audio

... and video
Describing Ourselves to Death: The Failures of Metadata

- George Blood Audio, LP

National Digital Stewardship Alliance
January 2014, Philadelphia
Definition by ALA PARS

Digital Preservation:

“Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time.”
In the words of Grace Hopper...

- “It's easier to ask forgiveness than it is to get permission”

- “A ship in a harbor is safe, but that is not what a ship is built for”

- “From then on, when anything went wrong with a computer, we said it had bugs in it”

- “You manage things; you lead people”
"The great thing about standards is that there are so many to choose from."
Standards are like toothbrushes.
Everyone agrees they're desirable...
Standards are like toothbrushes. Everyone agrees they're desirable…

but nobody wants to use someone else's.
Why are we collecting all this metadata?

• To provide for discovery
• To manage the files
• To provide provenance
• To provide authenticity
• Etc.
Fundamental Problem

• Institutions don’t ask
  – “What problem are we protecting against”,
  or
  – “What function do we need to provide for”?
Metadata

- ≠ Cataloging and Description
  - Cataloging and Description aid discovery
  - Metadata allows the data to function in systems
- How much is enough?
- Is it possible to have too much?
- Why do we need more than we did before?
  - Are we moving the goal posts?
  - To what extent are our neuroses about digital preservation a reflection of our failures in analog preservation?
  - Is more metadata less product? By doing “better” for one object are we preserving less overall?
- Has anyone asked the users what they need?
Organizing metadata

• “Standards”
• Toothbrushes
What is a standard?

- How widely adopted?
- If everyone is doing something... is that good enough to be a “standard”?  
- Does a standard have to be perfect?
- Does one size fit all?
- If there’s a standard and no one uses it, what’s it matter?
- What are the implications if there’s a standard and it is “locally modified”?
- If you make your own “standard”, in what ways does this enhance or inhibit preservation and long-term access?
  - Aren’t we taught to avoid proprietary solutions? Why not for metadata?
SIPS:
The State of the “Art”
Oberlin metadata

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship to SSA Date</td>
<td>Shipping Box Number</td>
<td>Object Unique Identifier</td>
<td>Program Unique Identifier</td>
<td>Number of Original Media Units</td>
<td>Original Format</td>
<td>Notes to Engineer</td>
<td>Original Recording Date</td>
<td>Complete Name</td>
<td>Title</td>
<td>Description</td>
<td>File Name Root</td>
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</table>
NYPL - LPA metadata

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<thead>
<tr>
<th>primary_identifier</th>
<th>sub_object_id</th>
<th>audio_data_encoding</th>
<th>delivery_medium</th>
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<tbody>
<tr>
<td>MGZTCO 3-2586</td>
<td>pt.1 PCM</td>
<td>USB Hard Drive &amp; LTO4 Data Tape</td>
<td></td>
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<tr>
<td>MGZTO 5-60</td>
<td>pt.2 PCM</td>
<td>USB Hard Drive &amp; LTO4 Data Tape</td>
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<tr>
<td>MGZTO 5-118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGZTO 5-118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGZTO 5-118</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*MGZTO 3-2586* is the primary identifier for the dubbing master created from the source recording.

<table>
<thead>
<tr>
<th>primary_identifier</th>
<th>disc_number</th>
<th>audio_object</th>
<th>date/time_create</th>
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<tbody>
<tr>
<td>MGZTL 4-2586</td>
<td>CD</td>
<td></td>
<td>2009-04-02T19:29:59-4:00</td>
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<tr>
<td>MGZTL 4-2586</td>
<td>CD</td>
<td></td>
<td>2009-04-02T19:45:23-4:00</td>
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<tr>
<td>MGZTL 4-2586</td>
<td>CD</td>
<td></td>
<td>2009-04-02T12:39:35-4:00</td>
</tr>
</tbody>
</table>

Source recordings, Digital File (WAV file), Dubbing master (Optical Disc), Service copy (Optical Disc)
<table>
<thead>
<tr>
<th>Field</th>
<th>Relation</th>
<th>Definition</th>
<th>Example</th>
<th>Required Status</th>
<th>Population</th>
<th>Origin</th>
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</thead>
<tbody>
<tr>
<td>analog_digi_flag</td>
<td>Source recording</td>
<td>describes the method by which a physical audio object was recorded</td>
<td>Analog or Digital</td>
<td>Mandatory</td>
<td>U of M</td>
<td>LC</td>
</tr>
<tr>
<td>dimensions_diameter</td>
<td>Source recording</td>
<td>audio object's diameter (in inches)</td>
<td>10 inches</td>
<td>Mandatory, if applicable</td>
<td>U of M</td>
<td>LC</td>
</tr>
<tr>
<td>dimensions_height</td>
<td>Source recording</td>
<td>audio object's height (in inches)</td>
<td>4 inches</td>
<td>Mandatory, if applicable</td>
<td>U of M</td>
<td>LC</td>
</tr>
<tr>
<td>dimensions_width</td>
<td>Source recording</td>
<td>audio object's width (in inches)</td>
<td>3 inches</td>
<td>Mandatory, if applicable</td>
<td>U of M</td>
<td>LC</td>
</tr>
<tr>
<td>originating_library</td>
<td>Source recording</td>
<td>Library from U of M of which the source recording is a part</td>
<td>SCL, (Special Collections)</td>
<td>Mandatory</td>
<td>U of M</td>
<td>UM</td>
</tr>
<tr>
<td>originating_collection</td>
<td>Source recording</td>
<td>Collection from U of M of which the source recording is a part</td>
<td>Reel, Wilson/Welles</td>
<td>Mandatory</td>
<td>U of M</td>
<td>UM</td>
</tr>
<tr>
<td>generation</td>
<td>Source recording</td>
<td>describes the physical audio object</td>
<td>studio master, master dub, original disc, etc.</td>
<td>Optional</td>
<td>U of M</td>
<td>LC</td>
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<tr>
<td>audio_object</td>
<td>Source recording</td>
<td>an audio object’s generic format name</td>
<td>LP, audio cassette, DAT, etc.</td>
<td>Mandatory</td>
<td>U of M (with vendor override)</td>
<td>HVD</td>
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<td>condition_note</td>
<td>Source recording</td>
<td>description of the state of a source recording’s physical condition</td>
<td>Pulse Code Modulated (PCM)</td>
<td>Mandatory</td>
<td>U of M (with vendor override)</td>
<td>HVD</td>
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<tr>
<td>audio_data_encoding</td>
<td>Digital file</td>
<td>structure for digital audio data</td>
<td>Pulse Code Modulated (PCM)</td>
<td>Mandatory</td>
<td>U of M</td>
<td>LC</td>
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<tr>
<td>file_loc_val</td>
<td>Digital file</td>
<td>location of digital file within U of M</td>
<td>TBD</td>
<td>Mandatory</td>
<td>U of M</td>
<td>LC</td>
</tr>
<tr>
<td>file_name</td>
<td>Digital file</td>
<td>identifier of digital file</td>
<td>Barcode + face/truck (3D0151234567890001)</td>
<td>Mandatory</td>
<td>U of M (provides barcode / Vendor generates the label)</td>
<td>UM</td>
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<tr>
<td>base_material</td>
<td>Source recording</td>
<td>a recording's base material</td>
<td>glass, aluminum, polycarbonate, unknown, etc.</td>
<td>Mandatory</td>
<td>Vendor</td>
<td>HVD</td>
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<tr>
<td>dye_layer</td>
<td>Source recording</td>
<td>describes the dye present in recordable optical discs</td>
<td>phthalocyanine, cyanine</td>
<td>Mandatory</td>
<td>Vendor</td>
<td>NYPL</td>
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<td>equalization</td>
<td>Source recording</td>
<td>specific name of recordings inherent equalization (pre-emphasis)</td>
<td>M-15, Type I, Type II, unknown, etc.</td>
<td>Mandatory, if applicable</td>
<td>Vendor</td>
<td>HVD</td>
</tr>
<tr>
<td>gauge</td>
<td>Source recording</td>
<td>pertains to audio tape (expressed in inches)</td>
<td>1/4&quot;, 1/2&quot;, etc.</td>
<td>Mandatory, if applicable</td>
<td>Vendor</td>
<td>HVD</td>
</tr>
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<td>groove_orientation</td>
<td>Source recording</td>
<td>pertains to analog grooved media</td>
<td>Lateral or Vertical</td>
<td>Mandatory, if applicable</td>
<td>Vendor</td>
<td>HVD</td>
</tr>
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<td>sampling_frequency</td>
<td>Digital file</td>
<td>rate at which audio was sampled for digital file</td>
<td>44.1K, 44.1K, etc.</td>
<td>Mandatory</td>
<td>Vendor</td>
<td>LC</td>
</tr>
<tr>
<td>format_name</td>
<td>Digital file</td>
<td>official name of the file format</td>
<td>Broadcast Wave Format</td>
<td>Mandatory</td>
<td>Vendor</td>
<td>LC</td>
</tr>
<tr>
<td>note</td>
<td>Digital file</td>
<td>any additional notes about the source recording, the preservation master file, production master file or access copy</td>
<td>tracks, titles, timing, editing, processing</td>
<td>As necessary</td>
<td>Vendor</td>
<td>LC</td>
</tr>
</tbody>
</table>
SI AAA Metadata

Description: Oral history interview with Ray Johnson, 1968 Apr. 17; Johnson, Ray; Fesci, Sevim; 4/17/1968

Originator: Smithsonian Institution

Originator Reference: Archives of American Art

Origination Date: 2008-12-09

Coding History (Master):
- A=ANALOG, M=mono, T=Revox_A700; 20869; Audiotape
- A=PCM, F=96000, W=24, M=mono, T=PrismSound; ADA-8XR; A/D
- A=PCM, F=96000, W=24, M=mono, T=MetricHalo; ULN-2; DIO
- A=PCM, F=96000, W=24, M=mono, T=SoX14.1; DAE

Service Copy:
- A=PCM, F=44100, W=16, M=mono, T=SoX14.1; DAE
SI AAA Second Project
| Sample Rate: | 96000 |
| Bit Depth: | 24 |
| Duration: | 0:42:19 |

**INFO**

**Name:** Hess, Thomas B. “The Breakthrough of Abstract Expressionism.”

**Artist:**

**Date:**

**Archival Location:** Smithsonian Institution Libraries, Hirshhorn Museum Library

**Copyright:** Material may be protected by copyright. Restrictions may apply.

**BEXT Description:**

Hess, Thomas B. “”The Breakthrough of Abstract Expressionism.” Lecture at NGA, 11-4-73: 0001, File Identifier; HMSG0001A-B, Tape Identifier

**BEXT Originator:**

Hirshhorn Museum Library

**BEXT Originator Reference:**

**BEXT Origination Date:** 2009-09-08

**BEXT Time Reference:** 0

**BEXT Version:** 1

**BEXT Coding History:**

A=ANALOG,M=mono,T=Revox_A700; 13652; Audiotape_1251
A=PCML,F=96000,W=24,M=mono,T=PrismSound; ADA-8XR; A/D
A=PCML,F=96000,W=24,M=mono,T=MetricHalo; ULN-2; DIO
A=PCML,F=96000,W=24,M=mono,T=SoX14.1; DAE

| Sample Rate: | 96000 |
| Bit Depth: | 24 |
| Duration: | 0:56:32 |

**INFO**

**Name:**

**Artist:**

**Date:**

**Archival Location:**

**Copyright:**

**BEXT Description:** Oral history interview with Tony Rosenthal, 1968 May 10-June 29; Tony; Sevlin; 1968 May 10-June 29

**BEXT Originator:** Smithsonian Institution

**BEXT Originator Reference:** Archives of American Art

**BEXIT Origination Date:** 2009-09-22

**BEXIT Time Reference:** 0

**BEXIT Version:** 1

**BEXIT Coding History:**

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A=PCML,F=96000,W=24,M=mono,T=MetricHalo; ULN-2; DIO
A=PCML,F=96000,W=24,M=mono,T=SoX14.1; DAE
How will any of this provide for discovery, management, provenance, etc?

- It all has to be done manually.
- It is just as much work to create software tools to read the metadata as to make it.
- It costs more to do the metadata work on some projects than the digitization.
- What will be the cost to reformat the metadata when the digital file is migrated?
Open Source!

Open Standards!!

Interoperability!!

Except MY Metadata
DIPs: Let’s get religion