



Digital Ontology-based Rights Management for Archival Collections

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Abstract

The *Deutsches Kunstarchiv* at the *Germanisches Nationalmuseum* in Nuremberg applied for funding of a two-year pilot project by the *Deutsche Forschungsgemeinschaft*, which focuses on objects that are *(still) subject to legal restrictions*. The aim of the project is to expand the current archival technical infrastructure, based on the *CIDOC Conceptual Reference Model*, by integrating a Rights Expression Language such as the *Open Digital Rights Language*. This integration provides a technical framework to record the outcome of a case-by-case rights assessment in a machine-readable format.

1 Deutsches Kunstarchiv

The *Deutsches Kunstarchiv* (DKA) at the *Germanisches Nationalmuseum*[11] is one of the largest archives whose holdings relate to German art and culture. Its 1,481 holdings comprise mostly written materials relating to architecture, photography, art history, art trade and conservation, ranging from the late 19th century until the present time. The archival materials cover a wide range of content and media and are mainly unique, making them valuable for a wide spectrum of research disciplines.[9]

2 Motivation

Archives are increasingly expected to provide public access to their collections in digital forms, but not all data held by the archive can be published online for unrestricted public access. Within the applicable German and European legal framework, the archive is subject to several restrictions: these include on the one hand, personal rights (*Persönlichkeitsrechte*)[6] and the *General Data Protection Regulation* (GDPR)[4] for the protection of individual interests, and on the other hand, copyright law (*Urheberrecht*)[5] for the protection of intellectual property.[9] As a result, also at the DKA, many records that have already been digitized are not accessible online due to unresolved rights issues and the resulting generic technical solutions.

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3 DFG project

In order to enable research on these sources within the existing legal framework, the *Deutsche Forschungsgemeinschaft* (DFG) is funding a two-year pilot project on *(still) rights-restricted objects*. [3, 22] The 13 involved projects [20] are jointly developing a multi-step process: First, a matrix of relevant rights and protection periods is established, on the basis of which standardized, machine-readable rights descriptions are created. These are then linked to the objects in the presentation system and finally used for the legally compliant publication of digital derivatives. [3, 9]

4 The sub-project DORA

The DKA sub-project DORA (*Digitales Ontologie-gestütztes Rechtemangement im Archiv*) [10] focuses on the machine-readable rights descriptions and its integration into the technical infrastructure. Currently, only about 20 percent of the digitized materials can be made accessible online to the public because the usage rights have not yet been clarified. Once these rights have been clarified, we expect accessibility to increase to 70 percent. To ensure this increase, the previously clarified rights information must be linked to the relevant object data set. The aim of our sub-project is to introduce a case-by-case rights assessment and to expand the technical infrastructure through the integration of a Rights Expression Language (REL) [18, 2, 13].

5 Technical infrastructure

The DKA publishes (meta-)data and digital images using the *Wissenschaftliche Kommunikationsinfrastruktur* (WissKI), a virtual research environment for the digital humanities developed in accordance with the FAIR principles. [21, 7, 19] Data collection and storage in WissKI are based on modeling semantic relationships using current semantic web technologies such as RDF and OWL, in combination with the ISO standard 21127 (*CIDOC Conceptual Reference Model*) [17, 1]. The CIDOC CRM is a documentation standard developed for the domain of cultural heritage and documentation of events in the past. It is available as an OWL extension [12, 23], which the DKA uses for its semantic data modeling [8].

6 Rights Expression Language

RELs make it possible to describe the actions that are permitted or prohibited when using the archival documents. For this project, the use of the W3C recommendation *Open Digital Rights Language* (ODRL) [13, 16, 15] would be an option. Other relevant options would be ccREL, which is used to assign Creative Commons licenses [15, 14] or the *Library Rights machine-readable Language* (LibRML), that was originally developed for library environments, [24] but is open to collaboration with archives.

ODRL is particularly suitable for this purpose, as it is available as an OWL ontology within the Semantic Web framework, just like the CIDOC CRM [23]. Participation in the OPAL workshop would be a great opportunity to discuss possible strategies for aligning the two standards and to explore how rights information can be integrated into a CIDOC CRM-based archival infrastructure.

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