

Metadata Interoperability Platform

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Aggregation and indexing initiatives, such as Europeana, illustrate the benefits and added value of metadata interoperability for repository owners and the end user. Modeling efforts are directed in facilitating the aggregation of diverse, proprietary metadata records under well defined, machine understandable reference data models. However, the mapping and transformation procedure is not always a straightforward task, varying according to existing infrastructure and data and requiring the involvement of domain experts and content providers.

Metadata Interoperability (MINT - <http://mint.image.ece.ntua.gr/>) is an open source, web based platform that is employed from the first steps of such workflows, corresponding to the ingestion, mapping, transformation and enrichment of metadata records. According to the architecture, MINT implements a variety of remediation approaches for the resulting repository that allow for the storage, delivery, access and retrieval of metadata records. Interoperability is achieved through the use of well defined metadata models, and the alignment of the providers' records to their requirements. MINT is being used by a growing number of providers that align proprietary data structures to a variety of standard or aggregation specific models, and in that way establish and maintain interoperability with aggregators and Europeana.

More specifically, the platform offers a user and organization management system that allows the deployment and operation of different aggregation schemes with corresponding user roles and access rights. Registered users can upload their metadata records in XML or CSV serialization, using the HTTP, FTP and OAI-PMH protocols. Users can also directly upload and validate records in a range of supported metadata standards (XSD). XML records are stored and indexed for statistics, previews, access from the mapping tool and subsequent services. Handling of metadata records includes indexing, retrieval, update and transformation of XML files and records. XML processors are used for validation and transformation tasks as well as for the visualization of XML and XSLT.

MINT uses a visual mapping editor for the XSL language. Mapping is performed through drag-and-drop and input operations which are translated to the corresponding code. The editor visualizes the input and target XSDs, providing access and navigation of the structure and data of the input schema, and the structure, documentation and restrictions of the target one. It supports string manipulation functions for input elements in order to perform 1-n and m-1 (with the option between concatenation and element repetition) mappings between the two models. Additionally, structural element mappings are

allowed, as well as constant or controlled value (target schema enumerations) assignment, conditional mappings (with a complex condition editor) and value mappings between input and target value lists. Mappings can be applied to ingested records, edited, downloaded and shared as templates. Preview interfaces present the steps of the aggregation such as the current input xml record, the

XSLT code of mappings, the transformed record in the target schema, subsequent transformations from the target schema to other models of interest (e.g. Europeana's metadata schema), and available html renderings of each xml record. Users can transform their selected collections using complete and validated mappings in order to publish them in available target schemas for the required aggregation and remediation steps.