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#11032

SPARQLing Geodesy for Cultural Heritage
New Opportunities for Publishing and Analysing Volunteered Linked (Geo-)Data

FIG Technical Session 03.2 – Emerging Technologies for Geospatial Analysis (Tuesday, 22 June 10:30-12:00 STAGES)
The paper uses the Use-Case of the Fellow-Project *Irish Ogham Stones in the Wikimedia Universe*. 

http://ogham.squirrel.link
Standards enable Linked Open Usable Geodata!
Easy data modelling principles: Use edges and nodes in a “simple sentence structure”.

Subject

Predicate

Object
Linked Data Cloud via https://lod-cloud.net
✧ a **free and open** knowledge base → everybody can add and edit

✧ central storage for structured data of **Wikimedia** projects

data in **Wikidata** is:
✧ multilingual
✧ available under a free license (CC 0)
✧ accessible to humans and machines
✧ exportable using standard formats
✧ interlinked to other open data sets on the LOD Cloud
The Semantic Web and Geodata...
The basic geo (WGS84 lat/long) vocabulary.

© Ontotext
Joseph Abhayaratna, Linda van den Brink, Nicholas Car, Rob Atkinson, Timo Homburg, Frans Knibbe, Kris McGlinn, Anna Wagner, Mathias Bonduel, Mads Holten Rasmussen, Florian Thiery (2020).

**OGC Benefits of Representing Spatial Data Using Semantic and Graph Technologies. Open Geospatial Consortium Whitepaper.**

HTML: [http://docs.ogc.org/wp/19-078r1/19-078r1.html](http://docs.ogc.org/wp/19-078r1/19-078r1.html).

**The OGC LOD Standard for LOUG = GeoSPARQL!**
There is a lack of FLOS GIS tools for LOD.

The **SPARQLing Unicorn QGIS Plugin** addresses the problem of the lack of availability of tools for Semantic Web geodata.
The SPARQLing Unicorn QGIS Plugin - a Linked Data Access Point for QGIS
The **SPARQL Unicorn** allows the execution of Linked Data queries in (Geo)SPARQL to selected triplestores and geo-enabled SPARQL endpoints and thus prepares the results of the queries in QGIS for the geocommunity.
The plugin currently offers three functions:

(a) simplified querying of Semantic Web data sources
(b) enrichment of geodata and
(c) transformation of QGIS vector layers to RDF data
Ogham Sites in QGIS using the SPARQLing Unicorn QGIS Plugin.
Use the community-based GeoNames and Pleiades as modern and ancient gazetteers.
Volunteered Geodata? Use Wikidata or Open Street Map!
4th-6th century AD

Ireland
(+Wales, England, Isle of Man)

Use Case: Irish -ᚑᚍᚏᚐᚋ- Stones
I want to look at all Ogham Stones from Ireland… Where do I find them?

**Online & Open:**
3D Ogham Project:
https://ogham.celt.dias.ie

Heritage Management:
http://webgis.archaeology.ie/historicenvironment/

**Online:**
CISP
https://www.ucl.ac.uk/archaeology/cisp/database/

**Offline:**
CIIC by Macalister
div. publications
Ogham Sites on Wikidata (https://w.wiki/3JGq)
Ogham Sites in the costum triplestore (https://digits.mainzed.org/ogham/) with the help of the SPARQLing Unicorn QGIS Plugin.
Geostatistical analysis of the density (e.g. the formula word MUCOI, right).
Creating Research Web-Tools.

https://github.com/ogi-ogham/ogham-lookup
https://github.com/FellowsFreiesWissen/Ogham

http://lookup.ogham.link
http://ref.ogham.link/?node=osullivan_1996:908
### Pros and Cons for modelling and publishing (geo-)data in an own triplestore or Wikidata.

<table>
<thead>
<tr>
<th>own ontology</th>
<th>Wikidata</th>
</tr>
</thead>
<tbody>
<tr>
<td>own flexible data model</td>
<td>embedded into the LOD cloud</td>
</tr>
<tr>
<td>data sovereignty</td>
<td>active community and citizen science</td>
</tr>
<tr>
<td>full access to your own triplestore / publication server</td>
<td>publication of LOD plus using Wikidata APIs and tools</td>
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</tbody>
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<table>
<thead>
<tr>
<th></th>
<th>pros</th>
<th>cons</th>
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</thead>
<tbody>
<tr>
<td>own ontology</td>
<td>development of an ontology</td>
<td>no interaction with less well-versed community members</td>
</tr>
<tr>
<td>Wikidata</td>
<td>not so flexible structure</td>
<td>no data sovereignty, everybody can edit the data</td>
</tr>
<tr>
<td></td>
<td>own specific extensions need to be developed</td>
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</table>
What's up next? Semantic WFS and GeoPubby!
Thx!

Any questions?

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