Action 1.1 - Towards a digital ecosystem for the environment and sustainability

Structure

1) Status of INSPIRE Good practices
2) Pool of experts on data-driven innovation
3) JRC Science for Policy report

Good practices

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English (en)

INSPIRE KNOWLEDGE BASE

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Infrastructure for spatial information in Europe

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- INSPIRE
- INSPIRE in your Country
- Learn
- Maintenance and Implementation
- Metadata
- MIG Work Programme
- Monitoring and Reporting
- Network Services
- Participate
- Spatial Data Services
- Use

Good Practice Library

Good Practice documents

Candidate	Endorsed
Building one access point to dispersed data sources	GeoDCAT-AP
Making spatial data downloadable via WMS services	SDMX for Human Health and Population Distribution
OGC compliant INSPIRE Coverage data and service implementation	OGC API – Features as an INSPIRE download service
	OGC SensorThings API as an INSPIRE download service

Good Practice Template

Download Template

Context

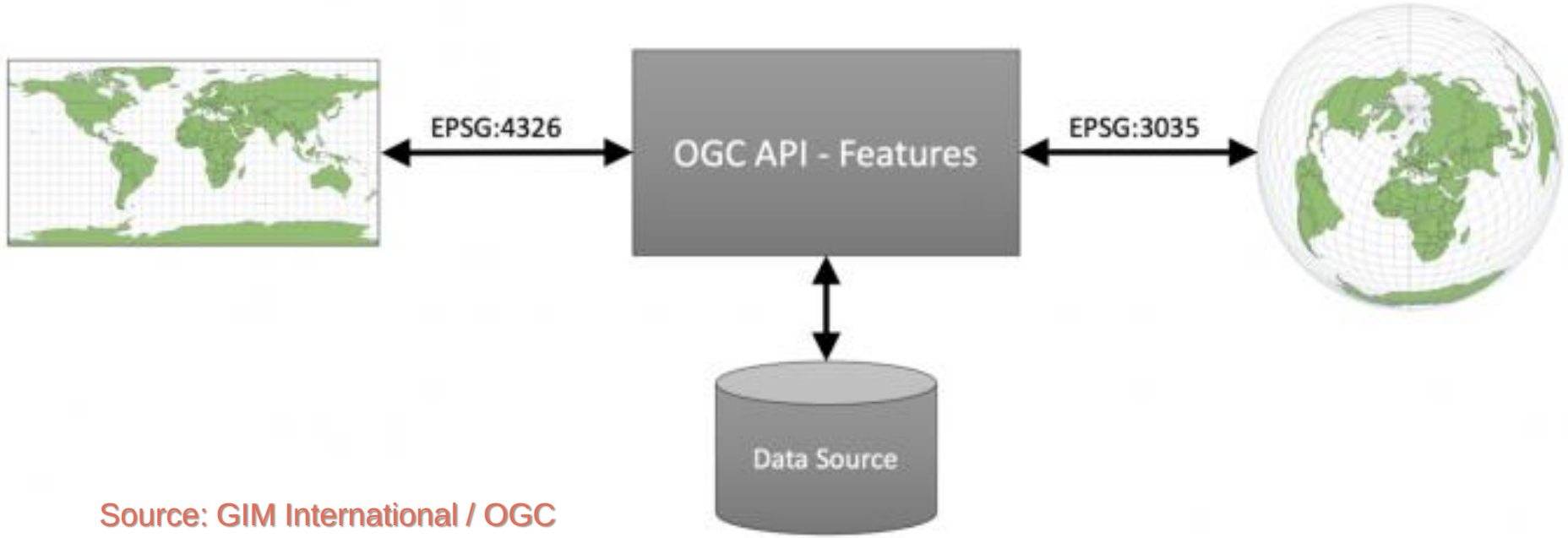
The development of INSPIRE foresaw the creation of an initial set of legally-binding Implementing Rules (IRs) and Technical Guidelines (TGs). As technology evolved since INSPIRE's creation and as experience is being gained through the implementation process, the need for new TGs emerged (e.g. for download services for observations and coverages), alongside a range of related tools that can maximise the benefits of the implementation process. These were developed in 2015 and 2016 under dedicated actions under the Maintenance and Implementation Work Programme.

At the same time, in the Thematic Clusters discussion forums, good practices for specific implementation issues (e.g. how to create persistent identifiers), opportunities offered by emerging technologies and standards (e.g. Vector Tiles, OGC SensorThings API) or extensions/profiles for specific application domains are being shared and discussed. Also, work in Member States, by solution providers or in research projects often yield interesting results that implementers in other Member States could benefit from.

https://github.com/INSPIRE-MIF/gp-ogc-api-features

OGC API-Features

- Endorsed by the 12th MIG meeting as an INSPIRE Good Practice
- Suggested amendments by the MIG:
  - Inclusion of options for CRS different from CRS84

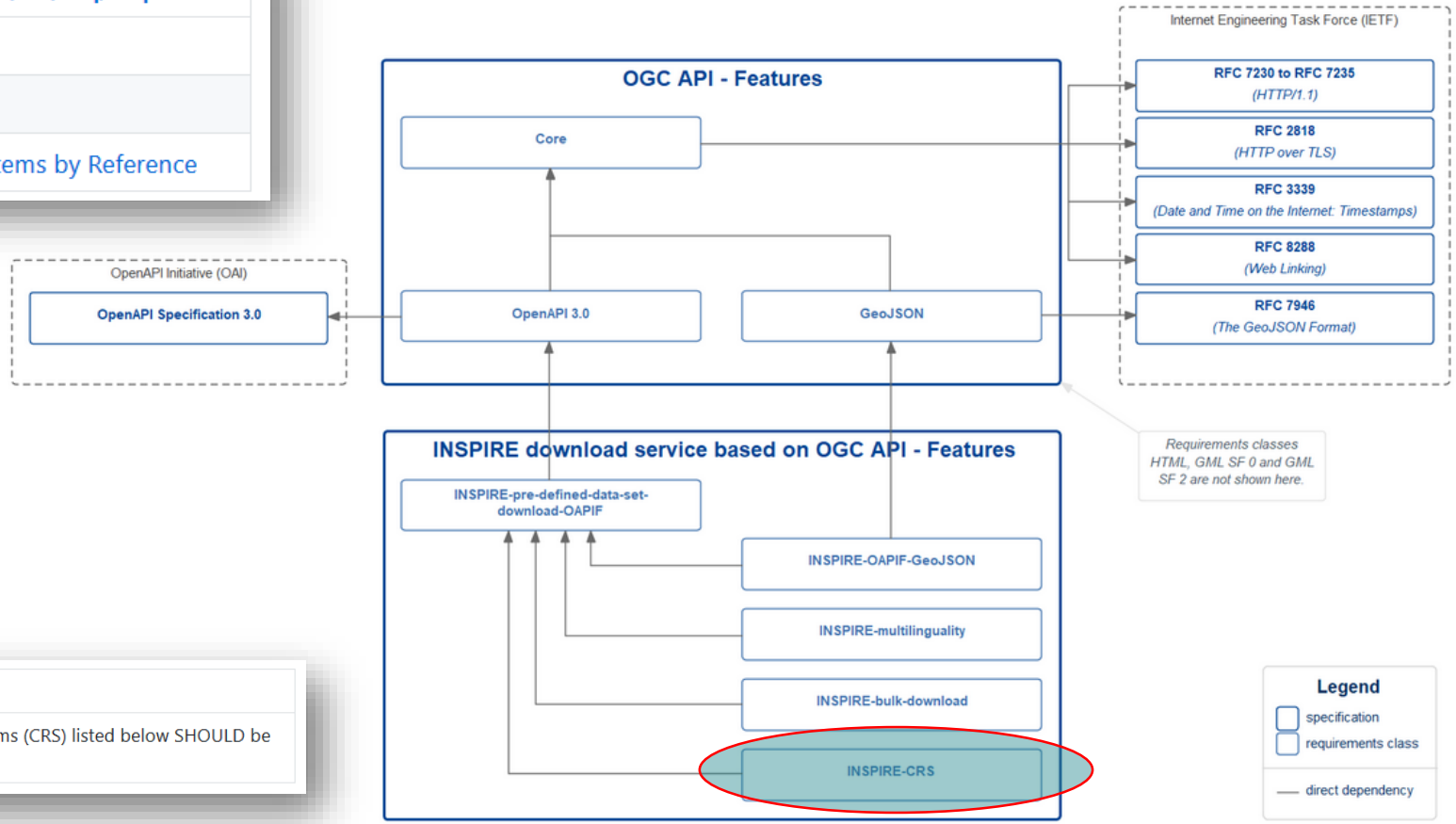


Source: GIM International / OGC

CRS for OGC API-Features in INSPIRE

- New requirements class: INSPIRE-CRS

Requirements class	http://inspire.ec.europa.eu/id/spec/oapif-download/1.0/req/inspire-crs
Target type	Web API
Dependency	INSPIRE-pre-defined-data-set-download-OAPIF
Dependency	OAPIF requirements class Coordinate Reference Systems by Reference



Recommendation	/rec/inspire-crs/recognised-crs
A	For each feature collection in the API at least one of the coordinate reference systems (CRS) listed below SHOULD be included in the list of supported coordinate reference systems.

Coming soon: ETS for OGC API - Features

- Follow-up of the work of Action 2020.1:
  - OGC API - Features as an INSPIRE download service endorsed as a GP
  - lots of implementations already available
  - requirements to be translated into ATS/ETS
- Work organised in:
  - Transposition of the tests currently available in the OGC TEAM Engine
    - Note 1: some tests still to be added by the OGC
  - Development of the INSPIRE-specific tests
  - ETS as combination of the TEAM Engine tests and the INSPIRE-Specific bits
    - Note 2: Encoding to be discussed separately

https://github.com/INSPIRE-MIF/gp-ogc-api-features

News .....

https://rivistageomedia.it/

RENZO CARLUCCI BIM CAD GIS 10 APRILE 2021

Nuova API OGC per la pubblicazione di dati geospaziali vettoriali in qualsiasi sistema di riferimento di coordinate

Raccolta, elaborazione e diffusione sono alcuni degli aspetti chiave del ciclo di vita dei dati in geomatica. Una delle sfide principali per i gestori dei dati è sempre come mantenere un livello di qualità appropriato durante il ciclo di vita dei dati. La popolarità del dato World Geodetic System 1984 (WGS 84) ha portato in precedenza alla pubblicazione di molti prodotti di dati con coordinate riferite al WGS 84, ma molti utenti di dati, dipendono da altri sistemi di riferimento di coordinate (SRC) per il loro lavoro.

Riconoscendo la crescente necessità di un'API (Application Programming Interface) che consenta la pubblicazione di dati geospaziali vettoriali in qualsiasi SRC, l'Open Geospatial Consortium (OGC) ha recentemente annunciato l'approvazione di un'estensione dell'API OGC con funzionalità che rispondono a questa esigenza.
La API OGC - Features fornisce i mattoni fondamentali dell'API per creare, modificare e interrogare "caratteristiche" sul Web (le caratteristiche sono semplicemente rappresentazioni digitali di oggetti di interesse nel mondo reale). Mentre la Parte 1 dell'API OGC - Features specifica solo l'accesso ai dati vettoriali in WGS 84, la nuova Parte 2 dello standard estende le capacità della Parte 1 con la possibilità di accedere ai dati che si trovano in qualsiasi CRS identificabile da un Uniform Resource Identifier (URI). La Figura illustra questa capacità mostrando gli stessi dati di origine trasformati in diversi CRS, vale a dire WGS 84 (etichettato EPSG: 4326) e ETRS89-esteso / LAEA Europe (etichettato EPSG: 3035).

La specifica in oggetto è la: ***OGC API - Features - Part 2: Coordinate Reference Systems by Reference.***

Le novità introdotte riguardano:
- in che modo, per ciascuna raccolta di funzionalità offerta, un server pubblicizza l'elenco degli identificatori CRS

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NEWS

New OGC API for Publishing Vector Geospatial Data in any Coordinate Reference System

By Gobe Hobona • April 7, 2021

Collection, processing and dissemination are some of the key aspects of the data lifecycle in geomatics. A major challenge for data managers is always how to maintain an appropriate level of quality as data goes through this lifecycle. The popularity of the World Geodetic System 1984 (WGS 84) datum has previously led to many data products being published with coordinates referenced to WGS 84. What then for those data users that depend on other Coordinate Reference Systems (CRS) for their work?

Acknowledging the increasing need for an Application Programming Interface (API) that allows for the publication of vector geospatial in any CRS, the Open Geospatial Consortium (OGC) has recently announced the approval of an extension to OGC API - Features that addresses this need. OGC API - Features provides the fundamental API building blocks to create, modify, and query 'features' on the Web (features are simply the digital representations of objects of interest in the real world). OGC API - Features comprises multiple parts, with each part being a separate standard. Whereas Part 1 of OGC API - Features only specifies access to vector data in WGS 84, the new Part 2 of the

What is the impact of OGC API – Features so far?

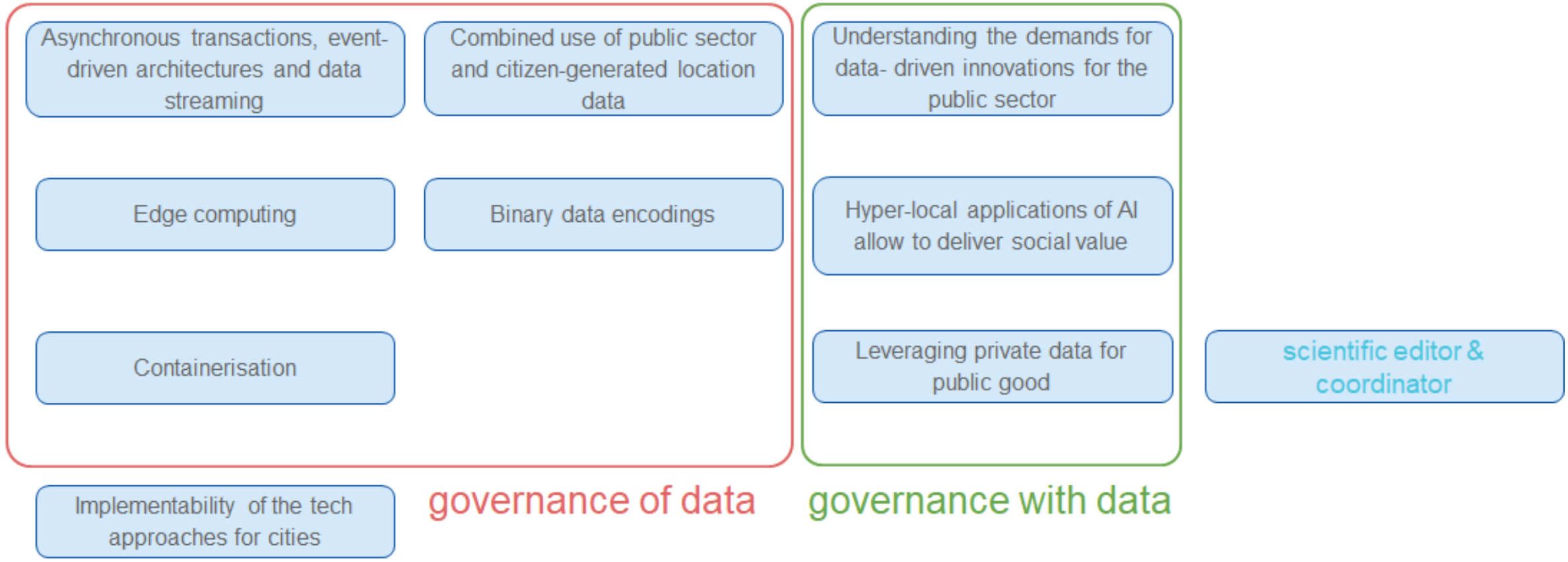
With just over a year since the release of Part 1 of OGC API - Features, the standard has already begun to have an impact globally. For example, the International Organization for Standardization (ISO) has approved Part 1 under the name ISO 19168-1:2020 Geographic information — Geospatial API for features — Part 1: Core. Further, the community of more than 30 states that are implementing the INSPIRE Directive has endorsed the API as a Good Practice for an INSPIRE download service. The INSPIRE Directive aims to create a European Union (EU) spatial data infrastructure for the purposes of EU environmental policies and policies or activities which may have an impact on the environment. Part 2 of the standard is expected to have even greater utility in geomatics due to its support for a variety of CRS. As with any OGC standard, this OGC standard is free to download and implement. Interested parties can view and download the standard from the OGC API - Features Page at https://ogcapi.ogc.org

Pool of experts

Pool of experts on data-driven innovation

- Context
  - Multiple emerging technological trends can help complement and/or substitute the ways in which we are sharing information in INSPIRE
  - Implemented within ELISE
- Topics
  - Governance of data
  - Governance with data
  - Based on sandboxing
- Outputs
  - Summary of the experimentation with emerging technologies in a structured manner
  - JRC Technical report

Pool of experts on data-driven innovation

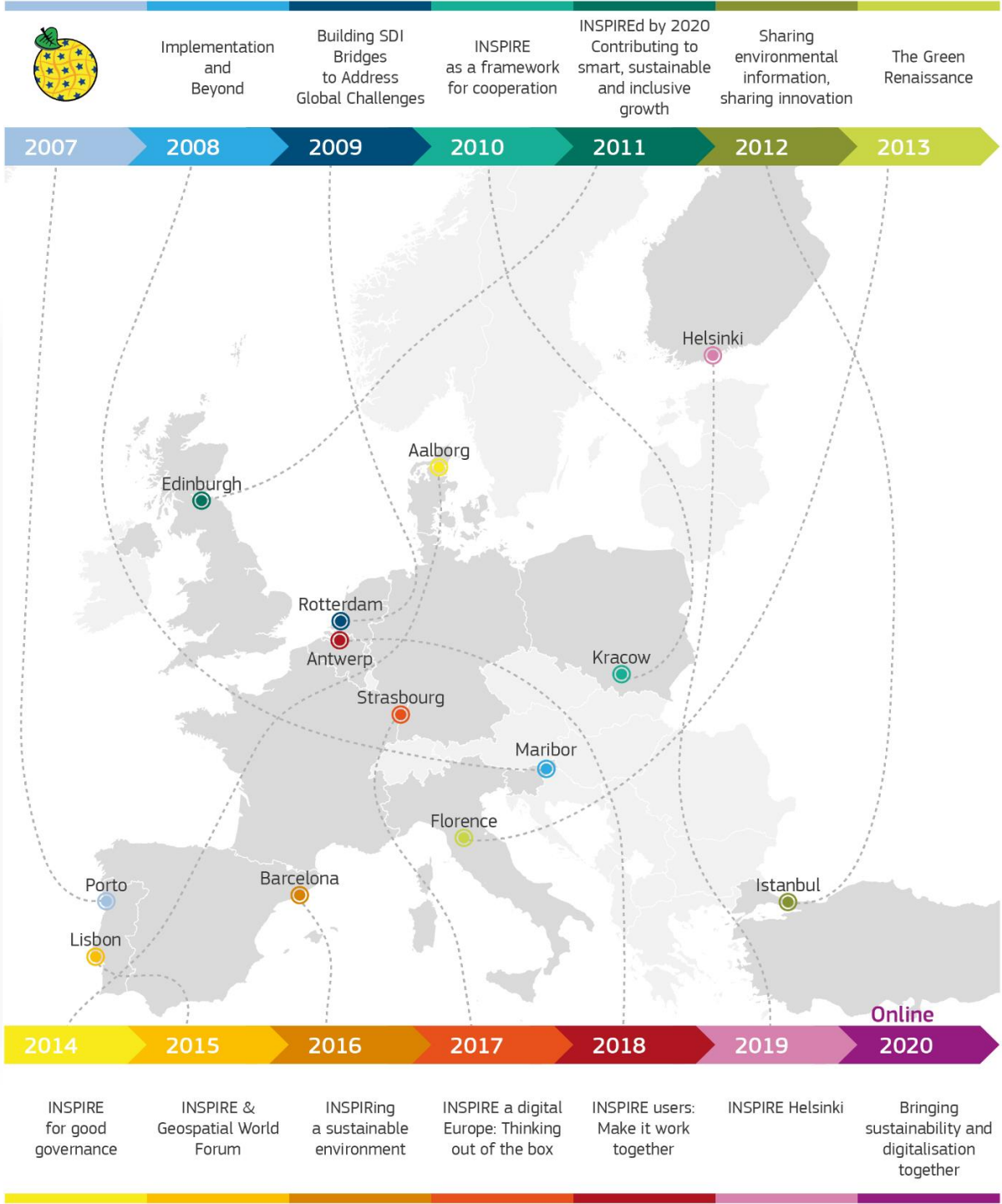


JRC Science for Policy Report

Forthcoming JRC Science for Policy Report

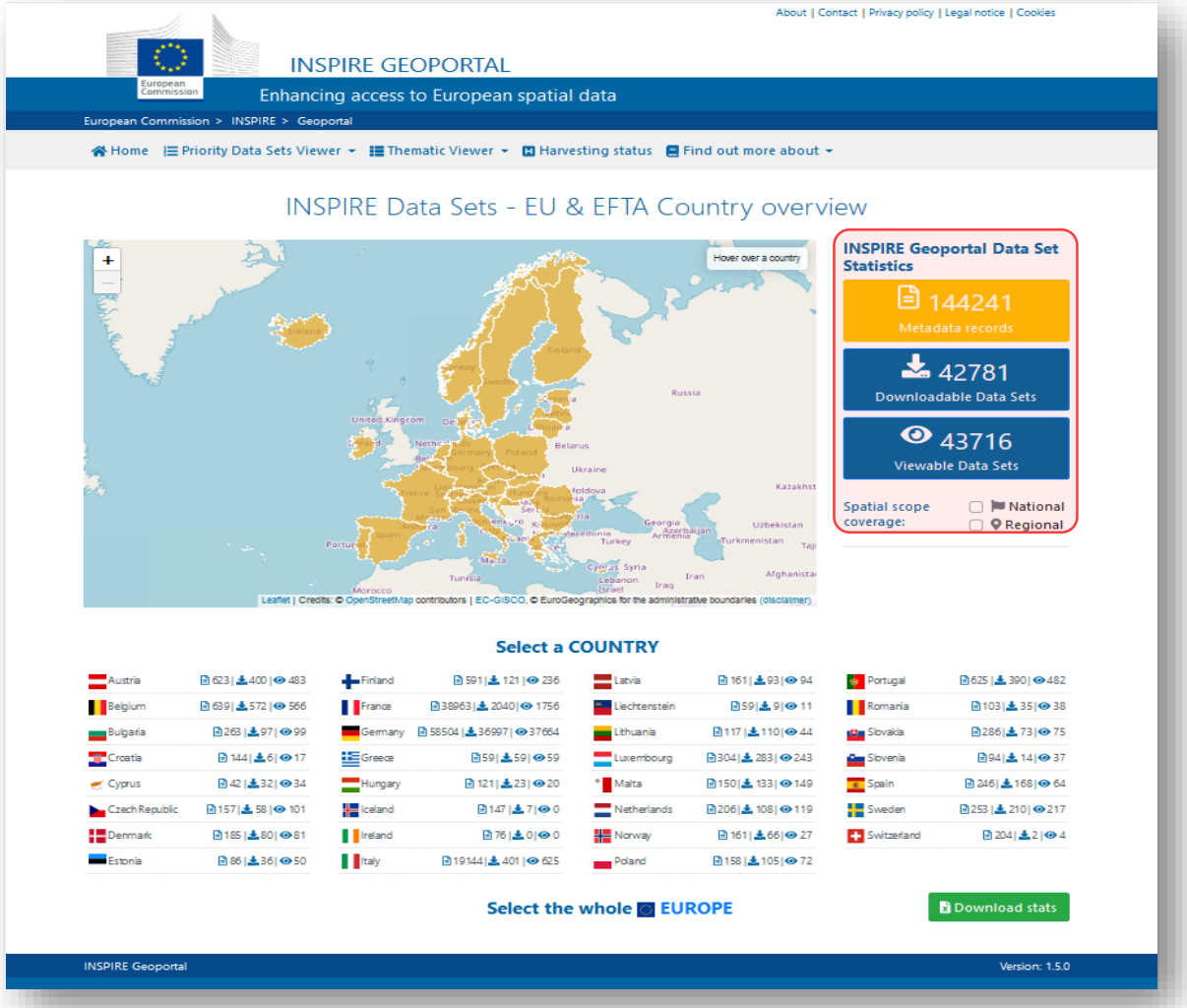
- With Geonovum and DG ENV
- Sneak peek
  - Overview of the status
  - Policy and technological context
  - Lessons learned
  - Vision for the technological evolution
  - Actions and roadmap
  - Prototype reference framework

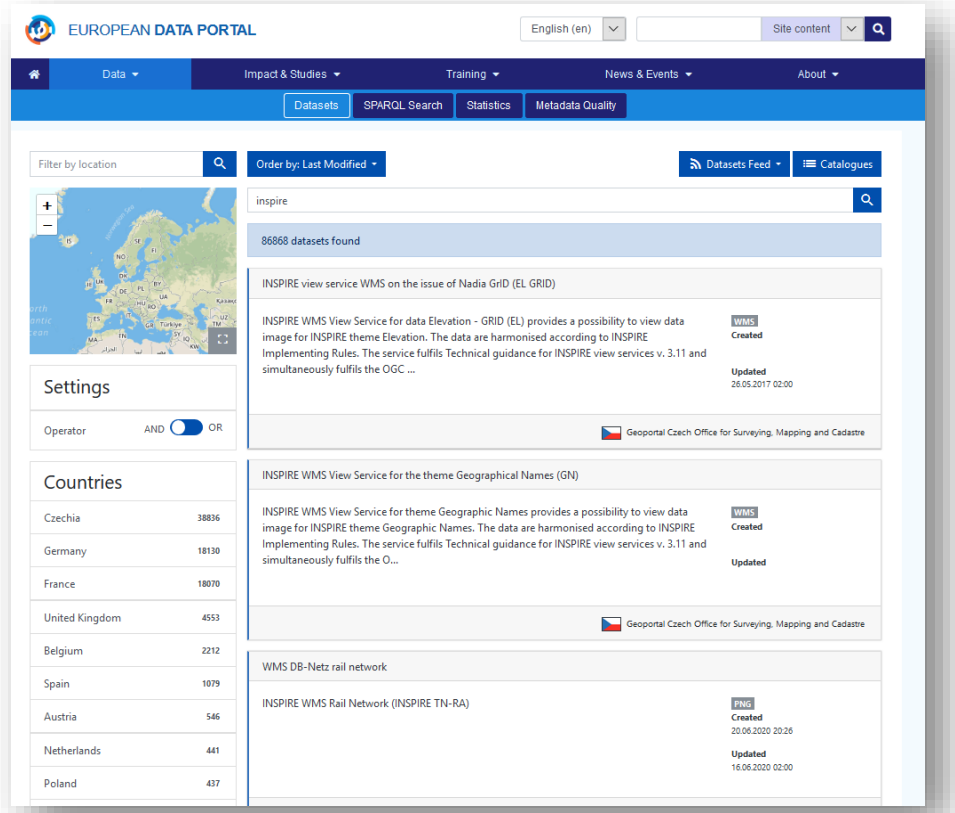
What works well
Community



What works well
Data availability

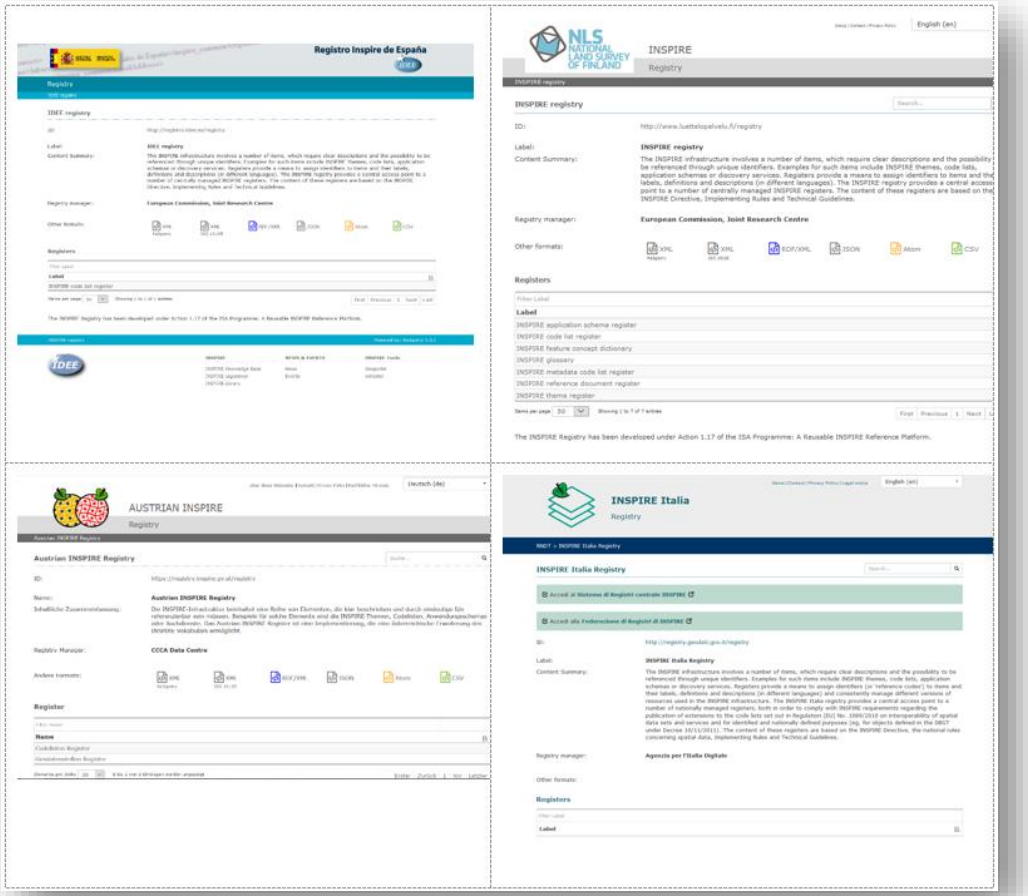
- Discoverability and accessibility are improving

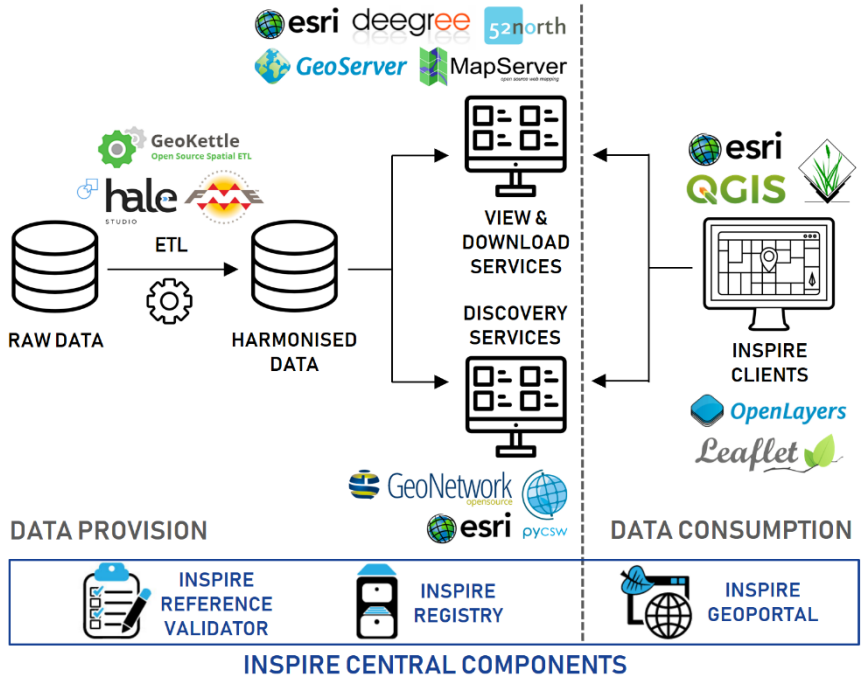


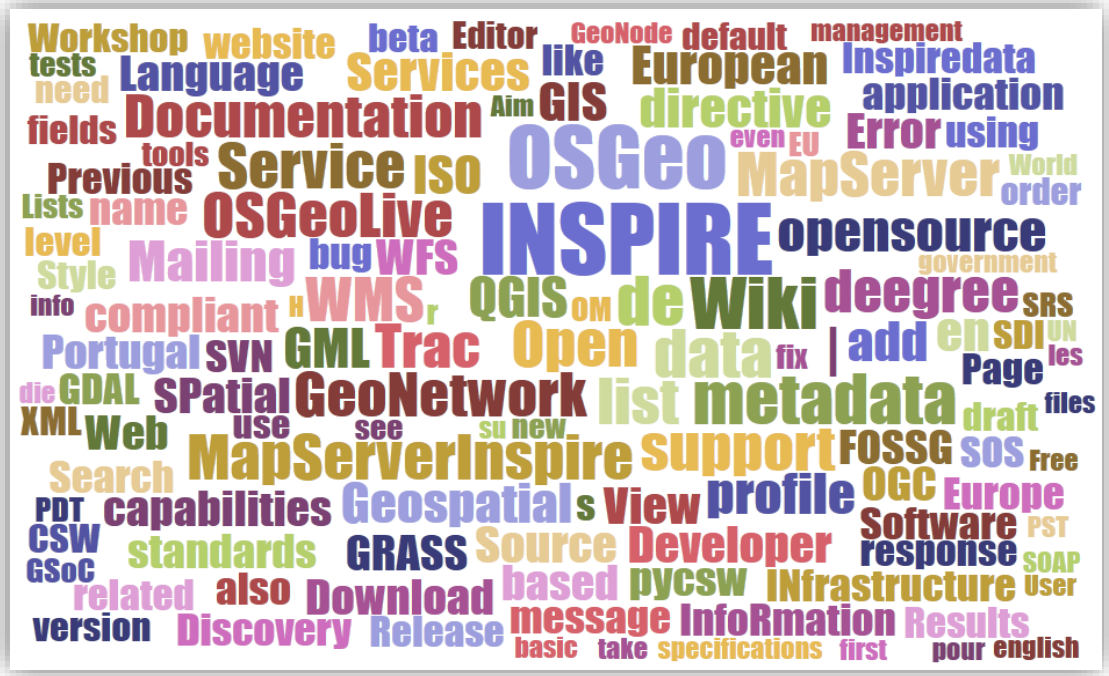


What works well

- Rich ecosystem of tools
  - Central INSPIRE components
  - Many client and server implementations

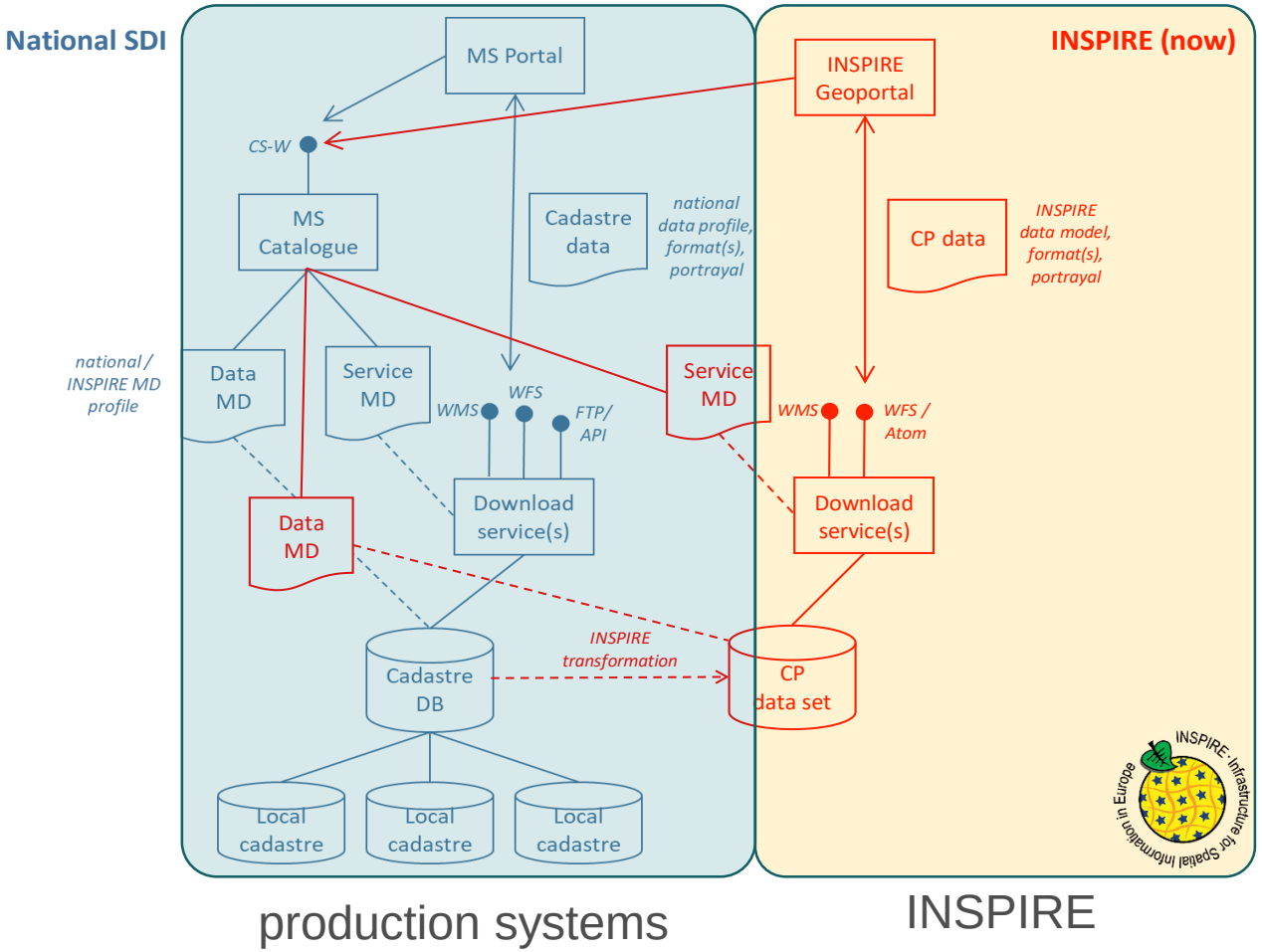






What does not work so well

- Parallel implementations
- Duplication of effort
- INSPIRE sometimes implemented to only check a box



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What does not work so well

- Custom extensions and narrow use of standards
  - Strictly following standards, or extending standards is problematic
  - Extended capabilities
  - GML attributes
  - Nested structures

What does not work so well

- Complex encoding

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	<gn:beginLifespanVersion xsi:nil="true"/>
	<gn:geometry>
		<gml:Point gml:id="_d7180a8f-a590-44da-8b45-41d96d5cba5e" srsName="http://www.opengis.net/def
		<gml:pos>471979.2568 5564594.2444</gml:pos>
		</gml:Point>
	</gn:geometry>
	<gn:inspireId>
		<base:Identifier>
			<base:localId>NamedPlace_Example</base:localId>
			<base:namespace>https://www.examples.eu/</base:namespace>
		</base:Identifier>
	</gn:inspireId>
	<gn:localType xsi:nil="true"/>
	<gn:name>
		<gn:GeographicalName>
			<gn:language>deu</gn:language>
			<gn:nativeness xsi:nil="true"/>
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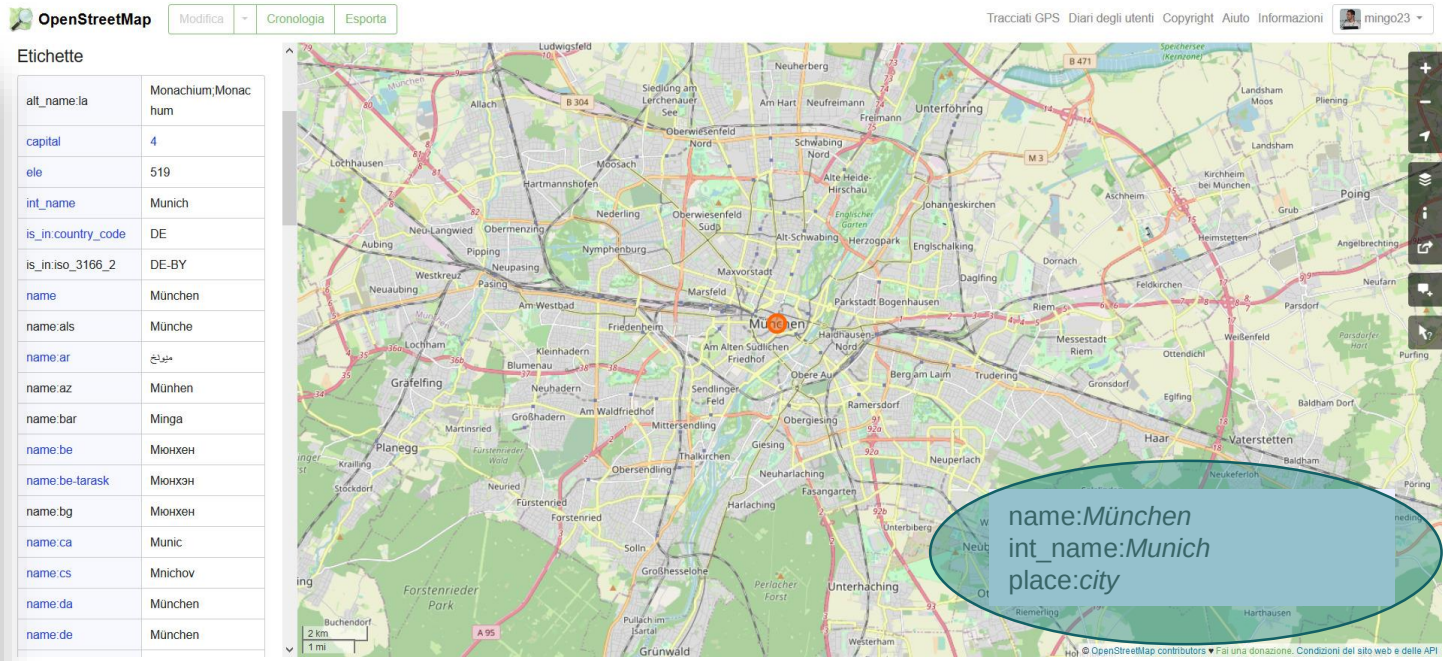

https://www.openstreetmap.org/node/1700534808#map=12/48.1332/11.6462

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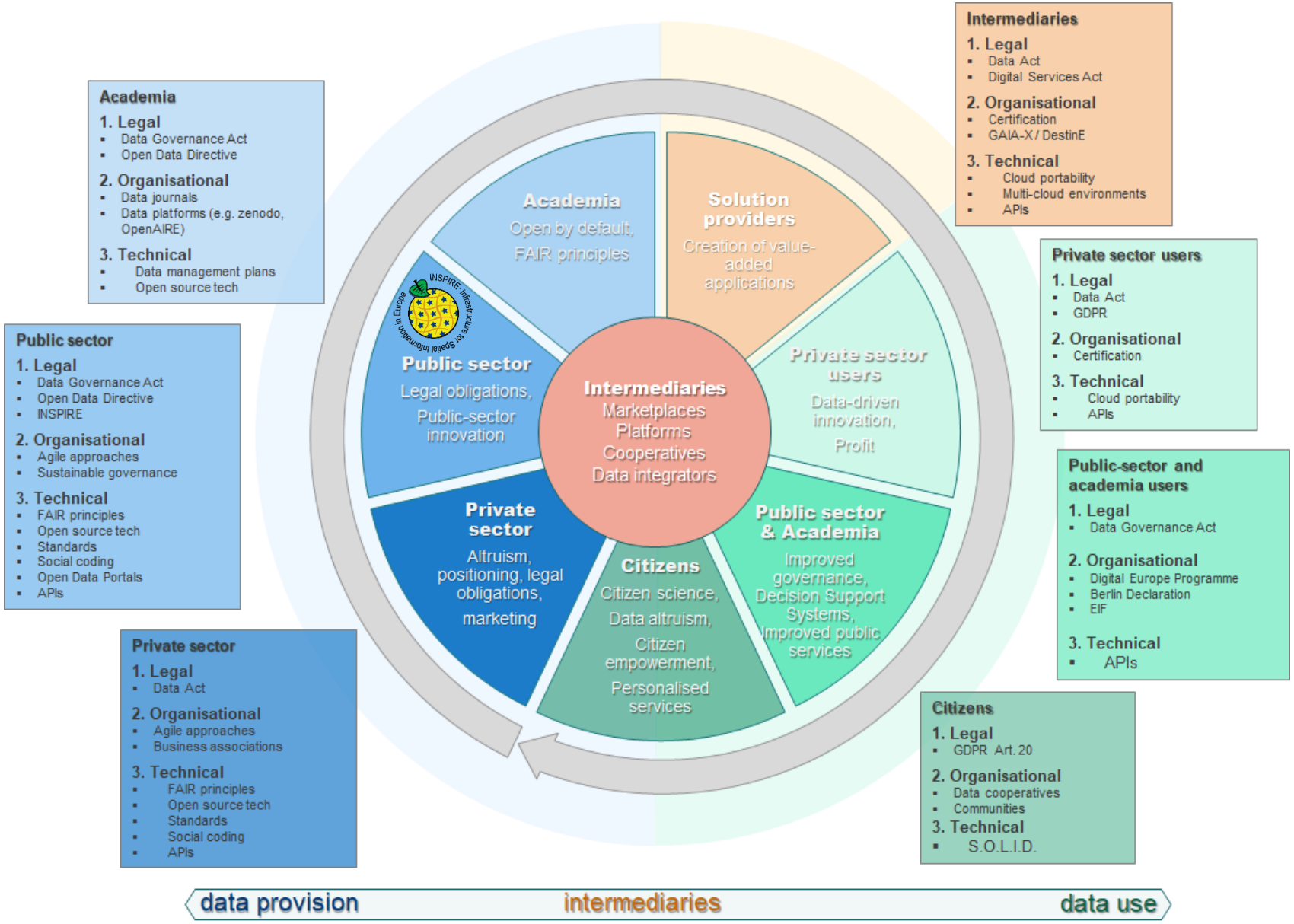
Vision (work in progress)

- INSPIRE should '**blend in' with the broader ecosystem** of spatial and non-spatial data, infrastructures, technologies and policies.
- This will mean **opening up to a broader community** of implementers and users and to a wider range of applications and use cases.
- Making the INSPIRE framework more **flexible and agile** will significantly lower the entry level to the sharing and utilisation of data.
- Technical **approaches need to be simplified** by reusing well-adopted standards and technologies.

INSPIRE in a broader data ecosystem

- From linear approach to a data ecosystem
  - Follow the value creation
  - Sustainable governance model is needed



Thank you

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