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Assembling catalogs of music metadata: another use case of LOD?

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Music-related projects dealing with complex metadata have a very long tradition in musicology and have produced a great variety of project-specific data formats and structures. This, however, hinders interoperability between data corpora and, ultimately, the full exploitation of the unprecedented potential of cutting-edge computer science. In this context, the schema defined within the Music Encoding Initiative (MEI) represents a significant step towards standardized music metadata. The MEI schema is the product of a collaborative, community-driven effort and is the de facto standard on international level for encoding music-related data (and notes) in a machine-readable structure.

The Metadata Editor and Repository for MEI Data (MerMEId, https://github.com/Edirom/MerMEId) is the only software tool for creating and editing metadata files in MEI. The editor was originally developed (starting from 2009) and widely adopted in the context of catalogs of works of music composers (e. g. *Catalogue of Carl Nielsen's Works*, https://www.kb.dk/dcm/cnw/navigation.xq), with the musical "work"being the central starting point of the encoding process. The current tool layout reflects this work-centered approach, guiding the user through a series of forms to capture various types of information related to a specific musical work, like music notes, performance history, sources, bibliography and more. The output is an XML file that conforms to the MEI schema, albeit with limitations due to lack of flexibility offered by the tool.

The musicological community needs a more flexible way of capturing metadata that goes beyond the work-centric approach described above. In addition, MerMEId requires codebase modernization to overcome the technical debt accumulated over the years and to become more sustainable and adaptable to new technologies. Against this background, the MerMEId community and the Centre for Digital Music Documentation (CDMD) of the Academy of Sciences and Literature | Mainz are working to further develop MerMEId. Here we present ideas and considerations on which functionalities the new MerMEId should have and how these could be technically implemented. A key improvement will be a modularized approach based on LOD. The user will be able to encode a wider range of freestanding entities, in addition to musical works, such as e. g. sources, persons, places, events, and bibliographic items. It will be possible to link the entities with each other through defined relationships and to create different types of catalogs according to project-specific requirements. We plan to achieve this representing our data as a Resource Description Framework (RDF) graph. Each freestanding entity will be modeled according to the MerMEId ontology, and the corresponding user interface for editing it will be described using the Shapes Constraint Language (SHACL). MerMEId will be able to import data from external triple stores and provide the possibility to enrich them. Albeit not strictly necessary for storing the data, it will be possible to export data as XML files according to the MEI or TEI schema. Future developments will also lower the technical barrier for setting up a project-specific online MerMEId instance, in particular for users or institutions with lower technical background. These are fundamental steps towards state-of-the-art Digital Musicology.

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