

Linked Open Data at The European Library

Introduction

The European Library aims to promote the wider use and exposure of the collections it aggregates from its member libraries. With this purpose in mind, one of the API services provided by The European Library is to make available Linked Open Data.

About the dataset

[The European Library Open Dataset](#) constitutes the subset of The European Library's aggregated data that is made openly available by its partner libraries.

The data is made available under the licensing terms of Creative Commons [CC0 1.0 Universal](#), which allows the unrestricted use of the data for any purpose by anyone, including commercial use.

A total of 18 libraries provide open data through The European Library. In total, these libraries provide 61 datasets, which comprise more than 51 million bibliographic resources.

The dataset is published in RDF, and linked to external datasets nowadays available as Linked Open Data. The major external dataset linked to are the following:

- [VIAF Virtual Union Authority File](#)
- [Geonames](#)
- [Library of Congress Subject Headings](#)
- [Library of Congress Children's Subject Headings](#)
- [Library of Congress Classification](#)
- [data.bnf.fr](#)
- [Gemeinsame Normdatei](#)
- [Dewey Decimal Classification](#)
- [ISO639-2 Languages](#)
- [MARC Countries](#)

Access to the Dataset

Two mechanisms are available for interacting or obtaining the dataset: it is available as bulk file downloadable files and according to the specifications of the [W3C Linked Data Platform 1.0](#).

Bulk files for all open data collections can be downloaded at the [datasets page](#). The downloadable files are provided in three formats/encodings:

- RDF in text/turtle
- RDF in application/rdf+xml
- Dublin Core Element Set in text/xml

The portal and data.theeuropeanlibrary.org both support LOD Content Negotiation according to [W3C Linked Data Platform 1.0](#).

Direct access to the data of individual bibliographic resources can be obtained by accessing the bibliographic resources URIs found in the dataset exports. The access responses to URIs is done according to **LOD Content Negotiation**, as follows:

- Programmatic access to the URIs, or through data browsers, should specify the RDF representation desired by specifying an HTTP header “*Accept*”. The following RDF representations (mime types) are available:
 - text/turtle
 - application/rdf+xml
 - application/rdf+json
 - text/n3
 - text/rdf+n3
 - application/x-binary-rdf
- Content negotiation is supported in data.theeuropeanlibrary.org. Any request to the URIs made with a web browser will be redirected to the corresponding HTML page at the portal. The web browser requests for the URIs are sent with the HTTP header *Accept:text/html* or *Accept:application/xhtml+xml*, therefore they are redirected to the corresponding HTML page at the portal.
- Content negotiation is also available in the portal. An RDF record may be requested for the pages that present individual bibliographic resources. Any request to these pages with the HTTP header *Accept:text/turtle*, or other RDF specific mime types, will be redirected to the corresponding RDF record at data.theeuropeanlibrary.org.

Data model and vocabularies

The dataset is published under a data model that makes use of the RDA Element Vocabularies as a basis. Additional vocabularies are used for data elements whose semantics could not be expressed using the RDA Element Vocabularies. The data is represented using classes and properties defined in the following vocabularies:

- RDA Classes - <http://rdaregistry.info/Elements/c/>
- RDA Agent properties - <http://rdaregistry.info/Elements/a/>
- RDA Manifestation properties - <http://rdaregistry.info/Elements/m/>
- RDA Unconstrained properties - <http://rdaregistry.info/Elements/u/>
- RDA Work properties - <http://rdaregistry.info/Elements/w/>
- RDA Content Type vocabulary - <http://rdvocab.info/termList/RDAContentType>
- RDA Mode of Issuance vocabulary - <http://rdvocab.info/termList/ModelIssue>
- RDA Illustrative Content vocabulary - <http://rdvocab.info/termList/IllusContent>
- FRBRer model - <http://iflastandards.info/ns/fr/frbr/frbrer/>
- Europeana Data Model - <http://www.europeana.eu/schemas/edm/>
- OWL 2 Web Ontology Language - <http://www.w3.org/2002/07/owl#>
- Dublin Core Terms - <http://purl.org/dc/terms/>
- Metadata Object Description Schema - <http://www.loc.gov/mods/rdf/v1#>
- WGS84 Geo Positioning - http://www.w3.org/2003/01/geo/wgs84_pos#
- OAI ORE Terms - <http://www.openarchives.org/ore/terms/>
- XML - <http://www.w3.org/XML/1998/namespace>
- RDF Schema vocabulary - <http://www.w3.org/2000/01/rdf-schema#>

A complete description of the data model can be found in the document: "[Linked Data at The European Library: Data Model and Vocabularies](#)".

License

The linked open data set is available under the Creative Commons [CC0 1.0 Universal](#) license.

Everyone may make unrestricted use of the data for any purpose, including commercial use.

Contact

We welcome feedback, and are particularly keen to hear about applications of the dataset, requests for improvement, since it this will guide our future work.

Questions and requests about linked open data at The European Library may be sent by email to info@theeuropeanlibrary.org, or on twitter [@europeanlibrary](https://twitter.com/europeanlibrary)

References

- [1] Tim Berners-Lee. Linked Data Design Issues. July 2006. W3C-Internal Document. URL: <http://www.w3.org/DesignIssues/LinkedData.html>
- [2] Steve Speicher and John Arwe (eds.). Linked Data Platform 1.0. March 2013. W3C Working Draft. URL: <http://www.w3.org/TR/ldp/>
- [3] The European Library. Linked Data at The European Library: Data Model and Vocabularies. 2014. URL: <http://www.theeuropeanlibrary.org/confluence/download/attachments/56393756/LOD+at+The+European+Library+-+Data+Model.pdf>
- [4] David Beckett; Tim Berners-Lee. Turtle: Terse RDF Triple Language. March 2011. W3C Team Submission. URL: <http://www.w3.org/TeamSubmission/turtle/>
- [5] Creative Commons. CC0 1.0 Universal. URL: <http://creativecommons.org/publicdomain/zero/1.0/>