



INSPIRE

as a

Best Practice

Paul van Genuchten - GeoCat

July 2018 - #foss4ge Guimarães



INTRO

Why is INSPIRE not commonly used?

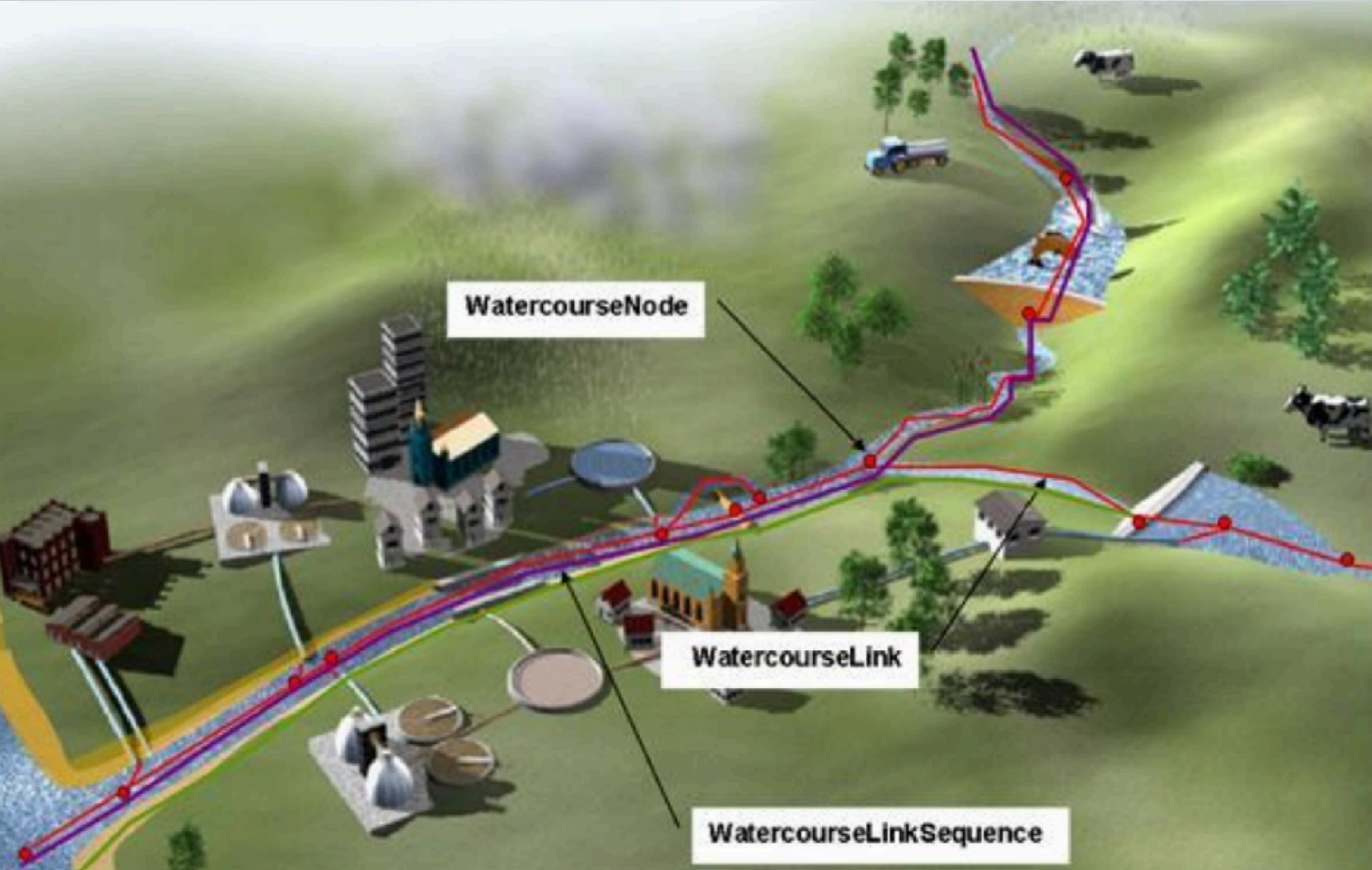
Inhoud

- Taken van waterschap
- Kengetallen
- GIS-omgeving
- Geoprocessing
- Enkele voorbeelden
- Ontwikkelingen
- Vragen



Michiel Bootsma at osgeo.nl day (ws fryslân)

osgeo.nl, Den Bosch, november 2017



Data Specification on Hydrography – Technical Guidelines

WHY A MISMATCH?

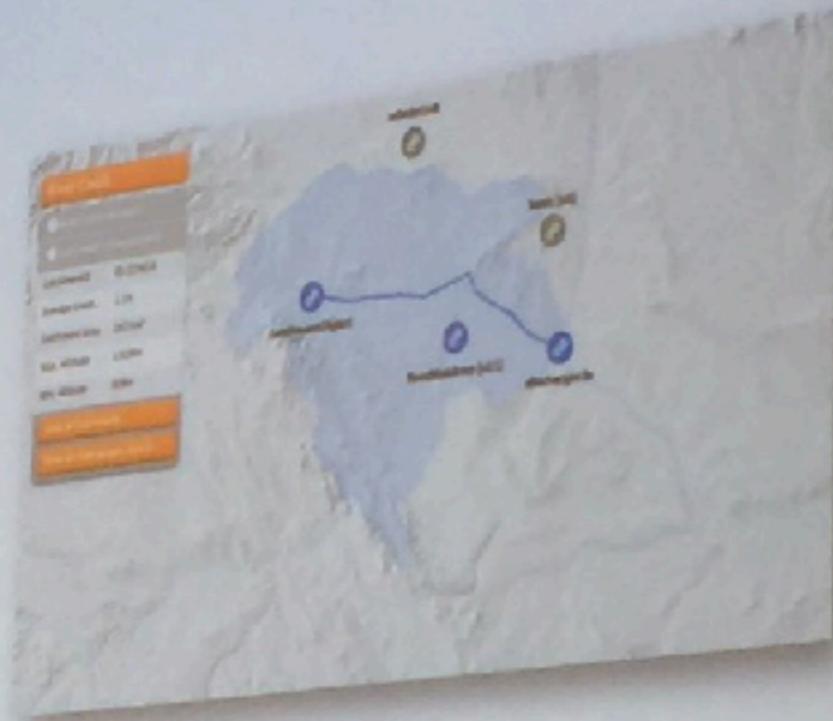
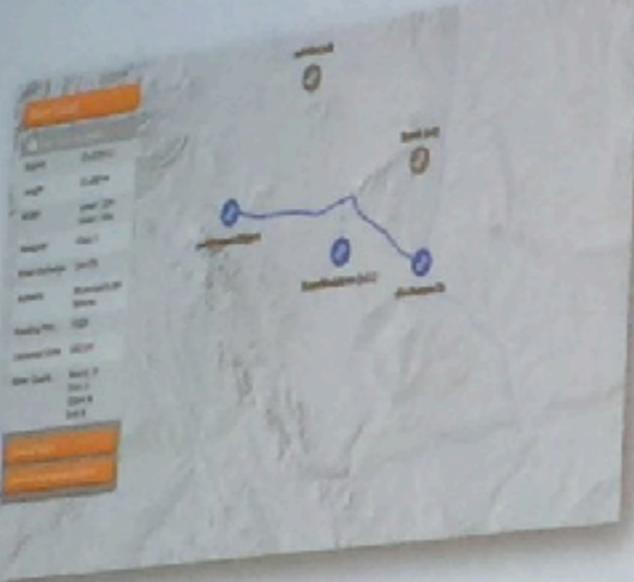
- INSPIRE has been adopted by GIS departments, but it should have been adopted by specialized departments
- GIS departments use generic tools, not capable to manage the complexity to solve many real world problems



OBJECTS vs MAPLAYERS

- GIS is used to think in ‘flat’ map layers
- Hierarchical objects and links between objects in many datasets is challenging in common GIS clients

Research: Linked Maps

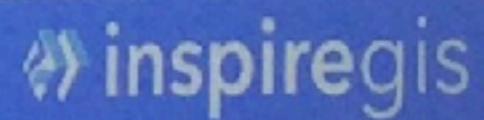


- Goal: Provide an user experience that matches linked spatial data structures and provides added value to end users
- Coming in hale connect 2.0.0

X20

INSPIRE Conference 2017 Strasbourg, France

www.wavetransform.be

 inspiregis

Thorsten Reitz, INSPIRE 2017, Strassbourg

EUROPA vs REGIONAL

- Data custodians complain about the European models, because they don't fully cover the local use cases
- INSPIRE recommends to extend the models to facilitate the local situation

EUROPA VS REGIONAL II

25.4.2007

NL

Publicatieblad van de Europese Unie

L 108/1

I

(Besluit) De wegwijzer naar informatie en diensten van alle overheden



> Hoog contrast

Home Particulieren Ondernemers

Overheidsinformatie

Over deze site

Contact

English

Help

Sitemap

Wet- en regelgeving

> Zoeken > Regeling

< Naar zoeken

Besluit Inspire

Geldend van 04-12-2009 t/m heden



Besluit van 30 oktober 2009 tot uitvoering van de Implementatiewet EG-richtlijn Infrastructuur ruimtelijke informatie (Besluit Inspire)

Wij Beatrix, bij de gracie Gods, Koningin der Nederlanden, Prinses van Oranje-Nassau, enz. enz. enz.

Op de voordracht van Onze Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer van 17 augustus 2009, nr. BJZ2009049464, Directie Bestuurlijke en Juridische Zaken;

Gelet op de artikelen 2, eerste lid, onder d, 9, tweede lid en 10, eerste lid, van de Implementatiewet EG-richtlijn infrastructuur ruimtelijke informatie;

De Raad van State gehoord (advies van 16 september 2009, no. W09.09.0327/IV);

Gezien het nader rapport van Onze Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer van 26 oktober 2009, nr. BJZ2009056969;

Hebben goedgevonden en verstaan:

tot oprichting

HET EUROPEES PARLEMENT EN DE

Gelet op het Verdrag tot oprichting van de Europese Unie, en met name op artikel 318 hiervan;

Gezien het voorstel van de Commissie,

Opschrift

Aanhef

Artikel 1

Artikel 2

Artikel 3

Artikel 4

Artikel 5

Artikel 6

Slotformulier en ondertekening

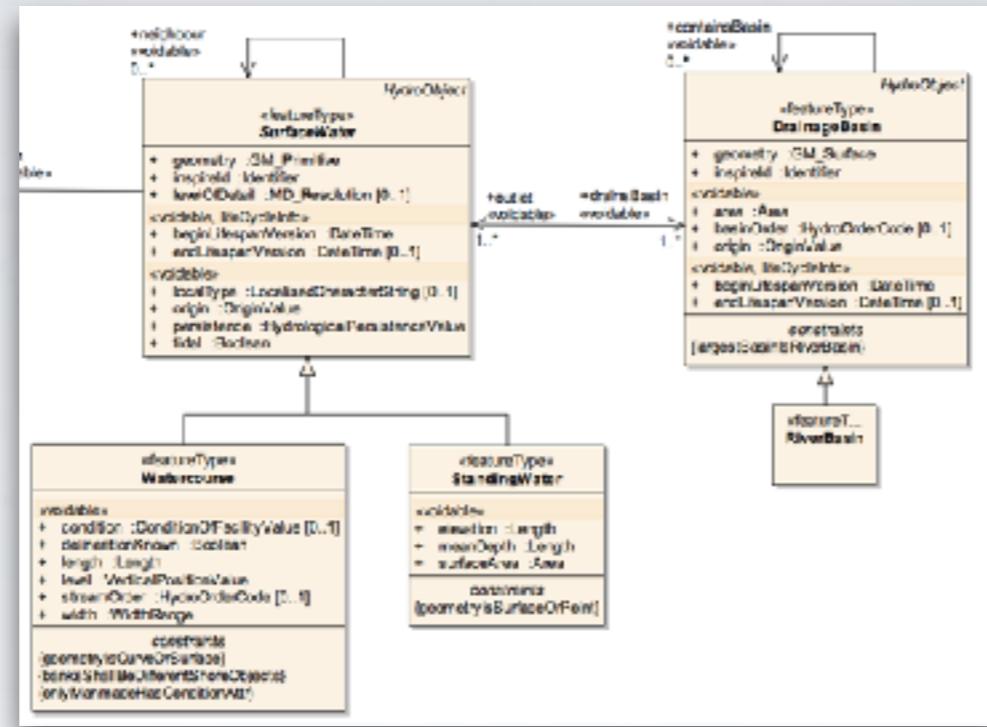
Bijlage I Thematische categorieën als bedoeld in artikel 2, eerste lid, onderdeel d, van de wet

INSPIRE & OPEN DATA

- INSPIRE ❤️ Open Data (& Open Data ❤️ INSPIRE)
- Not all INSPIRE data is Open Data
- Closed Data is **not** a reason **not** to publish
- Authentication en Authorisation are an underestimated but essential part of data sharing

Lessons so far

- Implementing OAuth on the server side was easy (few hours of work at Kadaster)
- OAuth not a natural fit for desktop clients (especially if open source)
- Authorization Code Grant (as used by NASA) fits better than Resource Owner Password grant (as implemented at Kadaster)
- OAuth makes sense when OGC services are used:
 - Within a larger ecosystem where OAuth is the norm (e.g. Digitaal Stelsel Omgevingswet)
 - When you want to do more than just authenticate (e.g. grant access to a user owned shared folder for storing results)
 - Other technical (deployment) reasons of your OGC services
- SAML & GeoXacML (bron: [switch.ch](#) & [geonovum](#))



App Schema GML

Complex processes need complex data

Simpel processes require simpel data

APP-SCHEMA GML

- INSPIRE followed OGC in its choice for app-schema GML to describe hierarchical linked objects
- app schema is also used in OGC standards such as SoilML, GeoSciML, etc

THE GIS DEPARTMENT HAS NO
TOOLS TO WORK WITH APP-
SCHEMA?

Off course, there are many tools in the Open Domain

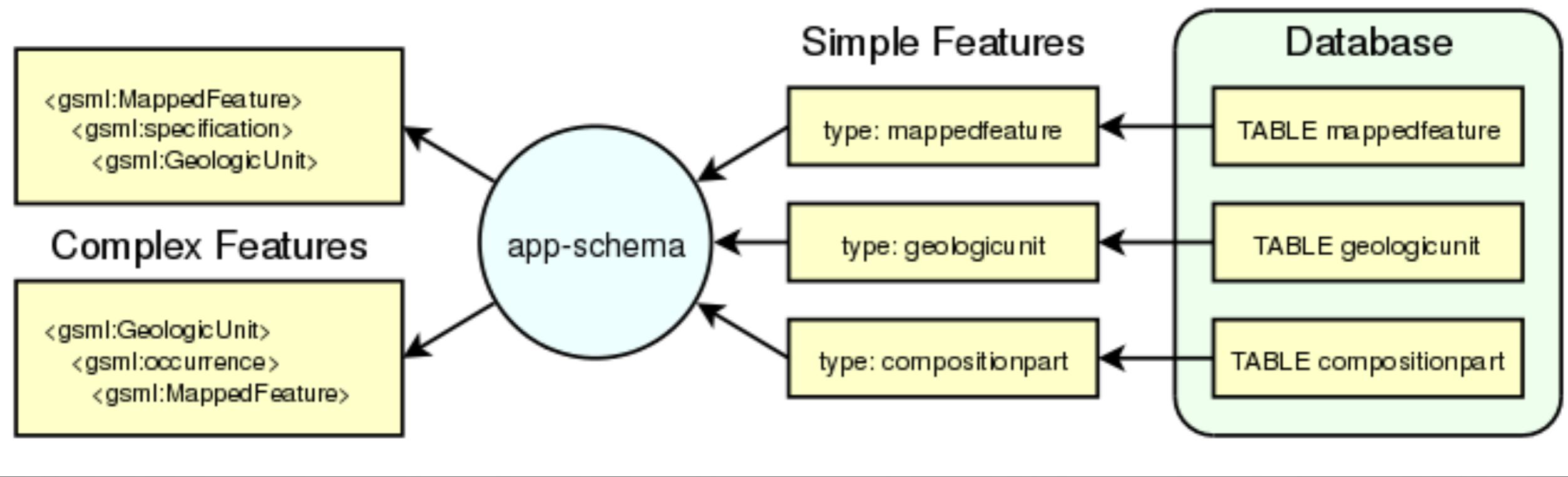
File Transformation Edit Window Help

The screenshot shows the HUMBOLDT Alignment Editor interface. The top bar displays the title "HUMBOLDT Alignment Editor 2.6.0 - PLU Province of Trento - D:\lavori_tmp\geologico\inspire\01_example_plu-1\plu_final.halex*". The main window is divided into several panes:

- Schema Explorer**: Shows the "Source" and "Target" schemas. The Source schema includes nodes like "documents", "dispol_part_subset_attr", "uso_pol_part2", "AGGIORN_6", "AREA", "COD_TOT", "PERIMETER", "PFSOPOI", "PLAN_FROM", "PLAN_NAMF", "the_geom", "USO_POL_1", and "USO_POL_ID". The Target schema includes nodes like "OfficialDocumentation", "SpatialPlan", "SupplementaryRegulation", "ZoningElement", "location", "backgroundMap", "beginLifespanVersion", "boundedBy", "description", "descriptionReference", "dimensioningIndication", "elevation", "featureOfInterest", "Groovy script", "Inspire Identifier", and "Rename".
- Alignment**: Displays a mapping between "uso_pol_part2" (Source) and "uso_pol_part2" (Target). The target node has a "Relype" operation connected to a "ZoningElement" node. A context menu is open over the "Groovy script" node, with "Inspire Identifier" selected.
- Properties**: Shows the "Inspire Identifier" configuration dialog. It includes fields for Namespace (Country: it, Provider: Province of Trento, Product: PGUAP), Local ID (localId: uso_pol_part2.USO_POL_ID), Version (versionId: 1.0), and nilReason. The dialog also contains tabs for "Back", "Next >", "Finish", and "Cancel".
- Bottom Panes**: Includes "Error Log", "Properties", "Workspace Log", "Type hierarchy", "Functions", "Report List", "Mapping", and status messages like "09:34 2013-06-29" and "Instance validation".

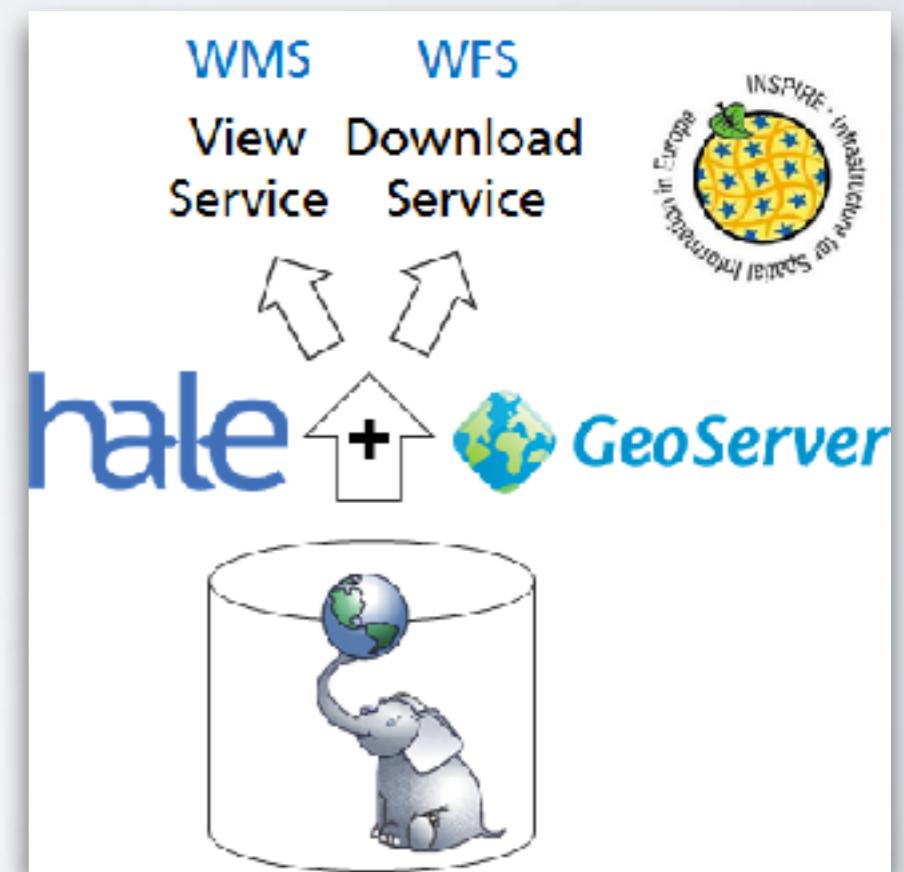
HALE (ETL)

hale
spatial data
harmonisation



GeoServer AppSchema plugin

Exposes Relational data as
AppSchema GML (via WFS)



deegree 3

Active workspace: default(external) [Reload]

Security hint: No password has been set.

general

workspaces
proxy
password
module info
send requests
see layers

Welcome to the deegree services console!

Use the general menu on the left to:

- workspaces: Download and activate example configurations
- proxy: Configure proxy settings
- module info: Display loaded deegree modules
- send requests: Send raw XML requests
- see layers: Display WMS layers

web services

services

data stores

coverages
feature
metadata
tile

map layers

layers
styles
themes

server connections

jdbc
remote ows

processes

provider

The lower menu on the left configures the active workspace:

- web services: Configure offered OGC web services
- data stores: Configure access to data sources
- map layers: Configure map layers and styles
- server connections: Configure connections to external servers
- processes: Configure geospatial WPS processes

For more information, please refer to the [official documentation](#).

deegree

deegree

Download

Method Import

Source GML fi

Input file or UP

GMLAS conf

Edit or create custom

 Remove un Remove un

19 layer(s) fou

functioneelge
gebouw (158)
gebouw_type
geografischg

QGIS/

Name	Type
_ogr_other_metadata	
functioneelgebied	
gebouw	
ogc_fid	INTEGER
ogr_pkid	VARCHAR
id	VARCHAR
identificatie_pkid	VARCHAR
brontype	VARCHAR
bronbeschrijving	VARCHAR
bronnauwkeurigheid	FLOAT
tdncode	INTEGER
visualisatiecode	INTEGER
mutatietype	VARCHAR
hoogteklasse	VARCHAR
hoogteniveau	INTEGER
status	VARCHAR
soortnaam	VARCHAR
naam	JSONSTRIN...
geometrie_brtvlakofpunt_vl...	POLYGON
geometrie_brtvlakofpunt_p...	POINT





Discovery, View & Download services

INSPIRE as a linking mechanism

INSPIRE APPROACH

- Use of OGC en ISO standards
- Additional rules to facilitate interoperability and multi lingual
- Directives, Technical Guidance, Tools and Validators

dé vindplaats van geo informatie van heel Nederland

Zoek in 6861 datasets, services en kaarten

Welk onderwerp?

Zoeken

Rijksmonumenten (rce:NationalListedMonuments)

Erfgoedetalage Rijksmonumenten

Bekijk op de kaart

Het featuretype '(NationalListedMonuments)' is gepubliceerd in de Web Feature Service
<http://services.rce.geovoorziening.nl/rce/wfs?&request=GetCapabilities&service=WFS>. Lees meer over het [WFS protocol](#).

Kies een data formaat om te downloaden:

Download data ▾

Het featuretype is gepubliceerd als atom/rss service op
http://services.rce.geovoorziening.nl/www/download/data/Rijksmonumenten_nl.xml. Lees meer over [Atom feeds](#).

Datasets in atom feed

[Rijksmonumenten in CRS EPSG:28992 \(ShapeFile\)](#) (3.66mb, application/x-shapefile, Amersfoort / RD New)

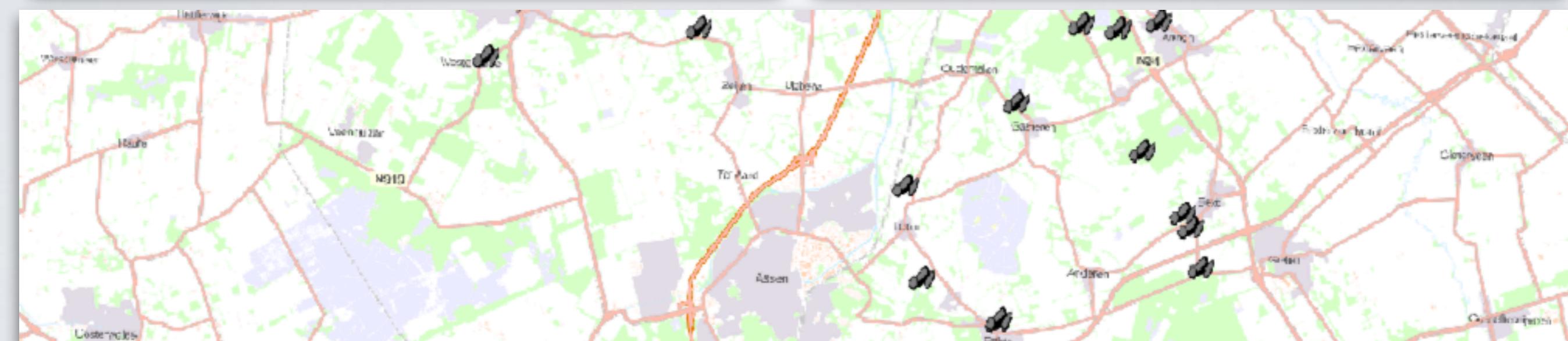
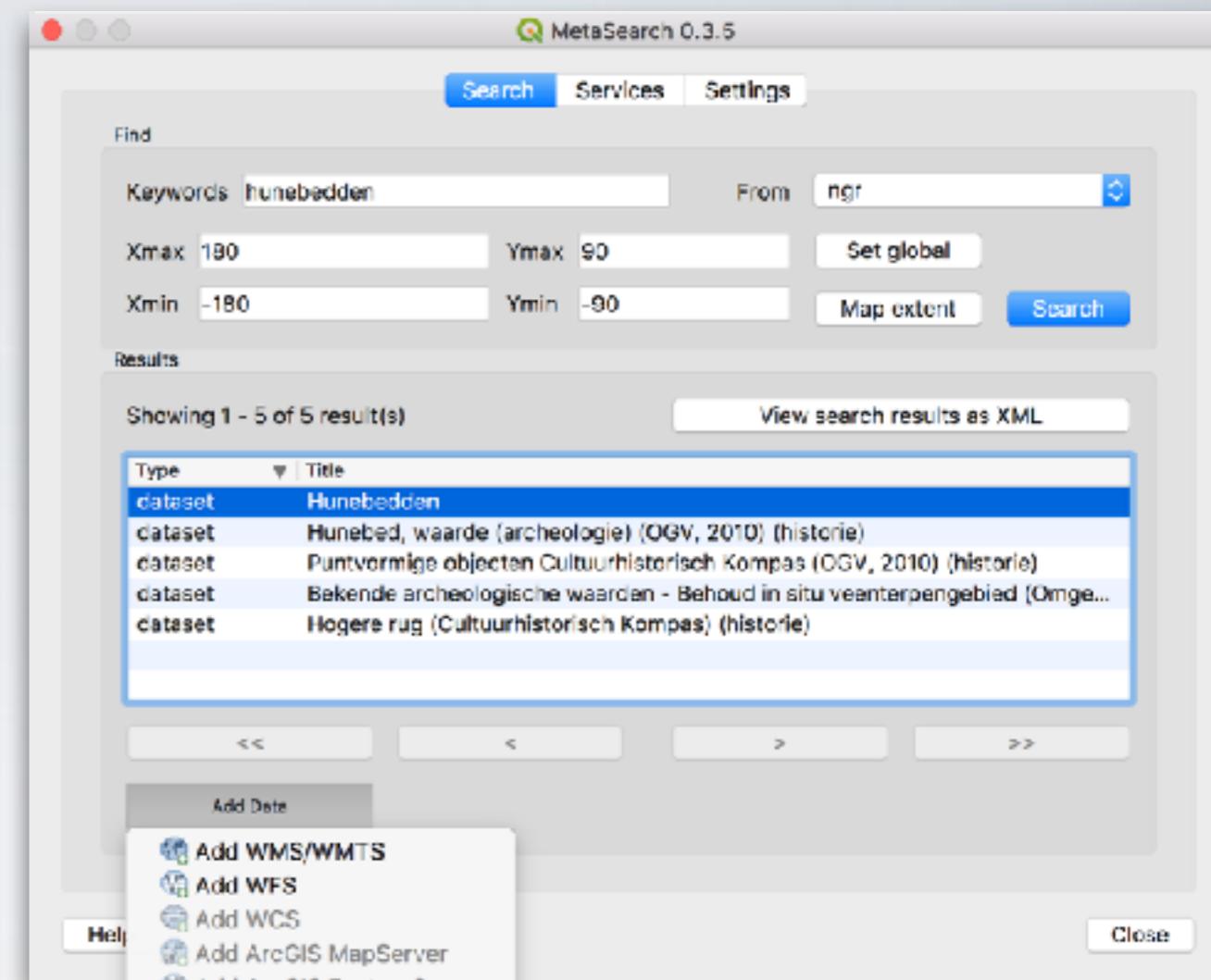
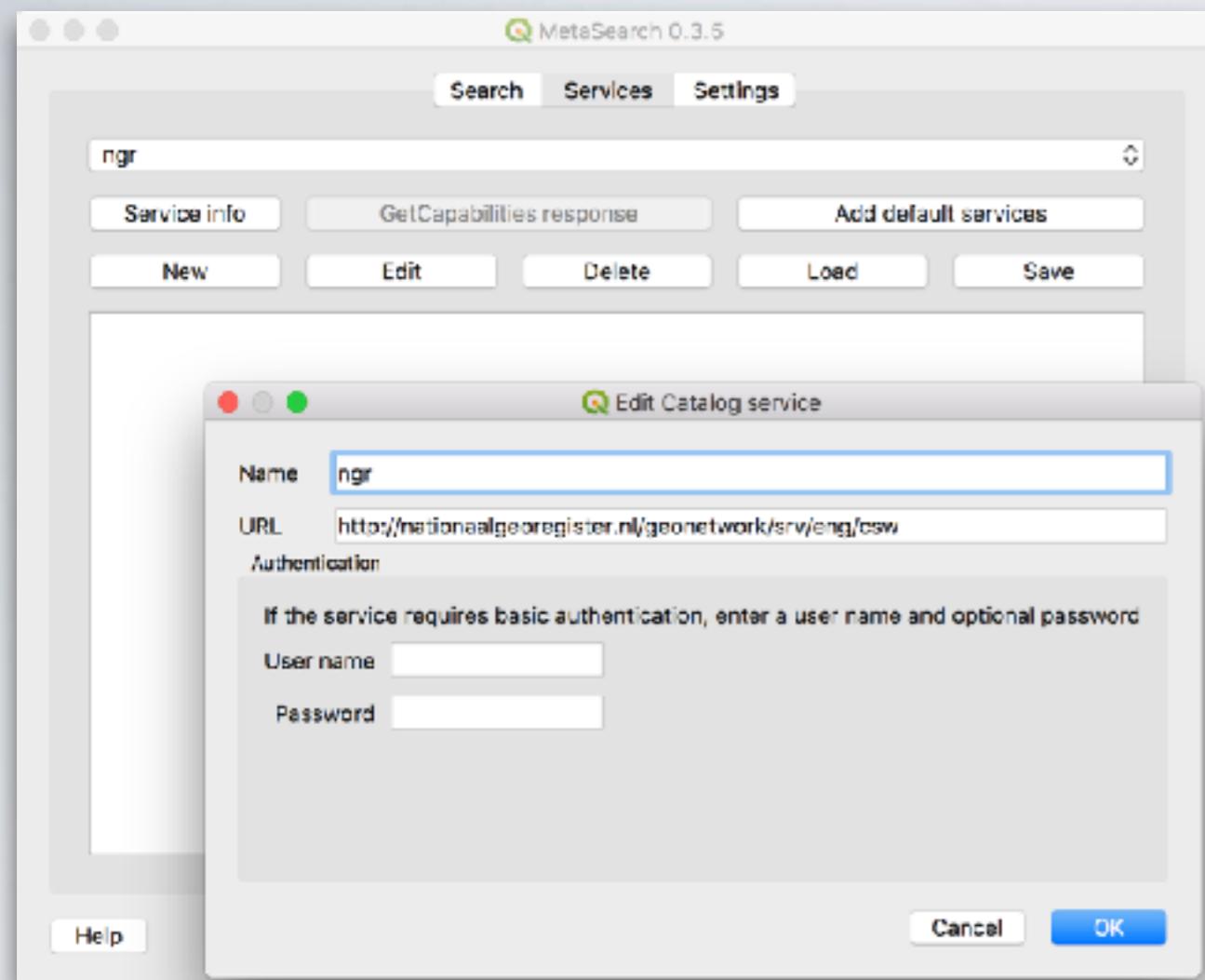
[Rijksmonumenten in CRS EPSG:28992 \(GML\)](#) (4.28mb, application/x-gmz, Amersfoort / RD New)

[Rijksmonumenten in CRS EPSG:4258 \(ShapeFile\)](#) (3.99mb, application/x-shapefile, ETRS89)

[Rijksmonumenten in CRS EPSG:4258 \(GML\)](#) (4.31mb, application/x-gmz, ETRS89)



GeoNetwork



QGIS MetaSearch

QGIS



INSPIRE Validator

The purpose of the INSPIRE validator is to help data providers, solution providers and national coordinators to check whether data sets, network services and metadata meet the requirements defined in the INSPIRE Technical Guidelines. The validator provides detailed test reports to help implementers understand how well their data, services, metadata or software solutions are doing (or where improvements may be needed).

The validator is based on the [Abstract Test Suites](#) agreed between Member States and the Commission in the INSPIRE Maintenance and Implementation Group. The current version of the validator contains all tests for INSPIRE metadata, download services based on WFS or Atom and data sets related to Annex I themes (Addresses, Administrative



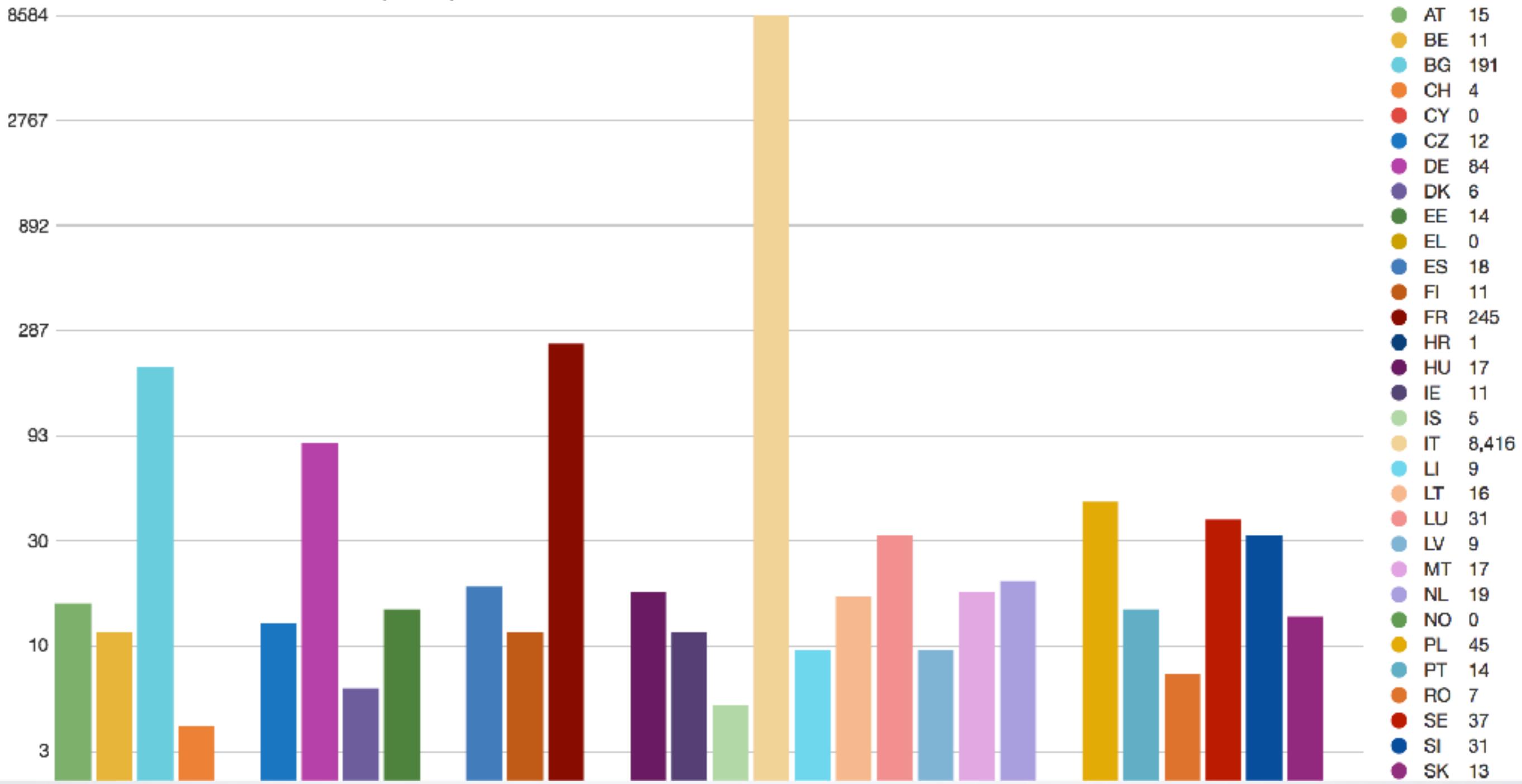
Test your data, services or metadata

Pick your resource (data, services or metadata), select the test(s) to launch and check the results to see how well you are doing (or where you need to improve).

Results will be retained on server for 8 days, download option is available.

ETF INSPIRE validator

NUMBER OF CONFORMANT SPATIAL DATA SETS (ANNEX I) - DSV21

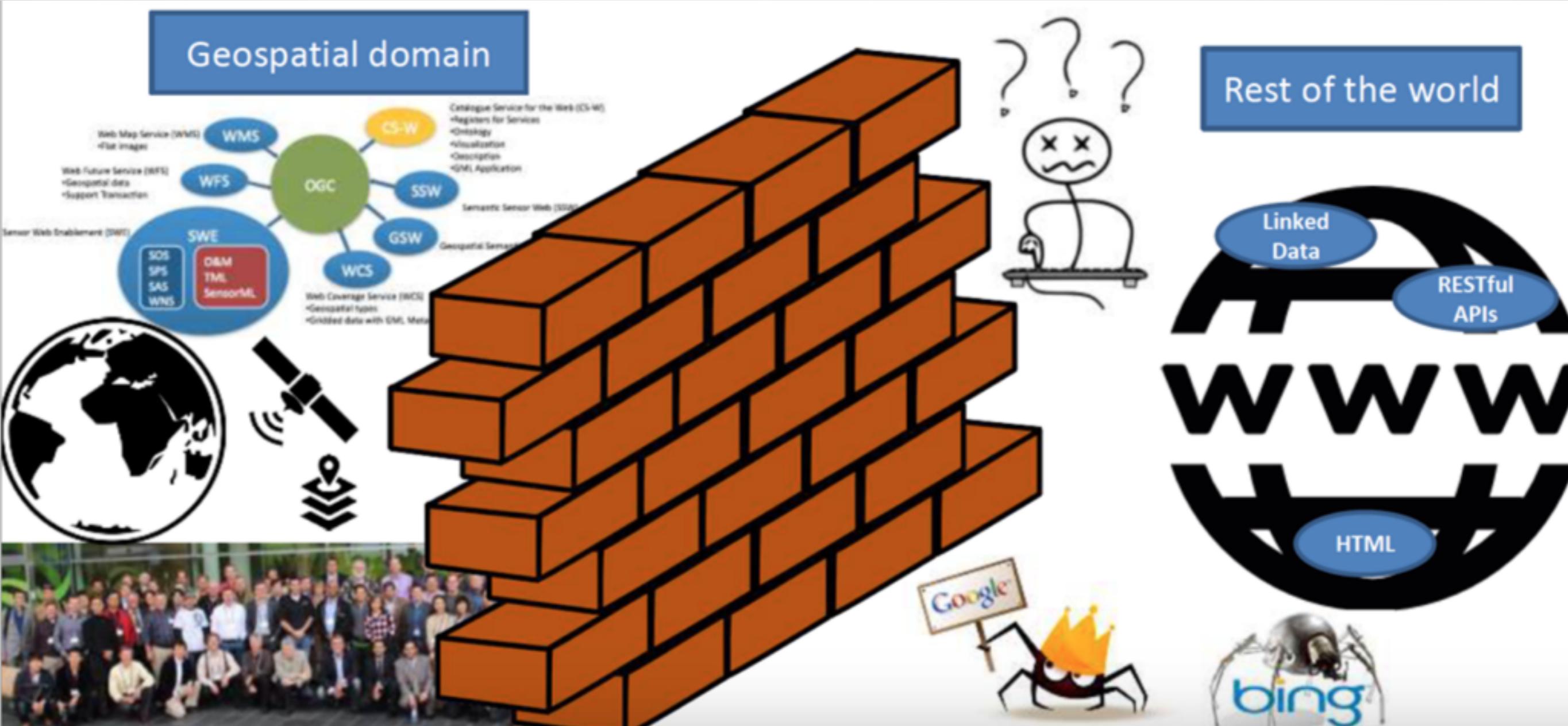


- INSPIRE Dashboard



web-api's and search engines

Usability research for INSPIRE



Spatial data on the web, 2016, OGC/Geonovum

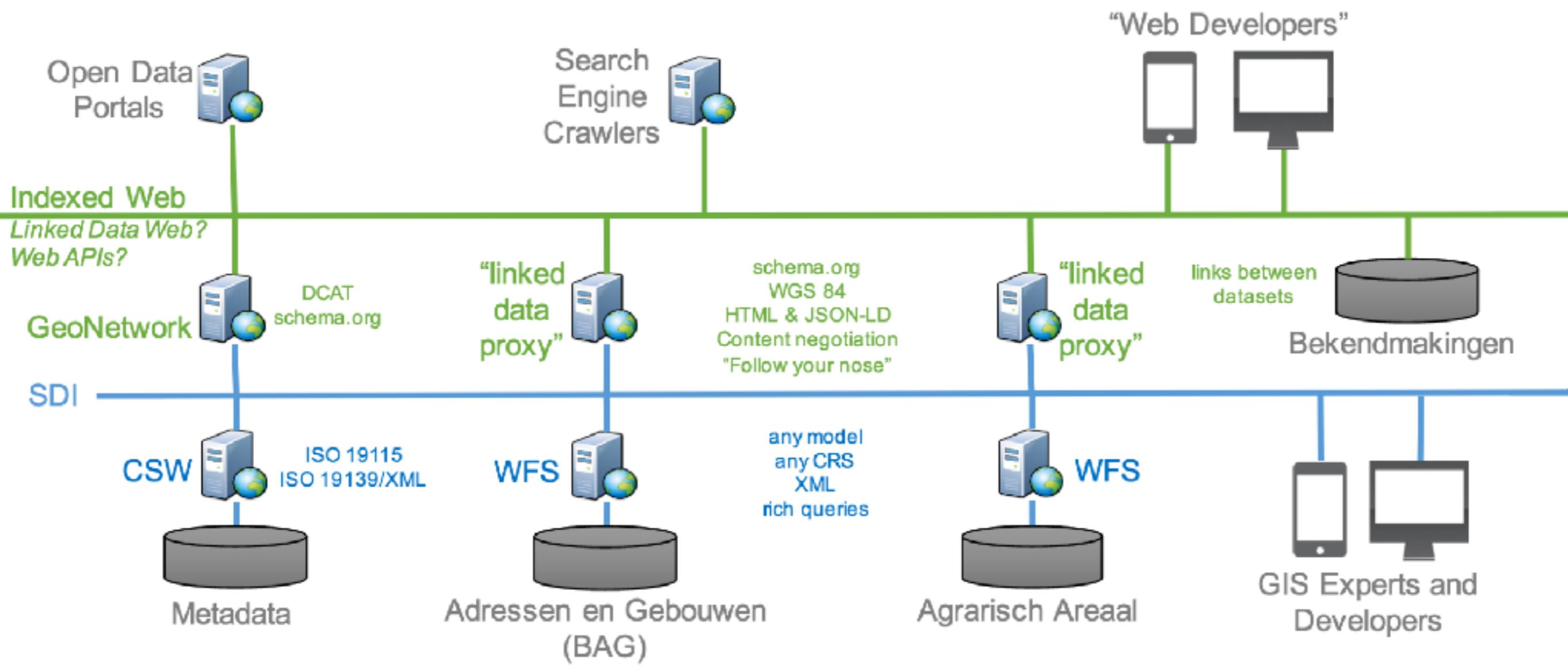
Html, URL,
microdata, json-
ld, RDFa,
Schema.org,
OpenGraph

RDF, OWL,
DCAT, VOID,
SPARQL, TTL,
DBPedia, SSN

GeoJson,
TopoJson,
VectorTiles,
TMS

OData
stat-dcat

OKFN,
DataPackage,
CSV



Ongeveer 141 resultaten (0,46 seconden)

[Kaderrichtlijn Water oppervlaktewaterlichamen RWS, lijnen - Datasets ...](#)

<https://data.overheid.nl/data/.../kaderrichtlijn-water-oppervlaktewaterlichamen-rws-lijn...> ▾

De Rijkswaterstaat **Kaderrichtlijn Water oppervlaktewaterlichamen** bevat de waterlichamen die in beheer zijn bij Rijkswaterstaat en is een onderdeel van het ...

[Kaderrichtlijn Water oppervlaktewaterlichamen RWS, vlakken ...](#)

<https://data.overheid.nl/.../kaderrichtlijn-water-oppervlaktewaterlichamen.../714263bf...> ▾

Veld, Waarde. Dataset, **Kaderrichtlijn Water oppervlaktewaterlichamen RWS, vlakken**. Laatst gewijzigd, 2 februari, 2017. Gecreëerd, 2 februari, 2017. Formaat ...

[Kaderrichtlijn Water oppervlaktewaterlichamen RWS, vlakken](#)

<https://www.nationaalgeoregister.nl/.../srv/.../2e31680f-68b5-4ff3-94a4-9c24109ffd5...> ▾

De Rijkswaterstaat **Kaderrichtlijn Water oppervlaktewaterlichamen** bevat de waterlichamen die in beheer zijn bij Rijkswaterstaat en is een onderdeel van het ...

[krw_oppervlaktewaterdelen_rws_vlakken.xml - Rijkswaterstaat](#)

www.rijkswaterstaat.nl/apps/.../dmc/.../krw_oppervlaktewaterdelen_rws_vlakken.xml ▾

De oppervlaktewaterdelen zijn een onderverdeling van de Rijkswaterstaat **Kaderrichtlijn Water oppervlaktewaterlichamen** (vlak) in verschillende waterdelen ...

[622a632a-c57b-44a2-83a4-e51223d5f15f utf8 dataset Servicedesk ...](#)

geoservices.rijkswaterstaat.nl/metadata/GEODATA.WVLI.owl_lijken ▾

De Rijkswaterstaat **Kaderrichtlijn Water oppervlaktewaterlichamen** bevat de waterlichamen die in beheer zijn bij Rijkswaterstaat en is een onderdeel van het ...



Alle

Afbeeldingen

Nieuws

Shopping

Maps

Meer ▾

Zoekhulpmiddelen

Pagina 3 van ongeveer 18.500 resultaten (0,17 seconden)

Lopik, Lopikerweg west 50 - Services

www.ldproxy.net/bag/inspireadressen/inspireadressen.2414293/ ▾

Lopik, Lopikerweg west 50. id: inspireadressen.2414293. streetAddress: Lopikerweg west 50. addressLocality: Lopik. postalCode: 3411AP.

Groesbeek, Hommelstraat 10 - Services

www.ldproxy.net/bag/inspireadressen/inspireadressen.8795076/ ▾

Groesbeek, Hommelstraat 10. id: inspireadressen.8795076. streetAddress: Hommelstraat 10. addressLocality: Groesbeek. postalCode: 6561ZH.

Groningen, Oosterkade 1001 - Services

www.ldproxy.net/bag/inspireadressen/inspireadressen.236/ ▾

Groningen, Oosterkade 1001. id: inspireadressen.236. streetAddress: Oosterkade 1001. addressLocality: Groningen. postalCode: 9711RS.

Joure, Sjoerd Wiersmahof 21 - Services

www.ldproxy.net/bag/inspireadressen/inspireadressen.8794864/ ▾

Joure, Sjoerd Wiersmahof 21. id: inspireadressen.8794864. streetAddress: Sjoerd Wiersmahof 21. addressLocality: Joure. postalCode: 8501VA.



Search or jump to...

Pull requests Issues Marketplace Explore



opengeospatial / WFS_FES

Watch 43

Star 53

Fork 12

Code

Issues 46

Pull requests 5

Projects 0

Wiki

Insights

Branch: master

WFS_FES / README.md

Find file Copy path

cportele Link to license text, not the GitHub page

64e3078 on Apr 16

4 contributors OGC

94 lines (63 sloc) | 4.82 KB

Raw

Blame

History



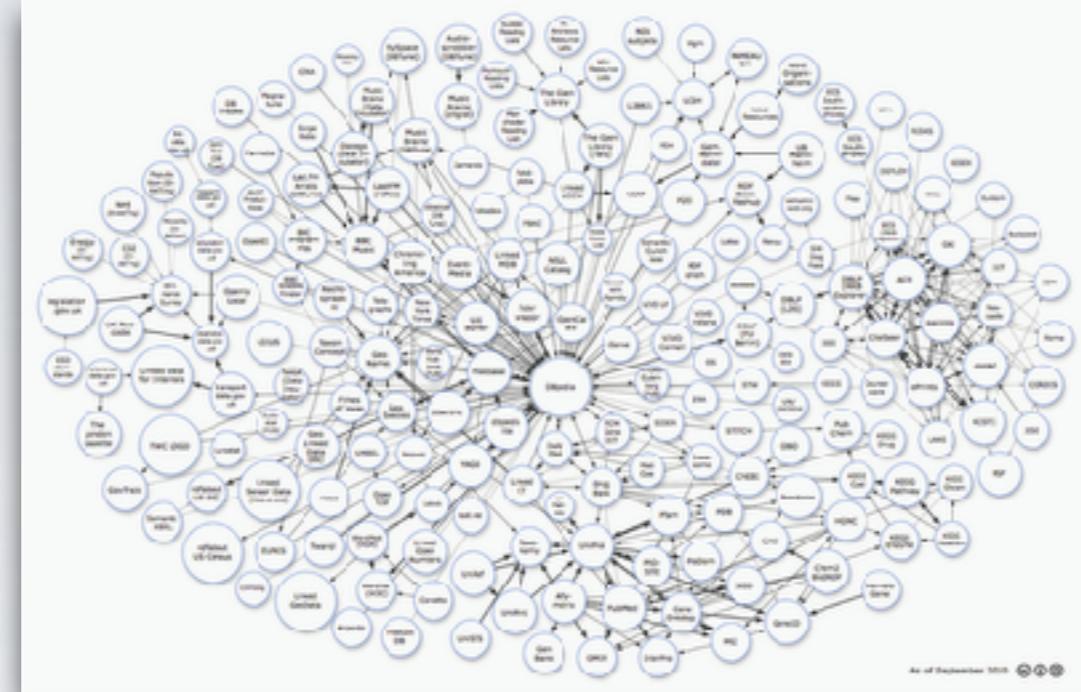
Web Feature Service 3.0

This GitHub repository contains the new revision of the OGC's Web Feature Service standard for querying geospatial information on the web. It is a complete rewrite of previous versions, focusing on a simple RESTful core specified as reusable OpenAPI components with responses in JSON and HTML.

Overview

A Web Feature Service is a standard API that represents collections of geospatial data.

GET /collections



INSPIRE and Linked Data

UML and RDF, different paradigms to look at the world

The recent SHACL standaard brings worlds together?



Search or jump to...

/

Pull requests Issues Marketplace Explore



INSPIRE as Linked Data (!)

Workspace for the ARE3NA activity on "INSPIRE as Linked Data"

Repositories 2

People 1

Projects 0

Search repositories...

Type: All ▾

Language: All ▾

[inspire-rdf-guidelines](#)

INSPIRE data in RDF

HTML 8 3 Updated on Jul 21, 2017

[inspire-rdf-vocabularies](#)

RDF Vocabularies for INSPIRE application schemas

Batchfile 4 1 Updated on Jul 21, 2017

WFS / Linked Data koppeling

Datasets BAG



bartvanleeuwen

mei '17



mei 2017

1 / 30

mei 2017

In het recent gepubliceerde document van OGC/W3C (<https://www.w3.org/TR/sdw-bp/>) worden een aantal best practices opgenomen om traditionele geodata ook via het web beschikbaar te maken, een van de implementatie richtingen is een extra feature property in WFS services waarbij dat property verwijst naar de Linked Data variant van de feature beschrijving.



cportele

jul. '17

@pvgenuchten

Yes, maybe to add to my previous comment: The INSPIRE Guidelines for the Encoding of Spatial Data state:

Recommendation 15; URIs of spatial objects should be persistent http URIs and include the namespace and the local identifier part of the INSPIRE identifier, if available.

Recommendation 16: 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 <http://inspire.ec.europa.eu/ids>.

EXAMPLE

```
<gml:identifier codeSpace="http://inspire.ec.europa.eu/ids">  
http://location.data.gov.uk/so/ad/Address/00BH/123456789012  
</gml:identifier>
```



Search or jump to...

Pull requests Issues Marketplace Explore



Geonovum / NEN3610-Linkeddata

Watch 9

Star 3

Fork 3

Code

Issues 20

Pull requests 0

Projects 0

Wiki

Insights

Branch: gh-pages ▾

NEN3610-Linkeddata / README.md

Find file Copy path

PalmJanssen Update README.md

4a7848f on Oct 31, 2017

2 contributors



14 lines (11 sloc) | 942 Bytes

Raw

Blame

History



NEN3610-Linkeddata

Repository voor het werken aan een linked data profiel op NEN3610.

Dit profiel wordt beschreven in een document. Het (nu nog lege) concept document wordt op Github ontwikkeld en is te lezen op <https://geonovum.github.io/NEN3610-Linkeddata>.

Groepsproces: Indienen van issues

De tot standkoming van het profiel is een open groepsproces. Via deze github kunnen bijdragen worden geleverd.

Bijdragen gaan via de issue lijst op het NEN3610-Linked data onderwerp. Er zijn een aantal categorien issues.

Vermeld bij het indienen van het issue de catagorie in de prefix van de titel:



Final words

INSPIRE as a proof of quality

INSPIRE QOS

- Availability
- Performance
- Capacity
- Usage



INSPIRE

- I hope you get inspired by my talk to check out some of the INSPIRE resources
- Fixing problems is much more efficient at a European level than national/regional
- Efficiency is good for environment, and this is where INSPIRE started

THANK YOU