



# **HD DVD-VR (Video Recording) Product Requirement & Guideline**

**Version 1.0**

**February 2006**

## **Conditions for publication**

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DVD Forum\*

\* The DVD Forum is a voluntary, ad hoc association of hardware manufacturers, software firms and other users of digital versatile discs (the "DVD Format"), created for the purpose of exchanging and disseminating ideas and information about the DVD Format and its technical capabilities and improvements and innovations.

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## **Revision history**

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## 1. General

### 1.1 Scope

This document defines the minimum requirements and recommendations for implementation of HD DVD-VR (Video Recording) products\* for manufactures from a consumer's point of view and the minimum requirements for a typical HD DVD-VR product\*.

HD DVD-VR product shall comply with the requirements described in the "HD DVD-VR (Video Recording) Product Requirement & Guideline".

\*: The products which refer to the HD DVD-VR (Video Recording) specifications.

## 1.2 HD DVD-VR Product Category

HD DVD-VR (Video Recording) Product Requirement & Guideline defined in this document applies to the following product categories.

### 1.2.1 HD DVD-VR Format Recorder/Player

- 1) HD DVD-VR Format Video Recorder
- 2) HD DVD-VR Format Stream Recorder
- 3) HD DVD-VR Format Video Player
- 4) HD DVD-VR Format Stream Player

Note: In these product categories, Recorders have the capability of both recording and playback of the contents compliant to HD DVD-VR specifications, while Players do not have the recording capability of the contents compliant to HD DVD-VR specifications. Refer to **2.2** to **2.5** for more details.

### 1.3 Normative References

HD DVD-VR (Video Recording) product shall comply with relevant specifications listed here.

Notes: In the event of minor updates to the applicable specifications which is defined as a change of second digit or third digit of version number, such as from 1.1 to 1.2, all HD DVD-VR products shall comply with the updated specifications after a reasonable time period, even if this HD DVD-VR (Video Recording) Product Requirement & Guideline is not updated. The latest version of each of the applicable specifications will be informed on the DVD FLLC web site, [www.dvdfllc.co.jp](http://www.dvdfllc.co.jp).

In the event of major updates to the applicable specifications, which is defined as a change of first digit of version number such as from 1.0 to 2.0, or the creation of a new format, HD DVD-VR products are not required to comply with these updates or the new format until the HD DVD-VR (Video Recording) Product Requirement & Guideline document is updated. Major specification revisions or new format specifications will be informed on the DVD FLLC web site, [www.dvdfllc.co.jp](http://www.dvdfllc.co.jp).

#### 1.3.1 Physical specifications

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 1: PHYSICAL SPECIFICATIONS Version 2.0
- 4) *DVD Specifications for High Density Re-recordable Disc (HD DVD-RW) \**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*
- 5) *DVD Specifications for High Density Re-recordable Disc for Dual Layer (HD DVD-RW for DL) \**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*

*\*: These are not included in this version. They will be included after their final versions are issued.*

#### 1.3.2 File system specifications

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.9 \*\*

*\*: File system specifications corresponding to 4) and 5) in 1.3.1 will be included after their final versions are issued.*

*\*\*:* This is preliminary information. The products which support HD DVD-R for DL shall be compliant with Version 2.0 (or later).

### **1.3.3 Application specifications**

- 1) DVD Specifications for High Definition VIDEO RECORDING (HD DVD-VR) Version 1.0
- 2) DVD Specifications for High Definition VIDEO (HD DVD-Video) Version 1.0 \*

*\*:* This is listed for the support of creation of Interoperable Content by HD DVD-VR Format Video Recorder.

**1.4 Copy Protection**

The basic policy of the DVD Forum is to respect copyrights and to enable copy protection systems. According to the basic policy stated above, an appropriate copy protection system for HD DVD content and media has been adopted as follows.

CP system	Media / Content	Proposer
AACS	HD DVD-VR content using HD DVD-Rewritable Disc HD DVD-VR content using HD DVD-Recordable Disc	AACS*

*Note: Other physical media will also be included when related specifications are completed.*

\*Contact: AACS license information is available from the AACS LA, LLC, [www.aacsla.com](http://www.aacsla.com).

AACS specification updates will be informed by DVD Forum or check web site of DVD Forum or AACS LA, LLC.

Since the copy protection system is not a DVD Forum specification, it is not subject to DVD Forum verification but compliance to the specification is recommended by DVD Forum.

## 1.5 Terminology

### Video Object (VOB)

Stream data which typically originate in self-encoding. The data structure of VOB complies with MPEG Program Stream (MPEG-PS). VOB data structure is defined as a sequence of packs, which has a fixed size of 2048 bytes.

### Stream Object (SOB)

Stream data which typically originate in digital broadcast. Source stream data to be recorded as an SOB consist of MPEG Transport Stream (MPEG-TS) Packets. The data structure of SOB complies with Packet Group format defined in HD DVD-VR specifications.

### Type A recording mode for SOB

Recording mode for SOBs, which is dedicated to a specific digital stream application type (e.g. digital broadcast standard). The source stream is a partial transport stream which has one program (e.g. one digital television channel) selected from the original broadcast transport stream. This mode requires analysis of the stream to be recorded. For more details, refer to HD DVD-VR specifications.

### Type B recording mode for SOB

Recording mode for SOBs, which realizes the streamer applications. Streamer application means that the source stream is recorded transparently without stream analysis, and the recorded content is typically decoded in external device e.g. set-top box or digital television. For more details, refer to HD DVD-VR specifications.

### Digital stream application type

Application type (e.g. digital broadcast standard) to distinguish the content of the MPEG Transport Stream recorded as SOB content.

In the case of Type A recording mode, digital stream application type defined in HD DVD-VR specifications (as of the first issuance of this Requirement and Guideline) is "Japanese ISDB". In the case of Type B recording mode, digital stream application type is not available and should be interpreted as "Unspecified", regardless of the content of the stream.

### Digital transport stream interface

Digital interface which supports the transparent ("as is") input and/or output of MPEG Transport Stream. The typical examples are IEEE1394 interface and IP (Internet Protocol) interface.

### Interoperable Content

Content specified by "DVD Specifications for High Definition VIDEO" and "DVD Specifications for High Definition VIDEO RECORDING".

## 1.6 Abbreviations

AACS	Advanced Access Content System
ISDB	Integrated Services Digital Broadcasting
SOB	Stream Object
VOB	Video Object

## 2. HD DVD-VR Format Recorder/Player

### 2.1 General Descriptions

This specification covers four categories as follows:

- 1) HD DVD-VR Format Video Recorder
- 2) HD DVD-VR Format Stream Recorder
- 3) HD DVD-VR Format Video Player
- 4) HD DVD-VR Format Stream Player

Note: Integrated systems of HD DVD-VR Format Recording/Playback functions (e.g. PC software in combination with appropriate hardware including disc drive) are also covered by these categories.

## 2.2 Requirements of HD DVD-VR Format Video Recorder

The technical requirements for HD DVD-VR Format Video Recorder are listed as below.

### 2.2.1 Specifications

HD DVD-VR Format Video Recorder shall comply with at least one of the following combinations of specifications:

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 1: PHYSICAL SPECIFICATIONS Version 2.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.9 \*
- 4) *DVD Specifications for High Density Re-recordable Disc (HD DVD-RW) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*
- 5) *DVD Specifications for High Density Re-recordable Disc for Dual Layer (HD DVD-RW of DL) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*

*\*: This is preliminary information. The products which support HD DVD-R for DL shall be compliant with Version 2.0 (or later).*

*\*\* : These are not included in this version. They will be included after their final versions are issued.*

HD DVD-VR Format Video Recorder shall comply with the following specification:

- 6) DVD Specifications for High Definition VIDEO RECORDING (HD DVD-VR) Version 1.0

### 2.2.2 Required functions

HD DVD-VR Format Video Recorder ("the recorder" in 2.2.2) shall comply with the following functions:

#### 1) Record functions

##### 1-1) General

The recorder shall have a capability to record the contents described below on at least one of the physical media described in 2.2.1. If the recorder supports 3) in 2.2.1, 2) in 2.2.1 shall also be supported.

##### 1-2) VOB

The recorder shall have a capability to record some kind of VOB content specified in DVD Specifications for High Definition VIDEO RECORDING. Especially, the recorder shall have a capability to generate and record VOB content in compliance to at least one mandatory video codec and at least one mandatory audio codec.\*

\*: The recorder does not need to support all kinds of coding parameters e.g. video resolutions, audio bit rates, etc.

#### 2) Playback functions

##### 2-1) General

The recorder shall have a capability to playback the contents described below on at least one of the physical media described in 2.2.1. If the recorder supports 3) in 2.2.1, 2) shall also be supported. At least, the recorder shall have a capability to playback the content recorded by the same recorder.

##### 2-2) VOB

The recorder shall have a capability to playback VOB content specified in DVD Specifications for High Definition VIDEO RECORDING.

##### 2-3) SOB

The recorder is strongly recommended to have a capability to playback SOB content of at least either of Type A recording mode (at least one digital stream application type) or Type B recording mode.

If the recorder has a capability to playback SOB content of Type A recording mode (at least one digital stream application type), the recorder is also strongly recommended to have a capability to playback SOB content of Type B recording mode if the recorder equips digital transport stream interface.

If the recorder has a capability to playback SOB content of Type A recording mode of some digital stream application type, the recorder shall have a capability to decode the SOB content or to output MPEG-TS retrieved from the SOB via digital transport stream interface.

If the recorder has a capability to playback SOB content of Type B recording mode, the recorder shall have a capability to output MPEG-TS retrieved from the SOB via digital transport stream interface.

### 3) Interoperable Content

Although it is described that "creation of Interoperable Content is an optional function of the recorders" in Annex R of HD DVD-VR specifications, the following shall apply.

The recorder shall have a capability to generate navigation data of Interoperable Content which can be played back by HD DVD-Video players, if any valid VOB compliant to HD DVD-VR specifications exists on the disc.

Note: It is recommended that manufactures of HD DVD-VR Format Video Recorders confirm all of the latest specifications e.g. HD DVD-Video specifications for Interoperable Content.

### 4) Video output

At least one video output is required except for integrated recorder/display.

### 5) Audio output

At least one analog 2ch stereo audio output is required.

### 6) Digital transport stream interface

Digital transport stream interface may be equipped. Especially, at least one digital transport stream interface shall be equipped in the following cases.

- If the recorder has a capability to playback SOB content of Type A recording mode of one or more digital stream application types and if the recorder does not have a capability to decode the SOB content of at least one of those digital stream application type.
- If the recorder has a capability to playback SOB content of Type B recording mode.

### 7) Copy protection

Until now, AACS is the only approved content protection method for HD DVD-VR content on HD DVD-Rewritable/Recordable Disc. Therefore, it is recommended for HD DVD-VR Format Video Recorder to comply with AACS Specifications.

## 2.3 Requirements of HD DVD-VR Format Stream Recorder

The technical requirements for HD DVD-VR Format Stream Recorder are listed as below.

### 2.3.1 Specifications

HD DVD-VR Format Stream Recorder shall comply with at least one of the following combinations of specifications:

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 1: PHYSICAL SPECIFICATIONS Version 2.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.9 \*
- 4) *DVD Specifications for High Density Re-recordable Disc (HD DVD-RW) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*
- 5) *DVD Specifications for High Density Re-recordable Disc for Dual Layer (HD DVD-RW of DL) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*

*\*: This is preliminary information. The products which support HD DVD-R for DL shall be compliant with Version 2.0 (or later).*

*\*\* : These are not included in this version. They will be included after their final versions are issued.*

HD DVD-VR Format Stream Recorder shall comply with the following specification:

- 6) DVD Specifications for High Definition VIDEO RECORDING (HD DVD-VR) Version 1.0

### 2.3.2 Required functions

HD DVD-VR Format Stream Recorder ("the recorder" in 2.3.2) shall comply with the following functions:

#### 1) Record functions

##### 1-1) General

The recorder shall have a capability to record the contents described below on at least one of the physical media described in 2.3.1. If the recorder supports 3) in 2.3.1, 2) in 2.3.1 shall also be supported.

##### 1-2) SOB

The recorder shall have a capability to record some kind of SOB content specified in DVD Specifications for High Definition VIDEO RECORDING. Especially, the recorder shall have a capability to record SOB content of at least either of Type A recording mode (at least one digital stream application type) or Type B recording mode.

#### 2) Playback functions

##### 2-1) General

The recorder shall have a capability to playback the contents described below on at least one of the physical media described in 2.3.1. If the recorder supports 3) in 2.3.1, 2) in 2.3.1 shall also be supported.

At least, the recorder shall have a capability to playback the content recorded by the same recorder.

##### 2-2) SOB

The recorder shall have a capability to playback SOB content of at least either of Type A recording mode (at least one digital stream application type) or Type B recording mode.

If the recorder has a capability to playback SOB content of Type A recording mode (at least one digital stream application type), the recorder is also strongly recommended to have a capability to playback SOB content of Type B recording mode if the recorder equips digital transport stream interface.

If the recorder has a capability to playback SOB content of Type A recording mode of some digital stream application type, the recorder shall have a capability to decode the SOB content or to output MPEG-TS retrieved from the SOB via digital transport stream interface.

If the recorder has a capability to playback SOB content of Type B recording mode, the recorder shall have a capability to output MPEG-TS retrieved from the SOB via digital transport stream interface.

#### 3) Video output

At least one video output is required except for integrated recorder/display, if no digital transport stream interface is equipped.

#### 4) Audio output

At least one analog 2ch stereo audio output is required, if no digital transport stream interface is equipped.

5) Digital transport stream interface

Digital transport stream interface may be equipped. Especially, at least one digital transport stream interface shall be equipped in the following cases.

- If the recorder has a capability to playback SOB content of Type A recording mode of one or more digital stream application type and if the recorder does not have a capability to decode the SOB content of at least one of those digital stream application type.
- If the recorder has a capability to playback SOB content of Type B recording mode.

6) Copy protection

Until now, AACS is the only approved content protection method for HD DVD-VR content on HD DVD-Rewritable/Recordable Disc. Therefore, it is recommended for HD DVD-VR Format Stream Recorder to comply with AACS Specifications.

## 2.4 Requirements of HD DVD-VR Format Video Player

The technical requirements for HD DVD-VR Format Video Player are listed as below.

### 2.4.1 Specifications

HD DVD-VR Format Video Player shall comply with at least one of the following combinations of specifications:

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 1: PHYSICAL SPECIFICATIONS Version 2.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.9 \*
- 4) *DVD Specifications for High Density Re-recordable Disc (HD DVD-RW) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*
- 5) *DVD Specifications for High Density Re-recordable Disc for Dual Layer (HD DVD-RW of DL) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*

*\*: This is preliminary information. The products which support HD DVD-R for DL shall be compliant with Version 2.0 (or later).*

*\*\* : These are not included in this version. They will be included after their final versions are issued.*

HD DVD-VR Format Video Player shall comply with the following specification:

- 6) DVD Specifications for High Definition VIDEO RECORDING (HD DVD-VR) Version 1.0

### 2.4.2 Required functions

HD DVD-VR Format Video Player ("the player" in 2.4.2) shall comply with the following functions:

#### 1) Playback functions

##### 1-1) General

The player shall have a capability to playback the contents described below on at least one of the physical media described in 2.4.1. If the player supports 3) in 2.4.1, 2) in 2.4.1 shall also be supported.

##### 1-2) VOB

The player shall have a capability to playback VOB content specified in DVD Specifications for High Definition VIDEO RECORDING.

##### 1-3) SOB

The player is strongly recommended to have a capability to playback SOB content of at least either of Type A recording mode (at least one digital stream application type) or Type B recording mode. If the player has a capability to playback SOB content of Type A recording mode (at least one digital stream application type), the player is also strongly recommended to have a capability to playback SOB content of Type B recording mode if the player equips digital transport stream interface. If the player has a capability to playback SOB content of Type A recording mode of some digital stream application type, the player shall have a capability to decode the SOB content or to output MPEG-TS retrieved from the SOB via digital transport stream interface. If the player has a capability to playback SOB content of Type B recording mode, the player shall have a capability to output MPEG-TS retrieved from the SOB via digital transport stream interface.

#### 2) Video output

At least one video output is required except for integrated player/display.

#### 3) Audio output

At least one analog 2ch stereo audio output is required.

#### 4) Digital transport stream interface

Digital transport stream interface may be equipped. Especially, at least one digital transport stream interface shall be equipped in the following cases.

- If the player has a capability to playback SOB content of Type A recording mode of one or more digital stream application types and if the player does not have a capability to decode the SOB content of at least one of those digital stream application type.
- If the player has a capability to playback SOB content of Type B recording mode.

#### 5) Copy protection

Until now, AACS is the only approved content protection method for HD DVD-VR content on HD DVD-Rewritable/Recordable Disc. Therefore, it is recommended for HD DVD-VR Format Video Player to comply with AACS Specifications.

## 2.5 Requirements of HD DVD-VR Format Stream Player

The technical requirements for HD DVD-VR Format Stream Player are listed as below.

### 2.5.1 Specifications

HD DVD-VR Format Stream Player shall comply with at least one of the following combinations of specifications:

- 1) DVD Specifications for High Density Rewritable Disc (HD DVD-RAM)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 2) DVD Specifications for High Density Recordable Disc (HD DVD-R)  
Part 1: PHYSICAL SPECIFICATIONS Version 1.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.0
- 3) DVD Specifications for High Density Recordable Disc for Dual Layer (HD DVD-R for DL)  
Part 1: PHYSICAL SPECIFICATIONS Version 2.0  
Part 2: FILE SYSTEM SPECIFICATIONS Version 1.9 \*
- 4) *DVD Specifications for High Density Re-recordable Disc (HD DVD-RW) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*
- 5) *DVD Specifications for High Density Re-recordable Disc for Dual Layer (HD DVD-RW of DL) \*\**  
*Part 1: PHYSICAL SPECIFICATIONS Version x.x*  
*Part 2: FILE SYSTEM SPECIFICATIONS Version x.x*

*\*: This is preliminary information. The products which support HD DVD-R for DL shall be compliant with Version 2.0 (or later).*

*\*\* : These are not included in this version. They will be included after their final versions are issued.*

HD DVD-VR Format Stream Player shall comply with the following specification:

- 6) DVD Specifications for High Definition VIDEO RECORDING (HD DVD-VR) Version 1.0

### 2.5.2 Required functions

HD DVD-VR Format Stream Player ("the player" in 2.5.2) shall comply with the following functions:

#### 1) Playback functions

##### 1-1) General

The player shall have a capability to playback the contents described below on at least one of the physical media described in 2.5.1. If the player supports 3) in 2.5.1, 2) in 2.5.1 shall also be supported.

##### 1-2) SOB

The player shall have a capability to playback SOB content of at least either of Type A recording mode (at least one digital stream application type) or Type B recording mode.

If the player has a capability to playback SOB content of Type A recording mode (at least one digital stream application type), the player is also strongly recommended to have a capability to playback SOB content of Type B recording mode if the player equips digital transport stream interface.

If the player has a capability to playback SOB content of Type A recording mode of some digital stream application type, the player shall have a capability to decode the SOB content or to output MPEG-TS retrieved from the SOB via digital transport stream interface.

If the player has a capability to playback SOB content of Type B recording mode, the player shall have a capability to output MPEG-TS retrieved from the SOB via digital transport stream interface.

#### 2) Video output

At least one video output is required except for integrated recorder/display, if no digital transport stream interface is equipped.

#### 3) Audio output

At least one analog 2ch stereo audio output is required, if no digital transport stream interface is equipped.

#### 4) Digital transport stream interface

Digital transport stream interface may be equipped. Especially, at least one digital transport stream interface shall be equipped in the following cases.

- If the player has a capability to playback SOB content of Type A recording mode of one or more digital stream application type and if the player does not have a capability to decode the SOB content of at least one of those digital stream application type.
- If the player has a capability to playback SOB content of Type B recording mode.

#### 5) Copy protection

Until now, AACS is the only approved content protection method for HD DVD-VR content on HD DVD-Rewritable/Recordable Disc. Therefore, it is recommended for HD DVD-VR Format Stream Player to comply with AACS Specifications.

### **3. Additional Description for products other than related specifications (Informative)**

#### **3.1 Logo on HD DVD-VR Format Recorder/Player**

Logo on HD DVD-VR Format Recorder/Player: Refer to DVD Logo Manual.

Note: Please refer to the latest DVD Logo Manual issued by DVD FLLC.

**The following Technical Coordination Group members of the DVD Forum participated in making this requirement & guideline.**

IBM Corporation

LG Electronics Inc.

Microsoft Corporation

NEC Corporation

SANYO Electric Co., Ltd.

Thomson

Toshiba Corporation

Victor Company of Japan, Limited

Walt Disney Pictures and Television

Warner Bros. Entertainment Inc.

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