

Universal Access to Cultural Heritage Material: The Europeana Resolution Discovery Service for Persistent Identifiers

Lars G. Svensson
Deutsche
Nationalbibliothek,
Germany
l.svensson@d-nb.de

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Within the cultural heritage community, it is increasingly common to distinguish the tasks of identification and addressing the object by using a location-independent Persistent Identifier (PI) such as a URN (Sollins et al., 1994), a DOI (DOI, 2010), or a Handle (Handle, 2010) linked to a URL describing the object location in an institutional repository or a digital long-term preservation system run by a national library. This way, the problem that a digital object is inaccessible if the content provider moves it to a different location can be solved since the object can still be found using the PI.

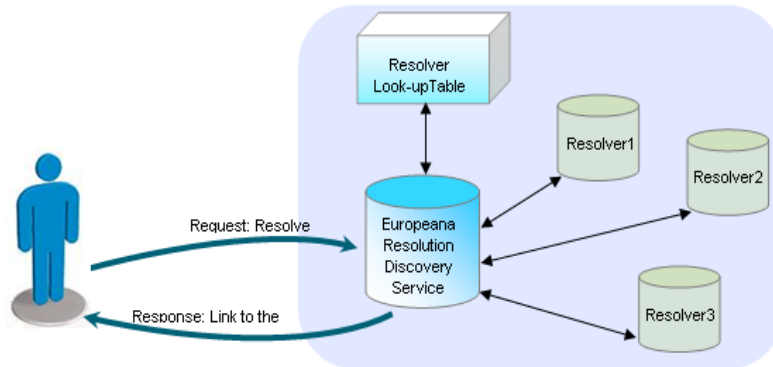
In order to resolve a non-http-based PI to a URL with the object location, a resolution service is required. In national libraries one of the most common PI schemas used is URN:NBN (Hakala, 2001), where each national library has an own sub-namespace for identifying the resources belonging to their legal deposit, e. g. the Finnish National Library uses the URN namespace URN:NBN:FI for their resources. In contrast to centralized systems like DOI or Handle, which have a central resolution service for all PIs belonging to the same scheme, URN:NBN-based identifiers are subject to a delegated responsibility model where each national library runs its own resolution service resolving the identifiers belonging to its namespace. With this approach the user has to know which national library is responsible for a particular URN:NBN namespace and has to find that library's resolution service.¹ This can be a major problem, particularly for digital library portals collecting metadata from content providers in different cultural settings and from different nations. For the European cultural heritage portal Europeana (Europeana, 2010), it was decided to implement a metaresolver – The Europeana Resolution Discovery Service (ERDS) – which collects all PI resolution requests and dispatches them to the proper national URN:NBN resolver service. This metaresolver was developed by the German National Library (DNB) as part of the Europeana sister-project EuropeanaConnect (EuropeanaConnect, 2010) and was completed in July 2010.

The metaresolver serves a two-fold purpose. The primary purpose is to serve as a single-point-of-entry for the resolution of persistent identifiers, regardless of which institution is responsible for the local service. Further, we plan to use the service as a showcase for content providers, showing them that there is a clear benefit for them to provide PIs in the metadata they add to Europeana.

In the first release, the ERDS will provide resolution services for URN:NBN-based PIs, as well as for DOI, PURL, ARK and Handle. From this first service we expect valuable feedback for the standardisation of and interoperability between resolution services for PIs. EuropeanaConnect cooperates closely with PersID (PersID, 2010), a project with the goal to build a complete governance infrastructure to support PIs and thus to guarantee access to scholarly and cultural resources. In order to achieve this, PersID has defined a minimal function set for national URN:NBN services: to serve metadata about the resource identified by a PI (author, title, year of publication etc), to serve metadata about the PI itself (issuer, date of issue, information on PI

¹ E. g. the National Library of Finland provides its URN:NBN-resolver at <http://urn.fi/<Identifier>> while the German National Library provides its service at <http://nbn-resolving.de/>

policy etc), and of course the resolution of the PI to a URL. The supplied metadata will enable digital curators, researchers etc to assess the trustworthiness of a PI and its suitability for e. g.



citation management. PersID currently develops the software for a compliant resolution server and further conducts three studies exploring the PI landscape, identifying the user requirements and designing feasible business models, policies and governance approaches and will in September 2010 present a roadmap with recommendations for the further development. It is expected that this co-operation will result in a core set of standards, policies and best practices for the implementation and operation of a PI infrastructure.

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