Glossary

B Frame: One of three picture types used in MPEG video. B pictures are bidirectionally predicted, based on both previous and following pictures. B pictures usually use the least number of bits. B pictures do not propagate coding errors since they are not used as a reference by other pictures.

Bandwidth: There are physical constraints on the amount of data that can be transferred through a specific medium. The constraint is measured in terms of the amount of data that can be transferred over a measure of time, and is known as the *bandwidth* of the particular medium. Bandwidth is measured in bps (bits per second).

Bit-rate: The rate at which a presentation is streamed, usually expressed in Kilobits per second (Kbps).

bps: Bits-Per-Second

Compression/Decompression: A method of encoding/decoding signals to reduce the data rate needed — allows transmission (or storage) of more information than the media would otherwise be able to support.

Extensible Markup Language: see XML

Encoding/Decoding: Encoding is the process of changing data from one form into another according to a set of rules specified by a codec. The data is usually a file containing audio, video or still image. Often the encoding is done to make a file compatible with specific hardware (such as a DVD Player) or to compress or reduce the space the data occupies.

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Feature: A Feature is a distinctive characteristic of the data which signifies something to somebody. A Feature for a given data set has a descriptor (i.e., feature representation) and an instantiation (descriptor value); for example, colour histograms.

Frame Rate: The number of images captured or displayed per second. A lower frame rate produces a less fluid motion and saves disk space. A higher setting results in a fluid image and a larger movie file.

GIF (Graphic Interchange Format): A common format for image files, especially suitable for images containing large areas of the same color.

GUI (Graphical User Interface): The term given to that set of items and facilities which provide the user with a graphic means for manipulating screen data rather than being limited to character-based commands. Graphic User Interface tool kits are provided by many different vendors and contain a variety of components including (but not limited to) tools for creating and manipulating Windows, Menu Bars, Status Bars, Dialogue Boxes, Pop-Up Windows, Scroll Or Slide Bars, Icons, "Radio" Buttons, Online and Context-Dependent Help Facilities. Graphic User Interface tool kits may also provide facilities for using a mouse to locate and manipulate on-screen data and activate program components.

Hyperlink: A synonym for "link" A hyperlink links a document to another document, or a document fragment to another document fragment. A link on a document can be activated and the user is then taken to that linked document or fragment. In Web pages links were originally underlined to indicate that there is a link.

I Frame: An I frame is encoded as a single image, with no reference to any past or future frames. Often video editing programs can only cut MPEG-1 or MPEG-2 encoded video on an I frame since B frames and P frames depend on other frames for encoding information.

Index: An index is a database feature used for locating data quickly within a table. Indexes are defined by selecting a set of commonly searched attribute(s) on a table and using the appropriate platform-specific mechanism to create an index.

Interactive Multimedia: Term used interchangeably with multimedia whose input and output are interleaved, like a conversation, allowing the user's input to depend on earlier output from the same run.

Internet Protocol: IP provides a datagram service between hosts on a TCP/IP network — IP thus runs "on top of" TCP. It routes the packets of data that are transmitted to the correct host. IP also takes apart datagrams and puts them back together again.

ISO (International Standard Organization): The ISO is an international body that certifies standards ranging from visual signs (such as the *i*-sign for information,

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seen at places such as airports and information kiosks) to language characters (such as proposed by ANSI and ASCII).

JPEG (Joint Photographic Experts Group): JPEG is most commonly mentioned as a format for image files. JPEG format is preferred to the GIF format for photographic images as opposed to line art or simple logo art.

Key Frame: In movie compression, the key frame is the baseline frame against which other frames are compared for differences. The key frames are saved in their entirety, while the frames in between are compressed based on their differences from the key frame.

Lossless: A video/image compression method that retains all of the information present in the original data.

Metamodel: A metamodel is a formal model used to create a "lower-level" model. A metamodel consists of the rules and conventions to be used when the lower-level model is created.

MPEG (Motion Picture Expert Group): Set of ISO an IEC standards:

MPEG1: Audio - MPEG1 Layers 2(MP2) or 3 (MP3), an Audio codec system used on the Internet offering good compression rations; widely used Video compression format.

MPEG2: Audio AAC (Advanced Audio Codec) the core codec of the future; Enhanced Video compression format (also used with DVD and HDTV applications); A/V transport and sync.

MPEG 4: Makes the whole stuff suitable for the Internet (applications layers set). Let's wait and see. (Ex.: BIFFs offer alternatives and extensions to SMIL and VRML, even more advanced Audio coding techniques (very low datarate, scaleable datarates, speech audio combinations)); Multiple delivery media - Mixed content MPEG 7: (Meta)Search and identification techniques for media streams / multimedia content description interface.

MPEG 21: The purpose of MPEG-21 is to build an infrastructure for the delivery and consumption of multimedia content.

MPEG-7 Descriptor: A Descriptor is a representation of a Feature. It defines the syntax and semantics of Feature representation. A single Feature may take on several descriptors for different requirements.

Multimedia: The use of computers to present text, graphics, video, animation, and sound in an integrated way.

Noninterlaced: The video signal created when frames or images are rendered from a graphics program. Each frame contains a single field of lines being drawn one after another. See also interlaced.

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P Frame: A P-frame is a video frame encoded relative to the past reference frame. A reference frame is a P- or I-frame. The past reference frame is the closest preceding reference frame.

Pixel: A "picture element"; images are made of many tiny pixels. For example, a 13-inch computer screen is made of 307,200 pixels (640 columns by 480 rows).

Protocol: A protocol is a standard of technical conventions allowing communication between different electronic devices. It consists of a set of rules for the communication between devices

Query: Queries are the primary mechanism for retrieving information from a database and consist of questions presented to the database in a predefined format. Many database management systems use the Structured Query Language (SQL) standard query format.

QuickTime: A desktop video standard developed by Apple Computer. QuickTime Animation was created for lossless compression of animated movies and QuickTime Video was created for lossy compression of desktop video.

Scene: A meaningful segment of the video.

Schema: A Schema is a mechanism similar to defining data types.

SQL (Structured Query Language): A specialized programming language for sending queries to databases.

Streaming: Multimedia files are typically large. A user does not want to wait until the entire file is received through an Internet connection. Streaming makes possible a portion of a file's content can be viewed before the entire file is received. The data of the file is continuously sent from the server. While loading, the user can begin viewing the streamed data.

TCP (Transmission Control Protocol): TCP protocol ensures the safe transmission of data between two hosts. Information is transmitted in packets.

TCP/IP: The TCP and IP protocols in combination is the basic protocol of the Internet.

URL (Uniform Resource Locator): The standard way to give the address of any resource on the Internet that is part of the World Wide Web (WWW).

Web (WWW) (World Wide Web): The universe of hypertext servers (HTTP servers) which are the servers that allow text, graphics, sound files, and so forth, to be mixed together.

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XML (Extensible Markup Language): XML is simplified (application profile) SGML(Standard Generalized Markup Language [ISO8879]), the international standard for markup languages. XML allows one to create their own markup tags, and is designed for use on the World Wide Web.

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