

OGC API Features

het einde van catalogi?



Paul van Genuchten

Delft, juni 2019

GeoCat

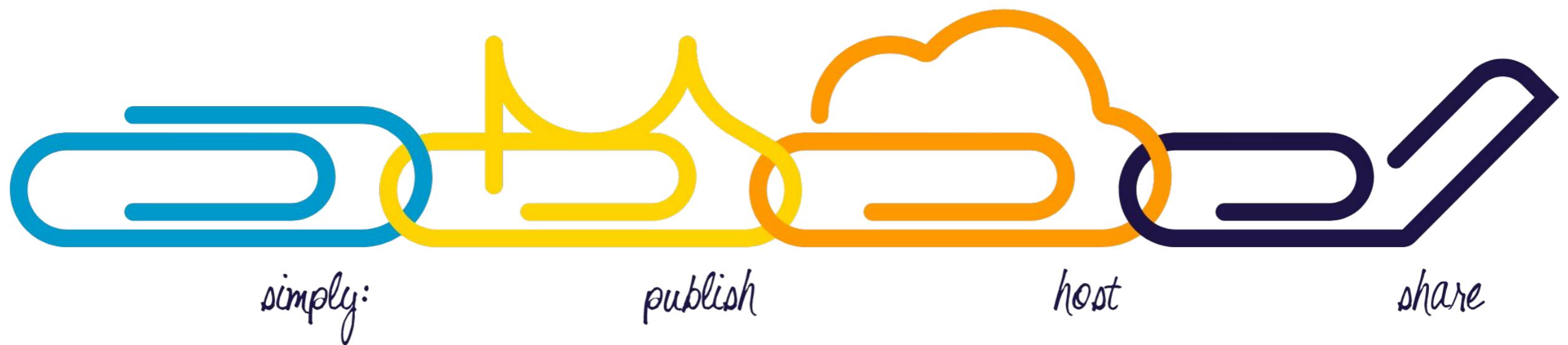
Geonetwork

FOSS4G

Enterprise open source

OGC lid

SAAS



Team





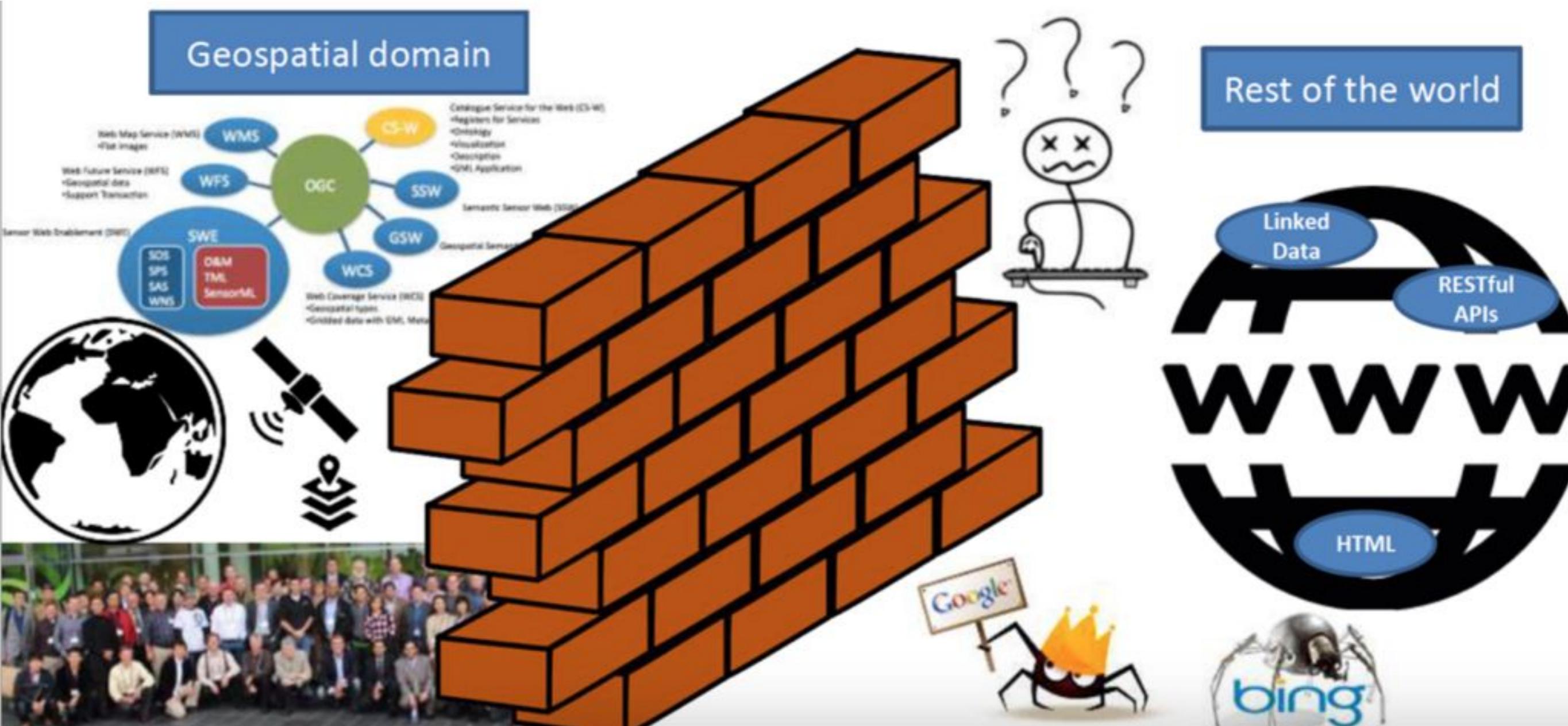
FOSS4G 2019 BUCHAREST

26 - 30 August 2019

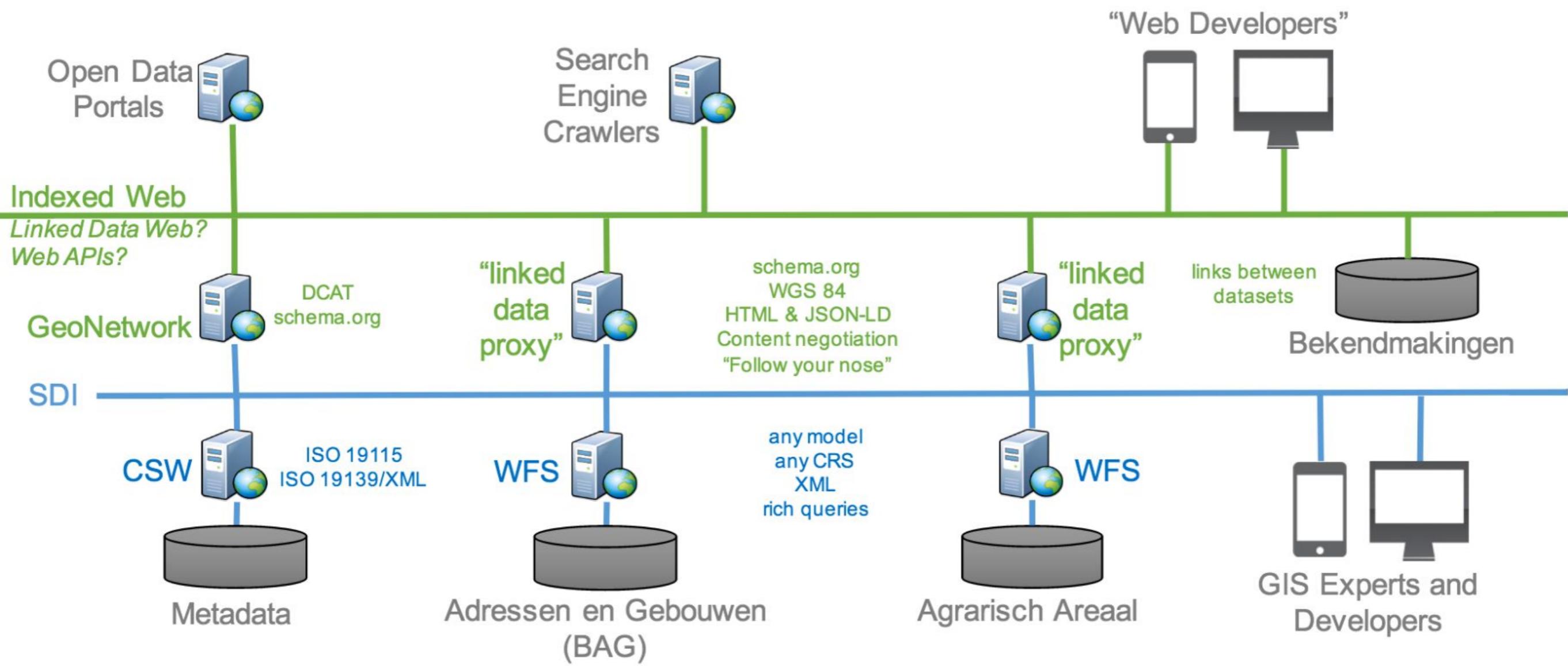
REGISTER NOW!



GeoCat en SDI-next



Spatial data on the web, 2016, OGC/Geonovum



Alle

Maps

Shopping

Afbeeldingen

Nieuws

Meer

Instellingen

Tools

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/GEO DATA.WVLI_owl_lijen ▾

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.

7. Best Practices Summary

[**Best Practice 1:** Provide metadata](#)

[**Best Practice 2:** Provide descriptive metadata](#)

[**Best Practice 3:** Provide structural metadata](#)

[**Best Practice 4:** Provide data license information](#)

[**Best Practice 5:** Provide data provenance information](#)

[**Best Practice 6:** Provide data quality information](#)

[**Best Practice 7:** Provide a version indicator](#)

[**Best Practice 8:** Provide version history](#)

[**Best Practice 9:** Use persistent URIs as identifiers of datasets](#)

[**Best Practice 10:** Use persistent URIs as identifiers within datasets](#)

[**Best Practice 11:** Assign URIs to dataset versions and series](#)

[**Best Practice 12:** Use machine-readable standardized data formats](#)

[**Best Practice 13:** Use locale-neutral data representations](#)

[**Best Practice 14:** Provide data in multiple formats](#)

[**Best Practice 15:** Reuse vocabularies, preferably standardized ones](#)

[**Best Practice 16:** Choose the right formalization level](#)

[**Best Practice 17:** Provide bulk download](#)

[**Best Practice 18:** Provide Subsets for Large Datasets](#)

[**Best Practice 19:** Use content negotiation for serving data available in multiple formats](#)

[**Best Practice 20:** Provide real-time access](#)

[**Best Practice 21:** Provide data up to date](#)

[**Best Practice 22:** Provide an explanation for data that is not available](#)

[**Best Practice 23:** Make data available through an API](#)

[**Best Practice 24:** Use Web Standards as the foundation of APIs](#)

[**Best Practice 25:** Provide complete documentation for your API](#)

[**Best Practice 26:** Avoid Breaking Changes to Your API](#)

[**Best Practice 27:** Preserve identifiers](#)

[**Best Practice 28:** Assess dataset coverage](#)

[**Best Practice 29:** Gather feedback from data consumers](#)

[**Best Practice 30:** Make feedback available](#)

[**Best Practice 31:** Enrich data by generating new data](#)

[**Best Practice 32:** Provide Complementary Presentations](#)

[**Best Practice 33:** Provide Feedback to the Original Publisher](#)

[**Best Practice 34:** Follow Licensing Terms](#)

[**Best Practice 35:** Cite the Original Publication](#)

§ Best Practices Summary

Best Practice 1: Use globally unique persistent HTTP URIs for Spatial Things

Best Practice 2: Make your spatial data indexable by search engines

Best Practice 3: Link resources together to create the Web of data

Best Practice 4: Use spatial data encodings that match your target audience

Best Practice 5: Provide geometries on the Web in a usable way

Best Practice 6: Provide geometries at the right level of accuracy, precision, and size

Best Practice 7: Choose coordinate reference systems to suit your user's applications

Best Practice 8: State how coordinate values are encoded

Best Practice 9: Describe relative positioning

Best Practice 10: Use appropriate relation types to link Spatial Things

Best Practice 11: Provide information on the changing nature of spatial things

Best Practice 12: Expose spatial data through 'convenience APIs'

Best Practice 13: Include spatial metadata in dataset metadata

Best Practice 14: Describe the positional accuracy of spatial data

OGC standaarden gebruiken het web..

..maar ze maken geen onderdeel uit van het web



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

♥ Jeff Harrison and 2 others liked

Open Geospatial: OGC @opengeospatial · 20 Apr 2018

OGC An overview of OGC's recent **WFS3** hackathon: moving towards a major overhaul of the Web Feature Service with implications for almost all OGC web services standards. go.myogc.org/2H9vgLI



4



9



- Code marathon in Ft. Collins (USA)

[Code](#)[Issues 21](#)[Pull requests 0](#)[Projects 1](#)[Wiki](#)[Insights](#)

No description, website, or topics provided.

[23 commits](#)[4 branches](#)[0 releases](#)[3 contributors](#)[View license](#)

Branch: master ▾

[New pull request](#)[Create new file](#)[Upload files](#)[Find File](#)[Clone or download ▾](#) cmheazel Misspelling ...

Latest commit 5567b1b 14 days ago

[OAPI-Common](#)

Misspelling

14 days ago

[OAPI-Elements](#)

March 6 update

3 months ago

[CONTRIBUTORS.md](#)

March 6 update

3 months ago

[DEVELOPMENT.md](#)

March 6 update

3 months ago

[LICENSE](#)

March 6 update

3 months ago

[README.md](#)

Cleanup May 7

15 days ago

[implementations.md](#)

March 6 update

3 months ago

[index.adoc](#)

Initial population

8 months ago

[README.md](#)

OGC API (OAPI) Common Specification

OGC API standards define modular API building blocks to spatially enable Web APIs. The OGC API family of standards is organized by resource type. Each resource has an associated API standard. These resource-specific API standards share a common core. This OGC API Common standard specifies requirements which are shared by all OGC API standards. The OGC API Common standard is maintained on this GitHub repository.



OpenAPI Specification

Version 3.0.2

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [BCP 14 RFC2119 RFC8174](#) when, and only when, they appear in all capitals, as shown here.

This document is licensed under [The Apache License, Version 2.0](#).

Introduction

The OpenAPI Specification (OAS) defines a standard, language-agnostic interface to RESTful APIs which allows both humans and computers to discover and understand the capabilities of the service without access to source code, documentation, or through network traffic inspection. When properly defined, a consumer can understand and interact with the remote service with a minimal amount of implementation logic.

OAPI Coverages

 [opengeospatial / ogc_api_coverages](#)

 Watch ▾ 14

 Star 1

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 Code

 Issues 16

 Pull requests 0

 Projects 0

 Wiki

 Insights

[WIP] OpenAPI for Coverages [http://www.github.com/opengeospatial/...](http://www.github.com/opengeospatial/)

 31 commits

 2 branches

 0 releases

 3 contributors

 Apache-2.0

Branch: master ▾

New pull request

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Schpidi Adjust as discussed in teleconference on 20190508

Latest commit fbf871a 15 days ago

 CIS+WCS-standards

PB: added relevant background information

2 months ago

 OAPI-Coverages

Adjust as discussed in teleconference on 20190508

15 days ago

 CONTRIBUTORS.md

Additional cleanup

3 months ago

 DEVELOPMENT.md

Additional cleanup

3 months ago

 LICENSE

First file

3 months ago

 README.md

Update README.md

a month ago

 README.md

OAPI Tiles

 [opengeospatial / OGC-API-Map-Tiles](#)

 Watch ▾ 9

 Star 3

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 Code

 Issues 4

 Pull requests 0

 Projects 0

 Wiki

 Insights

OGC API - Map Tiles draft specification [http://www.github.com/opengeospatial/...](http://www.github.com/opengeospatial/)

 15 commits

 2 branches

 0 releases

 3 contributors

 Apache-2.0

Branch: master ▾

New pull request

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Clone or download ▾



joanma747 Added a note about the work in the Swagger HUB

Latest commit 5c204c7 11 hours ago

 standard

Renamed the "OAPI-MapsTiles" folder to "standard"

2 months ago

 .gitignore

Renamed the "OAPI-MapsTiles" folder to "standard"

2 months ago

 CONTRIBUTORs.md

Raw Template

2 months ago

 DEVELOPMENT.md

Raw Template

2 months ago

 LICENSE

Raw Template

2 months ago

 README.md

Added a note about the work in the Swagger HUB

11 hours ago

 index.adoc

Raw Template

2 months ago

pygeoapi



pygeoapi

pygeoapi is a Python server implementation of the emerging OGC WFS 3.0 standard

Code

[GitHub repository](#)

[Repository with code and docker compositions](#)

[GitHub](#)

Install and README

[How to install pygeoapi](#)

[Instructions and explanations on how to install pygeoapi](#)

[README](#)

Docker images

[Images hosted in dockerhub](#)

[Docker images/composition to run pygeoapi](#)

[Coming Soon](#)

First implementations online

The screenshot shows the official website of the Government of Canada. At the top left is the Canadian flag and the text "Government of Canada". To its right is the French equivalent "Gouvernement du Canada". On the far right is a link to "Français". A search bar with the placeholder "Search Canada.ca" and a magnifying glass icon is positioned at the top right. Below the header is a dark blue navigation bar with white text containing links for "Jobs", "Immigration", "Travel", "Business", "Benefits", "Health", "Taxes", and "More services". Underneath the navigation bar is a breadcrumb trail: "Home" → "Environment and natural resources" → "Natural resources" → "Water and the environment" → "Water quantity" → "Water Survey of Canada" → "Water survey data products and services". The main content area features a large bold heading "National Water Data Archive: HYDAT". Below it is a section titled "National Water Data Archive" with a descriptive paragraph about HYDEX and HYDAT databases. Another paragraph provides details about HYDEX.

National Water Data Archive: HYDAT

National Water Data Archive

Hydrometric data are collected and compiled by Water Survey of Canada's eight regional offices. The information is housed in two centrally-managed databases: HYDEX and HYDAT.

HYDEX is the relational database that contains inventory information on the various streamflow, water level, and sediment stations (both active and discontinued) in Canada. This database contains information about the stations themselves such as; location, equipment, and type(s) of data collected.

Canadian National Water Data Archive

[JSON](#)[Raw Data](#)[Headers](#)[Save](#) [Copy](#) [Collapse All](#)

- ▶ **features:** [...]
- ▶ **links:** [...]
- timeStamp:** "2019-03-11T22:45:29.413215"
- numberReturned:** 500
- numberMatched:** 61179990
- type:** "FeatureCollection"

<http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items/10SB001.1992-01-11>

JSON		Raw Data	Headers
Save Copy Collapse All Expand All			
▼ geometry:			
type:			
"Point"			
▼ coordinates:			
0:			
-94.0583267211914			
1:			
67.5250015258789			
type:			
"Feature"			
▼ properties:			
STATION_NUMBER:			
"10SB001"			
LEVEL:			
null			
LEVEL_SYMBOL_EN:			
null			
FLOW:			
0			
FLOW_SYMBOL_EN:			
"Ice Conditions"			
FLOW_SYMBOL_FR:			
"Conditions à glace"			
LEVEL_SYMBOL_FR:			
null			
DATE:			
"1992-01-11"			
STATION_NAME:			
"HAYES RIVER ABOVE CHANTREY INLET"			
IDENTIFIER:			
"10SB001.1992-01-11"			
PROV_TERR_STATE_LOC:			
"NU"			

HTML als formaat

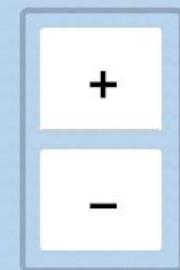
pygeoapi Demo instance - running latest GitHub version

Contact

Home / Collections / Windmills Within The Netherlands / Items

JSON

Items



ID	gid	NAAM	PLAATS	CATEGORIË
Molens.1	1	De Trouwe Wachter of Trouwe Wachter	Tienhoven	windmolen
Molens.2	2	Molen Gabriël of Voorste Molen	Kortenhoef	windmolen
Molens.3	3	Loenderv... Molen	Loenen aan de Vecht	windmolen

OGC API's en zoek machines

schema.org in pygeoapi

[Alle](#)[Afbeeldingen](#)[Nieuws](#)[Shopping](#)[Maps](#)[Meer](#)[Instellingen](#)[Tools](#)

Ongeveer 421 resultaten (0,18 seconden)

Google-advertentie

Probeer Google Search Console

www.google.com/webmasters/

Ben je de eigenaar van **demo.pygeoapi.io/master/collections**? Meer informatie van Google over indexering en rangschikking.

pygeoapi Demo instance - running latest GitHub version - Collections

<https://demo.pygeoapi.io/master/collections> ▾ [Vertaal deze pagina](#)

pygeoapi Demo instance - running latest GitHub version.

pygeoapi Demo instance - running latest GitHub version - Portuguese ...

https://demo.pygeoapi.io/master/collections/ogr_gpkg_poi ▾ [Vertaal deze pagina](#)

Portuguese Points of Interest obtained from OpenStreetMap. Dataset includes Madeira and Azores islands. Uses GeoPackage backend via OGR provider.

Dutch addresses (subset Otterlo). OGR GeoPackage Driver

https://demo.pygeoapi.io/master/collections/ogr_addresses_gpkg ▾ [Vertaal deze pagina](#)

pygeoapi Demo instance - running latest GitHub version.

Dutch Georef Stations via OGR WFS - pygeoapi Demo Server

https://demo.pygeoapi.io/master/collections/dutch_georef_stations ▾ [Vertaal deze pagina](#)

Locations of RD/GNSS-reference stations from Dutch Kadaster PDOK a.k.a RDInfo. Uses MapServer WFS v2 backend via OGRProvider.

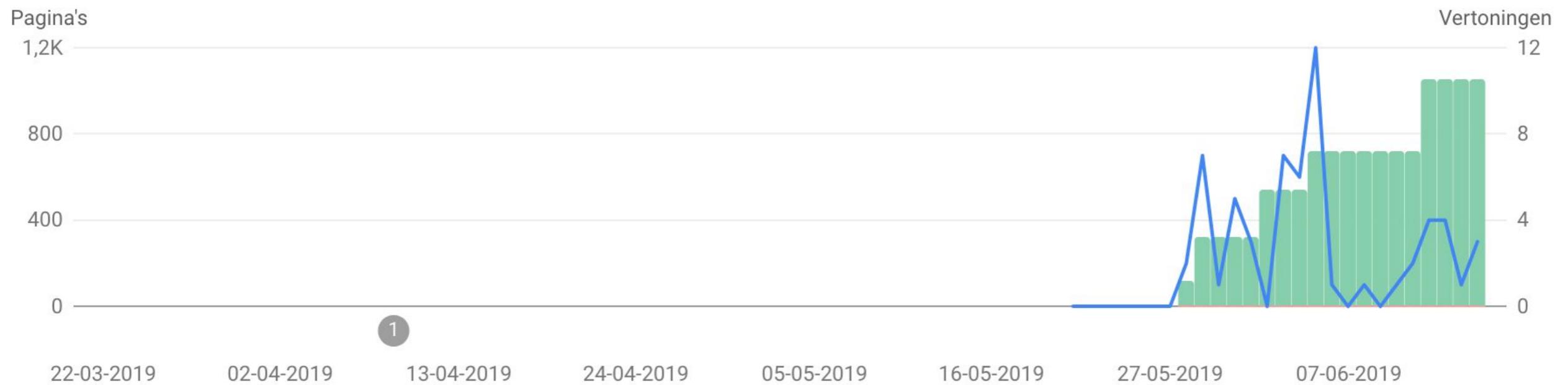
Fout
0
Geen problemen ?

Geldig met waarschuwingen
0
Geen problemen ?

Geldig
1,05K
Geen problemen ?

Uitgesloten
349
349 ?

Vertoningen



Dataset

[Thing](#) > [CreativeWork](#) > [Dataset](#)

A body of structured information describing some topic(s) of interest.

[\[more...\]](#)

Property	Expected Type	Description
Properties from Dataset		
distribution	DataDownload	A downloadable form of this dataset, at a specific location, in a specific format.
includedInDataCatalog	DataCatalog	A data catalog which contains this dataset. Supersedes catalog , includedDataCatalog . Inverse property: dataset .
issn	Text	The International Standard Serial Number (ISSN) that identifies this serial publication. You can repeat this property to identify different formats of, or the linking ISSN (ISSN-L) for, this serial publication.
	Text or URL	A technique or technology used in a Dataset (or DataDownload , DataCatalog), corresponding to the method used for measuring

Schema.org annotations

geython / pygeoapi

Unwatch 13 Star 26 Fork 15

Code Issues 24 Pull requests 0 Projects 1 Wiki Insights

add schema-org microdata based on schema.org/DataCatalog & Dataset #91

Merged tomkralidis merged 3 commits into geython:master from pvgencuhten:schema-org-primer 28 days ago

Conversation 2 Commits 3 Checks 0 Files changed 6 +148 -38

pvgencuhten commented on Apr 12

A suggestion to use microdata to annotate root, collections & collection pages

Due to header having service-title, I had to link it to other metadata about the service using itemref="collections"

Pages validated in google structured data testing tool:

home

DataCatalog	
@type	DataCatalog
url	http://localhost:5000
name	pygeoapi default instance
description	pygeoapi provides an API to geospatial data
keywords	geospatial, data, api,
license	CC-BY 4.0 license
provider	
@type	Organization
name	Organization Name
url	https://github.com/geython/pygeoapi
contactPoint	

Reviewers tomkralidis jorgejesus

Assignees jorgejesus

Labels None yet

Projects None yet

Milestone No milestone

Collections in this service

Name	Description
Observations	Observations
Large Lakes	lakes of the world, public domain
Windmills within The Netherlands	Locations of windmills within the Netherlands from Rijksdienst voor het Cultureel Erfgoed (RCE) INSPIRE WFS. Uses GeoServer WFS v2 backend via OGRProvider.
Castles within The Netherlands	Locations of castles within the Netherlands from Rijksdienst voor het Cultureel Erfgoed (RCE) INSPIRE WFS. Uses GeoServer WFS v2 backend via OGRProvider.
Dutch Georef Stations via OGR WFS	Locations of RD/GNSS-reference stations from Dutch Kadaster PDOK a.k.a RDInfo. Uses MapServer WFS v2 backend via OGRProvider.

Collections in this service

Name	Description
Observations	Observation

Powered by [pygeoapi 0.6.0](#)

Elements Console Sources Network Performance Memory Application Security

▼<tbody>

 ▼<tr itemprop="dataset" itemscope itemtype="http://schema.org/Dataset">

 ▼<td data-label="name"> == \$0

 ▼

Observations

 </td>

 <td itemprop="description" data-label="description">

 Observations

 </td>

 </tr>

►<tr itemprop="dataset" itemscope itemtype="http://schema.org/Dataset">...</tr>

Google Structured Data Testing Tool



https://demo.pygeoapi.io/master/collections/dutch_windmills

NEW TEST

```
63      <meta itemprop="url"  
content="https://demo.pygeoapi.io/master" />  
64      <meta itemprop="name" content="pygeoapi Demo instance  
- running latest GitHub version" />  
65      <meta itemprop="name" content="pygeoapi provides an  
API to geospatial data" />  
66      </span>  
67      <h2 itemprop="name">Windmills within The  
Netherlands</h2>  
68      <div itemprop="description">Locations of windmills  
within the Netherlands from Rijksdienst voor het Cultureel  
Erfgoed (RCE) INSPIRE WFS. Uses GeoServer WFS v2 backend via  
OGRProvider.</div>  
69      <h3>View</h3>  
70      <ul>  
71          <li>  
72              <div itemprop="distribution" itemscope  
itemtype="http://schema.org/DataDownload">  
73                  <meta itemprop="encodingFormat"  
content="text/html" />  
74                  <a title="Browse Items" itemprop="contentURL"  
href="https://demo.pygeoapi.io/master/collections/dutch_windm  
ills/items">  
75                      Browse through the items of "Windmills within
```

	geospatial data
url	https://demo.pygeoapi.io/master
name	pygeoapi Demo instance - running
dataset	latest GitHub version
@type	Dataset
@id	<a href="https://demo.pygeoapi.io/master/coll
ections/collections">https://demo.pygeoapi.io/master/coll ections/collections
name	Windmills within The Netherlands
description	Locations of windmills within the Netherlands from Rijksdienst voor het Cultureel Erfgoed (RCE) INSPIRE WFS. Uses GeoServer WFS v2 backend via OGRProvider.
includedInDataCatalog	
@type	DataCatalog
url	https://demo.pygeoapi.io/master
	pygeoapi Demo instance - running





site:demo.pygeoapi.io



About

4 results found



Data from: Large Lakes
demo.pygeoapi.io



Large Lakes OGR GeoJSON
Driver
demo.pygeoapi.io



Observations
demo.pygeoapi.io

Observations

[Explore at demo.pygeoapi.io](#)

Available download formats from providers

csv, json, html, geo+json

Description

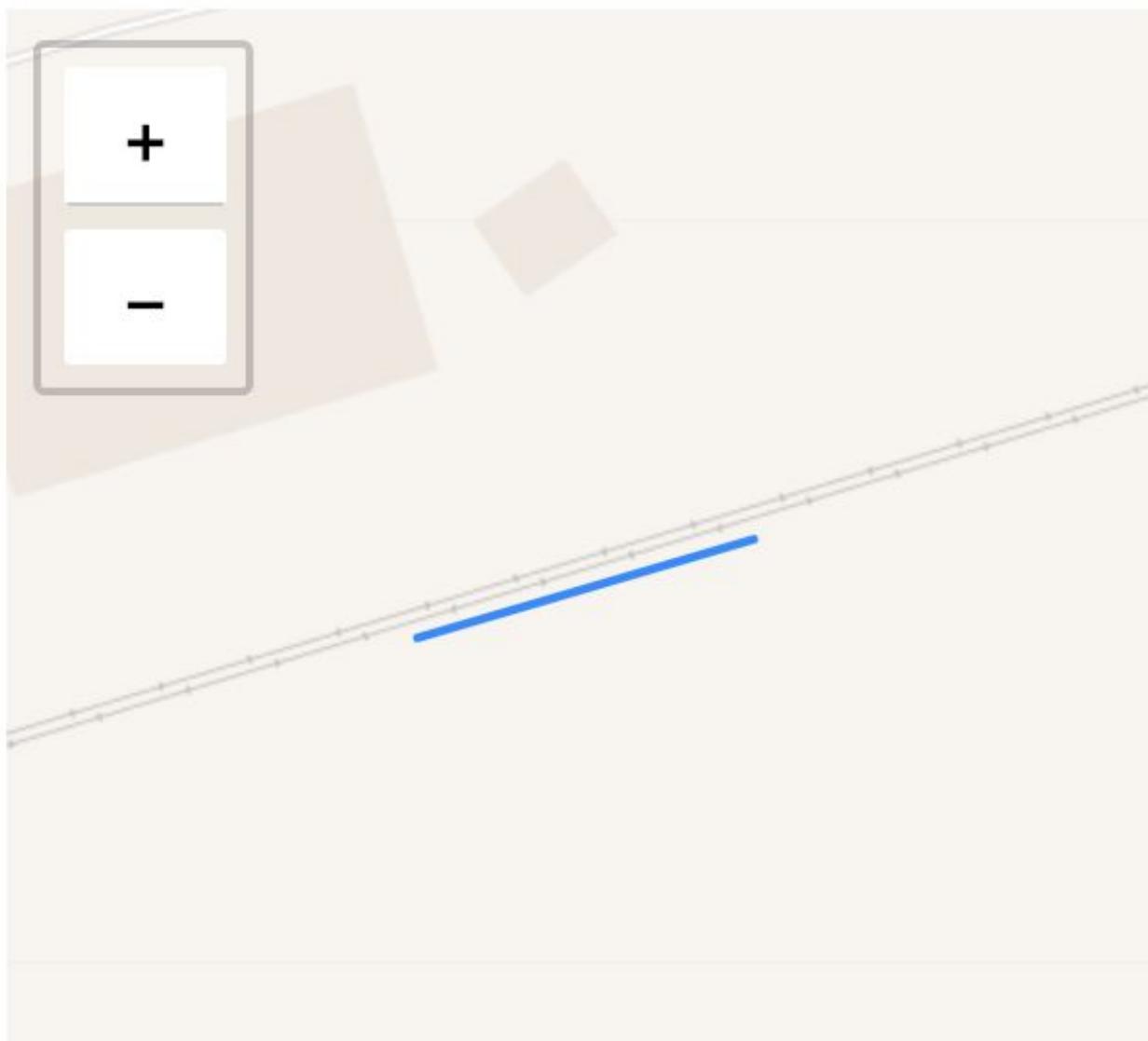
Observations

Best practices blijven relevant

Gebruik van URI's om objecten te identificeren

Veel geo data is karig, voeg links toe

Item 38556



Property	Value
id	38556
type	Multi Track

Geen catalogi meer nodig?

Bronnen die niet online of openbaar beschikbaar zijn

Zoekmachine biedt een extract van de metadata, onvoldoende om te bepalen of bron geschikt is voor use case.

Zou overheid zelf een eigen zoekmachine moeten faciliteren om officiële documenten de juiste prioriteit te kunnen toekennen

Ver van je bed show?

Nee hoor.

In een van de volgende versies van geoserver,
mapserver etc zal oapi support zitten

En worden vragen relevant als:

- moet op zo'n html weergave het logo van mijn organisatie staan (webrichtlijnen)
- moet ik via robots.txt zoekmachine crawling uitzetten