GEONOVUM

SDI.NL

Powered by INSPIRE

Ine de Visser
14-11-2019

Facts

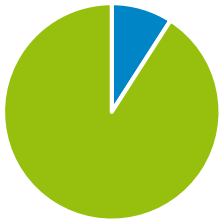
Founded in 2007

Public sector foundation

Supervisory Board appointed by Minister of the Interior and Kingdom Relations

Board of Directors

Project Board



Funding

Current annual portfolio 7 m€

Employees

Current employees: 30

50% detached from Public sector and Universities

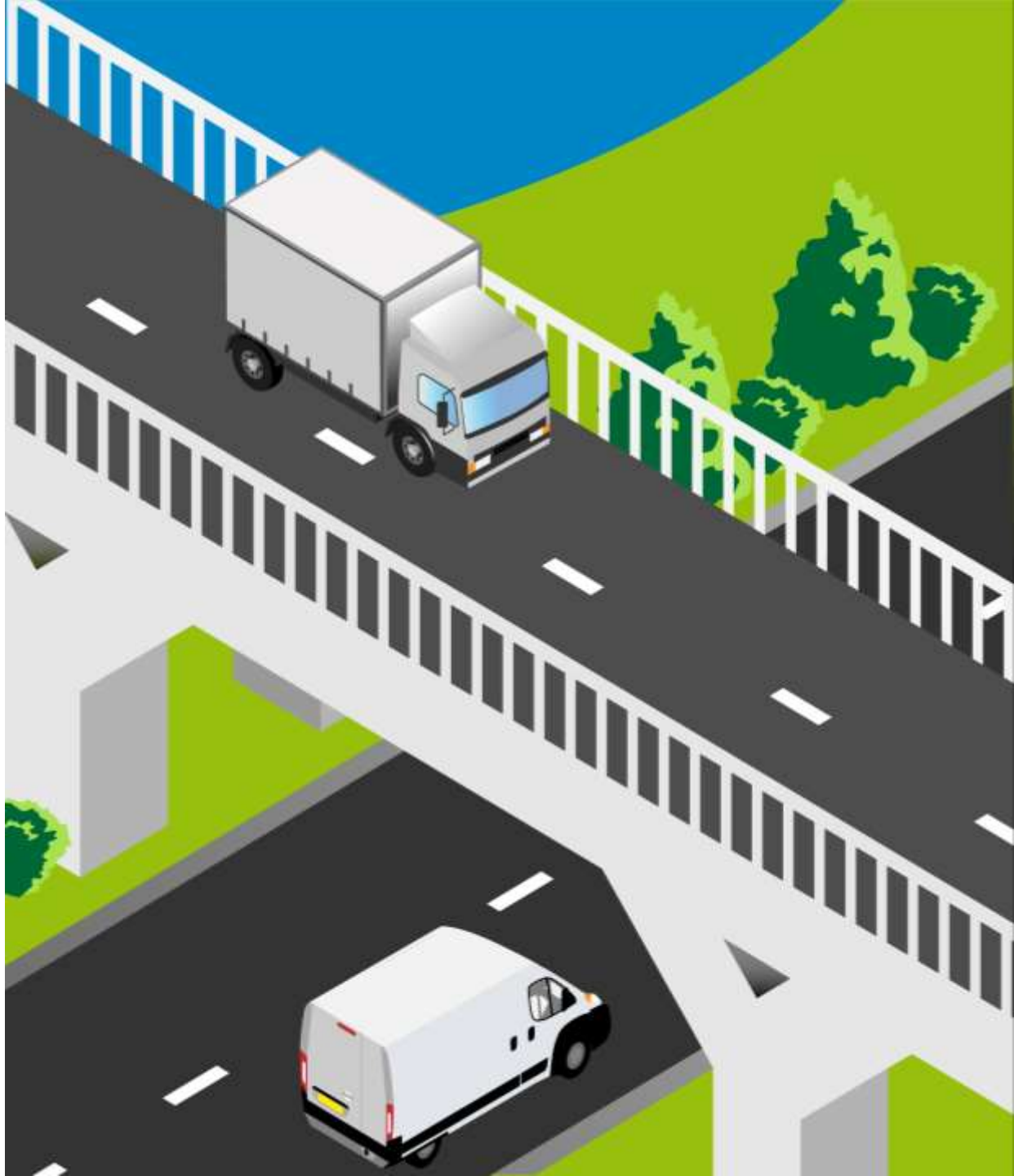
Geonovum is the executive committee of the National Spatial Data Infrastructure in the Netherlands.

Let the government perform better with geo-information.

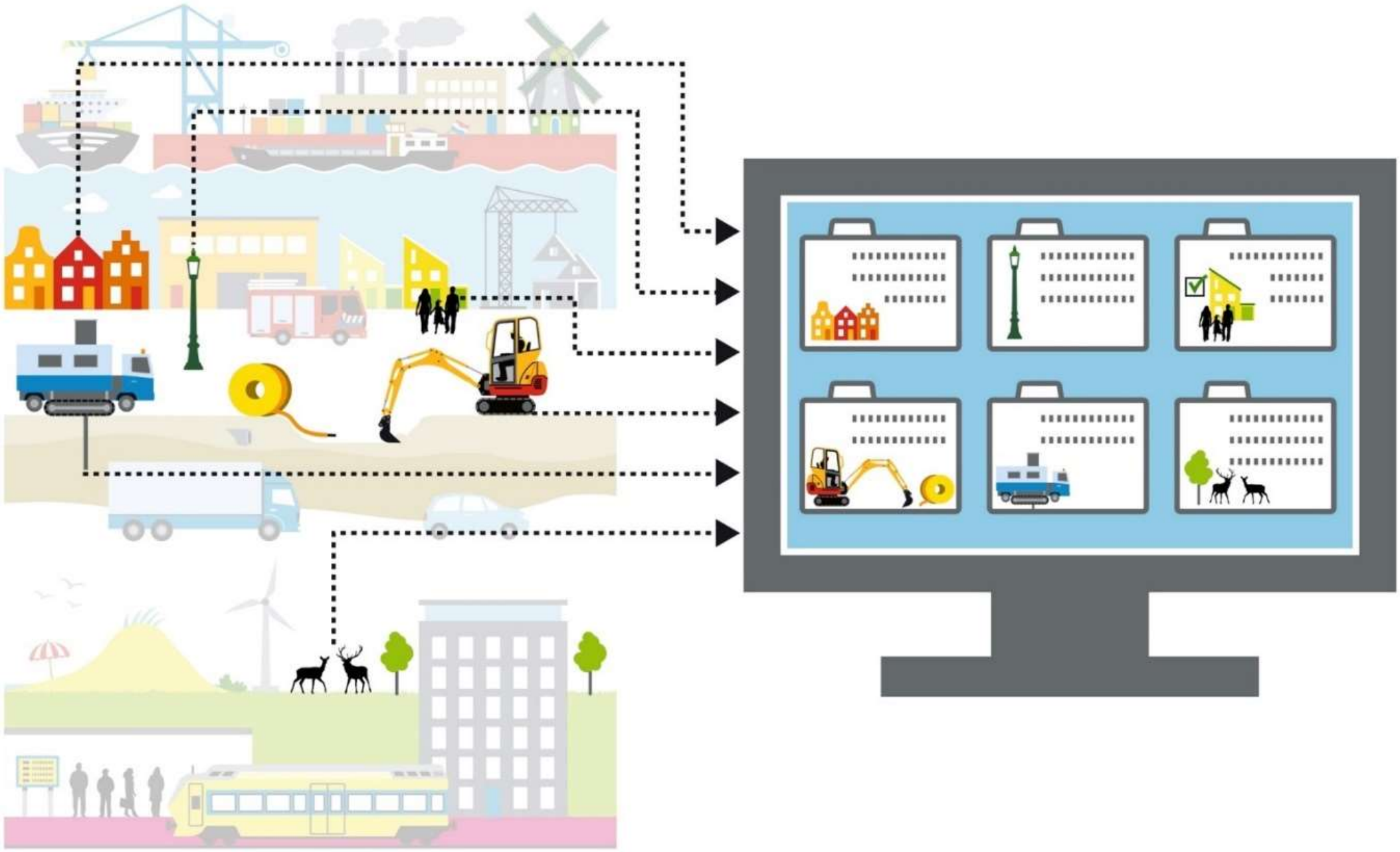
That is where we work on every day.

Geonovum explores, enables and ensures

Our tasks focus on developing and managing standards, ensuring that spatial data is accessible, interoperable and can easily be found and used.



The Spatial Enabled Society



The connecting force of standardization

We enable collaboration within sectors by developing and maintaining standards.

We do this in an open developing environment where both public and private sector parties work side-by-side.

By developing validation tools and instructions we furthermore enable data and service providers to meet the requirements of standards.

Standardization

Geonovum manages the geo-standards that are necessary for the geo-information infrastructure to work.

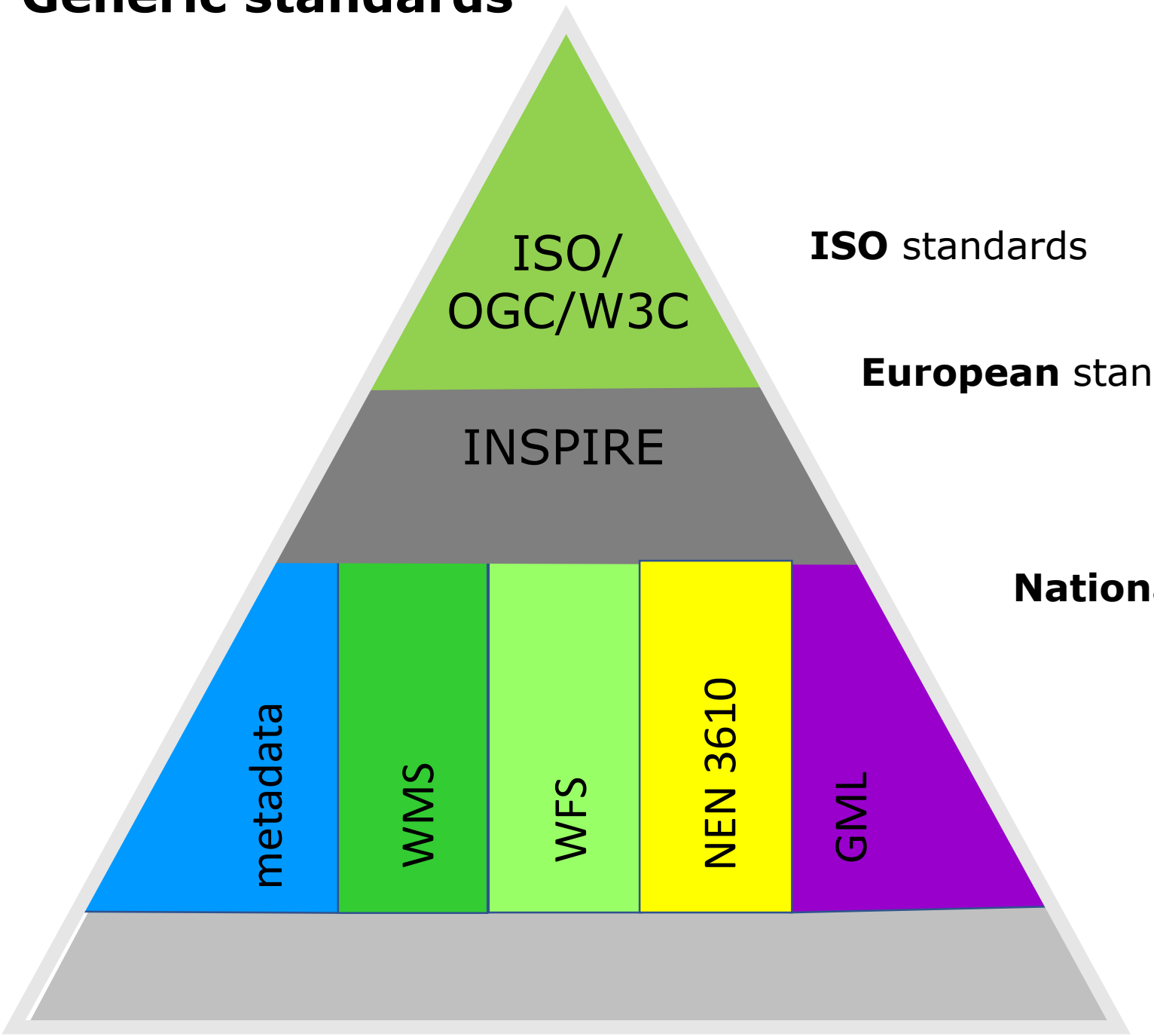
For this we work together and actively participate in various international standardization organizations.

- ISO / TC 211 and
- Open Geospatial Consortium (OGC)
- World Wide Web Consortium (W3C)
- INSPIRE
- we follow the developments at OMG and OASIS, which deal with standards for IT

This often involves coordinating domain-specific standards and coordination between geo standards and the i-government.

Geonovum ensures that new and changed international geo standards, if relevant and supported by the Netherlands, are adopted and recognized in the Netherlands.

Generic standards



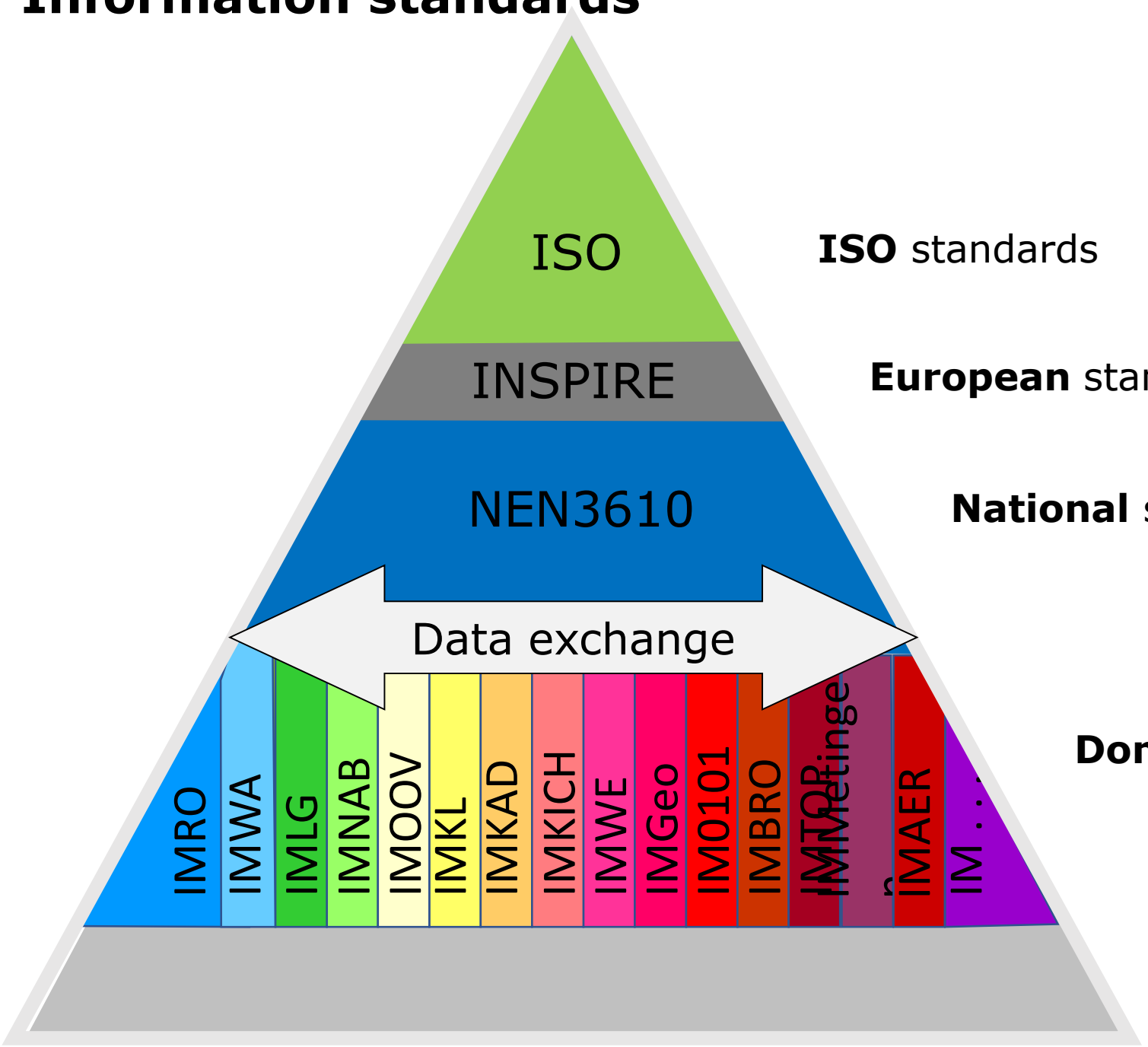
ISO standards

European standards

National standards

Organisation legacy

Information standards



ISO standards

European standards

National standards

Domain standards

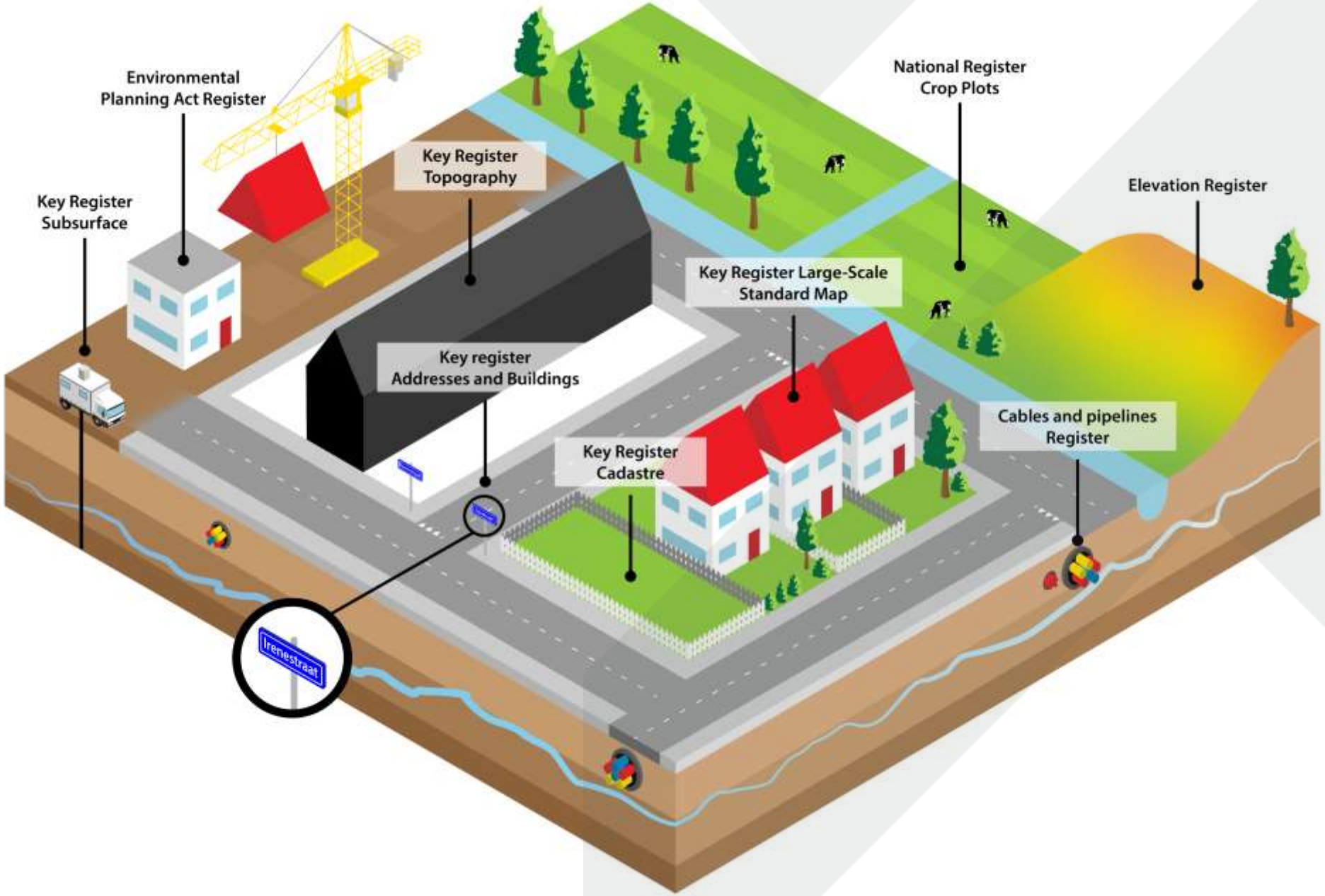
Domain vocabularies

Water
Spatial planning
Agriculture
Cadastral parcels
Air quality
Cultural History
Cables and pipelines
Public safety
….

Film:
https://www.youtube.com/watch?v=ms0CoSgT09Q&t=15s

Organisation legacy

GEONOVUM


Environmental Planning Act Register
Key Register Subsurface
Key Register Topography
National Register Crop Plots
Elevation Register
Key Register Large-Scale Standard Map
Key register Addresses and Buildings
Key Register Cadastre
Cables and pipelines Register
Irenestraat

INSPIRE

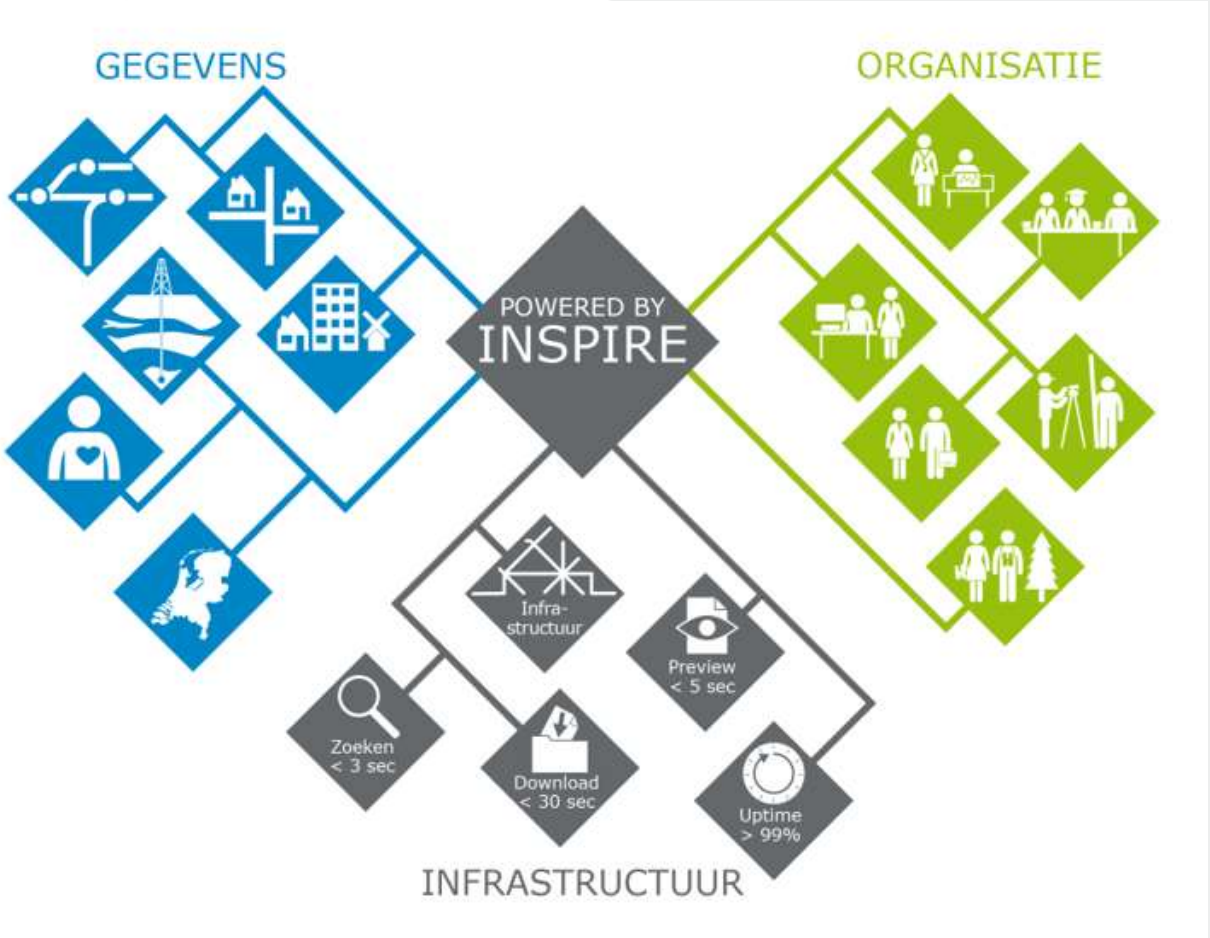
INSPIRE principles

Based on existing data

Data is only collected once and stored where it can be most effectively maintained

Building on existing infrastructures

Based on common agreements and standards



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Een wereld aan gegevens

GEONOVUM

Basisgegevens

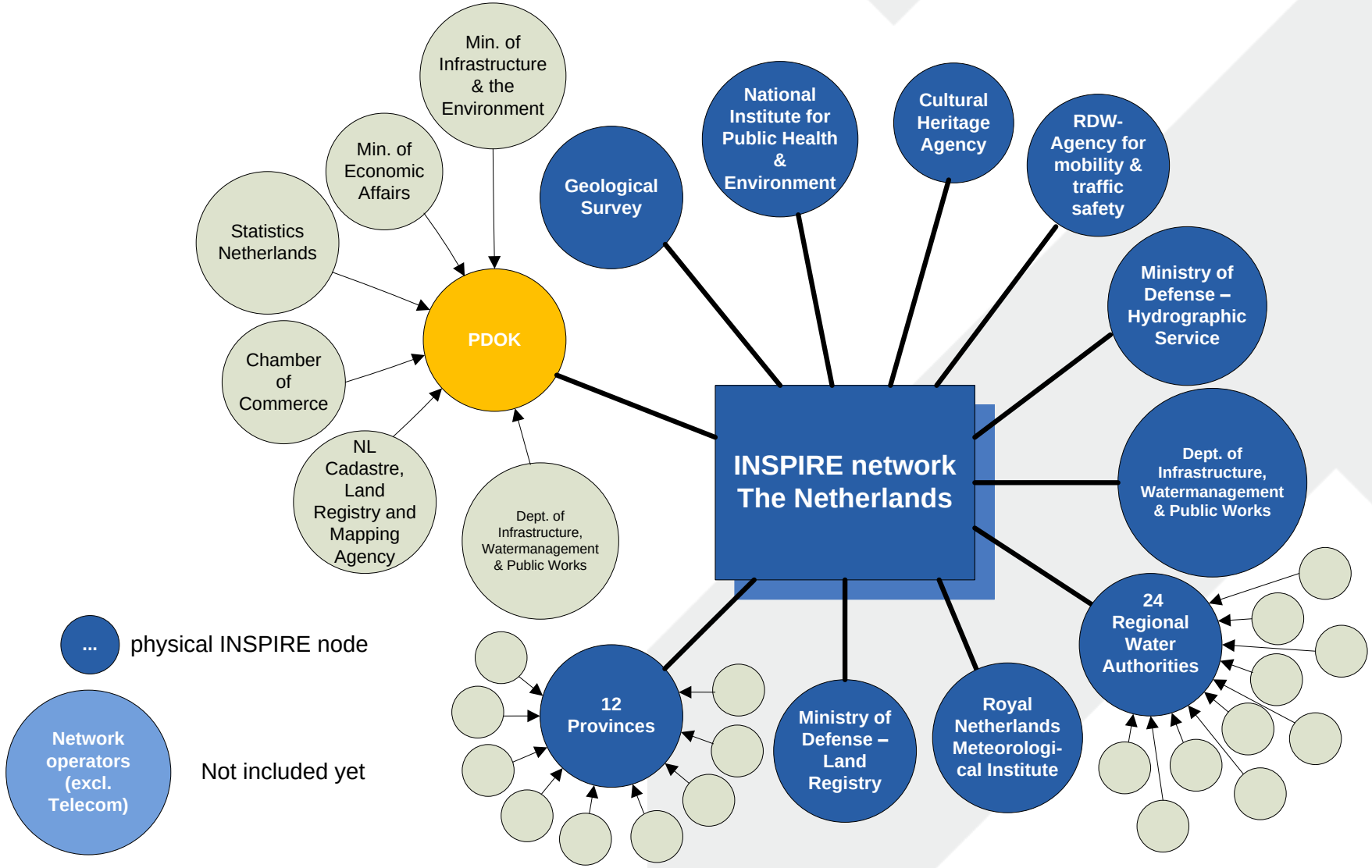
1. Administratieve eenheden
2. Adressen
3. Beschermde gebieden
4. Bodemgebruik
5. Geografisch rastersysteem
6. Geografische namen
7. Geologie
8. Hoogte
9. Hydrografie
10. Kadastrale percelen
11. Orthobeeldvorming
12. Systemen voor verwijzing door middel van coördinaten
13. Vervoersnetwerken

Thematische gegevens leefomgeving

A. Atmosferische omstandigheden
B. Biogeografische gebieden
C. Bodem
D. Energiebronnen
E. Faciliteiten voor landbouw en aquacultuur
F. Faciliteiten voor productie en industrie
G. Gebieden met natuurrisico's
H. Gebiedsbeheer, gebieden waar beperkingen gelden, gereguleerde gebieden en rapportage-eenheden
I. Gebouwen
J. Habitats en biotopen
K. Landgebruik
L. Menselijke gezondheid en veiligheid
M. Meteorologische geografische kenmerken
N. Milieubewakingsvoorzieningen
O. Minerale bronnen
P. Nutsdiensten en overheidsdiensten
Q. Oceanografische geografische kenmerken
R. Spreiding van de bevolking – demografie
S. Statistische eenheden
T. Verspreiding van soorten
U. Zeegebieden

www.geonovum.nl/inspire

INSPIRE data network



INSPIRE as flywheel

NGR Nationaal Georegister

Contact Help

GEONOVUM

Home | Zoeken | Kaart | Voor ontwikkelaars | Actueel | Over NGR | Inloggen

Welk onderwerp?

bos

Op welke locatie?

Toon resultaten Reset

Geavanceerd zoeken

7226 resultaten gevonden

Sortering: relevantie

Uitklappen Inklappen

ORGANISATIES

- Beheer PDOK (399)
- Provincie Drenthe (981)
- Provincie Utrecht (440)
- Provincie Zuid-Holland (565)
- Rijkswaterstaat (1297)

20 meer

TREFWOORDEN

- Bodem (399)
- Cultuurhistorie (403)

Orthofotomozaiek Westerschelde 2018

Organisatie: RWS Centrale Informatievoorziening (CIV)
Datum van de bron (aangemaakt): 2018-09-26

Onderwerp(en): Environment

Orthofotomozaiek van het projectgebied Westerschelde vervaardigd uit stereoluchtfoto-opnamen op 2-09-2018 en 26-09-2018 ter ondersteuning van het monitoringsprogramma in opdracht van WVL

Orthofotomozaiek Dollard 2018

Organisatie: RWS Centrale Informatievoorziening (CIV)
Datum van de bron (aangemaakt): 2018-07-27

Powered by INSPIRE

National spatial data register

- [ ] Bodem (399)
- [ ] Cultuurhistorie (403)
- [ ] Infrastructuur (408)
- [ ] Natuur (478)
- [ ] Vervoersnetwerken (446)

10 meer

LICENTIES

- [ ] CC BY (31)
- [ ] CC BY-NC (4)
- [ ] CC-BY (211)
- [ ] CCo (1840)
- [ ] Geo Gedeeld licentie (20)
- [ ] INSPIRE_Directive_Article13_1e (1)
- [ ] NoConditionsApply (260)
- [ ] NoLimitations (260)
- [ ] Public Domain (3081)

4 minder

BRONTYPE

Onderwerp(en): maatschappij

Locatie van Rotterdamse voorzieningen

Lokale bekendmakingen

Organisatie: Kennis- en Exploitatiecentrum Officiële Overheidspublicaties (KOOP)
Datum van de bron (publicatie): 2014-02-28

Onderwerp(en): maatschappij

Besluiten (bijvoorbeeld over het afgeven van een bouw- of kapvergunning) van gemeenten, provincies en waterschappen die worden gepubliceerd in de plaatselijke bladen, dagbladen en Staatscourant

---

Zwemwaterlocaties en zwemwaterkwaliteit - monsterpunten

Organisatie: Interprovinciaal Overleg
Datum van de bron (laatste wijziging): 2015-03-11

Onderwerp(en): natuur en milieu

De ongeveer 700 officiële zwemwaterlocaties worden jaarlijks, als ze geschikt bevonden zijn, door de provincies als zodanig aangewezen. Tijdens het zwemseizoen (van 1 mei tot 1 oktober)

National spatial data register

- Discovery (2)
- Download (276)
- Other (13)
- View (327)

PROTOCOL

- Download (1442)
- INSPIRE Atom (188)
- OGC:GML (703)
- OGC:KML (29)
- OGC:WCS (271)
- OGC:WFS (5258)
- OGC:WMS (5962)
- OGC:WMTS (99)
- UKST (336)
- Website (664)

5 minder

JAAR (AANGEMAAKT)

Transport weg

Organisatie: Interprovinciaal Overleg
Datum van de bron (laatste wijziging): 2012-12-03

Onderwerp(en): planning kadaster

Transport van gevaarlijke stoffen vindt plaats over de weg, het spoor, het water en door buisleidingen. Tijdens het transport kunnen dingen misgaan waardoor de gevaarlijke lading kan ontbranden of exploderen of waardoor er bijvoorbeeld giftige...

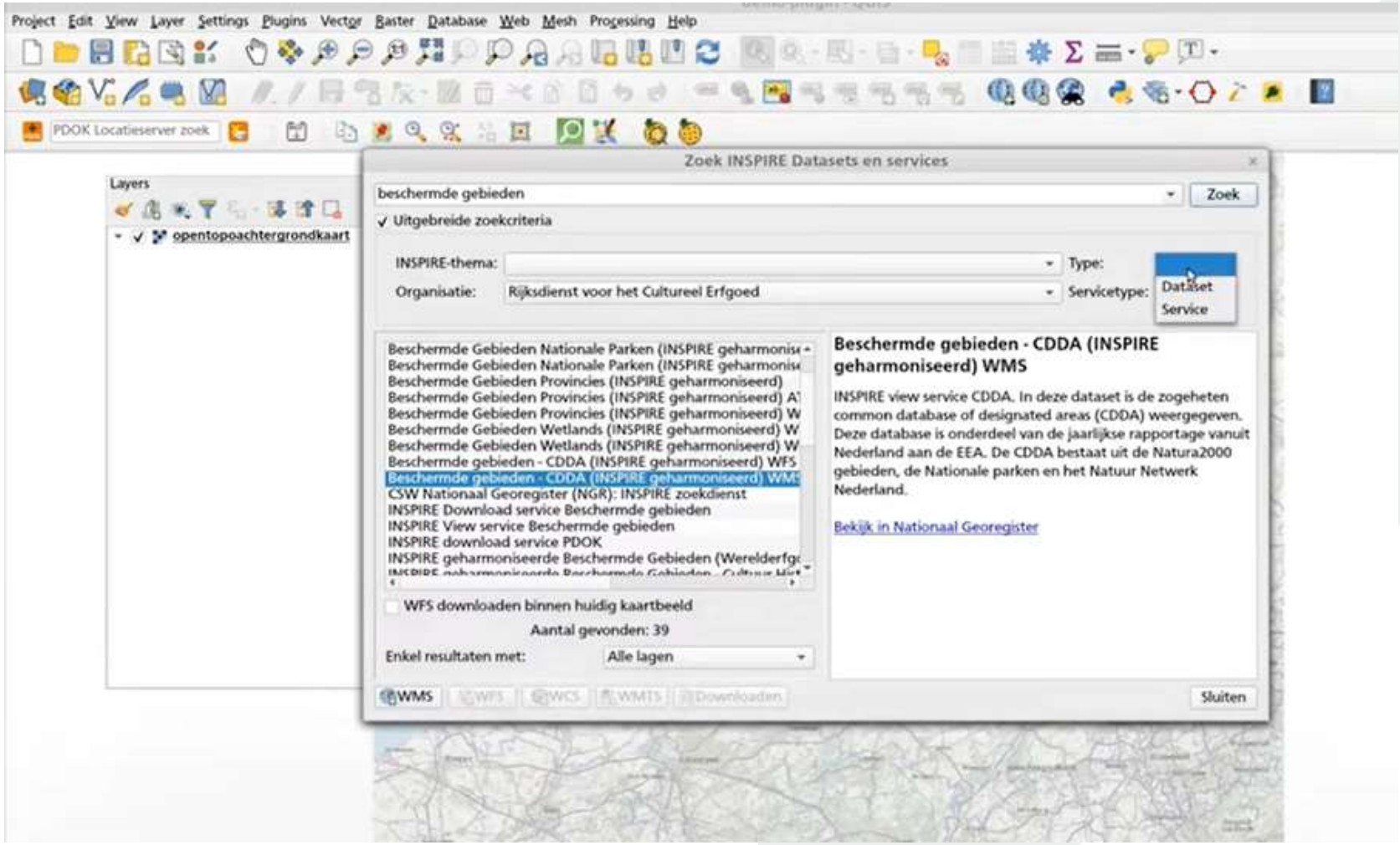
Inrichtingen ammoniak

Organisatie: Interprovinciaal Overleg
Datum van de bron (laatste wijziging): 2012-12-03

Onderwerp(en): natuur en milieu planning kadaster

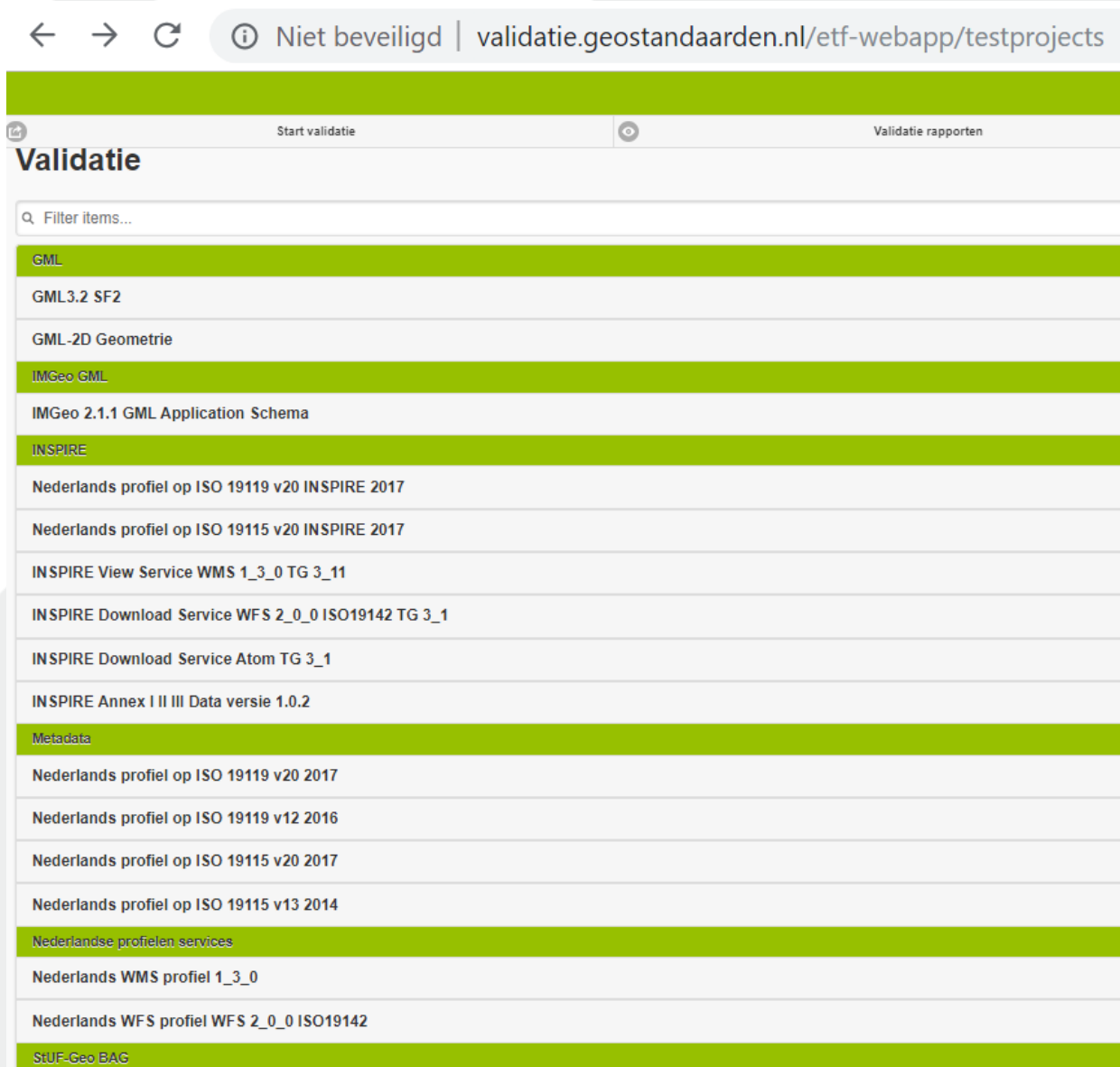
Bij ongevallen gevaarlijke stoffen gaat het om een groot ongeluk op een bedrijfsterrein. Een stof is een gevaarlijke stof wanneer deze giftig, brandbaar of explosief is, of een combinatie van deze eigenschappen heeft. Ammoniak (NH_3) wordt gebruikt...

Usability: INSPIRE QGIS plugin



Validation

By developing validation tools and instructions we enable data and service providers to meet the requirements of standards.



Workshop ‘The future of INSPIRE’

2018 INSPIRE Conference in Antwerp Geonovum organised a workshop on the future of INSPIRE. Around 70 people from a great variety of European member states (from coordinating bodies, data providers and implementors) and European institutions like the Commission and JRC participated.

Outcomes of this workshop are avaialble in english

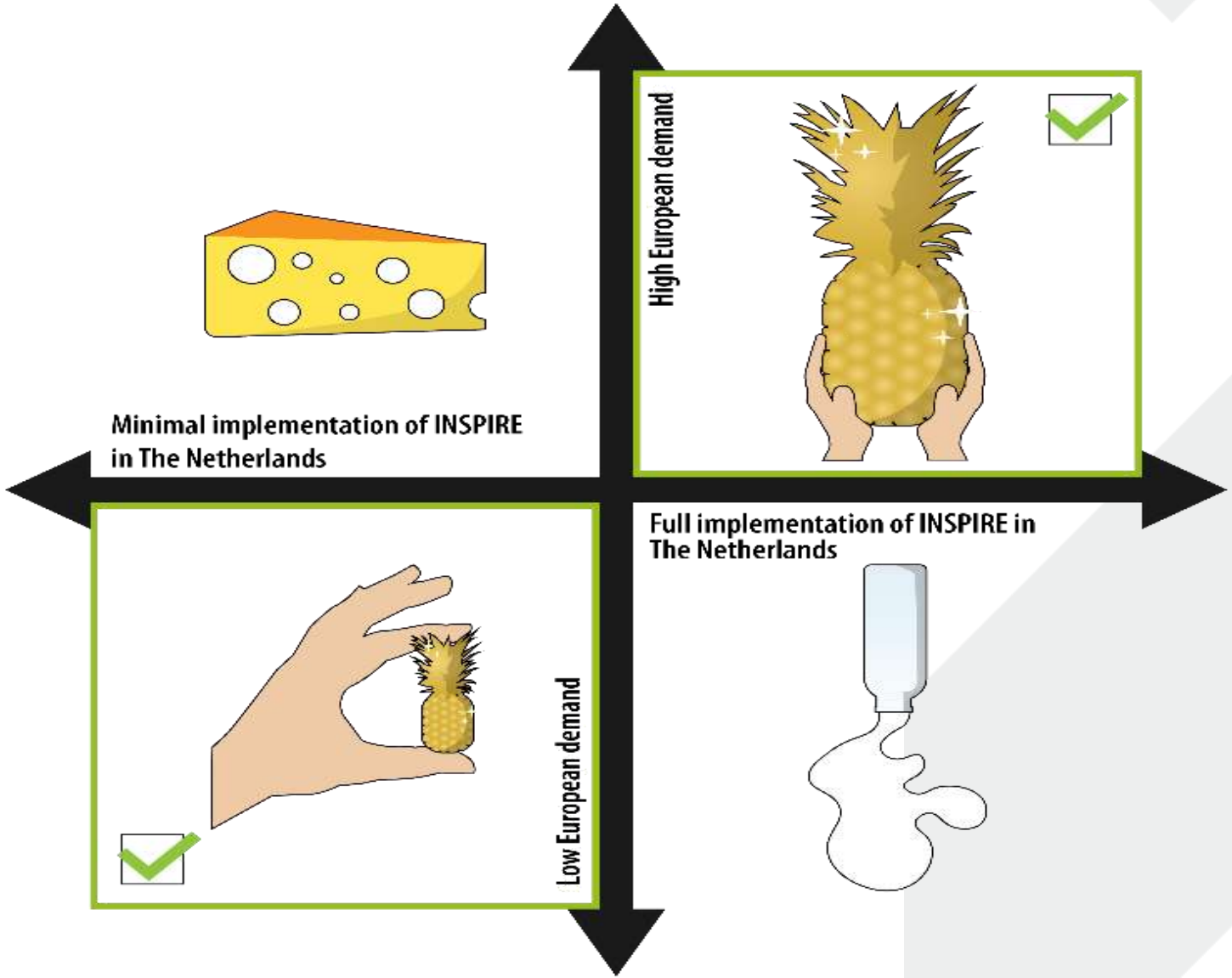
NL INSPIRE vision

The future of INSPIRE: from supply to demand?

From steering the implementation…

to managing the benefits

NL INSPIRE vision



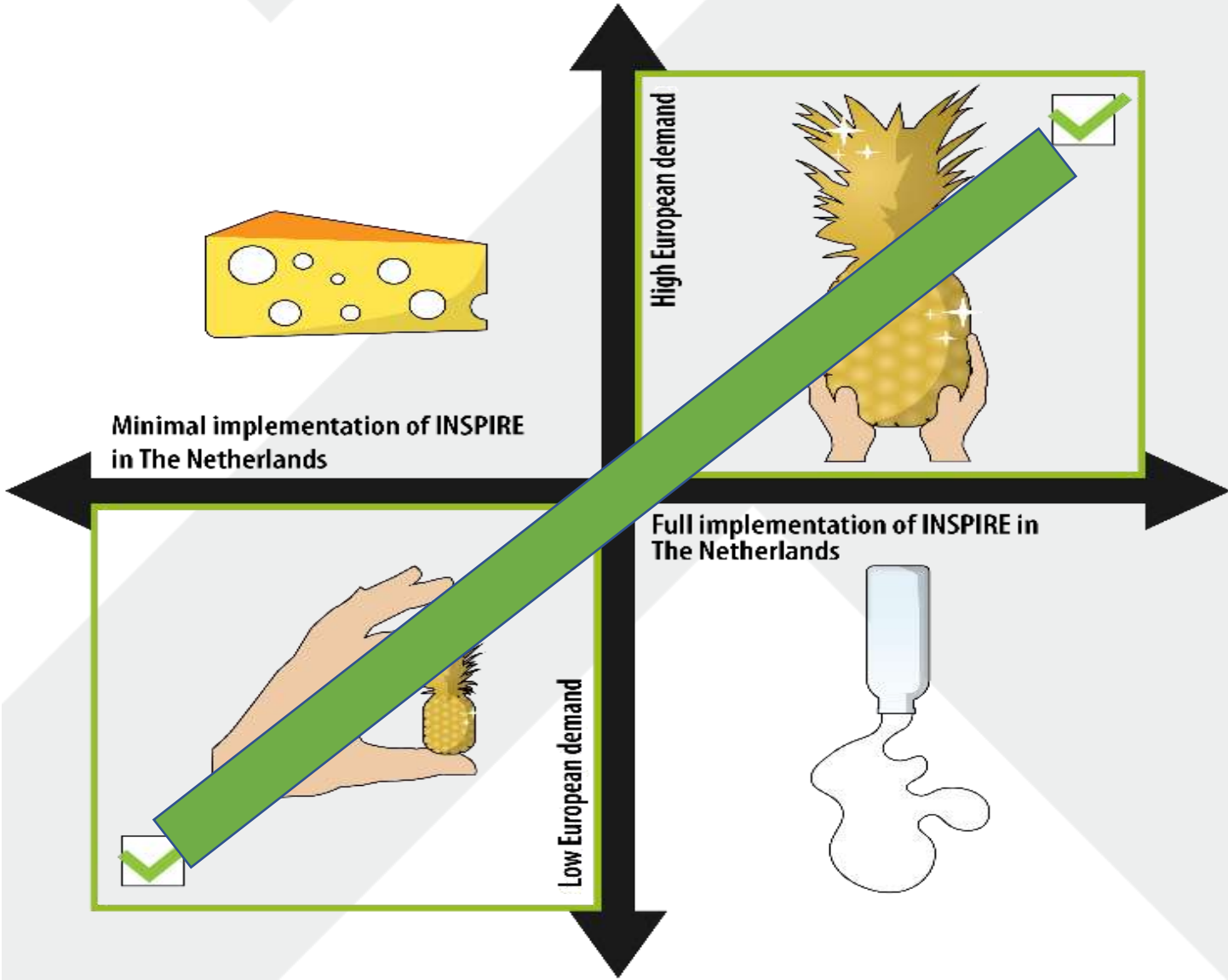
The upper left quadrant contains a cheese with holes. The (minimal) implementation is insufficient to respond to the demand. The consequence is that the benefits of INSPIRE are not cashed in, but the costs are low.

In the upper right scenario we find the **golden pineapple**: demand and supply connect with each other, benefits are redeemed, costs are (relatively) high.

At the bottom right we see spilt milk: there's optimal implementation but demand doesn't take off, creating over-supply and high costs.

on the lower left we have the **better one pineapple in the hand**... scenario: both demand and implementation are minimal, costs and benefits are low.

The quadrants are not so much a choice, but illustrate, from the point of view of efficiency, that we must strive to make supply and demand more compatible. This means, among other things, that we must look at which scenario is most desirable for each theme



NL INSPIRE vision, benfit management

An important means to find a good balance between demand and supply is benefit management.

In the case of INSPIRE, we find the benefits in particular at European level. This means that good interaction between the European and national levels is essential.

An example of this is the use of INSPIRE for reporting on environmental directives. The benefits are not only for the European Environment Agency (better European environmental policy), but also for the member states (no double reporting streams and therefore a reduction in the burden).

However, realising these benefits does not happen by itself and will only succeed if all parties involved

NL INSPIRE vision, conclusions

The philosophy of sharing European information so this information can be used quickly and relatively easily in policy, is seen as valuable by most parties.

The broad support for this within Europe and Member States is unique, as is the European and national organisation of INSPIRE.

There is a functioning and extensive network in place with enough energy to achieve common objectives.

This organisation becomes stronger by the legal basis, which makes INSPIRE a very strong instrument for unlocking European data.

In recent years, INSPIRE has therefore had , positive effects on the development of a Dutch and European SDI.

The vison document is available in english

NL INSPIRE vision, conclusions 2

At the same time we have to conclude that it has not been enough for the actual purposes of INSPIRE. Using data for European environmental policy is still very limited.

The main reason for this is that supply does not yet totally fit demand. This applies not just to the supply of data but also to the way it is supplied.

Now that demand for European data is growing in more and more areas, the challenge is to prioritise a correct and rapid response to that demand.

This means requirements for;

- the organisation (involving the demand),
- the data (new sets of information) and
- the technique (new techniques for unlocking the data).

The steering has so far focused mainly on the technical implementation of INSPIRE and not on the realisation of the benefits.

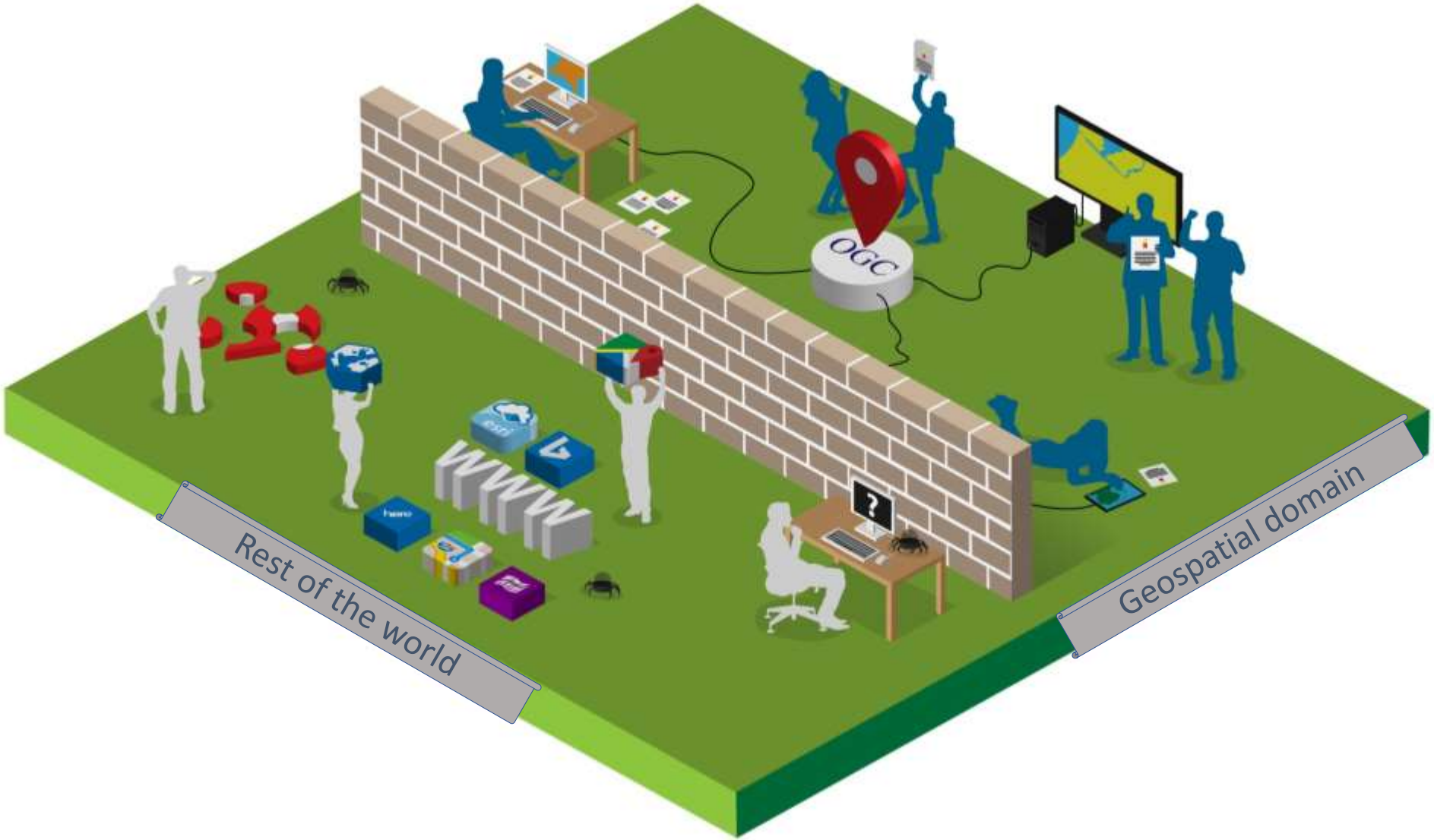
The Commissions' steps towards working with priority datasets and exploring the possibilities in other policy areas are good developments and seem to indicate a move in a direction in which the European demand will become more central

The vison document is available in english

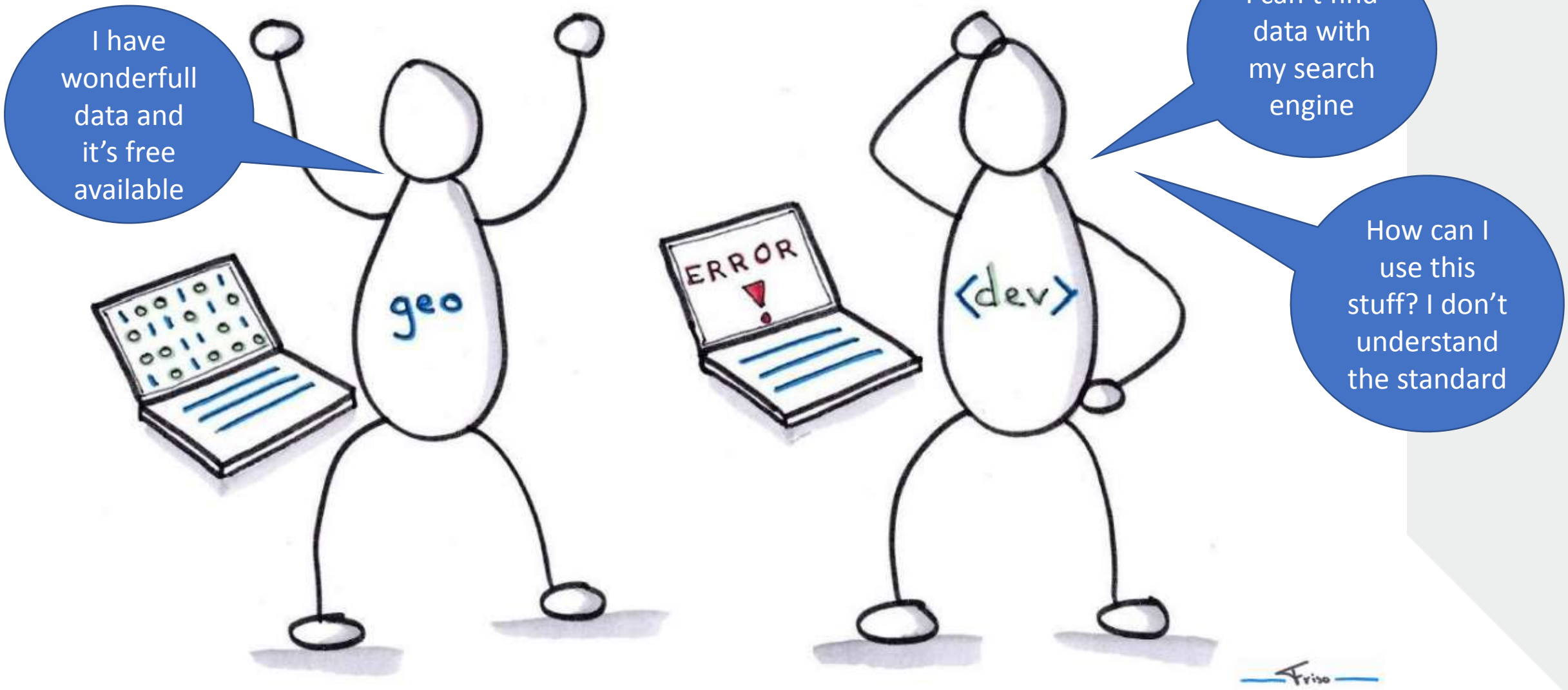
Developments

SDI.Next

Geo spatial versus Rest of the world



Geo spatial versus Rest of the world



GEONOVUM

W3C Working Group Note

Spatial Data on the Web Best Practices

OGC® Making location count.

W3C

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/

Editors:

Jeremy Tandy, Met Office
Linda van den Brink, Geonovum
Payam Barnaghi, University of Surrey

GEONOVUM

Best Practices Summary

Web principles

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

Spatial aspects

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

Spatial aspects

Best Practice 8: State how coordinate values are encoded

Best Practice 9: Describe relative positioning

Access

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'

Metadata

Best Practice 13: Include spatial metadata in dataset metadata

Best Practice 14: Describe the positional accuracy of spatial data

Web Principles!

WEB ARCHITECTURE

- ★ **Linkable:** use stable and discoverable global identifiers
- ★★ **Parseable**: use standardized data metamodels (e.g. CSV, XML, RDF, or JSON).
- ★★★ **Understandable**: use well-known or at least well-documented vocabularies/schemas
- ★★★★ **Linked**: link to other resources whenever possible
- ★★★★★ **Usable**: label your document with a license

CityJSON

Spatial Aspects

Nieuwe uitwisselstandaarden
Lichtere formaten

goodbye

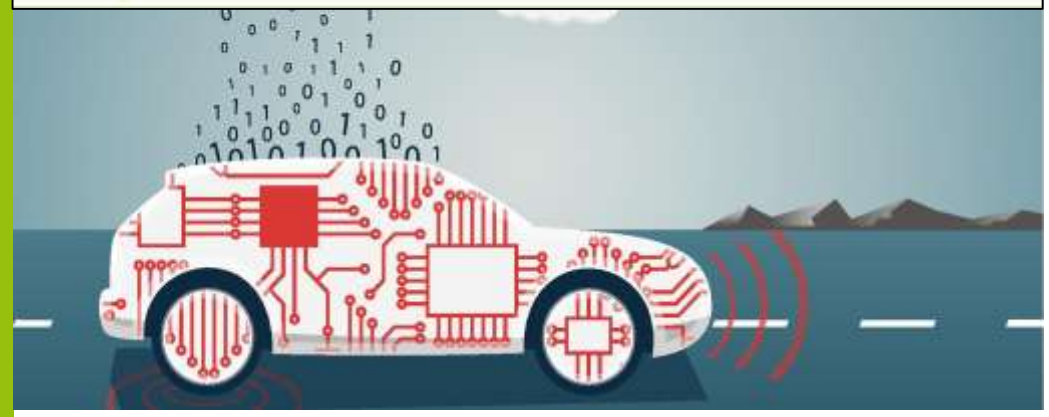
</GML>...?

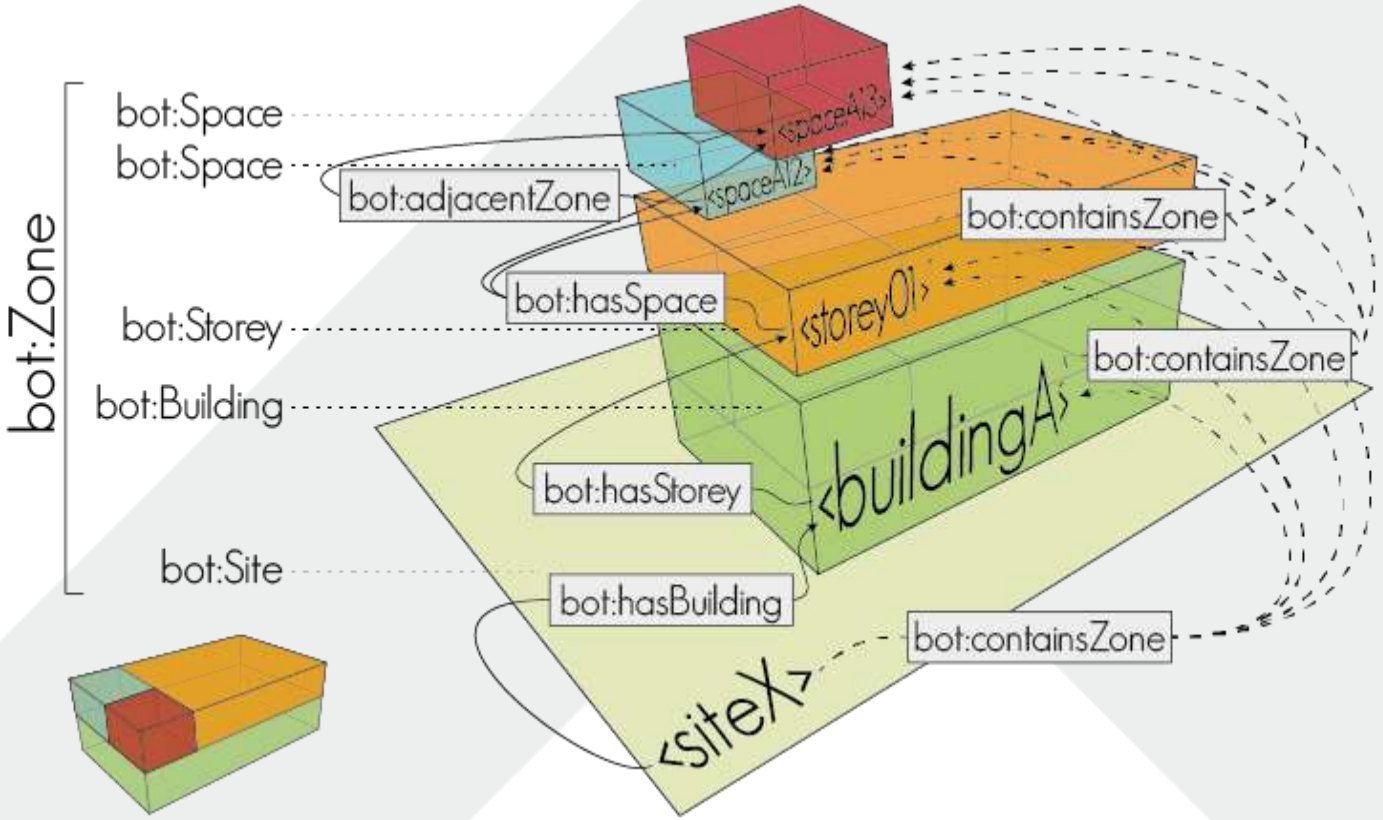
{GeoJSON}

```
"type": "FeatureCollection",
"features": [
  {
    "type": "Feature",
    "geometry": {
      "type": "Point",
      "coordinates": [102.0, 0.5]
    },
    "properties": {
      "prop0": "value0"
    }
  },
  {
    "type": "Feature",
    "geometry": {
      "type": "LineString",
      "coordinates": [
        [102.0, 0.0], [103.0, 1.0], [104.0, 0.0], [105.0, 1.0]
      ]
    },
    "properties": {
      "prop0": "value0",
      "prop1": 0.0
    }
  },
  {
    "type": "Feature",
    "geometry": {
      "type": "Polygon",
      "coordinates": [
        [
          [100.0, 0.0], [101.0, 0.0], [101.0, 1.0],
          [100.0, 1.0], [100.0, 0.0]
        ]
      ]
    },
    "properties": {
      "prop0": "value0",
      "prop1": { "this": "that" }
    }
  }
]
```

Bron: wikipedia

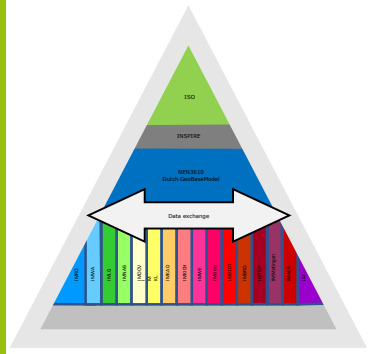
What? Are datamodels still important?





Linked Building Ontology

Geo-vocabulaires: UML > RDF



Universe of Discourse (UoD)

model of

model of

UML model

autom.transformation

RDF model #1

manual refinement

RDF model #2

conforms to

conforms to

conforms to

UML NEN3610 metamodel

- Use standardized vocabularies
- Complex datatypes as concepts
- Codelist values as concepts
- Relating external concepts
- Multiple inheritance
- UML:Class not same as OWL:Class

RDF GeoBase metamodel

Access
API strategy

GEONOVUM

Geonovum Versie ter vaststelling

INHOUDSOPGAVE

1. Inleiding
1.1 Status van de API strategie
1.2 Auteurs
1.3 Leeswijzer

2. Communicatie en beleid
2.1 De digitale overheid heeft een probleem
2.2 Wat is een API?
2.3 Wat betekenen APIs voor mijn organisatie?
2.4 Nederland heeft al schitterende voorbeelden

3. Inspelen op gebruikerswensen: dé sleutel tot gebruik
3.1 Inleiding
3.2 Overkoepelende aanbeveling: biedt een goede 'developer experience (DX)'
3.3 Gebruik: van 'onboarding' tot 'in productie'
3.4 Specifieke aanbevelingen voor een goede DX
3.4.1 Aanbeveling 1: werk met (meerdere) persona's
3.4.2 Aanbeveling 2: analyseer welke API's je aan moet bieden: welke informatievragen wil je beantwoorden?
3.4.3 Aanbeveling 3: documenteer gericht op de gebruiker, biedt snel inzicht en gebruik OAS 3
3.4.4 Aanbeveling 4: minimaliseer Time to First Call met een goede Sandbox
3.4.5 Aanbeveling 5: borg ontwikkeling en beheer
3.4.5.1 Aanbeveling 5.1 Stel een SLA op
3.4.5.2 Aanbeveling 5.2 Biedt een roadmap aan
3.4.5.3 Aanbeveling 5.3 Doe aan versiebeheer
3.4.5.4 Aanbeveling 5.4 Sluit de feedback-loop: betrek de community

API strategie voor de Nederlandse overheid

GEONOVUM

Geonovum Handreiking
Versie ter vaststelling 15 juli 2019

Deze versie:
https://docs.geostandaarden.nl/api/vv-hr-API-Strategie-20190715/

Laatst gepubliceerde versie:
https://docs.geostandaarden.nl/api/API-Strategie/

Vorige versie:
https://docs.geostandaarden.nl/api/cv-hr-API-Strategie-20190213/

Laatste werkversie:
https://geonovum.github.io/KP-APIs/

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Han Zuidweg, Forum Standaardisatie
Friso Penninga, Geonovum
Matthias Snoei, Swis
Jasper Roes, Het Kadaster
Peter Haasnoot, Logius

Doe mee:
GitHub geonovum/KP-APIs
Dien een melding in
Revisiehistorie
Pull requests

Rechtenbeleid:
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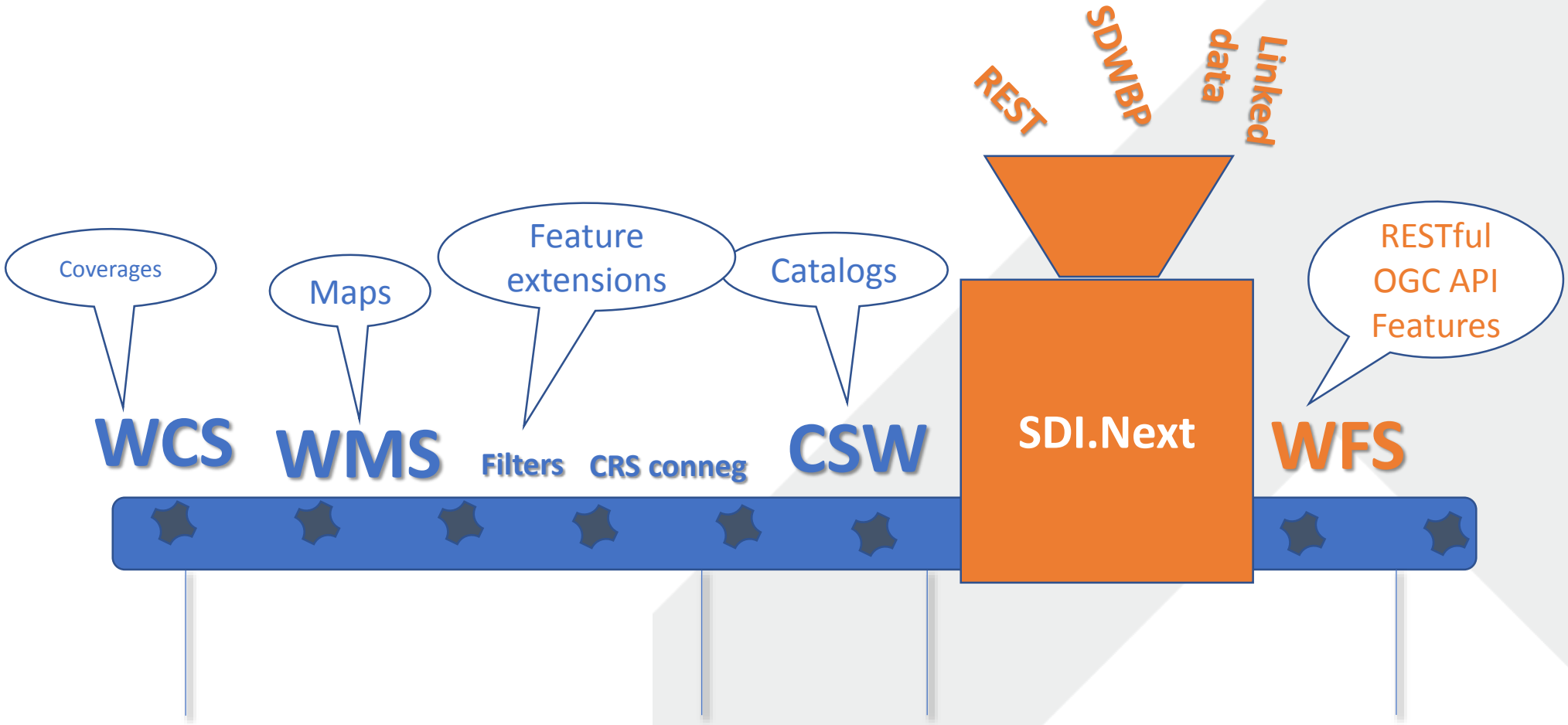
New generation OGC standaards



Metadata is still needed

W3C Candidate Recommendation

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5.5 Classifying dataset types
5.6 Describing catalog records metadata
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5.8 A dataset available as a download and behind some Web page
5.9 A dataset available through a service
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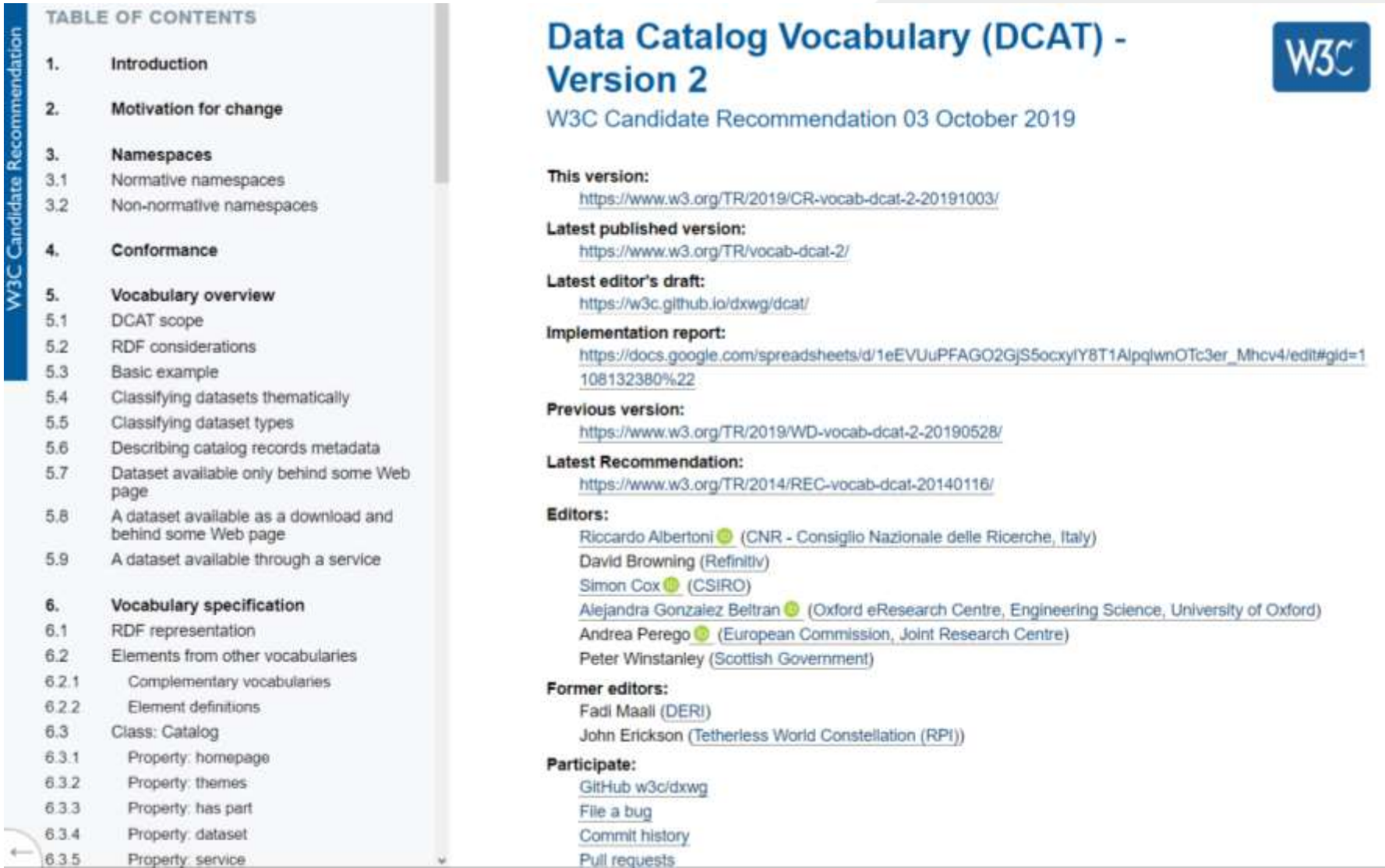
6.2.1 Complementary vocabularies
6.2.2 Element definitions
6.3 Class: Catalog
6.3.1 Property: homepage
6.3.2 Property: themes
6.3.3 Property: has part
6.3.4 Property: dataset
6.3.5 Property: service



Data Catalog Vocabulary (DCAT) - Version 2

W3C Candidate Recommendation 03 October 2019

This version:
https://www.w3.org/TR/2019/CR-vocab-dcat-2-20191003/

Latest published version:
https://www.w3.org/TR/vocab-dcat-2/

Latest editor's draft:
https://w3c.github.io/dxwg/dcat/

Implementation report:
https://docs.google.com/spreadsheets/d/1eEVUuPFAGO2GjS5ocxylY8T1AlpqlwnOTc3er_Mhcv4/edit#gid=1108132380%22

Previous version:
https://www.w3.org/TR/2019/WD-vocab-dcat-2-20190528/

Latest Recommendation:
https://www.w3.org/TR/2014/REC-vocab-dcat-20140116/

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Participate:
GitHub w3c/dxwg
File a bug
Commit history
Pull requests

The future

NoSQL databases, graph stores

Each object **individual** findable and accessable

Unlocked with APIs

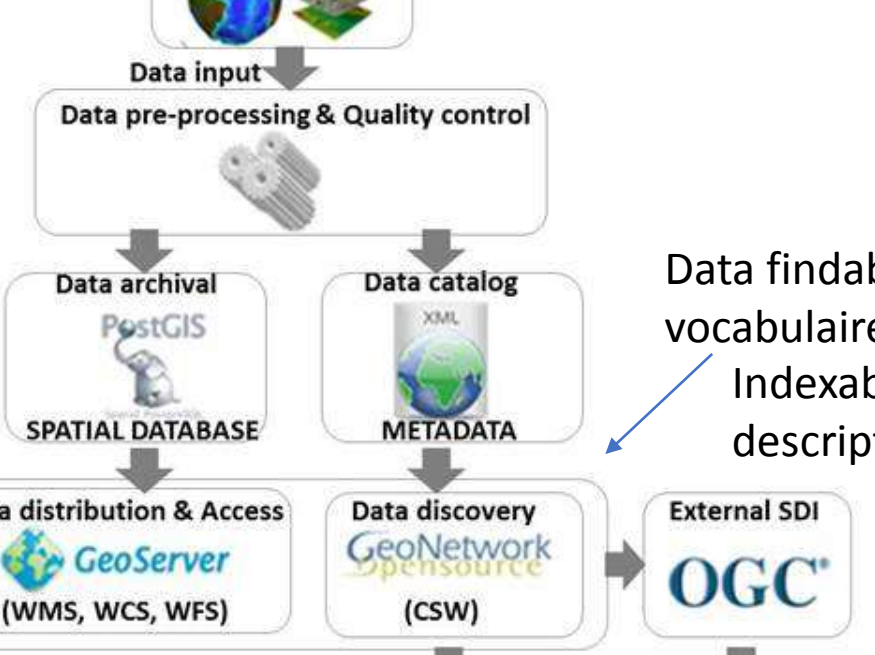
The existing SDI…

Also sensordata

Data findable via vocabulaires

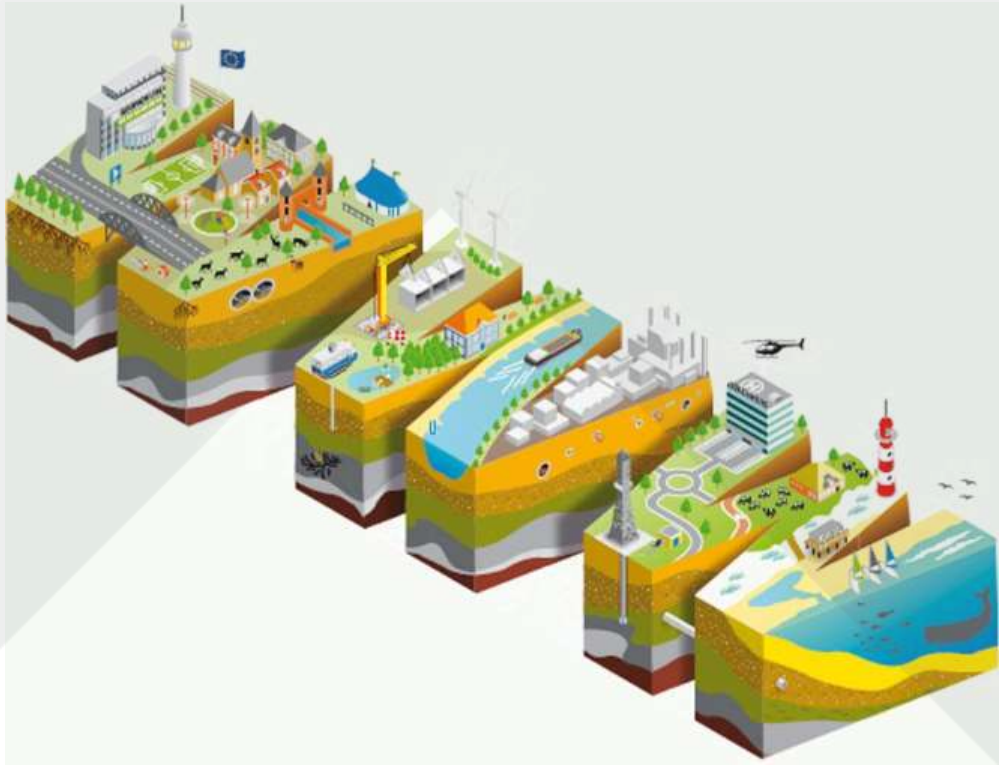
Indexable dataset descriptions

Light formats

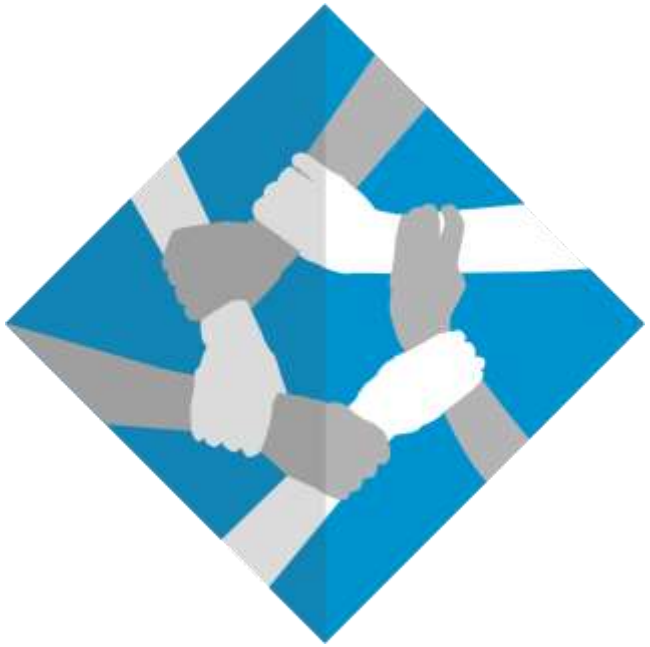


We contribute the knowledge and experience we gain in the Netherlands to the working groups of the international standardization organizations;

- the Open Geospatial Consortium (OGC) and
- the World Wide Web Consortium (W3C)



Major success factors



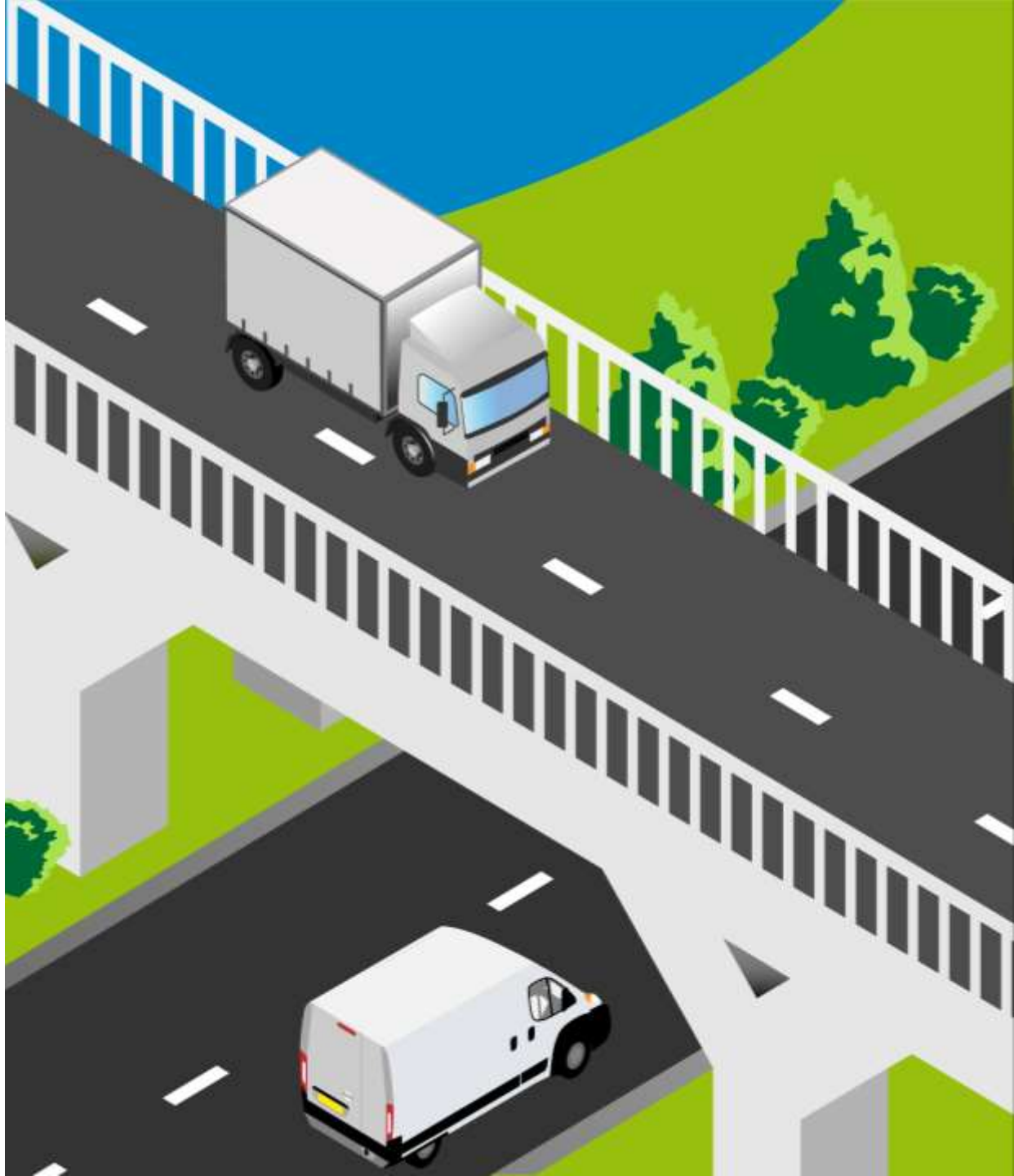
- Knowledge
- Network
- Neutrality

GEONOVUM

Work on all aspects of interoperability;

explore, enable and ensure

focus on developing and managing standards, ensuring that spatial data is accessible, interoperable and can easily be found and used.



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