

WFS 3.0

De geo-API van de toekomst

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 @brinkwoman

#DataToBuildOn

SDI.Ne~~x~~xt



Eerste versie uit 2002

Web Feature Service

https://nl.wikipedia.org/wiki/Web_Feature_Service

Internationale standaard (OGC)
Nederlandse standaard (PasToeLegUit)

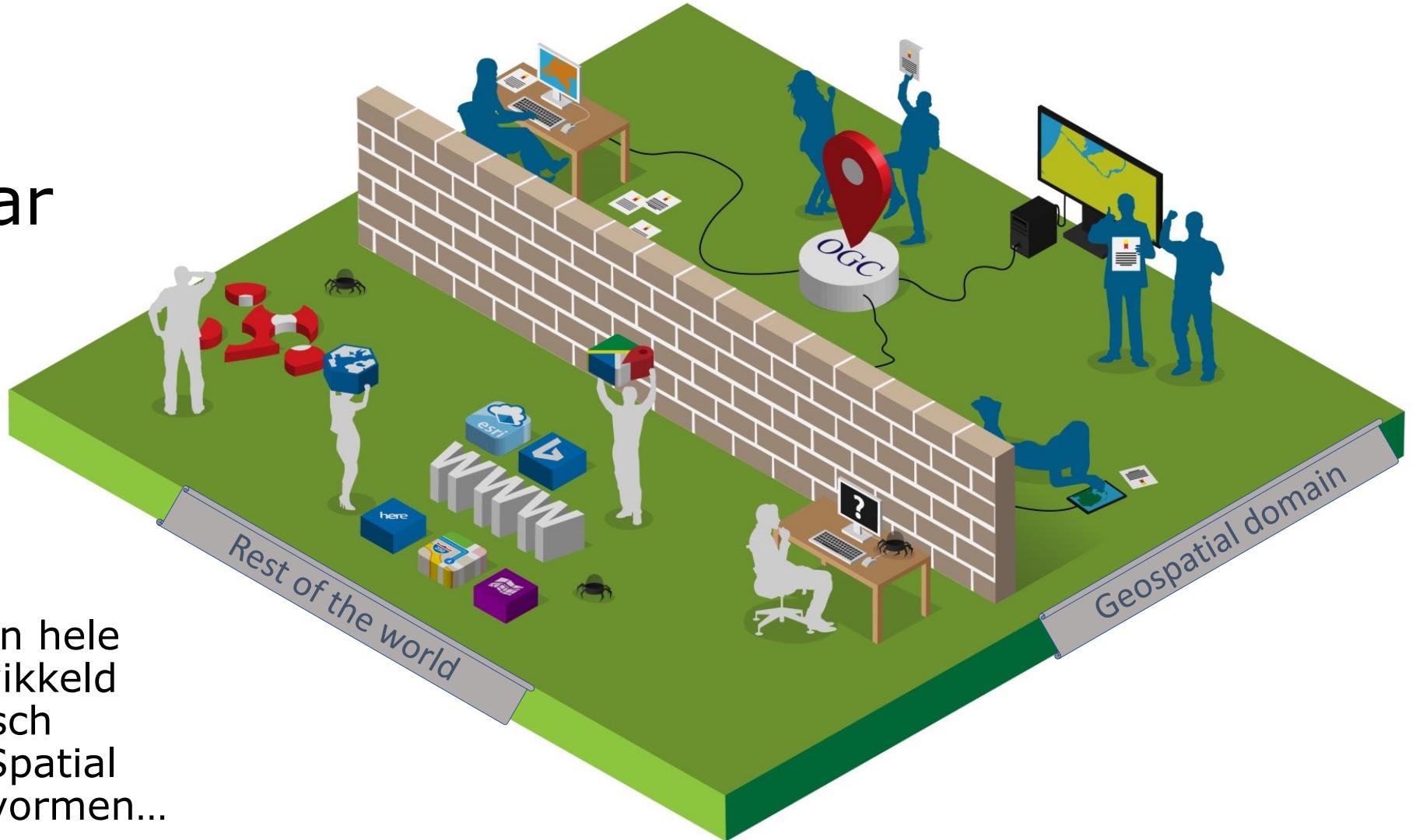
WFS

Web feature services (WFS)

Web Feature Service (WFS) is een protocol waarmee je geografische vector informatie kunt opvragen, aanleveren, bewerken en analyseren. WFS maakt gebruik van de Geography Markup Language (GML) om data over te dragen. Het WFS protocol zorgt ervoor dat je de door jou gevraagde objecten in GML, als data dus, terug krijgt. Dit in tegenstelling tot WMS waarbij een plaatje (image) wordt teruggestuurd. Omdat de internationale WFS standaard net als WMS de nodige vrijheidsgraden kent, is er ook een [Nederlands profiel voor de Web Feature Service](#) ontwikkeld. Dit Nederlandse profiel staat op de Pas-toe-of-leg-uit-lijst.

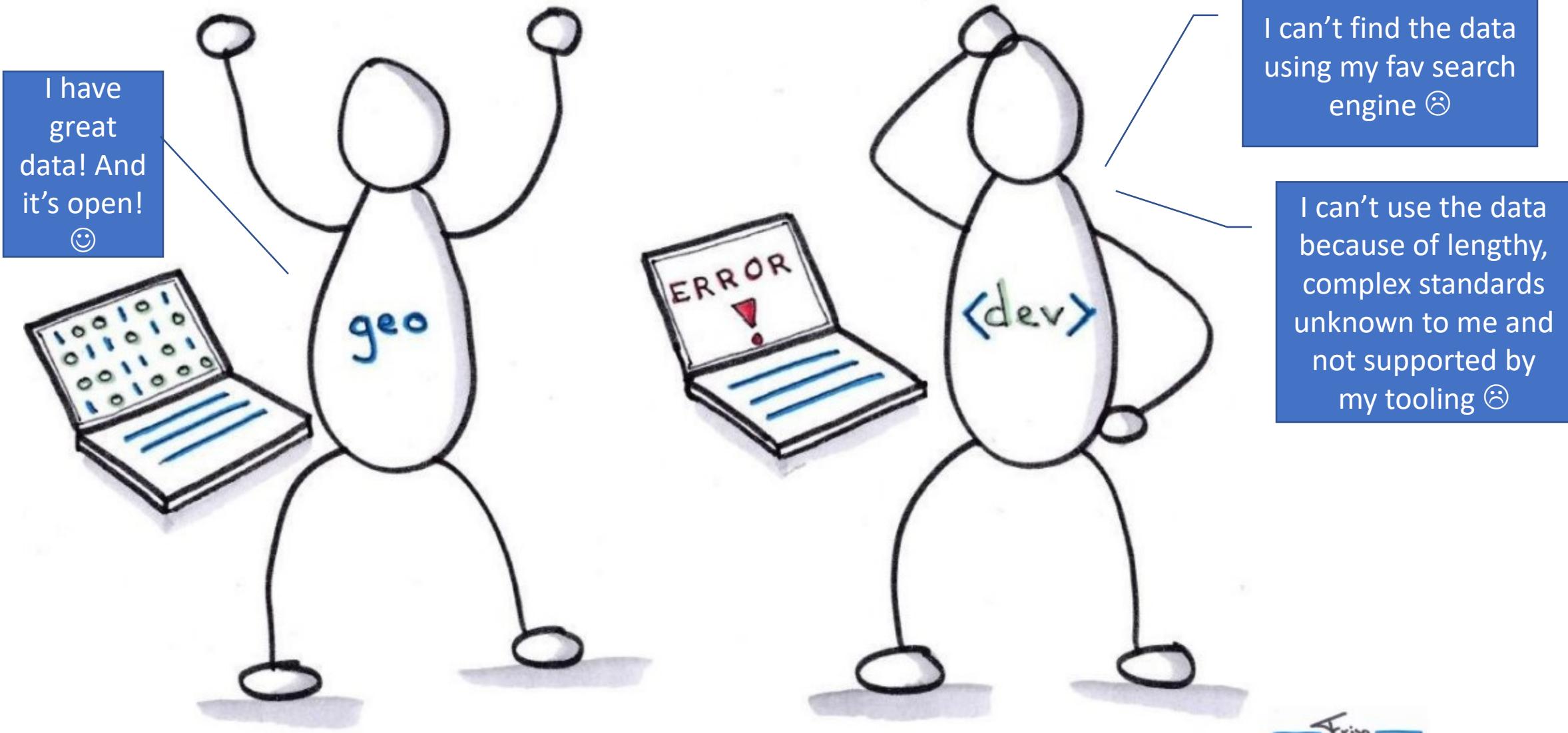


Van 2002 naar 2019...



In de geowereld is een hele set standaarden ontwikkeld die samen het technisch fundament voor de "Spatial Data Infrastructure" vormen...





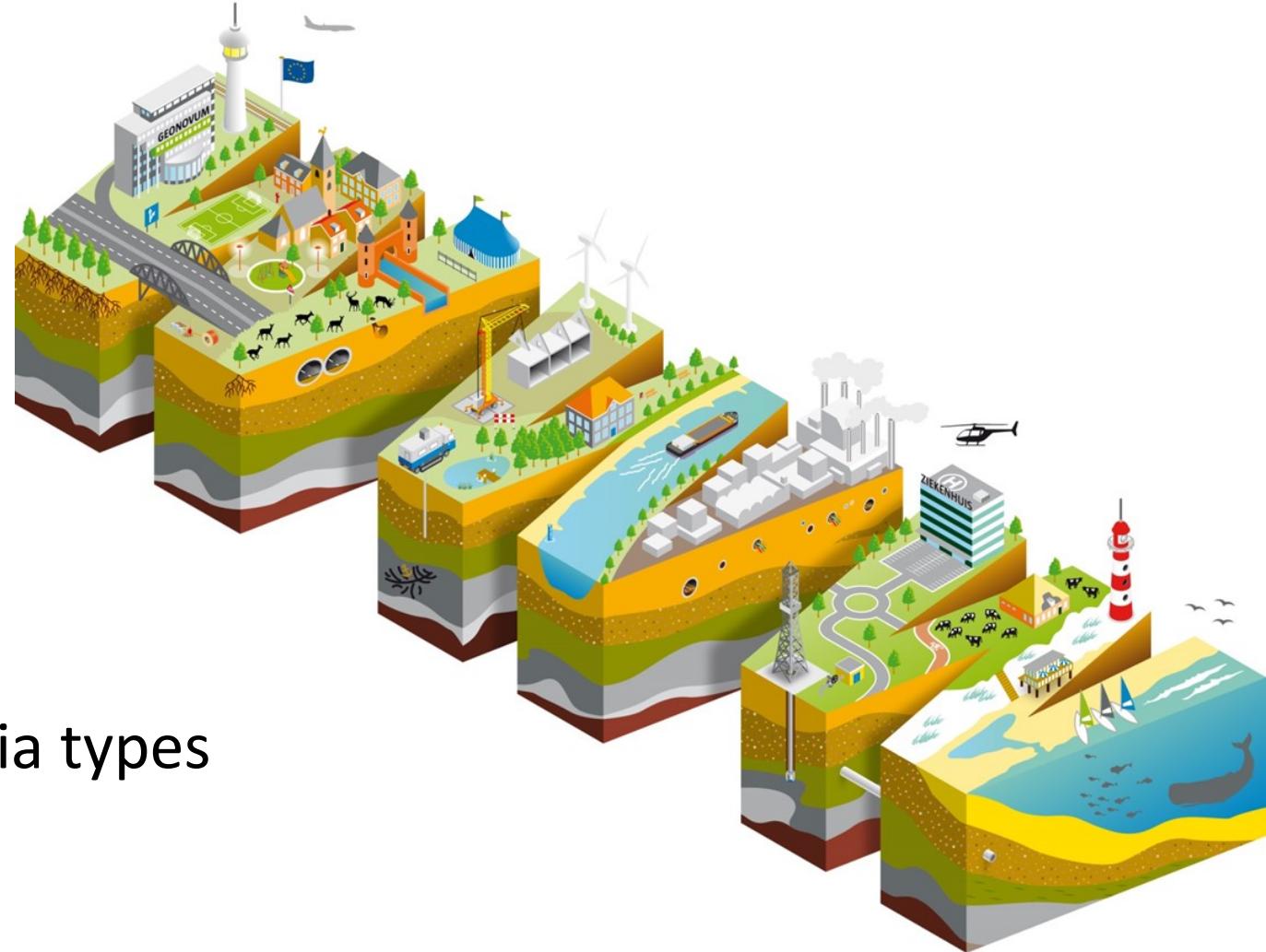
“ *The Web is the World’s most successful vendor neutral distributed information system [...]*

The ‘Web of data’ ranges from small amounts of data to vast datasets, and either which are open to all or restricted to a few. Data can be consumed by Web pages, downloaded for local processing, or accessed via network APIs that support remote processing [e.g. Web-services].”

W3C study of practices and tooling for Web data standardisation
<https://www.w3.org/2017/12/odi-study/>

Use of the Web platform's standard tools:

- search engines
- browsers
- HTTP (and HTTPS)
- hypermedia / Web links
- delegation to applications via media types
- openAPI metadata (Swagger)



Spatial Data on the Web Best Practices

W3C Working Group Note 28 September 2017



This version:

<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170928/>

Latest published version:

<https://www.w3.org/TR/sdw-bp/>

Latest editor's draft:

<https://w3c.github.io/sdw/bp/>

Previous version:

<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170511/>

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- Based on general Data on the Web Best Practices
- Introducing a couple of essential concepts for spatial data on the Web →



2019

Data formaat: GeoJSON

RESTful –
e.g. `HTTP GET`

in plaats van
WFS 2.0 `GetFeature`

Content negotiation

Ontwikkeld met developers

... en HTML

WFS 3.0

WGS84

[OGC Web Feature Service 3.0 - Part 1: Core, First Draft Release](#)

WFS 3.0 kern:

- Opvragen van datasets (collecties)
- Opvragen van data op basis van id, bbox, time
- Paginering

Maakt gebruik van OpenAPI specificatie



HTML landing page

GET

/ landing page of this API

SDI.Next

Zaatari Refugee Camp

OGC Testbed 14, Zaatari Refugee Camp

Collections

AgricultureSrf
CultureSrf
FacilitySrf
HydrographySrf
InformationPnt
o2s_A
o2s_L
o2s_P
RecreationSrf
SettlementSrf
StructurePnt
StructureSrf
TransportationGroundCrv
TransportationGroundSrf
UtilityInfrastructureSrf

API
Definition

OpenAPI 3.0

Data source

[https://services.interactive-instruments.de/t14/wfs2/zaatari?
SERVICE=WFS&REQUEST=GetCapabilities](https://services.interactive-instruments.de/t14/wfs2/zaatari?SERVICE=WFS&REQUEST=GetCapabilities)

VOORBEELD – OpenAPI

VOORBEELD – Data



Transacties

Asynchrone interactie

Vector tiles

Kaart extensie

Geavanceerde zoekvragen
(Opensearch ea)

Selectie van collecties

Selectie van eigenschappen

Hierarchisch / thematisch
ordenen van collecties

[CRS ondersteuning](#)

Extensies

Versimpeling van geometrie

A.2. Geometry simplification extension

A common usage pattern for a web feature service is as a data source for visualization. An issue that arises when used in this way is that the server has no information about the display scale and thus may, in certain situations, provide much more information in the response than is necessary to visually render the information.

The optional `resolution` parameter provides the server with the information necessary to suitably generalize geometries and features in the response for a specified resolution. This document does not describe a specific method or methods of generalization that a server might use. However, the CubeWerx server uses the [Douglas-Peucker](https://en.wikipedia.org/wiki/Ramer-Douglas-Peucker_algorithm) [https://en.wikipedia.org/wiki/Ramer-Douglas-Peucker_algorithm] algorithm.

The `resolution` parameter may be added to the following WFS paths:

- `/collections/{collectionId}/items`
- `/collections/{collectionId}/items/{fid}`

Clients making a `getFeature` request using the `resolution` parameter should be aware that



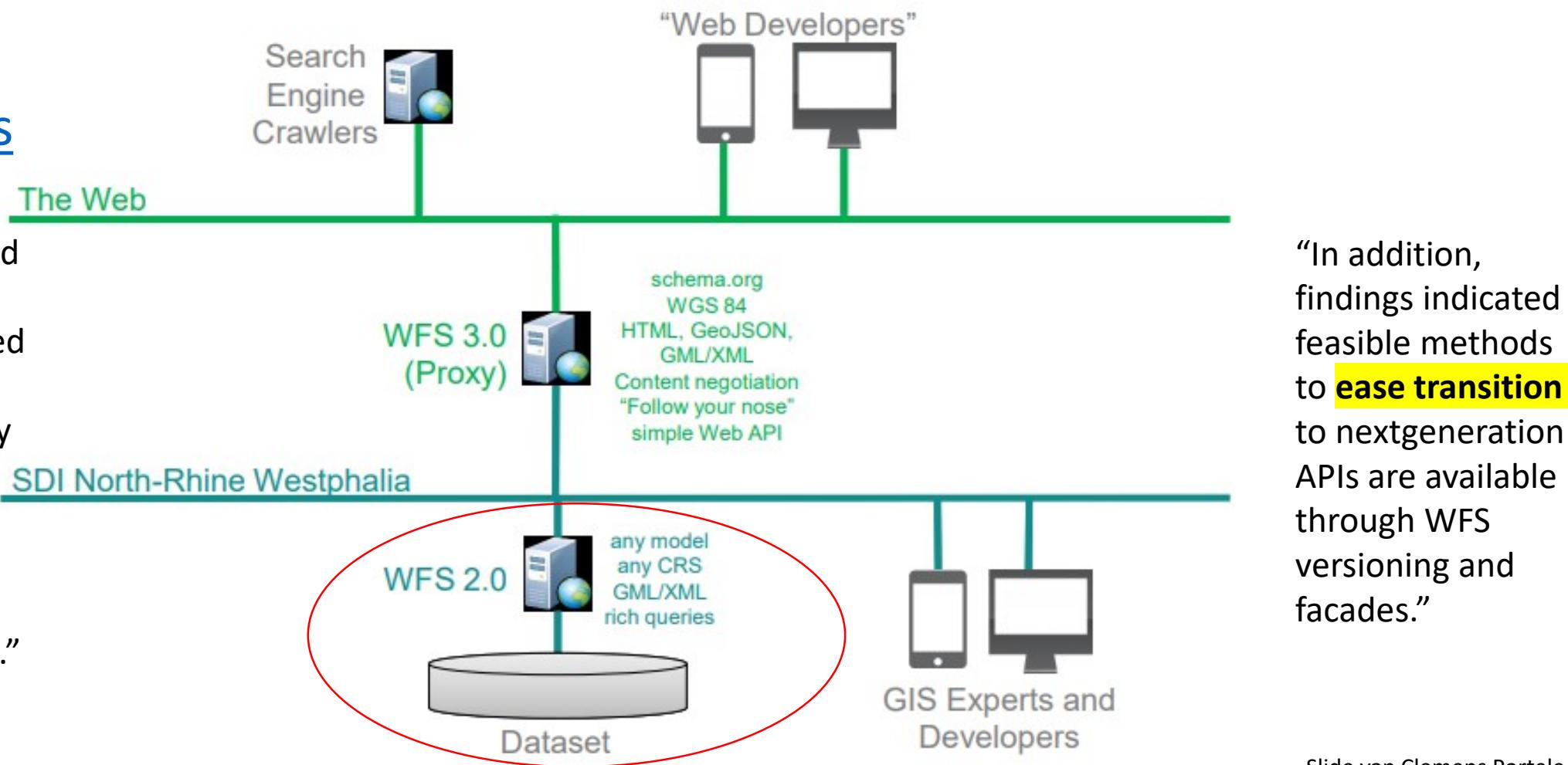
Implementation example in North-Rhine Westphalia

Implementaties beschikbaar

“Results of OGC Testbed 14 indicate the simple core of WFS 3.0 specified as OpenAPI can be **implemented rapidly** by software developers, and deliver geospatial feature resources secured by OpenID Connect and OAuth 2.0.”

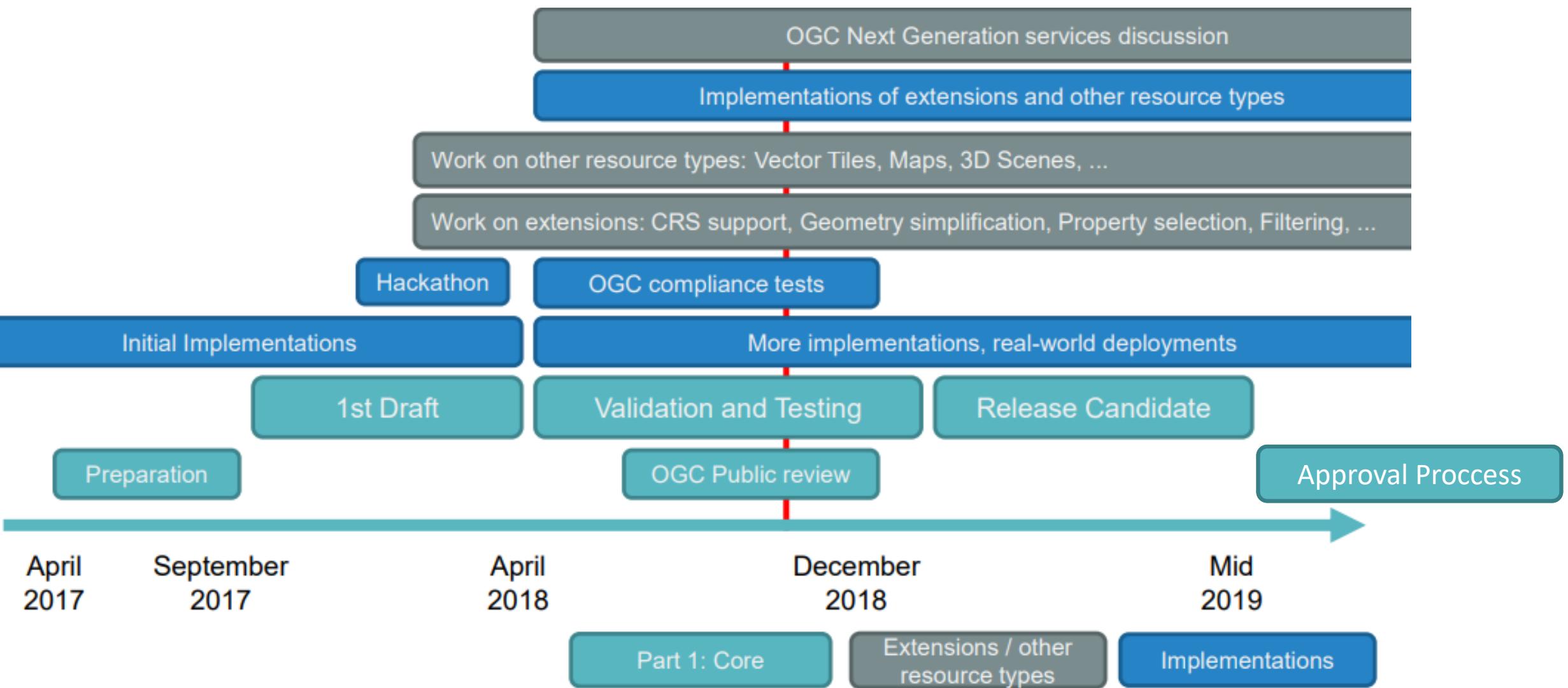
[Idproxy](#)

[GeoServer plugin](#)



Slide van Clemens Portele

OGC tijdspad voor WFS3 Core



Nederland

2019

Ervaring opdoen met WFS 3.0
Terugmelden op de OGC
standaard in consultatie

2020

WFS 3.0 op Pas-Toe-Of-Leg-Uit lijst



WFS 3.0 “Kern” in consultatie

Vaststellen WFS 3.0 Kern

Werk aan WFS 3.0 extensies

OGC

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