

# UNDERSTANDING AND IMPLEMENTING METS

## *A tutorial focused on METS 2*

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**Abstract** - This half day tutorial will provide participants with an introduction to the Metadata Encoding and Transmission Standard (METS) starting in METS version 1 and the METS Primer [1], but focusing on METS version 2. It will give a basic overview of METS and explore different models of implementation. The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library as well as digital archives, expressed using the XML schema language of the World Wide Web Consortium. It is maintained by the METS Editorial Board, and the METS Maintenance Activity is managed by the Library of Congress [2].

**Keywords** - Metadata and information strategies and workflows; Infrastructure, systems, and tools; Case studies, best practices and novel challenges; Training and education for a new version

**Conference Topics** - We're All in this Together; From Theory to Practice

### I. INTRODUCTION

METS, the Metadata Encoding and Transmission Standard, provides a key piece of infrastructure for digital transfer as well as digital preservation activities, playing a vital role in enabling the effective management, discovery, and re-usability of digital information. METS continues to be widely used in digital preservation to describe the contents and structure of digital objects [3] and to provide descriptive, administrative, and structural information about these objects. By working in conjunction with other standards, METS gives information regarding documents preservation activity, identifies technical features, and aids in verifying the authenticity of digital objects. METS

contains a set of metadata elements recommended for use in all transfer as well as archiving situations regardless of the type of materials being transferred or archived, the type of institution, and the transfer strategies employed.

### II. SUMMARY OF TUTORIAL

METS can be used to describe objects in the role of Submission Information Package (SIP), Archival Information Package (AIP), or Dissemination Information Package (DIP) within the Open Archival Information System (OAIS) Reference Model. METS version 2 [4, 5] simplifies the schema, makes it more consistent, and removes reliance on the outdated XLink standard. It aims to retain a clear path for migration from METS 1 for most use cases.

This tutorial introduces METS with a focus on version 2 and its elements. The tutorial will introduce the elements of METS and the changes between version 1 and 2. It will include methods and examples for migrating from version 1 to 2. In addition, it will present examples of METS metadata and a discussion of implementation considerations, particularly using METS in combination with the other XML metadata standards such as the "Preservation Metadata: Implementation Strategies" (PREMIS) [6] standard. It will include examples of transformations from existing METS 1 objects to the new METS 2.

The tutorial aims to develop and spread awareness and knowledge about metadata that supports transfer and long-term preservation of

digital objects, regardless of the version of METS in use.

### III. CONTENT OUTLINE

The draft outline for the tutorial is below.

#### A. *Introduction to METS*

1) *Background (brief history and rationale)*

2) *Status of METS*

3) *Benefits of implementing METS 2*

#### B. *METS in detail with a focus on METS 2*

1) *Core elements and a simple example*

#### C. *Implementation*

1) *METS 1 to METS 2*

2) *The case of using PREMIS and other metadata standards in METS*

3) *Support and the METS community*

4) *Conformance*

#### D. *Next steps and wrap up*

1) *Round table discussion for institutional plans*

### IV. INTENDED AUDIENCE

This tutorial will benefit individuals and institutions interested in learning about METS but who have limited experience in implementation as well as those interested in potential migration paths to METS 2. The tutorial will cover implementing METS for transfer as well as for the long-term management and preservation of digital information. The potential audience includes cultural heritage operators, researchers and technology developers, professional educators, and others involved in management and preservation of digital resources.

### V. EXPECTED LEARNING OUTCOMES

#### A. *Participants will understand:*

1) *What METS is and why it exists;*

2) *The benefits of implementing METS;*

3) *The differences between the two versions of METS;*

4) *The nature of the existing METS community;*

5) *The critical role METS plays in the digital preservation community for transferring digital objects.*

#### B. *In addition, participants will get insight into:*

1) *How METS may be used with PREMIS and other metadata standards;*

2) *How different organizations implement METS within their own repositories;*

3) *The nature of conformance with METS.*

### 1. REFERENCES

- [1] METS Editorial Board, version 1.6 2010. Accessed 2023. METS Primer located at <http://www.loc.gov/standards/mets/METSPrimer.pdf>
- [2] METS website. Accessed 2023. Located at <http://www.loc.gov/standards/mets/index.html>
- [3] COPTR Website. Accessed 2023. Located at [https://coptr.digipres.org/index.php/METS\\_\(Metadata\\_Encoding\\_and\\_Transmission\\_Standard\)](https://coptr.digipres.org/index.php/METS_(Metadata_Encoding_and_Transmission_Standard))
- [4] iPres 2022 short paper, METS version 2. Accessed 2023. Located at <https://doi.org/10.17605/OSF.IO/6SEZX>
- [5] METS version 2 white paper. Accessed 2023. Located at <https://github.com/mets/METS-schema/blob/mets2/METS2.md>
- [6] PREMIS website. Accessed 2023. Located at <http://www.loc.gov/standards/premis/index.html>