The Digital Agenda for Europe A perspective from the Open Geospatial Consortium

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imaGIne
OPPORTUNITIES EVERYWHERE
Unlocking the Power of Geographic Information, Today and Tomorrow...

Agenda

- The presentation focuses on work done within the geospatial and location standards development community

  – Interoperability & Standards (Pillar II)

  – Research & Innovation (Pillar V)

  – ICT-enabled benefits for the society (Pillar VII)

- „Re-Use and Access existing Expertise and Experience" or why cooperation matters

OGC and Open Data

Q: What is the OGC's position on "Open Data"?

The OGC embraces open data as well as other models for data distribution and access. The OGC standards framework must support a broad range of policy positions on the access to and distribution of geospatial data, and **we are supportive of all models for open access, licensed data, secure distribution, etc.** Policies on access and distribution of geospatial and other forms of data are constantly in flux. Data sets restricted for distribution by security and/or pricing / licensing, may be opened up for free access at another time. Changing market forces and organizational policies determine the rules for data access and distribution. Open standards, including those of the OGC, support the full range of business models, and **a common open standards framework is vital to the overall geospatial data marketplace.**

Making your treasures accessible & re-usable

Source: Sueddeutsche.de

Cross-Boundary Information Sharing

Continues to be one of our biggest challenges!

Source:
http://www.ign-sn.de/GI2012/GI2012-OpenDataPolicies-FINAL-Programme-WEB.pdf

Source:
http://de.wikipedia.org/w/index.php?title=Datei:Blaues_Wunder_Hochwasser_2002.JPG

The ability to access, fuse and apply diverse data sources is critical to situational awareness.

OGC at a Glance (1)

- Founded in 1994, not for profit, work is based on consensus and cooperation and is voluntary

- 480+ member organisations (industry, government, academia) (March 2013) http://www.opengeospatial.org/ogc/members

- 23 staff members

- 30+ adopted OGC Standards (several are ISO Standards) http://www.opengeospatial.org/standards

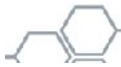*Mission: To serve as a global forum for and lead the development, promotion and harmonization of open and freely available geospatial standards.*
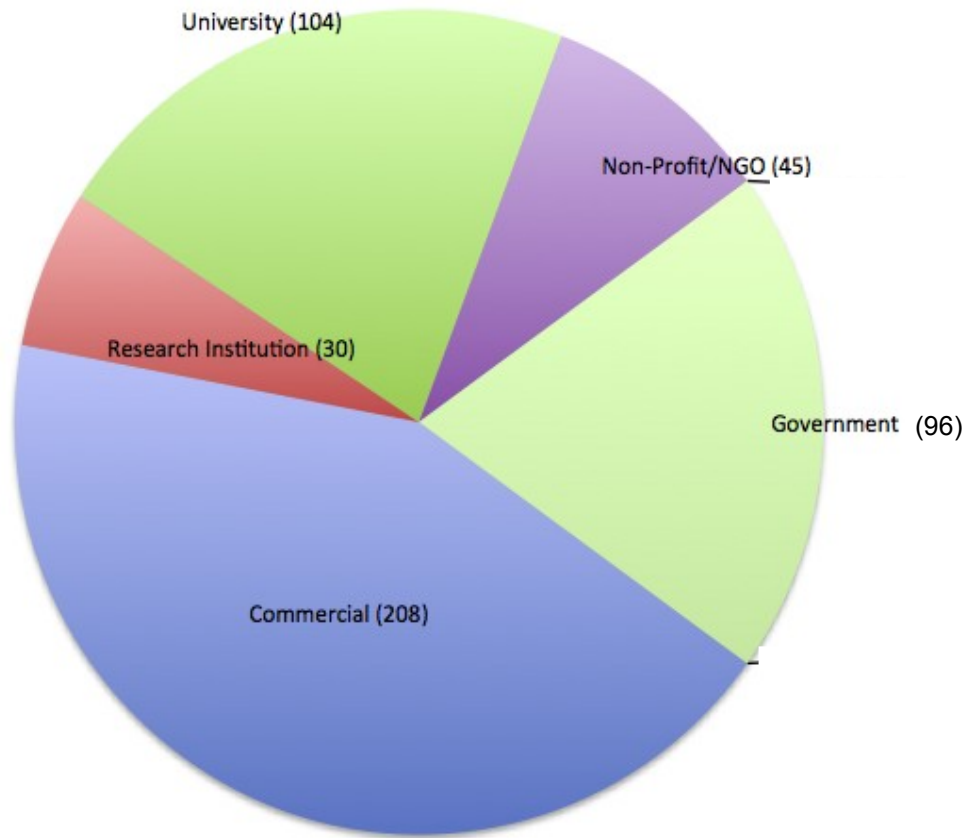
OGC at a Glance (2)

- Several hundred software products, implementing OGC Standards
  http://www.opengeospatial.org/resource/products

- Broad user community worldwide, many policy positions for NSDI
  and other areas are based on OGC standards,e.g.

  - European Union INSPIRE Directive emphasizing ISO and
    OGC standards for improved interoperability.

  - UK Ordnance Survey distributes its MasterMap product using OGC
    standards.

  - Dutch, Canadian, Australian, US American, Indian and other national Spatial
    Data programs recommend OGC standards as best practice for
    interoperability.

- Cooperation with other standards organisations and
  foundations, ISO/TC 211, OSGeo, W3C, OASIS and others
  http://www.opengeospatial.org/ogc/alliancepartners

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W3C

ISO International Organization for Standardization

OSGeo
Your Open Source Compass

OGC membership

Worldwide: OGC Member Types as at 31 Dec 2012

University (104)

Non-Profit/NGO (45)

Research Institution (30)

Government (96)

Commercial (208)

Africa (4)

Asia Pacific (73)

Europe (213)

Middle East (8)

North America (182)

South America (3)

Interoperability, Standards & OGC Programs

DAE Pillar II: Interoperability & Standards

Standards and the Digital Agenda

Action on interoperability is essential to maximise the social and economic potential of information and communication technologies (ICT). This need was identified in the Digital Agenda for Europe [COM (2010) 245 final/2] one of the flagship initiatives of the Europe 2020 Strategy.

The Digital Agenda can only take off if interoperability based on standards and open platforms is ensured.

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF

EU Digital Agenda

"Interoperability boosts competition, we need more of that. For devices or applications to be interoperable - to work together - all concerned parties must agree to a common way of doing things.

Formal standards are one way to get there.

More transparency in formal standard-setting can lead to more efficient outcomes. Public and private procurers of technology should be smart and <u>build their systems as much as possible on standards that everybody can use and implement without constraints</u>: this is good for the bottom-line because it promotes competition between suppliers and prevents vendor lock-in."

Neelie Kroes, Open Forum Europe 2010:
'Openness at the heart of the EU Digital Agenda' Brussels, 10th June 2010
http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/300

Views on Interoperability Levels

Cooperating partners with compatible visions, aligned priorities, and focused objectives

Political Context

Aligned legislation so that exchanged data is accorded proper legal weight

Legal Interoperability

Legislative Alignment

Coordinated processes in which different organisations achieve a previously agreed and mutually beneficial goal

Organisational Interoperability

Organisation and Process Alignment

Precise meaning of exchanged information which is preserved and understood by all parties

Semantic Interoperability

Semantic Alignment

Planning of technical issues involved in linking computer systems and services

Technical Interoperability

Interaction & Transport

Source: European Interoperability Framework, Annex II, p 26

OGC addressing interoperability

Planning of technical issues involved in linking computer systems and services

Technical Interoperability

← →

Interaction & Transport

→ OGC Standards Program

"In the OGC Standards Program the Technical Committee and Planning Committee work in a formal consensus process to arrive at approved (or "adopted") OGC® standards." (http://www.opengeospatial.org/ogc/programs/spec)

→ Standards Working Groups (SWG)

"Edit and approve a candidate standard for public comment, consider official Change Request Proposals to an existing OGC Standard and make changes to the standard as necessary."
(http://www.opengeospatial.org/projects/groups/swg)

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OGC addressing interoperability

Precise meaning of exchanged information which is preserved and understood by all parties

Semantic Interoperability
←——————————→
Semantic Alignment

→ OGC Interoperability Program (IP)

"The IP is a series of innovative, hands-on engineering initiatives to accelerate the development and acceptance of OGC standards." Process to test, verify and document user requirements.
(http://www.opengeospatial.org/ogc/programs/ip)

→ IP Initiatives (http://www.opengeospatial.org/projects/initiatives/active)

→ Domain Working Groups (DWG) part of the OGC SP

"DWGs provide a forum for discussion of key interoperability requirements and issues, discussion and review of implementation specifications, and presentations on key technology areas relevant to solving geospatial interoperability issues." (http://www.opengeospatial.org/projects/groups/wg)
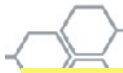
OGC addressing interoperability

Coordinated processes in which different organisations achieve a previously agreed and mutually beneficial goal

Organisational Interoperability

Organisation and Process Alignment

→ OGC membership (http://www.opengeospatial.org/ogc/members)

→ OGC Consensus Process – How the pieces fit together
(http://www.opengeospatial.org/ogc/process)

→ OGC Interoperability Program (IP) and IP Initiatives

→ Alliance Partners - "(...) we find that the OGC mission is aligned with the missions of many different organizations. (...) work with us toward common objectives." (http://www.opengeospatial.org/ogc/alliancepartners)

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OGC addressing interoperability

"Cultural / Social Interoperability"

→ OGC national and regional fora.
Allow the dialogue within a single culture, language and/or political context. But there's no blueprint for all fora. They vary (at least) in the following points: i.e. language, specific regional culture.
Examples: http://external.opengeospatial.org/twiki_public/ILAFpublic/ or http://www.forumogcfrance.org/

→ OGC Global Advisory Council - "The Council is a committee to advise OGC concerning its global outreach and organizational strategies." (http://www.opengeospatial.org/ogc/organization/gac)

→ OGC Board of Directors
(http://www.opengeospatial.org/ogc/organization/bod)

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Standardisation & Innovation

DAE Pillar V: Research and Innovation

Standards in Research & Development

- Norms and standards are a source of knowledge for research and development, for they reflect the current state of technology as a result of the participation of numerous experts in the relevant fields.

- When an organization can influence the content of standards to its advantage, the economic risk is lower.

- Expense of R&D is potentially reduced when the participants in standards work make their results generally available, and research need not be duplicated.

- Examples: OGC Interoperability Program, SWE & CityGML

Example: OGC Sensor Web Enablement (SWE)

Enables discovery and tasking of sensor assets, and application of sensor observations for enhanced situational awareness, much like HTML, and HTTP enabled WWW.

- All sensors reporting position
- All connected to the Web
- All with metadata registered

- All readable remotely
- Some controllable remotely
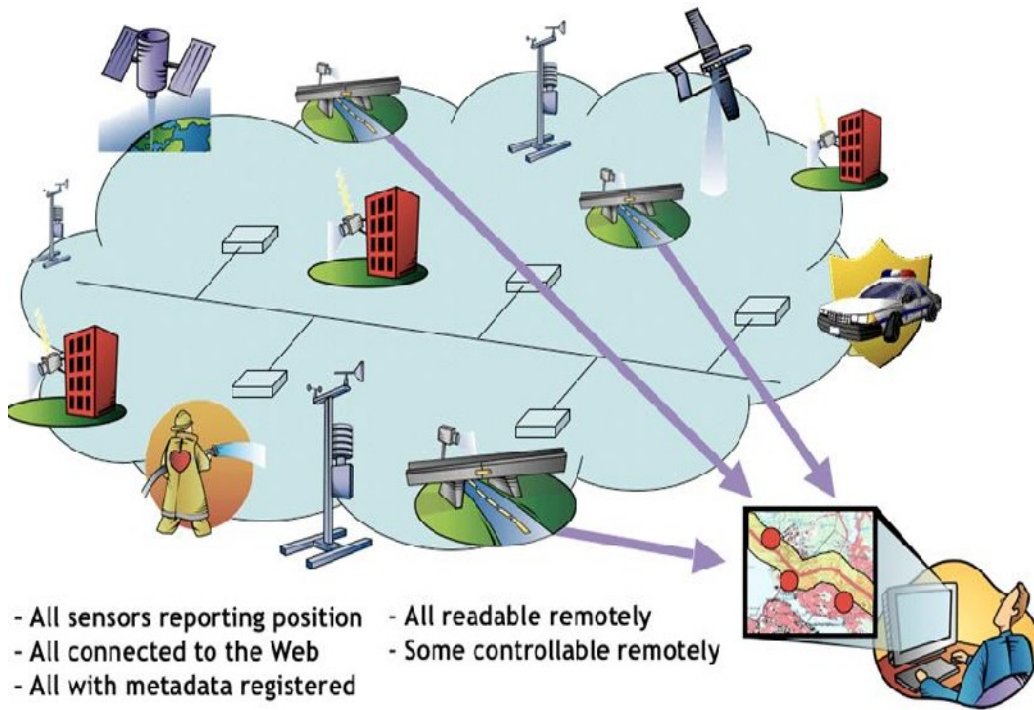
SWE is a suite of OGC standards:

• SWE is an open, consensus-based set of standards

• 3 standard XML encodings (SensorML, O&M, TML)

• 4 standard web service interfaces (SOS, Sensor Alert Service SAS, SPS, WNS)

• SWE is a Service Oriented Architecture (SOA) approach

Tomorrow: The Internet of things

Location apps

Sensor webs

Location marketing

Indoor/outdoor location

Building information models

OGC

bSa

IETF

Web3D

W3C

OASIS

Standards

Environmental monitoring

Predictive maintenance

Machine-to-machine communication

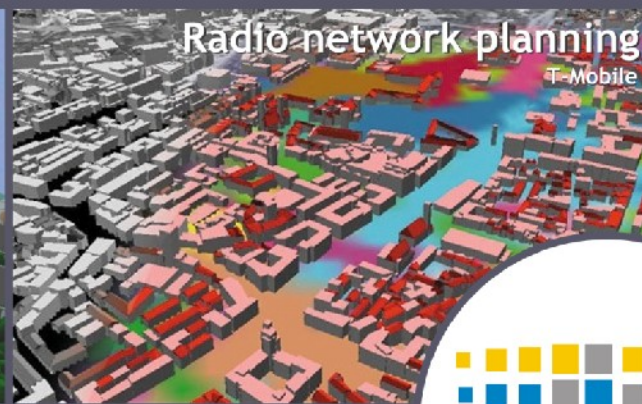Augmented reality

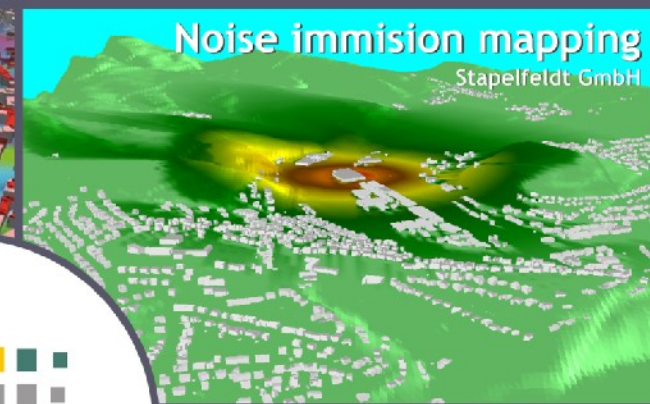Smart buildings

Smart pipes

Smart grid

Today's Internet

Sensor Web Interface for IoT
Standards Working Group
http://www.opengeospatial.org/projects/groups/sweiotswg

Disaster management
Kreis Recklinghausen

Radio network planning
T-Mobile

Noise immision mapping
Stapelfeldt GmbH

CityGML for 3d city models

Police simulator
Rheinmetall Defence Electronics

Business development & tourism

Kaufhof
Springfield Leffers
Münsterplatz
Navigation

Facility management

Urban planning

Architecture
Architekturwerkstatt SenStadt Berlin

Source: Kolbe, 2011

OGC Web Services testbed projects

$ or € 1 invested in OGC Web Services returns at least $2.8

(… in terms of supporting a similar initiative financed outside the OGC), as participants in OGC testbeds and pilot initiatives contribute more in in-kind contributions (labor, software, infrastructure etc.) than is provided in Sponsor funding.

OGC activities and examples

DAE Pillar VII: ICT-enabled benefits for EU society

Action 71: Assess contribution of smart grids and define minimum functionalities to promote interoperability

- Webinar „Energy Mapping with Open Standards"
  https://www2.gotomeeting.com/register/254787154

- Energy & Utilities Domain Working Group: The purpose of the WG is to provide an open forum for work on energy and utility related geospatial data interoperability issues.
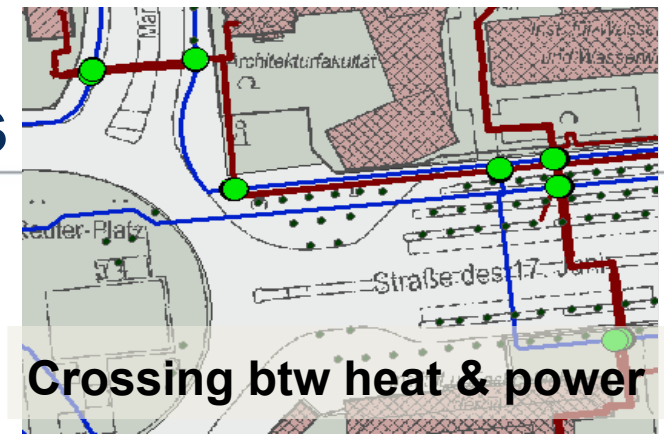

Source: Energy Atlas Berlin, Robert Kaden, Thomas Kolbe, Tatjana Kutzner (TU Berlin, TU Munich), http://www.directionsmag.com/images/webinars/Directions_OGC_GovFuture_Energy_Mapping_Webinar_1.28.13.pdf

# 2D / 3D Analysis and Simulation of Utility Networks

Crossing btw heat & power

Wasserleitung
Dimension: 400
Material: GG
Verlegejahr: 1958
Überdeckung: 1,5 m

Infos about pipes nearby

Pipeline rupture simulation
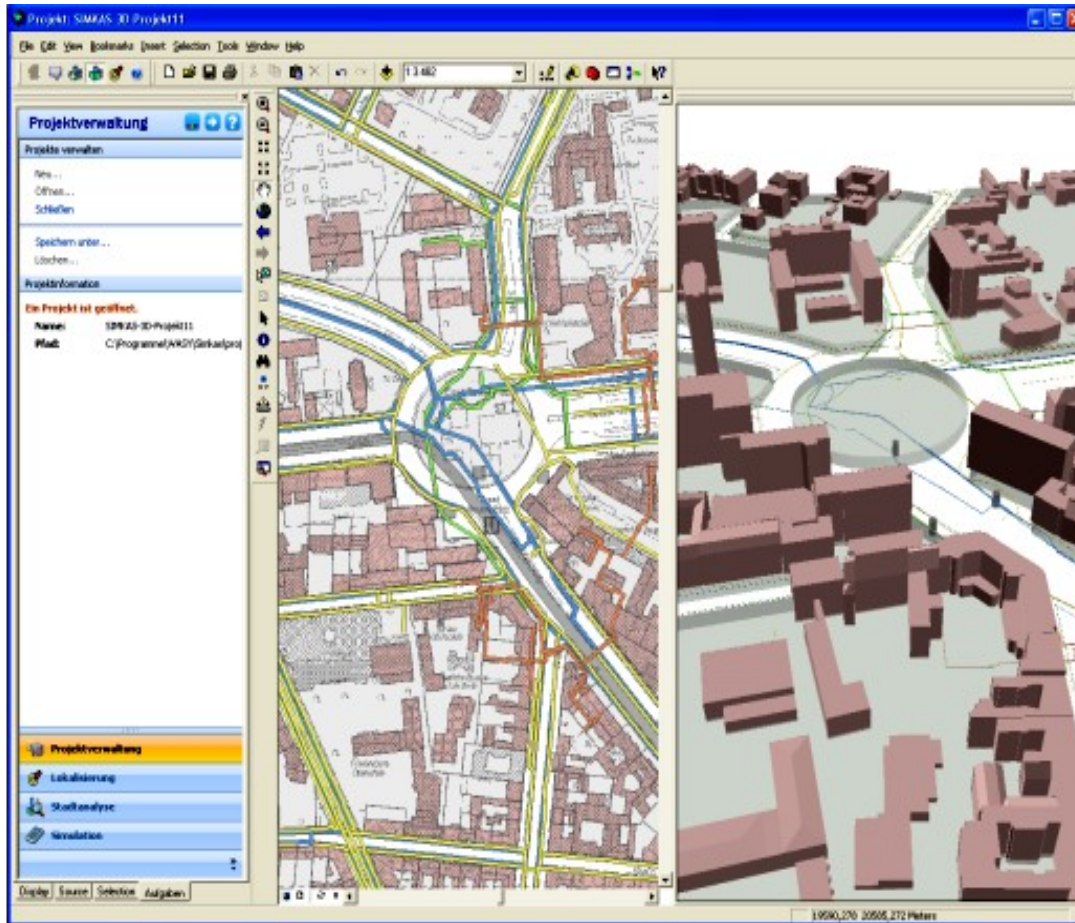
Source: DHI-WASY GmbH, SIMKAS-3D project partner

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29.04.13 – 26
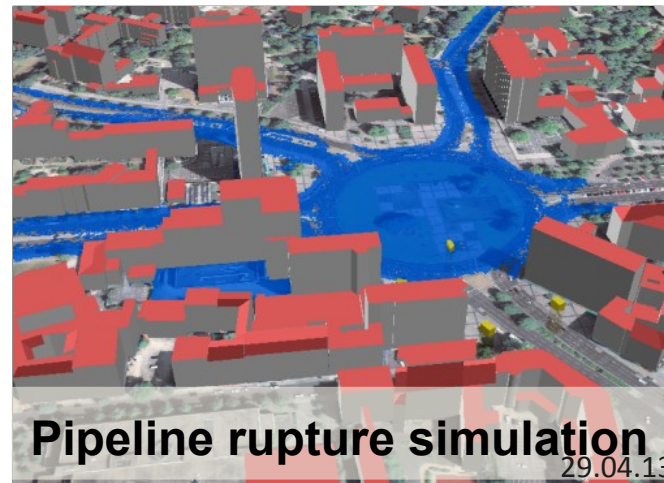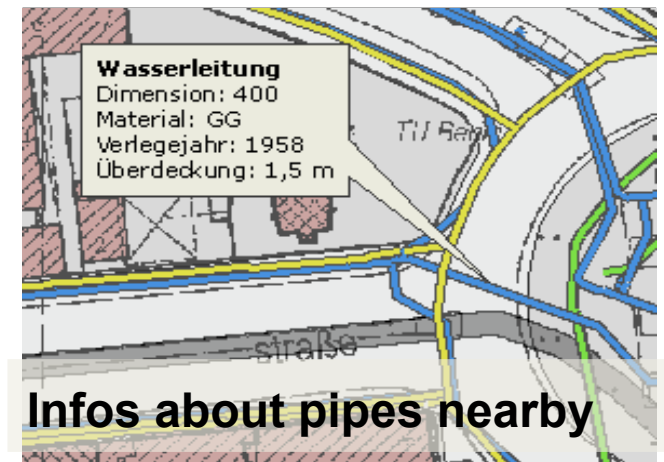
Action 84: Support seamless cross-border eGovernment services in the single market

- X-border GDI using OGC open standards and web services for cross boarder eGovernment activities (http://www.x-border-gdi.org)

- Areas of interest (examples):
  - Tourism
  - Water Management
  - Risk Management
  - Mobility & Traffic
  - City Planning
  - Industrial Areas
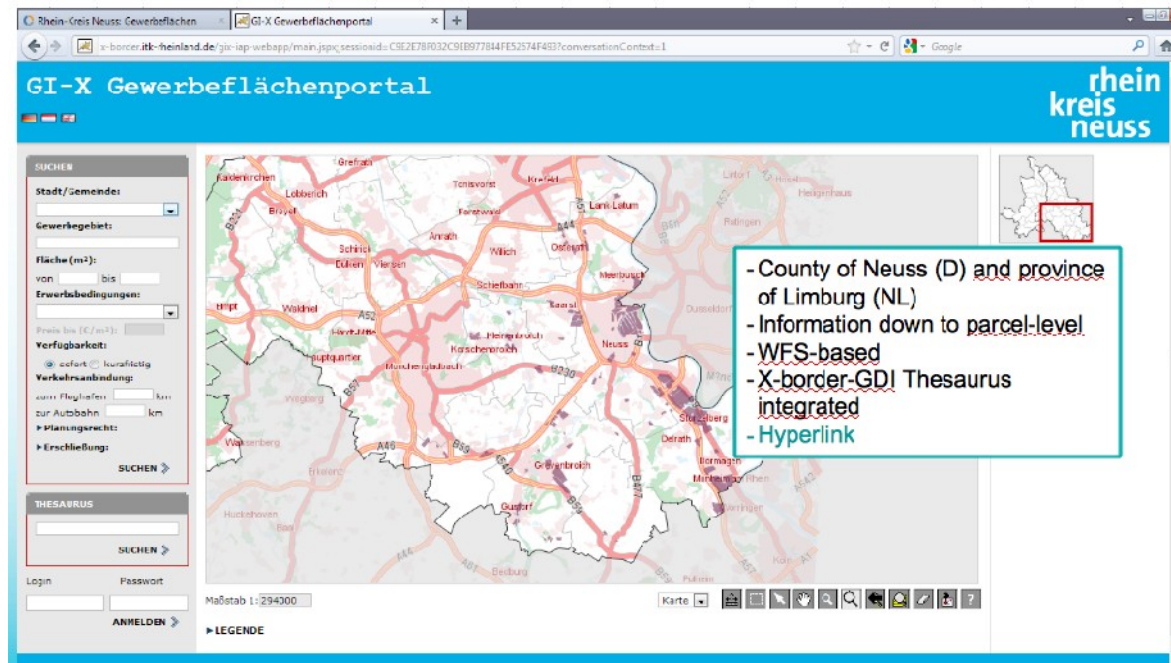
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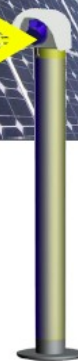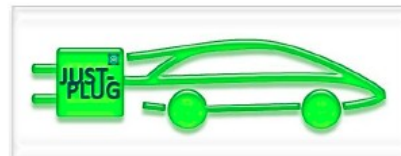
http://everynear.eu/tag/ballade/

- 👁 "Things" = Electric Vehicle Charging Stations
- 👁 "Internet" protocol = ← OGC Web Service: Web Feature Service

„next generation e-charging"

New requirements and technologies for an intelligent charging infrastructure within the e-Mobility ecosystem

BALLADE
Energie ganz nahe

JUST-PLUG

Slides provided by G. Triebnig, EOX

Projects co-funded by Austrian Research Promotion Agency

prolytic DEMAND MANAGEMENT · FH JOANNEUM · EOX · cirquent credible consulting NTT DATA Group · everynear · Zahl's mit dem Handy. · :·)) paybox

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Action 93: Adopt Air Traffic Management Solutions for SESAR

- Associates Partners to the SESAR JU

  (http://www.sesarju.eu/players/associatesju): With the endorsement of eight consortia as Associate Partners to the SESAR JU on 1 July 2011, the SESAR Joint Undertaking included additional companies with very different profiles and expertise from around the world in the SESAR work programme: SMEs, research organisations, universities, and institutes of higher education.

- MOSIA - Modeling Support with standards for Information and Architecture models applied to Aviation (MOSIA) http://www.opengeospatial.org/pressroom/pressreleases/1493

MOSIA Consortium

Carmenta Aktiebolag (CARMENTA AB), ENVITIA Ltd, International Geospatial Services Institute GmbH (IGSI), MEKON AIS (Scotland) Ltd, No Magic Europe UAB, Open Geospatial Consortium (Europe) Limited (OGCE), Snowflake Software LtD, Westfaelische Wilhelms-Universitaet, Stiftelsen SINTEF

The Digital Agenda for Europe and the OGC

- Provided examples demonstrate, that the DAE follows a real practical approach

- Given the strong focus on cooperation and the re-use of existing standards, DAE Actions should relate to and make use of achievements from the broader GI and location community where feasible (e.g. make use of INSPIRE data sets).

- If the DAE community manages to not re-invent the wheel but rather participate in and influences existing activities, Europe can have a huge impact on international standards that are used worldwide (e.g. OGC standards).

Communication & Participation in our work

Some closing thoughts

- "The conventional view serves to protect us from the painful job of thinking." - *John Kenneth Galbraith, economist*

- Contribute and work together – participate in the international standardisation process.

- Don't re-invent the wheel and avoid duplication of work and efforts.

- If you need to share data, why not also share your experiences and build on existing one.

Thank you for your attention
... and questions?

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