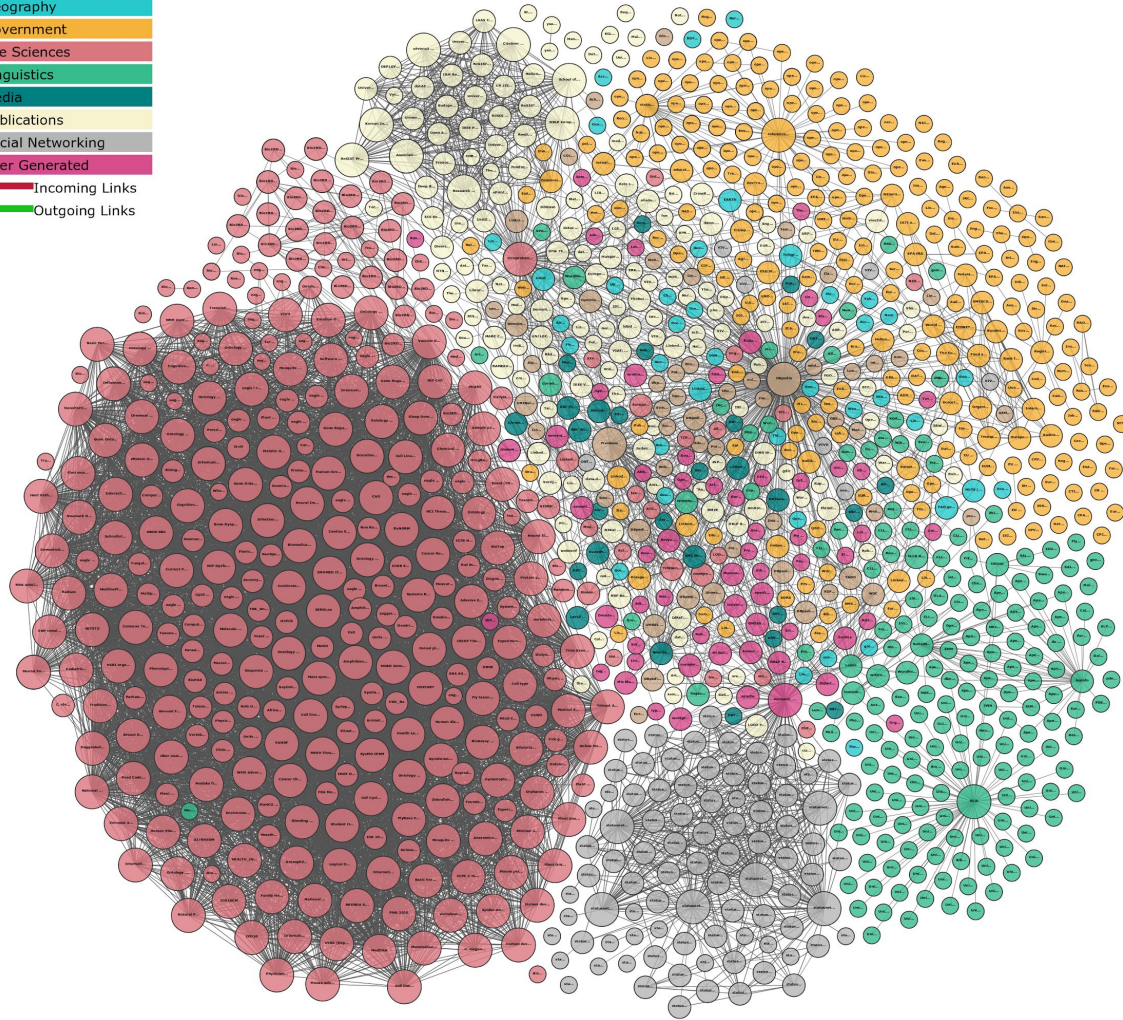
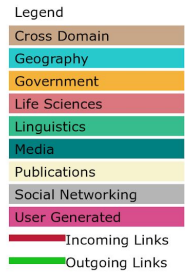


Datan julkaisu Linked Data Finland -alustalla

Jouni Tuominen

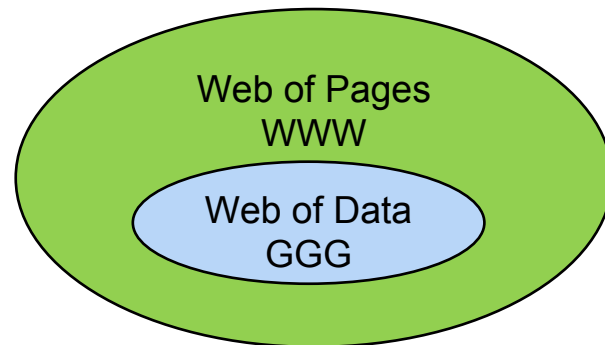
*HELDIG – Helsinki Centre for Digital Humanities, University of Helsinki, <http://heldig.fi>
Semantic Computing Research Group (SeCo), Aalto University, <http://seco.cs.aalto.fi>
jouni.tuominen@helsinki.fi*



Linking Open Data cloud diagram 2017, by Andrejs Abele, John P. McCrae, Paul Buitelaar, Anja Jentzsch and Richard Cyganiak. <http://lod-cloud.net/>

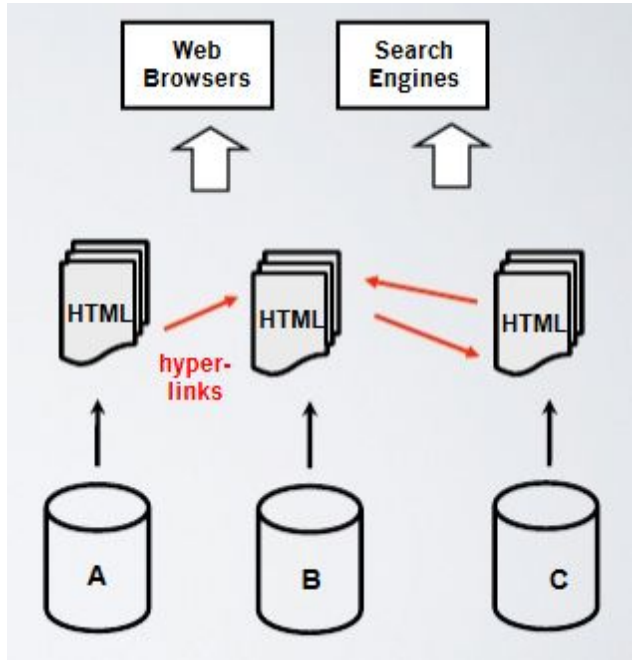
What is the Web of Data?

- Current web is a network that links pages: **Web of Pages**
 - Can be searched/browsed with a traditional web browser
 - Links connect pages
- Data network has emerged inside the web: **Web of Data**
 - Can be searched/browsed with a semantic application
 - Links connect information (e.g., parrot → bird)
- New (semantic) web consists of *both* of the networks
 - Web of Pages (for humans): World Wide Web
 - Web of Data (for machines): Giant Global Graph



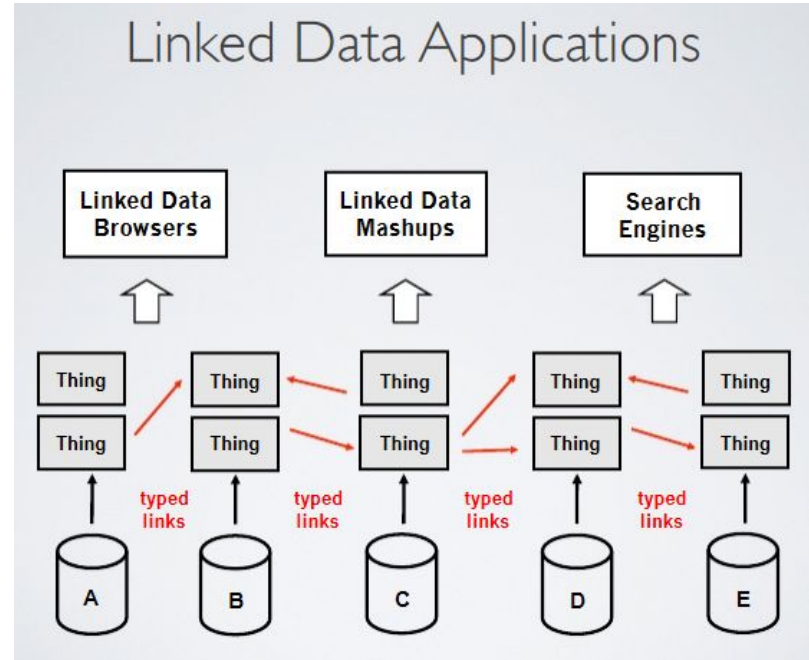
WWW and GGG coexistence

WWW



(Anja Jentzsch, 2012)

GGG

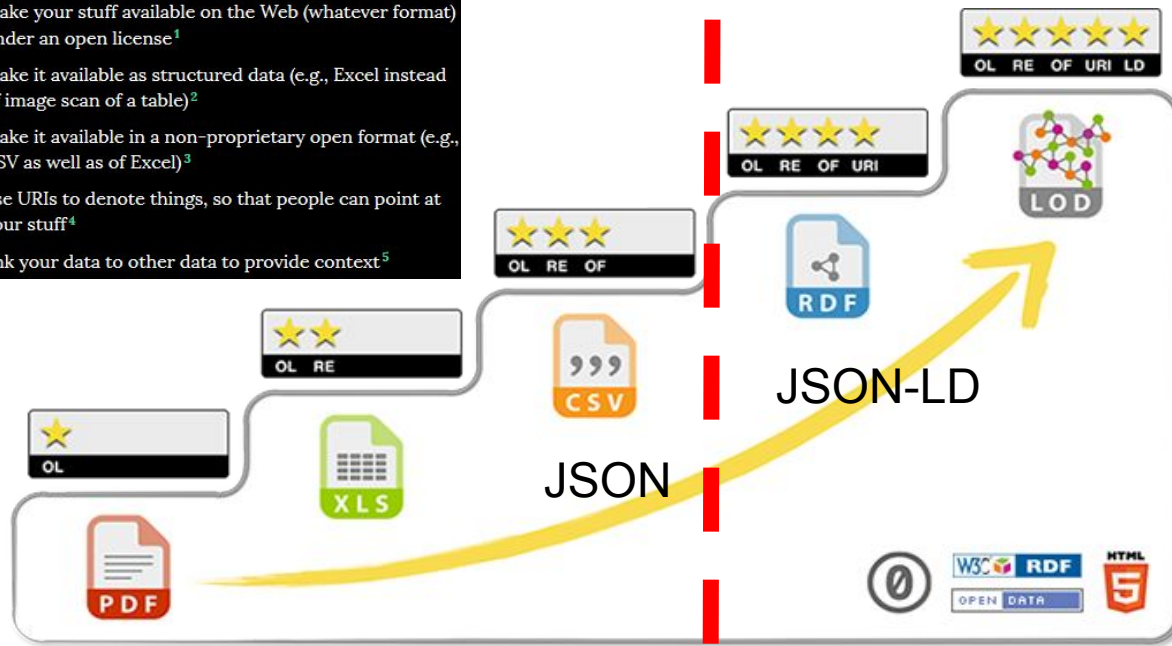


(Anja Jentzsch, 2012)

How to publish Linked Data?

5-star Linked Data model

- ★ make your stuff available on the Web (whatever format) under an open license¹
- ★★ make it available as structured data (e.g., Excel instead of image scan of a table)²
- ★★★ make it available in a non-proprietary open format (e.g., CSV as well as of Excel)³
- ★★★★ use URIs to denote things, so that people can point at your stuff⁴
- ★★★★★ link your data to other data to provide context⁵



“Traditional” Open Data

Linked Open Data

(Tim Berners-Lee)
<http://5stardata.info>

Linked Data Finland Living Lab <http://ldf.fi>



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[Project](#)

[Datasets](#)

[Schemas](#)

[Services](#)

[Policies](#)

[Documentation](#)

[Validation](#)

[Applications](#)

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Linked Data Finland

Living Laboratory Data Service for the Semantic Web

This site is the Living Laboratory of the [Linked Data Finland](#) research initiative, conducted by the [Semantic Computing Research Group](#) at [Aalto University](#) in collaboration with University of Helsinki and a large consortium of Finnish public organizations and companies.

Our goal is to make life easier for both publishers as well as consumers of structured data on the Web. We base our work on the [Linked Data](#) paradigm and stack of standards, which combines an expressive, semantic data model ([RDF](#)) with standardized access mechanisms ([SPARQL](#) and [live HTTP URIs](#)).

5-star Linked Data

The baseline of our work is the [5-star Linked Data model](#), proposed [originally](#) by Tim Berners-Lee.

- ★ Make data available on the Web in whatever format.
- ★★ Make data available as structured data (e.g., Excel instead of an image scan of a table).
- ★★★ Use non-proprietary formats (e.g., CSV instead of Excel format).
- ★★★★ Use URIs to denote things, so that people can point at your data.
- ★★★★★ Link your data to other data to provide context.

7-star Linked Data Service

However, in our opinion, providing 5-star Linked Data is just the beginning. To actually make use of the datasets, consumers need more support in getting to know and access them, as well as a better grasp of their quality and provenance. To this end, we extend the model with two additional stars:

- ★★★★★ Provide your data with a schema and documentation so that people can *understand and re-use* your data easily.
- ★★★★★★ Validate your data and denote its provenance so that people can *trust the quality* of your data.

This added support should come with as little extra work as possible to the data publisher. Our hypothesis is that a lot of this can be done automatically, basing on the Linked Data core. A data publisher needs only to provide

Our "7-star" model and LDF.fi data hotel

Goals: enhance re-usability and data quality

7-star Linked Data Service

However, in our opinion, providing 5-star Linked Data is just the beginning. To actually make use of the datasets, consumers need more support in getting to know and access them, as well as a better grasp of their quality and provenance. To this end, we extend the model with two additional stars:



Provide your data with a schema and documentation so that people can *understand and re-use* your data easily.



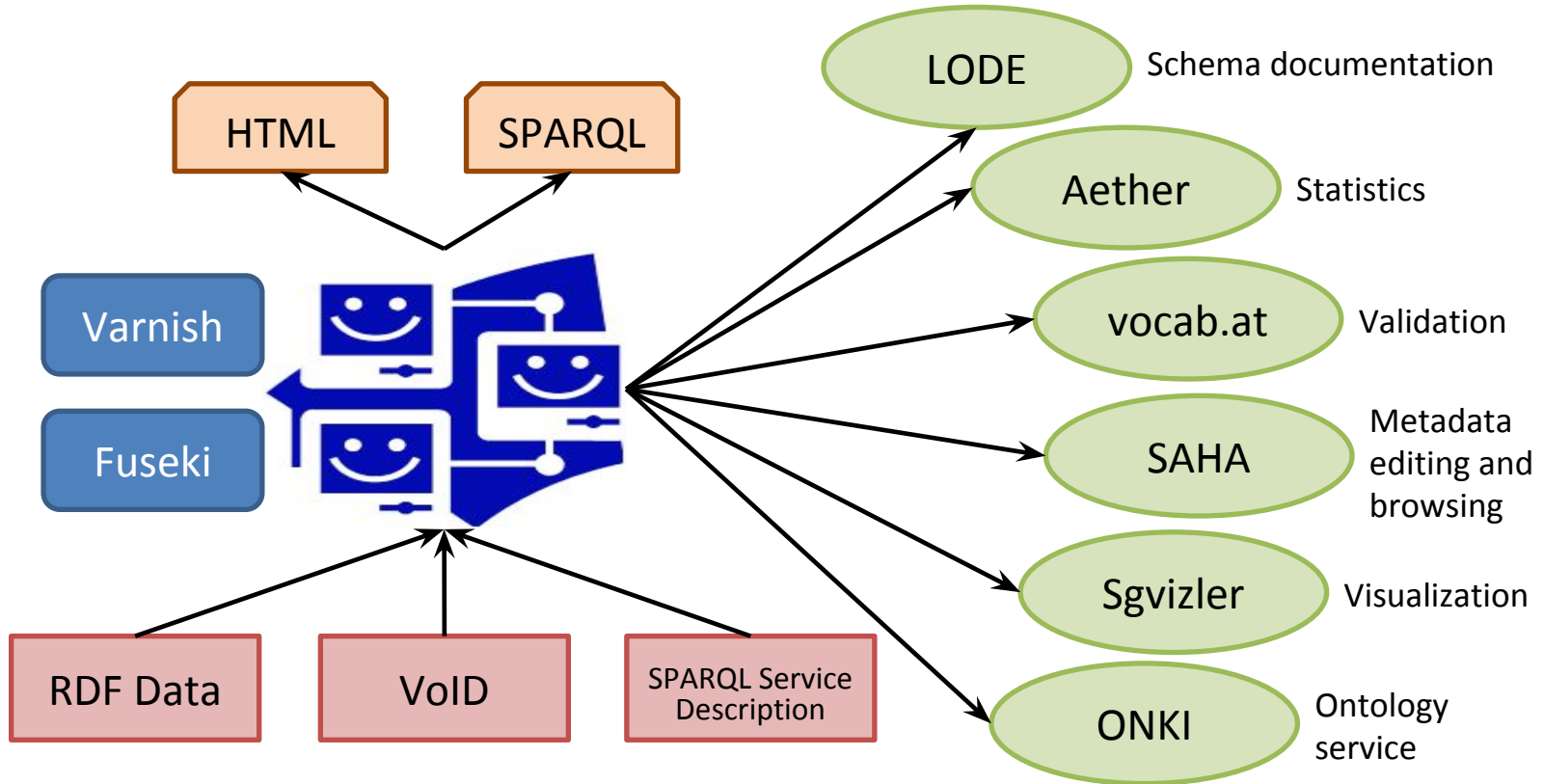
Validate your data and denote its provenance so that people can *trust the quality* of your data.

This added support should come with as little extra work as possible to the data publisher. Our hypothesis is that a lot of this can be done automatically, basing on the Linked Data core. A data publisher needs only to provide their data in the RDF format, and the LDF.fi portal will do the rest automatically. See the [overview paper](#) (in ESWC 2014 Proceedings, Springer-Verlag) for some more details about the underlying ideas.



Burj Al Arab

LDF.fi – generic Linked Data publication platform





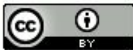
This dataset includes harmonized data of different kinds concerning the Second World War in Finland, separated in different graphs representing events, actors, places, photographs, and other aspects and documentation of the war. To test and demonstrate its usefulness, this data service is in use in the semantic portal [WarSampo](#) explained in more detail in this [project page](#).

Example SPARQL queries for the data:

- [Events, photographs and articles that are situated in Vyborg](#)
- [Casualties of the 1st Division and its subunits in the time interval 13.2.-13.3.1940 by place and date](#)

License

[CC BY 4.0](#)



See possible graph-specific licenses below.

Detailed Dataset Contents

Wartime Events (URI: <http://ldf.fi/warsa/events>)



([Browse data](#) / [View in Sotasampo.fi](#) / [Download](#))

Information on the events of the Winter War and Continuation War were derived from the books Talvisodan pikkujättiläinen, Jatkosodan pikkujättiläinen, and the organization records of the Finnish Defence Force.

SPARQL-kyselyeditori

```
1 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
2 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
3 PREFIX crm: <http://www.cidoc-crm.org/cidoc-crm/>
4 PREFIX articles: <http://ldf.fi/schema/warsa/articles/>
5 PREFIX dc: <http://purl.org/dc/elements/1.1/>
6
7 # Events, photographs and articles that are situated in Vyborg
8 SELECT *
9 WHERE {
10   BIND (<http://ldf.fi/warsa/places/municipalities/m_place_614> as ?viipuri)
11   { ?event crm:P7_took_place_at ?viipuri ;
12       skos:prefLabel ?prefLabel;
13       a ?eventTypeURI;
14       crm:P4_has_time-span ?timespan .
```

Table Raw Response Pivot Table Google Chart

Showing 1 to 50 of 5,571 entries (in 0.248 seconds)

	viipuri	event	prefLabel	eventTypeURI	timespan	picture
1	http://ldf.fi/warsa/places/municipalities/m_place_614	http://ldf.fi/warsa/events/event_173	Puna-armeijan joukot saivat Viipurin valtaustehtävän.	http://ldf.fi/warsa/events/event_types/MilitaryActivity	http://ldf.fi/warsa/events/times/time_1940-02-26-1940-02-26	
2	http://ldf.fi/warsa/places/municipalities/m_place_614	http://ldf.fi/warsa/events/event_173	Puna-armeijan joukot saavuttivat Viipurin suunnassa taka-	http://ldf.fi/warsa/events/event_types/MilitaryActivity	http://ldf.fi/warsa/events/times/time_1940-02-26-1940-02-26	

Linkitetyn datan selaus

SAHA3 | warsa - search

http://ldf.fi/warsa/events/event_536

Tapahtuma: Sotamarsalkka Mannerheim tarkasti Lapualla ulkomaisista vapaaehtoisista

[\[edit\]](#)

http://purl.org/dc/elements/1.1/description	Sotamarsalkka Mannerheim tarkasti Lapualla ulkomaisista vapaaehtoisista muodostetun Osasto Sisun.
http://www.cidoc-crm.org/cidoc-crm/P11_had_participant	Ylipääällikkö
http://www.cidoc-crm.org/cidoc-crm/P4_has_time-span	1940-03-27
http://www.cidoc-crm.org/cidoc-crm/P7_took_place_at	Lapua
http://www.w3.org/1999/02/22-rdf-syntax-ns#type	Tapahtuma
http://www.w3.org/2004/02/skos/core#prefLabel	Sotamarsalkka Mannerheim tarkasti Lapualla ulkomaisista vapaaehtoisista muodostetun Osasto Sisun.
http://www.w3.org/2004/02/skos/core#related	http://www.yso.fi/onto/ysa/Y94257

References (1)

<http://ldf.fi/warsa/events> (<http://www.w3.org/ns/sparql-service-description#Graph>) ← <http://rdfs.org/ns/void#exampleResource>

Skeeman dokumentaatio



Powered by

Other visualisation:
[Ontology source](#)

Table of Content

1. [Classes](#)
2. [Object Properties](#)
3. [Data Properties](#)
4. [Named Individuals](#)
5. [Annotation Properties](#)
6. [Namespace Declarations](#)

Classes

[aeidinkieli](#) [hautausmaa](#) [kansalaisuus](#) [kansallisuus](#) [kunta](#) [menehtymisloukka](#) [siviilisääty](#) [sotilasarvo](#) [sotilasarvo_ryhma](#) [sukupuoli](#)

[aeidinkieli](#)^c

[back to ToC or Class ToC](#)

IRI: <http://ldf.fi/schema/narc-menehtyneet1939-45/Aeidinkieli>

has super-classes

[concept](#)^c

is in range of

[Äidinkieli](#)^{op}

has members

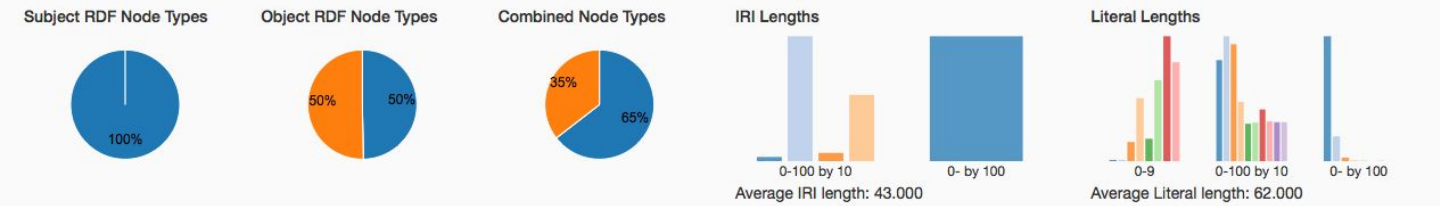
[italia](#)ⁿⁱ, [norja](#)ⁿⁱ, [ruotsi](#)ⁿⁱ, [saame](#)ⁿⁱ, [saksa](#)ⁿⁱ, [suomi](#)ⁿⁱ, [tanska](#)ⁿⁱ, [tuntematon](#)ⁿⁱ, [turkki](#)ⁿⁱ, [venaejæ](#)ⁿⁱ, [viro](#)ⁿⁱ

Tilastotietoja datasta

Aether VOID Statistics Viewer Limit to: [Go to](#)

General Statistics

General Statistics		Distinct Triple Parts		Classes		Literal Components	
Triples:	10,912	Subjects:	1,687	Subject Classes:	6	Datatypes:	1
RDF Nodes:	5,757	Properties:	10	Property Classes:	0	Languages:	0
		Objects:	4,060	Object Classes:	0		
				Total Classes:	6		



Namespace Information

- rdf:* <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
- events2:* <http://ldf.fi/warsa/events/>
- skos:* <http://www.w3.org/2004/02/skos/core#>
- ysa:* <http://www.ysa.fi/onto/ysa/>
- crm:* <http://www.cidoc-crm.org/cidoc-crm/>
- municipalities:* <http://ldf.fi/warsa/places/municipalities/>
- dce:* <http://purl.org/dc/elements/1.1/>
- actors:* <http://ldf.fi/warsa/actors/>
- karelian_places:* http://ldf.fi/warsa/places/karelian_places/

<http://goo.gl/LgQhmQ>

Powered by LDF.fi!

- **Legislation and case law: Semantic Finlex**
- **War history: World War I Linked Open Data, WarSampo**
- **Spatial data: place names from National Land Survey, National Archives**
- **Biographies: Semantic National Biography, Vanhat Norssit**
- **Epistolary data: Reassembling the Republic of Letters**
- **Corpus linguistics: STRATAS project**
- **Cultural heritage: data from BookSampo, CultureSampo, Semantic Kalevala, MuseoSuomi**
- **Bird and weather observations: data from Tiira.fi, Halias Station, Finnish Meteorological Institute**
- **Biological nomenclature: birds, mammals, insects, plants**
- **...and more...**
- **Your dataset?**



Welcome to Linked Data School LinDa

<http://linda.seco.cs.aalto.fi>