

Modelling «Base Bibliotek» as Linked Data

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Base Bibliotek



Søk i Nasjonalbiblioteket

[Home](#)[Om Nasjonalbibliotek](#)[Fag](#)[Opplevelse](#)[Kontakt](#)[English](#)

LIBRARY SERVICES FROM THE NATIONAL LIBRARY OF NORWAY

Directory of Norwegian Libraries and their ILL Associates Abroad (BIBLIOTEK)

[\[On BIBLIOTEK\]](#)[\[How to use the search form\]](#)[\[ILL guidelines\]](#)
[\[Directories of Nordic libraries\]](#)[\[Order Archive\]](#)[\[Other databases\]](#)
[Norwegian version]

You may search for words containing diacritical marks and accents by using the basic letter.
E.g.: Use **a** for searches on **a, á, â, ã, ä, å**, and **â**. use **c** for **ç**, **n** for **ñ** and **ñ**, and **ss** for German **ß**.
You may also click on the letters **ð, þ, æ, ø** and **å** to have them pasted into the search fields.
Masking and **Boolean** operators may be used. Use **?** and **#** for left-, middle and right **truncation**.

Word search:

Name of library:

Place name:

Countries:

Denmark
Finland
Faroe Islands

Library type:

Libraries in Archives
Colleges
County libraries

☒ **AND** / ☐ **OR** between the fields

Base Bibliotek

Name:	Bibliotek
Title:	Directory of Norwegian libraries and their ILL associates abroad ("Bibliotek")
Type:	Directory
Subjects:	All Norwegian public, research and special libraries, university, polytechnic and folk high school libraries, some libraries of elementary and secondary schools. Also libraries that participate in the Nordic union catalogue of serials (NOSP) and other foreign libraries lending in Norway or using the National Library services
Extension:	For Norwegian libraries: Name of institution (including former name), postal address, street address, telephone number, fax number, e-mail address, web-address (URL), library code (including former code), opening hours, subject fields, special collections, special bibliographies and documentation services. Information on libraries outside Norway is less extensive
Special search facilities:	Library code, name of institution (also foreign name form), address, telephone number, e-mail address, web site, subject field (in Norwegian only), library system, subject field, county and municipality name
Updating:	Daily
No of records Jan 1st:	4.955
Printed products:	Basis of "Norsk samkatalog : adresseliste for samarbeidende bibliotek ..." ["Norwegian union catalogue : a directory to participating libraries ..."] and "NOSP 19XX : adresseliste til nordiske bibliotek = Directory to Nordic libraries"
CD-ROM:	Library addresses for ordering are included in "Nordisk samkatalog for periodika (CDNOSP) = Nordic union catalogue of serials" (last edition: 2000, no. 1) and "Norsk samkatalog for bøker 1983- (CDSAM) = Norwegian union catalogue of books 1983-" (last edition: 2000, nr 2)
Database system:	TRIP
Availability:	Open to the general public
Web address:	http://www.nb.no/baser/bibliotek/english.html

Base Bibliotek

Nordic ILL Facts

BIBLIOTEK: R=426

[Corrections and Additions](#)

[New library entry](#)

[Avansert søk](#)

[ILL guidelines](#)

[Order Archive](#)

[Norsk søk](#)

[Other databases](#)

[New Search](#)

NOSP library code: **No UBIT/TEK**

BIBSYS Library ID: **a**

OCLC library code: **N5T**

ISIL-number for Norway: **NO-1160101**

Lending Unit code: **tek**

Closed for ILL until:

Type of library: **University Library**

Owner code: **TEK**

Subject sphere: **Technology**

Name of Library:

Universitetsbiblioteket i Trondheim

Teknisk hovedbibliotek

- Name of Interlending Unit:

Fjernlånsavdelingen

- Name in English:

NTNU Library. Main Library for Technology

[\[Bilde\]](#)

P.O.Box address, and address for mail to be picked up in Post office:

NTNU
NO-7491 TRONDHEIM

Street address for on-the-door delivery

Høgskoleringen 1, Gløshaugen
NO-7034 TRONDHEIM - Norway

Phone Numbers: - main number:

0047.73 59 51 00

- for information / reference:

0047.73 59 51 00

- for Interlending Unit:

0047.73 59 51 00

Telefax number:

0047.73 59 51 55 (prioritert)

E-mail address - general:

teknb@ub.ntnu.no

- for ILL and Document Delivery:

fjernlan@ub.ntnu.no

Links - to the Library's:

[Homepage and presentation picture](#)

- catalogue(s):

[Please check the document's availability here before a loan is requested](#)

- user account:

[Status of loans and self-served renewals and reservations](#)

Presentation of the library:

the Library houses the largest collection of technical literature in Norway, as well as comprehensive collections within other subject areas.

- Special Collections, archives etc.:

Patents and standards

- Library's catalogue system:

BIBSYS

ILL / Document Delivery Policy:

Interlibrary loans for home lending to libraries/institutions in the whole world.

Photocopy delivery directly to end-user in the whole world. Article copies

Base Bibliotek

```
<record rid="426" tstamp="2009-05-05 08:24:19">
  <bibnr>1160101</bibnr>
  <bibkode>UBIT/TEK</bibkode>
  <bibltype>UNB</bibltype>
  <aut encrypted="true">7fadb2cef091a681</aut>
  <gabx>10.401926051</gabx>
  <gaby>63.419495379</gaby>
  <katsyst>BIBSYS</katsyst>
  <startaar>1912</startaar>
  <kommnr>1601</kommnr>
  <url_bilde>http://www.ntnu.no/infoavdelingen/pressesenter/bildebaze/NTNUbygninger/
    Hovedbygningen_fra_oest_a.jpg</url_bilde>
  <inst>Universitetsbiblioteket i Trondheim
    Teknisk hovedbibliotek</inst>
  <inst_eng>NTNU Library.Main Library for Technology</inst_eng>
  ...
```

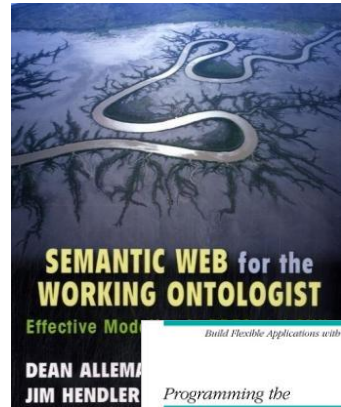
(Selection of elements from XML-document)

Base Bibliotek

<padr>NTNU</padr>
<ppostnr>7491</ppostnr>
<ppoststed>TRONDHEIM</ppoststed>
<vadr>Høgskoleringen 1, Gløshaugen</vadr>
<vpostnr>7034</vpostnr>
<vpoststed>TRONDHEIM</vpoststed>
<landkode>no</landkode>
<tlf>73 59 51 00</tlf>
<tlf_ref>73 59 51 00</tlf_ref>
<tlfax>73 59 51 55 (prioritert)</tlfax>
<epost_adr>tekhb@ub.ntnu.no</epost_adr>
<epost_best>fjernlan@ub.ntnu.no</epost_best>
<epost_nill>nill@bibsys.no</epost_nill>
<epost_nillkvitt>nill@bibsys.no</epost_nillkvitt>
<url_hjem><http://www.ub.ntnu.no/fakbib/gloshaug/></url_hjem>
<url_kat><http://ask.bibsys.no/ask/action/stdsearch></url_kat>
...
</record>

(Selection of elements from XML-document)

Base Bibliotek -> Linked data



?

Tim Berners-Lee
Date: 2006-07-27, last change: \$Date: 2009/06/18 18:24:33 \$
Status: personal view only. Editing status: imperfect but published.
[Up to Design Issues](#)

Linked Data

The Semantic Web isn't just about putting data on the web. It is about making links, so that when you have some of it, you can find other, related, data.

Like the web of hypertext, the web of data is constructed with documents on the web. However, relationships anchors in hypertext documents written in HTML, for data they links between object or concept. But for HTML or RDF, the same expectations apply to make the web go.

1. Use URIs as names for things
2. Use HTTP URIs so that people can look up those names.
3. When someone looks up a URI, provide useful information, using the standards (RDF)
4. Include links to other URIs, so that they can discover more things.

Simple. In fact, though, a surprising amount of data isn't linked in 2006, because of problems with these problems, details of implementation, and factors affecting choices about how you put

W3C Recommendation

W3C

RDF Primer

W3C Recommendation 10 February 2004

This version: <http://www.w3.org/TR/2004/REC-rdf-primer-20040210/>

Latest version: <http://www.w3.org/TR/rdf-primer/>

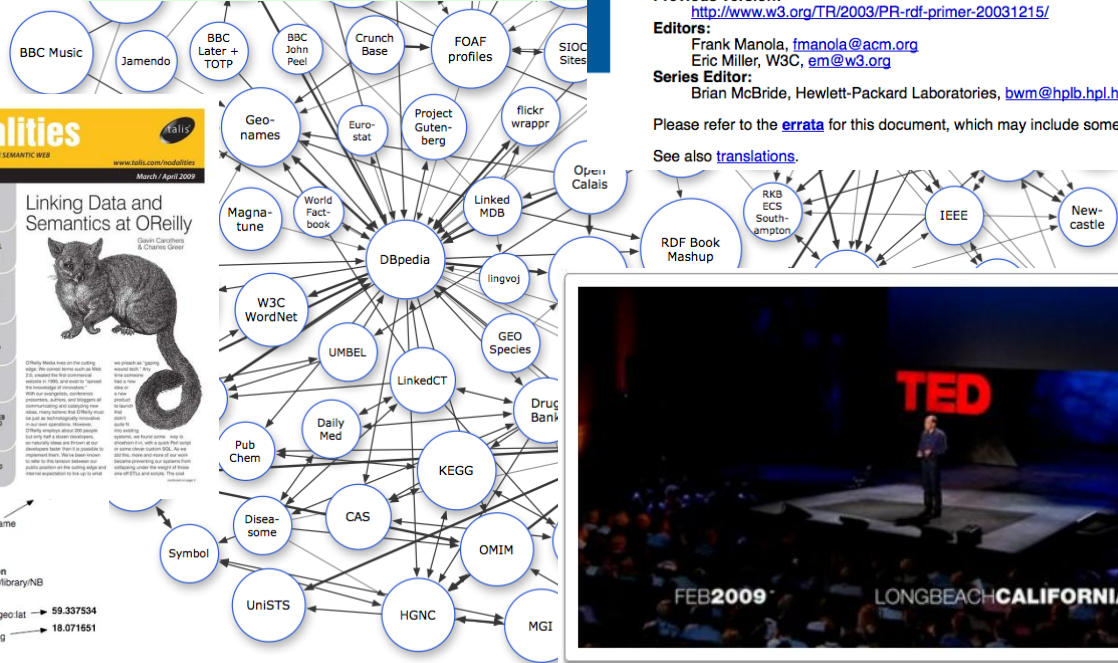
Previous version: <http://www.w3.org/TR/2003/PR-rdf-primer-20031215/>

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Please refer to the [errata](#) for this document, which may include some normative corrections.

See also [translations](#).



William Gibson

<http://libris.kb.se/resource/bib-5059476>

O'REILLY*

dc:creator

dc:title

bibo:Book

<http://libris.kb.se/resource/bib-5059476>

dc:subject

libris:held.by

foaf:Organization

<http://libris.kb.se/resource/libraryNB>

geo:lat

geo:long

59.337534

18.071651

Modelling

1. **Data analysis and preparation**
 - traditional usage, functional requirements, datatypes etc.
 - identifying potential URIs
 - identified existing vocabularies
 - (identified potential external links/URIs)
2. **RDFization**
3. **Ontology development**
4. **XSLT stylesheet/transformation**
5. **Triple store**
6. **SPARQL testing**
7. **Remodeling**

Analysis and preparation

Selection of data for experimental dataset

identifiers, 2 x names, 2 x addresses, geodata, e-mails, homepage, type of ils, type of library, z39.50-targets, (n)ill specifications etc.

Geo-data in UTM format transformed to lat/long

<gabx>270592</gabx>	→	<geo:lat>10.401926051</geo:lat>
<gaby>7040568</gaby>		<geo:long>63.419495379</geo:long>

URIs

**URIs assigned to «things» in the dataset;
libraries, library types, integrated
library systems, postal codes, country
codes**

- **HTTP URIs**
- **Hierarchical structure**
- **Derived from existing non-URI identifiers**
- **Simple naming pattern**

Based on:

Linked Data Patterns

**A pattern catalogue
for modelling,
publishing, and
consuming Linked
Data**

Leigh Dodds Ian Davis

<http://patterns.dataincubator.org/book/>

URIs

Example:

<http://bb.biblab.no/lib/1160101> a foaf:Organization ;
#Derived from **<bibnr>1160101</bibnr>**

bb:ils <http://bb.biblab.no/ils/BIBSYS> ;

**v:adr [a v:home ;
v:Street "Høgskoleringen 1, Gløshaugen" ;
v:postal-code <http://bb.biblab.no/postal-code/7034>] .**

Challenge:

Algorithmic derivation → «Garbage in, garbage out»

MM2
Mickromarc 2
MicroMarc
Micromarc
Micromarc 2
MikroMarc
Mikromarc
Mikromarc 2

Vocabularies

@prefix foaf: <<http://xmlns.com/foaf/0.1/#>>

@prefix v: <<http://www.w3.org/2006/vcard/ns#>>

@prefix geo: <http://www.w3.org/2003/01/geo/wgs84_pos#>

@prefix bb: <<http://basebibliotek.no/bb/1.0/#>>

@prefix skos: <<http://www.w3.org/2004/02/skos/core#>>

RDFization

```
v:adr [a v:home ;  
      v:Street "Høgskoleringen I, Gløshaugen" ;  
      v:postal-code <http://bb.biblab.no/postal-code/7034> ] .
```

```
<http://bb.biblab.no/postal-code/7034> v:postal-code "7034" ;  
V:Locality "Trondheim" .
```

Normalization of RDF? 3NF?

SPARQL

Norwegian names and visitation addresses to libraries in Oslo using the integrated library system «Bibliofil»

Virtuoso SPARQL query form:

Query text

```
prefix foaf: <http://xmlns.com/foaf/0.1/#>
prefix bb: <http://basebibliotek.no/bb/1.0/#>
prefix v: <http://www.w3.org/2006/vcard/ns#>
```

```
SELECT ?name ?street ?pcode ?place WHERE
{?bibliotek a foaf:Organization ;
foaf:name ?name ;
v:adr ?address ;
bb:ils <http://bb.biblab.no/ils/Bibliofil> .
FILTER ( lang(?name) = "no" )
?address a v:home ;
```

Display Results As: ☒ Rigorous check of the query

```
prefix foaf: <http://xmlns.com/foaf/0.1/#>
prefix bb: <http://basebibliotek.no/bb/1.0/#>
prefix v: <http://www.w3.org/2006/vcard/ns#>
```

SELECT ?name ?street ?pcode ?place WHERE
{?bibliotek a foaf:Organization ;
foaf:name ?name ;
v:adr ?address ;
bb:ils <http://bb.biblab.no/ils/Bibliofil> .
FILTER (lang(?name) = "no")
?address a v:home ;
v:Street ?street ;
v:postal-code ?code .
?code v:postal-code ?pcode ;
v:Locality ?place .
FILTER regex(?place, "oslo", "i")}
ORDER BY ?name

SPARQL

name	street	pcode	place
Deichmanske bibliotek Hovedbiblioteket	Arne Garborgs plass 4	0179	OSLO
Deichmanske bibliotek Det flerspråklige bibliotek	Arne Garborgs plass 4	0179	OSLO
Deichmanske bibliotek Bjerke filial	Trondheimsveien 275	0589	OSLO
Deichmanske bibliotek Gamle Oslo filial	Hagegata 32	0653	OSLO
Deichmanske bibliotek Oppsal filial	Vetlandsveien 99-101	0685	OSLO
Deichmanske bibliotek Romsås avdeling	Romsås Senter 1	0970	OSLO
Deichmanske bibliotek Røa filial	Austliveien 4	0751	OSLO
Deichmanske bibliotek Stovner filial	Stovner senter 24B	0985	OSLO
Deichmanske bibliotek Torshov/Sandaker filial	Sandakerveien 59	0477	OSLO
Deichmanske bibliotek Avdeling Rikshospitalet Pasientbiblioteket	Sognsvannsvn 20	0372	OSLO
Deichmanske bibliotek Barne- og ungdomsavdelingen	Arne Garborgs plass 4	0179	OSLO
Deichmanske bibliotek Majorstuen filial	Harald Hårfagres gate 2	0363	OSLO
Deichmanske bibliotek Bøler filial	Bølerlia 3C	0691	OSLO
Deichmanske bibliotek Furuset filial	Trygve Lies plass 1	1051	OSLO
Deichmanske bibliotek Grünerløkka filial	Schous plass 10	0552	OSLO
Deichmanske bibliotek Smestad barnefilial	Konventveien 27	0377	OSLO
Deichmanske bibliotek Holmlia filial	Holmlia Sentervei 16	1255	OSLO
Deichmanske bibliotek Lambertseter filial	Cecilie Thoresens vei 12	1153	OSLO
Deichmanske bibliotek Nordtvet filial	Nordtvetveien 28	0952	OSLO
Deichmanske bibliotek Bjørnholt bibliotek	Slimeveien 15-17	1275	OSLO
Norsk lyd- og blindeskriftbibliotek Studenttjenesten	Observatoriegata 1B	0254	OSLO
Norsk lyd- og blindeskriftbibliotek NLB Oslo - Hovedutlånet	Observatoriegata 1 B	0254	OSLO
Norsk rikskringkasting Biblioteket	Bjørnstjerne Bjørnsons plass 1	0340	OSLO

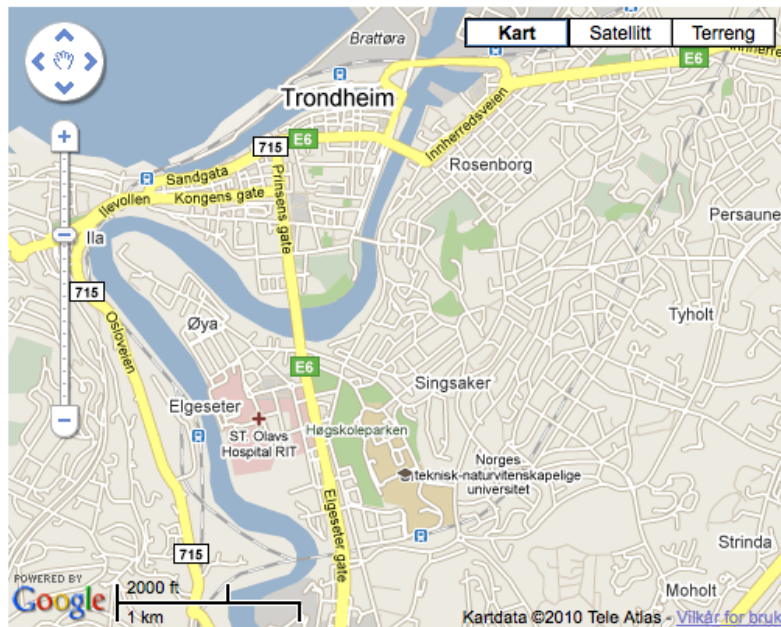
Where are the killer apps?

Søk i Base Bibliotek vha Linked Data

Kartsøk

[Navn / biblioteknummer](#)

Klikk på kart for å finne de fem nærmeste bibliotek.



1. [Universitetsbiblioteket i Trondheim Teknisk hovedbibliotek](#)
2. [Norsk Rikshåndskriftarkiv & Research Biblioteket - Tyholtarkivet](#)
3. [Trondheim folkebibliotek Hovedbiblioteket](#)
4. [Universitetsbiblioteket i Trondheim Biblioteket for marin teknikk](#)
5. [Sør-Trøndelag fylkesbibliotek](#)

By David Massey: <http://bibin.hio.no/~davm/bb/bb2.html>

External links and «Open data» vs. «Linked data»

To do:

```
<http://bb.biblab.no/libtype/UNB> a bb:Libtype ;  
  skos:prefLabel "UNB" ;  
  skos:altLabel "Universitetsbibliotek" ;  
  owl:sameAs <http://dbpedia.org/page/Category:Academic_libraries> .
```

```
<http://bb.biblab.no/lib/1160101> a foaf:Organization ;  
  foaf:based_near <http://sws.geonames.org/3133880/> ;  
  bb:mother_inst <http://dbpedia.org/page/Norwegian_university_of_science_and_technology> .  
  v:adr [a home ;  
    v:Street "Høgskoleringen 1, Gløshaugen" ;  
    v:postal-code <http://posten.no/postnummer/7034> .
```

The four rules/expectations of behavior



1. Use URIs as names for things

To do! 2. Use HTTP URIs so that people can look up those names

To do! 3. When someone looks up a URI, provide useful information, using the standards (RDF, SPARQL)

To do! 4. Include links to other URIs, so that they can discover more things

Thank you!

kim.talleras@jbi.hio.no