

Report / minutes of AGILE 2009 pre-conference workshop on the PTB

Created by Johannes Brauner

Attendants

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Agenda

9.30 – 9.45	Welcome
	Johannes Brauner (Technische Universität Dresden) - PTB – AGILE/EuroSDR/OGC Persistent Testbed for Research and Teaching
9.45 – 10.45	Perspectives and Requirements on PTB
	Michael Lutz (JRC) – Possible uses of the PTB for INSPIRE testing
	Valentina Sagres (JRC) - A test bed approach for quality assurance of spatial data under the EU's Common Agricultural Policy
10.45 – 11.15	Coffee break
11.15 – 11.45	Anders Östman (University of Gävle) – Performance Testing of GI Services
11.45 – 12.45	Results from PTB Phase 1
	Edward Nash (University of Rostock)- Concept of a Universal Client as Gateway to the PTB
	Mohamed Bishr (ifgi) - PTB in Geospatial Semantics. Needs and Challenges.
	Rob Lemmens (ITC) - Schematisation service chain: A use case for the OGC-EuroSDR-AGILE Persistent Test Bed
	Chris Higgins (EDINA) - Some access control findings from PTB Phase I
	Rob Lemmens (ITC) - Towards a catalog service for the OGC-EuroSDR-AGILE Persistent Test Bed
13.00 – 14.00	Lunch
14.00 – 15.00	Testbed business models
	Ulf Sandgren (Lantmäteriet) - SEIS / INSPIRE
	Johannes Brauner (Technische Universität Dresden) - GIGAS – Developing a business model for a persistent testbed
15.00 – 15.30	Coffee break
	Chris Higgins (EDINA) – ESDIN
	Volker Kraut (Runder Tisch GIS e. V.) - INSPIRE GMES Testbed
16.30 – open end	Future of the PTB and (Panel) Discussion (moderated by Lars Bernard)

Please skip to the Conclusion / Wrap-up at the end for the final discussion outcome.

PTB – AGILE/EuroSDR/OGC Persistent Testbed for Research and Teaching (Johannes Brauner, TUD)

Johannes introduced the main objectives of the PTB and emphasised the following issues for the discussion throughout the day:

- Funding
- Involvement of industry partners
- Responsibilities (Maintenance, facilitation)
- Second Call for Participation
- OGC involvement / OGC IE status
- Participation in the OGC CCIP
- Relationship to other testbed activities

Possible uses of the PTB for INSPIRE Testing (Michael Lutz, JRC)

Michael gave an overview about INSPIRE and the according Annex I DS Testing activities (transformation and application testing), which the JRC coordinated and were finished a short time ago. The JRC identified the following problems relating to this testing activity:

- Almost no application testing
- Little data quality, consistency, MD and portrayal testing
- Complexity of INSPIRE DSs
- Lack of time to do more comprehensive testing
- Lack of examples
- Lack of resources / budgets
- Low support for GML 3.2.1
- Relatively little feedback on CBCs

According to Michael, the PTB could be useful for such INSPIRE testing activities by:

- Providing INSPIRE download services (for easier data access) to provide local data for transformation testing and INSPIRE-compliant data for application testing,
- Developing transformation test approaches for offline (translating download services) and on-the-fly (transformation service) testing, potentially considering performance parameters,
- Providing INSPIRE view services for testing portrayal functionality,
- Providing INSPIRE discovery services for testing metadata transformation,
- Developing cost-benefit considerations for testing activities.

The PTB and INSPIRE testing activities mutually benefit. For INSPIRE he identified the following benefits:

- Lower entry barriers:
 - More comprehensive testing (incl. e.g. application testing)
 - Easy testing of effects of modelling decisions

- Ongoing feedback from testing
- More CBC information

Possible benefits for testers (the PTB participants) are:

- Access to real-world data & use cases/applications
- Adding knowledge (technical & content) for organisation
- Learning by doing
- Established links between data providers, transformers and end users

In the following discussions it was agreed upon that INSPIRE testing totally fits into the PTB concept if the basic infrastructure is available. For the technical aspects the according testing services, registries, security mechanisms, etc. should be available as a reference implementation. On the organisational side communication channels and rights management issues were identified as most important.

A test bed approach for quality assurance of spatial data under the EU's Common Agricultural Policy (Valentina Sagris)

Valentina presented an also EC-driven but INSPIRE-independent approach on data quality testing in the context of EU's Common Agricultural Policy (CAP).

She started her presentation with an overview about the current status of the CAP and its relation to the INSPIRE data specifications. The quality assurance consists of a management of requirements (especially monitoring and testing of conceptual conformance) and of data governance. Data governance consists of a definition of a certain conformance quality level, the planning and performing of quality tests and of reports about the data quality.

Afterwards she introduced the LPIS Core conceptual Model (LCM) based on ISO 19105 for the CAP testing activities. She stated that compliance testing against data specification is an alternative understanding of testbed regarding the classical definitions.

She asked the following questions about PTB vs. data compliance testing:

- What are the overlaps?
- What is already available?
- What is the scope for future research?

She compared both approaches:

PTB initiative	CAP Data compliance testing
Web services in university centres	27+ database implementations
Knowledge in testing and establishing of the services	Common model/data specifications (informal, still under development)
Experiences in schema transformation techniques	Web Services of Member States administrations (oriented to farmers, not for QC, OGC compliance unknown)
	ATS experience

She suggested that the PTB can offer the testing procedures for this quality tests.

In the following discussions it was agreed that this compliance testing could present another PTB use case, especially because of its importance for bringing INSPIRE and CAP on a streamlined track.

Performance testing of GI services (Anders Östman)

Anders started his presentation with a proposal to do some INSPIRE performance testing on the following issues:

- OGC compliance
- INSPIRE compliance (data, service and metadata specifications)
- Compliance to other SDI requirements (especially usability)

He refers to a currently undergoing initiative between Sweden (main partner) and Germany, with Denmark and Switzerland showing strong interest. OGC compliance testing is available and there are a lot of tools to test the performance on Web Services (JMeter, etc.). Usability is a hot topic (AGILE working group, EuroSDR projects and the OGC Working group on data quality). Data quality consists mainly of accuracy, completeness, consistency, etc.. Critical success factors for the usability are:

- Fast: The delivery shall be fast.
- High quality: Information shall be correct, relevant, and up- to-date.
- Flexible: Customizable to the needs of the customer.
- Low Cost
- Convenient
- Reliable: The service shall be provided with a consistency, that is, it should be always completed.

He proposed the following (short term) actions:

- Find interested partners
- Find a suitable cooperation framework (meeting issues, a EuroSDR or PTB project?)
- Propose an action plan by September 2009
- Start project in November 2009 (Initially on own funding)

It was agreed that the PTB is suitable for such testing activities and the idea came up to issue a next Call for Participation for the PTB with the main focus on INSPIRE testing (test suite, performance and applications/usability). Details were discussed in the wrap-up discussion at the end.

Reports from the use cases from PTB Phase 1

Details about the thematic content of the Use Cases can be found in according slides.

Edward Nash (Rostock and Newcastle Universities)

Edward Nash reported from their use cases to develop a Universal Client as a gateway for the PTB. They had an ambitious plan, but realised only parts of it.

He identified four challenges which needed to be tackled:

- Very limited funding (only small traveller grant, no developer time)

- Less overlap than expected with current projects
- Parallel developments (e.g. the 52n WPS OpenLayers client)
- Lack of interaction with the other PTB use cases

To overcome these issues in the future he proposed to:

- Implement a central portal / client which improves the visibility of the PTB (Question: Is a catalogue enough or should it be extended to a full viewer application)
- Widen participation (self-registration of contributed services, census of available open services, define minimum service requirements)
- Think about different approaches for different service types (data services – relatively few providers with supraregional coverages vs. value-adding services)

Mohamed Bishr (University of Münster)

Mohamed identified their motivation to participate in the PTB as followed:

- Semantic technology is still evolving, so there is a need for a sandbox
- Reproducibility of results is improved for further research an collaboration
- Progress is measurable
- Demos make it easy to drive ideas home

He stated that the status of the PTB is not good enough for the following reasons:

- Services are not complementary
- Data is not overlapping^
- No grand overall Use Case is available
- Collaboration is limited
- There is no research agenda
- The approach is not clear (bottom-up vs. top-down)

To overcome these issues he proposed to:

- Define a clear distinction between dynamic (sand box) and persistent testing (as suggested by Mike Gould in one of the first meetings)
- Create templates on how to acquire PTB funding in future project proposals and IPR licensing templates (this improves the coordination of embedding the PTB in projects)
- Form a strategic committee which is responsible for a research agenda and an overall theme
- Find a clear connection to INSPIRE
- Show the PTB relevance to policy makers
- Reduce strong access control

Most of his suggestions were wrapped up in the final discussions.

Rob Lemmens (ITC and CGS at Nottingham University)

Rob concluded as follows:

- Their Use Case implements an industrial application and demonstrates that it is possible to host non-trivial algorithms in an OGC-compatible form
- Service descriptions are very important (especially when it comes to service orchestration)
- Service chaining is an important research issue (transparent vs. opaque chaining)
- Interoperability is vulnerable (the shift from WPS 0.4.0 to WPS 1.0.0 required a lot of handy work)

Chris Higgins (EDINA and Universität der Bundeswehr München)

Chris showed that their Use Case was very successful and clearly not as successful as without the PTB. He identified four benefits for the PTB:

- Possibility of setting up an Identity Federation across the PTB based on Shibboleth
- OGC WMS and possibly other OWS can be combined with Shibboleth Identity Management
- A potential means for restricted geospatial information to be made available into the PTB
- Demonstrates value of PTB European academic sector focus to wider initiatives, eg, GEOSS, GMES, INSPIRE, etc.

Possible next steps are:

- An OGC PTB Interoperability Experiment focussing on Shibb based authentication
- Begin exploring cooperation across European Access Management Federations from an SDI perspective
- IE participant components:
 - Shibboleth IdP (and WAYF)
 - Web Service specific PEP(s)
 - Services

He posed the following questions to think about:

- But what Use Case?
- Who has the resources?
- Links to what projects?
- Risks. Only happened because of the PTBs uniqueness.

Rob Lemmens and Bernard Hakizimana (ITC)

Rob and Bernard showed the first prototype for a PTB catalogue service based on GeoNetwork. Additional details can be found in their screen cast on the PTB Website.

They stated that several hundreds of OGC web services available over the internet but do not provide enough description about the services (-> PTB can provide catalogue function) and GeoNetwork allows to provide service descriptions, but needs to be enhanced with chaining info and quality parameters (-> PTB can serve as testbed for this catalogue research activities).

Testbed Business Models - Testing of specifications and services related to INSPIRE SEIS GMES (Ulf Sandgren)

Ulf started his presentation by showing the different foci of INSPIRE, SEIS and GMES and why the initiatives are so different.

He identified the following research issues for the testing of the different service kinds:

- Test of registry services - use of different base maps, gazetteers, terminology catalogues, etc
- Test of discovery services - metadata catalogues - techniques for production and harvesting of metadata - test of user interfaces
- Test of view services - view services for portrayal - cartographic aspects
- Download services - performance requirements - handling of large data volumes
- Transformation services - different coordinate systems - different data models
- Invoke services - chaining of data from different sources
- Security systems (handling of security and integrity)

For testing data specifications he proposed:

- Schema translation - for setting up a delivery layer - for services on the fly
- Usability of proposed specifications - usability in specific processes & applications - combination of data themes from different sources
- Cost/benefits considerations
- Generalisation
- Multiple information representation

Details about SEIS can be found in his presentation.

He suggested the following points on how to proceed:

- PTB facilities to be developed as meeting points for representatives from different stakeholders
- Developed cooperation between different PTB's
- A more formal and long-term agreement between a group of PTB's and the Commission (JRC)
- Development of consistent testing methodology as part of a systematic quality process
- Look at future models for handling of evaluation and certification

Details about the discussion are in the concluding wrap-up.

GIGAS – Developing a business model for a persistent testbed (Johannes Brauner)

Johannes started his presentation with an introduction into the GIGAS project (details in his slides). One outcome of GIGAS is the development of a business model for “a” persistent testbed. PTB and GIGAS mutually benefit (the GIGAS recommendation of a persistent testbed becomes more weight and a business model for the PTB is funded).

Johannes states that a business model should consist at least of:

- Infrastructure
 - Core capabilities (main objectives)
 - Partner network (AGILE, EuroSDR, OGC, JRC, GEOSS, SDI initiatives, etc.)
 - Value configuration (What is the value of a persistent testbed, why is it so important? -> Enables problem oriented work, set up of own services to test against can be avoided)
- Offering
 - Value proposition (What does a persistent testbed offer to create the proposed infrastructure? -> services, catalogue service, access control capabilities, mailing list, website, overview about other existing testbeds -> Metatestbed)
- Customers
 - Target customers (GI research community, standardisation bodies, industry partners (?))
 - Distribution Channels (website, mailing lists, Calls for Participation, etc.)
 - Customer Relationship (workshops, conferences, fairs, publications, best practice documents, etc.)
- Funding (cost structure, depending on hosting model for services, (in-kind) contributions from customers/projects, public funding)

Details about the discussion wrapped up in the conclusion.

esdin - Overview with an Academic Sector Perspective (Chris Higgins)

Chris started his presentation with an overview about the esdin project (details can be found in his slides). The esdin project shall provide access to INSPIRE compliant services for research and education, European data for UK users and UK data for European users. Additionally, a European academic SDI shall be created (based on real data).

These goals shall be reached by the following steps:

- Assist with awareness and dissemination, eg, through OGC, ISCGM, UNSDI
- Key route for academic engagement will be through testbeds, e.g., the European Persistent Testbed for Research and Education
- Network and develop links with other relevant projects, e.g., GIGAS
- Organise workshops in association with, e.g., AGILE, EuroSDR
- Apply experience of Access Control
- Implement services (WMS, WFS, CSW) for use by small numbers of academic institutions through testbeds.
- We have said we would bring 5 academic institutions by yr2, 30 by yr3
- Evaluate whether elements of the test environment can be sustained for use by the academic sector

The esdin project provides real data complements the theoretical work carried out by the GIGAS project.

INSPIRE GMES test platform by Runder Tisch GIS e.V. (Volker Kraut)

Volker shortly introduced the differences between INSPIRE and GMES and gave an introduction into their testing platform. From an organisational viewpoint they experienced the following issues:

- Permanence necessary for usefulness and impact
- Cooperation necessary:
 - GIS vendors
 - Data providers
 - Universities
 - Users
- High effort to keep platform running and up to date:
 - Service Monitor
 - Web based calendar of events
 - Catalogue of Components crucial (CSW)
 - Systems must be configured by GIS vendors themselves
- Applications crucial:
 - Real world scenarios
 - Test data from different providers covering the same geographic area
 - Cross-vendor interoperability test

They carried out some discussions between experts about funding for persistent testing activities with the following outcome:

- Project funding
 - Implemented step by step in sponsored projects
 - Necessary: Real world scenarios which demonstrate benefit of Web Service approach
- Central Testing instance
 - Needs official mandate (EC)
 - Cooperation on European level
 - For a testing-fee or community funded?

Discussion details wrapped up in the conclusion.

Concluding discussion outcome / wrap-up (Moderator: Lars Bernard)

The following future actions were agreed upon:

- Define a PTB business/organisation model (GIGAS; Sweden, ?)
 - What to fund?!

- What is the content/scope?
 - Define relationship to INSPIRE; OGC; GMES; GEOSS
 - Scopes/Parts of testbeds (sandbox, persistent services)?
- How to get the mostly project based funding persistent?
- How to get the organisation persistent?
- A first draft/version 9/2009 (GIGAS)
 - Circulate draft in the 'PTB'
- Organise a follow-up meeting...(GIGAS)
 - e.g. in September/October
 - ASAP: define date & place
- Finalise PTB Phase I (TU Dresden, IFGI; ITC)
 - Prepare a survey within the 'PTB'
 - Have a/several show case(s); clients; etc.
 - Scope & architecture of the PTB; the next call(s)
 - Timeframe: August/July 2009
- Prepare next PTB call; possibly on INSPIRE/(GMES) related services, possible aspects
 1. test suite;
 2. performance;
 3. security;
 4. applications/usability
- Set up a committee for preparing the call and evaluating proposals (Univ. Gävle; E(S)DINA; EuroSDR/AGILE/OGC, GDI-DE; JRC; IfGI?; tbc.)
 - identify and define cross-links between the accepted projects (geographical overlap, storyboard)
 - ask for mandated resources
 - ask for lifetime of proposed services
 - Long term benefit?!
 - Timeframe: as much as possible before October 2009
 - How to link with OGC (and other) activities?
- Strategic committee
 - EuroSDR/OGC/AGILE
 - Formalise OGC participation (EDINA)
 - EC/JRC (MoU? TU Dresden);
 - EuroGeographics; ... (CGS;EDINA)

- Revisit in 2010: OSGEO, GEOSS
 - CGS/Edina/TUDresden
 - Confirmed up to end of 2009
 - To also be confirmed by the respective initiatives
- Continue/provide PTB platform;
 - web site (ITC; TU Dresden; JRC; ?)
 - Catalogue (currently ITC for Phase I; EDINA will migrate the catalogue to Edinburgh in the near future; ?)
 - Meta-Testbed (GIGAS,?)
- Provide rules, doc's & templates (PTB committee; GIGAS)
 - Charter / participation
 - on acquiring funding
 - on sharing data / IPR (ESDIN/WP4)
 - TimelineOctober2009
- Define/provide reference data (EDINA)
 - ideally in a cross-border setting
 - t.b.d. -> EuroGeographics!

The PTB facilitator (Johannes Brauner) is responsible for initiating the future actions.