

A-to-D Converter

A device for converting analog signals to digital.

aliasing

An unwanted stair-stepped appearance on uncorrected curves and angled lines in graphics or text. Aliasing can be corrected in many applications applying [anti-aliasing](#).

alpha

See [alpha channel](#).

alpha channel

A fourth channel in a 32-bit image that allows for transparency. Alpha masks can be created in another program such as Adobe Photoshop and then used by Sorenson Video to mask out an area of a video clip.

amplitude

The strength of an audio signal. Amplitude is related to the volume of a sound and is measured in decibels (dB). If a signal is too strong, it may result in [clipping](#).

analog

A continuously variable electrical signal. An example of an analog recording medium for video is VHS. If you were to look at a graph of an analog signal, the waves would be smooth. Computers can only store and manipulate data digitally. Before analog video or audio may be stored on your computer, they must first be converted to a digital format.

anti-aliasing

The process of smoothing out jagged edges in a digital image or text. It is accomplished by placing pixels of intermediate color values between the pixels of solid color, creating the illusion of a smooth line. Anti-aliased alpha channels imported to Sorenson Video 3 are converted to a one-bit alpha channel and all anti-aliasing is lost. This can be corrected by adjusting the values under Mask Smoothing on the Masking settings tab. However, it is recommended to not include anti-aliasing in user-supplied alpha channels. Turn off anti-aliasing in your editing program and smooth the mask as mentioned above.

artifact

Distortion that occurs in an audio or video file that has been compressed with a codec that was not present in the original uncompressed source.

ASF

Advanced Streaming Format is a MS Windows Media Player file format for audio and video on the Internet and other networks. It is a highly flexible and compressed format that contains streaming audio, video, slide shows, and synchronized events. ASF files are streaming, which means that they can begin to play before they have been completely downloaded.

aspect ratio

This is the ration of the width to the height on a monitor or television screen. Most TVs and monitors have a 4:3 aspect ratio. The screens are 4 units wide and 3 units high.

ASX

Advanced Stream Redirector files are text files used for redirection to MS Windows Media Player ASF files. They contain media and server information but contain no actual video or audio. ASX files can be distributed as attachments or as links. When a user opens an ASX file, the file opens the referenced movie in their media player, making it appear as though the entire file had already been downloaded.

asymmetric

Unequal. Refers to the time spent encoding vs. decoding. Encoding can take much longer than decoding.

audio gain

Sensitivity of the audio input measured in decibels

AV

Audio visual.

A/V Drive

A high-capacity, high-performance drive capable of effectively capturing and storing high bandwidth audio/video information.

AVI

Audio Video Interleaved. An MS Windows video format for synchronization and compression of audio and video signals. It is a bitmap-based format, and is the most common for audio/video data on the PC. Raw AVI from video capture is a great place to start for compression, but is typically too large to effectively use across the Internet.

bandwidth

The amount of data per second that can be delivered to your computer. A 56K modem has a bandwidth of 56 kilobits/second. The term bandwidth is also used in conjunction with data rate when discussing video.

batch compression

The automated process of compressing and queuing several video clips at once. This functionality is available in both Discreet Cleaner 5.1 and Sorenson Squeeze. See [watch folder](#).

bidirectional prediction

A compression scheme which utilizes [bidirectional frames](#) to reduce the file size.

bidirectional frames

A bidirectional frame is a frame created by the compressor and inserted between [intraframes](#) and/or [interframes](#). The compressor analyzes the frames before and after the bi-directional frame and then creates and inserts a frame based on the average quality of both.

bit

Contraction for binary digit. All data on a computer is stored as bits. A bit can be either a one or a zero. Eight bits = one Byte. See [Kb](#), [KB](#).

bitmap

An image made up of individual pixels, each with its own values for brightness and color.

bit rate

The amount of information that is required to transmit 1 second of audio information. For example, a bitrate of 24 kbits/s indicates that the audio requires 24 Kbits, or 3 KBytes, of information for 1 second of audio. To place the bitrate in context: a 28.8K Modem can handle a maximum of 28.8 Kbits/s of information, while an audio CD-player reads data from a CD at a rate of 1411 Kbits/s.

block refresh

Block refresh and keyframes work on a similar premise. Where interframes are frames that are dependent upon [keyframes](#) for unencoding video information, intra blocks are small sections of a video frame (16x16 pixels) that accurately describe a video at that point in time. Forcing a block refresh forces a section of the video frame to be accurate so that the same block in the following frame can approximate changes more accurately. The advantage to a block refresh is that refreshing random blocks of 16x16 pixels create a picture of similar image quality to keyframes at a much lower data rate. Additionally, if a packet containing an original block is lost, it won't compromise the entire movie the way losing a keyframe would.

blue screen

See [chroma key](#).

broadcast

A streaming option that sends a single stream that branches down all channels, regardless of whether a client is listening.

capture card

A device used for transferring video and audio to a hard drive. If the source material is analog, it

also converts it to digital format. If it was digital already, it is transferred to the hard drive.

capturing

The process of saving video from an external source to your hard drive. Analog video is converted to digital.

CD-ROM

Compact Disc-Read Only Memory.

CGI

Computer Graphic Imagery.

channel

Any one of the color components ([RGB](#) and [alpha](#)) that make up a computer graphic image.

chroma key

Chroma key is an effect in video programs which allows you to remove a specified color from a video clip so that other video can be inserted in the deleted area.

chrominance

The perception of color.

clipping

When an audio signal contains maximum amplitude levels that are too high for the device receiving the signal, the input is said to be clipping. A clipped audio file may contain a great deal of distortion and as a result sound rough and harsh.

codec

A contraction for the terms Compression/Decompression. A codec encodes data for efficient transmission and then decodes the received data for presentation.

component video

A video format where [luminance](#) and [RGB](#) signals are recorded separately. Component video is not yet widely supported, but should begin to gain wider acceptance. It is the native video format of DVDs and High Definition Television (HDTV).

composite video

A video stream that combines all the signals required for displaying video into one signal, thus requiring only one connection. [NTSC](#) is an example of composite video.

compression

The act of making a file or data stream smaller. Compression can be either [lossy](#) or [lossless](#). Sorenson compression is a lossy compression.

compressor

An audio or video device that reduces the amplitude range of a video clip or an audio track. The effect of the audio compressor is to make the loud parts of a signal softer and to make the very soft parts louder.

CRT

Cathode Ray Tube. The glass tube inside a monitor. An electron gun inside the tube illuminates tiny dots called phosphors as it sweeps back and forth across the screen.

D-to-A converter

A device for converting digital signals to analog.

DAT

Digital Audio Tape. DAT is a medium developed by Sony for recording audio that can rival CDs in sound quality.

data rate

A measurement of the amount of information per second in a video clip. Higher data rate requires

more bandwidth. In general, the higher the data rate, the higher the quality of video and/or audio.

decoding

Reconstructing an encoded file or data stream.

de-esser

A special type of compressor that operates only at high frequencies, usually above 3 or 4 kHz. It is used to reduce the effect of vocal sibilant sounds and is generally not used for non-vocal audio.

deinterlace

To remove artifacts created due to the nature of interlaced video. See [interlacing](#).

digital

Information stored as binary data (ones and zeros). Because computers only understand binary, video and audio must be converted to digital before they can be stored or manipulated by a computer. A digital wave would appear square and blocky. See [analog](#).

digital video (DV)

A video signal stored in binary format. To process and store video on a computer, it must first be converted to a binary format. Most digital video cameras are capable of outputting video directly to a hard drive in this format via IEEE 1394 interface. DV is a good format to input into a compression and editing application, but the file sizes are too large for effective delivery over the Internet.

digitize

To convert an analog signal to a digital one.

digitizer

The capture card or device that converts an analog signal into a digital signal. A video digitizer will convert an analog video signal into a digital stream or file.

disc array

A group of two or more hard discs being used as a single drive to either increase performance or redundancy. Also known as RAID (Redundant Array of Independent Discs).

distortion

When an audio file sounds different than it normally should it is said to be distorted. Distortion is often caused by clipping and can often produce audio that sounds overly rough or harsh.

dropped frames

Frames of a video lost during the capture process. This can be caused by several factors, including: slow hard drive, lack of [RAM](#), or a slow capture card.

DV

See [digital video](#).

DV25

The most common type of DV compression; DV25 has a fixed data rate of 25 Megabits per second.

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encoding

Analyzing and compressing a file or data stream.

firewall

A device used to keep uninvited guests from entering a private network. Because [progressively downloaded](#) videos are sent via the same method as Web content ([HTTP](#), [FTP](#)), they are less likely to be blocked by a firewall than a streaming broadcast.

FireWire

The Apple brand name for [IEEE 1394](#).

FLV

A Macromedia Flash MX video file in which the video and audio are compressed. When an .FLV clip is added to the timeline in Flash, the video is not compressed a second time, so the import is considerably less time consuming. FLV files can be created using Flash with Sorenson Spark or Sorenson Spark Professional (Pro). Spark Pro has the added advantage of being able to batch process entire directories of video to .FLV or .SWF format for later use at a higher quality and smaller file size than is possible using the standard version of Sorenson Spark.

FPS

Frames per second. See [frame rate](#).

FTP

File Transfer Protocol. FTP is a [protocol](#) commonly used to upload and download files to or from remote servers over the Internet.

frame

A single image in a video, much like a still photograph.

frame rate

The number of frames per second. Higher frame rates should be used to more accurately portray high-motion video. The following table shows some common frame rates:

Format	Frame Rate
Film	24
NTSC (USA)	29.97
PAL (Europe)	25
Web	30, 15, 12

gain

See [audio gain](#).

hinted video

Video clips are made up of [frames](#). Frames can become quite large for transmission, affecting efficiency. Also, if any of these frames are lost in a streaming transmission, it can have a very negative effect on quality. When video data is hinted, frames are divided into smaller chunks of data called packets to increase speed of transfer and reduce the impact of lost data. All QuickTime movies created for streaming must be hinted.

HTTP

HyperText Transport Protocol. The standard protocol used to transfer Web pages over the Internet.

hue

The differentiation between colors. White, black and shades of gray are not hues.

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i.Link

The Sony brand name for [IEEE 1394](#).

IEEE

Institute of Electrical and Electronic Engineers. IEEE is an organization that sets many of the standards for the electronics industry.

IEEE 1394

An interface standard that allows for direct transfers of [DV](#) or other digital data from one device to another. See i.Link and FireWire.

interframe

A temporally compressed frame (see temporal compression).

interlacing

A system by which the electron gun in a monitor or television scans even and then odd lines of phosphors inside the [CRT](#). This process is still used in standard television displays, but is not generally in use (or advised) in computer monitors.

Internet

A decentralized, global network. The World Wide Web is only a part of this network. Other components of the Internet include email, news servers, Gopher and Telnet.

intraframe

A spatially compressed frame (see spatial compression).

intranet

A localized, private network based on the same technology as the Internet.

Inverse Telecine (IVTC)

IVTC or Inverse Telecine is the process of converting 29.97fps interlaced video into a 23.97fps progressive video.

IP

Internet Protocol. See [TCP/IP](#).

IP Address

The specific network address of a computer on a network using [TCP/IP](#) as its network protocol.

ISO

International Organization for Standardization. The ISO has several committees under its umbrella that define global standards such as the compression standards [JPEG](#) and [MPEG](#).

JPEG

Joint Photographic Experts Group. A standard for compressing and decompressing still computer images. Files are saved with either a JPG or a JPEG extension.

Kb

Kilobits are a volume measurement for digital data. A Kilobit is also used to measure the amount of data sent each second (Kb/s). 1 Kb(bit) = 1,024 bits. See [bit](#).

KB

Kilobytes are a volume measurement for digital data. The Kilobyte is a unit used to measure the amount of data sent each second (KB/s). 1 KB(yte) = 8 Kb(its). See [bit](#).

keyframe

A spatially compressed frame used as the reference point for interframes.

LAN

Local Area Network

limiter

A special type of compressor which prevents the amplitude of an audio track from exceeding a certain preset level, no matter what the input amplitude may be. Limiters are sometimes used to prevent unexpected high-amplitude signals from causing large amounts of distortion.

lossless

A compression scheme where the reconstructed image is exactly the same as the original. No data is lost.

lossy

A compression scheme where some of the less important or less visible data is discarded in order to make the image smaller. The reconstructed image is close to the original, but not exactly the same.

luminance

Brightness of an image or object.

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masking

Masking lets you isolate the foremost part of your video so you can insert an image, movie or other video sequences as the background. This feature works similar to chroma-key.

media key

For videos where you want to keep your content secure, QuickTime allows you to create a Media Key. It is essentially a password that you need to see a movie. If you try to view the movie without supplying the password, you'll get audio without a picture. To supply passwords for your QuickTime player, go to the Control Panel (Windows) and double click the QuickTime Icon and choose Media Keys from the drop down menu. Press the Add button to supply new passwords.

MJPEG

Motion JPEG; a series of JPEG images played by a video player.

MOV

All QuickTime Movies are associated with the .MOV file extension. It works on Win 95/98/2000/NT/XP, Mac OS Classic and X. Additionally, it supports over 200 media types (Photoshop, GIF, JPEG, etc.) in addition to the QuickTime movie format. One of the major advantages of working in the QuickTime environment is its free server.

Apple currently offers two streaming server options. The QuickTime Streaming Server for the Macintosh platform runs on Macintosh Server G4, Power Mac G4, Power Mac G4 Cube, iMac, Macintosh Server G3, or Power Macintosh G3. The open source Darwin Streaming Server, which is available on more platforms than any other server, including Mac OS X 10.1 or later, Red Hat Linux, Solaris 8 (SPARC) and Windows NT Server 4.0/Windows 2000 Server.

MPEG

Moving Picture Expert Group. It is considered a type of compression and a video format.

MPEG-4

MPEG-4 (MP4) was defined using the standards for encoding video in a digital compressed format as specified by the Moving Picture Experts Group (MPEG). It supports video, audio, and system components that are compliant with the International Organization for Standardization (ISO) MPEG-4 defacto standards. The MPEG-4 open standards are a set of specifications that are used to build products for production, encoding and delivery of audio/video content over many kinds of networks to a variety of clients such as personal computers, wireless devices, Web browsers, and many more.

Device manufacturers prefer using MPEG-4 because the open architecture and codec do not lock them into specific formats or players. Instead of having to develop for three or four separate formats, which is logistically difficult and costly, providers can build on MPEG-4's single format.

multicast

Delivering a single stream that branches to multiple recipients. Results in a single stream in the delivery pipe and greatly reduces network congestion.

NTSC

National Television Standards Committee. The NTSC defines the North American television standard.

one-pass VBR

The Sorenson One-Pass VBR (Variable Bit Rate encoding) option compresses all frames to the same visual quality level, while not doing any extra work. The quality of One-Pass VBR is not as good as 2-pass VBR. However, using One-Pass VBR takes no longer to compress than non-VBR, and does produce good quality. Also, One-Pass VBR was developed inside of SV3, and does not require a host software to perform this feature (unlike 2-pass VBR which requires Sorenson Squeeze or Cleaner). Since it is only one pass, this technique can be easily used for real-time compression. One-Pass VBR automatically adjusts to achieve the best quality possible for streaming and progressive download.

packetizer

The software component that bundles the data and formats it for delivery over the intranet or

Internet. Packetizers also optimize media streams against packet loss.

PAL

Phase Alternating Line. The dominant European television standard.

pixel

A pixel is the smallest element a computer can use to draw objects on the screen.

port

Used in [TCP/IP](#) to distinguish between different data streams traveling to a single [IP address](#). Communication can be established at different ports to keep conversations separate.

poster frame

A poster frame is an image such as a logo or graphic that appears in a player while the movie is being loaded into memory (buffering).

progressive download

Progressive downloads are an HTTP/FTP-based delivery method in which the entire video is downloaded to the user's machine. In a progressive download, lost packets are retransmitted until they are received, providing consistently high quality from download to download. Because they rely on the same protocol as Web pages for delivery, they are less likely to encounter problems with firewalls than streaming downloads. The movie doesn't need to be downloaded entirely to start watching it, so it can appear as if it were a streaming file on a fast enough connection.

Progressive downloads also have disadvantages. They can't be broadcast, multicast, or transmit live feeds. The user can't jump ahead to different parts of the movie until it has been downloaded. Finally, limiting distribution or modification of your movie can be very difficult, as the user has the option to save a copy locally.

protocol

A set of rules that two or more computers on a network must agree upon in order to communicate. Think of protocols as languages. If two computers speak [TCP/IP](#), they will understand each other.

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QuickTime

Apple computer's multimedia delivery architecture. Sorenson Video is a QuickTime codec.

RA

See [Real Networks content](#).

RAM

1) Random Access Memory. RAM is a volatile storage device, meaning that when the power is turned off, the contents are erased. It is used to temporarily hold data and currently running programs. Increasing the amount of RAM in your computer can be a very cost effective way of improving system performance.

2) A file saved with the .RAM extension. See [Real Networks content](#).

Real Networks content (RA, RM, RAM)

Real Networks content is software developed by RealNetworks that streams live or pre-recorded audio/video to a client, such as a Web browser, by decompressing it dynamically so that it can be played back in real time. Delivering Real Networks content requires use of RealSystem Server Basic (free), Plus, Intranet, or Professional software. The RealSystem Server Basic allows for up to 25 concurrent viewers. As your requirement for simultaneous viewers increases, so does the cost of the server.

real-time

The reception, processing and delivery of data in such a way that it appears to be instantaneous.

reference movie

A very small movie clip that redirects the client video player to the actual movie to be viewed. It can even be used in QuickTime to choose which version of a movie a user will see based on bandwidth

and CPU.

relay server

A relay server receives unicast streams from the Internet and multicasts them to a Local Area Network (LAN).

replication server

A replication server is used for sending multiple unicast streams across the Internet. Each recipient receives their own unique stream, which creates an inefficient use of bandwidth.

resolution

The number of horizontal pixels times the number of vertical pixels (e.g. 800 x 600) in a video, still image, or a monitor's display.

RGB

Red, Green, Blue; the primary colors of the additive color system used with computers and television.

router

A device used to connect one network to another. Routers can be used in both local and wide area networks.

RTP

Real-time Transport Protocol. A data transport protocol defined to deliver live media capture to one or more clients at the same time. Requires an RTP server to capture, compress, packetize, and transmit the data over a network in real time. The transport protocol used by [RTSP](#) streaming.

RTSP

Real-time Streaming Protocol. The standard used to transmit stored media to one or more clients at the same time. Provides client controls for random access to the content stream. Requires an RTSP server. RTSP uses [RTP](#) as the transport protocol.

S-VHS

Super VHS. A backwards compatible, improved version of VHS.

S-Video

Separate Video, also called Y/C video. The Y/C designation is shorthand for luma (Y) and chroma (C).

sample rate

Similar to the frame rate for a film, this represents the number of times, per second, that the audio signal is captured. In general, the higher the sample rate, the higher the sound quality of the resulting audio, but the larger the audio file. The sample rate is very important in determining the highest frequency that can be captured. The human ear can hear frequencies from 20 Hz to a maximum of 20,000 Hz. For a frequency to be captured in an audio file, the sample rate must be more than twice that frequency. For instance, the sample rate of CD audio is 44,100 Hz (44.1 kHz) so that the highest frequency it can represent is 22,050 Hz. This clearly covers the range of human hearing.

sampling

The method used to convert analog signals to digital form. Analog signals are sampled at some frequency in their digital conversion. For Sorenson Broadcaster this is used most commonly to determine the audio sampling frequency. A higher sampling frequency captures higher frequency audio.

saturation

The amount of color or how much "pigment" is present.

SECAM

Sequential Color with Memory. A TV format similar to PAL. In SECAM the chroma is FM modulated and the R'-Y and B'-Y signals are transmitted line sequentially.

secure watermark

See watermark.

server

A machine whose sole purpose is to supply information in its many forms, so that other machines can use it. For Sorenson Broadcaster the server of interest is a QuickTime Streaming Server, which accept streams from Sorenson Broadcaster and re-transmits them to many clients.

sibilance

Voice recordings often contain excessive loudness of the voice sibilants, and this effect is sometimes called sibilance. The most difficult sibilants to reproduce accurately are the sounds "s" and "sh". This effect is reduced by the use of a [de-esser](#).

spatial compression

Compression applied to a single frame, independent of any preceding frames. Often called an "intraframe".

streaming download

Streaming downloads are an RTP/RTSP-based delivery method in which the video is played as it is received. The user has immediate access to any point in the movie without downloading it first. Streaming downloads are especially well suited to long broadcasts because frames are discarded as soon as they are viewed. This means that no storage space is taken up on the client side to view the file. It also acts as a form of content protection, since the user has no means of saving and redistributing the file. If a connection can't keep pace with the data rate, information can be dropped to help to maintain real-time playback. Streaming is the only way to present live feeds and supports broadcasts and multicasts.

streaming server

A specialized server that can use RTP/RTSP to broadcast audio and video over the Internet. Examples include QuickTime Streaming Server, Darwin Streaming Server, the Real System Servers, or Windows Media Services in Windows 2000 Servers.

SWF

When a Macromedia Flash MX .FLA file is published for the Web, it takes on the .SWF extension. While normally associated with vector graphics and audio, Macromedia Flash MX now supports embedded video. An advantage of working with the Flash player is its widespread distribution and the ability to include powerful programming elements using ActionScript. SWF files can either be created individually in Macromedia Flash MX using Sorenson Spark, or in bulk as an automated process using the Spark Professional video codec in Sorenson Squeeze for Macromedia Flash MX.

TCP/IP

Transmission Control Protocol/Internet Protocol. TCP/IP is the de facto [protocol](#) for sending and receiving information over the Internet.

temporal compression

A compression technique that compares a frame to the preceding frame and then transmits only the differences. Often called "interframe" compression.

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UDP

User Datagram Protocol. The data transmission standard used by [RTP](#) to broadcast data over [IP](#) networks. UDP is designed for broadcast and thus lacks many of the error correction features of TCP. UDP is a "lossy" protocol, meaning that some data may be lost in transmission.

unicast

Unicasts send a separate stream for each user through a single pipe. Because it relies on HTTP/FTP for delivery, it is less affected by firewalls than multicasting.

URL (Uniform Resource Locator)

The global address of a file on the Internet. The address of the window you are currently viewing is an example of a URL.

vector

A 16x16 pixel block from a video frame.

vector quantization (VQ)

A compression algorithm that uses representative patterns to define an image and reconstruct it.

video capture card

A video digitizer. Converts analog video signals into digital form

VOD

Video-on-demand. VOD is pre-recorded video stored on a server for access at the user's convenience. Vcast is an example of a program that can provide VOD.

WAN

Wide Area Network.

watermark

A still image such as a logo added to a video clip to show identity or to protect content. If a watermark created with Sorenson Video is removed from the compressed video, the video will not play.

watch folder

A watch folder is a directory that Sorenson Squeeze monitors for incoming uncompressed video. As new files are placed in this folder, they are automatically queued and compressed according to either preset or custom compression settings chosen by the user.

WMA

MS Windows Media Audio is an audio codec designed by Microsoft for use with streaming content at CD quality. It is designed to resist data loss that could cause signal degradation and can improve download times for audio.

WMV

WMV is a MS Windows Media file with audio and/or video and is used to download and play files or to stream content. The WMV format is similar to the ASF format. Please see the ASF file documentation for more information about the capabilities of these files.

YUV-12

A color encoding scheme composed of 8x8 pixel color blocks, used to save space when encoding graphics and video. Since the human eye is less sensitive to color than it is to light, for every 16 [luminance](#) samples (Y), there are only eight [chrominance](#) samples (U, V).