Society of Archivists Data Standards Group

A Guide to Archival and Related Standards
Standards applicable to archives; for the digital delivery of repository guides, finding-aids, and images of material from collections.

METS – Metadata Encoding Transmission Standard

Name of Standards Developing Organisation
Developed as an initiative of the Digital Library Federation and maintained in the Network Development and MARC Standards Office of the Library of Congress.¹

Current version
Version 1.7, October 2007

Replaces
Version 1.6, Month October 2006

Abstract
METS is an XML specification designed to enable the storage and transfer of different kinds of data in a standard form. This potentially provides interoperability between organisations and digital repository software.ii

Description
A considerable range and quantity of metadata is used in the management of digital collections. METS acts as a packaging standard, which can either contain, or point to, both content and its metadata. METS also provides means to encode structural metadata; this is essential to maintaining the meaningful display of digital materials, which are often composed of interrelated parts. The result is a flexible wrapper able to accommodate any type of content or metadata required to describe the different facets of a digital object or collection.

The METS data model
METS is arranged in seven high-level sections as follows

1. METS Header section
   Provides metadata about the METS document itself, such as the author/s of the record and the date it was created and last modified.

2. Descriptive Metadata section
   Used to embed any kind of descriptive metadata, whether in XML or binary format.

3. Administrative metadata section
   Split into four subsections:
   • Technical metadata
Describes the technical attributes of the content. This usually includes generic metadata (e.g. size and format), as well as more format-specific metadata, (e.g. the bit-depth of an image).

- Rights metadata
  Documents intellectual property rights.
- Source metadata
  Describes the analogue source of digitised content.
- Digital provenance metadata.
  Digital preservation metadata describing the object and its provenance.

4. File section
Supplies an inventory of the content described in the METS document. Content can be logically grouped; a staple example of this is derived from image digitisation projects, where it is common for a file group to contain references to a thumbnail, master and display versions of an image.

5. Structural map section
The only mandatory section in the METS standard, the structural map is often described as the heart of a METS document. It is a mechanism for recording structural relationships, of any kind, between content.

The structural map also provides a means of linking metadata records in the descriptive and administrative metadata sections with content; this link can be made at the highest level of the structural map (e.g. a link to a collection level description in EAD), the lowest level of the structural map (e.g. MIX technical metadata about a specific image in the collection), or at any level in the hierarchy between (e.g. a rights record about a series of content in the collection).

6. Structural link section
Encodes hyperlinks between nodes of the structural map. The developers envisage it being used for encoding archived websites.

7. Behaviour section
Associates executable behaviours with data in the METS document.

Documentation
The METS standard is well documented. Annotated schemas are available from the METS website, along with a brief introduction and tutorial and a detailed and user-friendly Primer and Reference Manual.iii

Recommended metadata standards and METS Profiles
Any metadata standard can be used with METS, including local profiles. As interoperability is a key objective for the METS community, the METS editorial board endorses a number of standards for use in different sections of the METS document; these include EAD and PREMIS.iv

METS can be implemented for a variety of purposes, from newspaper digitisation projects to the long-term preservation of digital objects. The
flexibility of METS can lead to very different implementations of the standard, even for ostensibly identical purposes. The METS Editorial Board maintains a registry of METS profiles, which are definitions of how METS is used in a given application. Organisations with similar requirements can therefore re-use relevant METS profiles in their own context. METS profiles:
- describe the purpose of the profile and its creation
- record which metadata schemas are used in which sections
- record whether content and metadata is embedded or externally referenced
- describe the way in which the METS document is structured
- describe tools used to generate the metadata
- provide an example METS document conforming to the profile.

Overlap with endorsed component schema
One example of overlap between METS and component schema is the encoding of a digital file’s hash value (a kind of digital fingerprint), which can be encoded in METS, PREMIS, MIX and other metadata standards. Implementers may decide to record some metadata redundantly, or define which standard is the best home for certain types of metadata.

Usage
METS is used internationally – its documentation is available in Chinese, English, French, German, Italian, Portuguese and Spanish. It is a popular packaging format in the digital library community. It is not, however, the only packaging standard available; others include MPEG-21 DID and IEEE LOM.

Next month
Next month we will look at Encoded Archival Description (EAD), an XML specification developed expressly for describing archival materials.

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METS: maintenance activity <http://www.loc.gov/standards/mets/mets-home.html>

DSpace and Fedora digital repositories support METS. See METS tools & utilities <http://www.loc.gov/standards/mets/mets-tools.html>


External schemas for use with METS <http://www.loc.gov/standards/mets/mets-extenders.html>

METS profiles <http://www.loc.gov/standards/mets/mets-profiles.html>
