German National Library
Office for Library Standards
26 April 2012

Summary of the activities of the German National Library related to RDA and Linked Data

RDA in the German-speaking countries

In the German-speaking countries Austria, Germany and in parts of Switzerland, the Committee for Library Standards, a consortium of German academic and public libraries and regional library service centers, the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany and the German Research Foundation, ensures the use of uniform standards for cataloguing, data formats and interfaces. The Committee for Library Standards is a nationwide coordinating body in the above mentioned areas and gives a professional opinion in deciding on questions of principle.

The Office for Library Standards is an organizational unit of the German National Library (DNB) and serves as the administrative office for the Committee for Library Standards. It does most of the technical work in the area of library standardisation for Germany, Austria and Switzerland and it represents the interests in committees on a national and international level collaborating actively in this context.

Groups of experts support special tasks by advising, discussing and passing resolutions. The Committee for Library Standards installed the following expert groups:

- expert group for authority data
- expert group for data formats
- expert group for descriptive cataloguing
- expert group for subject cataloguing

In the context of the internationalisation of the national codes, the Committee for Library Standards decided to become actively involved in the development process of the new standard "Resource Description and Access (RDA)" being developed as an international code. The Office for Library Standards therefore has set up an RDA project, which consists of 4 work packages:

- General issues (project management, communication, committees)
- Technical implementation (format, data exchange, cataloguing clients, legacy data, services)
- Rule instructions (RDA elements, rule instructions, policy decisions, translation issues)
- Training (training material, training lessons).

The German National Library is set to change its cataloguing system over to the new Resource Description and Access (RDA) standard from the middle of 2013. This follows the changeover by the Library of Congress, the National Library of Medicine and the National Agricultural Library as well as the British Library, the National Library of Australia and Library & Archives Canada which is scheduled for the beginning of 2013.

As a dependable partner of the libraries and library networks, the German National Library is paving the way for adopting RDA in the German-speaking countries. In its session on 5 October 2011 the Committee for Library Standards resolved in principle to introduce the new Resource Description and Access cataloguing standard in the German-speaking countries. The Committee will initiate the necessary decision-making process for the introduction in the relevant institutions, thereby enabling it to pass a final resolution at its next session on 31 May 2012. The Office for Library Standards will monitor and support the changeover in collaboration with the expert groups and other relevant bodies as the Consortium of Library Networks. Besides considering future data models, this includes publishing a German translation of the set of rules, drawing up policy statements and carrying out training.

International, German-language and local aspects need to be taken into account and weighed against each other in all such activities undertaken. Staff at the German National Library is involved in this work in a wide range of bodies, or are at least in close contact with them. A completely new element within this structure is the European RDA Interest Group, EURIG, which was founded with the involvement of the German National Library and officially established last year.

During its Glasgow meeting from November 1-4 2011, the Joint Steering Committee for Development of RDA (JSC) welcomed Christine Frodl, who is the Deutsche Nationalbibliothek's representative to JSC since January 2012.

Model-based approaches for next-generation cataloguing – Preparation for implementation of RDA

In preparation for its announced implementation of RDA, DNB is engaged in research efforts in the field of data analysis and data modelling, with a view to data compatibility regarding current practice and representation in RDA. As a consequence, DNB has developed models for the representation of hierarchical data structures applying RDA as the cataloguing standard and the underlying FRBR classes according to implementation scenario 1.

Although DNB's first implementation of RDA will not follow implementation scenario 1, present data structures will be considered, in particular the linking of bibliographic resources with authority data, as well as the alignment of related bibliographic resources. In particular, attention will be given to present representations of hierarchical relationships such as parts of multipart works, volumes of series and articles or issues of serials.

⇨ For further information see also The German National Library's response to the "Bibliographic Framework Transition Initiative"[1]

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[1] http://files.d-nb.de/pdf/bfti_statement_dnb.pdf

Linked data

The Linked Data Service of the German National Library

In 2010, DNB started to publish its authority data as linked data. Since that time, the Linked Data Service[2] has expanded and now includes bibliographic data. As part of this process, the license for linked data has also been changed to "Creative Commons Zero".

Authority data – Gemeinsame Normdatei (GND)

The aim of the "Gemeinsame Normdatei (GND)" was to combine the existing Name Authority File (PND), Subject Headings Authority File (SWD), Corporate Body Authority File (GKD), and the Uniform Title File of the Deutsches Musikarchiv (German Music Archive) into a single, universal authority file. The GND should consign to the past problems arising from different formats, parallel storage of data records and different rules for descriptive and subject cataloguing.

The objective of the GND is to form a modern, web-compatible authority file which is capable of networking the wide range of resources and information held by libraries and other cultural institutions in the German-speaking countries and making these accessible to users.

To approach a web-compatible authority file DNB also provides the GND as linked data. Therefore an independent GND specific vocabulary (GND Ontology[3;4]) was developed that almost completely covers the offered GND concepts provided in MARC 21. The vocabulary allows the description and expression of relations between differentiated and undifferentiated persons, conferences or events, corporate bodies, places or geographic names, subject headings, and works.

To ensure the interoperability of the new defined GND Ontology to existing vocabularies, we decided to apply the vocabulary alignment approach as recommended by the W3C Library Linked Data Incubator Group[5]. A first task was the alignment of the Friend of a Friend (FOAF) vocabulary and the RDA Element Sets. It has to be taken into account that the GND work is not the same as a FRBR work, it is more like a WEMI representation. That is the reason why DNB in some parts only align the unconstrained RDA elements. In future – after the first implementation of RDA - DNB has to analyze and discuss how to cope with this discrepancy between GND and FRBR.

Bibliographic data

As a first step, bibliographic data of DNB's main collection (apart from the printed music and the collection of the Deutsches Exilarchiv – German Exile Archive) and the serials (magazines, newspapers and series) of the German Union Catalogue of Serials (Zeitschriftendatenbank, ZDB), have been converted. Henceforth the RDF/XML-representations of the records are available within the DNB portal[6].

The bibliographic data records are not shown in their full complexity in the RDF format, rather specific elements which are required for identification of the resources are selected for Linked Data representation. The modelling is based on the internal format specifications for the DNB and ZDB bibliographic data. The choice of vocabulary was made from widely available vocabularies such as Dublin Core which have already been reused. In the first level of implementation, a pragmatic approach has been selected which involves gradual refinement and expansion of the modelling.

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[2] https://wiki.dnb.de/display/LDS/
[3] https://wiki.d-nb.de/download/attachments/44532423/gnd.owl
[4] https://wiki.d-nb.de/download/attachments/44532423/gnd-owl-doc.html
[5] http://www.w3.org/2005/Incubator/lld/XGR-lld-20111025/#Express_library_data_by_re-using_or_mapping_to_existing_Linked_Data_vocabularies
[6] http://portal.dnb.de/

Especially the issue of modelling different type vocabularies (publication, physical and bibliographic forms or content, media and carrier type) based on our current values will need further development. In the future, reference to a controlled vocabulary would be desirable to ensure that this information remains machine-readable.

⇨ For further information see also 'The Linked Data Service of the German National Library'[7]

DINI-AG-KIM Titeldaten – Working Group on modelling bibliographic metadata in Germany

As a result of the linked data movement, many library networks or libraries in Germany already offer their bibliographic metadata as linked data or plan to do so. Most of the existing services are still beta versions, where optimization of some features is being sought - for example through the provision of more links to other datasets.

The exposure of bibliographic metadata as linked data was modelled differently in these services and colleagues are interested in discussions about data modelling issues, feedback on their services and in the exchange of experiences. In order to meet these needs, a working group on modelling bibliographic metadata was set up, called "DINI-AG-KIM Titeldaten".

In the course of the kick-off meeting, it became clear that it would be helpful to collocate classes and properties used in the existing RDF representations of the libraries. Subsequently, they will be sorted and compared in order to discuss which attributes of bibliographic resources are relevant for identification and representation so that the data could be easily integrated into other services or contexts. Based on these outcomes, the working group will map the best-practice RDF properties to MARC 21.

⇨ For further information see also wiki pages of DINI-AG-KIM-Titeldaten[8]

culturegraph

culturegraph.org is a Linked Open Data service that aims to establish shared identifiers (Uniform Resource Identifiers) for cultural works (books and other text, paintings, sculptures, piece of music etc.) to ensure these resources can be reliably and persistently referenced. The service is currently being developed cooperatively by the German National Library (DNB) and the North Rhine-Westphalian Library Service Center (hbz) with support from the German-speaking Working Group of Library Networks.

The existence of many different bibliographic data bases of publishers, libraries and library networks results in a multitude of descriptions and identifiers for every bibliographic resource. This multiplicity brings about many disadvantages whose elimination can be tackled in the context of migrating bibliographic data into the semantic web.

DNB and hbz want to approach this proliferation of identifiers and descriptions by developing a cooperative identification system. The use of URIs as common, global identifiers provides an excellent basis for connecting distributed information sources and will ultimately offer cultural heritage institutions and their holdings maximum visibility in the World Wide Web.

The initial phase of the combined efforts of the DNB and hbz is aimed at using central URIs for bibliographic resources to which other identifiers can be linked. Similar to the service sameas.org identifiers for identical and similar resources will then be bundled based on these central URIs.

The first prototype contains 90 million bibliographic records of six German library networks. Data has been bundled by several different matching algorithms which can be easily be customized. The lookup and resolving service provides a search interface, statistics and data flow schematics. The records and bundles are also published in the RDF format.

⇨ For further information see also culturegraph.org[9]

Open Metadata Registry (OMR) – Translating and registering RDA elements and vocabularies

DNB is currently working on a German translation of RDA for German-speaking countries which will be published later in 2012. At the moment, the first German translation is being reviewed internally and the German-language terminology is being documented in order to ensure the usage of consistent vocabulary during the translation process.

The Open Metadata Registry supports the input of multilingual vocabularies so that labels and definitions in different languages can be assigned to the same concept. Some of the German value vocabularies, such as content, media and carrier types as well as RDA roles, have already been added to the Open Metadata Registry.

As soon as the JSC's review process of the RDA elements and vocabularies is completed and their German equivalents are finalised, DNB intends to add more German terms to the registry in order to permit reuse of the RDA elements and vocabularies with German labels.

In the process of the implementation of RDA at the DNB, we will analyze if and how we can apply RDA properties in our RDF representation of bibliographic metadata. Most likely, we will reuse the unconstrained properties as we will not be able to distinguish between FRBR Group 1 entities within our initial implementation.

⇨ For further information see also 'The German National Library – Translating and registering RDA elements and vocabularies'[10]

Contact:
Christine Frodl, Tel: +49-69-1525-1404, e-mail: c.frodl@dnb.de
Sarah Hartmann, Tel: +49-69-1525-1461, e-mail: s.hartmann@dnb.de

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[9] http://www.culturegraph.org/
[10] http://metadataregistry.org/blog/2009/10/12/the-german-national-library-translating-and-registering-rda-elements-and-vocabularies/