German National Library
Adickesallee 1
60322 Frankfurt am Main

11 April 2019

Data Services: Changes in RDF format from 18 June 2019 (Export Release 2019.02)

1. Release schedule

Dear Sir/Madam,

In accordance with the German National Library's (DNB) release planning for export formats[1], the next change in the conversion and data modelling will take place on 18 June 2019. (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 (GND[2]) and the DNB's bibliographic data will be made available for download in the serialisation formats RDF/XML, Turtle, JSON-LD, as an HDT file[3] and in N-Triples as of March, June/July and October/November[4]. The full copy for Entity Facts[5] will also be released at these times, albeit only in the format JSON-LD.

Full copies of the bibliographic data from the German Union Catalogue of Serials (ZDB) and the Address data of the German ISIL and Library Code Agency[6] will be updated in March and October/November.

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[1] https://wiki.dnb.de/x/wgcbBQ

[2] https://www.dnb.de/EN/gnd

[3] Header, Dictionary, Triples; http://www.rdfhdt.org/what-is-hdt/

[4] https://data.dnb.de/opendata/

[5] https://www.dnb.de/EN/entityfacts

[6] http://sigel.staatsbibliothek-berlin.de/en/startseite/

2.2. Provenance information for bibliographic data

The subject "Provenance information for bibliographic data" (information on the origin of each triple) was an important part of the last release. This is of particular interest for the subject cataloguing elements (dcterms:subject, dc:subject) in the bibliographic data. It refers, for example, to the information concerning the process by which a GND subject heading is assigned to a publication (intellectual, machine-based with confidence value XY, etc.). The formal element "Language" (dcterms: language) is also a corresponding use case.

This provenance information is modelled along the lines of PROV Ontology[7], and is published as a separate data copy. Along with RDF/XML and Turtle, this will also be available in the serialisation JSON-LD as of this release. Thanks to this development, it was possible to create a full-copy data inventory release 2019.01 (13 February 2019). Additional information regarding planning, documentation and modelling is available on the DNB WIKI[8] (German language only). The update is carried out in the same rhythm as the respective full copies.

2.3. Prefixes used in the document

| dcterms: http://purl.org/dc/terms/
| gndo: https://d-nb.info/standards/elementset/gnd#
| owl: http://www.w3.org/2002/07/owl#

3. Publication of RDF vocabularies

In addition to the announcement of changes in RDF format, dated preliminary versions of the RDF vocabularies for "DNB Metadata Terms" and "GND Ontology" will also appear after being aligned with the release planning.

The preliminary versions for release 2019.02 can be accessed at:

| https://d-nb.info/standards/elementset/dnb_20190618 (DNB Metadata Terms)
| https://d-nb.info/standards/elementset/gnd_20190618 (GND Ontology)

3.1. Changes:

| Improvement: All RDF vocabularies have been expanded to include the statements "dcterms:license"[9]. Before, the licence was only highlighted with the property "http://creativecommons.org/ns#license".
| Additional smaller corrections based on user feedback

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[7] http://www.w3.org/TR/prov-o/
[8] https://wiki.dnb.de/x/46G5C
[9] https://creativecommons.org/publicdomain/zero/1.0/

4. Changes in GND conversions

| Correction: ISNI URIs adopted from VIAF[10] (via "sameAs" in the Entity Facts profile and with "owl:sameAs" in the GND Ontology profile[11]) will be corrected from the prefix "http://www.isni.org/" to "http://isni.org/isni/".[12]
Examples in the test file:
http://d-nb.info/gnd/10000054-X, http://d-nb.info/gnd/100003141, http://d-nb.info/gnd/10000324-2

| Correction: URIs adopted from VIAF (via "sameAs" in the Entity Facts profile and with "owl:sameAs" in the GND Ontology profile[13]) will be corrected from the prefix "http://id.loc.gov/authorities/" to "http://id.loc.gov/rwo/agents/".
Example in the test file:
http://d-nb.info/gnd/118540238

4.1. GND Ontology profile

| Correction: The production of statements with the property "gndo:playedInstrument" (affects the entity type "Person") was accidentally inactive for some time. It is now once more being actively added.
Example in Turtle:
<http://d-nb.info/gnd/128910666> gndo:playedInstrument <http://d-nb.info/gnd/7694384-7> .

Examples in the test file:
http://d-nb.info/gnd/134689240, http://d-nb.info/gnd/124883869, http://d-nb.info/gnd/134739523, http://d-nb.info/gnd/128910666, http://d-nb.info/gnd/128368497

4.2. Entity Facts profile

New feature: Entity Facts now supports "event" as an additional entity type. These are GND entities of the record type "Tf", i.e. conferences, events, conference series and event series. Please see the overview of JSON-LD[14] for the individual description elements.

Example in JSON-LD:
```
{
 "@context" : "http://hub.culturegraph.org/entityfacts/context/v1/entityfacts.jsonld",
 "@type" : "event",
 "@id" : "http://d-nb.info/gnd/1161350764",
 "preferredName" : "Deutscher Bibliothekartag (107. : 2018 : Berlin)",
 "describedBy" : {
  "valid" : "2019-03-11T14:38:49+0100",
  "license" : "https://creativecommons.org/publicdomain/zero/1.0/",
  "@id" : "https://hub.culturegraph.org/entityfacts/1161350764"
 },
 "variantName" : [ "Bibliothekartag (107. : 2018 : Berlin)", "107. Deutscher Bibliothekartag" ],
```

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[10] https://viaf.org/
[11] Cf. the DNB's WIKI Linked Data Service https://wiki.dnb.de/x/TZa5C
[12] Cf. http://www.isni.org/how-isni-works, section "Linked data"
[13] Cf. the DNB's WIKI Linked Data Service https://wiki.dnb.de/x/TZa5C
[14] https://wiki.dnb.de/x/9ob9Bw

```
"dateOfEvent" : [ "12.06.2018-15.06.2018", "2018" ],
"organizerOrHost" : [ {
  "@id" : "http://d-nb.info/gnd/10014451-2",
  "preferredName" : "Berufsverband Information Bibliothek"
}, {
  "@id" : "http://d-nb.info/gnd/108169226X",
  "preferredName" : "VDB -Verein Deutscher Bibliothekarinnen und Bibliothekare"
} ],
"associatedPlace" : [ {
  "@id" : "http://d-nb.info/gnd/4011882-4",
  "preferredName" : "Deutschland"
} ],
"placeOfEvent" : [ {
  "@id" : "http://d-nb.info/gnd/4005728-8",
  "preferredName" : "Berlin"
} ],
"isA" : [ {
  "@id" : "http://d-nb.info/gnd/4130470-6",
  "preferredName" : "Kongress"
} ],
"topic" : [ {
  "@id" : "http://d-nb.info/gnd/4145267-7",
  "preferredName" : "Bibliothekarverband"
} ],
"isPartOf" : [ {
  "@id" : "http://d-nb.info/gnd/1024863-8",
  "preferredName" : "Deutscher Bibliothekartag"
} ],
"biographicalOrHistoricalInformation" : "Der 107. Deutsche Bibliothekartag fand unter dem Moto
\"offen & vernetzt\" im Tagungshotel Estrel statt",
"homepage" : [ "https://bibliothekartag2018.de/" ],
"sameAs" : [ {
  "@id" : "http://d-nb.info/gnd/1161350764/about",
  "collection" : {
    "abbr" : "DNB",
    "name" : "Gemeinsame Normdatei (GND) im Katalog der Deutschen Nationalbibliothek",
    "publisher" : "Deutsche Nationalbibliothek",
    "icon" :
"http://www.dnb.de/SiteGlobals/StyleBundles/Bilder/favicon.png?__blob=normal&v=1"
  }
}, {
  "@id" : "http://viaf.org/viaf/4353152988207812790008",
  "collection" : {
    "abbr" : "VIAF",
    "name" : "Virtual International Authority File (VIAF)",
    "publisher" : "OCLC",
    "icon" : "http://viaf.org/viaf/images/viaf.ico"
  }
} ]
}
```

Examples in the test file:
http://hub.culturegraph.org/entityfacts/1161350764,
http://hub.culturegraph.org/entityfacts/1010859-2,
http://hub.culturegraph.org/entityfacts/4032376-6
http://hub.culturegraph.org/entityfacts/1029455600
http://hub.culturegraph.org/entityfacts/5105778-5
http://hub.culturegraph.org/entityfacts/16211785-1

5. Changes in the conversion of bibliographic data from the German National Library and the German Union Catalogue of Serials

| Change: The vocabulary used for RDF values for statements with the property "dcterms:accrualPeriodicity" is being changed. ZDB resources are particularly affected. The previously used vocabulary for RDF values, "http://marc21rdf.info/terms/continuingfre", will be replaced with "http://id.loc.gov/vocabulary/frequencies", as this is deemed to be more persistent and stable in the long term.

Examples in Turtle:
Previously:
<http://ld.zdb-services.de/resource/2018478-5> dcterms:accrualPeriodicity <http://marc21rdf.info/terms/continuingfre%23a> .

New:
<http://ld.zdb-services.de/resource/2018478-5> dcterms:accrualPeriodicity <http://id.loc.gov/vocabulary/frequencies/ann> .

Examples in the test file:
http://ld.zdb-services.de/resource/2018506-6,
http://ld.zdb-services.de/resource/2018545-5
http://ld.zdb-services.de/resource/2019636-2
http://ld.zdb-services.de/resource/2018824-9

6. Looking ahead: HTTPS protocol for URIs and permalinks

The entity URIs of the resources of the DNB, GND, ZDB and the ISIL and library codes directory are scheduled to be changed from mid-October 2019 onwards. The HTTP protocol will be replaced by HTTPS. This means that the URIs in the subject positions of the RDF triple will change.

Examples:
http://d-nb.info/gnd/134689240 -> https://d-nb.info/gnd/134689240

http://d-nb.info/454884451 -> https://d-nb.info/454884451

http://ld.zdb-services.de/resource/2018506-6 -> https://ld.zdb-services.de/resource/2018506-6

http://ld.zdb-services.de/resource/organisations/DE-26-010 -> https://ld.zdb-services.de/resource/organisations/DE-26-010

We have decided to take this step in order to deliver the data via secure connections in every instance, and therefore be able to guarantee the authenticity of the data at all times. The HTTP URIs will be permanently moved to the new HTTPS URIs (HTTP status code "301 Moved Permanently").

7. Examples and further information

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/:

| "GNDTestRelease2019_02 …" for the authority data from the GND
| "ZDBTitelTestRelease2019_02 …" for the ZDB bibliographic data
| "EntityFacts_TestRelease2019_02.jsonld" for Entity Facts

All the information regarding the German National Library's Linked Data Service can be found on our website[15].

If you have any questions, we will be happy to assist you.

Heike Eichenauer (Digital Services) and Jana Hentschke (Information Infrastructure)

Telephone: +49 69 1525-1074
Fax: +49 69 1525-1636
e-mail:h.eichenauer@dnb.de
https://www.dnb.de

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[15] https://www.dnb.de/EN/lds