An Organizational Frame for Interoperability Testing in Spatial Data Infrastructures

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The Project


- Initialise an Consensus process between INSPIRE, GEOSS, GMES and standardisation bodies
- Understanding commonalities and discrepancies between INSPIRE, GEOSS and GMES architectures and identify common interoperability needs
- Design of an open, persistent test-bed
- Recommendations for the SDI research agenda
What is Interoperability Testing?

- Different Scopes & Initiatives
  a) Standards development
     OGC, ISO,…
  b) Research beyond existing standards
     AGILE/EuroSDR/OGC Persistent SDI Testbed (PTB),…
  c) Prototyping for operational products
     Industry, partly conducted in b) & a)
  d) Compliance and performance checking
     OGC Initiative for Compliance & Interoperability Testing
     & Evaluation (CITE), INSPIRE?
  e) Demonstrating best practices
     OGC Pilots, Regional SDI Testbeds…
Why Persistent Interoperability Testing?

- Provide GI research & development community with a reliable prototyping and testing environment.

- Increase sustainability for EU funded projects:
  - Allow persisted prototypes, demonstrators and best-practise implementations.
  - Increase visibility of participants and results
  - Reduce set-up costs for EU projects to further develop SDI

- Support SDI standards and interoperability teaching

- Strengthen and consolidate European voice in international standardisation bodies
Different Persistent Test Environments

1. Persistent Meta SDI Testbed
   - acts as an umbrella portal facilitating informing and networking about testing activities.

2. Persistent Interoperability Testbed
   - the maturation from research to pre-operational interoperability testing

3. Persistent Test Harness
   - testing for service interface and data standard compliance (incl. performance, legal obligations,…)
   - including certification as the final step in a product maturation process
Different Test Environments

Meta SDI Testbed

Persistent Interoperability Testbed

- Basic infrastructure
- Security / trust
- Licensing

Pre-operational SDI testing initiatives

- GMES (SSE)
- INSPIRE
- GEOSS pilot & IOC
- OGC testbeds / pilots
- Further procurement preparation pilots

"Research" testing for sandbox initiatives

- AGILE/EuroSDR/OGC PTB
- OGC testbeds
- EC research projects
- ...

Technology maturation

External Testbeds & Pilots

- OGC
- INSPIRE/GMES Testbed Runder Tisch GIS e.V. Munich
- ...

Persistent Test Harness

- Basic infrastructure
- Test engines
- Certification

Services

- Interoperability
- Performance
- Certification (OGC TEAM, OGC CITE, ISO, CEN, GMES, INSPIRE)

Data

- INSPIRE
- ...

Interoperability Testing for SDI
GIGAS Testing Business Models

- GIGAS developed Business Models for
  1. Persistent Meta SDI Testbed
  2. Persistent Research and Sandbox Testing
  3. Persistent Pre-operational Testing
     a. Using Service Support Environment (SSE)
     b. INSPIRE Data Specification Testing Perspective

- considering:
  - Scope and Requirements
  - Possible Usage Scenarios
  - Roles
  - Users
  - Infrastructure
  - Customer Care
  - Required Resources
  - Risks and Issues
  - Conclusions and Perspectives
1. Persistent Meta SDI Testbed

- Acts as an umbrella portal facilitating informing and networking about testing activities.
  - No real testing is carried out in the Meta SDI Testbed.

- Components
  - A query-able web portal that provides an overview and background about all ongoing testing activities

- None existing initiative identified

- Annual costs estimated as
  - 4 PM + ~ 10,500 Euro (travel, hosting)

- Possible hosts e.g. JRC
2. Persistent Research and Sandbox Testing

- Components
  - Persistent Infrastructure Environment matured basic data and services (e.g. WFS/WCS, security/licensing mechanisms, etc.),
  - Service Registry that enables researchers to share and mutually use their prototypes within a persistent infrastructure,
  - Collaboration Tools for the research community
  - Consistent Data Policy framework for data / services used.
2. Persistent Research and Sandbox Testing

- **OGC Testbeds** as well
  AGILE/EuroSDR/OGC PTB serve as examples

- Ideally commonly run by
  - CEN, GEOSS, GMES, INSPIRE, ISO, OGC
  - AGILE, EuroSDR
  - Regional SDIs...

- Annual resources estimated as
  - 20 PM + ~ 60,000 Euro (travel, hosting)

- Possible Funding via
  - EC/EU, EU FP & other research projects
  - subscription based...?!?
3. Persistent Pre-operational Testing

a. Service Support Environment
   - Focus on product maturation & EO community (not on certification !)
   - Based on the ESA SSE & OGC Pilots
   - Roughly same costs as the research & sandbox testing
   - Both could be merged…

b. INSPIRE Data Specification Testing
   - Focus on support of INSPIRE schema development (not on certification !)
   - Additional focus on capacity building and cost benefit analysis
   - JRC as a possible host candidate…

http://services.eoportal.org/
Conclusion

- Common persistent testing facilities to improve synergetic effects & productivity for EU SDI developments

- Distinguish different testing strategies

- GIGAS identified components, costs and possible candidates for SDI testing:
  - Meta SDI Testbed seems an easy to realise, quick win effort
  - Further consolidation & development of an European SDI testing suite needed!
  - Financing models may be based on EU funding or a subscription based model….further steps required!
Thanks!

Find related resources under: http://www.thegigasforum.eu/

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