Vision on discoverability of spatial data

Rediscovering Spatial Data Discoverability

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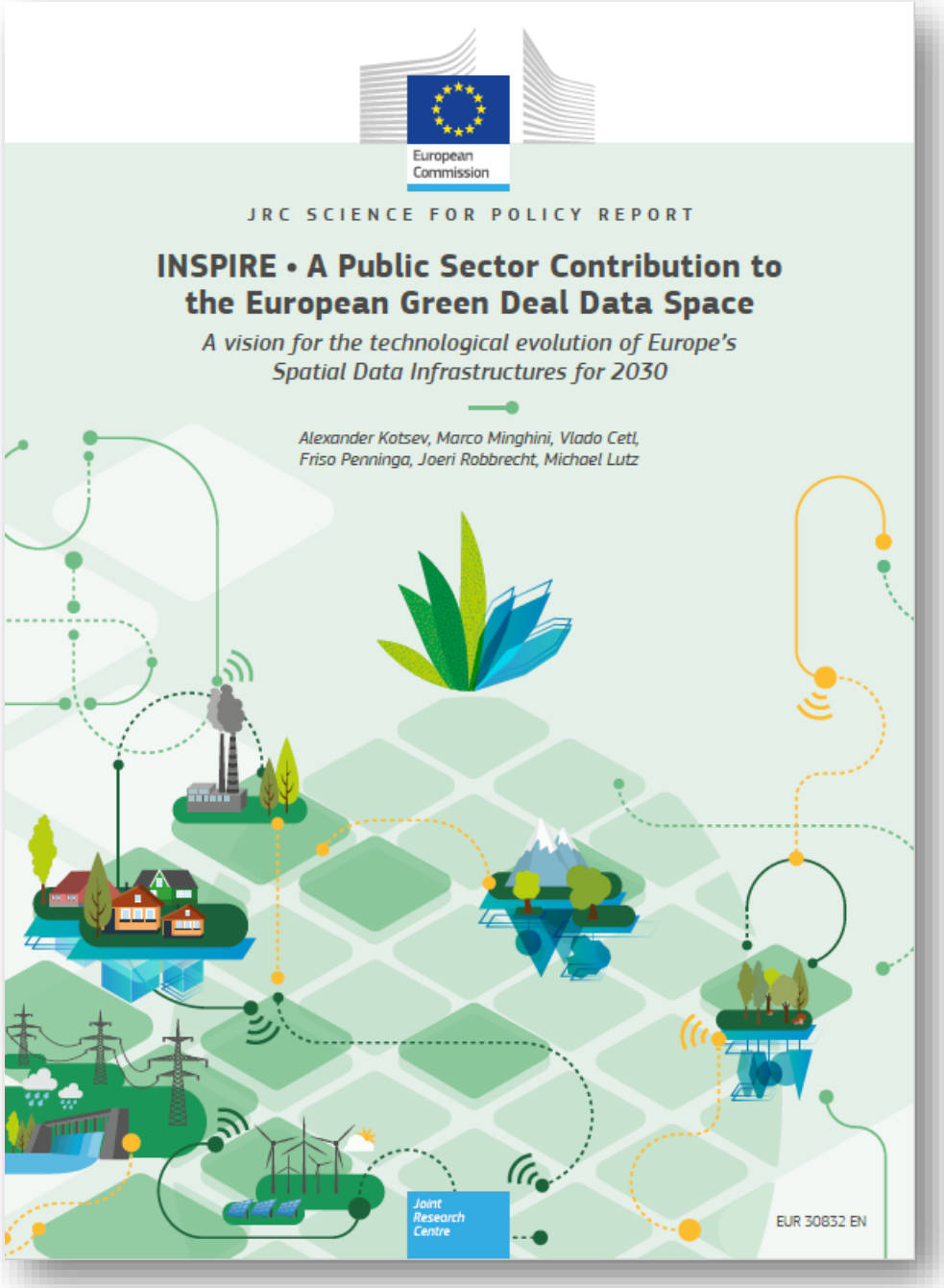
EuroSDR & EuroGeographics INSPIRE KEN Workshop on Spatial Data Discoverability, 28th April 2022

INSPIRE Evaluation & Future
JRC Science for Policy Report

- **INSPIRE - A Public Sector Contribution to the European Green Deal Data Space**

  https://publications.jrc.ec.europa.eu/repository/handle/JRC126319

- Prepared by JRC, 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



INSPIRE Evaluation & Future Vision

- Evolution to a data ecosystem.
- Broadening the scope:
  - New sectors: public, private/businesses, academia.
  - New communities: developers, users.
- Widening the range of applications and use cases.
- **Making the INSPIRE framework more simple, flexible and agile.**
- Lowering the knowledge entry-level for implementing and/or using data.
- Reusing well-adopted and working standards and technologies.

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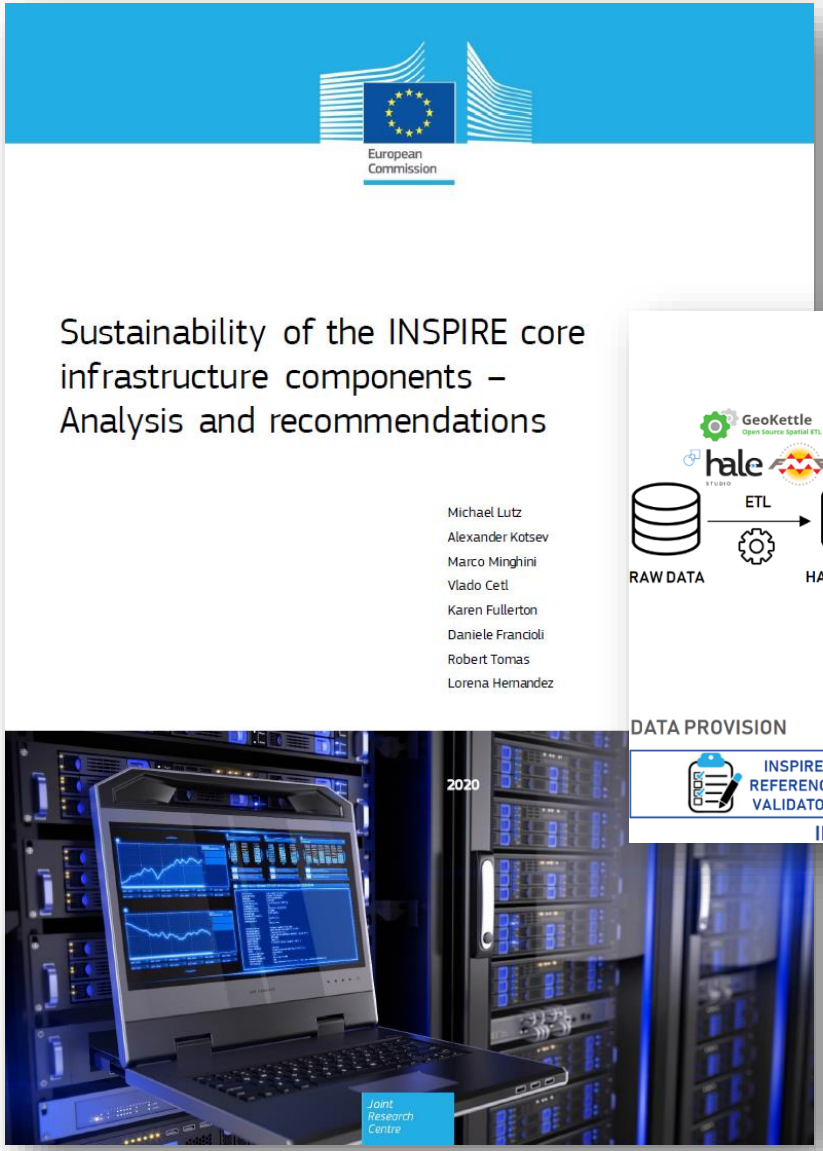
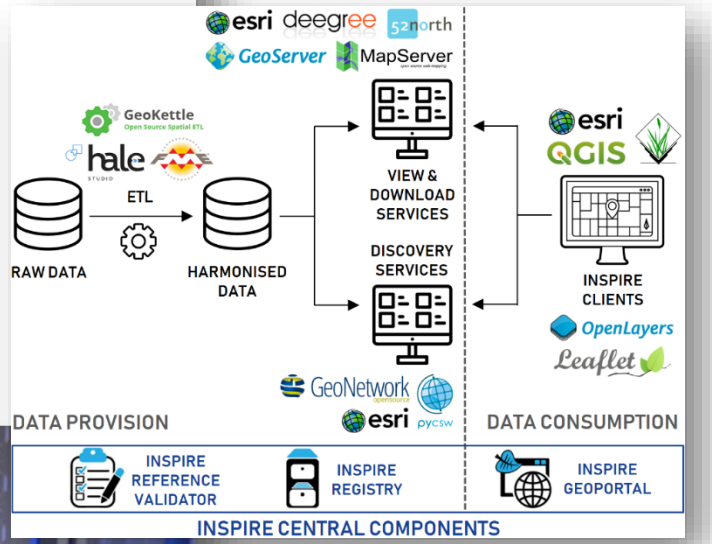
Central INSPIRE Components
Sustainability approach

- **Sustainability of the INSPIRE core infrastructure components**
  - **Support by tools is the default.**
  - **Build strategic partnerships with communities.**
  - Focus on the INSPIRE-specificity and not on mainstream tool development.
  - Harmonise the approaches for helpdesk.
  - Decouple tools from infrastructure.
  - Extensive use of the cloud.





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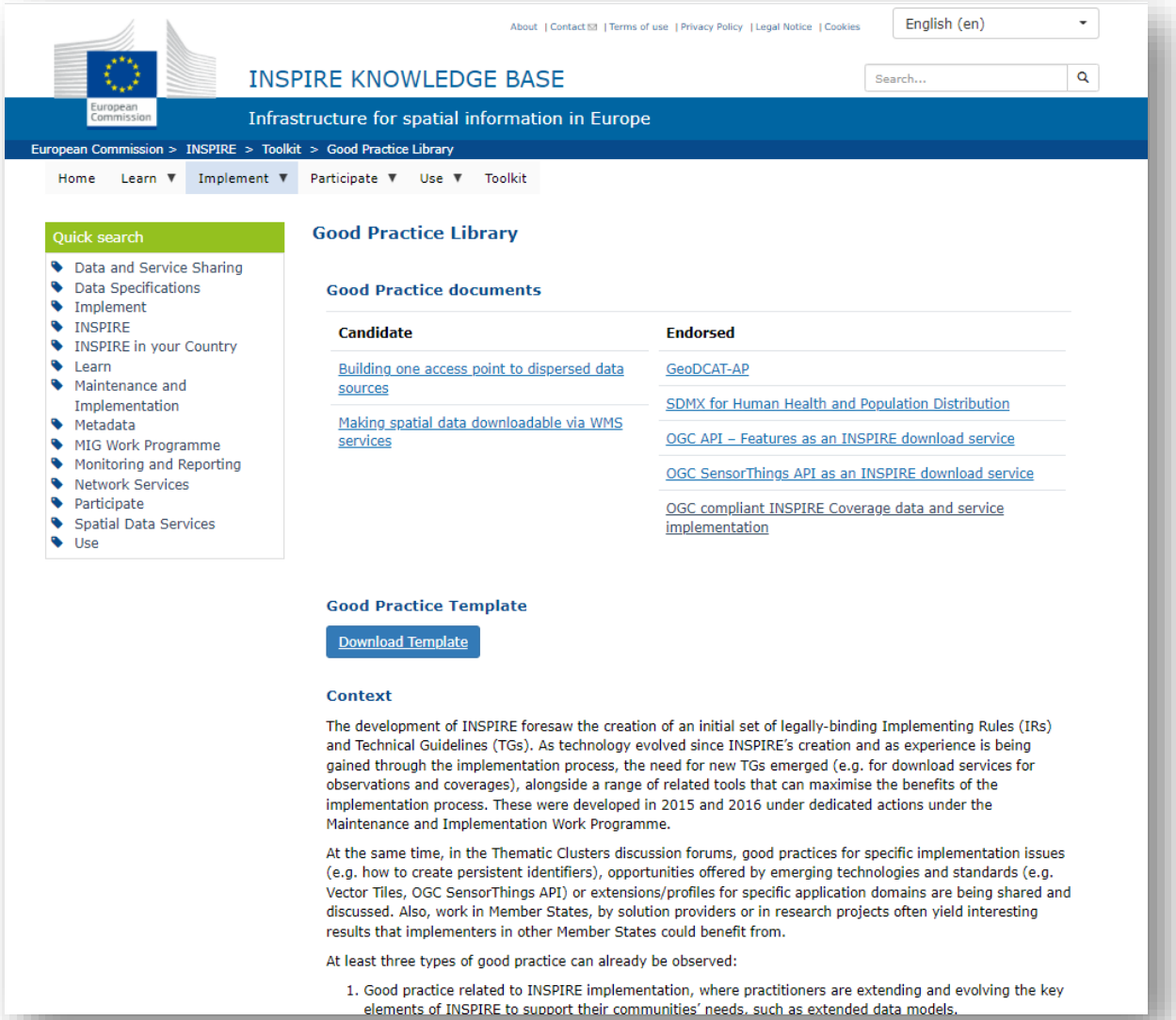
Flexibility in INSPIRE Implementation
INSPIRE Good Practices

- Good Practice library available.
- Procedure for proposing Good Practices and subsequent potential endorsement:
  - *Step1. Initiation.*
  - *Step 2. Submission as candidate (MIG-T).*
  - *Step 3. Outreach.*
  - *Step 4. Submission (MIG).*
  - *Step 5. Legal scrutiny.*
  - *Step 6. Feedback.*

https://inspire.ec.europa.eu/portfolio/good-practice-library



Spatial data discoverability trends
INSPIRE Conference 2021 dedicated session

https://inspire.ec.europa.eu/conference2021/livestream/2

Time reference: 13:29:26

- The field of metadata catalogues is evolving in a very fast and dynamic way.
- Member States are developing cataloguing solutions that encompass both INSPIRE/geospatial as well as Open Data domains.
- The OGC is finalizing the new OGC - API Records standard, which will highly simplify the discovery, access and management of metadata on the web.
- The new developments are pushing the evolution of software components, in particular open source. In particular, making metadata available in multiple national and European infrastructures through different standards and rules.

Spatial data discoverability trends
Good practices identified

Practices

- Data-service linking simplification (MIWP Action 2.3.2).

Standards

- OGC - API Records.
- SpatioTemporal Asset Catalogues (STAC).
- GeoDCAT-AP.

Tools

- GeoNetwork.

Bridge between geospatial and open data catalogues

- ISO Metadata – GeoDCAT-AP.

Spatial data discoverability trends
Standards

OGC - API Records - https://ogcapi.ogc.org/records

- Simplification of the discovery, access and management of metadata (creation, modification and sharing) on the web.
- Data automatically discoverable through search engines.
- Status:
  - OGC API - Records - Part 1: Core - Draft specification, near to be adopted.
  - Covering read-only access to records and simple query capabilities.
  - Additional parts: covering additional capabilities addressing specific needs.
- Endorsed as INSPIRE Good Practice candidate (discovery services):
  - 69th MIG-T Meeting: https://wikis.ec.europa.eu/display/InspireMIG/69th+MIG-T+meeting+2022-04-01

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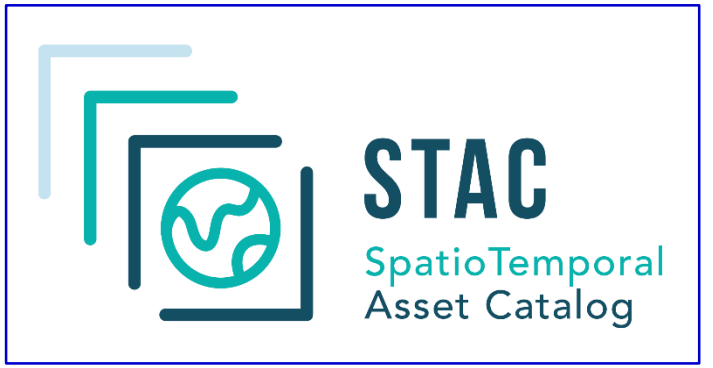
Spatial data discoverability trends
Standards



SpatioTemporal Asset Catalogues (STAC) - https://stacspec.org

- SpatioTemporal Asset: any file that represents information about the earth captured in a certain space and time.
- STAC: Common language to describe a range of geospatial information.
- It allows data providers to expose their data as SpatioTemporal Asset Catalogs (STAC), so that new code does not need to be written whenever a new data set or API is released.
- Making it being more easily indexed and discovered.
- MIG-T community showed increasing interest on STAC.

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Future of spatial data discoverability

Sectoral European data spaces / Green Deal

Rich pool of data (varying degree of accessibility)

Free flow of data across sectors and countries

Full respect of GDPR

Horizontal framework for data governance and data access

Health

Industrial & Productive

Agriculture

Finance

Mobility

Environment **Green Deal**

Energy

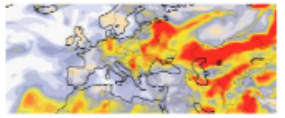
Public Administration

Skills

- Technical tools for data pooling and sharing
- Standards & interoperability (technical, semantic)
- Sectoral Data Governance (contracts, licenses, access rights, usage rights)
- IT capacity, including cloud storage, processing and services

Personal Data Spaces

High Value Data sets

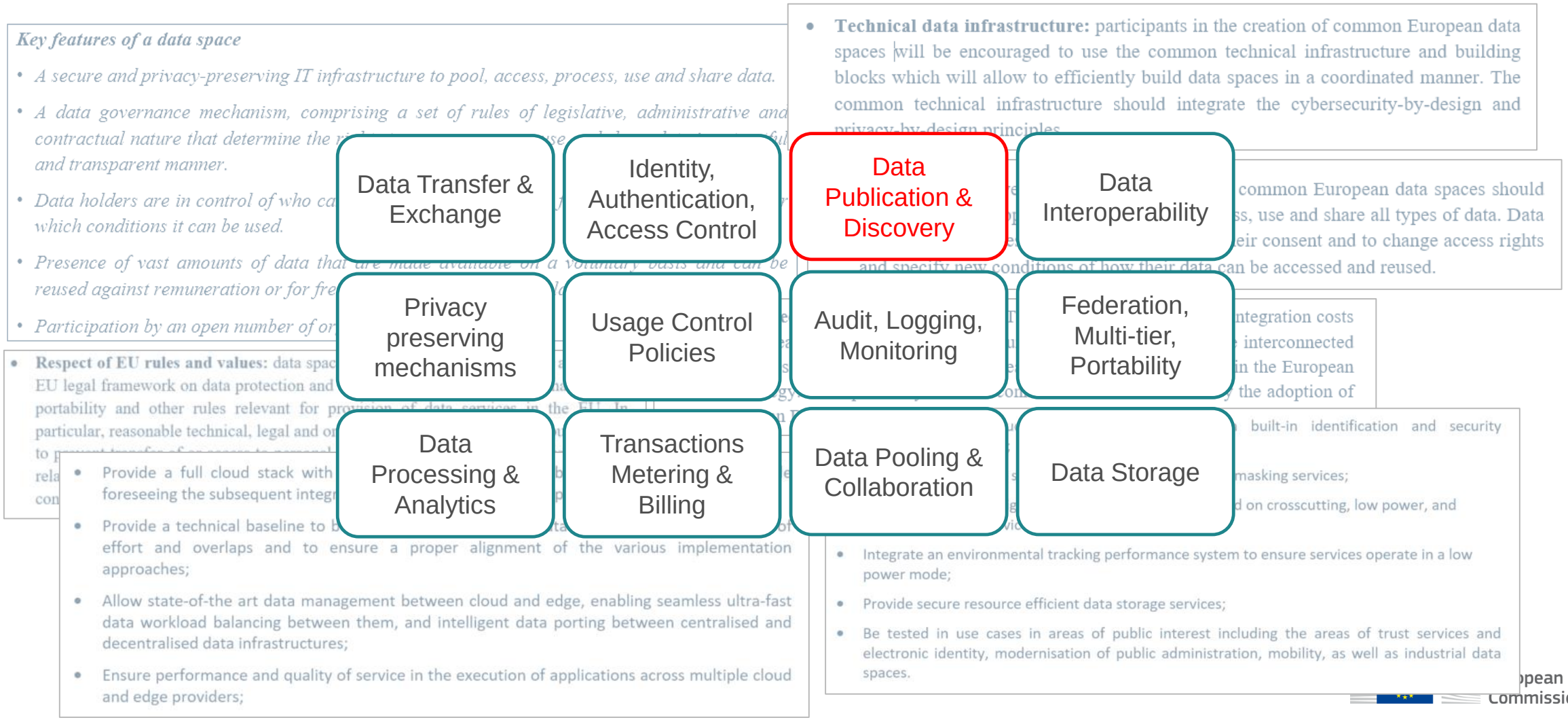


Public Sector

Vision on future spatial data discoverability
Personal reflections

- Metadata models
  - Storing metadata information in a standard-agnostic way.
  - Maintaining all metadata elements which allows serving metadata in all the standards required in your domain.
- Metadata Catalogues & Tools
  - Easy-to-use editor, with automatic aids.
  - Ability to transform metadata on-the-fly and serve the information in a wide range of standards.
  - Bridging the gap across different domains (e.g. Geospatial vs. Open data).
  - Metadata exposed through the use of geospatial discovery APIs.
  - Automatically discoverable through Web search engines.
  - Discovery service (backend) on the cloud.
- **UI (frontend) - What a user would expect?**
  - Simple, understandable communication, NLP search, data filtering, levelled exploration of results.
  - Metadata results automatically translated to user's language, adapted to user's knowledge.
  - Frontend not necessarily coupled to the SDI geoportal / catalogue.

Data spaces Cookbook
Future spatial data discoverability - Conclusions



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Thank you!

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