Geospatial vs Open in Flanders (BE)

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<td>Standards:</td>
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<td>DCAT</td>
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INFORMATIE VLAANDEREN

Copyright Miss Globe & Mr Cube: Frans Knibbe, Geodan
Overview

**Geographic data & services**

- ISO / INSPIRE
- SDI-Flanders Best Practices
- GeoNetwork
- Geopunt (Sitecore & MapApps)

**Open data**

- DCAT-AP
- GeoDCAT-AP
- CKAN(MD) / TDT(MD)
- CKAN(portal)
- TDT (data)

**Documents**

- ISAD (Best Practices)
- ?
- ?
- (documenten)

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Informatie Vlaanderen: INSPIRE Conference - September 2016
Study: Scenarios

> Scenario 0: Optimize & automate AS IS
> Scenario 1: Geo via Open procedures
> Scenario 2: Open via Geographic procedures
> Scenario 3: Mixed Scenario
Scenario (0): AS IS +

+
> Small optimizations
> Small investments

-
> Large maintenance cost
> Consistency
Research topics in scenarios 1, 2 & 3

1. **MD standard** for all kinds of data (geo & open)

- MD export in RDFa?
- MD export in XML?

? Opportunities, issues, problems, critical points (semantics)
GeoDCAT-AP v1.0 uni-directional conversion

- GeoDCAT-AP v1.0 is intended to be *uni-directional* (ISO XML ➔ GeoDCAT RDF only).

- Conversion is not *lossless*:
  - Resource locator: partially supported
  - Temporal extent: partially supported
  - Spatial resolution: partially supported as free text
  - Maintenance information: partially supported
  - Data quality (partially: only conformance result)

- GeoDCAT-AP 1.0 does not meet all the requirements of SDI-Flanders and INSPIRE Metadata Implementing Rules.
GeoDCAT-AP RDF to ISO XML: two-way conversion?

A bi-directional conversion between DCAT RDF and ISO XML metadata records is *technically* feasible

... but which additional *use cases* would be addressed?

... moreover a lossless, bi-directional conversion would require extension of GeoDCAT-AP to cover the full information content of the ISO schemas + cardinality constraints (SHACL). Additional best practices are needed for uniformly dealing with resources and URIs.
2. **MD system** for all kinds of data (geo & open)

- Flemish branch or General one
- ISO/INSPIRE profile (& XML storage)
- DCAT-AP profile (& XML storage vs RDFa storage), GeoDCAT-AP profile, ...
GeoNetwork 3.0 – Experiment 1: Creation of DCAT-AP Metadata Template using ISO Schema

> Creation of a Simple Metadata Template for Open Data – based on the existing GeoNetwork ISO schema plugin

- **Storage format**: remains ISO XML
- **Simplified template**: elements not needed for the Open Data portal were removed in the template. Data Quality, Topic Category, CRS, etc.
- **Export/conversion**: possibility to export metadata records as RDF (built-in GeoNetwork 3.0 ISO schema plugin using Andrea Perego’s XSL transformation).
- **CSW API**: can be used to query all metadata records. Can (continue to be) used by the Open Data portal for harvesting records.
- **De-referenceable URIs**: HTTP URIs in RDF metadata can be made dereferenceable via ‘redirect rules’ on HTTP server (Linked Data).

**Result**: GeoNetwork is used as a metadata management environment for both INSPIRE / spatial metadata and open data.

**BUT**: The template is “too complex” for the open data world.
GeoNetwork 3.0 – Experiment 1: Creation of DCAT-AP Metadata Template using ISO Schema
GeoNetwork 3.0 – Experiment 2: Creation of Schema Plugin for DCAT using DCAT XML

> Creation of a new GeoNetwork schema plugin for Open Data
  - **Storage format**: “DCAT XML” (an XML Schema)
  - **DCAT input forms**: possibility to create dedicated forms for open data (Field Types, Views, Tabs, etc.).
  - **Export/conversion**: possibility to export metadata records as RDF in DCAT-AP format using XSL transformation.
  - **CSW API**: can be used to query ISO and DCAT metadata records. Allows harvesting records... allows importing records.
  - **De-referenceable URIs**: HTTP URIs in RDF metadata can be made dereferenceable via ‘redirect rules’ on HTTP server (Linked Data).

**Result:** GeoNetwork is used as a metadata management environment for both INSPIRE / spatial metadata and open data.
GeoNetwork 3.0 – Experiment 2: Creation of Schema Plugin for DCAT using DCAT XML
3. **MD portal** for all kinds of data (geo & open)

- CSW vs Catalogue in DCAT-AP
- Analyse the European Open Data Portal

? Opportunities, issues, problems, critical points (semantics)
Scenario (1): Geo > Open procedures
Scenario (2): Open > Geo procedures

+  
  > Small maintenance cost (after large investments)
  > CKAN as a portal
    • Extensions available
  > GeoNetwork as a system

-  
  > Not INSPIRE & ‘geo’ compliant in standards
  > Large investments on 3 levels
  > Complexity
Preferred scenario (3): Mixed scenario

Geographic data & services

ISO / INSPIRE
SDI-Flanders Best Practices

Open data

DCAT-AP
GeoDCAT-AP

Profile: Geo MD “ISO XXX”

Export:
- ISO “19XXX” XML
- GeoDCAT-AP

Profile: Open MD “DCAT XML”

Export:
DCAT-AP

GeoNetwork

Geopunt
(Sitecore & MapApps)

CKAN(portal)

> PILOT: Oktober 2016 – Januari 2017
Conclusion

> The study proves the gap between metadata standards and systems can be reduced
  - To improve exchange,
  - Reduce & simplify maintenance,
  - Reach efficiency, consistency, ...
  - And keep it as simple as possible for data providers in describing their data once only, while reaching the widest possible audience

> But to really close the gap, the semantic differences should be picked up to solve by the standardization bodies itself (W3C, OGC, JRC, ISA, ISO)
HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)

SITUATION:
THERE ARE 14 COMPETING STANDARDS.

14?! RIDICULOUS!
WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE’S USE CASES. YEAH!

SOON:

SITUATION:
THERE ARE 15 COMPETING STANDARDS.
Questions?
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