

Serving links as simple as possible

Despite the importance of hyperlinks, there is no established, easy method to share large amounts of links on the Web. Link servers such as SFX remain closed data silos and techniques such as OAI-PMH and RDF add more complexity than needed for most applications. With BEACON we created a very simple and condense file format for providing and aggregating context related links. The main design goal was ease of creation: you can generate BEACON files with little technical background even by hand or simple tools, such as spreadsheets. By this means it is suitable especially for specialized data providers that want people to find their documents. Despite its simplicity, BEACON is compatible with RDF, so institutions can start with the former and have their links converted to Linked Data later.

What's in a link?

Based on the SeeAlso data model,¹ a link consists of:

- **source:** URI of the source object that is linked from
- **target:** URL of the target document
- **label:** optional short name or information about the target document, for instance its size as number of “hits”
- **description:** optional description of the target document

In BEACON format the values are separated by a vertical bar:

`source|label|description|target`

In many cases the source objects come from a shared controlled vocabulary and the target documents are indexed by the same vocabulary. We collected data providers with documents about people, indexed with numbers from the German name authority file (PND). In this case the source URI is the URI form of a PND. If the PND number is also part of each target URL, the only required part of a single link is the PND number.

Using BEACON

As data provider you can create and provide BEACON files to let other web pages link to your resources. You can also aggregate existing BEACONS or use an existing BEACON aggregator to link to related resources from you pages. To further facilitate implementation there are programming libraries such as Data::Beacon⁵ and an online BEACON validator.⁶

References

¹ Voß, J. (2008). SeeAlso: A Simple Linkserver Protocol.

<http://www.ariadne.ac.uk/issue57/voss>

² <http://toolserver.org/~apper/pd/>

³ <http://aksw.org/Projects/LinkedHistory/>

⁴ <http://beacon.findbuch.de/>

⁵ <https://github.com/nichtich/p5-data-beacon>

⁶ <http://ws.gbv.de/beacon/validator>

Links to documents about people are harvested as BEACON by services such as Wikipedia Personensuche² (below), LinkedHistory project at University of Leipzig,³ and Findbuch aggregator.⁴



source: <http://d-nb.info/gnd/118540475>

precise links

BEACON format in a nutshell

The file format is line-based and uses Unicode UTF-8. Each file consists of a list of unordered, non-repeatable **metadata fields**, and a list of **links**. The metadata fields can describe the data provider and the set of links, and abbreviate the link format with a **PREFIX** and a **TARGET** amongst others.

```
#FORMAT: PND-BEACON
#PREFIX: http://d-nb.info/gnd/
#TARGET: http://daia.hebis.de/resolver/wikimedia/pndresolver/{ID}
#DESCRIPTION: Titel von und über Personen im HeBIS-Katalog
#INSTITUTION: HeBIS-Verbundzentrale
#ISIL: DE-603
#FEED: http://daia.hebis.de/resolver/wikimedia/pndresolver/beacon.txt
#TIMESTAMP: 2011-03-05T09:03:09

118540440
118540475
...
http://d-nb.info/gnd/118540475|...|...|http://daia.hebis.de/resolver/wikimedia/pndresolver/118540475
```

metadata fields

links

type and URI prefixes of sources and targets

information about the data provider and about the dataset

fully expanded link (label & description omitted)

There are several ways to abbreviate links based on common patterns:

```
#PREFIX: http://d-nb.info/gnd/
#TARGETPREFIX: http://gso.gbv.de/DB=2.1/REL?PPN=
#MESSAGE: {hits} Titel im Verbundkatalog des GBV

118540475|31|079339735
```

source = <http://d-nb.info/gnd/118540475>
label = 31 Titel im Verbundkatalog des GBV
description = 079339735
target = <http://gso.gbv.de/DB=2.1/REL?PPN=079339735>

Institutions providing links as BEACON

(with numbers of links as of 2011-03-07)

* indicates an external BEACON file, not provided by the institution itself

libraries, library networks, and archives

Hessen Library Network, HeBIS (1.414.832), Common Library Network, GBV (931.146), Bavarian State Library, BSB (89.266), Vorarlberger Literaturarchiv Franz Michael Felder (2.141), Akten der Reichskanzlei Weimarer Republik (4.024), ZBW press archives 20th century (3.800) documenta archive* (1.072), Landeskirchliche Zentralbibliothek (28)

bibliographies

Books Printed in the German Speaking Countries from 1601 to 1700: VD17 (64.006), Gesamtkatalog deutschsprachiger Leichenpredigten (20.185), Rektoratsreden im 19. und 20. Jahrhundert (2.955)

general biographies

Articles in German Wikipedia (144.261), ADB/DNB register (74.182), ADB at Wikisource (27.020), Allgemeine Deutsche Biographie (23.053), Neue Deutsche Biographie (16.615), Biographisch-Bibliographisches Kirchenlexikon* (12.578), Notendatenbank.net (1.468), Lebendiges virtuelles Museum Online* (869), FemBiographien* (685), Frauen in Bewegung 1918–1938* (67), 50 Klassiker der Soziologie* (50), Klassiker der Geschichtswissenschaft at historicum.net* (46)

regional biographies

Bayerisches Musiker-Lexikon Online (20.657), Historical Dictionary of Switzerland* (6.754), Rheinland-Pfälzische Personendatenbank (2.036), Hessian Biography (1.689), Catalogus Professorum Rostochiensium (1.656), Professorenkatalog der Universität Leipzig (1.365), Ostdeutsche Biographie der Kulturstiftung der dt. Vertriebenen* (1.288), portal “Westfälische Geschichte“ (1.767), Sächsische Biografie (949), Austria-Forum* (898), Rostocker Matrikelportal 1419-1945 (402), portal Rheinische Geschichte* (385), dictionary of Georgian Biography* (156), Vorarlberg Chronik* (82), bio-en bibliografisch lexicon van de neerlandistiek* (69), Repertorium Academicum Germanicum (49)

full-text, images, and other media

Wikimedia Commons (16.820), Wikisource author & topic pages (3.318), Deutsche Akademie der Bau-, Bild- und Mahlerey-Künste (2.763), Liberley.it* (2.373), Projekt Gutenberg-DE* (1.109), Zeno.org (1.000), Werner Icking Music Archive* (934), lib.ru Klassika* (716), Bibliotheca Augustana* (643), Collected Portraits at the SUB Cologne* (598), Sophie Project* (184), Images in Codex Manesse* (134), Wortblume German poetry* (42)

Add your BEACONS at
<http://de.wikipedia.org/wiki/Wikipedia:PND/BEACON>