



envision
environmental services infrastructure with ontologies

Deliverable D7.4:

Report on “Workshop – User Community I”

Date:	Monday, 14. June 2011
Author(s):	Patrick Maué (UOM)
Dissemination level:	PU
WP:	7
Version:	1.1
Keywords:	Dissemination strategy, Foreground
Description:	This deliverable reports on workshops performed in the first year of the ENVISION project by UOM partners.



ICT for Environmental Services and
Climate Change Adaption

Small or Medium-scale Focused Research Project
ENVISION (Environmental Services Infrastructure with Ontologies)

Project No: 249120

Project Runtime: 01/2010 – 12/2012

Document metadata

Quality assurors and contributors

Quality assesor(s)	Hiroshi Kobayashi (BRGM), Simon Scheider (UOM) (from D7.4)
Contributor(s)	

Version history

Version	Date	Description
1.1	14.06.11	Created individual report based on D7.2 v1.0

Executive Summary

Several workshops have been conducted in the first project year 2010 where ENVISION partners have presented the ENVISION platform to the scientific user community. In the first year the focus lied on scientific conferences: the research results have been presented to the domain experts working in other research projects in the domain of environmental models. Workshops focussing on the introduction how to pratical use the ENVISION platform will be performed in the remaining time of the project. This report is an excerpt of the content already presented in Deliverable 7.2.

Workshops with the user communities

The relevant user communities have been introduced in Deliverable 7.2. Over the course of the first project year, several workshops have been co-organized by members of the project consortium. Results coming from the ENVISION project have been presented and discussed with members of the targeted user communities in these workshops.

Environmental Information Systems and Services – Infrastructures and Platforms (envip'10)

<i>Workshop Website:</i>	http://purl.org/ifgi/envip10
<i>Workshop Proceedings:</i>	http://ceur-ws.org/Vol-679
<i>Videos of the presentations:</i>	http://videlectures.net/envip2010_bonn/

The workshop has been organized by Arne J. Berre, Dumitru Roman (both SINTEF) and Patrick Maué (UOM). The workshop was held during October 7-8, 2010, in conjunction with the ENVIROINFO 2010 conference in Bonn, Germany.

We addressed research problems as well as practical experiences around frameworks, methods, concepts, models, languages and technologies that enable enhanced environmental service infrastructures and platforms. Of particular interest were the architectural, technical, and developmental foundations of infrastructures supporting flexible discovery and chaining of distributed environmental services.

The targeted audience were members of the environmental modelling community; in particular scientist representing research projects addressing environmental information systems. Submissions were formally peer-reviewed by three referees, and 13 papers were finally accepted for presentation at the workshop and publication at the Proceedings. The workshop was organized in five sessions and included discussions on topics such as Infrastructures with Semantic Annotation and Uncertainty, Infrastructures with Decision Support and Augmented Reality, Infrastructures with Ontologies and Environmental Indicators, and Infrastructures with Discovery and Service Chaining. The workshop succeeded in involving several EU funded projects that are currently building components of infrastructures and platforms for environmental monitoring in Europe. The paper presentations and discussions during the workshop helped to identify common elements and differences between these projects (see Section 2.2.8 for a more detailed discussion).

The papers have been published as part of the CEUR Workshop Proceedings: <http://ceur-ws.org/Vol-679>

The videos of the presentations are online, you can find them at videlectures.net

Workshop Description:	Program
<p>The Shared Environmental Information System (SEIS) is one of three major initiatives along with the INSPIRE Directive and the Global Monitoring for Environment and Security (GMES) undertaken by Europe to collect and share environmental information for the benefit of the global society.</p> <p>Different efforts are now emerging towards the creation of infrastructures and platforms for Environmental Information Systems and Services – including Infrastructures for flexible discovery and chaining of distributed environmental services.</p> <p>Information and Communication Technologies (ICT) have an essential role to play in the context of Environmental systems as they provide the necessary support in terms of tools, systems and protocols to establish a dynamic environmental space of collaboration in a more and more sophisticated digital world. Core challenges are not only related to providing seamless environmental data access to public authorities, businesses and the public at large, but also to allowing for interoperable environmental services based on Web technologies, and stimulating new market opportunities. ICT for environmental collaboration is widely recognised as a major step for addressing complex management issues including adaptation to climate change and sustainable management of urban environment. The European Commission recently funded several projects in the area of ICT for Sustainable Growth, with a core focus on ICT for Environmental Services and Climate Change aiming at providing the foundations for an infrastructure for monitoring, predicting and managing the environment and its natural resources.</p>	<p>The keynotes for the ENVIP workshop will be shared with the ENVIROINFO conference. The program of the conference is here.</p> <p>Thursday 09:00-10:30, KEYNOTE (EnviroInfo) and Coffee Break</p> <p>Thursday 10:30-12:30, Session 1 Infrastructures with Semantic annotation and Uncertainty <i>Chairs: Arne J. Berre, SINTEF and Denis Havlik, Austrian Institute of Technology)</i></p> <ul style="list-style-type: none">• article/video/slides Closing the discovery gap in environmental information resources using semantic annotations: the TaToo Approach by Tomas Pariente Lobo, Mauricio Ciprian, Gerald Schimak, Giuseppe Avellino, and Sascha Schlobinski• article/video/slides Validation Scenario for Anthropogenic Impact and Global Climate Change for Tatoon by Jiri Hrebicek, Ladislav Dusek, Miroslav Kubasek, Jiri Jarkovsky, Karel Brabec, Ivan Holoubek, Lukas Kohut, and Jaroslav Urbanek• article/video/slides Service-Based Infrastructure for User-Oriented Environmental Information Delivery by Leo Wanner, Harald Bosch, Nadjat Bouayad-Agha, Ulrich Bügel, Gerard Casamayor, Thomas Ertl, Ari Karppinen, Ioannis Kompatsiaris, Tarja Koskentalo, Simon Mille, Jürgen Moßgraber, Anastasia Moutzidou, Maria Myllynen, Emanuele Pianta, Marco Rospocher, Horacio Saggion, Luciano Serafini, Virpi Tarvainen, Sara Tonelli, Thomas Urbanek, and Stefanus Vuchika

Figure 4 - Screenshot of the ENVIP workshop website.

Towards Digital Earth: Search, Discover and Share Geospatial Data (DE2010)

Workshop Website: <http://ifgi.uni-muenster.de/DE2010/>

Workshop Proceedings: <http://ceur-ws.org/Vol-640>

The workshop has been co-organized by Alejandro Llaves and Patrick Maué (both UOM). The workshop was held September 20, 2010, in conjunction with the FIS 2010 conference in Berlin, Germany.

The workshop aimed to bring together a wide spectrum of researchers from academia, industry and government working on key elements of Next Generation Digital Earth. It reinforced the notion of Digital Earth by analysing best practices on the wide range of related fields. The workshop targeted the following outcomes:

- Stimulate discussion between participants about the Digital Earth theory framework and technology.
- Provide an interdisciplinary overview of existing solutions making use of Digital Earth that have been developed for specific problems.
- Document the current state of the art and identify the next steps in research towards

the Next Generation Digital Earth.

Six submissions have been accepted for presentations. The workshop included a Keynote by Dr. Max Craglia, the research coordinator of the SDI unit of the European Commission's Joint Research Center. The presentations covered topics such as the relation between environmental services and semantic web technologies, the impact of the model web on the Digital Earth, and problems of volunteered geographic information.



FIS:2010 

Towards Digital Earth: Search, Discover and Share Geospatial Data

Workshop at **Future Internet Symposium**,
September 20th, 2010, Berlin, Germany.

Motivation and Scope

Virtual globes such as Google Earth have become popular for commercial, social and scientific applications in the past few years. The former US vice president Al Gore coined the term 'Digital Earth' to envisage a virtual globe that provides access to spatially referenced information on the Web [1]. Various efforts have been made to support Gore's vision. Custom online earth applications have been developed by Google, Microsoft, Yahoo, ESRI, NASA, the Indian Space Research Organisation (ISRO), the OpenStreetMap Community, and the United Nations. Several International working groups have been established such as the International Society for Digital Earth (ISDE) and the Interagency Digital Earth Working Group (IDEWG). Moreover, different conferences and workshops such as the Digital Earth international symposia have been organized to push and document the development of Digital Earth. Tools to support the realization of the Digital Earth vision have been developed at different levels and at different scales, ranging from geo-browsers over online collaborative mapping tools to Spatial Data Infrastructures. The recently established notion of Linked Geodata underpins this vision by connecting distributed data across the Internet.

Existing solutions such as the ones mentioned above cover several aspects of the Digital Earth initiative.

News

- 2010-10-05
The [call for papers](#) for the special issue in IJSDIR is out.
- 2010-09-28
The [proceedings](#) are online.
- 2010-09-01
The [program](#) is online.
- 2010-08-10
The list of [Accepted papers](#) is online!
- 2010-07-28
[Keynote abstract](#) added.
- 2010-07-04
[Deadline extension!](#)
- 2010-05-18
[Keynote by Max Craglia](#) confirmed.
- 2010-05-17
Follow us on [Twitter!](#)
- 2010-05-17
[Submission info](#) updated.

Figure 5 - Screenshot of the DE2010 workshop website.

Workshop on Linked SpatioTemporal Data (LSTD 2010)

Workshop Website: <http://stko.psu.edu/lstd2010/>

Workshop Proceedings: <http://stko.psu.edu/lstd2010/>

LSTD 2010 has been co-organized by Patrick Maué (UOM). The workshop was held September 14, 2010, in conjunction with the GiScience 2010 conference in Zürich, Switzerland.

This workshop introduced the relation between upcoming Linked Data infrastructures and existing Spatial Data Infrastructures to the GiScience community. The workshop results contributed to the on-going work of the NeoGeo Semantic Web Vocabularies Group, an online group focused on the construction of a set of lightweight geospatial ontologies for Linked Data. The workshop helped to better define the data, knowledge representations, reasoning methodologies, and additional tools needed to link locations seamlessly into the Web of Linked Data.

The workshop started with a tutorial by Todd Pehle from Orbis Technologie introducing the basic ideas, languages, and tools to get started with Linked Data. The following presentations covered topics about linking SDI's with linked data, aligning geospatial ontologies, publishing geographic information as linked data, and more.

WORKSHOP ON LINKED SPATIOTEMPORAL DATA 2010

In conjunction with the 6th International Conference on Geographic Information Science (GIScience 2010)

Zurich, 14-17th September, 2010; the workshop will be held on the 14th September 2010.



Workshop Description & Scope

Whilst the Web has changed with the advent of the Social Web from mostly authoritative towards increasing amounts of user generated content, it is essentially still about linked documents. These documents provide structure and context for the described data and ease their interpretation. In contrast, the upcoming Data Web is about linking data, not documents. Such data sets are not bound to a specific document but can be easily combined and used outside of the original context. With a growth rate of millions of new facts encoded as RDF-triples per month, the Linked Data cloud allows users to answer complex queries spanning multiple sources. Due to the uncoupling of data from its original creation context, semantic interoperability, identity resolution, and ontologies are central methodologies to ensure consistency and meaningful results. Space and time are fundamental ordering relations to structure such data and provide an implicit context for their interpretation. Prominent geo-related Linked Data hubs include Geonames.org as well as the Linked Geo Data project which provides a RDF serialization of Open Street Map. Furthermore, myriad other Linked Data sources contain location-based references. This workshop aims at introducing the GIScience audience to the Linked Data Web and discuss the relation between the upcoming Linked Data infrastructures and existing OGC services-based Spatial Data Infrastructures. The workshop results will directly contribute to the ongoing work of the NeoGeo Semantic Web Vocabularies Group, an online group focused on the construction of a set of lightweight geospatial ontologies for Linked Data. Overall, the workshop should help to better define the data, knowledge representations, reasoning methodologies, and additional tools needed to link locations seamlessly into the Web of Linked Data. Subsequently, with the advent of "Linked Locations" in Linked Data, the gap between the Semantic Web and the Geo Web will begin to narrow.



List of Relevant Topics

Topics of interest for the Linked Spatiotemporal Data workshop include (but are not limited to):

- Application of Linked Spatiotemporal Data

Figure 6 - Screenshot of the website for the LSTD2010 workshop.

Collaboration with other European Projects

Collaboration with other European research projects, in particular addressing similar issues advertised in the FP7 program for research on environmental sustainability, is an important aspect in ENVISION. This collaboration has been reason for organizing two workshops. The public workshop on Environmental Services Infrastructures and Platforms (envip'10) has been discussed in Section 2.2.7.1.

ENVIP succeeded in involving several EU funded projects that are currently building components of infrastructures and platforms for environmental monitoring in Europe. The paper presentations and discussions during the workshop helped to identify common elements and differences between these projects in terms of generic components such as development of ontologies and conceptual models, service discovery and composition, sensor access and stream processing, visualization, multilingualism, interoperability, contributions to standards and security. The list of projects present at the workshop and the covered areas are presented in the below table

	Ontologies / domain models	(Service) discovery	(Service) Composition	Sensors access / streams	(Web) visualization	Multilingualism	Transformation / mapping	Standards contributions	Security
TATOO	X	X			X				
PESCADO		X	X		X				
UncertWeb		X	X					X	
SUDPLAN			X		X				
HYDROSYS				X	X				
NETMAR	X	X	X		X	X	X		
OEPI	X	X	X						
GENESIS-DEC	X	X	X		X			X	X
LARKC				X				X	
ENVISION	X	X	X	X	X	X	X	X	
DIADEM	X		X		X		X		

Figure 7 - Collaboration between European projects participating in the ENVIP workshop. (from the Editorial of the Workshop Proceedings)

The workshop clearly showed that further effort is needed to align and ensure a smooth integration of the various components developed in these projects. Nevertheless, the workshop fostered a greater understanding of how open environmental service infrastructures can enable enhanced collaboration between public authorities, businesses and the general public for a better management of the environment and its natural resources.

Furthermore, a bilateral workshop between ENVISION and UncertWeb (see <http://www.uncertweb.org/>) has been organized September 22 by the University of Münster. It focussed on training: members of UncertWeb presented their approach for integrating information about uncertainty into spatial data services and process. In return, the integration of semantic technologies has been presented by the ENVISION consortium.

Conclusion

This deliverable presented three workshops which have been performed by members of the ENVISION project in the first project year. Other workshops are planned in the last project year, and will be reported on accordingly.