to the ITU-R 601 standard.

Uncompressed-Quality Video

(FV) This is Video that has the same image quality as uncompressed video, but has been compressed using mathematically lossless compression to optimize storage space.

Undelete

(CER) The act of restoring deleted information. An undelete is comparable to (and usually included as part of) an "undo" command; it is more restricted, however, in that undo reverses any previous act, but undelete reverses only a deletion. Undelete generally refers only to excised text or deleted files.

Underdevelop

(FP) To give less development than normal, usually to compensate for overexposure of the film being processed.

Underexpose

(FP) To give less than normal exposure to a film, electronic sensor, or paper.

Underscan

(FV) A video monitor setting in which the raster does not expand completely to the physical edges of the CRT screen, resulting in a black border around the edges of the screen. Some monitors can be set to underscan mode to be able to see the entire active picture area. Underscanning modifies the video timing so that the entire video signal appears in a rectangle centered on the television screen with a black border.

Underscan Area Of a Video Image

(FV) This is the outside edge of the video active picture area and the black border representing the blanking area, outside of the video safe area of the video active picture area. It is approximately 10% in from both sides, top, and bottom of the outside edges of the active picture area. A small part of the underscan area may be visible in some televisions and the amount visible can vary from television to television. It is most likely that the concept of underscan was introduced to allow for a reasonable manufacturing tolerance based on the limitations of early video technology and the dramatic increase in production costs that would result if there was a smaller tolerance requiring more precision parts.

Unidirectional

(CER) A connection between an electronic device and a computer in which data flows in only one direction. Each device connected to a unidirectional bus is either a transmitter, or a receiver, but not both. (FA) A pickup pattern which is more sensitive to sounds arriving from one direction than from any other.

Unidirectional Mike

(FA) This is a microphone which picks up signals primarily from one direction and discriminates against or rejects sounds arriving from other directions.

Unique Characteristics

(FP, FV) These are the observable features of an object that are reproduced in an image that are unique to one, and only one, original object to a reasonable degree of scientific certainty. See also individual characteristics and individualizing characteristics.

Unity Gain

(FA, FV) An amplifier or active circuit in which the output amplitude is the same as the input amplitude.

UNIX

(CER) A multi-user, multi-tasking (doing more than one thing at the same time), multi-platform operating system originally developed by Bell Labs for mainframe and mini-computers.

Unsharp Mask

(FP) (1.) A sharpening technique achieved by combining a slightly blurred negative version of an image with its original positive. (2.) This is an image sharpening filter used in some image processing applications.

Unsharp Masking (USM)

(FP) (1.) A sharpening technique achieved by combining a slightly blurred negative version of an image with its original positive. (2.) This is an image sharpening filter used in some image processing applications.

Upgrade

(CER) This refers to either a new version of a program or an enhancement of hardware by adding additional hardware.

Upload

(CER) Sending a file from your computer to another device.

URL

(CER) This is an abbreviation for Uniform Resource Locator. It is the address of an internet Web site.

USB

(CER) It is an abbreviation for universal serial bus. It is a protocol for transferring data to and from digital devices. Many digital cameras and memory card readers connect to the USB port on a computer. USB card readers are typically faster than cameras or readers that connect to the serial port, but slower than those that connect via FireWire which is about 40 times faster than USB1. USB 2 is claimed to be as fast as FireWire.

USB Port

(CER) This is a high-speed port that lets you daisy-chain devices (connect one device to another).

UV filter

(FP) This is a filter that blocks UV light and passes visible light. It is also used to protect a lens.

UXGA

(CER) This is a specification of for a display resolution of 1600 x 1200 pixels.

V

Vacuum Back

(FP) It is a camera back with a perforated plate through which air is drawn by a pump. A sheet of film is therefore sucked flat against the plate and held firmly during exposure, it was used for special large format cameras.

Vacuum Easel

(FP) It is a box with a flat perforated plate through which air is drawn by a pump to the paper flat when making photographic enlargements. It is also used to keep latent lifts and documents flat when being photographed so that a cover glass is not needed.

Valid Signal

(FV) This refers to a video signal that will remain legal when translated to any other format. A valid signal is always legal, but a legal signal is not necessarily valid. Signals that are not valid will be processed without problems in their current format, but problems may be encountered if the signal is translated to a new format.

Validation

(CER, FA, FP, FV) The process of performing a set of experiments, which establishes the efficacy and reliability of a tool, technique or procedure or modification. This is a requirement for any custom application software before it can be used for forensic applications. This is also recommended for commercial applications. In the forensic setting, this usually involves the processing of what the user considers to be a representative sample of the type or types of evidence to be processed.

Validation Testing

(CER, FA, FP, FV) An evaluation to determine if a tool, technique or procedure functions correctly as intended for a specific application using a representative sample.

Validity check

(CER) The process of analyzing data to determine whether it conforms to predetermined completeness and consistency parameters.

Value

(FP) The relative lightness or darkness of an area. Low values are dark; high values are light.

Vanishing Point

(FP) It is the point at which parallel lines, when viewed obliquely, appear to converge to in the distance.

Vaporware

(CER) Software or hardware that is talked about, but may never actually appear.

VAR

(CER, FA, FP, FV) This is an abbreviation for Value Added Reseller. It is a company which resells hardware and software packages to developers and/or end-users. (disadvantage) The original purchase price is lower if the end user purchases the individual components and takes the time to assemble them and fix any incompatibilities. In this situation, the costs associated with the time it takes to put the system together, troubleshoot it, and the lost production time is not taken into consideration. (advantage) The complete system is ready to be used as soon as it is received with the added cost of the VAR being more than offset by the savings in time to get it working, and lost production time. When something does go wrong, you have one company to fix it and you do not have to waste time with each vendor claiming that it is the other vendor's product that is causing the problem.

Variable Contrast Paper

(FP) This is a black and white printing paper using manufacturer with a combination of a low contrast emulsion layer sensitive to yellow light and a high contrast emulsion layer sensitive to magenta light. The contrast can usually be varied over a range of 0 to 5 by a set of fixed contrast filters or by varying the yellow and magenta filter settings in a subtractive color enlarger.

V Blanking Width

(FP) This refers to the width in terms of time or horizontal lines of the television blanking signals that occur during the vertical retrace interval.

VCR

(FV) This is an abbreviation for Video cassette recorder, which is an electronic device generally used for recording and viewing full-motion video.

Vector Graphics

(FP) This is an image composed of geometric shapes such as curves, arcs and lines rather than the pixel based bitmap.

Vector Image

(FP) This is a graphic or composed of geometric shapes such as curves, arcs and lines rather than the pixel based bitmap.

Vectorscope

(FV) An electronic device that measures a video signal's chrominance (color) performance.

Vertical Alias

(FV) This is an alias caused by unfiltered sampling in the vertical direction by scanning lines. Vertical aliasing is frequently noticed when reading vertical resolution on a resolution chart. The wedge-like lines become finer and finer until they reach the limit of the vertical resolution of the system, but then they may appear to widen or to change position. This is caused by lines on the chart sometimes falling between scanning lines and sometimes on them. In a properly filtered television system, detail finer than the vertical resolution of the system would be a smooth blur.

Vertical Blanking

(FV) This refers to the video synchronizing signals which occur at the end of each field. These blanking signals represent the time during which the electron beams of an output device are turned off and positioned to the upper left edge of the display.

Vertical Blanking Interval (VBI)

(FV) That part of the video signal where the voltage level is at 0 IRE and the electron beam sweeps back from the bottom to the top of the screen.

Vertical Drive

(FV) This is the synchronizing pulse that occurs at the leading edge of vertical blanking. It is used in older systems to indicate the start of vertical retrace.

Vertical Interval

(FV) This is the time period of the video signal that occurs between the end of one field and the beginning of the next. During this time period, the electron beam in cameras and monitors are turned off (invisible) so that they can return from the bottom of the screen to the top to begin another scan without leaving a visible retrace line.

Vertical Interval Time Code (VITC)

(FV) This refers to time code information stored on specific scan lines during the vertical blanking interval. It is a popular method for recording time code onto videotape. A time code address for each video frame is inserted in the vertical interval (the vertical blanking retrace period) of the video signal, where it is invisible on-screen yet easily retrieved, even when a helical scanning VCR is in pause mode. This is also where a CCTV multiplexer will record any time-lapse video overlay information and the information necessary to de-multiplex a multiplexed time-lapse video recording.

Vertical Period

(FV) In video, this is the time required for one vertical scan cycle. In NTSC, this is 1/59.94 second, in PAL, 1/50 second.

Vertical Resolution

(FV) This is the amount of resolvable detail in the vertical direction in a picture. It is usually expressed as the number of distinct horizontal lines which can be seen in a test pattern. Vertical resolution is primarily fixed by the number of horizontal scanning lines per frame.

Vertical Retrace

(FV) This is the return of the electron beam from the bottom to the top of the raster after completion of each field.

Vertical Scan Frequency

(FV) This is the frequency of the vertical sync pulses or vertical scans. The NTSC vertical scan frequency is 59.9 Hz.

Vertical Scan Rate

(FV) For noninterlaced video, this is the same as the frame rate. For interlaced video, this is twice the frame rate.

Vertical Serrations

(FV) These are the small notches in a vertical synchronizing pulse which provides horizontal synchronization during the vertical interval.

Vertical Size

(FV) This is an adjustment in consumer television allowing a service technician, with the use of an appropriate test pattern, to adjust the overall height of a video image so that the television set produces a reasonably accurate image.

Vertical Sync

(FV) This is the synchronization pulse that initiates the vertical retrace of the electron gun from the bottom of a frame back to the top.

Vertical Sync Pulse

(FV) This is the synchronization pulse that initiates the vertical retrace of the electron gun from the bottom of a frame back to the top.

Verification

(FP, FV) See verify. (FV) The process of confirming the accuracy of an item as compared to its original.

Verify

(FP, FV) This is the fourth step in the ACE-V and ACE-VR scientific protocols for comparative analysis. It is an independent analysis, comparison and evaluation by a second qualified examiner. In most forensic laboratory settings this also includes the procedures to be followed in the event that there is a disagreement over the scientific validity of the examination performed by the first examiner.

Very High Frequency (VHF)

(FA, FV) This refers to a frequency band used for usually less expensive or older wireless microphones that are more susceptible to interference as compared to wireless microphones that operate in the UHF frequency band. (FV) This is the range from 30 MHz to 300 MHz, within which are found U.S. television channels 2 through 13.

Very Large Scale Integration (VLSI)

(CER) This is the technology by which hundreds of thousands of semiconductor devices are fabricated on a single chip.

VESA

(CER) The video electronics Standard association set standards for high resolution video devices such as monitors and video circuits. VESA also developed a standard for IBM-PC and compatible machines called VL-Bus (VESA Local) for video boards and slots that can be plugged into the motherboard.

VESA Local Bus (VL)

(CER) In late 1992, VESA (Video Electronics Standard Association) completed the specification for a local bus expansion for PCs.

VGA

(CER, FP) This is an abbreviation for Video Graphics Array. It is a hardware video display standard of 640X480 pixels originally developed by IBM and for the most part has been replaced by higher resolution standards.

VHS

(FV) This is an abbreviation for Video Home System. This is a consumer videocassette record/playback tape format using half-inch wide magnetic tape and is the most common home VCR format in the U.S.

VHS Hi-Fi

(FV) An improved stereo audio recording/playback system found on some camcorders and VCRs.

VHS-C (VHS-Compact)

(FV) This is a miniature version of the VHS tape format utilizing smaller cassettes that may also be played on standard VHS machines by using an adapter cartridge.

Video

(FV) The electronic representation of a sequence of images, depicting either stationary or moving scenes, and which may include audio.

Video Analysis of Forensic Video Analysis

(FV) - (definition developed and accepted by practicing forensic scientists/examiners) Forensic Video Analysis is the scientific examination, comparison, and/or evaluation of video in legal matters. (ASCLD-LAB - category definition for accreditation purposes only) A subdiscipline of Digital & Multimedia Evidence which involves the examination, analysis, and/or evaluation of video.

Video Camera

(FV) This is a camera which contains an electronic image sensor designed to capture an electronic representation of a sequence of images, depicting either stationary or moving scenes, and which may include audio.

Video Capture

(FV) This is the process of converting analog video to digital video.

Video capture device

(FV) This is any hardware device that converts analog video signals to digital video signals for subsequent storage on a computer's hard disk or other mass storage device. Some video capture devices are also capable of converting digital video to analog video for output to a VCR.

Video card

(CER) A card that fits into a computer's expansion slot to control output to a computer monitor.

Video cassette

(FV) This refers to a plastic shell containing videotape wound around two reels.

Videocassette Recorder (VCR)

(FV) An electronic device used for recording and playback of videotape mounted in a specific design of cassette or cassettes in a specific recording format or formats.

Video CD

(CER, FV) An industry standard for storing MPEG-1 video on a CD.

Video clip

(FV) A file that contains a short continuous video recording, usually of one scene.

Video compression

(FV) This is any process used to reduce the size of files containing video images stored in digital form. The two most common forms of compression are wavelet and MPEG.

Video Deck

(FV) This is an electronic device consisting of a video/audio head assembly, a system for transporting the videotape past the heads, and operational controls. It is used for recording and playback of videotape. It may also refer to electronic devices that can only be used to playback a previously recorded videotape.

Video Digitizer

(FV) Similar to a frame grabber but requires longer than 1/30th of a second to digitize a complete frame and therefore cannot be used for motion video. With the reduction in cost of high quality frame grabber, these devices are seldom used.

Video Distribution Amplifier

(FV) A device used to divide and boost the strength of a single video signal for delivery to multiple video devices.

Video Driver

(CER) This is a small software program that enables your computer and the video card to communicate with the monitor.

Video Editing

(FV) A procedure for combining titles, graphics, special effects, and selected portions of video clips in order to create a finished videotape recording.

Video Enhancement

(FV) Any process intended to improve the visual appearance of video sequences or specific features within video sequences.

Video Enhancer

(FV) A general term used to describe a device used to correct video image problems.

Video for Windows®

(CER, FV) This is Microsoft's older multimedia environment for the Windows operating system.

Video Format

(FV) This is a standard that determines the way a video signal is recorded onto videotape. Standards include, but are not limited to: DV, Digital 8, 1-inch Type C, 3/4-inch U-Matic, 3/4" U-Matic, 8 mm, Beta, Beta ED, Betacam, Betacam SP, SP, D-1, DCT, D-2, D-3, D-5, Digital Betacam, Hi8, M-II, VHS, and S-VHS.

Video Framestore

(FV) A device that enables digital storage of one or more images for steady display on a video monitor or output to a video printer.

Video Gain

(FV) The range of light-to-dark values of the image which are proportional to the voltage difference between the black and white voltage levels of the video signal. It is represented on the waveform monitor by the voltage level of the whitest whites in the active picture signal.

Video Mixer

(FV) This is a European term for a video production switcher.

Video Monitor

(FV) A high-quality television set (without RF circuits) that accepts video baseband inputs directly from a TV camera, videotape recorder, or other video source.

Video Noise

(FV) This is a visible defect in a poor quality video signal within the standard video signal that is often called Snow.

Video Printer

(FV) This is a special device used to capture a single frame of video and print an electronic photograph.

Video Processing Amplifier

(FV) This is a device that stabilizes the composite video signal, regenerates the synchronizing signals, and allows other adjustments to the video signal parameters.

Video Projector

(FV) This is a display device which projects a video or computer image onto a large screen. The classic video projector has three primary color video tubes which converge on-screen to create the full color image. Single tube projectors eliminate convergence problems but compared to three tube systems they usually project a relatively lower quality image.

Video Recording

(FV) The converting of an image, moving or still, into a video signal that can then be recorded.

Video Sequence

(FV) This is a series of two or more pictures arranged in succession.

Video Signal-to-Noise Ratio

(FV) An indication of the relative amount of noise in an electronic image.

Video Stabilization

(FV) The process of positioning individual frames so that a selected object or person will remain in the same location as the video is played.

Video Switcher (Production Switcher, Video Mixer)

(FV) This is an electronic device that accepts inputs from a variety of video sources and allows the operator to select a particular source to be sent to the output(s).

Videotape

(FV) This is a flexible magnetic tape used for recording video and audio signals. It is made of a backing, a binder, and a coating. The coating is generally made of iron oxide, but may also be made of metal particle or metal evaporated coatings.

Videotape Recorder (Video Tape Recorder, VTR)

(FV) This is any device which permits audio and video signals to be recorded on magnetic tape.

Video Time Base Error

(FV) Where all the components of the video signal jitter (change in time) together in relation to another video signal.

Video To Audio Crosstalk

(FV) A measurement, typically in dB, of the amount of unwanted video signal energy present in an audio signal.

Video Track

(FV) This is the track or area on a videotape where video information is recorded.

View Camera

(FP) This is a camera with movements in which the taking lens forms an image directly on a ground-glass viewing screen. A film holder is inserted in front of the ground glass for exposure.

Viewfinder

(FP) This is an optical system used for composing and sometimes focusing the subject.

Viewing lens

(FP) This is the lens on the camera through which the photographer views the subject.

Vignette

(FP) This is to underexpose the edges of an image. Sometimes done intentionally but more often caused accidentally by a lens that forms an image only partially covering the film or paper.

VIR

(FV) This stands for vertical interval reference. It is a reference signal inserted into the vertical interval of the source video. This signal is used further down the video chain to verify parameters and to automatically adjust gains and phase.

Virtual Memory

(CER) This is a method of using hard disk space as if it were RAM, but it is significantly slower than read RAM.

Vision Mixer

(FV) This is a European term for video production switcher.

Visual Acuity

(FP) This is the relative amount of detail perceptible by the human eye.

Visual Perception

(FP) This is the subjective interpretation of impressions transmitted from the retina to the brain in terms of information about a physical world displayed before the eye. Visual perception can involve any one or more of the following: recognition of the presence of something; identifying it; locating it in space; noting its relation to other things; and identifying its movement, color, brightness, or form.

Visual Resolution

(FP) This is a measurement of a person's capacity for seeing distinctly fine details that have a very small angular separation.

VITC

(FV) This is an abbreviation for vertical interval time code. This is a time code encoded into the vertical interval of the video. It usually can be read out even when a VTR is still-framed or running at slower or faster than play speed.

VITS (Vertical Interval Test Signal)

(FV) This is a signal that may be included during the vertical blanking interval to permit on-the-air testing of video circuit functions and adjustments.

VL

(CER) This is an abbreviation for VESA Local Bus.

VL Bus

(CER) This stands for VESA Local Bus.

VLF

(CER) This refers to very low frequency radiation produced by CRT designs of computer monitors that some studies indicate could be a potential health risk.

VOB Files

(CER, FV) These are DVD-Video movie files. They usually contain multiplexed Dolby Digital audio and MPEG-2 video.

Voice Over

(FV) This refers to narration added over video, usually during post production. The narrator, who is not recorded with the original video, explains or somehow supplements the visual images.

Volatile Memory

(CER) Memory devices whose stored data is lost when power is removed. RAM can be made to appear nonvolatile by providing it with a back-up power source.

Volume Unit (VU) Meter

(FA, FV) This is a device used for measuring and displaying the intensity of an audio signal.

VRAM

(CER) This is an abbreviation for Video Random Access Memory. This memory is dedicated for the computer video display card functions.

VTR

This is an abbreviation for Videotape recorder.

VU Meter

(FA, FV) This is a device used for measuring and displaying the intensity of an audio signal.

W

Walking-Ones

(CER) This is an electronic memory test pattern in which a single one bit is shifted through each location of a memory filled with 0s. A walking-zero pattern is the converse.

WAN

(CER, FV) This is an abbreviation for Wide Area Network. It is a data network that spans more than one geographical location and may connect several LANs.

Warm

(FP) This refers subjectively to reddish colors that by association with common objects (fire, sun, and so on) which gives a subjective impression of warmth.

Warm Start

(CER) This is to reboot a system without turning the power off.

Warp

(FV) This is a special effect created to distort or twist video images.

Warping

(FV) This video effect is related to morphing except that a warp consists of transforming one video image into one of a completely different type.

Washing aid

(FP) This is a chemical solution used between fixing and washing film or paper. It shortens the washing time by converting residues from the fixer into forms more easily dissolved by water. It is also called hypo neutralizing (or clearing) agent and was used mainly with fiber based photographic papers.

Watermark

(FA, FV) Information hidden as almost “invisible noise” or almost “inaudible noise” in a video or audio signal intended to be used for copyright protection purposes. (FV) (1.) This can refer to a checksum value placed in a video image outside of the picture area to authenticate the video image. Unless this checksum is a universal standard that can be easily verified by law enforcement agencies, the proprietary checksum values have the limitation of only being verifiable by the manufacturer’s support staff and are therefore of no practical value. Because of this severe limitation, any recording system using a proprietary checksum value is NOT recommended for video recordings intended for legal or forensic uses. (2.) This is an almost invisible logo inserted in an image for either copyright protection or authentication. From a legal standpoint it can be argued that any form of visual watermark could render a video recording inadmissible for one of several reasons. First, unless you know exactly how and where the watermark is embedded in the video image, and even with this knowledge, it can be impossible to determine if a small detail in the video image was in the object originally videotaped or if it is the watermark itself or a combination of the watermark and the image of the original object. Second, any form of visual watermark can and most likely will interfere with any attempt to

enhance the video image. Third, any form of visual watermark may interfere with the ability to reproduce accurate copies of the original video recording. Forth, any form of visual watermark can interfere with editing of the original video record, such as when there is a court order to edit out a section that contains inadmissible video. Because of these problems that have the potential to render the video recording inadmissible in court, any recording system using a visual watermark system is NOT recommended for video recordings intended for legal or forensic uses. This includes any video recording system that uses a so-called invisible watermark. (3.) A translucent logo inserted in and recorded as part of an image for copyright protection or television station identification.

Watt (W)

(FA, FV) This is a measure of electrical power. This is the power expended when 1 ampere of direct current flows through a resistance of 1 ohm. It is calculated by multiplying volts times amperes (Watts = Volts X Amperes).

.wav

(CER, FA) This is the file extension that identifies sound files stored in waveform (WAV) audio format.

WAV

(CER, FA) This is a file format in which Windows stores sounds as waveforms. Such files have the extension .wav.

Waveform

(FA, FV) The visual representation of a wave's amplitude changes over time.

Waveform Monitor

(FA, FV) 1. An electronic device that provides a graphic display of a video/audio signal's strength.

Wavelength

(FA, FV) This is the distance between successive peaks or troughs in a periodic signal that is propagated through space. Wavelength can be calculated as speed divided by frequency.

Wavelet

(CER, FA, FV) A mathematical function that varies over a limited extent of time. Wavelets are coming into increasing use for analyzing signals (such as sound). They have limited duration and sudden changes in frequency and amplitude rather than the infinite duration and constant amplitude and frequency, of the sine and cosine functions.

Wavelet Transform

(FA, FV) A time-to-frequency conversion which gives a constant bandwidth frequency analysis.

Wet plate process

(FP) This is a photographic process in which a glass plate was coated with a collodion mixture, then sensitized with silver nitrate, exposed, and developed while the collodion was still wet. It was popular from the 1850s until the introduction of the gelatin dry plate in the 1880s.

Wetting agent

(FP) This is a photographic chemical solution used after the manual washing of black and white film. By reducing the surface tension of the water remaining on the film, it speeds up drying and prevents water spots.

White Light

(FP, FV) This is a mixture of all wavelengths of the visible part of the electro-magnetic spectrum. The human eye sees this mixture as light that ranges from a neutral gray to white depending on the intensity.

White Balance

(FP, FV) This is a function on electronic camera to adjust the sensor and/or the processing of the raw data from the sensor to compensate for the different mixture of colors of light being emitted by different light sources.

White Compression

(FV) This refers to amplitude compression of the signals corresponding to the white regions of the picture, thus modifying the tonal gradient. The overall effect of white compression beyond bandwidth limiting is to reduce contrast in the highlights of the picture as seen on a monitor.

White Level

(FV) This is the video signal level which defines white for the video system.

White Level Control

(FV) This is a name for the contrast or picture control. It describes a function that is otherwise not clearly spelled out in names of controls used on monitors. It is not a term found on a monitor control. (As “black level” clearly defines the brightness control function, “white level” more clearly defines the contrast or picture control function.)

White Noise

(FA) A random signal having the same energy level at all frequencies (in contrast to pink noise which has constant power per octave band of frequency).

White Peak

(FV) The maximum excursion of the picture signal in the white direction at the time of observation.

White Reference

(FV) In a video production context, it is defined as the luminance of a white card having 90% reflectance and subjected to the same illumination as the scene.

Wide-Angle Distortion

(FP, FV) A change in perspective caused by using a wide-angle lens very close to a subject. Objects appear stretched out or farther apart than they really are when viewed from a normal viewing distance without the use of any optical device. In this situation the resulting photograph sometimes could give a misleading appearance of the distance between objects, and/or the relative size of objects, because the camera lens is unusually close to one object. In the hands of a properly training photographer, this is not likely to be a problem and can be easily explained on the witness stand in common crime scene photography situations such as the overall photography of the scene with a wide angle lens. It is common accepted practice to use a wide-angle lens to take overall photographs at a crime scene, especially when photographing the interior of small rooms. In most cases, overall crime scene photographs taken with a high quality wide angle lens by a properly training photographer will represent a fair and accurate photographic reproduction of the crime scene.

Wide-Angle Lens

(FP) A camera lens with a focal length less than the diagonal of the film format it's being used for.

Widescreen

(FV) This refers to a video image with an image with an aspect ratio greater than a 1.33:1 aspect ratio.

Wide SCSI

(CER) This is a form of the SCSI-2 interface that can transfer data 16 bits at a time at up to 20 megabytes per second.

Width

(FP, FV) This can refer to the size of the picture in a horizontal direction. (FV) (1.) This can refer to the width of recording tape, varying from 0.150" in cassette tape to 2.0" for video, mastering and instrumentation tapes.

Winder/Cleaner

(FA, FV) This is a device designed to wind and clean magnetic tape in order to restore it to a quality that approaches the condition of a new tape, providing the tape has not been physically damaged.

Window Dub

(FV) This refers to copies of a videotape with a "burned in" time code display. Hours, minutes, seconds and/or frames appear on the recorded image. Window dubs are used in off-line editing and to add a time and date to a videotape image as a reference of when the video was recorded.

Windows

(CER) This is an operating system for PCs developed by Microsoft, using a graphic interface that imitated that of the Macintosh. This is the operating system used in the majority of computers used for forensic applications.

Wipe

A transition between two video signals that takes the shape of a geometric pattern.

Wipe Generator

(FV) This is an electronic device that produces video wipe transition control signals. It may be a standalone device or part of a production switcher.

WMF

(CER, FP) This is an abbreviation for Windows Meta File. This is a vector-based graphic images file format.

Work Copy

(FA, FP, FV) This is a copy or duplicate of a recording or data that can be used for subsequent processing and/or analysis.

Working solution

(FP) This is any chemical solution diluted to the correct strength for use.

Work Print

(FV) This is a videotape which is created as a result of an off-line editing session.

Workstation

(CER, FA, FP, FV) This is a computer, monitor and its peripherals that are dedicated to a single use.

WORM

(CER) This is an abbreviation for Write Once, Read Many This is an optical drive where the data is recorded once (usually with a laser) but may be read many times. CD ROMs are WORMs.

Wow

(FA, FV) This refers to slow, periodic variations in the speed of the tape, characterized by its effect on pitch.

Wow And Flutter

(FA, FV) Wow refers to low-frequency variations in pitch while flutter refers to high-frequency variations in pitch caused by variations in the tape-to-head speed of a tape machine.

.wmf

(CER) This is a file extension that identifies a vector graphic encoded as a Microsoft Windows Metafile file.

Wrinkle

(FV) A physical deformity of the videotape. Any creases or wrinkle in the videotape and which may produce dropouts or a loss of picture information upon playback.

Write Block/Write Protect

(CER) Hardware and/or software methods of preventing modification of media content while the media content is being read. In the forensic examination of evidence these devices perform a critical function by allowing the examiner to make an image, recover deleted files that have not been overwritten, examine files, and/or copy files without altering any data on the storage media being examined.

WYSIWYG

(CER) This is an abbreviation for What you see is what you get. Usually, but not always, referring to the accuracy of a screen display to show how the final result will look.

X

X setting (X sync)

(FP) This is a flash setting that causes an electronic flash to fire in synchronization with the shutter. For some manual cameras, the X synch speed refers to the maximum speed that the camera can synchronize with an electronic flash.

Xenon

(FP) This is a gas sometimes used in electronic flash tubes and enclosed arc light sources.

XGA

(CER) This refers to a standard for a computer monitor image resolution of 1024 x 768 pixels.

Y

YCC

(FP, FV) The color model used by Kodak in its Photo CD process. This involves the translation of data that was originally in RGB form into one part of what scientists call luminance but the rest of us call brightness (this is the Y component) and two parts (the CC) of chrominance or color and hue. Sony uses the same system in its professional Betacam video system.

Z

Z

(FA, FV) This is a symbol for impedance.

Zero Timing Point

(FV) This is the point at which all the video signals must be in synchronization (typically the switcher input).

ZFP

(CER) This is an abbreviation for Zero Foot Print. This term is used to describe peripherals that take little or no additional desk space when installed. Often this means they are designed to sit under an existing peripheral or the computer itself.

.zip

(CER) This is a file extension that identifies a compressed archive file encoded in a ZIP format.

Zone focus

(FP) This is to present the focus of a lens so that some future anticipated action is likely to take place within the limits of the depth of field so that a fast moving event can be photographed without having to refocus the camera and risk missing the photograph at the peak moment of action.

Zone Focusing

(FP) This is a method of focusing the lens so that the depth of field extends over a preselected range of distances where the subject is anticipated to be.

Zone System

(FP) This is the method of determining exposure and development required for individual scenes, invented by Ansel Adams. It is based on analysis of subject luminosities in terms of ten gray tones, labeled zones 0 through X and pre-visualizing them as print densities. By measuring each subject luminance with a handheld meter it is possible to determine how much the range of values must be contracted or expanded by negative development control to give the required values in the print. This requires a high degree of skill and experience.

Zoom Lens

(FP, FV) This is a lens design in which the photographer or videographer can adjust the focal length.

Numerals

0H

(FV) This is the reference point of the horizontal sync.

0V

(FV) This is the reference point of the vertical (field) sync.

120 roll film

(FP) This is a film format for still photography introduced by Kodak for their Brownie camera in 1901 and is still very popular, as the surviving medium film format.

1/4" Phone

(FA) This is a connector used in audio production that is characterized by its single shaft with locking tip.

1/8th Mini

(FA) This is a small audio connector used frequently in consumer electronics.

1:1

(FP) This is a photograph in which the object depicted in the photograph is the same size as the original object. (FP) This is an uncompressed video capture.

24 Frames Per Second

(FV) This is an International standard for motion picture film shooting and projection.

24-Bit Color

(FP, FV) This is a color image for which each red, green and blue channel stores 8 bits of information.

25 Frames Per Second

(FV) This is the frame rate of television in all countries not conforming to CCIR system M (NTSC).

29.97 Frames Per Second

(FV) This is the frame rate of NTSC color television, which was changed from 30 so that the color subcarrier could be interleaved between both the horizontal line frequency and the sound carrier.

3-D digitizer

(FP, FV) This is a hardware device and software application that converts a real object into 3-D computer model.

3-D effects (program)

(FP, FV) This is a software application program that creates images that look three-dimensional on a computer screen.

30 Frames Per Second

(FV) This is the frame rate of an NTSC video signal prior to color.

4:1:1

(FV) 4:1:1 indicates that Y' has been sampled at 13.5 MHz, while Cb and Cr were each sampled at 3.375 MHz. Thus, for every four samples of Y', there is one sample each of Cb and Cr.

4:2:0

(FV) This is a sampling system used to digitize the luminance and color difference components (Y, R-Y, B-Y) of a video signal. The four represents the 13.5 MHz sampling frequency of Y, while the R-Y and B-Y are sampled at 6.75 MHz, effectively between every other line only. This amounts to a subsampling of chroma by a factor of two compared to luma (and by a factor of four for a single Cb or Cr component).

4:2:0 Macroblock

(FV) This is a sampling system that has four 8 x 8 blocks of luminance (Y) and two 8 x 8 blocks of chrominance (one block of Cb and one block, of Cr).

4:2:2

(FV) This is a commonly-used term for a component digital video format. The details of the format are specified in the ITU-R BT.601-2 standard document. The numerals 4:2:2 denote the ratio of the sampling frequencies of the single luminance channel to the two color difference channels. For every four luminance samples, there are two samples of each color difference channel.

4:2:2:4

(FV) This is the same as 4:2:2 but with the addition of a key channel which is sampled four times for every four samples of the luminance channel.

4:2:2p (Professional Profile)

(FV) This refers to a higher quality, higher bitrate encoding designed for professional video usage.

4:3

(FV) This is the aspect ratio of conventional video, and television screens.

4:4:4

(FV) This is similar to 4:2:2 except that for every four luminance samples, the color channels are also sampled four times.

4:4:4:4

(FV) This is similar to 4:2:2:4 except that for every four luminance samples, the color and key channels are also sampled four times.

480i

(FV) This refers to 480 lines of interlaced video (240 lines per field). It usually refers to 720 x 480 or 704 x 480 pixels of resolution.

480p

(FV) This refers to 480 lines of progressive video (480 lines per frame). 480p60 refers to 60 frames per second; 480p30 refers to 30 frames per second; and 480p24 refers to 24 frames per second (film source). It usually refers to 720 x 480 or 704 x 480 pixels of resolution.

50 Fields Per Second

(FV) This is the field rate of 25 frame-per-second interlaced television.

60 Fields Per Second

(FV) This is the field rate of 30 frame-per-second interlaced television.

720p

(FV) This refers to 720 lines of progressive video (720 lines per frame). It usually refers to 1280 x 720 pixels of resolution in a 1.78 aspect ratio.