

To: Joint Steering Committee for Development of RDA
From: Kathy Glennan, ALA Representative
Subject: New Chapter 3 elements for *Optical Disc Data Storage Format* and *Optical Disc Recording Method*

Related documents: [6JSC/ALA/16](#) and the constituency responses to that proposal.

Abstract

Create two new instructions to enable recording specific optical disc characteristics: RDA 3.21, *Optical Disc Data Storage Format* and RDA 3.9.4, *Production Method for Optical Disc*. Add terms to RDA Glossary to support the new instructions.

Justification

At the 2012 JSC meeting, ALA withdrew [6JSC/ALA/16](#), *Revision of RDA 3.19.3 for video encoding formats and addition of a new element for optical disc characteristics* because the JSC expressed a preference to use existing vocabularies instead of developing and maintaining extensive vocabularies internal to RDA itself. In the intervening years, ALA has partnered with the Online Audiovisual Catalogers (OLAC) to investigate these issues further, since the audiovisual community still has a need for capturing certain optical disc characteristics. We have not identified an external vocabulary that is appropriate or even relevant for the concepts described in this proposal.

This follow-up proposal, developed with OLAC, creates two new instructions for describing basic characteristics of optical discs: data storage format and recording method. Capturing this information is important for both use and preservation. RDA's lack of guidance for recording anything about these characteristics is an ongoing problem. Omissions or inaccuracies in recording this information prevent users from identifying resources that are usable with the equipment that is available to them. We have consulted with Alex Duryee of AVPreserve to improve the accuracy of our terminology and identify the best and simplest ways to meet our goals.

Issues to be resolved

ALA recommends a pragmatic approach to describing these optical disc characteristics. The instructions in RDA should be easy for catalogers without strong technical backgrounds to understand and apply. They should describe resources at a level that is useful and easily understood by end users and public services staff.

We propose that only a short list of terms for formats that are currently in common use be maintained within the text of RDA. This shorter list should be sufficient for the needs of most general library

collections. Less common or obsolete formats could be maintained, as needed, by other groups outside the core text of RDA. For example, OLAC will maintain a somewhat longer list of terms that includes some obsolete formats. OLAC has created draft vocabularies for the proposed new elements, including the ones that we are not recommending for incorporation into the text of RDA, in the Metadata Registry Sandbox. These lists are available at:

- <http://sandbox.metadataregistry.org/uri/opticalDiscPhysicalStandard>
(*Optical disc data storage format* in this proposal)
- <http://sandbox.metadataregistry.org/uri/opticalDiscRecordingMethod>
(*Production method for optical disc* in this proposal)

Optical disc data storage format (e.g., DVD, CD, Blu-ray)

The type of data storage format (e.g., DVD, CD, Blu-ray) is important because users need to have a device that will read that type of disc. These are standards that refer to a physical type of optical disc with pits and lands of a certain size arranged in a certain pattern that need to be read by a certain wavelength of laser. This data storage format can be considered a refinement of optical discs as a type of Storage Medium Format in the RDA/ONIX Framework value vocabularies.

It is important for RDA to include the common types of data storage formats used for commercially-available optical discs. There are only three in widespread distribution today: CD, DVD, and Blu-ray. We have also included Wii U, which is the most common proprietary game disc format. A short list of the most common optical disc data storage formats will be useful and accessible to the vast majority of catalogers, especially those who do not have a technical background. By using an open-ended list, additional disc types can be recorded as needed by institutions that collect more specialized or uncommon materials.

ALA recommends the placement of this new instruction at 3.22, since it is similar to a system requirement. This would require renumbering the current 3.22 as 3.23. Alternatively, this instruction could be placed after RDA 3.6, *Base Material*, but that would require significant renumbering of the subsequent instructions.

Optical disc recording method

The method of getting data on the disc (stamping or burning) and, to a lesser extent the specific type of recordable disc, such as CD-RW or DVD-R, are important because burned discs are less reliable. Older drives and players, in particular, may not read them, and they deteriorate faster than stamped discs. This information is particularly important for public services staff trying to troubleshoot patron complaints and for assessing the preservation needs of a collection.

Note that the above two elements, taken together, provide enough information about a disc to map into the RDA/ONIX Framework. As all but the most exotic optical discs adhere to well-documented standards set forth by the ISO and ECMA, the RDA/ONIX mappings can be derived from these two elements. For example, knowing that an optical disc is a burned CD-RW is sufficient to derive a complete set of RDA/ONIX physical characteristics - its FixationMethod (heating), FixationTool (780 nanometer laser), IntermediationMethod (780nm laser), etc.

For Optical disc recording method, we propose that the primary distinction be whether the disc is stamped or burned. This fundamental distinction is the most important for access, troubleshooting

and preservation. In addition, it is not always practical to determine the specific type of burned or stamped disc.

- **Stamped discs** are mass-produced from glass masters and reliably play in all types of players supporting that disc standard. Stamped discs are also known as pressed discs, prerecorded discs, replicated discs, and CD/DVD/BD-ROMs. This last usage is complicated because terms such as DVD-ROM are popularly used both to mean a read-only, stamped disc and to mean a disc that contains content other than DVD-audio or DVD video, such as software, data, or other kinds of files that usually require a general-purpose computer for use.
- **Burned discs**, or recordable discs, are discs where content is written with a laser on a layer of dye or metal alloy within the disc. These are the type of discs that are used for burning CDs or DVDs in a computer drive. Burned discs are also known as recorded discs or duplicated discs. In many cases, burned discs are easily identified by examination of the top and bottom of the disc.

ALA has also proposed adding an Optional Addition to record the specific type of burned disc, providing specific vocabulary and adding terms to the Glossary. In many, but not all, cases, the type of recordable disc, such as DVD-R or CD-RW, is stated on the disc. DVD-R is the type of burned disc most commonly encountered by libraries, but not all recordable discs are DVD-R. If the specific type of disc is known, we recommend that it also be recorded if it is thought important. The specific type of recordable disc often appears on the disc label or can usually be definitively determined with appropriate software, such as KProbe (<http://www.k-probe.com/>). We note that no Optional Additions in RDA currently provide a controlled list of terms.

Stamping or burning a disc can be considered a type of production method. Thus, we have proposed this as a sub-element in RDA 3.19.

Summary of proposed changes

Change #1

- Create RDA 3.22, *Optical Disc Data Storage Format*
- Renumber current RDA 3.22 to RDA 3.23
- Update references to renumbered instruction

Change #2

- Add ***Optical discs*** to the Exceptions in 3.9.1.3
- Create RDA 3.9.4, *Production Method for Optical Disc*

Change #3

- Add 35 new terms (definitions and cross-references) to RDA Glossary to support the new instructions

Impact

These new instructions will allow consistent recording of information regarding data storage format and production method for optical discs. By making *Optical Disc Data Storage Format* the new RDA 3.22, one instruction (and the references to it) will need to be renumbered. The new Glossary definitions, which are loosely based on Wikipedia, will need to be added to the RDA Registry.

Proposals

Change #1

- Create RDA 3.22, *Optical Disc Data Storage Format*
- Renumber current RDA 3.22 to RDA 3.23 (no mark-up provided)
- Update references from 3.22 to 3.23 (no mark-up provided):
 - 2.21.1.1, 2nd paragraph
 - 3.4.5.6, 2nd and 3rd paragraphs
 - 3.5.1.4.14, Exception, 4th and 6th paragraphs
 - 3.21.2.8, Exception
 - 7.17.1.1, 2nd paragraph
 - A.8, 1st paragraph

3.22 Optical Disc Data Storage Format *[new]*

3.22.1 Basic Instructions on Recording Optical Disc Data Storage Format

3.22.1.1 Scope

Optical disc data storage format is the set of technical specifications that describe the way that content is stored on and read from an optical disc, including storage capacity, laser wavelength used for reading the disc, and the size and arrangement of pits and lands on the disc.

3.22.1.2 Sources of Information

Use evidence presented by the resource itself (or on any accompanying material or container) as the basis for recording the optical disc data storage format. Take additional evidence from any source.

3.22.1.3 Recording Optical Data Storage Format

Record the optical disc data storage format if it can be readily ascertained and is considered important for identification or selection. Use an appropriate term from the following list:

Blu-ray Disc

CD
DVD
Wii U

If none of the terms in the list is appropriate, use another concise term to indicate the optical disc data storage format.

Change #2

- Add **Optical discs** to the Exceptions in 3.9.1.3 (marked-up copy only below)
- Create RDA 3.9.4, *Production Method for Optical Disc*

3.9.1.3 Recording Production Methods

Record the production method if considered important for identification or selection. Use one or more appropriate terms from the following list:

blueline
blueprint
collotype
daguerreotype
engraving
etching
lithograph
photocopy
photoengraving
photogravure
print
white print
woodcut

EXAMPLE

engraving

Production method for an art print

Exceptions

Manuscripts. For the method of production for manuscripts, see [3.9.2](#).

Tactile resources. For the method of production for tactile resources, see [3.9.3](#).

Optical discs. For the method of production for optical discs, see [3.9.4](#).

If none of the terms in the list is appropriate or sufficiently specific, use another concise term or terms to indicate the production method.

EXAMPLE

chromolithograph

Production method for a print

Record details of production method as instructed at [3.9.1.4](#).

3.9.4 Production Method for Optical Disc *[new]*

3.9.4.1 Scope

Production method for optical disc▼ is the method used to record data on an optical disc.

3.9.4.2 Sources of Information

Use evidence presented by the resource itself (or on any accompanying material or container) as the basis for recording the method used to record data on an optical disc. Take additional evidence from any source.

3.9.4.3 Recording Production Methods for Optical Discs

For an optical disc, record the production method for optical discs if it can be readily ascertained and is considered important for identification or selection. Use an appropriate term from the following list:

burned disc

stamped disc

EXAMPLE

stamped disc

production method for a commercially-released Blu-ray Disc of a major motion picture

burned disc

production method for a commercially-released educational video on DVD

Optional Addition

Record the specific type of burned disc, in addition to the term *burned disc*, if considered to be important for identification or selection. Use an appropriate term from the following list:

BD-R

BD-RE

CD-R

CD-RW

DVD+R

DVD+RW

DVD-R

DVD-RAM

DVD-RW

EXAMPLE

burned disc

CD-R

production method for a personal CD with Word documents donated to an archive

If none of the terms in the list is appropriate or sufficiently specific, use another concise term to indicate the production method for an optical disc.

Record details of production method for optical disc as instructed at [3.9.4.4](#).

3.9.4.4 Details of Production Methods for Optical Discs

Record **details of production method for optical disc**▼ if considered important for identification or selection. For scope and sources of information, see [3.9.4.1](#) and [3.9.4.2](#).

Change #3

- Add 35 new terms (definitions and cross-references) to RDA Glossary to support the new instructions

BD-R

Blu-ray Disc Recordable; a type of recordable Blu-ray Disc that can be written to only once.

BD-RE

Blu-ray Disc Recordable Erasable; a type of recordable Blu-ray Disc that can be repeatedly written to, erased, and re-recorded.

BD-ROM

stamped disc▼

Blu-ray Disc

A data storage format for a plastic optical disc that is 1.2 mm thick and usually 120 mm in diameter, which was officially released in 2006. Blu-ray discs are read with a 405 nm diode blue laser at 36 Mbits/s (1×). Disc capacities are 25 GB for single-layer discs, 50 GB for double-layer discs, and the specification leaves room for more layers in the future.

Blu-ray Disc Recordable

BD-R▼

Blu-ray Disc Recordable Erasable

BD-RE▼

burned disc

A disc containing data that is encoded by a writing laser, usually in a disc drive, that targets a layer made of dye or a metal alloy on the disc. Use for both record once and rewriteable discs. Also known as duplicated, recorded, or recordable discs.

CD

A data storage format for a plastic optical disc that is 1.2 mm thick and usually 120 mm in diameter, which first became commercially available in October 1982. CDs are read with a 780 nm wavelength (infrared and red edge) semiconductor laser at 1200 Kb/s (1×). Disc capacity is typically up to 700 MB or 80 minutes of audio.

CD-R

Compact Disc-Recordable; a type of recordable CD that can be written to only once.

CD-ROM

stamped disc▼

CD-RW

Compact Disc-ReWritable; a type of recordable CD that can be repeatedly written to, erased, and re-recorded.

compact disc

CD▼

Compact Disc-Recordable

CD-R▼

Compact Disc-ReWritable

CD-RW▼

details of production method for optical disc

Details of the method used to record data on an optical disc.

digital versatile disc

DVD▼

digital video disc

DVD▼

duplicated disc

burned disc▼

DVD

A data storage format for a plastic optical disc that is 1.2 mm thick and usually 120 mm in diameter that was invented in 1995 and became commercially available in Japan in November 1996, in the U.S. in March 1997, and later in other countries. DVDs are read with a 650 nm laser at 10.5 Mbit/s (1×). Disc capacities range from 4.7 GB (single-sided, single layer) to 17.08 GB (double-sided, double-layer).

DVD+R

A type of burned DVD that can be written to only once.

DVD+RW

A type of burned DVD that can be repeatedly written to, erased, and re-recorded.

DVD-R

A type of burned DVD that can be written to only once.

DVD-RAM

A type of burned DVD that can be repeatedly written to, erased, and re-recorded.

DVD-Random Access Memory

DVD-RAM▼

DVD-ROM

stamped disc▼

DVD-RW

A type of burned DVD that can be repeatedly written to, erased, and re-recorded.

optical disc data storage format

The set of technical specifications that describe the way content is stored on and read from an optical disc, including storage capacity, laser wavelength used for reading the disc, and the size and arrangement of pits and lands on the disc.

prerecorded disc

stamped disc▼

pressed disc

stamped disc▼

production method for optical disc

The method used to record data on an optical disc.

recordable disc

burned disc▼

recorded disc

burned disc▼

replicated disc

stamped disc▼

stamped disc

A disc that is mass-produced by a machine that uses a glass mold and stamping process to produce pits and lands. These discs contain prerecorded content that is not recordable or writeable by the consumer. Also known as prerecorded, pressed, or replicated discs. The most common types of stamped discs are CD-ROM, DVD-ROM and BD-ROM.

Wii U

A data storage format for an optical disc designed for playback in Nintendo's Wii U game console.