

27. June 2022

Metadata services: Changes in RDF format from 27 September 2022 (Export Release 2022.03)

1. Release schedule

In accordance with the German National Library's (DNB) release planning for export formats¹, the next change in the conversion and data modelling will take place on 27 September 2022. There may be disruptions to the interfaces and the Data Shop between 08:00 and 12:00 noon during the technical changeover.

2. Linked Data Service in general

2.1. Full copies

Following the export releases, it is expected that updated full copies of the Integrated Authority File (GND²) and the DNB's bibliographic data will be made available for download in the serialisation formats RDF/XML, Turtle, JSON-LD, as an HDT file³ and in N-Triples as of March, June/July and October/November⁴.

Metadata provenance dump deliveries are effected at the same intervals. The provenance information is modelled along the lines of PROV Ontology⁵ and published in the form of a separate data copy. Additional information regarding planning, documentation and modelling is available on the DNB WIKI⁶.

Full copies of the bibliographic data from the German Union Catalogue of Serials (ZDB)⁷ and the Address data will be updated in March and October/November.

¹ <https://wiki.dnb.de/x/wgcbBQ> available only in German

² <https://www.dnb.de/EN/gnd>

³ Header, Dictionary, Triples; <https://www.rdfhdt.org/what-is-hdt/>

⁴ <https://data.dnb.de/opendata/>

⁵ <https://www.w3.org/TR/prov-o/>

⁶ <https://wiki.dnb.de/x/46G5C> available only in German

⁷ <https://sigel.staatsbibliothek-berlin.de/en/startseite/>

The full copy for Entity Facts⁸ is released monthly, albeit only in the format JSON-LD.

2.2. Prefixes used in the document

	bibo:	http://purl.org/ontology/bibo/
	cc:license	https://creativecommons.org/publicdomain/zero/1.0/
	crm	http://www.cidoc-crm.org/cidoc-crm/
	dcterms:	http://purl.org/dc/terms/
	gndo	http://www.w3.org/2002/07/owl#
	owl:	http://www.w3.org/2002/07/owl#
	rdau	http://rdaregistry.info/Elements/u/
	rdf:	http://www.w3.org/1999/02/22-rdf-syntax-ns#
	rdfs:	http://www.w3.org/2000/01/rdf-schema#label

3. Publication of RDF vocabularies

3.1. Changes in vocabulary "GND Subject Categories"

- | Improvement:
Minor corrections have been made to a number of labels in the value vocabulary of the GND systematics (GND Subject Categories⁹).

3.2. GND Ontology

Note: changes to the GND Ontology will be made starting on 27 June 2022 (beginning of the MARC21 export test phase) in order to ensure that the newly created URIs are available for test purposes.

3.2.1. Other additional title information to work titles

- | New feature:
the GND Committee recently decided to introduce a new relations code:

Code: "tmzu" (= title with additional title information)

Code definition:

Title with additional title information which is deemed important for identification or access purposes and is either used in the earliest known manifestation of the work (e.g. manuscript, first edition) or mentioned as additional title information in a significant reference work.

This information is depicted in the newly created property

⁸ <https://www.dnb.de/EN/entityfacts>

⁹ <https://d-nb.info/standards/vocab/gnd/gnd-sc.html>

gndo:titleWithOtherTitleInformation of type owl:AnnotationProperty, range
rdfs:Literal..

3.2.2. Addition for describing cataloguing levels

- | New feature:
A new object property has been introduced to describe the cataloguing level.
gndo:descriptionLevel will in future refer to the new RDF value vocabulary GND
Encoding Level.10.

3.2.3. Addition for describing the medium of performance of musical content

- | New feature:
Six new datatype properties have been introduced to describe the medium of performance of musical content:
 - | gndo:mediumOfPerformanceAsLiteral
 - | gndo:numberOfEnsemblesOfTheSameType
 - | gndo:numberOfPerformersOfTheSameMedium
 - | gndo:alternativeMediumOfPerformance
 - | gndo:totalNumberOfPerformers
 - | gndo:totalNumberOfEnsembles

3.2.4. Cross-concordance

- | New feature:
Nine new object properties have been introduced to describe the relations between various thesauri:
 - | gndo:equivalence
 - | gndo:exactEquivalence
 - | gndo:inexactEquivalence
 - | gndo:compoundEquivalence
 - | gndo:cumulativeCompoundEquivalence
 - | gndo:broaderMapping
 - | gndo:narrowerMapping
 - | gndo:relatedMapping
 - | gndo:noMapping

4. Changes in GND conversions

Improvement:¹¹

In the case of variant names (gndo:Work), the information that a work has additional title information can be provided in the data base. To ensure that this can be taken into account, e.g. for retrieval purposes, we are now delivering these names with the

¹⁰ <https://wiki.dnb.de/download/attachments/50759357/005.pdf> available only in German

¹¹ See above [Other additional title information to work titles](#)

property `gndo:titleWithOtherTitleInformation`; this was implemented for the first time in release 2022.03.

Test data:

1213476607
1282160532
1241704864
1240426798
1239408005

| New feature:¹²

Cataloguing levels are assigned to data records in the GND to indicate the editorial status of the respective record. Further information about encoding levels is available at <https://wiki.dnb.de/download/attachments/50759357/005.pdf>. The cataloguing levels are delivered through the Linked Data Service with the help of a new value vocabulary titled "Description" and the new property `gndo:descriptionLevel` in the GND Ontology.

Example in Turtle:

```
<https://d-nb.info/gnd/135898838/about> dcterms:license
<http://creativecommons.org/publicdomain/zero/1.0/>;
  dcterms:modified "2021-11-09T13:54:48.000"^^xsd:dateTime ;
  gndo:descriptionLevel <https://d-
nb.info/standards/vocab/gnd/description-level#1> .
```

Test data:

https://d-nb.info/gnd/135898838
1256882496
1217742018
1256922684
125678737X
125690449X
1248087798
1219223913

| New feature:¹³

Works of music will in future contain the medium of performance, if available. This will include:

- | the "medium of performance (literal)"
(`gndo:mediumOfPerformanceAsLiteral`) as a literal
- | the "Number of ensembles of the same type"
(`gndo:numberOfEnsemblesOfTheSameType`)
as a blank node in combination with `gndo:mediumOfPerformance`

```
<http://d-nb.info/gnd/300151888> gndo:mediumOfPerformance
[rdf:value <http://d-nb.info/gnd/107726772X>
;gndo:numberOfEnsemblesOfTheSameType "2"] .
```

¹² See above [Addition for describing cataloguing levels](#)

¹³ See above [Addition for describing the medium of performance of musical content](#)

- | the "Number of performers" (gndo:numberOfPerformersOfTheSameMedium) as a blank node in combination with gndo:mediumOfPerformance

```
<http://d-nb.info/gnd/1248047427> gndo:mediumOfPerformance
[ rdf:value <http://d-nb.info/gnd/4046865-3>
; gndo:numberOfPerformersOfTheSameMedium "3" ] .
```

- | the "Alternative medium of performance or doubling instruments or Ad-libitum instrumentation" (gndo:alternativeMediumOfPerformance) as a literal
- | the "Total number of performers" (gndo:totalNumberOfPerformers) as a literal
- | the "Total number of ensembles" (gndo:totalNumberOfEnsembles) as a literal

Test data:

```
1247949370
300151888
1248047427
1247949370
124777743X
```

5. Changes in the conversion of bibliographic data from the German National Library

Data from the German Museum of Books and Writing (DBSM) integrated into the Linked Data Service

The data from the German Museum of Books and Writing (DBSM) is being integrated into the Linked Data Service. This entails the use of the following RDF elements:

- | New feature
There is a new resource type: Image and image medium. This is expressed in rdf:type statements with the RDF class "bibo:Image".

```
<https://d-nb.info/1032099801> rdfs:type
<http://purl.org/ontology/bibo/Image> .
```

Test data

```
1032099801
1099337607
1104960036
1107419425
1137081007
```

- | New feature
Provenance information such as the place of creation and the name of the creator are

transported using the properties "rdau:P60161" ("has place of production") and "rdau:P60477" ("has creator"). This is free-text data delivered in the form of literals.

Example:

```
<https://d-nb.info/1032099801> rdau:P60161 "Budapest" ;  
rdau:P60477 "Abt. Wiss. Bibliotheken im Ministerium für Kultur d. Ungar.  
Volksrepublik"
```

Test data

1067600213
112928025X
1137079304
1137079363

New feature

Design characteristics (e.g. woodcut, marbled paper, embossing) and subject headings are delivered as links to the GND with the property `dcterms:subject`.

Example:

```
<https://d-nb.info/1032099801> dcterms:subject <http://d-  
nb.info/gnd/4064827-8> , <http://d-nb.info/gnd/2005040-9> .
```

Test data:

1148026193
1081330945
1067339426

New feature:

Object descriptions are delivered in a blank node in the RDF document for the linked resource. For this, the statement "Resource is identified by" is depicted using the property "crm:P1_is_identified_by". The blank node is an "Appellation" type ("crm:E41_Appellation") and contains the object description as a literal in `rdfs:label`. The vocabulary provided by Getty Art and Architecture Thesaurus¹⁴ is linked to indicate the type of object description.

Example:

```
@prefix crm: <http://www.cidoc-crm.org/cidoc-crm/> .  
<https://d-nb.info/1032099801> crm:P1_is_identified_by [  
  a crm:E41_Appellation ;  
  rdfs:label "In Evangelium Marci paraphrasis per Erasmus  
Roterodamu[m] A... (auf dem vor Erasmus liegenden Papier)" ;  
  crm:P2_has_type http://vocab.getty.edu/page/aat/300028702  
] .
```

Test data

1099337607
1032099801
1137081007

¹⁴ <https://www.getty.edu/research/tools/vocabularies/aat/>

1104960036
1107419425

6. Examples and further information

In the course of the next few days the following example files, including the announced changes, can be accessed in the serialisation formats RDF/XML, Turtle and JSON-LD by visiting <https://data.dnb.de/testdat/>:

- | „GNDTestRelease2022_03 ...“ for the GND authority data
- | „DNBTestRelease2022_03 ...“ for DNB bibliographic data

All the information regarding the German National Library’s Linked Data Service can be found on our website¹⁵.

If you have any questions please do not hesitate to mail us at metadatendienste@dnb.de.

Yours faithfully

on behalf of Deutsche Nationalbibliothek (German National Library)

Tracy Arndt (Information Infrastructure)
and Uta Ackermann (Digital Services)

¹⁵ <https://www.dnb.de/EN/lds>