

To: Joint Steering Committee for Revision of AACR
FROM: Jennifer Bowen, ALA representative
SUBJECT: Rule revision proposals relating to technical description of digital media

Background and summary of recommendations

ALA was asked to work on the rules for the technical description of digital media, on the grounds that this part of AACR2 was badly out of date and that the description of digital resources was a point of emphasis in the strategic plan for RDA.

A preliminary report from the ALA task force was presented in September 2005 (*5JSC/ALA/1*). This report presented the results of the task force's investigation of data elements relevant to technical description in a variety of metadata standards, presented as an Appendix to the preliminary report.

Based on that analysis, the task force has developed the following rule revision proposals. Although there are many data elements relevant to the technical description of digital media, we have chosen to concentrate on what we feel are the most important elements for users in selecting a resource. Our principal recommendations are:

1. Formalize "File Format" as a data element within the technical description.
2. Formalize "File Size" as a data element within the technical description.
3. Apply "Duration" to digital media.
4. Move the recording of disk and tape characteristics from "Other Technical Details" to "Notes on Other Technical Details."
5. Retain "Digital Representation of Graphic Images" as a separate element.
6. Generalize the instructions for recording "System Requirements."

Please note these features of the following proposals:

1. The revisions are presented as changes to the 2005 draft of Chapter 3 of RDA, rather than as revisions to AACR2 rules.
2. The proposed revisions do in fact represent modifications or extensions of AACR2 rules and practices.
3. The proposals include suggestions for adding, deleting, or changing examples, which we recommend the JSC pass on to the Examples Group.

Rule Revision Proposals

3.1.4 b). If applying 3.1.5 to a remote access digital resource, it may be desirable to give separate technical descriptions for different versions of what are essentially the same medium, for instances PDF and HTML versions of the same resource. We therefore recommend deleting “conveyed in a distinct type of media” from this guideline and adding an example.

b) Record separate technical descriptions for each part or group of parts

If a further technical description of each part is desired, record a separate technical description for each part or group of parts ~~conveyed in a distinct type of media.~~

46 slides : col.

1 audiocassette (15 min.) : analog, mono.

(Example follows ISBD specifications for presentation)

1 text file (16 p. : ill., col. maps, PDF)

1 text file (ill., col. maps, HTML)

(Example follows ISBD specifications for presentation)

General recommendation on extent (3.4)

ALA recommends that three important attributes of digital media be included in the technical description: file format, file size, and duration. These are significant factors for users in **selecting a manifestation**. File format determines whether the user will be able to obtain and use the file. File size (along with the user’s telecommunications capabilities) determine how long it will take to download the file. Duration determines whether the resource is of sufficient extent to warrant obtaining it.

Although all of these attributes are related to extent, they are also in a sense independent data elements. ALA is proposing to add guidelines for these attributes as sub-elements under extent. However, an equally valid approach would be to treat them elsewhere as independent elements within the technical description. In that case, the decision of whether to display the content of these elements as part of the extent statement or not would be a matter of presentation to be covered by the application of various standards treated in Appendix D.

The present proposal calls for revisions to the basic guidelines in 3.4.0.10 ff., and to the more specific guidelines in 3.4.4.1 and 3.4.4.2.

ALA is not clear whether the order in which the elements are recorded in an extent statement, or whether this is a matter of presentation/display. However, **if** the extent statement is considered to be a data element and **if** these are to be considered subelements within the extent statement, then the order should be specified. In that case, we recommend the following order: basic extent statement (3.4.0.4); subunits (3.4.0.5), file format (3.4.0.10), file size (3.4.0.11), and duration (3.4.0.12). [Note: in its comments on the draft, ALA has also recommended that the specification of parentheses be deleted, as these are clearly a display convention.]

Finally, in our comments on the draft, ALA recommended that the distinction between a formal statement and a note should be reconsidered. If this is done, it will not be necessary to include in the guideline an instruction to make a note, if the information cannot be given succinctly. If the ALA recommendation is not accepted, and there continues to be a distinction between formal statements, such an instruction would need to be added to each of these rules.

3.4.0.10. File format [new]. We recommend the addition of a new guideline:

3.4.0.10. File format [new]

- For digital resources, record the file format following the number of units (see 3.4.4.1 and 3.4.4.2).

1 CD-ROM (20 sound files, mp3)

1 text file (PDF)

ca. 100 digital images (JPEG and GIF)

[Note: This set of proposals is limited to digital media. However, it should be noted that the concept of a technical specification of storage format is more general. It certainly applies, for instance, to the television and videorecording systems (e.g., VHS, Beta). There is certainly evidence that catalogers of moving image material would like to record this information either as part of the specific material designation or closely associated with it. Making this element general would be a way of accomplishing this.]

3.4.0.11. File size [new]. We recommend the addition of a new guideline:

3.4.0.11. File size [new]

- For digital resources, record the file size following the number of units (see 3.4.4.1 and 3.4.4.2)

1 CD-ROM (3 sound files, 58 mb)

1 video file (6.6 MB)

3.4.0.10. Duration. The concept of duration applies to digital resources (including streaming media). ALA recommends the addition of an example here; a similar proposal to add examples at 3.4.4.1 and 3.4.4.2 is included below. [Note: We recommend that, in constructing an extent statement, duration be recorded following the file format and file size; therefore, we recommend renumbering the subrules.]

3.4.0.40 12. Duration

- If the resource being described has a playing time, running time, performance time, etc., record the time (i.e., the duration) in parentheses following the number of units as follows:

- a) if the total duration is stated on the resource, record it as stated

1 audiocassette (40 min.)

1 film loop (3 min., 23 sec.)

2 audio discs (1 hr., 30 min.)

1 video file (27 min.)

[other lettered guidelines unchanged]

- ◇ *Optionally*, if the resource comprises two or more units, and the units have a stated uniform duration or an approximate uniform duration, record the duration of each unit followed by *each*; otherwise, record the total duration. See also 3.4.5.5.

31 audiocassettes (60 min. each)

11 audiocassettes (ca. 30 min. each)

2 videoreels (50 min.)

1 CD-ROM (3 sound files, ca. 20 min. each)

3.4.4.1. Digital files contained on disks, cartridges, etc. Add provisions for recording file format and (optionally) duration, with appropriate examples. The bullets have been re-ordered to correspond to order in which we recommend these elements be recorded in an extent statement. [Note that the final bullet in the draft is actually part of the preceding option, i.e., it relates to the recording of subunits, not to recording either number of units or number files, etc.]

3.4.4.1. Digital files contained on disks, cartridges, etc.

- Record the extent of the resource by giving the number of units followed by an appropriate term for the type of carrier as listed under 3.3.X.
- ◇ *Optionally*, if the digital file is in a format that parallels a print or graphic counterpart (e.g., PDF), record the number of subunits followed by an appropriate term for the print or graphic counterpart (see 3.4.1–3.4.3).

1 CD-ROM (184 remote-sensing images)

3 CD-ROMs (xv p., 450 maps)

1 CD-ROM (2 text files, 50, 60 p., PDF)

~~If the number of subunits cannot be stated succinctly, record the details in a note, if they are considered to be important (see 3.4.5.12).~~

- Add the file format, if readily available and considered to be important.

1 CD-ROM (2 text files, PDF)

- Add the number or approximate number of files and/or records, statements, or bytes in parentheses, if readily available and considered to be important.

1 CD-ROM (1 file : 240,000 bytes)

1 computer disk (3 files : 100, 460, 550 records)

1 zip disk (96 mb)

- ◇ Optionally, if the digital file is in a format that has a playing time (e.g. a sound or video file), record the playing time (see 3.4.0.10).

1 DVD-ROM (1 video file, MPEG, 58 mb, 27 min.)

1 CD-ROM (3 sound files, wav, ca. 20 min each)

1 CD-ROM (15 sound files, mp3, 60 min.)

3.4.4.2. Digital files contained in remote access resources. If the provisions of 3.1.5 are applied, then file format, file size, and duration are applicable to the extent of remote access resources as well. Add relevant provisions to 3.4.4.2 (bullets re-ordered as above):

3.4.4.2. Digital files contained in remote access resources

- Record the number of files followed by an appropriate term from the list below, or a term in common usage, if considered to be important. See also 3.6.0.4 and 3.7.0.6.

[List of terms to be added]

- ◇ Optionally, if the digital file is in a format that parallels a print or graphic counterpart (e.g., PDF), record the number of subunits followed by an appropriate term for the print or graphic counterpart (see 3.4.1–3.4.3).

1 electronic text (xiv, 217 p., PDF, 478 kb)

- Add the file format, if readily available and considered to be important.

1 video file (MPEG)

- Add the number or approximate number of files and/or records, statements, or bytes, if readily available and considered to be important.

- ◇ Optionally, if the digital file is in a format that has a playing time (e.g. a sound or video file), record the playing time (see 3.4.0.10).

1 sound file (wav, 182 KB, 1 min., 33 sec.)

1 video file (Quicktime, 6.6 MB, 2 min., 10 sec.)

3.4.5.12. This guideline should be generalized to include notes on all aspect of the extent of a digital resource, including file format, file size, and duration. [Note: If ALA's recommendation to merge the guidelines for formal statements and for notes is accepted, the present recommendation would be moot.]

3.4.5.12. ~~Number of files, records, statements, or bytes~~ Extent of a digital resource

- Make notes on the ~~number or approximate number of files in a digital resource and/or the number or approximate number of records, statements, or bytes,~~ extent of a digital resource, including file format, file size, or duration, not recorded in the technical description if readily available and considered to be important (see 3.4.4.1).

File size: 520, 300, 280, 320, 400, 500 records.

File size varies.

Blocked BCDs, 40 records per block, 90 characters per record.

Duration: 5 min., 27 sec.

Pagination of PDF file: 20 p.

3.6.0.4. We propose to add some examples:

3.6.0.4. Remote access digital resource

- If the extent of a remote access digital resource has been recorded (see 3.4.4), record other technical details of the resource, if desired.

Sound: silent

Color: b&w

Illustrations: ill., col. maps

Type of recording: digital

Number of sound channels: mono.

3.6.5.5. Playing speed. This element applies to digital media (including *streaming media*) and is recorded in kilobytes per second (kbps). Add the following bullet before the final bullet in 3.6.5.5. The information is not usually readily available and may be quite complex (e.g., different playing speeds depending on the user's connection); therefore, this instruction should be qualified "if readily available and considered to be important."

- Record the playing speed of a digital resource in kilobytes per second (kbps), if readily available and considered to be important

32 kbps

3.6.12. Digital characteristics. If a distinction continues to be made between formal statements and notes, then ALA recommends that this information be treated as a note and the guidelines moved to 3.6.13.9.

3.6.12.4. Remote access digital resources. ALA is recommending that file type be treated as an element relating to extent (see 3.4.0.11 above). Therefore, 3.6.12.4 needs to be rewritten with different examples or (preferably) deleted.

3.6.13.9. Other technical details of digital resources. ALA recommended above (3.6.12) to treat attributes of storage media as notes, rather than a formal statement. If the distinction is to be maintained in RDA, the following should be added to 3.6.13.9. We are also recommending an example of a complicated playing speed note, as well as the deletion of an example that belongs at 3.6.5.9 (or 3.6.13.6 (Other technical details of audio resources).

3.6.13.9. Other technical details of digital resources

- Make notes on digital characteristics (e.g., whether a digital medium is single or double sided, its recording density, its sectoring), if readily available and if they are considered to be important.

single sided, single density, soft sectored

6,250 bpi

- Make notes on other technical details of a digital resource that are not included in the formal other technical details element (see 3.6.0.4 and 3.6.12.3) if they are considered to be important.

~~Stereo sd.~~

Displays in red, yellow, and blue.

Not copy-protected.

Windows Media format version streams at 700 kbps; Real Media version streams at 225 kbps.

Hierarchical file structure.

Number of variables: 960.

ASCII character set.

3.8. Digital representation of graphic content

- Scope: Although this information is currently specified only for cartographic resources, it is more widely applicable to two-dimensional still images that exhibit relevant technical characteristics, for instance architectural or engineering drawings. ALA sees no compelling reason to restrict this element (or set of elements) to cartographic resources.
- At least one of the subelements (format name) is a specific application of the element File format, which we are recommending as a subelement under extent. Because the overlap between File format and Digital representation is not complete, we are not proposing to merge the two elements. However, some sort of reference between the two may be needed.
- Name: The name of this element should be “Digital representation of graphic images.” It records how a graphic image is stored electronically, no matter what format the content originally took. For example an image created by scanning a page of text, a page of a music score, a map or a photograph would all be stored as a raster image.
- Definition: Consistent with the last point, ALA suggests changing the definition to “the method used to store a graphic image in digital form.”
- The lists following “data type” and “object type” in 3.8.0.3 are closed lists; change “e.g.” to “i.e.” in both cases.
- In order to generalize the application of this guideline, change “number of objects used to represent spatial information” to “number of objects used to represent graphic information”.
- The comparable rule in AACR2 prescribed punctuation for presentation of this data. This is missing in the RDA draft. ALA is ambivalent about the inclusion of punctuation specifications. However, in this case, this is **not** ISBD punctuation, so it needs to be given somewhere in RDA. The relevant specification is:
 - Enclose the number of objects in parentheses after the object type and precede the name of the format with a space-semicolon-space.

3.9.0.4. System requirements for a digital resource. The prescribed list of attributes to be recorded, not to mention the specification of a caption, is not the most useful way to give this guideline. There is now a much wider variety of information provided by producers of digital resources and/or required for their use. A more generic guideline would be more useful to catalogers. Furthermore, there should be a more careful distinction made between information that is needed by the user and information that is not. We therefore propose to replace the draft 3.9.0.4, and most of the examples, with the following:

3.9.0.4. System requirements for a digital resource

- Make a note on any system requirements beyond what is normal and obvious for the medium, if the information is readily available. Record information that is necessary either for selecting a resource or for obtaining access to a resource, but not for information that

is either implicit in the nature of the material (e.g., Web resources requiring a browser; PDF files requiring Adobe Acrobat Reader) or where access is completely controlled by the server.

System requirements: IBM PC; 64K; colour card; 2 disk drives.

System requirements: IBM PC or 100% compatible; 128K; DOS 1.1 to DOS 2.1.

System requirements: Windows 98SE/2000/ME/XP (only); 1 GHz AMD Athlon or Intel Pentium III (2.5 GHz AMD Athlon or Intel Pentium IV recommended); 256 MB (512 recommended); 64 MB DirectX 8.1. compliant (128 MB recommended); DirectX 8.1. compliant; DirectX 8.1 (DirectX 9.0c included on disk); 8x or faster (32x or faster recommended); 1.5 GB minimum; supported video cards at time of release: ATI 8500/9000/X series; NVIDIA GeForce 3/4/FX/6/7 series (GeForce 4 MX not supported).

Broadband connection required for 128Kbps streaming (CD quality)

DSL or ISDN required for 64Kbps streaming (near CD quality)