INSPIRE & Environment Data in the EU

Andrea Perego

Research Data infrastructures for Environmental related Societal Challenges Workshop

@ pre-RDA P6 Workshops, Paris

22 September 2015
INSPIRE in a nutshell

Purpose
Providing access to cross-border EU data to be used in support to
- EU environmental policies
- Policies or activities which impact on the environment

Governance & scope
- Comprehensive legal & technical framework for data & service interoperability
- Cross-sector thematic scope

Current status
- ~200K data sets from EU Member States, discoverable through the INSPIRE Geoportal

Process
Development & revision process involving experts & stakeholders from all EU Member States (public & private sectors, research institutions)
# INSPIRE thematic scope

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. Hydrography
9. Protected sites

10. Elevation
11. Land cover
12. Ortho-imagery
13. Geology

14. Statistical units
15. Buildings
16. Soil
17. Land use
18. Human health and safety
19. Utility and governmental services
20. Environmental monitoring facilities
21. Production and industrial facilities
22. Agricultural and aquaculture facilities
23. Population distribution – demography
24. Area management/restriction/regulation zones & reporting units

25. Natural risk zones
26. Atmospheric conditions
27. Meteorological geographical features
28. Oceanographic geographical features
29. Sea regions
30. Bio-geographical regions
31. Habitats and biotopes
32. Species distribution
33. Energy Resources
34. Mineral resources
A collaborative effort

- Transparency and inclusiveness
- Stakeholder consultations
- Support to Member States on the implementation
- Extend INSPIRE to and ensure consistency of different policy domains
- Promote INSPIRE in international standardisation

94 MIG representatives
7 active MIG sub-groups
28 Member States (+ EFTA and accession and candidate countries)
356 registered Implementation Experts (Pool of Experts)
10000+ comments (Data interoperability stakeholder consultation)
34 Spatial Data Themes
280 Legally Mandated Organisations
511 Spatial Data Interest Communities
471 registered Thematic Experts (Thematic Clusters platform)
5 Drafting Teams & IOC Task Force
Consolidation Team (DG ENV, JRC, EEA)

10000+ comments (Data interoperability stakeholder consultation)
INSPIRE specifications

6 legal acts
40+ Technical Guidelines
Implementatin Rules (IRs), Technical Guidelines (TGs) and tools

WHAT Member States MUST implement (abstract specification)

- Directive

Commission Regulation

- Implementing Rules

INSPRIRE Directive 2007/2/EC

not legally binding

“HOW Member States MIGHT implement it” (technical specification)

- Technical Guidelines

- TGs for the Implementation of Download Services

- TGs – Data Specification on Addresses

Tools implementing INSPIRE requirements

- INSPIRE-SOS

- INSPIRE validator

- Extended schemas
Use of international standards

Some references to standards
- Directive
- Commission Regulation

Legally binding
- INSPIRE Directive 2007/2/EC

Not legally binding
- Implementing Rules

Many references to standards
- Technical Guidelines
- Tools implementing INSPIRE requirements

Examples:
- TGs for the Implementation of Download Services
- INSPIRE-SOS
- INSPIRE validator
- Extended schemas

(mainly ISO/TC 211)

Many references to standards
(OGC, ISO/TC 211, domain-specific)
INSPIRE, PSI & Open Data

EU activities and regulations

• Communication on Open Data (COM(2011)882)

• Revision to the Decision governing re-use of Commission's documents (2011/833/EU)

• Revision to the Directive on re-use of Public Sector Information (2013/37/EU)

• EU Programme on Interoperability Solutions for European Public Administrations (ISA)
The G8 Open Data Charter in the EU

• Published 31 October 2013
• INSPIRE mentioned as a comprehensive framework for access to and reuse of geospatial information including electronic infrastructures

EU implementation of the G8 Open Data Charter

Introduction
In June 2013, the EU endorsed the G8 Open Data Charter and, with other G8 members, committed to implementing a number of open data activities in the G8 members’ Collective Action Plan.

Commitment 1 of the Collective Action Plan required each member to publish by October 2013 details of how they would implement the Open Data Charter according to their individual national frameworks.

Thanks to the many initiatives already adopted at EU level, including the revised Directive on the re-use of public sector information, the EU Open Data Portal and the new Commission rules on the re-use of its own documents, compliance with the G8 Open Data Charter and para. 47 of the June 2013 G8 communiqué is fully consistent with existing EU policy.

The following details the EU’s on-going implementation of the G8 Open Data Charter.

Open data context
The European Union has for years been stressing the goal of opening up data as a resource for innovative products and services and as a means of addressing societal challenges and fostering government transparency. Indeed, better use of data, including government data, can help to power the economy, serving as a basis for a wide range of information products and services and improving the efficiency of the public sector and of different segments of industry. The European Union aims to be at the forefront of public administrations in terms of openness in relation to its own documents. Access to documents held by the three major institutions (Parliament, Council and Commission) is governed by Regulation (EC) no 1049/2001. This Regulation is currently under revision to bring all the EU institutions, bodies, offices and agencies within its scope, in accordance with the provisions of the Treaty of Lisbon.

In December 2011, the European Commission presented a comprehensive open data package, looking at the potential for further opening up data, in particular data produced by the public sector. The key element of this package is to reinforce the main legal instrument applicable across the 28 EU Member States, Directive 2003/98/EC on reuse of public sector information (the PSI Directive). The revised Directive entered into force in June this year.

As a rule, the European Commission has allowed reuse of its documents for commercial and non-commercial purposes at no charge since 2006. In 2011, it also engaged itself to work towards
"High-value" data in the EU

Guidelines on recommended standard licences, datasets and charging for the reuse of documents

- Published 24 July 2014
- Datasets “in highest demand from re-users across the EU”:
  1. Geospatial data
  2. Earth observation and environment
  3. Transport data
  4. Statistics
  5. Companies
The pan-EU Data Portal

- A single access point for the cross-border discovery of datasets available from EU data portals

- It will harvest any kind of dataset metadata

- The geospatial component plays an important role in the underlying infrastructure

- Complemented with additional services – as an EU gazetteer

- To be based on harmonised and cross-domain metadata interchange formats
**INSPIRE & the EU ISA Programme**

**Objective:** Re-using INSPIRE for cross-sector interoperability

- Involvement in activities of other ISA Actions

- Two INSPIRE-related ISA Actions: EULF & ARe3NA

- Some of the activities concern the use of Linked Data in INSPIRE
Why Linked Data for INSPIRE?

• Agree on a common RDF representation of INSPIRE meta/data

• Enable a better integration of the INSPIRE with government data infrastructures, typically based on main-stream technologies

• Promote cross-sector re-use of INSPIRE data and related specifications

• *Investigate how Linked Data can be implemented limiting as much as possible its impact on the existing infrastructures and data management workflows*
(Some) Work under-way

- INSPIRE registers & registries
- Persistent identifiers for INSPIRE and location information
- Alignment of metadata schemas
- Alignment of controlled vocabularies
- AAA (Authentication, Authorisation and Accounting), licensing schemes and data sharing
INSPIRE registry

ID: http://inspire.ec.europa.eu/registry

Label: INSPIRE registry

Content Summary: The INSPIRE infrastructure involves a number of items, which require clear descriptions and the possibility to be referenced through unique identifiers. Examples for such items include INSPIRE themes, code lists, application schemas or discovery services. Registers provide a means to assign identifiers to items and their labels, definitions and descriptions (in different languages). The INSPIRE registry provides a central access point to a number of centrally managed INSPIRE registers. The content of these registers are based on the INSPIRE Directive, Implementing Rules and Technical Guidelines.

Registry manager: European Commission, Joint Research Centre

Other formats: XML (Re3gistry), XML beta (ISO 19135), RDF/XML beta, JSON, Atom, CSV beta
GeoDCAT-AP

- Geospatial extension of DCAT-AP, meant to enable cross-sector sharing of metadata based on ISO 19115 – including INSPIRE

- DCAT-AP (DCAT application profile for data portals in Europe):
  - Metadata interchange format to be used across data portals by EU Member States
  - Based on and compliant with the W3C Data Catalog vocabulary (DCAT)
  - To be used as a metadata schema for the pan-EU Open Data Portal
Agree upon a common RDF representation

- RDF is increasingly being used as an alternative representation of INSPIRE metadata
- Without a harmonised INSPIRE-to-RDF mapping, metadata interoperability is lost

Facilitate cross-sector sharing of INSPIRE metadata

- INSPIRE metadata are already being harvested by and published in cross-domain data portals at the national and/or regional level
- INSPIRE metadata will be harvested and published on the pan-EU Open Data Portal, which uses DCAT-AP as a metadata interchange format
Concluding remarks

• The public sector and the research community are facing overlapping issues about data infrastructures

• In some cases, the solution is already available in other sectors and/or domains
  • Re-use (and adapt) may be a reasonable way forward

• In other cases, no solution exists
  • Coordinating efforts might be mutually beneficial

• But why shouldn't we do this separately?
  • In some cases, we may be not able to
  • We should be interoperable – e.g.: PSI is used in research data, and vice versa; support to data integration
Thanks for your attention!

andrea.perego@jrc.ec.europa.eu