OGC vs Open/Linked data

Benefits of working in a highly standardised community

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- Currently 11 staff, based in NL and ES
- Founder of GeoNetwork
- Offering services on the OSGeo Stack
- GeoNetwork GeoServer PostGIS QGIS …
INTERFACES BETWEEN COMMUNITIES IS IMPORTANT

And then it helps if the community is highly standardised
EXAMPLE OF PROXY APPROACH
HOWEVER...

Some universal rules all communities should adopt

- Use (resolvable) URI’s to identify things
  - Records in a database (exposed via WFS)
  - Metadata in a catalogue
  - References to codelist items

- Re-use ontologies and codelists where possible
C.3 Encoding of an external object identifier

<table>
<thead>
<tr>
<th>Recommendation 15</th>
<th>URLs of spatial objects should be persistent http URLs and include the namespace and the local identifier part of the INSPIRE identifier, if available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE 1</td>
<td><a href="http://location.data.gov.uk/so/ad/Address/00BH/123456789012">http://location.data.gov.uk/so/ad/Address/00BH/123456789012</a> could be used to encode the external object identifier of an INSPIRE Address spatial object with the namespace “00BH” and the local id “123456789012” (example adapted from [Designing URI Sets for Location, 2011]).</td>
</tr>
<tr>
<td>Recommendation 16</td>
<td>In a GML encoding, the external object identifier should be encoded in a gml:identifier property of the feature with the codeSpace attribute set to <a href="http://inspire.ec.europa.eu/ids">http://inspire.ec.europa.eu/ids</a>.</td>
</tr>
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</table>
# Guidelines for the RDF encoding of spatial data

<table>
<thead>
<tr>
<th>Title</th>
<th>Guidelines for the RDF encoding of spatial data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Draft</td>
</tr>
<tr>
<td>Creator</td>
<td>ARE3NA project &quot;INSPIRE Re3ference Platform Phase 2&quot;</td>
</tr>
<tr>
<td>Date</td>
<td>2017-07-17</td>
</tr>
<tr>
<td>Subject</td>
<td>INSPIRE encoding rules for representing spatial data as RDF</td>
</tr>
<tr>
<td>Publisher</td>
<td>ARE3NA project &quot;INSPIRE Re3ference Platform Phase 2&quot;</td>
</tr>
<tr>
<td>Type</td>
<td>Text</td>
</tr>
<tr>
<td>Description</td>
<td>This document specifies an experimental encoding rule for representing spatial data sets in INSPIRE as RDF. The use of RDF is optional and does not supersede or replace the requirements regarding encoding specified in Clause 9 of the Data Specifications. This optional encoding is intended to support the e-government and open data community in Europe, which is increasingly looking at RDF to represent data.</td>
</tr>
</tbody>
</table>

http://inspire-eu-rdf.github.io/inspire-rdf-guidelines/
2. Primary

Data is as collected at the source, with the highest possible level of granularity, not in aggregate or modified forms.

If an entity chooses to transform data by aggregation or transcoding for use on an Internet site built for end users, it still has an obligation to make the full-resolution information available in bulk for others to build their own sites with and to preserve the data for posterity.
SOME USE CASES
OF BRIDGING THE COMMUNITIES AND THE STANDARDS HELP OUT
SPATIAL METADATA VIA OPEN DATA PORTALS

- Requires a transformation from iso19139 to DCAT
- May need alternative protocols then CSW

Challenges

- If multiple portals are crawled by search engines, you may end up with multiple hits of the same dataset in the search engine
- WMS/WFS protocol links are not common in open data portals
LOCATE WFS/CSW FEATURES VIA SEARCH ENGINES

- Have a webpage created for every WFS/CSW-record
- Use schema.org annotations to have the search engine crawl the content as structured data
- Provide value to end-users who are finding your records on the search engines
QUERY SPATIAL (META) DATA AS RDF (SPARQL)

- Expose WFS as RDF

- All watercourses, crossing a road network, 2500m around my current location, having had maintenance activity last month.
SIMPLE QUERY API ON WFS

Targets the API developer community
RDF DATA AS GIS LAYER

- a sparql query as a base for a WFS feature type definition?
FUTURE IN LINKED DATA?

- OGC and INSPIRE are looking at linked data
- joined effort of OGC and W3C
A POTENTIAL DIRECTION

• In dataset registration process add metadata about the datamodel

• Use the data model metadata to harmonise the data
CREATE RDF FROM TABLE DATA

Mint a URI based on unique column `schema.org/identifier`

Feature type is `schema.org/Product`

Link columns to concepts from common ontologies `schema.org/name`
{
    "@context": {
        "name": "http://schema.org/name",
        "image": {
            "@id": "http://schema.org/image",
            "@type": "@id"
        },
        "homepage": {
            "@id": "http://schema.org/url",
            "@type": "@id"
        }
    },
    "@id": "http://manu.sporny.org",
    "@type": "http://schema.org/Person",
    "name": "Manu Sporny",
    "homepage": "http://manu.sporny.org/",
    "image": "http://manu.sporny.org/images/manu.png"
}
ISO19110 is a TC211 standard to describe the data model of a dataset.

- Indicate the feature type each record represents

- For each column describe a label and a link to a concept in an ontology
CONCLUSIONS

• A lot of work has been done on Inspire & RDF

• Is RDF a good alternative besides XML or is it the only-way-forward?

• The fact that we’re already a highly standardised community helps
WE HOPE TO HEAR YOUR COMMENTS

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