

# Music Documentation in Libraries, Scholarship, and Practice



June 4-6, 2012

## The Use of METS for Delivering Digital Objects together with RISM Catalog Records

Laurent Pugin (RISM Switzerland)

### Abstract

The Metadata Encoding and Transmission Standard (METS) is a schema for describing metadata related to digital objects. While RISM projects increasingly involve digitization or the use of digitized sources, having appropriate standard techniques for archiving and distributing the data is highly desirable.

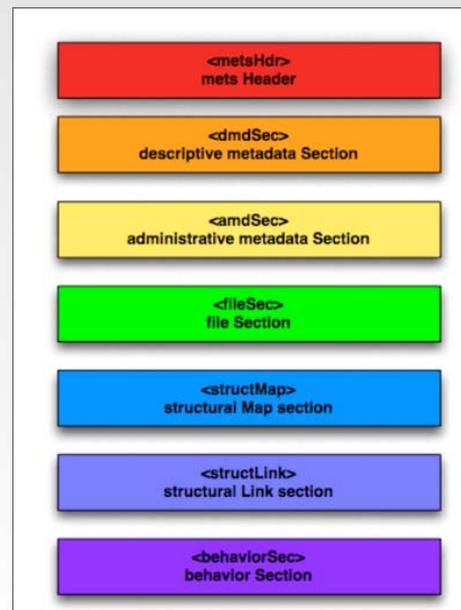
In this talk, I will investigate the use of METS for RISM projects for delivering digital images together with RISM catalog records. The challenges in using METS as applied to music sources will be addressed in particular.

\*\*\*\*\*

METS stands for Metadata Encoding and Transmission Standard and is an XML standard designed for encoding metadata necessary for both the management of digital objects within a repository, and the exchange of such objects between repositories. It means that for RISM, METS would come into play not for replacing data standards we use, such as MARC or MARCXML, but instead for managing additional digital objects related to the sources, and of course mostly digital images. I am thinking, for example, of cases where RISM or RISM working groups are, directly or indirectly, involved in digitization projects. The Early Music Online project is a good example. This would be a typical case where the use of METS would be a valuable addition.

# METS

- ❖ Metadata Encoding Transmission Standard
- ❖ XML format
- ❖ Management of digital objects within a repository
- ❖ Exchange of digital objects between repositories
- ❖ Generic and very developed standard
- ❖ Organized in different sections



Of course, as are most of the standards of this type, METS is quite developed and fairly complex. A METS file is composed of different sections, with one that includes information about the METS file itself, with creation date, its status and so on. I have no intention of going into too much detail about METS. I would like instead to focus on some aspects of it that I think make it beneficial and appropriate for RISM. A section of interest for us is the “Descriptive Metadata” section, where information is given about the object represented by the METS file. In our case, if we consider a scan of a music source, this would be the descriptive metadata of the source itself.



# Harvard Digital Scores and Libretti

Harvard University Library  
Page Delivery Service

**Schulz-Beuthen, Heinrich. Die Verschollene [manuscript]: musikalische Drama [in zwei Aufzügen]/Dichtung von Friedrich Spigl; Musik von Heinrich Schulz-Beuthen; [Klavierauszug vom Componisten]. [1892?].**  
Musik No. 800.424.607

Thumbnail Navigation Unavailable [More...]

Search View Text Print Related Links Help Copyright Cite This Resource

Page: 1 Go Sequence: 9 Go Image Size: □ □ □ □

Expand All Collapse All Show Thumbnails

- [-] Schulz-Beuthen, Heinrich. Die Verschollene
  - [+] [Front cover and verso] (seq. 1-2)
  - [+] [Handwritten notes] (seq. 3)
  - [+] [Photograph] (seq. 4)
  - [+] [Title page and verso] (seq. 5-6)
  - [-] Personen der Handlung (seq. 7) (seq. 7)
  - [+] [Blank page] (seq. 8)
  - [-] Erster Aufzug, pp. 1-82 (seq. 9-90)
    - [-] Introduction, pp. 1-2 (seq. 9-10)
      - page 1 (seq. 9)
      - page 2 (seq. 10)
    - [-] [Scene 1], pp. 2-13 (seq. 10-21)
      - page 2 (seq. 10)
      - page 3 (seq. 11)
      - page 4 (seq. 12)
      - page 5 (seq. 13)
      - page 6 (seq. 14)
      - page 7 (seq. 15)
      - page 8 (seq. 16)
      - page 9 (seq. 17)
      - page 10 (seq. 18)
      - page 11 (seq. 19)
      - page 12 (seq. 20)

RISM | Répertoire International des Sources Musicales  
Schweiz - Suisse - Svizzera - Switzerland

4 / 7

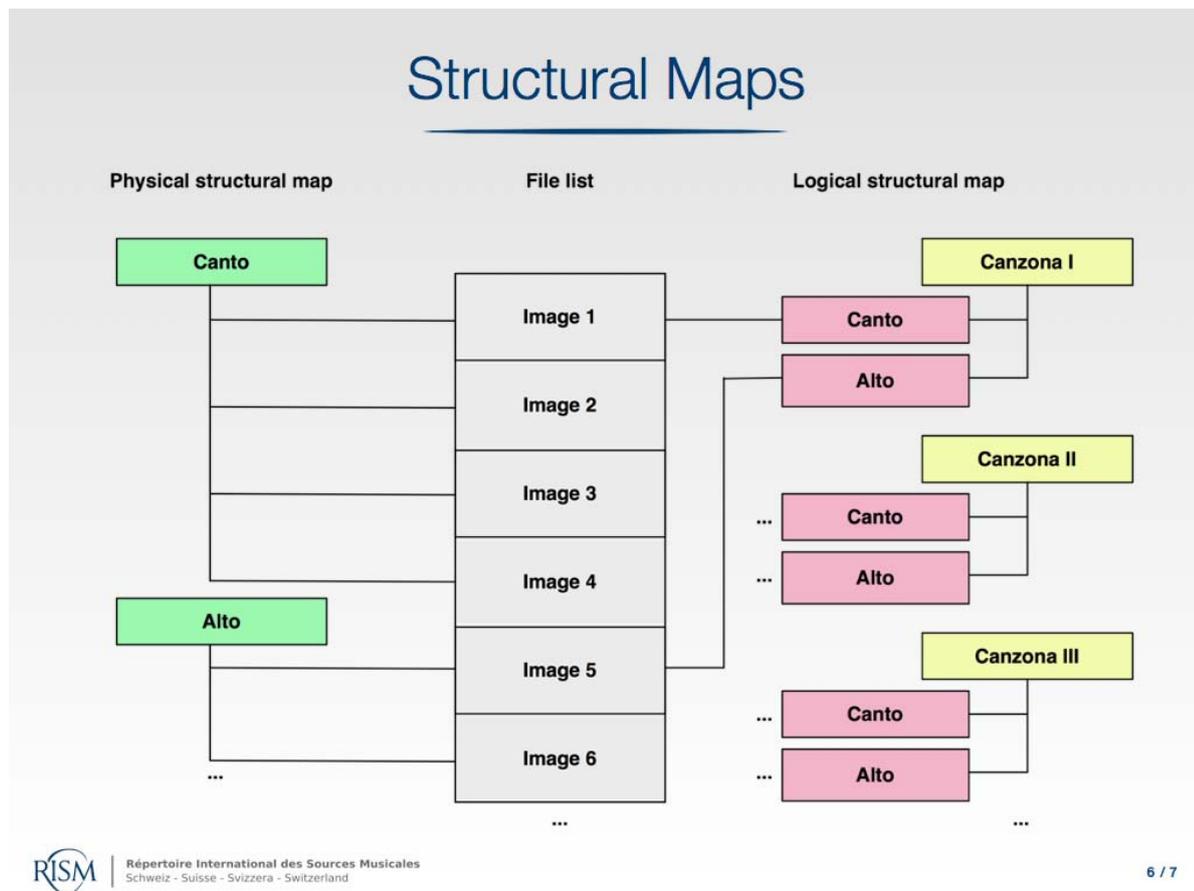
This screenshot of the Harvard Digital Scores and Libretti virtual collection is a good example. It is one of the few cases of music online resources that make use of METS – even though its METS profile is not officially registered. We can see on the left a tree providing the user with hierarchical access to the content of the source, with its different sections and the different pages. This is exactly the type of information we have in the so-called “structural map” of the METS file where we can have an arbitrary number of level grouping, for example works, movements, sections and so on. Now what makes METS even more attractive is that we can have several structural maps, each of them reflecting a particular aspect of the source.

# Early Music Online

The screenshot displays the 'Early Music Online' web application. On the left, a 'Hide Contents' sidebar lists a table of contents for a source named 'Bassus', including items like 'fly leaf', 'title page', and folios 2 through 21, plus an 'Index'. The main area shows a digital image of an open manuscript. The right page is titled '1 Clemens non Papa. BASSVS. Cum 5. voc. 2' and contains musical notation with Latin lyrics: 'N te Domine spe ra ui non confan- dar non confandar in aeternum, ij in iu sti tia tu a li- bera me. Inclina ad me aurem tuam A ii'. The interface includes navigation buttons for 'First', 'Prev', 'Next', and 'Last', a 'Show Thumbnail' button, and a 'Close' button in the top right corner.



Let's have a look at this example taken from the Early Music Online project I already mentioned before. As you can see, we also have a tree on the left, or more precisely a list since we have here only one level in the hierarchy. In this case, each item in the list is a folio of the source because we have two pages per image (strictly speaking, we actually have two different folios on each image, but this does not really matter for us now). This structure represents the physical structure of the source. Now because this source is in partbooks, its content is spread out over several physical entities. From the reader's perspective, being able to access a particular piece will certainly be highly desirable.



In METS, we can easily have another structural map representing the content of the source. We would expect here to have a list of pieces, and for each them, the list of relevant pages for each voice. As you can see on the diagram, the different structure maps will point to the same image list of the METS file. Quite a few projects aim at improving partbook presentation. There is a project on Du Chemin in Tours, but I am not aware that it uses METS. There is an important project at the Bayerische Staatsbibliothek that deals specifically with partbooks. So all this is not new. The new point with METS is that it offers a way of standardizing this information and enabling objects to be shared. We should not forget that creating structural maps is a highly time-consuming task. There is no solution for obtaining them automatically and they have to be created by hand, at least for a significant part of them.

It means that as for cataloguing, they represent a huge amount of human work. For this reason, it is important to have a standard way of capturing this and, in the long run, of sharing it. For example, a working group being involved in a digitization project can create the structural maps and then make them available to others. That is, the data produced will be system independent and could be used directly in another system, for example in a resource that would regroup several projects. This sounds very easy in theory, but it can be more complicated in practice. As is often with this type of standard, because they are so wide and very generic, some sort of standardization within the standardization is necessary. In METS, it is achieved with “profiles” that specify precisely what we expect to find in a METS file. The profiles define how to use METS for a particular project and they also include contact information. This is something we should strongly consider for music.

## Current and Future Work

---

- ❖ Integration of METS navigation in the Swiss RISM database system
- ❖ Implementation of a module for the DIVA.js image viewer
- ❖ Testing of tools for creating and managing digital objects
- ❖ Design and registration of a METS profile

At RISM Switzerland, we are currently working on the integration of digital images in our database system. Navigation through METS structures is being implemented in conjunction with the DIVA.js image viewer, an image viewer developed specifically for high-resolution document images. We are also testing various existing METS tools for creating and managing digital objects. Together with this work, it would be highly worthwhile to have a profile registered for this, and why not under the umbrella of RISM? As I briefly explained, having a profile would in a way create a standard for musical sources within the METS standard. More advanced features can also be explored, such as linking elements of descriptive metadata (an incipit, for example) with the structural map. I would be very happy to discuss this, share our experience and collaborate with anybody who is interested in this. I am convinced that it will be a path that will pay off in the future.