Numbers

1394

IEEE-1394 is an external bus standard that provides high-speed data connections between devices, generally a computer and a DV camcorder. Devices conforming to this standard are capable of transmitting digital data at 100 -400 Mbps. Also known under the names "FireWire" or "i-Link". Other devices adopting 1394 are high-end professional color printers and mass storage devices.

3:2 pull-down

The process of converting film's 24 progressive frames per second into the 30 interlaced fps (60 fields per second) of video to meet the requirements of the NTSC television standard. The process can be reversed, and the original frames reconstructed, through inverse telecine.

4:1:1

Ratio of sampling frequencies used to digitize the luminance and color difference components (Y, R-Y, B-Y) of a video signal. The "4" represents 13.5 MHz for the sampling frequency of the Y channel and the "1"s represent 3.75 MHz for both the R-Y,B-Y channels. Color information is sampled at half the rate of the 4:2:2 system in a fashion more efficient for 525 line television formats.

4:2:0

Ratio of sampling frequencies used to digitize the luminance and color difference components (Y, R-Y, B-Y) of a video signal. The "4" represents 13.5 MHz for the sampling frequency of Y, and the "2" and "0" represent the sampling of R-Y and B-Y at 6.75 MHz, between every other line only. Color information is sampled at half the rate of the 4:2:2 system in a fashion more efficient for 625 line television formats.

4:2:2

Ratio of sampling frequencies used to digitize the luminance and color difference components (Y, R-Y, B-Y) of a video signal, and often used synonymously component digital format, ITU-R 601, 601, CCIR-601 and SMPTE-125. The "4" represents 13.5 MHz for the sampling frequency of the Y channel and the "2"s represent 6.75 MHz for the R-Y and B-Y channels. This format has best support for high-quality chromakeying used in video production.

5.1

Surround sound using five and one additional discrete audio channels: left, center, right, left rear/side Surround, right rear/side Surround, and a subwoofer (the ".1" in "5.1").

8-VSB

Eight discrete amplitude level Vestigial Side-Band broadcast transmission standard, the ATSC digital television transmission standard currently used in the United States.

A-C

AAC

Advanced Audio Coding is a codec standard (ISO/IEC 13818-4,5) for MPEG-2 audio compression similar to MP3, but considered by some to provide higher quality at lower bitrates. Also part of the MPEG-4 audio specification.

AC-3

Older term for Dolby Digital, the 5.1 channel surround-sound audio standard for ATSC digital television and DVD video in the U.S. Achieves approximately 13:1 compression.

ADPCM

Adaptive Delta Pulse Code Modulation, a codec used for the compression of audio files. It achieves superior compression by encoding only the difference between samples.

ADSL

Asymmetrical Digital Subscriber Line, a technology for transmission of digital data over standard twisted-pair copper phone lines used for consumer TV applications with "VCR-like" quality. Generally provides speeds of to 6 Mbps up to 12,000 feet, or 1.5 Mbps up to 18,000 feet.

Algorithm

A formula used to simplify, modify, or predict data to selectively reduce the high data rate required by digital audio and video.

Aliasing

Defects in a video image that usually appear as jagged edges on diagonal lines.

Alpha Channel

The optional grayscale layer in image or video files used to isolate portions of the image, generally for mattes and compositing.

Analog

A system, signal or device that represents and/or transmits information via waves carried over the air or recorded onto a magnetic tape. Analog systems are limited in their ability to duplicate information accurately.

Anamorphic

The enhancement to DVD Video that allows proper, full resolution display of a 16:9 ratio video image on a widescreen display. When viewed on a 4:3 standard television display, the DVD Video player can adjust accordingly and present the image as "letterboxed" (black bars across the top and bottom).

Anti-aliasing
When pixels in an image are averaged so that their colors are more similar to surrounding pixels, in order to reduce jagged edges.
API
An Application Program Interface is the specific method prescribed by a computer operating system or by another program through which a programmer writing an application can make requests of the operating system, hardware or other application.
Artifacts
Unwanted noise or defects in digital images or video, usually the result of poor (or simply heavy) compression.
ASF
Advanced Streaming Format, one of Microsoft's media file formats for streaming video and audio over networks and the Internet.
Aspect Ratio
The expression of the relationship of width to height for a given pixel or image, either expressed as a ratio (example: 4:3) or as a decimal (example: 1.33, 4 divided by 3). NTSC and PAL video are considered 4:3, and widescreen video is typically 16:9.
Asynchronous reader filter
In Microsoft's DirectShow, a file source filter that reads data off the disk for playing back media files, and the source filter used for most filter graphs.
Asynchronous
A type of transmission in which data is transmitted independently without reference to a standard clock. Also used in reference to different capacities for data transfer in each direction (such as ADSL).
ATM
Asynchronous Transfer Mode, a form of fast packet switching that allows for data transmission of 25 and 155 Mbps. The internationally agreed basis for broadband ISDN.
ATSC
Advanced Television Systems Committee that establishes the technical standards for advanced television systems, including digital and high definition television transmission in the United States.
AVI
Audio-Video Interleave, a media file format for storage of digital video and audio on the Microsoft Windows platform.
AVO
In MPEG-4, an individual Audio-Visual object is anything that can be seen, heard or experienced as part of an MPEG-4 presentation. Optimal coding algorithms and delivery schemes can be employed based on unique characteristics of each AVO.
B-Frame
In MPEG, a Bi-directional Predictive picture composed by evaluating only the differences between the immediate previous and next I- or P- frames in a video sequence. B-frames provide the best compression of the three (IPB) frame types.
Bandwidth
In digital communications networks, the data transfer capacity of a system expressed in the number of bits per second. In broadcast networks (television, radio, wireless), the capacity is expressed in MHz and the amount of spectrum available to each communications licensee.
Batch Processing
A feature common in many digital video applications that automates (based on input from the user) repetitive or similar functions such as video capture or export to multiple formats.
BIFS
Binary format for scenes. In MPEG-4, a set of elements called nodes that describe the layout of a multimedia layout, organized in a tree-style hierarchical scene graph node structure.
Bit
Short for binary digit, this is the unit of measure for the smallest element of digital data, with a value of 1 or 0.
Bitmap
An image comprised of a pattern of different colored dots or pixels.
Bit Rate
The speed at which digital data is streamed across a network, usually measured in kilobits per second (Kbps) or megabits per second (Mbps).
Block
In digital video, a rectangular area of picture, usually 8 x 8 pixels in size, which is subjected to DCT coding as part of the compression process. Also used to refer to visible compression artifacts between adjacent blocks in a DCT-based compression
Bob
A method of displaying interlaced video fields on a progressive monitor by doubling or interpolating alternate fields and displaying them for 1/60 of a second, similar to television. In Windows, DirectDraw automatically shifts every other field by one half pixel vertically, and then stretches each field by a factor of two vertically.
Bps
Bits per second, a general measurement for data transfer rate
Broadband
High-speed data transmission, usually referring to services at 1.5 Mbps or greater
Broadcast
The delivery of media or presentation, live or prerecorded, in which all viewers join the presentation in progress. Also used to refer to the part of the television industry that provides content directly to the home or alternate providers (cable, satellite, etc.).
Buffering
The process by which streaming media is cached in memory before beginning to play.
Bus
A system data bus acts as a communication channel between the motherboard and other system components. Within the processor of a computer, data passes along a set of parallel lines known as an internal data bus. An external data bus provides an interface with the system's motherboard. In terms of a Local Area Network (LAN), a bus topology consists of a single two-directional

cable, which is connected to each of the workstations and file servers.

Byte

Short for binary term, a unit of data made of eight bits.

Cable modem

A data modem that uses the bandwidth of a given cable system (primarily fiber optic or coaxial cable) that provides bandwidth generally up to 30 Mbps.

CATV

Community Antenna Television, or simply Cable, a television system that distributes programming over coaxial or fiber-optic cable.

CBR

Constant Bit Rate, the encoding or delivery of media at a specific given data rate.

CCD

Charge coupled device, a chip or set of chips that samples analog signals, and used in cameras and video cameras.

CCIR

Comit Consultatif International des Radiocommunications (International Radio Consultative Committee), an international standards group replaced by the International Telecommunications Union (ITU).

CCIR 601

The recommendation developed by the CCIR specifying the digitization of color video signals, color space conversion, the 13.5MHz sample rate and the 720-pixel horizontal resolution of broadcast television. Also known as Recommendation ITU-R BT.601.

CD-I

CD Interactive, one of the original multimedia formats for compact disc.

CD-R

Recordable CD. A CD-R has inside a dye, sensitive to a laser beam. The Laser writes the information (pits) into an optical pregroove, and the dye changes the reflectivity of the gold layer to form the pits. A CD-R cannot be erased, and is thus known as WORM (Write Once, Read Many times).

CD-ROM

A CD with data used by computers to load programs or to read stored data. A CD-ROM (Read Only Memory) cannot be overwritten (Yellow book).

CD quality

An audio stream that is encoded by using uncompressed PCM at 44.1 kHz and 16 bit stereo.

Cache

Computer memory used to store information that is most frequently used, usually stored in a section of main memory or in a separate device for faster access.

Caption

Text that accompanies an image or video stream.

CELP

Code-Excited Linear Prediction, an audio encoding method for low-bit rate (2400 bps) speech coding.

Channel

A single component of an audio or video that creates the desired image or sound produced by the decoder/player when combined with other elements.

Chroma/Chrominance

The characteristics of color information based on the combination of hue and saturation, independent of the luminance intensity.

CIF

Common image format for digital video, defined as a resolution of 352 horizontal x 240 vertical pixels.

Cinepak

An older, widely used software codec for CD-ROM video. It was generally associated with 320 x 240 resolution video, 15 frames per second, at 150 Kbps. Modern codecs produce much better results.

Client

The device, computer, or software that originates requests to the server in a network environment.

Clip

In editing, a single media item to be used as part of the larger project.

CMYK

A color model that uses subtractive colors (Cyan, Magenta, and Yellow) to create all the other colors, and a fourth channel, Black (K) used to create varying grayscale shades. Used primarily in post-process printing.

Codec

A Compressor/Decompressor is a software or hardware component used to digitally compress video and audio data to minimize the file size, and to decompresses media files during playback. Motion-JPEG, DV, MPEG (and its various flavors), Indeo, and Sorenson are all common codecs.

COFDM

Coded orthogonal frequency division multiplexing, the broadcast transmission standard used for digital television in Europe. Generally considered to be less robust and flexible than 8-VSB, but more immune from multi-path interference.

Color Model or Color Space

Term describing how elements are combined in an image to produce a color. Examples are: RGB which combines red, green, and blue to form other colors; CMYK, which combines cyan, magenta, yellow, and black, and; HSB, which combines hue, saturation, and brightness. Moving between color spaces requires conversion, and certain models are best suited for different applications (example, RGB for video, CMYK for printing).

Component Video

A color video signal that separates luminance and chrominance into different parts. RGB, 4:2:2 and YUV are examples of

component video systems. Betacam video employs a component video signal system. Systems using component video are considered to provide better quality than composite video systems.

Composite Video

A color video signal that contains all of the color information (luminance and chrominance) in one signal, used as a type of analog compression. NTSC, PAL and SECAM are examples of composite video systems, and RCA style ports on devices like a VCR are considered composite.

Compression

The process of reducing file size for storage by finding patterns of data that can be classified more efficiently. There are two general categories of compression, lossless and lossy. A codec (Compressor/Decompressor) is an algorithm or scheme used when recording digital video or audio. For example, when video is transmitted over the Internet, it must be compressed on the sending end and decompressed on the receiving end. A codec can be chosen based upon the user's audio or image quality and image size preferences. Windows Media Technologies provides numerous codecs for streaming media content.

Compression filter

A specialized type of transform filter. Compression filters (compressors) accept data, use a compression scheme to transform the data, and pass the compressed data downstream.

Concatenation

End-to-end linking together of different digital streams, often complicated by differences (bitrate, structure, etc.) of the different streams.

Cropping

The process of trimming away the edges of images, retaining only the inside portion and resizing the image's dimensions accordingly.

D-F

D1

A format for component digital video tape recording working to the ITU-R 601, 4:2:2 standard using 8-bit sampling. Also used to refer to video resolution of 720x480 (NTSC) or 720x576 (PAL), often as Full-D1.

DAI

DMIF-Application Interface. In MPEG-4, an application interface that allows access to AVOs regardless of the method of transmission.

Data Broadcasting

The distribution of text and/or graphics via the spare capacity in the broadcast, cable or satellite transmission system.

Data Rate

The speed at which data passes between devices or systems, generally measured in bits per second.

DBS

Digital Broadcast System (or Satellite). A digital satellite reception system utilizing a fixed small dish focused on a geostationary satellite. DBS units are able to receive multiple channels of multiplexed video and audio signals (usually MPEG-2 transport streams via COFDM) as well as programming information, and (sometimes) data such as Internet and e-mail.

DCT

Discrete cosine transform, a method of video compression used in DV, MPEG and others that evaluates 8x8 pixel blocks in the picture.

Demultiplex

Separating the elementary streams of data (for instance, video and audio) from a single multi-channel stream.

DivX ;-)

A set of homebrew media codecs for Windows the AVI file format. They are based on a cracked version of Microsoft’s "MPEG-4" codec, and named after the failed Circuit City pay-per-view DVD scheme or 10:1 compression (depending on who you ask). Confusingly, DivX has little to do with DVD or true MPEG-4, but nevertheless provides excellent quality and compression.

DMIF

Delivery Multimedia Integration Framework, the part of the MPEG-4 specification that separates content from delivery method, and ensures transparent access to the content irrespective of the delivery technology, environment, or network.

DSL

Digital Subscriber Lines, high speed Internet access lines for connections directly from a telephone switching station to the client. There are many varieties, and the most common, ADSL, offers download rates up to 1.5 Mbps.

Decrypt

Conversion of encrypted content into accessible content.

Deinterlace

The process of combining two interlaced field sets into a single frame, usually to remove artifacts and scanlines to improve the quality of video when displayed on progressive systems.

Delta Frame

Encoded video frames that contain only data of the changes from the previous frame.

Device Control

A system or software driver that gives applications the ability to control video source devices like a camcorder or VCR.

Digital

The method of data storage where analog information is converted into numerical values to be processed by computers.

Digitizing

The process of converting analog input to a digital form.

DirectDraw

DirectDraw is a Microsoft DirectX SDK component that enables direct manipulation of display memory, the hardware blitter, hardware overlay support, and flipping surface support. DirectDraw provides more efficient use of system resources to create full-screen video.

DirectShow
Successor to Microsoft's Video For Windows and ActiveMovie that supports the capture, storage and playback of video and audio files. At the heart of the DirectShow services is a modular system of pluggable components called filters, arranged in a configuration called a filter graph. A component called the filter graph manager oversees the connection of these filters and controls the stream's data flow. Applications control the filter graph's activities by communicating with the filter graph manager.
DirectX
The group of technologies designed by Microsoft for running and displaying, on the Windows platform, applications and interactive multimedia content, such as full-color graphics, video, 3-D animation, and surround sound. Through the DirectX API, developers are given a common set of instructions, components, and tools to integrate a wide range of multimedia elements.
Dithering
A process that arranges pixels of different colors close together to simulate colors not directly supported by an image data type.
Dolby Digital
Formerly Dolby AC-3, the approved 5.1 channel (surround-sound) audio standard for ATSC digital television, achieving approximately 13:1 compression. The system uses multiple channels and speakers in front of and behind the listener to create the illusion of audio depth (3 in front, 2 behind the listener and 1 sub-woofer for low frequencies). This is also the standard that the US uses for DVD Movies.
Download
The delivery of content over a network in which the content is copied to a client computer from another client or the server (unlike streaming, in which the source data is not copied to the client computer).
Downstream Filter
In DirectX, the next filter in line to receive data from an upstream filter. An upstream filter sends data from its output pin to the connected input pin of the downstream filter.
DPI
Dots Per Inch is a measure of screen, image and printer resolution that is expressed as the number of dots that a device can print or display per linear inch.
Driver
Software that manages control of and communication with a hardware device.
DRM
Digital Rights Management, a system that packages and manages access to media content, such as decryption or license management.
DSP
A Digital Signal Processor is a processor that is usually dedicated for handling audio or video signals, commonly found in consumer electronics.
DTV
Digital Television Refers to transmitting a broadcast signal by encoding it digitally, gaining a number of benefits in the process. DTV can be compressed to provide four, five or more channels in the same bandwidth required for one channel of the current standard television. For digital conversion, the "Grand Alliance" plan approved by the FCC calls for the allocation of 6 MHz of the broadcast spectrum for each television broadcaster. It can be used for multiple standard definition signals, or one HDTV signal, and/or data transmission.
DV
Digital Video, or DV, is a very specific format and codec for video. The format can be stored on and played back by camcorder and computer, transferred between the two via IEEE 1394 digital I/O.
DVB
Digital Video Broadcasting, the group that developed the preferred scheme for digital broadcasting in Europe.
DVD
Digital Versatile Disc (aka Digital Video Disc), a disc format that stores 4.7 GB of data on a single sided, single layer CD size disc (equivalent to up to 3 hours of video and multi-channel audio). DVDs can also be double sided or dual layer-storing even more data.
DVD-R
A recordable (write once) DVD format using dye sublimation recording technology, capable of storing 3.95 GB on a single sided, single layer CD size disc. Generally used for DVD pre-mastering.
DVD-RAM
A recordable (write once) DVD format using phase-change recording technology, now capable of storing 4.7 GB on a single sided, single layer CD size disc. Generally used for archiving data on PCs, and a more affordable option than DVD-R. Although currently limited to drives for PCs, the backers of the format plan on releasing DVD-Video players compatible with the DVD-RAM format for recording and playback in the immediate future.
EDL
In video editing, an Edit Decision List is a list of all clips, effects, and transitions in a video project included in a video project, including notation of sources. EDLs are generally transferable between systems.
EPG
An Electronic Programming Guide is an interactive on-screen listing of programming available to a television service subscriber.
Encode
The conversion of data into a specified digital format for storage and retrieval, usually involving compression and sometimes encryption technologies.
Encrypt
In digital media, a software system used to protect sensitive data, often using a password or code.
Export
The process of converting data into a format that is recognizable by other applications.
FCC

The Federal Communications Commission is the federal regulatory agency that establishes policies to govern interstate and international communications by radio, television, wire, satellite, and cable.

Fiber Optics

A data transmission system that accepts an electrical signal, converts and transmits it by light pulses and then reconverts the output to an electrical signal at the receiving end. Fiber optics provide extremely high bandwidth and can run for long distances between repeaters. Fiber systems have three components, a transmission medium (fused silica or an ultra thin fibers of glass), the light source (LED or laser) that produces pulses representing the data, and a photodiode detector.

Field

A set of alternating scanlines of an interlaced video frame, most commonly used in television. This approach was originally invented as a form of compression for analog transmission, and also provides twice the images per second (at half the resolution) to achieve smoother fast motion. NTSC (29.97 frames per second), for example, provides a series of 59.94 interlaced fields per second.

Field dominance

Scan lines of the even-numbered (lower) fields fall spatially halfway between the scan lines of the odd-numbered (upper) fields, but are separated temporally. The field displayed first determines the field dominance (for instance, "lower field first").

File Format

A file structure that defines the way information is stored. Examples are ASCII text, AVI, MPEG, and QuickTime.

Filter

An effect applied to an image, video, or sound that changes its appearance or sound quality. Also, a key component in the Microsoft DirectShow architecture, a filter is a COM object that supports DirectShow interfaces or base classes. It might operate on streams of data in a variety of ways, such as reading, copying, modifying, or writing the data to a file. Sources, transform filters, and renderers are all particular types of filters. A filter contains pins that it uses to connect to other filters.

Filter Graph

In DirectShow, a collection of filters that are connected to perform a particular operation, such as playing back a media file, or capturing to the hard disc. The Filter Graph Editor is a graphical tool included with the Microsoft DirectX Media SDK that creates and manages DirectShow filter graphs.

Firewall

A firewall is a system used as a security measure between the Internet and an internal network.

FireWire

Trademarked name given by Apple Computers for the IEEE 1394 digital I/O standard.

FlexMux

The optional Flexible Multiplexing layer of MPEG-4, a tool that provides simple packet syntax and lightweight multiplexing for low bit rate, low delay streams.

FMV

Full Motion Video, the ability to play video at the broadcast frame rate of 30 fps for NTSC signals or 25 frames per second for PAL signals.

Frame

A single image in a video sequence containing the entire set of scanlines. NTSC video displays at roughly 30 frames per second.

Frame Drop

Frame Drop is when a decoding or encoding system cannot keep up with the true frame rate of the source video, resulting in "jerky" playback.

Frame Rate

The number of frames captured or displayed in one second of a video sequence.

Frame Size

The size (resolution in pixels or lines) of the captured or displayed frame in a video sequence.

FPS

Frames Per Second, the number of frames captured or displayed per second in a video sequence.

Frequency

The number of times an electromagnetic signal repeats an identical unit of time, measured in hertz (Hz).

G-I

Gamma

The range of possible colors and values portrayed on a display.

GoMotion

A DirectShow-based SDK by Ligos used by developers to add scalable, real-time MPEG-1 and MPEG-2 encoding to Windows-based PC software applications.

Grayscale

Color model for image data containing a 1 - 256 different shades of gray (including black and white).

GOP

In MPEG, a Group Of Pictures representing frames between successive I frames, with P and/or B frames in between.

H.263

ITU standard for variable low bit rate, low resolution coding of video for videoconferencing over packet networks like the Internet. Less flexible than MPEG, but requires less overhead for processing.

HDTV

High Definition Television, any format that is at least twice the horizontal and vertical resolution of the current standard definition signals, displayed in a 16:9 aspect ratio.

HSB

A color model that specifies colors as: H representing the hue or basic color; S representing the saturation or purity of the color; and B representing the Brightness or amount of light the color appears to emit.

HSP

Host Signal Processor, a device or system that depends on the host CPU for part or most of the data processing.

HTTP

Hypertext Transfer Protocol, the main protocol used on the World Wide Web that defines the rules for transmission of web pages (and related content) in TCP packets.

Hue

The color of light or a pixel, the property that sets it apart from other colors in a wavelength of light.

I/O

Input/Output, typically refers to sending data signals to and from devices.

I-Frame

One of the three types of frames that are used in MPEG coded signals. These contain data to represent an entire frame image (intraframe), compressed using DCT.

IEEE

Institute of Electrical and Electronics Engineers, a non-profit organization that sets and reviews standards for the electronics industry.

IEEE 1394

IEEE-1394 is an external bus standard that provides high-speed data connections between devices, generally a computer and a DV camcorder. Devices conforming to this standard are capable of transmitting digital data at 100 -400 Mbps. Also known under the names "FireWire" or "i-Link". Other devices adopting 1394 are high-end professional color printers and mass storage devices.

Import

The process of bringing data of a non-native format into an application, usually through a translation filter.

Indeo

A set of video and audio codecs originally developed by Intel for PC multimedia applications, and featuring progressive download features for the Internet.

Input Pin

In a filter graph, a pin that accepts data into the filter.

InfiniBand

A next-generation digital I/O architecture currently under development promising transmission rates of 500MB/s to 6GB/s per link.

Intelligent Streaming

A type of multiple bit rate streaming that adjusts the quality properties of the video and/or audio stream according to network conditions.

Interactive Television

The combination of standard television and enhancements (such as Internet access and interactive content).

Interframe

Data reduction based on coding the differences and predictions between frames.

Interlace

Interlaced video uses two alternating video fields to make a single frame of video, most commonly used in television. This approach was originally invented as a form of compression for analog transmission, and also provides twice the images per second (at half the resolution) to achieve smoother fast motion. NTSC (29.97 frames per second), for example, provides a series of 59.94 interlaced fields per second.

Interleave

A process of arranging audio and video data during compression used to obtain smoother playback and synchronization.

Interpolation

The method of generating missing information by estimating intermediate values between two known values in a sequence.

Intraframe

Data reduction based on coding only the information within a single frame, regardless of surrounding frames.

Inverse Telecine

The process that reconstructs the frames that were added when 24 fps film was converted to 29.97 fps (59.94 fields per second) video.

IP

Internet Protocol, the base protocol for the Internet designed to operate over a wide range of network technologies that defines an addressing plan and delivery service, but does not guarantee arrival of packets. Also used as an abbreviation for Intellectual Property.

IPMP

The optional Intellectual Property Protection and Management layer of MPEG-4, used to provide management of authorized access to encrypted content.

ISDN

Integrated Services Digital Network is a telecommunications service evolved from the existing public telephone network that provides access at 128 Kbps per line.

Isochronous

Data transfer at a consistent, specified rate suitable for continuous data such as video and voice.

ITU

The International Telecommunications Union, headquartered in Geneva, Switzerland is an international organization within which governments and the private sector coordinate telecommunications standardization. In many cases, it is the successor to the CCIR.

J-L

Jaggies

Undesired jagged edges that appear around the edge of objects in video or an image, commonly seen when interlaced video is displayed in a progressive video environment (example, television video captured and played back on a computer).

Joint Stereo
A specific coding method in MPEG Layer-II audio where the upper frequencies of the stereo signal are joined and coded as intensity stereo in order to conserve bandwidth and improve quality.
JPEG
Named after the Joint Photographic Experts Group that created the standard, a compression technique for images that reduces them to a small percentage of the original file size.
Kbps
Kilobits per second, a general measurement for data transfer rate at thousands of bits per second.
KBps
Kilobytes per second, a general measurement for data transfer rate at thousands of bytes per second.
Key
The piece of data required to unlock a media file packaged with encryption, usually obtainable separately.
Keyframe
A frame of digital video that contains all the data required to reconstruct that frame. Also, one of two or more frame in a sequence that is used for interpolation of motion or information between frames.
kHz
Kilohertz, or one-thousand Hertz, a measurement of frequency.
Linear Editing
Traditional "cut and splice" editing done on a flatbed where the sources are edited in the order presented. Changes to any edit require re-recording all of the succeeding edits or using the master as the source.
Lossless Compression
Any compression method that reduces file size without changing any data when the file is reopened.
Lossy Compression
Any compression method that reduces file size by selectively discarding what is determined to be nonessential data.
M-O
M1V
A standard abbreviation or file extension for an MPEG-1 elementary video stream.
M2V
A standard abbreviation or file extension for an MPEG-2 elementary video stream.
M-JPEG
Motion JPEG, a video compression scheme and codec that treats each field or frame in a sequence as a separate image, and performs separate compression on each. Popular in older digital editing systems before the advent of DV formats.
Macroblock
In MPEG, the basic unit used for motion compensated prediction. A macroblock consists of four eight by eight blocks of luminance data (arranged in a 16 by 16 sample array) and two 8 by 8 blocks of color difference data, which correspond to the area covered by the 16 by 16 section luminance portion of the picture.
MB
A Megabyte, one million bytes (actually 1,048,576), or one thousand kilobytes.
Mbps
Megabits per second, a general measurement for data transfer rate at millions of bits per second.
MBps
Megabytes per second, a general measurement for data transfer rate at millions of bytes per second.
MCI
Media Controller Interface, a software driver designed by Microsoft to allow media files to be played in Windows and device control from the PC.
Metadata
Information about the data itself. In digital media, information about the properties of audio and in the signal's data stream used for efficient decoding and databasing functions.
MHz
Megahertz, or one million Hertz, a measurement of frequency.
Motion Compensation
In video compression, the process of analyzing previous/future frames to identify motion vectors, and create the prediction and the error difference signal for interframe encoding.
Motion Estimation
In video compression, the process of evaluating and describing only the differences between adjacent frames, thus eliminating the need to convey redundant information.
Motion Vector
Two-dimensional vector used for motion compensation and motion estimation that provides an offset from the coordinate position in the current picture to the coordinates in a reference picture.
MPEG
Moving Picture Experts Group, the organization involved with defining open standards for digital media. Also used as the name of the formats and compression methods defined by this group.
MPEG-1
A widely used set of standards for the coded representation of video and audio, primarily for PC multimedia applications. The basis of formats such as CD-I and VideoCD. The ISO standards are organized under the designation ISO/IEC 11172.
MPEG-2
A widely used set of standards for the coded representation of video and audio, primarily for digital television and digital broadcast satellite. Intended for applications requiring support for interlaced video, and larger frame sizes and bitrates than supported by MPEG-1. The basis of formats such as Super VideoCD and DVD Video. ISO standards are organized under the

designation ISO/IEC 13818.

MPEG-4

A next-generation set of standards for the coded representation of the combination of streamed elementary audiovisual data in the form of natural or synthetic, audio or visual, 2D and 3D objects. It is a departure from previous MPEG standards as it concentrates more on the architecture of a multimedia system rather than pure compression issues. MPEG-4 provides standardized elements enabling the integration of production, distribution and content access, independent of the transmission method. ISO standards are organized under the designation ISO/IEC 14496.

MPEG-J

A programmatic system that specifies an API for interoperation of MPEG-4 media and Java applications.

MP2

A standard abbreviation or file extension for an MPEG Level II elementary audio stream.

MP3

A standard abbreviation or file extension for an MPEG Level III elementary audio stream.

MP4

Abbreviation used by many to describe a file containing MPEG-4 video and/or audio information.

Multicast

A connection in which multiple clients simultaneously receive the same broadcast stream from a server on a multicast-enabled network.

Multiplex

The process of combining separate elementary video and audio streams into a single synchronized signal or stream. Also known as "mux".

NAB

The National Association of Broadcasters is an industry group representing the radio and television industries to the government, public and other industry groups.

Noise

Visual or audible discrepancies that adversely affect media that has been recorded or encoded badly.

Non-linear Editing

The method of combining multiple digital media clips to produce a finished product. NLE offers random access at anytime to all source material in the project until the final recording is published to tape.

NTSC

National Television Standards Committee is the standards body that defined the commercial broadcast standards for television used in North America (and some other parts of the world such as Canada and Japan). It describes a system for video that is 29.97 frames (59.94 interlaced fields) per second and 525 scan lines per frame. The standard includes the specifications for the composite color encoding system, often considered to be difficult to work with.

Object Descriptor (OD)

In MPEG-4, a structure similar to a URL, containing pointers to elementary streams and containing Quality of Service parameters.

OC-3

A fiber optic line capable of transmitting 155 megabits per second.

OC-48

A fiber optic line capable of transmitting 2400 megabits per second.

Off-line

The process of editing video away from the source material to create an edit decision list. This is often considered a more economical method of planning an editing project without tying up more expensive or complex online systems.

OHCI

Open Host Controller Interface, a specification for the interaction between Host Controller hardware (such as found on a IEEE 1394 card) and the Host Controller software driver.

On-line

The process of editing directly with the source material in real-time. The process can largely be automated by using an EDL generated in an offline edit session.

Open Cable

An industry initiative aimed at producing standards-based set-top boxes that are interoperable and enable interactive services for cable customers.

OpenDML

An extension to the AVI file format developed by Matrox to remove the 2 GB file length restrictions imposed by the AVI format. Type-1 DV AVI files are built on OpenDML, and thus are limited in length only by the file systems used by the operating system. The NTFS file system supported on Windows NT and 2000 can store OpenDML files of almost unlimited length. The FAT32 file system supported on Windows 98 only supports files up to 4 GB.

Output Pin

In a filter graph, a pin that provides data to other filters.

Overlay

The process of rendering part of one image transparent to allow a second image to appear through this transparent area, used on PC graphics systems to provide high quality video without compromising the performance.

P-Q

P-Frames

In MPEG, a Predicted frame that contains only predictive information generated by evaluating the difference between the present frame and the previous one. They contain much less data than I-frames and help achieve the low data rates, quality and efficiency associated with the MPEG signal.

Packet

A unit of information transmitted as a whole from one device to another on a network, consisting of binary digits representing both data and a header.

PAL

Phase Alternation Line is the television standard used in Europe, Africa, and South America characterized by 25 frames (50 interlaced fields) per second and 625 scan lines per frame.

Pan-scan

DVD-Video display format in which a 16:9 video is cropped for a 4:3 display.

Parser Filter

In Microsoft's DirectShow, a filter that pulls information from a disc by using the asynchronous file reader filter, or from the Internet by using the URL moniker filter.

PCM

Pulse Code Modulation, a method by which analog sound is digitally sampled and recorded. Changing the playback rate and amplitude of the sampled digital pulses enables PCM sound to be reproduced with a varying pitch and amplitude.

Pel

Video term for picture element, also known as pixel, the smallest component that makes up an image.

Pin

In Microsoft's DirectShow, a COM object created by the filter that represents a point of connection for a data stream on the filter.

Pixel

The smallest component that makes up an image, each of which can be a different color. Used as the unit of measurement for an image, and derived from the shortening of the words "picture element" or "picture cell."

Post-Production

In video and audio, the process of merging media sources from tape or film into the finished program. Post-production includes editing, special effects, dubbing, and titling.

POTS

Plain Old Telephone Service. Regular analog phone service, as opposed to ISDN, ADSL, and other digital phone services.

Primary Surface

The area in memory containing the image being displayed on the monitor.

Production

In video, refers to the process of creating programs. In more specific usage, production is the process of getting original video onto tape or film, ready for post-production.

Profile

A predefined group of settings that match content type and bit rate with appropriate audio and video codecs and settings.

Protocol

Protocols are the procedures required for communication between computers, controlling transmission speeds, direction of transmission, error detection and correction, etc.

Pull-down

Also called 3:2 pull-down, the technique for displaying 24 frame-per-second progressive film content on an interlaced 29.97 frame (59.94 fields) per second monitor. The first frame is show for 3 fields (1.5 frames), and then the second frame is shown for 2 fields (1 frame).

QoS

Quality of Service, the concept that transmission rates, error rates, and other characteristics can be measured, improved, and, to some extent, guaranteed in advance.

QCIF

Quarter Common source Intermediate Format, a resolution of 176x144 and common standard for PSTN videophone.

QSIF

Quarter Source Input Format, 176x140 pixels for NTSC and 176x144 pixels for PAL.

Quantization

In the encoding of digital video, the process by which pixels from the sampled video signal are assigned a value within a defined range. Quantization determines the extent of frequencies to be analyzed in the video as part of the compression process.

QuickTime

A media architecture developed by Apple Computer which allows you to compress video files. QuickTime files are referred to as movies and have an MOV extension.

RTSP

Real-time Streaming Protocol, a standard Internet protocol for interaction between the server and the client for delivery of streamed media.

Real-time

The actual time an event takes place. For example, real time can refer to the live capture from a video source, with no time required for encoding.

RealMedia

Streaming technology architecture developed by Real Networks for delivering live video to users over the Internet at low bit rates to be played in RealPlayer.

Render

The process of combining source information into a single file after applying transitions and other effects for output.

Resolution

The resolution of an image determines the size of the individual pixels in an image, and thus the size of the whole image when displayed or printed. Resolution is shown in pixels per inch (PPI) or dots per inch (DPI). Common resolutions are 72 DPI for computer video, and 600 DPI for print material.

RGB

The model used in televisions, computer monitors and image formats to display color. It mixes varying amounts of Red, Green,

and Blue to create other colors in the spectrum
S-U
S-VHS
Super VHS, the second-generation VHS standard that improves the picture quality by processing the brightness and the color separately. It is unrelated to the S-Video video signal.
S-Video
A type of video signal and analog I/O system that transmits luminance and color portions separately, using multiple wires. S-video avoids the NTSC encoding process and the inevitable loss of picture quality that results from it.
Saturation
The degree of a color's purity. A color that is highly saturated will be more pure and appear stronger. Increasing a color's saturation makes it appear quite vivid while reducing saturation makes the color seem washed out. saturation Color purity. For example, a color that is completely blue has a 100% saturation, while white, which is composed of all colors, has a zero saturation.
SCSI
Small Computer Systems Interface, a widely used high data rate general-purpose parallel digital I/O interface. Up to eight devices can be connected to one bus, and different flavors support up to 20 Mbps.
SDI
Serial Digital Interface, a popular digital I/O interface for video in broadcast and post-production environments, capable of transfer up to 270 Mbps.
SECAM
System Electronic Pour Coleur Avec Mmoire, the television standard used in France, Russia, and Africa characterized by 25 frames (50 interlaced fields) per second and 625 scan lines per frame.
Server
A storage system that provides audio and video storage for a network of clients.
SIF
Source Input Format, 352x240 at 30fps (NTSC) and 352x288 at 25fps (PAL). Commonly used in MPEG-1 coding.
SMPTE
Society of Motion Picture and Television Engineers, an organization based in the United States that makes recommendations for video standards to be adopted by the industry.
Splicing
In MPEG, the ability to cut at random into a bit stream for switching and editing, regardless of type of frames (I, B, or P).
SDTV
Standard Definition Television, an alternative to HDTV-resolution digital television. Offers the ability to transmit four or more standard-quality programs in the same bandwidth.
STB
A Set-top Box is a receiver device that converts a digital signal and passes it on to the television. The main function is the decoding of the incoming MPEG-2 signal, though some STBs may support extended functionality such as Internet connectivity and interactive content.
Stream
Data and associated properties transmitted across a network or system. Also, a general term for a piece of media.
Streaming
The process of sending multimedia files in a continuous flow over networks from server to client. Data is generally not copied to the client for storage, and the user can start viewing the content without waiting for the stream to be fully downloaded.
Subsampling
The process of interpreting image data by grouping and averaging color data over a block of pixels, to enhance compression. Subsampling reduces the number of bytes required to store a pixel’s color information by averaging color and luminance information.
SVCD
Super VideoCD (or Super VCD), a Compact Disc MPEG-2 video format to succeed Video CD, and developed by the China Recording Standards Committee. Quality is generally considered to be between VHS and DVD, providing resolutions of 480x480 (NTSC) or 480x576 (PAL), and supporting interlaced video. Also supports variable bitrate (VBR) MPEG-2 video at up to 2.6 Mbps, and up to two MPEG-2 Layer II stereo audio streams. A typical SVCD can hold about 18 - 40 minutes of media, and can be played on many set top DVD video players.
Sync Layer (SL)
In MPEG-4, the common mechanism for conveying timing information, and the wrapper layer around elementary streams.
Synchronous
A transmission procedure by which the bit and character stream are slaved to accurately synchronized clocks, both at the receiving and sending end.
T-1
In North America, a digital carrier for a DS1-formatted signal.
T-3
In North America, a digital carrier for a DS3-formatted signal.
Telecine
The technique of converting 24 frame-per-second progressive filmed content to interlaced 29.97 frame (59.94 fields) per second video.
Timecode
A universal method used throughout professional video production to identify a specific frame's location relative to other frames in the project. It is standardized as Hours:Minutes:Seconds:Frames, based on the 24 hour clock (example - 01:33:16:29 is the 29th frame at the time mark of 1 hour, 33 minutes and 16 seconds).

Transcode
The process of converting a file or program from one format or resolution to another.
Transform Filter
In DirectShow, a filter that takes data, processes it, and then passes it along to the next filter in the filter graph.
Transport Stream
A type of stream supported by MPEG-2 used for transmission applications such as cable and satellite. TS are well suited for delivery of multiple video and audio streams in error-prone environments.
Twisted Pair
The most common medium for transmission, consisting of two insulated copper wires twisted together in a helical form. Most common in the connection between telephones and the telephone company office by a twisted pair, Twisted Pair can be used for either analog voice or digital transmission.
Type-1 DV AVI
In Microsoft Windows, OpenDML AVI files using a DV codec where the video and audio are stored in their native, interleaved format. As they are based on OpenDML, they are limited in length only by the file systems used by the operating system. The NTFS file system supported on Windows NT and 2000 can store Type-1 files of almost unlimited length. The FAT32 file system supported on Windows 98 only supports files up to 4 GB. However, because the Type-1 format stores data as a single AVI stream, Type-1 DV AVI files are not compatible with Video for Windows. These files are currently only compatible with applications and IEEE-1394 cards that use the DirectShow media system. Type-1 DV files are typically created by DirectShow-compatible OHCI IEEE-1394 PCI cards.
Type-2 DV AVI
In Microsoft Windows, AVI files using a DV codec where the video and audio are not stored in their native, interleaved format, but rather split into a single video stream and one to four audio streams within the file. Type-2 DV AVIs have the advantage of being backward compatible with Video for Windows. However, this format requires a small amount of redundant size, and additional processing to split/multiplex the DV stream during the functions of capture/transmit to IEEE 1394 devices. In addition, they are limited by the same restrictions in file size associated with the non-OpenDML AVI file format.
URL
Uniform Resource Locator, an address that identifies a protocol, host computer, directory, and file to access that file from another computer on a network.
USB
Universal Serial Bus is an external bus standard that provides high-speed data connections between a computer and peripherals (usually keyboards, mice, etc.). Often compared to IEEE 1394, but only capable of transmitting digital data at 12 Mbps. USB 2.0 will raise the transfer speed to 480 Mbps.
UDP
User Datagram Protocol, a communication protocol that can send media data from one computer to another. It does not sequence the arrival of the data packets, but does provide the capability to verify that the data arrived intact.
V-Z
VBI
The Vertical Blanking Interval is a synchronizing period in the broadcast video signal when no active picture information is transmitted, and often used to carry data.
VBR
Variable Bit Rate encoding is a method that ensures consistent high video and audio quality throughout an encoded stream by allocating extra bits to more complex sections. VBR generally produces an overall higher and more consistent quality level than Constant Bit Rate (CBR) encoding.
VCD
VideoCD is a Compact Disc MPEG-1 format that was defined by Philips and JVC, and is also known as 'White Book'. VideoCD can store about an hour of video sequences and sound in up to 98 A/V tracks. It is generally playable on all CD-ROM players and the most recent generation of DVD (Digital Versatile Disc) players. Frame size and rate must conform to must be either 352x240 29.97 fps (NTSC) or 352x288 25 fps (PAL), with audio (mono or stereo) at a sampling frequency of 11, 22, or 44 kHz. Quality of video is generally considered to be less than VHS due to the low bit rate restrictions (@1100 kbps).
VHS
Video Home System, the most widely used video recording format for consumers.
Video 1
Video 1 is an early Microsoft Video for Windows software codec originally developed by MediaVision.
Video for Windows
Video for Windows was the first multimedia architecture developed by Microsoft. It is one of the most common formats (through the AVI file format) for playing video files on the PC.
VO
In MPEG-4, a scalable Video Object that correpsonds to a particular 2D object in a scene, made up of one or more Video Object Layers (VOL).
VOD
In broadcast, Video-On-Demand is a program sent immediately and independently to a customer in response to his individual request. This contrasts with scheduled broadcast television (and even Pay Per View), which is made available simultaneously to all customers able to receive it.
VOP
In MPEG-4, a Video Object Plane is a time sample of a video object that may contain shape information, texture data and motion parameters. VOPs may be encoded independently of each other, or dependant on each other using motion compensation. Similar to MPEG-2 syntax, these are known as I-VOPs, P-VOPs, and B-VOPs. VOPs are grouped together in GOVs, Groups of VOPs
VTR
A Video Tape Recorder is the general term for any device capable of recording visual information onto magnetic tape so that it

can be played back and shown on a television display.

Waveform

A visual representation of sound, often used in the process of sound editing.

Wavelet Compression

An asymmetrical image compression method that is scalable and provides high quality. Wavelet compression assumes that an image contains "trends" and "outliers". Trends have large areas of slowly varying gradation, and outliers are areas of highly concentrated changes. The wavelet transform encodes the trends at low resolution, and the outliers at high resolution. Wavelet compression then quantizes the transformed image so that redundant information is mapped to zero, and then efficiently encodes the zeros.

WDM

Windows Driver Model, a standard driver model for Windows that is implemented in Windows 98 and Windows 2000, and supports new classes such as USB, 1394 and streaming devices.

Weave

A method of displaying interlaced video fields on a progressive monitor by blending two interlaced images into a frame.

Windows Media Technologies

The family of interoperable Windows streaming media applications. Windows Media Tools create Windows Media content that can be served by Windows Media Services and played by a Windows Media Player client.

XML

Extensible Markup Language, a simple dialect of SGML suitable for use on the World Wide Web and elsewhere for the creation of custom markup languages. It allows users to define their own customized markup languages for limitless different classes of documents.

YUV

A color model that describes color information in terms of luminance (Y) and chrominance, as defined as the difference between a color and reference white at the same luminance (represented by U and V, where U=B-Y, and V=R-Y). YUV uses properties of the human eye to prioritize information.

Zaphod Beeblebrox

Two-headed, three-armed ex-hippie and totally-out-to-lunch part-time president of the galaxy, and cousin to Ford Prefect. Okay, we were stumped for "Z", and just happy to have finally finished this.