One Infrastructure: Many Applications

Alexander Kotsev
European Commission
Joint Research Centre
Digital Earth and Reference Data Unit
www.jrc.ec.europa.eu

Serving society
Stimulating innovation
Supporting legislation
Status (2015)

- Ready for **mass implementations**
- INSPIRE has entered in **implementation stage**
- Infrastructure components can be used as ‘**building blocks**’
- **More implementations = easier to handle**
  - Lessons learned are reflected
  - Availability of technology increasing
  - Growing community
- **INSPIRE pilots**
  - *Operational vs Exploratory*
Inclusive infrastructure

- Accommodates **different needs**
- Can be **fine-tuned** to particular needs/domains

**Domain specific pilot activities (JRC)**

- Air Quality Directive
- Water Framework Directive
- Floods Directive
- Transportation pilot (EULF)
- Energy pilot (EULF)
- EU Knowledge base on Minerals
Several examples of INSPIRE pilots

- Air quality e-reporting
- Interoperable sensor nodes
- Synchronized data management
- Support to macro-regional strategies
- Beyond EU28
An e-reporting example (before 2014)

- Excel based template
- Centralized approach
- 1,000 reporters
- 24 official languages
- 3 alphabets
- Diverse institutions
- Heterogeneous practices
E-Reporting (2014 - onwards)

**INSPIRE-based air Quality e-Reporting pilot**

- **Partners:** ENV, Member States (voluntary) EEA

- **Results:**
  - One reporting model for two Directives
    - Air quality (IPR decision, 2011): 90% of data model
    - INSPIRE: 10% of data model

7th EAP Priority 5:
To improve the knowledge and evidence base for EU environment policy

Data model for environmental monitoring facilities
Air quality e-reporting

- Easy to Use Web Interfaces
- Streamlined e-reporting
- Learning experience
- Comparable pan-European data
Extensions to the ‘temporal’ domain
Context

“Ä geometric increase of the number of sensors connected to the Internet is expected”, Michael Howell (25.05.2015)
Extensions to the ‘temporal’ domain

- **Sensor Observation Service (INSPIRE/SOS)**
  - Data transmission use case
  - Suited for near-real time
  - Reusable & interoperable services
  - Domain independent
  - Data managed close to the source
  - Easy to Use Web Clients
Extensions to the ‘temporal’ domain

An INSPIRed sensor node (I-NODE)

“Sustainable Urban Living” JRC project (SUL)

- Open source software
- Open hardware
- Out-of-the-box
- DIY community
Emerging opportunities

• ‘Proper’ data management matters

• Occasion for doing things “the right way”

1) SEVESO – Establishment

2) Industrial Emissions Directive - Installations

3) E-PRTR – Industrial Facilities

4) Large Combustion Plants

Work ongoing

• INSPIRE - common denominator

• Common identifiers (INSPIREid)

• Subdivision of roles
Beyond EU28

INSPIRE and the global agenda
International Standardization Bodies (OGC, ISO, etc.)
UNGGIM-Europe

- Uptake of principles, reflection of lessons learned

Partnership with WB/FAO/UNECE

- **Awareness raising** events
- **Transfer of know-how** to non-EU countries
- Joint yearly **action plan**

Support to macro-regional development

EUSDR
Danube Reference Data and Services Infrastructure (DRDSI)

Based on **MS investment in INSPIRE**

Open data **platform (CKAN)**
- Publish, search, view and download data

**Data (4500 +) coming from**
- European Commission
- National and International Stakeholders
- European, Regional and National Projects

**Coordination and Collaboration**
- Including a Permanent Network (DANUBE_NET) composed by a representative of each Danube country
New opportunities

“Data Infrastructures for Sustainable Growth” workshop (28.05, 09:00 h)

- Business side of things
- Value added products
- Different perspectives
- ‘Recipes for success’
Conclusions

- The infrastructure is **mature** and ready to:
  - Support **mass-implementations**
  - **Be extended** and fit for purpose
- INSPIRE can also be **successfully used**:
  - **Beyond the geospatial** domain (e.g. open data, space-time, Internet of Things, etc.)
  - To address cross-cutting issues **outside the environment** (smart cities, Digital Single Market, etc.)
- **Outside EU28**
- Many emerging **opportunity for businesses**
- INSPIRE as a driver for **innovation**
Thank you for the attention 😊