Glossary

Multimedia terminology contains computer and video terminology. The most important terms are defined in the following.

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ADPCM

Abbreviation for Adaptive Delta Pulse Code Modulation. It is a method of storing audio information in a digital format.

Aliasing

An inaccurate display of an image due to the limitations of the output device. Typically, aliasing appears in the form of jagged edges along curves and angled shapes.

Anti-aliasing

A method of smoothing out jagged edges in bitmap images. This is usually accomplished by shading the edges with similarly colored pixels to the background, thus making the transition less apparent. Another method of anti-aliasing involves using higher resolution output devices.

Aspect ratio

The ratio of width to height in an image or graphic. Keeping the aspect ratio means any change to one value is immediately reflected in the other.

AVI

Abbreviation for Audio Video Interleaved, standard format for digital video (Video for Windows).

Averaging

A filtering process which takes the gray/color value of each pixel and averages it with the values of surrounding pixels. The value of each pixel is then replaced with the averaged value.

Bit

The smallest element of a computer's memory. Among other things, bits are used to record the color values of pixels in an image. The more bits used for each pixel, the greater the number of available colors. For example:

- 1-bit: each pixel is either black or white.
- 4-bit: each pixel can be any one of 16 colors or gray shades.
- 8-bit: each pixel can be any one of 256 colors or gray shades.
- 16-bit: each pixel can be any one of 65,536 colors.
- 24-bit: each pixel can be any one of 16.7 million colors.

Bitmap

An image format made up of a collection of dots or "pixels" arranged in rows.

Black and white

An image that contains only black and white pixels.

CD-ROM

CD-ROMs are mass storage media for digital data, such as digital video. CD-ROMs can only be read.

Channel

Classifications of information in a data file to isolate a particular aspect of the entire file. For example, color images use different channels to classify the color components in the image. Stereo audio files use channels to identify the sounds intended for the left and right speakers. Video files use combinations of the channels used for image and audio files.

Clip

A temporary storage area shared by all Windows programs used to hold data during cut, copy, and paste operations. Any new data you place onto the clipboard immediately replaces the existing data.

Cloning

Replicating one part of an image within or between different images.

CODEC

Abbreviation for Compressor/Decompressor, compresses (packs) and decompresses (unpacks) image data.
There are different compression methods (software CODECs and hardware CODECs).

Color depth

Number of bits delivering the color information for each pixel.
In the black-and-white operation 1-bit color depth means 2^1=2 colors, 8-bit color depth supply 2^8=256 colors, 24-bit color depth 16,777,216 (=2^{24}) colors.

Color model

A color model is a way to mathematically describe and define colors and the way they relate to each other. Each color models has a specific purpose; the two most common color models are RGB and HSB.

Color palette

Number of colors the graphics system can generate.

Complementary Color

Complementary colors are opposite in value to primary colors. If you were to combine a color with its compliment, the result would be white. For example, the complimentary colors of red, green, and blue are cyan, magenta, and yellow respectively.

Composite video

Composite video encodes all image information in one signal.

Compression

A method for making files smaller in size on disk. There are two types of compression: lossless and lossy. Files compressed with a lossless scheme can be restored to their original state with no change to their original data. Lossy schemes discard data during compression, so the file, when reopened is slightly different. Ulead programs support schemes of both types depending on the file format.

Control line

A line that joins two control points in to establish a fixed path to follow during an animation.

Control point

Points placed upon an image or effect that identify starting, ending, or intermediate locations for objects during animation.

Cropping

Selecting the visible image area.

Data rate

Data per second, i.e. amount of data which a mass storage medium (hard disk or CD-ROM) saves/plays back per second or the amount of data of a video sequence per second.

Data transfer rate

The measurement of the speed at which information passes between storage mediums, (ex. CD ROM or Hard Disk), and the display device, (ex. Monitor or MCI device). Depending on the devices used, some transfer rates may offer better performance than others. For example, most double-speed CD-ROMs have 300 KB/sec transfer rates.

Data type

The way an image is internally described and represented by a computer. The data type of an image controls the amount of information that the image can retain and therefore its displayed appearance. Ulead programs read and write the following types: Black & White, Grayscale, Indexed 16- and 256-Color, RGB True Color and CMYK True Color. RGB 8-Color images can also be read, but they are automatically converted to Indexed 16-Color.

DCT

Abbreviation for Discreet Cosine Transformation. Part of the JPEG image data compression: The brightness and color information is saved as frequency coefficient.

Digital video

Digital video stores information bit by bit in a file (in contrast to analog storage media).

Dithering

Method by which images with a limited color palette appear to contain more color. Most notably, Black & White images appear to contain near-continuous changes in tone (gray shades). By arranging pixels of different colors close together, dithering can simulate colors not directly supported by an image data type. The various dithering techniques differ in the way they calculate and arrange new pixel values.

Dots per inch (DPI)

A unit of measure for screen and printer resolution that represents the number of dots a line can print or display per inch. Also called pixels per inch (ppi).

Edit decision list (EDL)

An **E**dit **D**ecision **L**ist is a listing of all clips, effects, and transitions in a video project. This document identifies each clip's location, the mark in and mark out times, and how it relates to other clips in the project. Its primary use is as a reference when using conventional video editing equipment for the final project.

File format

The ways in which a computer stores images or information on a disk.

Filters

Tools that alter data to produce special effects.

Frame

A single image in a video or animation sequence.

Frame rate

Frame rate defines how many frames of a video sequence are played in one second.

Frame size

The maximum size for displaying image data in a video or animation sequence. If an image intended for the sequence is larger than the frame size, it must be cropped or resampled to fit.

Graphics file

A file whose data is composed largely of vector graphics. Vector graphics do not have a basic component, like a pixel, but are defined as lines between points, and fills between lines.

Grayscale

Graded shades of gray. For an image this normally means 254 different grays plus black and white: 256 “grays” in all.

Halftoning

A method of using a pattern of black and white dots to produce what appears to be shades of gray. This is a common type of dithering.

Hardware CODEC

Compression method which creates compressed digital video sequences. These video sequences need special additional hardware to be recorded/played back and offer a better image quality than data compressed with software CODECs.

HiColor

For images, this normally means a 16-bit (5-6-5) data type that can contain up to 65,536 colors. TGA file formats support images of this type. Other file formats require prior conversion of a HiColor image into True Color. For displays, HiColor normally refers to 15-bit (5-5-5) display adapters that can display up to 32,768 colors.

Huffman-Coding

Part of the JPEG image data compression. Values occurring seldom receive a long code, values occurring often receive a short code.

IDE

Also AT bus, common hard disk interface for PCs.

Image

An image is a reproduction, or picture of something. In this case, the term is used to describe digitized pictures, consisting of pixels, which can be shown on a computer display and manipulated by image enhancement software.

Image compression

Method to reduce the amount of data of digital image and video files.

Interlaced

Interlaced describes the refresh method which the PAL and other TV systems use: The TV image consists of two image halves of 312 1/2 lines each.

Interleave

An arrangement of audio and video to promote smoother playback and synchronization or compression. The standard AVI format equally spaces audio and video.

Irrelevance

Irrelevant (unimportant) information can be eliminated during the image data compression, since the human eye does not realize that this information is missing.

JPEG

Abbreviation for Joint Photographic Experts Group. Standard for the image compression.

Key color

A color made transparent so that a background image can show through. Most commonly used when overlaying one video sequence on top of another, allowing the underlying video to display wherever the key color appears.

Key frame rate

A method to help in the compression of video files, which works by assigning certain frames as key frames whose video data is completely saved at the time of compression. The video data of any intervening frames between two key frames is then only partially saved. On decompression these partial frames reconstruct their data from the key frames.

Laserdisk

Medium which stores analog video. Information on laserdisks can only be read, but not changed.

Mark In / Mark Out

In video editing, the mark in and mark out times refer to the starting and ending time codes that identify the portions of clips to be included in the project.

Mask

A mask isolates a portion or portions of an image for editing. By using a mask, you can protect parts of an image from unwanted changes. A special kind of mask allows you to use grayscale values to control how much protection is applied to an area.

Matte

A matte is an image or video that isolates regions for other images or clips to appear through.

MCI

Developed by Microsoft as a means to play audio and video data. It is also used to connect a computer to an external video source such as a VCR or laser disc.

MIDI

Industry standard interface that allows communication between musical synthesizers, musical instruments and computers.

Motion-JPEG

Video for Windows format for JPEG-compressed video sequences specified by Microsoft.

MPEG

Abbreviation for **M**otion **P**ictures **E**xperts **G**roup. Standard for the compression of moving images.

Non-interlaced

Image refresh method, where the complete image is generated without skipping lines.
A non-interlaced image flickers much less than an interlaced image.

NTSC

Abbreviation for **N**ational **T**elevision **S**ystem **C**ommittee.
Color TV standard spread in the USA using 525 lines and 60 image fields per second.

PAL

Abbreviation for **P**hase **A**lternation **L**ine.
Color TV standard developed in Germany using 625 lines and 50 image fields per second.

Pixel

Abbreviation for *picture element*. Pixels are the smallest elements of a monitor image.

Prime colors

The colors that are the basis of the RGB color model: red, green, and blue. By varying how these colors are blended on screen, it is possible to create any other color.

Proxy file

A Proxy file is a low resolution copy of an image or video file that requires fewer system resources to work with. Thus creating and editing video projects is faster.

Quantization

Part of the JPEG image data compression. Relevant details are represented precisely, less relevant details for the human eye are represented with less precision.

Raster

In computing terms, an image is a digital picture shown as a collection of dots, (pixels), arranged on a page or screen.

Redundance

Redundant (superfluous) information can be eliminated during the image compression. During decompression the images can be restored completely.

Run Length Encoding

The RLE = Run Length Encoding method is part of the JPEG compression. The “zero” values are not saved individually but with a counter, which states how often «zero» values occur in succession.

Resolution

The number of pixels (pixels) which can be displayed on the monitor horizontally and vertically. The higher the resolution, the more details can be displayed.

RGB

Abbreviation for Red, Green and Blue, the basic colors of additive color mixing. RGB describes the method used in computer technology where image information is transferred by dividing it into the three basic colors.

Scaling

Adaptation to the desired image size.

SCSI

Abbreviation for Small Computers System Interface. SCSI is used as hard disk interface for high-performance PCs because of its high data rate.

SECAM

Abbreviation for **S**equential **C**ouleur à **M**émoire.
Color television system developed on the basis of the NTSC system operating with 625 lines and 50 image halves per second.

Software CODEC

Compression method to compress digital video sequences which can be played back without special hardware. The quality of these sequences depends on the performance of the complete system. VHS quality is not achieved.

Still-Video

Method where cameras digitally store photographs on floppy disks or in the computer memory.

S-VHS

Improved standard for home VCRs using S-Video signals to improve the color reproduction(Y/C).

S-Video

With S-Video signals the brightness (luminance) and the color information are transferred separately (chrominance) (Y/C).

Time Code

The time code identifies the position of a frame in a video sequence with respect to a starting point, (usually, the beginning of the clip). Its usual form is Hours:Minutes:Seconds:Frame. In a video project, there may be several different time codes. One time code refers to the overall project, while the others refer to each clip in the project.

Transformation

Commands in Ulead programs that allow for spatial effects like flip, rotate, and distort.

TrueColor

An image that contains enough color to appear “true” to life. For an image, this normally means 24-bit color, providing up to 16.7 million colors.

VHS

Abbreviation for **V**ideo **H**ome **S**ystem.
System commonly used for home VCRs to record and play back images and sound using a 1/2" tape.
VH systems use composite signals consisting of brightness and color information.

VISCA

A protocol used by several devices for controlling external video sources from computers.

Video-8

Video system using a 8 mm tape.
Video 8 recorders generate composite signals.

Video decoder

Converts analog signals into digital information.

Video encoder

Converts digital information into analog signals.

Video for Windows

Video for Windows is a Microsoft Windows system extension which records, stores and to plays back video sequences from hard disk (digital video).

Video scan rate

Frequency with which the video signal is scanned.
The higher the video scan rate the higher the image quality and the lesser the flicker.

Warping

A method of distortion based on a grid pattern. By moving the control points that appear at each grid intersection, you can control the distortion of the image.

Y/C

Y/C is a signal consisting of two components: Y = Brightness information, C = Color information.

YUV

Color model where Y delivers the brightness information and U and V the color information.