

# Understanding and Implementing METS

## *A Tutorial*

### **Karin Bredenberg**

*Kommunalförbundet Sydarkivera  
Sweden  
karin.bredenberg@sydarkivera.se  
karin.bredenberg@gmail.com  
0000-0003-1627-2361*

### **Juha Lehtonen**

*CSC – IT Center for Science  
Finland  
juha.lehtonen@csc.fi  
0000-0002-9916-5731*

### **Tobias Steinke**

*Deutsche Nationalbibliothek  
Germany  
t.steinke@dnb.de  
0000-0002-3999-1687*

**Abstract – This half day tutorial will provide participants with an introduction to the Metadata Encoding and Transmission Standard (METS) and the METS Primer [1]. It will give a basic overview of the standard 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 Board and the METS Maintenance Activity is managed by the Library of Congress [2].**

**Keywords – preservation strategies, workflows, case studies, best practice, training and education**

**Conference Topics – Enhancing the Collaboration; Building the Capacity & Capability**

## I. Introduction

The METS Primer describes the metadata and information being stored or transferred in a METS document. METS 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 metadata provides for descriptive information, administrative information, and structural information about digital 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 the Tutorial

The Making of America II project (MOA2) [3] originally attempted to address the issues of digital object metadata in part by providing an encoding format for descriptive, administrative, and structural metadata for textual and image-based works. METS, originally a Digital Library Federation initiative, built upon the work of

MOA2 and provided an XML document format for encoding metadata necessary for both management of digital objects within a repository and exchange of such objects between repositories (or between repositories and their users). Depending on its use, a METS document could be used 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.

We have seen a growing call for the METS Board to undertake tutorials, such as this, as more and more organizations come to grips with digital transfer and digital preservation. This tutorial introduces METS and its elements and gives an examination of the elements in the Primer. In addition, it presents examples of METS metadata and a discussion of implementation considerations, particularly using METS in combination with the “Preservation Metadata: Implementation Strategies” (PREMIS) [4] standard. It will include examples of implementation experiences through the institutional experience of the tutors.

The tutorial aims at developing and spreading awareness and knowledge about metadata to support the transfer and long-term preservation of digital objects.

## III. Content Outline

The draft outline for the tutorial is outlined below.

### A. *Introduction to METS*

1. *Background (brief history and rationale)*
2. *Benefits of implementing METS2*

### B. *METS in detail*

1. *Core elements and a simple example*

### C. *Implementation*

1. *METS Profile*
2. *Case studies*

3. *The case of using PREMIS in METS*
4. *Support and the METS community*
5. *Conformance*

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

1. *Round table discussion for institutional plans*

#### IV. Intended Audience

The tutorial will benefit individuals and institutions interested in implementing METS for transfer as well as for the long-term management and preservation of their digital information but who have limited experience in implementation. 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 nature of the existing METS community*
4. *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*
2. *How different organizations implement METS within their own repositories*
3. *The nature of conformance with METS*

#### VI. Short Biographies of Organizers

**Karin Bredenberg** is a Metadata Strategist at the municipality organization Sydarkivera. She currently serves as the chair of PREMIS EC, co-chair of TS EAS, chair of the DILCIS Board as well as a member of the METS Board. Currently Bredenberg act as the activity lead for specifications in the eArchiving Building block.

**Juha Lehtonen** is a Senior Applications Architect at CSC – IT Center for Science located in Espoo, Finland. He acts as a main designer of methods, models and specifications for the national digital preservation services, and is a coordinator between the partner organizations using the services and digital preservation developers. In 2012-2014, he attended in APARSEN – EU/FP7 Network of Excellence project and was leading the activities related to preservation policies. He has been a member of the METS Editorial Board since 2017.

**Tobias Steinke** is working in the German National Library on the conceptual development of digital preservation and is responsible for the web archiving project

of the library. He is a member of the METS Editorial Board and has been involved in national and international projects about digital preservation and in standardization.

#### References

- [1] METS Editorial Committee, <METS> *Metadata Encoding and Transmissions Standard: Primer and Reference Manual*, Version 1.6. 2010.
- [2] *METS website*, Last accessed August 11th 2021. [Online]. Available: <http://www.loc.gov/standards/mets/index.html>.
- [3] *MOAC2 website*, Last accessed August 11th 2021. [Online]. Available: <https://old.diglib.org/standards/dlfoaii.htm>.
- [4] *PREMIS website*, Last accessed August 11th 2021. [Online]. Available: <http://www.loc.gov/standards/premis/index.html>.