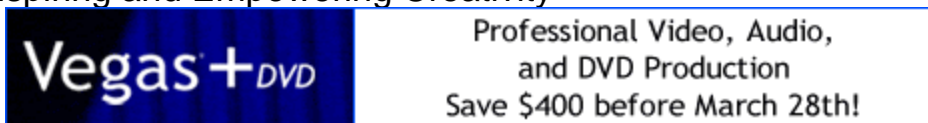


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## Glossary of DVD Acronyms and Terms

### A

#### **8/16 modulation**

The form of modulation block code used by DVD to store channel data on the disc. See modulation.

#### **AAC**

##### **(Advanced Audio Coder)**

An audio-encoding standard for MPEG-2 that is not backward-compatible with MPEG-1 audio.

#### **AC-3**

The former name of the Dolby Digital audio-coding system, which is still technically referred to as AC-3 in standards documents. AC-3 is the successor to Dolby's AC-1 and AC-2 audio-coding techniques.

#### **ADPCM**

##### **(Adaptive Differential Pulse Code Modulation)**

A compression technique that encodes the difference between one sample and the next. Variations are lossy and lossless.

#### **anchor point**

One of a specified set of sector numbers that identify the size of a volume descriptor sequence.

#### **angle**

An angle is a scene recorded from different viewpoints. Each angle is equal in time length and an Angle Block may contain up to nine angles.

#### **Angle Menu**

Menu used to select the angle number.

#### **ASV (Audio Still Video)**

A still picture on a DVD-Audio disc.

#### **audio channel number**

The consecutive numbers assigned to the audio channel of the audio stream. They range from 0 to 7 in the description of the Video Title Set manager area. ACH0 and ACH1 are assigned to the left channel and the right channel, respectively, for two-channel stereo audio signals.

#### **Audio Menu**

Menu used to select the audio stream.

**audio stream number**

The consecutive numbers assigned to the audio streams for a title in a VTS. These numbers range from 0 to 7 in the order described in the VTS manager area. For menus, the number of audio streams is limited to 0 or 1.

**Audio\_TS**

UDF file name used for audio directory on disc volume.

**authoring**

For DVD-Video, authoring refers to the process of designing, creating, collecting, formatting, and encoding material. For DVD-ROM, authoring usually refers to using a specialized program to produce multimedia software.

**auto-play  
(or automatic playback)**

A feature of DVD players that automatically begins playback of a disc if so encoded.

**B****birefringence**

An optical phenomenon where light is transmitted at slightly different speeds depending on the angle of incidence. Also refers to light scattering due to different refractions created by impurities, defects, or stresses within the media substrate.

**Book A**

The document specifying the DVD physical format (DVD-ROM). Finalized in 1996.

**Book B**

The document specifying the DVD-Video format. Mostly finalized in 1996.

**Book C**

The document specifying the DVD-Audio format. Finalized in 1996.

**Book D**

The document specifying the DVD record-once format (DVD-R). Finalized in August 1997.

**Book E**

The document specifying the Rewritable DVD format (DVD-RAM). Finalized in August 1997.

**B-picture (or B-frame)**

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

**burst cutting area**

A circular section near the center of a DVD disc where ID codes and manufacturing information can be inscribed in bar code format.

**button**

This is a rectangular area in the subpicture display area highlighted by the Highlight Information (HLI) that is used to define the active area on a menu associated with a specific action.

**button number**

The consecutive numbers assigned to every button on a menu. These numbers range from 1 to 36.

**C****cell**

In DVD-Video, a cell is a unit of video anywhere from a fraction of a second to many hours. Cells allow the video to be grouped for sharing content among titles, interleaving for multiple angles, and so on.

**cell command**

A Navigation command executed when the presentation of a cell has been completed.

**CGMS (Copy Guard Management System)**

A method of preventing copies or controlling the number of sequential copies allowed. CGMS/A is added to an analog signal, such as line 21 of NTSC. CGMS/D is added to a digital signal, such as IEEE 1394.

**challenge key**

Data used in the authentication key exchange process between a DVD-ROM drive and a host computer, where one side determines if the other side contains the necessary authorized keys and algorithms for passing encrypted (scrambled) data.

**channel data**

The bits physically recorded on an optical disc after they have had error-correction encoding and modulation. Because of the extra information and processing, channel data is larger than the user data contained within it.

**chapter**

In DVD-Video, a chapter is a division of a title. Technically called a Part of Title (PTT).

**CIRC (cross-interleaved Reed Solomon code)**

An error-correction coding method that overlaps small frames of data.

**clamping area**

The area near the inner hole of a disc where the drive grips the disc in order to spin it.

**CMF (Cutting Master Format)**

A protocol, similar to DDP, that describes data that will be recorded onto an optical disc. Developed by Pioneer, CMF can now be recorded directly to DVD-R for Authoring (4.7 GB) media using the Pioneer DVR-S201 recorder. This allows a single DVD-R disc to serve as both a check disc for testing playback, and as the replication master for saving time and ensuring

accuracy of the data. DVD-R Cutting Master Format is written to the lead-in area, which has been specially reserved for mastering applications and is defined in version 2.0 of the DVD-R for Authoring specification. Special software and some handling at a press facility are required to use the DVD-R Cutting Master.

### **CMI (Content Management Information)**

General information about copy protection and allowed use of protected content. Includes CCI.

### **combo drive**

A DVD-ROM drive capable of reading and writing CD-R and CD-RW media. May also refer to a DVD-R, DVD-RW, or DVD+RW drive with the same capability.

### **control area**

A part of the lead-in area on a DVD containing one ECC block (16 sectors) repeated 192 times. The repeated ECC block holds information about the disc.

### **copy control information**

Information specifying if content is allowed to be copied.

### **copyrighted material flag**

In DVD-Video, a 1-bit value stored in the CPR\_MAI that indicates if the corresponding sector includes any copyrighted material.

### **CPPM (Content Protection for Prerecorded Media)**

Copy protection for DVD-Audio.

### **CPRM (Content Protection for Recordable Media)**

Copy protection for writable DVD formats.

### **CPR\_MAI (Copyright Management Information)**

In DVD-Video, an extra 6 bytes per sector that includes the Copyright Protection System Type (CPS\_TY) and Region Management information (RMA) in the Contents provider section of the Control Data Block; and CPM flag, CP\_SEC flag, and CGMS flags in the Data Area.

### **CPSA (Content Protection System Architecture)**

An overall copy protection design for DVD.

### **CP\_SEC (Copyright Protection System Flag)**

In DVD-Video, a 1-bit value stored in the CPR\_MAI that indicates if the corresponding sector has implemented a copyright protection system. See CSS.

### **CPS\_TY (Copyright Protection System Type)**

In DVD-Video, an 8-bit (1-byte) value stored in the CPR\_MAI that defines the type of copyright protection system implemented on a disc.

### **CPTWG (Copy Protection Technical Working Group)**

The industry body responsible for developing or approving DVD copy protection systems.

### **CSS (Content Scrambling System)**

In DVD-Video, CSS is an encryption scheme designed to protect copyrighted material on a

disc by periodically scrambling the data using encryption keys.

## D

### **Data Area**

The physical area of a DVD disc between the lead-in and the lead-out (or middle area) that contains the stored data content of the disc.

### **DDP (Disc Description Protocol)**

Identifies and describes collections of data that will be recorded onto a CD or DVD. DDP allows for automated transfer of data from data publishers to disc manufacturers. DDP is the de facto standard in the DVD industry for delivering disc image data to the replication plant for manufacturing. Originally developed by Doug Carson & Associates, Inc. (DCA) for CD manufacturing, DDP provides descriptive information about the disc to be manufactured, such as the physical size, number of sides, etc. DVD utilizes version 2.0 of this specification, which can be requested via the DCA Web site at [www.dcainc.com](http://www.dcainc.com).

### **delta picture (or delta frame)**

A video picture based on the changes from the picture before (or after) it. MPEG P-pictures and B-pictures are examples of delta frames.

### **directory structure**

For the video specification (Book B), directory structure defines a common set of files that must be present on all DVD discs. Components include Root and Video\_TS.

### **Direct Stream Digital (DSD)**

An uncompressed audio bitstream coding method developed by Sony. Direct Stream Digital is an alternative to PCM.

### **disc key**

A value used to encrypt and decrypt a title key on DVD-Video discs.

### **disc menu**

On a DVD-Video disc, a disc menu is the main menu from which titles are selected. Also called the system menu or title selection menu. Sometimes mistakenly called the title menu.

### **discrete surround sound**

Audio in which each channel is stored and transmitted independent of other channels. Multiple independent channels directed to loudspeakers in front of and behind the listener allow precise control of the sound field in order to generate localized sounds and simulate moving sound sources.

### **DLT (Digital Linear Tape)**

A digital archive standard using half-inch tapes. Commonly used for submitting a premastered DVD disc image to a replication service.

### **Dolby Digital**

A perceptual coding system for audio developed by Dolby Laboratories and accepted as an international standard. Dolby Digital is the most common method used to encode audio for

DVD-Video and is the mandatory audio compression system for 525/60 (NTSC) discs.

### **Dolby Pro Logic**

The technique or the circuit that applies the technique of extracting surround audio channels from a matrix-encoded audio signal. Dolby Pro Logic is a decoding technique only, but its name is often mistakenly used to refer to Dolby Surround audio encoding.

### **Dolby Surround**

The standard for encoding surround-sound audio in a two-channel stereo signal. A decoder, such as a Dolby Pro Logic circuit, can then extract the center and surround channels. A Dolby Surround decoder extracts surround channels, while a Dolby Pro Logic decoder uses additional processing to create a center channel. The process is essentially independent from the recording or transmission format. Both Dolby Digital and MPEG audio compression systems are compatible with Dolby Surround audio.

### **domain**

Program Chains (PGCs) are classified into four types of domains: First Play Domain, Video Manager Menu Domain, VTS Menu Domain, and Title Domain.

### **down-mix**

To convert a multichannel audio track into a two-channel stereo track by combining the channels with the Dolby Surround process. All DVD players are required to provide down-mixed audio output from Dolby Digital audio tracks.

### **DSI (Data Search Information)**

Information for fast-forward/fast-backward and seamless playback. DSI is realtime control data spread throughout the DVD-Video data stream. Along with PGCI, these packets are part of the 1.00 Mbps overhead in video applications (Book B). These packets contain navigation information, which makes it possible to search and maintain seamless playback of the VOB. The most important field in this packet is the sector address where the first reference frame of the video object begins. Advanced angle change and presentation timing are included to assist seamless playback.

### **DTS (Digital Theater Sound)**

A perceptual audio-coding system developed for theaters. DTS is a competitor of Dolby Digital and an optional audio track format for DVD-Video and DVD-Audio.

### **DTS-ES**

A version of DTS decoding that is compatible with 6.1-channel Dolby Surround EX. DTS-ES Discrete is a variation of DTS encoding and decoding that carries a discrete rear-center channel instead of a matrixed channel.

### **DVD (Digital Versatile Disc)**

Generic name for a family of related disc formats encompassing video, audio, and computer file storage on an optical disc format. The related disc formats share common physical formats and logical/file structures but hold different content.

### **DVDA (DVD Association)**

A nonprofit industry trade association representing DVD authors, producers, and vendors throughout the world ([www.dvda.org](http://www.dvda.org)).

**DVD-A (DVD-Audio)**

The audio-only format of DVD. Primarily uses PCM audio with MLP encoding, and an optional subset of DVD-Video features.

**DVD Forum**

An international association of hardware and media manufacturers, software firms, and other users of DVDs. The DVD Forum was created for the purpose of exchanging and disseminating ideas and information about the DVD format ([www.dvdforum.com](http://www.dvdforum.com)).

**DVD Multi**

A logo program that promotes compatibility with DVD-RAM and DVD-RW. DVD Multi isn't a drive, but it defines a testing methodology for drives that, when passed, ensures a drive product can in fact read DVD-RAM and DVD-RW. It puts the emphasis for compatibility on the reader, not the writer.

**DVD-R (DVD Recordable)**

DVD-R offers a write-once, read-many storage format akin to CD-R and is used to master DVD-Video and DVD-ROM discs, and used for data archival and storage applications. The authoring-use drive (635 nm laser) was introduced in 1998 by Pioneer, and the general-use format (650 nm laser) was authorized by the DVD Forum in 2000.

**DVD-RAM (DVD Random Access Memory)**

A rewritable DVD disc endorsed by Hitachi, Panasonic, and Toshiba. DVD-RAM is a cartridge-based (and, more recently, bare disc) technology for data recording and playback. The first DVD-RAM drives were introduced in spring 1998 and had a capacity of 2.6 GB (single side) or 5.2 GB (double side). DVD-RAM Version 2 discs with 4.38 GB arrived in late 1999, and double-side 9.4 GB discs arrived in 2000. DVD-RAM drives typically read DVD-Video, DVD-ROM, and CD media. The current installed base of DVD-ROM drives and DVD-Video players can't read DVD-RAM media.

**DVD-ROM (DVD Read-Only Memory)**

The base format of DVD. Standard DVD-ROM and DVD-Video discs can't be used for recording. A DVD-ROM can store essentially any form of digital data.

**DVD-RW (DVD Rewritable)**

A rewritable DVD format introduced by Pioneer that is similar to DVD+RW. It has a read-write capacity of 4.38 GB.

**DVD+RW (DVD Rewritable)**

A rewritable format that provides full, non-cartridge compatibility with existing DVD-Video players and DVD-ROM drives for both realtime video recording and random data recording across PC and entertainment applications. DVD+RW was developed cooperatively by Hewlett-Packard, Mitsubishi Chemical, Philips, Ricoh, Sony, and Yamaha.

**DVD-Video**

A standard for storing and reproducing audio and video on DVD-ROM discs. DVD-Video is based on MPEG video, Dolby Digital and MPEG audio, and other proprietary data formats.

**dye polymer**

The type of chemical used in DVD-R and CD-R media that darkens when heated by a high-power laser.

## E

### **ECC (Error-Correction Code)**

Additional information added to data to allow errors to be detected and possibly corrected.

### **ECC Constraint Length**

The number of sectors that are interleaved to combat burst-like error characteristics of discs. Sixteen sectors are interleaved in DVD. Interleaving takes advantage of typical disc defects such as scratch marks by spreading the error over a larger data area, thereby increasing the chance that the ECCs can conceal the error.

### **EDC (Error Detection Code)**

A 32-bit (4-byte) CRC-like code appended at the end of the data sector.

### **EFM (Eight-to-Fourteen Modulation)**

A low-level and critical channel coding technique that maximizes pit sizes on the disc by reducing frequent transitions from 0 to 1 or 1 to 0. For example, CD employs pulse width modulation (PCM), representing 1s as land-pit transitions along the track. The 8/14 code maps 8 user data bits into 14 channel bits. In the 1982 CD standard (IEC 908), 3 merge bits are added to the 14-bit block to further eliminate 1-to-0 or 0-to-1 transitions between adjacent 8/14 blocks.

### **EFM+**

DVD's EFM+ method is a derivative of EFM. It folds the merge bits into the main 8/16 table.

### **elementary stream**

A general term for a coded bitstream such as audio or video. Elementary streams contain packs of packets.

### **emulate**

To test the function of a DVD disc on a computer after formatting a complete disc image.

### **entropy coding**

Variable-length, lossless coding of a digital signal to reduce redundancy. MPEG-2, DTS, and Dolby Digital apply entropy coding after the quantization step. MLP also uses entropy coding.

### **extent**

1. For the volume structure and the ISO 9660 file structure, an extent is defined as a set of logical sectors, which contains the logical sector numbers that form a continuous ascending sequence. The address, or location, of an extent is the number of the first logical sector in the sequence.
2. For the UDF file structure, an extent is defined as a set of logical blocks that contains the logical block numbers that form a continuous ascending sequence.

## F

### **father**

The metal master disc formed by electroplating the glass master. The father disc is used to



make mother discs, from which multiple stampers (sons) can be made.

**First Play PGC**

A PGC that is described in the Video Manager Information table and has no corresponding VOBs. The First Play PGC is executed at initial access; i.e., just after disc loading.

**forced activation button**

A menu button that automatically performs the specified action as soon as the button has been highlighted on the menu.

**forced display**

A feature of DVD-Video allowing sub-pictures to be displayed even if the player's subpicture display mode is turned off. Forced display was designed for showing subtitles in a scene where the language is different from the native language of the film.

**forced selected button**

A menu button that is automatically selected when the menu is displayed.

**fragile watermark**

A watermark designed to be destroyed by any form of copying or encoding other than a bit-for-bit digital copy. The absence of the watermark indicates that a copy has been made.

**G****GOF (Group of Audio Frames)**

The data area of 1/30 second, which is composed of 20 audio frames of linear PCM audio.

**GOP (Group of Pictures)**

A GOP is the atomic unit of MPEG video access. In MPEG video, a GOP is one or more I-pictures followed by P-pictures and B-pictures. GOPs are limited in DVD-Video to 18 frames for 525/60 and 15 frames for 625/50.

**GPRM (General Parameters)**

A GPRM is used to store the user's operational history and to modify a player's behavior. DVD-Video players have 16 unique GPRMs. Each GPRM may store a fixed-length, 2-byte numerical value.

**H****HLI (Highlight Information)**

HLI is used to specify button highlights for menus. HLI contains information about the button number, including highlight timing, palette for subpicture highlights, and coordinates of the button.

**I****ID (Identification Data)**

A 32-bit field identifying the sector number within the disc volume.

**IEC (ID Error Correction)**

Two special error-correction bytes (IEC) that are added to each sector header.

**IED (ID Error Correction)**

An error-detection code applied to each sector ID on a DVD.

**interleave**

To arrange data in alternating chunks so that selected parts can be extracted while other parts are skipped, or so that each chunk carries a piece of a different data stream. In DVD, interleaving is used for seamless multiangle and director's cut features, in which multiplexed streams are subsequently interleaved to allow seamless playback of alternate program material.

**I-picture (or I-frame)**

In MPEG video, an I-picture is an intra-picture that is encoded independently from other pictures. I-pictures provide a reference point for dependent P-pictures and B-pictures and allow random access into the compressed video stream. I-pictures use transform coding (DCT, quantization, and VLC) with no motion compensation, resulting in only moderate compression. Hence, I-frames are larger than B-pictures and P-pictures.

**K****key picture (or keyframe)**

A video picture containing the entire content of the image (intraframe encoding), rather than the difference between it and another image (interframe encoding). MPEG I-pictures are key pictures.

**L****land**

The raised area of an optical disc.

**layer**

The plane of a DVD disc on which information is recorded in a pattern of microscopic pits. Each substrate of a disc can contain one or two layers.

**Layer 0**

In a dual-layer disc, Layer 0 is the Layer closest to the optical pickup beam and surface of the disc. Dual-layer discs are 10 percent less dense than single-layer discs due to cross talk between the layers.

**Layer 1**

In a dual-layer disc, Layer 1 is the deeper of the two layers.

**lead-in**

The physical area 1.2 mm or wider preceding the data area on a disc. The lead-in contains sync sectors and control data, including disc keys.

**lead-out**

On a single-layer disc or PTP dual-layer disc, a lead-out is the physical area 1.0 mm or wider toward the outside of the disc following the Data Area. On an OTP dual-layer disc, a lead-out is the physical area 1.2 mm or wider at the inside of the disc following the recorded Data Area.

**letterbox filter**

Circuitry in a DVD player that reduces the vertical size of anamorphic widescreen video (combining every four lines into three) and adds black mattes at the top and bottom.

**level**

In MPEG-2, a level specifies parameters such as resolution, bitrate, and frame rate.

**LPCM (Linear PCM)**

A coded representation of digital data that isn't compressed. Linear PCM spreads values evenly across the range from highest to lowest.

**M****main data**

The user data portion of each disc sector. Each portion is 2048 bytes.

**main level (ML)**

A range of proscribed picture parameters defined by the MPEG-2 video standard with maximum resolution equivalent to ITU-R BT.601 (720 x 576 x 30).

**main profile (MP)**

A subset of the syntax of the MPEG-2 video standard designed to be supported over a large range of mainstream applications such as digital cable TV, DVD, and digital satellite transmission.

**mastering**

The process of replicating optical discs by injecting liquid plastic into a mold containing a master. Not the same as premastering.

**matrix encoding**

The technique of combining additional surround-sound audio channels into a conventional stereo signal. Used in Dolby Surround.

**menu**

In DVD-Video, there are two kinds of menus-System Menus and Interactive Menus. The six types of System Menus are Title Menu, Root Menu, Audio Menu, Subpicture Menu, Angle Menu, and PTT or Chapter Menu.

**middle area**

Unused physical area that marks the transition from Layer 0 to Layer 1. Middle area only exists in dual-layer discs where the tracks of each layer are in opposite directions.

**MKB (Media Key Block)**

Set of keys used in CPPM and CPRM for authenticating players.

**MLP (Meridian Lossless Packing)**

A lossless compression technique used by DVD-Audio that removes redundancy from PCM audio signals to achieve a compression ratio of about 2:1 while allowing the signal to be re-created perfectly by the MLP decoder.

**modulation**

Replacing patterns of bits with different (usually larger) patterns designed to control the characteristics of the data signal. DVD uses 8/16 modulation, where each set of 8 bits is replaced by 16 bits before being written onto the disc.

**mother**

The metal discs produced from mirror images of the father disc in the replication process. Mothers are used to make stampers, or sons.

**motion vector**

A two-dimensional spatial displacement vector used for MPEG motion compensation to provide an offset from the encoded position (I-picture or P-picture) of a block in a reference picture to the predicted position (in a picture or B-picture).

**MP3 (MPEG-1 Layer III audio)**

A perceptual audio coding algorithm that's not supported in DVD-Video or DVD-Audio formats.

**MPEG-1 video**

Video encoded in accordance with the ISO/IEC 11172 specification.

**MPEG-2 video**

Video encoded in accordance with the ISO/IEC 13818 specification.

**MPEG audio**

Audio compressed according to the MPEG perceptual encoding system. MPEG-1 audio provides two channels that can be in Dolby Surround format. MPEG-2 audio adds data to provide discrete multichannel audio. Stereo MPEG audio is the mandatory audio compression system for 625/50 (PAL/SECAM) DVD-Video.

**MPEG video**

Video compressed according to the MPEG encoding system. MPEG-1 is typically used for low data rate video such as on a Video CD. MPEG-2 is used for higher-quality video, especially interlaced video on DVD or HDTV.

**MP@ML (Main Profile at Main Level)**

One of the two most common MPEG-2 formats used by DVD (along with SP@SL).

**multiangle**

A DVD-Video program containing multiple angles allowing different views of a scene to be selected during playback.

**multilanguage**

A DVD-Video program containing sound tracks and subtitle tracks in more than one language.

**Multi\_PGC Title**

In DVD-Video, a title within a Video Title Set (VTS) that contains more than one Program Chain (PGC).

**multiplexing**

Combining multiple signals or data streams into a single signal or stream. Usually achieved by interleaving at a low level.

**MultiRead**

A standard developed by the Yokohama group, a consortium of companies, for attempting to ensure that new CD and DVD hardware can read all CD formats.

**multisession**

A technique in write-once recording technology that allows additional data to be appended after data written in an earlier session.

**mux**

Abbreviation for multiplex.

**mux\_rate**

In MPEG, the combined rate of all Packetized Elementary Streams (PES) of one program. The mux\_rate of DVD is 10.08 Mbps.

**N****navigation data**

In DVD-Video, there are five types of navigation data: Video Manager Information (VMGI), Video Title Set Information (VTSI), Program Chain Information (PGCI), Presentation Control Information (PCI), and Data Search Information (DSI).

**navigation timer**

In DVD-Video, a system timer used during navigation operations.

**nighttime mode**

Name for Dolby Digital dynamic range compression feature that provides low-volume listening without losing legibility of dialog.

**nonlinear PCM**

Audio coding technique that allocates values to audio spectrum based on importance of frequency ranges to human hearing.

**O****One\_Random\_PGC Title**

In DVD-Video, a title within a VTS that contains a single PGC, but does not meet the requirements of a One\_Sequential\_PGC Title.

**One\_Sequential\_PGC Title**

In DVD-Video, a title within a VTS that contains a single PGC with the following attributes: PG

Playback mode is Sequential; no Next PGC, Previous PGC, or Go Up PGCs are defined; and the navigation timer is neither set, nor referred to.

**OTP (Opposite Track Path)**

A dual-layer disc where Layer 0 and Layer 1 have opposite track directions. Layer 0 reads from the inside to the outside of the disc, whereas Layer 1 reads from the outside to the inside. The disc always spins clockwise, regardless of track structure or layers. OTP mode facilitates movie playback by allowing seamless (or near-seamless) transition from one layer to another. In computer applications (DVD-ROM), it usually makes more sense to use the PTP format where random access time is more important.

**outer diameter**

Width of the disc. For "normal" CDs and DVDs, outer diameter is 12 cm; for small CDs and DVDs, outer diameter is 8 cm.

**P****pack**

A group of MPEG packets in a DVD-Video program stream. Each DVD sector of 2048 bytes contains one pack.

**packet**

A low-level unit of DVD-Video (MPEG) data storage containing contiguous bytes of data belonging to a single elementary stream such as video, audio, control, and so forth. Packets are grouped into packs.

**parental management**

An optional feature of DVD-Video that prohibits programs from being viewed or substitutes different scenes within a program depending on the parental level set in the player. Parental control requires that parental levels and additional material (if necessary) are encoded on the disc.

**part of title**

In DVD-Video, a division of a title representing a scene. Also called a chapter. Parts of titles are numbered 1 to 99 in a One\_Sequential\_PGC title and 1 to 999 in a Non\_Sequential\_PGC title.

**PCI (Presentation Control Information)**

A DVD-Video data stream containing details of the timing and presentation of a program (aspect ratio, angle change, menu highlight and selection information, and so on). PCI and DSI together make up an overhead of about 1 Mbps.

**PES (Packetized Elementary Stream)**

The low-level stream of MPEG packets containing an elementary stream, such as audio or video.

**PGCI (Program Chain Information)**

Data describing a chain of cells (grouped into programs) and sector locations, thus composing a sequential program. PGCI data is contained in the PCI stream.

**physical format**

The low-level characteristics of the DVD-ROM and DVD-Video standards. Physical formats includes pits on the disc, location of data, and organization of data according to physical position.

**physical sector number**

Serial number assigned to physical sectors on a DVD disc. Serial incremented numbers are assigned to sectors from the head sector in the Data Area as 30000h from the start of the lead-in area to the end of the lead-out area.

**picture stop**

A function of DVD-Video when a code indicates that video playback should stop and a still picture should be displayed.

**pit**

A microscopic depression in the recording layer of an optical disc. Pits are usually one-fourth of the laser wavelength and cause cancellation of the beam by diffraction.

**pit art**

A pattern of pits to be stamped onto a disc to provide visual art rather than data. Pit art is a cheaper alternative to a printed label.

**pit length**

Arc length of the pit along the direction of the track.

**post-command**

In DVD-Video, a navigation command that is executed after the presentation of a PGC has been completed.

**P-picture (or P-frame)**

In MPEG video, a predicted picture based on difference from previous pictures. P-pictures (along with I-pictures) provide a reference for following P-pictures or B-pictures.

**pre-command**

In DVD-Video, a navigation command that is executed before the presentation of a PGC has been started.

**premastering**

The process of preparing data in the final format to create a DVD disc image for mastering. Includes creating DVD control and navigation data, multiplexing data streams together, generating Error-Correction Codes, and performing channel modulation. Often includes the process of encoding video, audio, and subpictures.

**presentation data**

DVD-Video information-such as video, menus, and audio-that is presented to the viewer.

**profile**

In MPEG-2, a profile specifies syntax and processes such as picture types, scalability, and extensions.

**program**

In a general sense, a sequence of audio or video. In a technical sense for DVD-Video, a group of cells within a PGC.

**PTP (Parallel Track Path)**

A variation of DVD dual-layer disc layout where readout begins at the center of the disc for both layers. Designed for separate programs (such as a widescreen and a pan-and-scan version on the same disc side) or programs with a variation on the second layer. Also most efficient for DVD-ROM random-access application.

**PTT Menu**

Menu used to access a specific PTT in a VTS. Usually referred to as chapter menu.

**PUH (Pickup Head)**

The assembly of optics and electronics that reads data from a disc.

**RAMbo drive**

A DVD-RAM drive capable of reading and writing CD-R and CD-RW media. RAMbo is a play on the word combo.

**R****RAMbo drive**

A DVD-RAM drive capable of reading and writing CD-R and CD-RW media. RAMbo is a play on the word combo.

**read-modify-write**

An operation used in writing to DVD-RAM discs. Because data can be written by the host computer in blocks as small as 2 Kb-but the DVD format uses ECC blocks of 32 Kb-an entire ECC block is read from the data buffer or disc, modified to include the new data and new ECC data, then written back to the data buffer and disc.

**reference picture (or reference frame)**

An encoded frame that is used as a reference point from which to build dependent frames. In MPEG-2, I-pictures and P-pictures are used as references.

**regional code**

A code identifying one of the world regions for restricting DVD-Video playback.

**regional management**

A mandatory feature of DVD-Video that restricts the playback of a disc to a specific geographical region. Each player and DVD-ROM drive includes a single regional code, and each disc side can specify in which regions it is allowed to be played. Regional coding is optional: A disc without regional codes will play in all players in all regions.

**replication**

1. The reproduction of media such as optical discs by stamping a master copy onto blank media.
2. A process used to increase the size of an image by repeating pixels to increase the



horizontal size and/or lines to increase the vertical size, or to increase the display rate of a video stream by repeating frames. For example, a 360 x 240-pixel image can be displayed at 720 x 480 size by duplicating each pixel on each line and then duplicating each line. In this case, the resulting image contains blocks of four identical pixels.

**reserved (or reserved field)**

Currently unused field in DVD spec that may be used in future revisions of the spec.

**reserved bytes**

The 6 bytes in the header of each DVD sector reserved for future use.

**RMA (Region Management Information)**

In DVD-Video, an 8-bit (1-byte) value that appears in the CPR\_MAI and is used to indicate the regions of the world where users can play a disc.

**Root Menu**

The menu used to access other interactive menus in the Video Tile Set (VTS) Manager domain, or to make a selection not defined by other system menus, such as Angle Menu, Audio Menu, PTT Menu, and Subpicture Menu.

**S****scanning velocity**

The speed at which the laser pickup head travels along the spiral track of a disc.

**SCMS (Serial Copy Management System)**

Used by DAT, MiniDisc, and other digital recording systems to control copying and limit the number of copies that can be made from copies.

**SDDS (Sony Dynamic Digital Sound)**

A perceptual audio-coding system developed by Sony for multichannel audio in theaters. SDDS is a competitor of Dolby Digital and an optional audio track format for DVD.

**sector**

A logical or physical group of bytes recorded on the disc; the smallest addressable unit. A DVD sector contains 38,688 bits of channel data and 2048 bytes of user data.

**sector number**

A number that uniquely identifies the physical sector on a disc.

**SFF 8090**

Specification number 8090 of the Small Form Factor Committee, an ad hoc group formed to address disc industry needs and develop recommendations to be passed along to standards organizations. SFF 8090 (also known as the Mt. Fuji specification) defines a command set for CD-ROM- and DVD-ROM-type devices, including implementation notes for ATAPI and SCSI.

**simple profile (SP)**

A subset of the syntax of the MPEG-2 video standard designed for simple and inexpensive applications such as software. SP does not allow B-pictures.

**simulate**

To test the function of a DVD disc in the authoring system without actually formatting an image.

**son**

The metal discs produced from a mother disc in the replication process. Fathers or sons are used in molds to stamp discs.

**s/pdif (Sony/Philips Digital Interface)**

A consumer variant of the AES/EBU digital audio transmission standard. Most DVD players include s/pdif coaxial digital audio connectors providing PCM and encoded digital audio output.

**space**

The reflective area of a writable optical disc. Equivalent to a land.

**SP@ML (Simple Profile at Main Level)**

The simplest MPEG-2 format used by DVD. Most discs use MP@ML. SP@ML does not allow B-pictures.

**stamping**

The process of replicating optical discs by injecting liquid plastic into a mold containing a stamper (father or son).

**STP (Surface Transfer Process)**

A method of producing dual-layer DVDs that sputters the reflective aluminum layer onto a temporary substrate of PMMA, then transfers the metallized layer to the already molded Layer 0.

**subpicture**

Graphic bitmap overlays used in DVD-Video to create subtitles, captions, karaoke lyrics, menu highlighting effects, and so on.

**Subpicture Menu**

Menu used to select a subpicture stream.

**substrate**

The clear, polycarbonate disc onto which data layers are stamped or deposited.

**sync frame**

Physical record unit of 1488 channel bits length comprising 91 bytes of data and a sync code. One physical sector consists of 26 sync frames.

**System Menu**

The main menu of a DVD-Video disc where titles are selected. Also called the title selection menu or disc menu.

**T**

**tilt**

A mechanical measurement of the warp of a disc. Usually expressed in radial (indicating dishing in the perpendicular direction) and tangential (indicating ripples in the perpendicular direction).

**title**

The largest unit of a DVD-Video disc (other than the entire volume or side). A title is usually a movie, TV program, music album, etc. A disc can hold up to 99 titles, which can be selected from the disc menu. Entire DVD volumes are also commonly called titles.

**title key**

A value used to encrypt and decrypt user data on DVD-Video discs.

**title menu**

On a DVD-Video disc, it refers to the menu within a title from which audio, subpicture, chapters, and so forth can be selected.

**track**

1. A distinct element of audio-visual information, such as the picture, a sound-track for a specific language, or the like. DVD-Video allows one track of video (with multiple angles), up to 8 tracks of audio, and up to 32 tracks of subpicture.
2. One revolution of the continuous spiral channel of information recorded on a disc.

**track buffer**

Circuitry (including memory) in a DVD player that provides a variable stream of data up to 10.08 Mbps to the system decoders of data coming from the disc at a constant rate of 11.08 Mbps (except for breaks when a different part of the disc is accessed).

**track pitch**

The distance in the radial direction between the centers of two adjacent tracks on a disc. DVD-ROM standard track pitch is 0.74  $\mu$ m.

**U****UDF (Universal Disc Format)**

A standard developed by the Optical Storage Technology Association designed to create a practical and usable subset of the ISO/IEC 13346 recordable, random-access file system and volume structure format.

**UDF Bridge**

A combination of UDF and ISO 9660 file-system formats that provides backward-compatibility with ISO 9660 readers while allowing full use of the UDF standard.

**universal DVD**

A DVD designed to play in DVD-Audio and DVD-Video players by carrying a Dolby Digital audio track in the DVD-Video zone.

**universal DVD player**

A DVD player that can play both DVD-Video and DVD-Audio discs.

**user data**

The 2048 bytes of data recorded on each sector of a disc independent of formatting and error-correction overhead.

**V****VCAP (Video Capable Audio Player)**

An audio player that can read the limited subset of video features defined for the DVD-Audio format.

**VIDEO\_TS**

UDF file name used for video directory on disc volume. Files under this directory name contain pointers to the sectors on the disc that hold the program streams.

**VMG (Video Manager)**

In DVD-Video, the information and data that controls one or more VTS and VMGM. VMG is composed of the Video Manager Information (VMGI), the Video Object Set for Video Manager Menu (VMGM\_VOBS), and a backup of the VMGI (VMGI\_BUP).

**VMGI (Video Manager Information)**

Information required to manage one or more VTS and Video Manager Menu areas. VMGI is nonrealtime data located at the start of the Video Manager area.

**VMI (Volume Management Information)**

Identifies disc side and content type.

**VOB (Video Object)**

A single, complete presentation stream composed of multiplexed Video, Audio, Subpicture, PCI, and DSI elementary streams, and consisting of an integer number of VOBUs.

**VOBS (Video Object Set)**

A collection of one or more VOBs. There are three types: VMGM\_VOBS for the Video Manager Menu (VMGM) area, VTSM\_VOBS for the Video Titles Set Menu (VTSM) area, and VTST\_VOBS for the Video Title Set Title (VTST) area.

**VOBU (Video Object Unit)**

A small (between 0.4 and 1.0 seconds) physical unit of DVD-Video data storage, usually the length of one GOP, that begins with a NV\_PCK and usually includes an integer number of GOPs.

**volume space**

Collection of sectors that make the volume. Not all sectors on the disc comprise the volume. Some sectors near the inner and outer spiral are used as leader.

**volume**

A logical unit representing all the data on one side of a disc.

**VTS (Video Title Set)**

In DVD-Video, a collection of titles and VTSM that controls 1 to 99 titles. It is composed of the Video Title Set Information (VTSI), the Video Object Set for the Menu (VTSM\_VOBS), the

Video Object Set for the Title (VTST\_VOBS), and a backup of the VTSI (VTSI\_BUP).

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