



PC Recording

# **PC VR Format Recording Software**

**for DVD-R, DVD-RW and DVD-RAM discs**

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## **TEST SPECIFICATION**

**Version 1.1**  
**December 2011**

## Amendment for PC VR Format Recording Software TS   Version 1.1 (December 2011)

The following pages were amended without changing the version number of the TS.

- **Amendment 1 (June 2012)**

Page	Location	Amendment
Page 18	<b>Annex A</b>	<ul style="list-style-type: none"><li>• "Industrial Technology Research Institute" was deleted from the Class-A Lab list.</li></ul>
Page 21	<b>Annex D</b>	<ul style="list-style-type: none"><li>• Contact information of "DVD Format/Logo Licensing Corporation" was updated.</li></ul>

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## **Revision History**

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- September 1, 2003  
PC VR Format Recording Software Test Specification Version 1.0 was approved by VTF members.
- September 23, 2003  
PC VR Format Recording Software Test Specification Version 1.0 was approved by SC.
- June 2005  
Version 1.01 updated Normative References and Class-A Lab List, and was edited as electronic files.
- December 15, 2011  
PC VR Format Recording Software Test Specification Version 1.1 was approved by WG-V members.  
The Version 1.1 added DVD-R for General and DVD-R for DL discs as applicable discs.

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## 1. General

### 1.1 Scope

The scope of this Test Specification is the testing PC VR Format\* Recording Software for compliance with DVD Specifications listed in 1.2. The test procedure described herein could be used by Class-A Verification Labs, Class-B Verification Labs and Quality Assurance Departments of PC VR Format Recording Software manufactures. The scope of this Test Specification is limited to product's compliance to DVD Specifications and not to evaluate performance of products.

\*: "VR Format" means DVD Video Recording format.

Note: The term "DVD-R" may be used as a generic name for DVD-R for General and DVD-R for DL in this Test Specification.

### 1.2 Normative References

DVD Specifications for Re-recordable Disc (DVD-RW)

- Part 1: Physical Specifications Version 1.2 and
- Optional Specifications 2x-speed DVD-RW Revision 1.0
- Optional Specifications 4x-speed DVD-RW Revision 2.0
- Optional Specifications 6x-speed DVD-RW Revision 3.0
- Part 2: File System Specifications Version 1.0

DVD Specifications for Rewritable Disc (DVD-RAM)

- Part 1: Physical Specifications Version 2.1 and
- Optional Specifications 3x-speed DVD-RAM Revision 1.0
- Optional Specifications 5x-speed DVD-RAM Revision 2.0
- Part 2: File System Specifications Version 2.0

DVD Specifications for Recordable Disc for General (DVD-R for General)

- Part 1: Physical Specifications Version 2.1 and
- Optional Specifications 4x-speed DVD-R Revision 1.0
- Optional Specifications 6x-speed DVD-R Revision 2.0
- Optional Specifications 8x-speed DVD-R Revision 3.0
- Optional Specifications 2x-speed DVD-R Revision 4.0
- Optional Specifications 12x-speed DVD-R Revision 5.0
- Optional Specifications 16x-speed DVD-R Revision 6.0
- Part 2: File System Specifications Version 2.1

DVD Specifications for Recordable Disc for Dual Layer (DVD-R for DL)

- Part 1: Physical Specifications Version 3.0 and
- Optional Specifications 4x-speed DVD-R for DL Revision 1.0
- Optional Specifications 6x-speed DVD-R for DL Revision 2.0
- Optional Specifications 8x-speed DVD-R for DL Revision 3.0
- Optional Specifications 10x-speed DVD-R for DL Revision 4.0
- Optional Specifications 12x-speed DVD-R for DL Revision 5.0

Part 2: File System Specifications Version 3.0

DVD Specifications for DVD-RAM/DVD-RW/DVD-R for General Discs

Part 3: Video Recording Version 1.2

### **1.3 Scope of Products Covered**

- PC VR Format Recording Software (for DVD-R disc, DVD-RW disc and/or DVD-RAM disc)

Note: The product covered shall be for home use or office personal use.

### **1.4 Requirements for the product**

The following parameters are the basic requirements for the PC VR Format Recording Software.

- (1) The Logo and Mark specified by Licensor (DVD FLLC) should be marked on package, catalog, user display on screen and instruction manual. However, the Logo and Mark for this product shall not be used on the media that contains the software, such as CD-ROM disc and DVD-ROM disc, or on the DVD-R, DVD-RW and DVD-RAM discs to which Video contents are recorded using the product.
- (2) Scope of the target disc(s) covered (DVD-R disc, DVD-RW disc and/or DVD-RAM disc) must be clearly stated on product and packaging.
- (3) One or more supporting OS and DVD Drive shall be recommended in the catalog and/or instruction manual.

## 2. DVD Logo

DVD Format/Logo Licensing Corporation owns the rights to license the DVD Logo. To be able to use the DVD Logo, DVD manufacturer must have:

- a. License to use the Logo and
- b. DVD Specification compliance of the product for logo consideration must be validated by the test specifications as defined in this document.

Licensing terms for the DVD Logo are available from the DVD Format/Logo Licensing Corporation.

This chapter describes the mechanism to be used for product compliance testing.

### 2.1 Definition of Terms Used

**First Production Model-** The **First Production Model** must be tested and approved by any of the appropriate Class-A Verification Labs (see definition of Class-A Labs below) for compliance with DVD Specifications. Class-A labs will use the test specifications described in this document for compliance verification.

The following parameters must be used to determine a **First Production Model**:

- DVD Specifications Version n.x changing to n+1.x
- Initial or the latest production model at the start of Logo Program for each licensee

**Next Production Model -** A **Next Production Model** does not require compliance verification from a Class-A Verification Lab, but must be tested by licensee in its QA department for compliance with DVD Specifications. Licensee's QA department must have the test tools required to perform the tests specified in this document and must, at minimum, use the test procedure referred to in this document (licensee is free to have its own QA procedure, equipment and tools as long as it is a superset of the specification described in this document). A Licensee without its own QA department can get the product tested by a certified Third Party Class-B Verification Lab (see definition of Class-B Labs below).

The following parameters must be used to determine a **Next Production Model**:

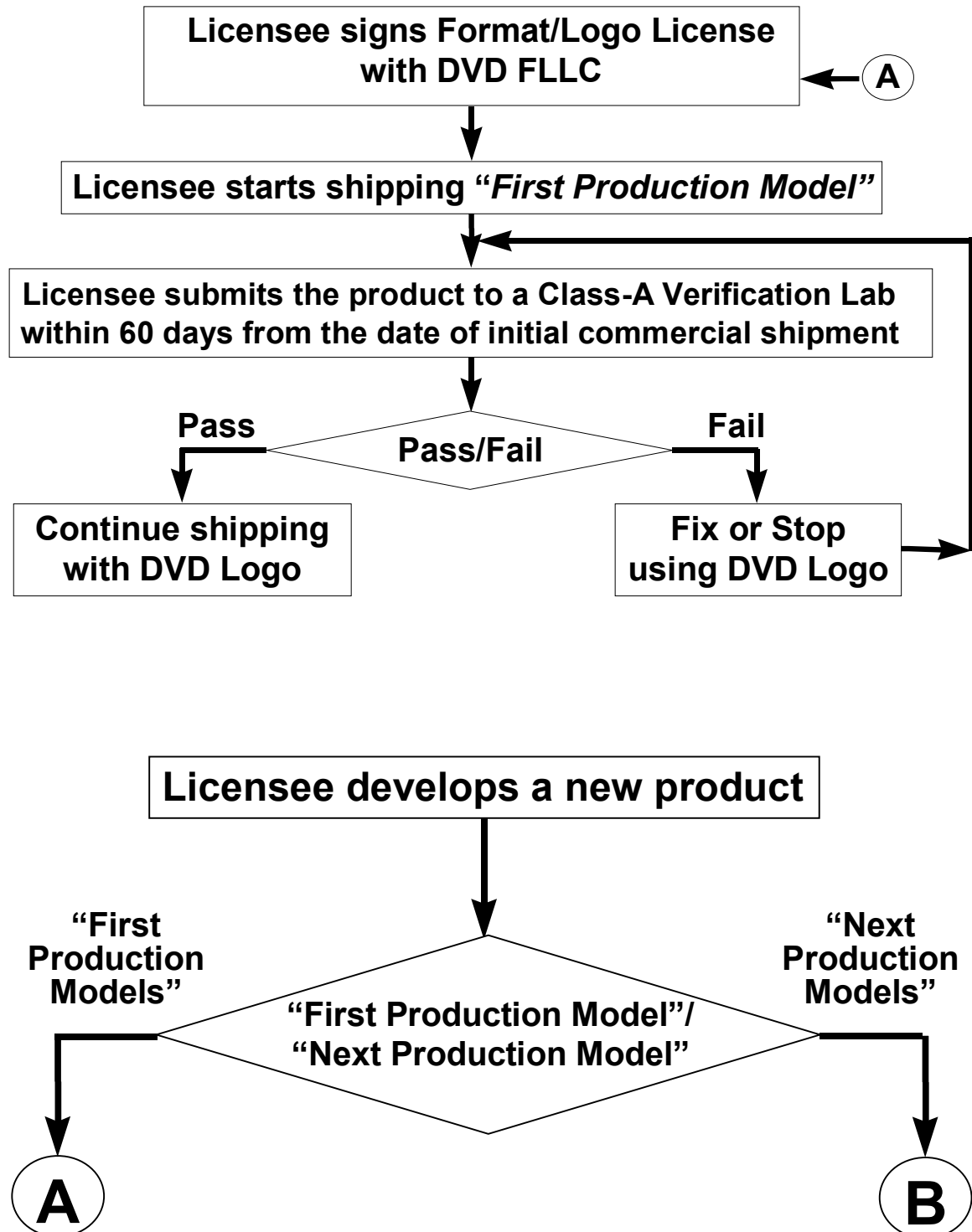
- DVD Specifications Version n.x changing to n.x+1
- Significant changes at Licensees discretion to support new OS, addition of new disc type (DVD-R disc, DVD-RW disc or DVD-RAM disc), additional functions and/or software related to DVD format. e.g. Version-up of the PC VR Format Recording Software.

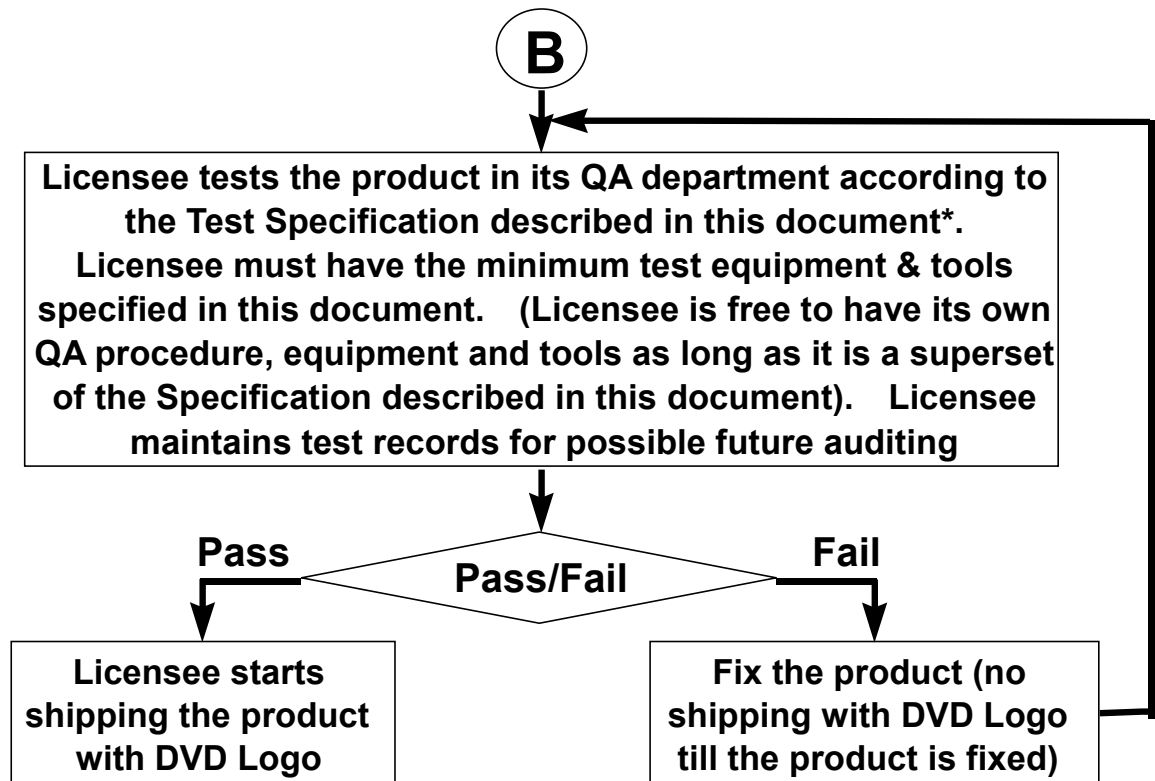
**Class-A Verification Labs -** Class-A Verification Labs are experts in DVD technology and provide independent expert assessment of Licensee's product compliance with DVD Specifications. Class-A labs also provide additional services such as interpretation of DVD Specifications, Test Tool development, Class-B Lab and Licensee auditing, etc.

***Class-B Verification Labs*** - PC VR Format Recording Software Class-B Verification Labs provide PC VR Format Recording Software testing strictly according to the **PC VR Format Recording Software Test Specification** (They can not interpret the specifications).

## 2.2 DVD Logo Mechanism

The DVD Logo mechanism is described in the following flow chart:





\*: Licensee without own QA department can get the product tested by a **PC VR Format Recording Software Class-B Verification Lab**.

### 3. Test Conditions

Target PC VR Format Recording Software shall be tested under the following conditions. (Test System)

- (1) Target PC VR Format Recording Software shall be installed in PC.
- (2) Target PC VR Format Recording Software shall be operated on recommended OS.
- (3) Recommended DVD Drive shall be connected to PC in accordance with instruction manual.

In the event that the target PC VR Format Recording Software has a DVD-R/RW/RAM VR Recorded disc playback capability, it shall be treated as the DVD-R/RW/RAM VR Player and shall satisfy the playback function Test Specification of DVD-R Video Recorder Test Specification, DVD-RW Video Recorder Test Specification and/or DVD-RAM Video Recorder Test Specification.

## 4. Test Tools and Test Specifications

This chapter covers the test specifications and tool requirements for the physical and logical compliance testing.

### 4.1 Test Tools

The following tools are required to perform the tests specified and shall be available before executing the test procedures.

#### 4.1.1 Test Tools for DVD-RW Recording

To be able to check the discs recorded using the PC VR Format Recording Software for DVD-RW, the following tools are used for this verification activity. As for acquisition, refer to **Annex D**.

##### Verifier for File System and Application Layer:

- DVD Video Recording Verifier for RW (**VRFV-001**) or equivalent verifier

##### Test Discs:

- DVD-RW Standard Blank Test Disc: **RWBTD-011** or
- 2x-speed DVD-RW Standard Blank Test Disc: **RWBTD-021** or equivalent blank discs

#### 4.1.2 Test Tools for DVD-RAM Recording

To be able to check the discs recorded using the PC VR Format Recording Software for DVD-RAM, the following tools are used for this verification activity. As for acquisition, refer to **Annex D**.

##### Verifiers:

- DVD-RAM Video Recording Verifier/Dump Tool (**DVD-VR01RAM**)
- DVD-RAM File System Verifier (**DVD-FV01RAM**) or (**TFSV01**)

Regarding verifiers, other equivalent tools can also be used.

##### Test Discs:

- Stream and Navigation Recording/Editing Test Disc (12cm)  
**RAM-VR400** for 525/60 TV system and/or **RAM-VR450** for 625/50 TV system
- Stream and Navigation Recording/Editing Test Disc (8cm)  
**RAM-VC210-A** for 525/60 TV system and/or **RAM-VC210-AP** for 625/50 TV system
- Maximum number of objects Test Disc (12cm)  
**RAM-VR200** for 525/60 TV system and/or **RAM-VR250** for 625/50 TV system
- Maximum number of objects Recording Test Disc (8cm)  
**RAM-VC210-B** for 525/60 TV system and/or **RAM-VC210-BP** for 625/50 TV system
- Standard Blank Disc  
**RAM-PT200-A** or equivalent blank disc



#### 4.1.3 Test Tools for DVD-R Recording

To be able to check the discs recorded using the PC VR Format Recording Software for DVD-R, the following tools are used for this verification activity. As for acquisition, refer to **Annex D**.

##### **Verifiers:**

Verifier for Application Layer is:

- DVD Video Recording Verifier for Application Layer for SL (DVD-VR01RAM) or DVD Video (VR) Recording Verifier for SL (VRFV-001)
- DVD Video (VR) Recording Verifier for DL (VRFV-002)
- DVD Video Recording Utility for SL (TVRU-01) or equivalent tool
- DVD Video Recording Utility for DL and SL (TVRU-02) or equivalent tool

Note: DVD Video Recording Verifier for R is composed of DVD Video Recording Utility (TVRU-01 and/or TVRU-02) or equivalent tool, and DVD Video Recording Verifier for Application Layer for SL (DVD-VR01RAM) or DVD Video (VR) Recording Verifier for SL (VRFV-001) and/or DVD Video (VR) Recording Verifier for DL (VRFV-002).

The DVD Video Recording Utility is a tool to convert video recorded contents on the DVD-R disc into DVD-RW disc, DVD-RAM disc or HDD so that the contents can be recognized by the Video Recording Verifier.

Verifier for File System is:

- DVD File System Verifier for R-VR for SL (TFSV05)
- DVD File System Verifier for R-VR for DL and SL (TFSV07)

##### **Test Discs:**

(For 525/60 TV system)

- 1x-speed DVD-R for General Standard Blank Test Disc: Type 1 GRBTD-001 or equivalent blank disc
- 4x/2x-speed DVD-R for DL Standard Blank Test Disc: GRBTD-001-DL or equivalent blank disc

## 4.2 Test Specifications for DVD-RW Recording

The following sections describe the test procedures required for verification of the PC VR Format Recording Software for DVD-RW (hereinafter called VR Software).

### 4.2.1 Recording

- Nominate the "Operation Nomination" in **Form 3FF** and record arbitrary contents on a DVD-RW Standard Blank Test Disc (**RWBTD-011 or RWBTD-021**) and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for RW at some items in accordance with **Form 3FF**.
- If the VR Software has any operations regarding recording other than the nominated Check Items on **Form 3FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 3FF**. Then, execute the operations on the recorded disc and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for RW at some items, which are nominated, in accordance with **Form 3FF**.

NOTE: All operations regarding recording shall be nominated by the applicant. If the blank rows to nominate the operations are insufficient, blank rows shall be added and nomination shall be described by the applicant. The VR Software shall be verified in accordance with Operation Nominations in **Form 3FF**.

### 4.2.2 Editing

- Edit the recorded disc and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for RW at some items in accordance with **Form 4FF**.

NOTE: If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 4FF**, the testing of E25, E26 and E27 shall be done after testing of all operations regarding editing.

- If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 4FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 4FF**. Then, execute the operation on the recorded disc and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for RW at some items, which are nominated, in accordance with **Form 4FF**.

NOTE: All operations regarding editing shall be nominated by applicant. If blank rows to nominate the operations are insufficient, blank rows shall be added and nominated. The VR Software shall be verified in accordance with Operation Nominations in **Form 4FF**.

### 4.3 Test Specification for DVD-RAM Recording

The following sections describe the test procedures required for verification of the PC VR Format Recording Software for DVD-RAM (hereinafter called VR Software).

#### 4.3.1 Recording and Editing capability for variety of Streams and Navigation data

- This test is composed of following categories, and each category shall proceed respectively. So each category shall start from original state of the test disc: **RAM-VR400** or **VC210-A** for 525/60 TV system, or **RAM-VR450** or **VC210-AP** for 625/50 TV system.

Categories: Record PG/Delete PG/Split PG/Merge PG/Move PG/Temporarily Delete/Create PL/Delete PL/Split PL/Merge PL/Move PL

- This test targets to check the recording and editing capability for variety of streams, e.g. VOBs to be played back seamlessly, and variety of navigation data, e.g. SMLI and AGAPI.

Note: Even if the VR Software has no such capability to create VOBs which are played seamlessly, the disc including the VOBs is carried from any other Video Recorders. Therefore preparing pre-recorded test discs including such data and checking for the behavior of recording and editing functions are necessary.

- Firstly an applicant executes the operations according to the nominated function column and the operation column of **Form 5FF**. Then the modified disc shall be verified by the DVD-RAM Video Recording Verifier: **DVD-VR01RAM** and DVD-RAM File System Verifier: **DVD-FV01RAM** or **TFSV01**. After this checking, an applicant should check some data fields whether each filed is appropriately updated as expected results using Dump-tool (**DVD-VR01RAM**). Test results shall be recorded in the column of "Syntax".
- The data fields shall be appropriately updated i.e. satisfied with the expected value. Test result shall be recorded in "Semantics" columns of **Form 5FF**.
- When the function corresponding to the operation has not been supported by the VR Software, i.e. Nominated Function is described with hyphen '-', the test can be skipped.

Note 1: All test items are basically optional functions, but it is strongly recommended to test the corresponding function, which is supported by the VR Software.

Note 2: The applicant shall describe the nominated function. If the VR Software has no corresponding functions, hyphen '-' shall be put at the corresponding column of "Nominated Function" and the corresponding tests can be skipped. If the VR Software has any functions other than prescribed Test Item, the functions shall be nominated at the blank rows located at the end of **Form 5FF**.

If the blank rows to nominate the operations are insufficient, blank rows shall be added and nomination shall be described by the applicant.

#### 4.3.2 Recording and Editing capability for miscellaneous Navigation data

- This test targets to check the recording and editing capability for miscellaneous functions, e.g. Protect and Primary Text. The target functions are not affected to any other data fields and functions basically. Therefore this test is unnecessary to start with pre-recorded disc, but start with a Standard Blank Disc (**RAM-PT200A**).
- At first, an applicant should record two PGs, each of which has two Original Cells and temporarily delete the M\_VOB/S\_VOG corresponding to the second Cell in the second PG. Either Cell type may be used at this test category.
- Test items described in **Form 6FF** shall be executed and the test results shall be recorded.
- When the function corresponding to the operation has not been supported by the VR Software, i.e. Nominated Function is described with hyphen '-', the test item can be skipped.
- When the VR Software has no capability to display the test object/fields on monitor screen, the modified disc can be checked using the Dump-tool (**DVD-VR01RAM**).

Note 1: All test items are basically optional functions, but it is strongly recommended to test the corresponding function, which is supported by the VR Software.

Note 2: The nominated function shall be described by the applicant. If the VR Software has no corresponding functions, hyphen '-' shall be put at the corresponding column "Nominated Function". If the VR Software has any functions other than prescribed Test Item, the functions shall be nominated at the blank rows located at the end of **Form 6FF**.

If the blank rows to nominate the operations are insufficient, blank rows shall be added and nomination shall be described by the applicant.

#### 4.3.3 Recording and Editing capability for the maximum number of objects

- This test targets to check the recording and editing capability for the maximum number of objects, 999 Movie VOBs and 63936 (= multiple  $999 \times 64$ ) Still Picture VOBs, using the test disc: **RAM-VR200** for 525/60 TV system or **RAM-VR250** for 625/50 TV system. The maximum number of objects is strictly restricted in the DVD Video Recording Specifications, and then the VR Software shall not record and/or create the objects exceeding the restriction.
- Even when the recordable area is still remained, the VR Software shall refuse user's request to record and/or create new object in case the maximum number of the objects have already been recorded.
- An operator should execute item-by-item according to the nominated function and the operation of **Form 7FF**, and check each item with expected result.
- When the function corresponding to the operation has not been supported by the VR Software, i.e. Nominated Function is described with hyphen '-', an operator can simply skip this test item.
- When the VR Software has no capability to display the object/fields corresponding to the test on monitor screen, the modified disc can be checked using the Dump-tool (**DVD-VR01RAM**).

Note 1: All test items are basically optional functions, but it should be done as much as the VR Software supports the corresponding function.

Note 2: The nominated function shall be described by the applicant. If the VR Software has no corresponding functions, hyphen '-' shall be put at the corresponding column "Nominated Function". If the VR Software has any functions other than prescribed Test Items, the functions shall be nominated in the blank rows located at the end of **Form 7FF**.

If the blank rows to nominate the operations are insufficient, blank rows shall be added and nomination shall be described by the applicant.

#### 4.4 Test Specifications for DVD-R Recording

The following sections describe the test procedures required for verification of the PC VR Format Recording Software for DVD-R (hereinafter called VR Software).

##### 4.4.1 Recording for SL disc

- Nominate the "Operation Nomination" in **Form 8FF** and record arbitrary contents on a DVD-R for General Standard Blank Test Disc or equivalent and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for R at some items in accordance with **Form 8FF**.
- If the VR Software has any operations regarding recording other than the nominated Check Items on **Form 8FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 8FF**. Then, execute the operations on the recorded disc and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier at some items, which are nominated, in accordance with **Form 8FF**.

NOTE: 1) When checking the recorded SL disc using DVD Video Recording Verifier, the video recorded contents on the DVD-R disc are converted into the DVD-RAM disc or DVD-RW disc by using DVD Video Recording Utility for SL (TVRU-01, TVRU-02 or equivalent tool). After that, the converted contents regarding application layer are verified by DVD Video Recording Verifier for Application Layer (DVD-VR01RAM) for SL or DVD Video (VR) Recording Verifier for SL (VRFV-001) respectively.

2) All operations regarding recording shall be nominated by the applicant. If blank rows to nominate the operations are insufficient, blank rows shall be made and nominated.

DVD-R VR Software for SL shall be verified in accordance with Operation Nominations in **Form 8FF**.

##### 4.4.2 Editing for SL disc

Edit the disc recorded in the test of **4.4.1** and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for R at some items in accordance with **Form 9FF**.

NOTE: If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 9FF**, the testing of E39, E40, and E41 shall be done after testing of all operations regarding editing.

- If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 9FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 9FF**. Then, execute the operation on the recorded disc and play back the presentation data and navigation data and check the recorded disc using Verifier at some items, which are nominated, in accordance with **Form 9FF**.

NOTE: 1) When checking the edited SL disc using DVD Video Recording Verifier, the video edited contents on the DVD-R disc are converted into the DVD-RAM disc or DVD-RW disc by using DVD Video Recording Utility for SL (TVRU-01, TVRU-02 or equivalent tool). After that, the converted contents regarding application layer are verified by DVD Video Recording Verifier for Application

Layer (DVD-VR01RAM) for SL or DVD Video (VR) Recording Verifier for SL (VRFV-001) respectively.

- 2) All operations regarding editing shall be nominated by applicant. If blank rows to nominate the operations are insufficient, blank rows shall be made and nominated. DVD-R VR Software for SL shall be verified in accordance with Operation Nominations in **Form 9FF**.

#### 4.4.3 Recording for DL disc

- Nominate the "Operation Nomination" in **Form 10FF** and record arbitrary contents on a DVD-R for DL Standard Blank Test Disc or equivalent and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for R at some items in accordance with **Form 10FF**.
- If the VR Software has any operations regarding recording other than the nominated Check Items on **Form 10FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 10FF**. Then, execute the operations on the recorded disc and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier at some items, which are nominated, in accordance with **Form 10FF**.

NOTE: 1) When checking the recorded DL disc using DVD Video Recording Verifier, the video recorded contents on the DVD-R disc are converted into the HDD by using DVD Video Recording Utility for DL (TVRU-02 or equivalent tool). After that, the converted contents regarding application layer are verified by DVD Video (VR) Recording Verifier for DL (VRFV-002).

- 2) All operations regarding recording shall be nominated by the applicant. If blank rows to nominate the operations are insufficient, blank rows shall be made and nominated. DVD-R VR Software for DL shall be verified in accordance with Operation Nominations in **Form 10FF**.

#### 4.4.4 Editing for DL disc

Edit the disc recorded in the test of **4.4.3** and play back the presentation data and navigation data and check the recorded disc using DVD Video Recording Verifier for R at some items in accordance with **Form 11FF**.

NOTE: If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 11FF**, the testing of E40, E41, and E42 shall be done after testing of all operations regarding editing.

- If the VR Software has any operations regarding editing other than the nominated "Check Items" on **Form 11FF**, nominate "Check Items", "Operation Nomination" and "Expected result/Check point" for the operation in blank rows on **Form 11FF**. Then, execute the operation on the recorded disc and play back the presentation data and navigation data and check the recorded disc using Verifier at some items, which are nominated, in accordance with **Form 11FF**.

NOTE: 1) When checking the edited DL disc using DVD Video Recording Verifier, the video edited contents on the DVD-R disc are converted into the HDD by using DVD Video Recording Utility for DL (TVRU-02 or equivalent tool). After that, the converted contents regarding application layer are verified by DVD Video (VR) Recording Verifier for DL (VRFV-002).

- 2) All operations regarding editing shall be nominated by applicant. If blank rows to nominate the operations are insufficient, blank rows shall be made and nominated. DVD-R VR Software for DL shall be verified in accordance with Operation Nominations in **Form 11FF**.



#### 4.4.5 File System verification

This test verifies logical file system format of recorded DVD-R discs, which are formatted on the strength of DVD-R for General Book Part 2: File System Specifications Version 2.1 and/or DVD-R for DL Book Part 2 File System Specifications. It also verifies discs according to OSTA UDF Standard Revision 2.0.

##### 4.4.5.1 Test for SL disc

The disc recorded in the test of **4.4.1 and 4.4.2 (Form 8FF and 9FF)** shall be checked its file system format.

The test for recorded SL disc shall be done in accordance with user's manual of DVD File System Verifier for R-VR for SL disc, TFSV05 or TFSV07.

- If no error was detected in the above verifications, mark OK in the column for SL disc of **Form 12FF**.

##### 4.4.5.2 Test for DL disc

The disc recorded in the test of **4.4.3 and 4.4.4 (Form 10FF and 11FF)** shall be checked its file system format.

The test for recorded DL disc shall be done in accordance with user's manual of DVD File System Verifier for R-VR for DL disc, TFSV07.

- If no error was detected in the above verifications, mark OK in the column for DL disc of **Form 12FF**.

## Annex A

### List of Class-A Verification Labs

*This List is correct at the time of publication. However, when the Class-A Lab information contained here differs from such information cited in our website [www.dvdfllc.co.jp](http://www.dvdfllc.co.jp), the List with more current date prevails. Also, please refer to the website for the latest Verification Service of each Class-A Lab.*

#### **Panasonic Corporation**

Format Verification Laboratory

1-15, Matsuo-cho, Kadoma, Osaka, 571-8504 Japan

Fax: +81-6-6909-5027

E-mail: [fvl-info@ml.jp.panasonic.com](mailto:fvl-info@ml.jp.panasonic.com) URL: <http://panasonic.co.jp/avc/fvl/en/index.html>

#### **PIONEER CORPORATION**

Verification Laboratory

1-1 Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa, 212-0031 Japan

Fax: +81-44-580-4027

## **Annex B**

### **Glossary of Terms used**

(May be defined in future.)

## Annex C

### Procedure for Class-A Verification Lab Product Submission

The procedure for submitting a product to a Class-A Verification Lab is as follows:

#### Preliminary Application

Applicant must complete **Form 1FF** to provide preliminary information.

#### Self Test

Applicant must test the product in accordance with this Test Specification prior to submitting samples to a Class-A Verification Lab. Applicant must complete **Form 2FF**, and **necessary Forms\*** to provide test results.

\*Note:

- **Form 3FF to 4FF** are necessary for PC VR Format Recording Software supporting to record to DVD-RW disc.
- **Form 5FF to 7FF** are necessary for PC VR Format Recording Software supporting to record to DVD-RAM4.7 disc.
- **Form 8FF to 9FF and 12FF** are necessary for PC VR Format Recording Software supporting to record to DVD-R for General disc.
- **Form 10FF to 12FF** are necessary for PC VR Format Recording Software supporting to record to DVD-R for DL disc.
- **Form 13FF** is necessary for all PC VR Format Recording Software.

#### Mutual Non-Disclosure Agreement (NDA)

Applicant, in order to maintain the confidentiality of the applicant product and Verification Lab's information, must sign a Mutual Non-Disclosure Agreement.

#### Application

Applicant must submit the sample of PC VR Format Recording Software, the recorded disc which covers **Form 3FF to 4FF** and/or **Form 5FF to 7FF** and/or **Form 8FF to 9FF and 12FF** and/or **Form 10FF to 12FF**, software feature map, disc structure map, instruction manual, and PC system (when Class-A lab requires applicant to submit) along with said necessary Forms and the NDA.

#### Test Result

Upon completion of testing, Verification Lab will complete **Form 14FF** to inform the applicant and DVD Format/Logo Licensing Corporation of the test results.

## Annex D

## Test Tool Contact Information

The Contact Information is correct at the time of publication. However, when the Class-A Lab information (marked <\*>) differs from such information cited in our website [www.dvdfllc.co.jp](http://www.dvdfllc.co.jp), the List with more current date prevails.

Verifiers	
<ul style="list-style-type: none"> <li>DVD Video Recording Verifier for RW / DVD Video (VR) Recording Verifier for R SL <b>VRFV-001</b></li> </ul>	<b>PIONEER CORPORATION&lt;*&gt;</b> Verification Laboratory 1-1 Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa, 212-0031 Japan Fax: +81-44-580-4027
<ul style="list-style-type: none"> <li>DVD Video (VR) Recording Verifier for R DL <b>VRFV-002</b></li> </ul>	
<ul style="list-style-type: none"> <li>DVD-RAM Video Recording Verifier <b>DVD-VR01RAM</b></li> </ul>	<b>Panasonic Corporation&lt;*&gt;</b> Format Verification Laboratory 1-15, Matsuo-cho, Kadoma, Osaka, 571-8504 Japan Fax: +81-6-6909-5027 E-mail: fvl-info@ml.jp.panasonic.com URL: <a href="http://panasonic.co.jp/avc/fvl/en/index.html">http://panasonic.co.jp/avc/fvl/en/index.html</a>
<ul style="list-style-type: none"> <li>DVD-RAM/RW File System Verifier <b>DVD-FV01RAM</b></li> </ul>	
<ul style="list-style-type: none"> <li>DVD-RAM File System Verifier <b>TFSV01</b></li> <li>DVD Video Recording Utility for R SL : <b>TVRU-01</b></li> <li>DVD Video Recording Utility for R DL and R SL: <b>TVRU-02</b></li> <li>DVD File System Verifier for R-VR for SL: <b>TFSV05</b></li> </ul>	<i>Discontinued</i>
<ul style="list-style-type: none"> <li>DVD File System Verifier for R-VR for DL and SL <b>TFSV07</b></li> </ul>	<b>DVD Format/Logo Licensing Corporation</b> 2F Shibadaimon Makita Bldg., 2-5-8 Shibadaimon, Minato-ku, Tokyo, 105-0012 Japan Fax: +81-3-5777-2884 E-mail: <a href="mailto:verification@dvdfllc.co.jp">verification@dvdfllc.co.jp</a>

Test Discs	
<ul style="list-style-type: none"> <li>DVD-RW Standard Blank Test Disc (1x-speed) <b>RWBTD-011</b> (2x-speed) <b>RWBTD-021</b></li> <li>1x-speed DVD-R for General Standard Blank Test Disc: <b>Type 1; GRBTD-001</b></li> <li>4x/2x-speed DVD-R for DL Standard Blank Test Disc: <b>GRBTD-001-DL</b></li> </ul>	<b>PIONEER CORPORATION&lt;*&gt;</b> Verification Laboratory 1-1 Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa, 212-0031 Japan Fax: +81-44-580-4027
<ul style="list-style-type: none"> <li>Stream and Navigation Recording/Editing Test Disc (12cm) (For 525/60 TV system) <b>RAM-VR400</b> (For 625/50 TV system) <b>RAM-VR450</b></li> <li>Maximum number of objects Test Disc (12cm) (For 525/60 TV system) <b>RAM-VR200</b> (For 625/50 TV system) <b>RAM-VR250</b></li> <li>DVD-RAM Standard Blank Disc <b>RAM-PT200-A</b></li> </ul>	<b>Panasonic Corporation&lt;*&gt;</b> Format Verification Laboratory 1-15, Matsuo-cho, Kadoma, Osaka, 571-8504 Japan Fax: +81-6-6909-5027 E-mail: fvl-info@ml.jp.panasonic.com URL: <a href="http://panasonic.co.jp/avc/fvl/en/index.html">http://panasonic.co.jp/avc/fvl/en/index.html</a>
<ul style="list-style-type: none"> <li>Stream and Navigation Recording/Editing Test Disc (8cm) (For 525/60 TV system) <b>RAM-VC210-A</b> (For 625/50 TV system) <b>RAM-VC210-AP</b></li> <li>Maximum number of objects Test Disc (8cm) (For 525/60 TV system) <b>RAM-VC210-B</b> (For 625/50 TV system) <b>RAM-VC210-BP</b></li> </ul>	<b>Hitachi Consumer Electronics Co., Ltd.&lt;*&gt;</b> Format Verification Center 292 Yoshida-cho, Totsuka-ku, Yokohama-shi, Kanagawa, 244-0817 Japan Fax: +81-45-866-5905