

## METADATA STANDARDS AND GUIDELINES RELEVANT TO DIGITAL AUDIO

This chart provides a quick overview of metadata standards and guidelines that are in use with digital audio, including metadata used to describe the content of the files; metadata used to describe properties of the digital files, how they were created, and (for digitized content) the original analog object; and metadata used to manage and preserve digital files. A number of these standards and guidelines have broader application beyond audio. Links to audio examples have been provided when possible.

Prepared by the PARS Task Force on Audio Preservation Metadata in cooperation with the MLA BCC Metadata Subcommittee

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STANDARD OR GUIDELINE	BRIEF DESCRIPTION	LINK TO STANDARD OR GUIDELINE	COMMENTS AND EXAMPLES OF USE WITH DIGITIZED AUDIO
<b>AES-X098A</b> <b>Descriptive Metadata for Audio Objects</b>	This Audio Engineering Society (AES) draft standard was designed to set forth the descriptive metadata elements that shall be used to describe the basic characteristics of audio digital objects from their creation and through numerous migrations. These elements constitute the basic level of description required to define an audio digital object for archiving and use purposes. Since creating the draft, the AES has essentially decided to use EBUCore as its descriptive metadata schema. At the AES May 2009 meeting it was decided that both the EBU and the AES each publish the EBUCore document within their systems, with cross-acknowledgement to the other body. This would allow latitude for each organization's maintenance procedures while acknowledging the rapport between them.	For more information on the AES's discussion concerning EBUCore, see <a href="http://www.aes.org/standards/meetings/aes126-sc-03-07-report.cfm">http://www.aes.org/standards/meetings/aes126-sc-03-07-report.cfm</a>	
<b>AES-X098B</b> <b>Administrative and structural metadata for audio objects</b>	This Audio Engineering Society (AES) draft standard sets out the vocabulary to be used in describing digital and analog audio formats, including both those formats that exist in some tangible form such as a reel of tape and those that exist only as a stream of bits, united to a single audio carrier, such as a broadcast WAVE file. This vocabulary takes the form of an Extensible Markup Language (XML) schema.		Coming soon! As of the 127th AES Convention in New York, October 2009, AES-X098B Draft Standard is just a few formalities away from being officially approved.  The Sound Directions Project used the draft standard to build its audio object metadata. <a href="http://www.dlib.indiana.edu/projects/sounddirections/">http://www.dlib.indiana.edu/projects/sounddirections/</a>
<b>AES-X098C</b> <b>Administrative metadata for audio objects</b>	This Audio Engineering Society (AES) draft standard sets out the vocabulary to be used in describing the processing and handling of audio objects in audio preservation work. This metadata, sometimes referred to as 'process history' or 'digi-prov', describes the details of how audio objects are treated and/or migrated. Essentially it provides the 'who', 'where', 'what' and 'how' information that clarifies the provenance of the audio object with regard to the work that has been done to restore and/or preserve the object.		Draft in progress! The Sound Directions Project used the draft standard to build its process history metadata <a href="http://www.dlib.indiana.edu/projects/sounddirections/">http://www.dlib.indiana.edu/projects/sounddirections/</a>
<b>AudioMD</b>	AudioMD contains technical metadata that describe a digital audio archival object. Developed by the Library of Congress.	<a href="http://www.loc.gov/rr/mopic/avprot/audioMD_v8.xsd">http://www.loc.gov/rr/mopic/avprot/audioMD_v8.xsd</a>	This standard is not widely implemented and is not recommended for use in new projects.

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<b>Dublin Core</b>	<p>The Dublin Core metadata standard is a simple yet effective element set for describing a wide range of networked resources. The Dublin Core standard includes two levels: Simple and Qualified. Simple Dublin Core comprises fifteen elements; Qualified Dublin Core includes three additional elements (Audience, Provenance and RightsHolder), as well as a group of element refinements (also called qualifiers) that refine the semantics of the elements in ways that may be useful in resource discovery. The semantics of Dublin Core have been established by an international, cross-disciplinary group of professionals from librarianship, computer science, text encoding, the museum community, and other related fields of scholarship and practice.</p>	<p>Collaborative Digitization Program Dublin Core Metadata Best Practices, <a href="http://www.bcr.org/dps/cdp/best/dublin-core-bp.pdf">http://www.bcr.org/dps/cdp/best/dublin-core-bp.pdf</a></p>	<p>Specification for the Europeana Semantic Elements (ver. 3.1). Uses Dublin Core with some additional fields to integrate metadata for digital objects from European museums, archives, libraries, and audio-visual collections. Implementation at <a href="http://www.europeana.eu">http://www.europeana.eu</a></p> <p>The CONTENTdm system uses Qualified Dublin Core, and allows for locally-defined qualifiers in addition to the DCMI-defined qualifiers. An example of an audio collection built in this way with CONTENTdm is <a href="http://www.westernsoundscape.org/">http://www.westernsoundscape.org/</a></p> <p>Ball State University has published online some information on their use of Qualified Dublin Core for oral histories: <a href="http://www.bsu.edu/libraries/wiki/index.php?title=Oral_Histories#Metadata">http://www.bsu.edu/libraries/wiki/index.php?title=Oral_Histories#Metadata</a></p>
<b>EAD Encoded Archival Description</b>	<p>EAD is a non-proprietary de facto standard for the encoding of finding aids for use in a networked (online) environment. Finding aids are inventories, indexes, or guides that are created by archival and manuscript repositories to provide information about specific collections. While the finding aids may vary somewhat in style, their common purpose is to provide detailed description of the content, history, and intellectual organization of collections of archival materials. EAD allows the standardization of collection information in finding aids within and across repositories.</p>	<p>See EAD for AV Google group : <a href="http://groups.google.com/group/ead-for-av">http://groups.google.com/group/ead-for-av</a></p>	<p>EAD is used more frequently for collection-level and file-level description, rather than the description of individual items, which makes it appropriate only for audio collections treated archivally rather than bibliographically.</p> <p>The James Madison Carpenter Collection at the Library of Congress (in conjunction with the University of Sheffield) uses EAD to describe sound recordings (and other associated material) at the item level: <a href="http://www.hrionline.ac.uk/carpenter/">http://www.hrionline.ac.uk/carpenter/</a></p>

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<b>EBUCore</b>	<p>The EBU Core Metadata Set is proposed to aggregate information within the EBU (European Broadcast Union) community. The Dublin Core used in the EBU Core Metadata Set will allow EBU Members to contribute to Europeana (the European Digital Library Project in collaboration with National Libraries and Museums), and EUScreen (a European project to provide access to broadcasters audiovisual resource with a participation of several EBU members and in liaison with Europeana).</p>	<p>See <a href="http://tech.ebu.ch/lang/en/MetadadataEbuCore">http://tech.ebu.ch/lang/en/MetadadataEbuCore</a>, especially Tech 3293</p>	<p>This is version 1.1 of the "EBU Core" metadata set, based on the results of the EBU Digital Strategy Group. This is primarily a minimum list of attributes for which an XML representation is also proposed. It is based on the Dublin Core and expands the list of elements originally defined in EBU Tech 3293-2001 for radio archives.</p> <p>More information on the role of this specification with regard to other related EBU metadata specifications is provided in the 'metadata' section of the EBU TECHNICAL website (<a href="http://tech.ebu.ch/metadata">http://tech.ebu.ch/metadata</a>)</p>
<b>METS Metadata Encoding and Transmission Standard</b>	<p>The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library, expressed using the XML schema language of the World Wide Web Consortium. The standard is maintained in the Network Development and MARC Standards Office of the Library of Congress, and is being developed as an initiative of the Digital Library Federation.</p>	<p><a href="http://www.loc.gov/standards/mets">http://www.loc.gov/standards/mets</a></p>	<p>The Sound Directions project carried out by Indiana and Harvard provides examples of METS use from both libraries (<a href="http://www.dlib.indiana.edu/projects/sounddirections/index.shtml">http://www.dlib.indiana.edu/projects/sounddirections/index.shtml</a>)</p> <p>See also a PowerPoint on METS use with audio from Sound Directions at <a href="http://www.loc.gov/standards/mets/presentations/Robin_Wendler_Sound%20Directions%20Germany.ppt">http://www.loc.gov/standards/mets/presentations/Robin_Wendler_Sound%20Directions%20Germany.ppt</a></p> <p>For further examples from Columbia and Stanford, see <a href="https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html">https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html</a></p> <p>British Library's Archival Sound Recordings project METS profile supports the compilation of metadata in terms of file identification and linking and the description of content, processes and conditions associated with those files. It is anticipated that this profile will serve the needs of audio preservation and access generally though a modified profile will be needed for handling born-digital files: this profile is applicable specifically to data files that have been generated from analogue originals. See <a href="http://www.bl.uk/profiles/sound/index.html">http://www.bl.uk/profiles/sound/index.html</a></p>

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<b>MODS</b> <b>Metadata Object Description Schema</b>	<p>MODS is a schema for a bibliographic element set that may be used for a variety of purposes, and particularly for library applications.</p> <p>The standard is maintained by the Network Development and MARC Standards Office of the Library of Congress with input from users, and under the guidance of an Editorial Committee.</p>	<p><a href="http://www.loc.gov/standards/mods/">http://www.loc.gov/standards/mods/</a></p>	<p>MODS, like its influence MARC, does not have a natural and obvious place for the inclusion of data on instrumentation. It is certainly possible to include instrumentation/medium of performance information, but it takes a bit of work.</p> <p>The Library of Congress uses MODS for sound recordings in its Performing Arts Encyclopedia (PAE) <a href="http://www.loc.gov/performingarts/">http://www.loc.gov/performingarts/</a>. The main record is for the recording as a whole, with &lt;relatedItem type="constituent"&gt; elements for each work that appears on the recording. See for example the "Library of Congress Concerts" special presentation within the PAE.</p>
<b>PBCore</b>	<p>Version 1.1 of PBCore (the Public Broadcasting Metadata Dictionary) has been developed by a cross-organizational team of public radio and television producers and managers, archivists and information scientists to provide—for television, radio and Web activities—a standard way of describing and using descriptive data, allowing content to be more easily retrieved and shared among colleagues, software systems, institutions, community and production partners, private citizens, and educators. It can also be used as a guide for the onset of an archival or asset management process at an individual station or institution.</p>	<p><a href="http://www.pbcore.org/">http://www.pbcore.org/</a></p>	<p>WGBH Boston administered the development of PBCore and is a leading implementer of the standard. (<a href="http://www.wgbh.org">http://www.wgbh.org</a>)</p>
<b>PREMIS</b>	<p>A core set of implementable preservation metadata, broadly applicable across a wide range of digital preservation contexts and supported by guidelines and recommendations for creation, management, and use. The PREMIS Data Dictionary defines "preservation metadata" as the information a repository uses to support the digital preservation process. Specifically, the group looked at metadata supporting the functions of maintaining viability, renderability, understandability, authenticity, and identity in a preservation context.</p>	<p>PREMIS home: <a href="http://www.loc.gov/standards/premis/index.html">http://www.loc.gov/standards/premis/index.html</a>            Using PREMIS with METS:  <a href="http://www.loc.gov/standards/premis/premis-mets.html">http://www.loc.gov/standards/premis/premis-mets.html</a></p>	<p>As of November 2009, the Florida Digital Archive is using the draft AES-X098B audio metadata standard for ingest of audio files in DAITSS 2, using a web service developed in-house. The web service makes use of JHOVE and DROID and generates PREMIS output containing various standard metadata schemata, including AES audio metadata. To see a snapshot of the PREMIS output, go to <a href="http://description.fcla.edu">http://description.fcla.edu</a> and upload a WAVE file.</p> <p>Example from Stanford of PREMIS used with METS at <a href="https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html">https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html</a></p>

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<b>WAVE file embedded metadata</b>	Embedded metadata is a part of the content file and cannot become separated from it. It can provide a brief statement of information provided in fuller form through external metadata standards. The Broadcast WAVE file provides a place in the file header for extended information about file creation, content, etc. Federal Agencies Audio-Visual Working Group, draft guideline on Broadcast WAVE Metadata represents a minimal set of recommended embedded metadata for historical and cultural heritage digital audio reformatting.	<a href="http://www.digitizationguidelines.gov/audio-visual/documents/wave_metadata.html">http://www.digitizationguidelines.gov/audio-visual/documents/wave_metadata.html</a>	For examples, see Columbia University Libraries <a href="https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html">https://www1.columbia.edu/sec/cu/libraries/bts/mellon_audio/working.html</a> ; see also the documentation for Sound Directions, <a href="http://www.dlib.indiana.edu/projects/sounddirections/index.shtml">http://www.dlib.indiana.edu/projects/sounddirections/index.shtml</a>