Semantic Interoperability Conference

SEMIC 2014

Highlights Report

Athens 9 April 2014

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Introduction

Gertrud Ingestad , Conference Chair
Director "Information Systems and Interoperability Solutions", DG Informatics
European Commission

"Semantic barriers are still prominent. We need to perform a substantial work in order to achieve cross-domains interoperability. Metadata governance and management is a key enabler of semantic interoperability to foster growth within Europe."

In order to realise the full potential of the European single market, public administrations need to seamlessly exchange information across borders and sectors.

The Interoperability Solutions for European Public Administrations (ISA) Programme addresses this need by contributing to the interoperability of eGovernment systems and services.

In this context, the Semantic Interoperability Conference 2014 - SEMIC 2014 has brought together both the experts driving the practice of semantics, linked data technologies and those who have first-hand experience of implementing these standards in cross-border e-Government applications.

E-Government, semantics, open data experts presented their case studies, real-world examples and experiences with semantic technologies.

This year the main theme for the conference was **Metadata governance and management** which contributes to successful cross- border semantic interoperability between public administrations.
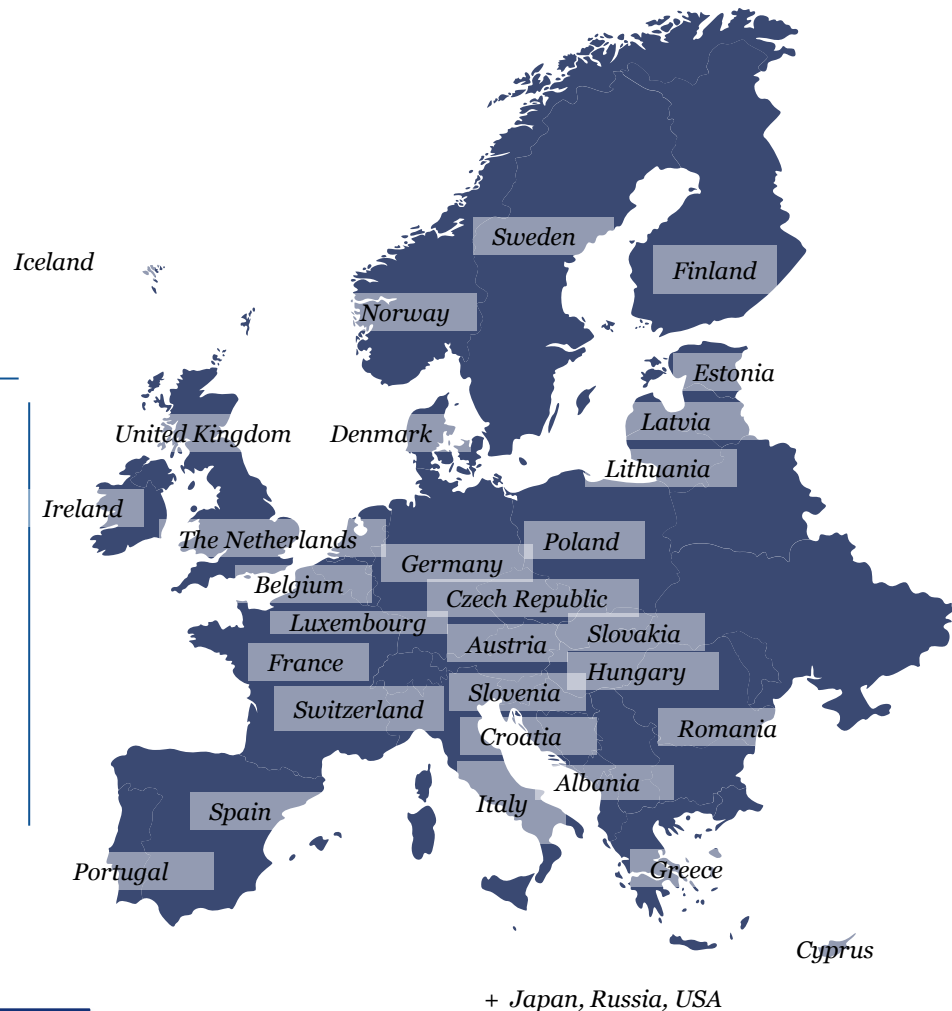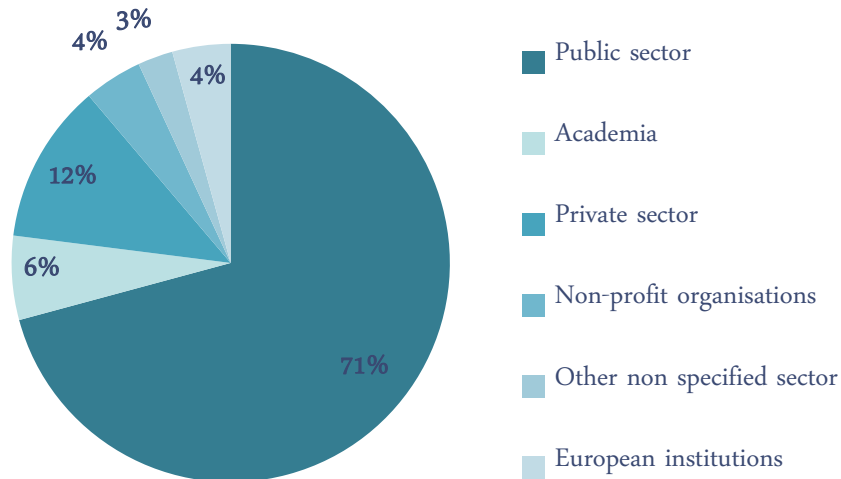
SEMIC
SEMANTIC
INTEROPERABILITY
CONFERENCE
2014

isa
Interoperability Solutions
for European Public Administrations

SEMIC 2014 - Conference Figures

203 participants

...from 33 countries

Organisations represented by sector

- Public sector
- Academia
- Private sector
- Non-profit organisations
- Other non specified sector
- European institutions

71%
12%
6%
4%
4%
3%

Iceland
Sweden
Finland
Norway
Estonia
Latvia
United Kingdom
Denmark
Lithuania
Ireland
Poland
The Netherlands
Germany
Belgium
Czech Republic
Luxembourg
Slovakia
France
Austria
Hungary
Slovenia
Switzerland
Croatia
Romania
Albania
Spain
Italy
Portugal
Greece
Cyprus

+ Japan, Russia, USA

Conference Highlights

Welcome

Paraskevi Evy Christofilopoulou, Deputy Minister of Administrative Reform & e-Governance, Greece

Paraskevi Evy Christofilopoulou is the Deputy Minister of Administrative Reform & e-Governance in Greece since June 2013. Previously, she has been appointed as Parliamentary Spokesperson for PASOK, Deputy Minister of Education and Lifelong Learning & Religious Affairs Next to that, she is the Secretary General for the European Social Fund at the Ministry of Labour and Social Affairs. Mrs. Christofilopoulou was elected MP in 2004, 2007, 2009 and 2012 with PASOK, representing the Attica constituency, which comprises the outskirts of Athens.

At the opening of the SEMIC 2014 conference, the Deputy Minister explained how open data is a tool for innovation and fosters growth in Europe. It is important to make open data known and available for entrepreneurs in Europe. Furthermore, semantic interoperability is a challenge for e-Government strategy to interlink multiple registers in a way that they understand each other.

"Semantic interoperability is key for transparency and better public services."

Conference Highlights

ISA fostering semantic interoperability between public administrations in Europe
Margarida Abecasis, Head of Unit
Vassilios Peristeras, Program Manager, ISA Programme, European Commission

Margarida Abecasis is the Head of the [Interoperability Solutions for European Public Administration (ISA](#) Unit of the European Commission DG Informatics. A telecommunications engineer, she joined the European Commission in 1993 to work in the network services. She was responsible for IT projects supporting the modernisation of the decisional procedures of the Commission and inter-institutional exchanges. In 2006, she was nominated Head of Unit in charge of ICT infrastructure services.

Dr. Vassilios Peristeras works as Programme Manager in the ISA Unit. He teaches at universities, and is elected Assistant Professor at the International Hellenic University in Thessaloniki, Greece. He has worked as eGovernment researcher and consultant in international, public and private organizations in several countries and published over 100 papers. His interests include eGovernment, semantic technologies, open, linked data, and interoperability.

In their presentations they have highlighted the economic impact of semantics, interoperability and how ISA promotes sharing of semantics-related practices among different stakeholders in Europe.

"Semantic interoperability requires a social process to agree on the meaning of information."

Conference Highlights

Keynote

Kshemendra Paul, Program Manager, Information Sharing Environment, United States

President Obama appointed **Kshemendra Paul** as the Program Manager of the [Information Sharing Environment (PM-ISE)](#) in July 2010. In this role, Mr. Paul works closely with federal, state, local and tribal partners – as well as with the private sector and international allies – to lead a responsible information sharing policy and strategy to enhance national security. One of the key successes of the ISE Programme is [NIEM](#), the National Information Exchange Model, which is an XML-based information exchange framework that particularly targets semantic interoperability in various communities of the US Public Sector. He has pointed out how NIEM contributes to better information sharing.

In his presentation, Mr. Paul has emphasised that global standards can provide a better solution to meet our common challenges. In particular, 9/11 showed that for homeland security we need better semantic interoperability. Today, national information sharing practice with a federated common approach and integrated architecture supports cross-organisationally efficient policy responses.

"Working with IT industry helps driving interoperability."
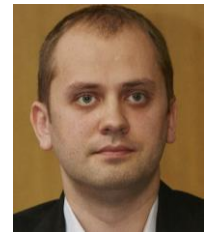
Conference Highlights

PART 1: Metadata Governance and Management

Metadata Management for Communicating Value of Public Services
Mihkel Tikk, Estonian Information System's Authority

Mihkel Tikk has been designing business processes and e-services in the Estonian government. He is the Head of the Estonian State Portal www.eesti.ee, which has been acknowledged by the European Commission as the best State Portal in Europe. He is also working with the United Kingdom Cabinet Office IT Reform Group and Government Digital Service as an advisor. Furthermore, he is part of the World Summit Award grand jury and active in the area of cybersecurity, being one of the founders of the Estonian Cyber Defence League.

In his presentation, Mr. Tikk has pointed out how portfolio management of public services can contribute to more efficient national and cross-border services.

"Estonia uses the Core Public Service Vocabulary to better describe and manage its portfolio of public services."

Conference Highlights

Metadata Governance in the German public sector: the XÖV Framework
Lutz Rabe, Project Manager, IT-Standards Coordination Office (KoSIT)

Lutz Rabe currently works as Officer at the IT Standards Co-ordination Office (KoSIT) of the German IT Planning Council. He is responsible for governance and operation of the XÖV framework for standardizing data exchange metadata for the German federal and state government. In this role he also provides advice and support on legal, procedural, semantic and technical issues related to the development and enforcement of metadata specifications for data exchange with and within the German public administration.

In his presentation, Mr. Rabe showed that metadata governance and management practices are part of the German XÖV framework. The most successful realisation of the XÖV framework is the XMeld specification: instead of paper based data exchange, 300.000 XMeld-Messages are sent per day integrating municipal citizen registers.

*"The XÖV Framework offers a methodology, core library,
UML profile, XML design rules, and XGenerator tool."*

Conference Highlights

PART 2: Semantic interoperability

" The Netherlands uses the Metadata Workbench tool for e-Documents applying the UN/CEFACT CCTS methodology for e-Justice XML information exchange specs."

Management of Metadata and XML Schemas for e-Justice Interoperability

Pim Keizer, Ministry of Security and Justice in the Netherlands
Pim Van Der Eijk, Sonnenglanz Consulting

Pim Keizer is a Data Analyst at the Ministry of Security and Justice in The Netherlands. He works for a specialized service called EBV, which is part of the Justitiële Informatiedienst (JustID), a central Justice information service organization. He is involved in promoting the electronic data exchange for e-Justice in the Netherlands.

In his presentation he has pointed out the importance to customize core components while making sure that the same definitions are used in order to achieve semantic interoperability across the justice domain. Mr. Keizer has explained that the Metadata Workbench promotes consistent definitions, impact analysis and supports fast XML Shema.

Pim van der Eijk is an independent consultant and project manager, supporting public and private sector organizations internationally. His main expertise is in standards-based information management and e-business/e-government integration. At the Dutch administration he co-developed the methodology and toolkit for modelling and managing metadata, including management of XML schemas, using open standards from OASIS and UN/CEFACT. He is involved in the European large scale pilots e-SENS and e-CODEX. In his presentation he showed how criminal case record exchange with the use of Metadata Workbench can support the fight against organised crime and how it can improve consistency and efficiency of the criminal justice system. In the future they plan an integration with linked data and a connection to repositories such as the core vocabularies which is developed in the context of the ISA Programme.

Conference Highlights

Survey on metadata management and governance in Europe
Max Dekkers, AMI Consult

Makx Dekkers has extensive experience in information technology, standardisation and international cooperation, especially in the broad areas of eGovernment, access to Public Sector Information and to cultural resources, digital heritage. The main focus of his activities lies with the development and practical application of solutions for information management and data exchange with emphasis on interoperability from both strategic and technical perspective. In the context of SEMIC, he was the editor of the Asset Description Metadata Schema (ADMS, 2011-2012) and of the DCAT Application profile for data portals in Europe (DCAT-AP, 2013) and co-author of the Study on Business Models for Linked Open Government Data (BM4LOGD, 2013); furthermore of the Survey on metadata management requirements and existing solutions in EU institutions and Member States (2013-2014).

In his presentation, Mr. Dekkers underlined the importance of structural metadata. According to him it is essential to find out what are the requirements, what are the costs from a resource point of view and what are the foreseen benefits. As a result of the survey, several good practices and recommendations have been identified which can support the efforts to improve metadata management and governance in Europe.

"Structural metadata like ADMS, DCAT-AP, and the Core Vocabularies cater for multilingual labels and multilingual code lists."

Conference Highlights

"The Inter-Institutional Metadata Management Committee and the Metadata Registry are key enablers in the harmonisation and standardisation of structural metadata."

The role of Publications Office in semantic web and standardisation activities

Willem Van Gemert, Information Systems Architect
Marc Wilhelm Küster, Head of Section

Willem van Gemert works as information systems architect at the Publications Office of the EU in the Dissemination and Reuse directorate. He coordinates the maintenance and publication process of the reference data assets managed in the Metadata Registry of the Publications Office. He is involved in the definition of the metadata governance on EU level in the context of the Inter-institutional Metadata Maintenance Committee (IMMC). He is the coordinator for ISA action 1.1 at the Publications Office and chairs the Inter-institutional Taskforce on a common approach for the management of URIs by EU institutions.

Marc Küster holds a degree in Physics, a Master in Philology and History and a PhD in Modern Philology. After working for the University Tübingen's Computing Centre in the department of Literary and Documentary Data Processing and the XML service provider Saphor GmbH, he became Professor for Web Services and XML Technologies at the University of Applied Sciences Worms. In 2008 Marc joined the Publications Office to lead the development of the Publications Office's common content and metadata repository CELLAR including its Common Data Model (CDM), and since 2011 as head of section on "Storage and Electronic Archive".

In their presentation they have highlighted how the Publications Office benefits from Metadata Registry (MDR) and how CELLAR, IMMC with the EU institutions and dissemination sites (EUR-Lex, EU-Bookshop, TED, Cordis, Who is Who, Open Data Portal) can contribute to a framework for harmonisation and standardisation.

Conference Highlights

European Legislation Identifier "ELI" – towards a legal semantic interoperability
John Dann, Chair of the ELI Task Force, Luxembourg

John Dann is the Chair of the "ELI Task Force" of the EU Council on the implementation of the "European Legislation Identifier" (ELI). He is Head of the "Point of Single Contact-Business Portal" at the Ministry of the Economy in Luxembourg and also a representative for the Ministry to the Committee "Simplifying administrative formalities". Mr. Dann represents Luxembourg at the "European Forum of Official Gazettes", and acts as the European correspondent for the EU Council's Working Party on "e-Law (e-Justice)". He gives lectures for civil servants on "Access to Legislation".

In his presentation, Mr. Dann explained that there is a need for legislation identifiers by citizens and businesses, but also by public administrations involved in the legal decision-making process. The work on the European Legislation Identifier (ELI) aims at providing better access to legislation, both for humans and machines via a more harmonised URI design. Future work on the ELI may include the creation of a common data model – an ontology – for EU legislation. Mr. Dann concluded his presentation with a number of exciting demonstrations indicating how a number of key use cases will be put into practice.

"The European Legislation Identifier (ELI): an HTTP URI pattern for legislation."

Conference Highlights

Linking Legal Data
John Sheridan, Head of Legislation Services, UK National Archives

John Sheridan is Head of Legislation Services at The UK National Archives, where he leads the team responsible for legislation.gov.uk, the UK's official legislation website and the world's first linked data statute book. He is also a member of the UK Government's Open Standards Board. Mr. Sheridan is one of the leading pioneers of open and linked data in the UK. In his current role, Mr. Sheridan devised "expert participation", an approach for maintaining the UK Government's official legislation database as open data, working with the private sector. He is an active contributor to initiatives at a European level, such as the European Legislation Identifier. Mr. Sheridan is a former co-chair of the World Wide Web Consortium's e-Government Interest Group.

At the SEMIC 2014 Conference, Mr. Sheridan explained that initiatives as The Gazette, an online public record in publishing legal matters, are making a shift in format and easy access to any legislation, improving transparency. He gave a demo about the added value of Linked Data design principles and features for the website of the London Gazette.

"Persistent identifiers are more important for semantic interoperability than data models."

Conference Highlights

Boosting online job search with semantic interoperability throughout Europe

Martin Le Vrang, Team Leader, DG Employment, Social Affairs & Inclusion, ESCO

Martin Le Vrang is a team leader for ESCO in the unit "Skills, Mobility and Employment Services" of DG Employment, Social Affairs and Inclusion. Before joining the European Commission Martin was managing partner of an Internet start-up for six years. The company developed Internet applications for SMEs and provided a blog hosting platform. He studied in Germany and New Zealand, graduating in business administration, computer science and European law.

In his presentation, Mr. Le Vrang gave information on ESCO, which is a multilingual classification of European Skills, Competences, Occupations and Qualifications aiming to support cross-border online profiling and job search.

"The ESCO taxonomy provides a multilingual classification system of skills, competences, occupations, and qualifications. Used on a job portal such as EURES, it allows matching CVs and job vacancies."

Conference Highlights

Semantic building block convergence to support e-Government
Muriel Foulonneau, Research Engineer, Henri Tudor Research Center, e-SENS

Muriel Foulonneau is a specialist in metadata, semantic interoperability and the quality, usability of data in distributed systems. She has worked in particular with the French ministry of culture and communication on cultural data interoperability, for the National Centre for Scientific Research in France (CNRS) on open access to scientific data and for the University of Illinois on large scale data aggregations, transformation, and mapping. She is the author of multiple publications on metadata, semantic interoperability, open data and data driven services. As a member of the Advisory Board of the Dublin Core Metadata Initiative, she has taken part in the eGovernment large scale pilot Simple Procedures Online for Cross- Border Services (SPOCS) and is now an active participant of the e-SENS project (ICT-PSP) task on semantic interoperability across eGovernment large scale pilots in Europe.

In this context, Ms. Foulonneau pointed out that the e-SENS, *Electronic Simple European Networked Services* project aims at improving cross-border access of citizens and business to public services in Europe by provision of interoperable solutions.

"Organisations often claim that they are special and can hence cannot use an existing semantic standard. To achieve semantic convergence, we need to get beyond that claim."

Conference Highlights

An industry perspective on deployed semantic interoperability solutions

Ralph Hodgson, CTO, TopQuadrant

Ralph Hodgson is a co-founder and the CTO of [TopQuadrant, Inc](#)., a US-based company that specialises in semantic technology solutions, tools, consulting and training. He combines expertise in semantic technologies with over 30 years of experience in business application development and deployment, consulting, software development, and strategic planning. Prior to starting TopQuadrant in 2001, he held executive consulting positions at IBM Global Services where he was a founding member of Portal Practice and Object Technology Practice. Prior to IBM, he was the European Technology Director, founder, and Managing Director of Interactive Development Environments, which was an international CASE tools vendor.

In his presentation, Mr. Hodgson pointed out the importance of common identifiers in facilitating data integration using the [SPARQL query language](#). He also argued that model-driven applications exploit the real power of Semantic Web technologies for interoperability.

"The TopBraid product suite enables software developers and data integrators to use Sematic Web standards to deliver innovative products and services."

Conference Highlights

Panel: Semantic interoperability and access to base registers

Panel: Semantic interoperability and access to base registers

Stijn Goedertier, Manager, PwC

Dr. Stijn Goedertier has a Master degree in informatics and business engineering from the Catholic University of Leuven (KU Leuven) and holds a PhD in the field of process mining. Mr. Goedertier joined PwC Technology Consulting in 2008 where he has worked on several projects related to information management, software, and interoperability. Since 2011 he has been working as a contractor for the Interoperability Solutions for European Public Administration (ISA) Programme of the European Commission. He was closely involved in the development, promotion, and implementation of the e-Government Core Vocabularies, the Asset Description Metadata Schema (ADMS), and the DCAT Application Profile (DCAT-AP) together with public administrations in Europe.

In the panel on semantic interoperability and access to base registers, speakers shared experiences in Greece, Norway, Denmark, Belgium and from a national, regional, local and a private sector perspective. In the European Interoperability Framework (EIF) base registers play an important role and are called the "cornerstones of public service". Public administrations can streamline their interactions if they base their administrative processes and interactions on reliable base registers with a high data quality. During the conversation it was mentioned that semantic interoperability stays an issue, next to the fragmentation of data in local databases without common persistent identifiers. In addition, base registers are often made for a specific domain and the challenge remains how information can be interpreted and re-used in other administrative processes.

Conference Highlights

Panel: Semantic interoperability and access to base registers

Antonis Stasis, Head of Directorate – Hellenic Ministry of Administrative Reform and e-Governance, STORK project.

Antonis Ch. Stasis is the Head of the Electronic Data Processing Directorate in the Hellenic Ministry of Administration Reform and E-Government. He has a PhD degree as Computer Engineer from the National Technical University of Athens. His is responsible in the Ministry for E-Government services, Interoperability Framework, Document Management, the STORK project, the e-SENS project and open data projects. He has also participated in the drafting of the Greek e-government strategy and implementation of big horizontal e-government projects such as the Public Administration Network, the Greek Government Portal (ERMIS), the Point of Single Contact, and the Public Key Infrastructure.

Katrien De Smet – Project Manager, CORVE

Katrien De Smet is involved in e-government projects for local authorities at the Flemish e-Government Coordination Unit (CORVE). One of the projects is the Intergovernmental Product and Service Catalogue (IPDC). The IPDC is a base registry who provides machine-readable descriptions of products and services provided at the local, provincial, regional, and national levels. Government organizations can reuse those descriptions in different contexts. The distributed service catalogue is an extension on the IPDC that focuses on the contact information about the products and services. In both projects semantic interoperability and reuse of common agreed vocabularies is essential.

"In the public sector, fragmentation of data sources and semantic interoperability conflicts remain an issue."

Conference Highlights

Panel: Semantic interoperability and access to base registers

David Norheim, Head of Department, Computas

David Norheim heads the Information Management Department in [Computas]. He has 13 years' of experience with Semantic Web technologies, and has over the last 5 years been involved in projects in Norway, Sweden and Denmark applying semantic technologies for eGovernment interoperability, including the Norwegian Semantic Registry for Public Sector Interoperability, and more recently, the Danish Digitaliseringsstyrelsen ModelBroker implementation. He has also been involved in standardization, and is an advocate for use and reuse of public sector information with focus on shared models and five star data. Mr Norheim holds a Master in Computer Science from the [NTNU University in Trondheim], Norway.

Nikolaj Skovmann Malkov, Enterprise Architect, KL

Nikolaj Skovmann Malkov has been involved since 2007 in several different efforts to improve interoperability on all aspects of the enterprise architecture in the Danish local and public sector on semantic interoperability. As an employee of the [Association of the Danish Municipalities] he is working with the municipalities, other public sector agencies and vendors in order to identify, adapt or develop and promote the use of standards. The last couple of years he has been actively involved in activating the joint public sector standards for Classification, Organisation, Case file and Document (*"OIO Sag& Dokument" standards*) to play an integral role in the ongoing transformation of the local governmental ICT landscape.

"The public sector should not create large-scale ontologies, but should seek synergies from the reuse of small core vocabularies."

Conference Highlights

"To make open data work, we need standards, clear licensing and reuse conditions, reliable data infrastructures and the right competencies. "

Making Open Data work for Europe

Daniele Rizzi, Policy Officer DG Communications Networks, Content and Technology

Daniele Rizzi has a degree in civil engineering from the Politecnico di Milano University. He spent most of his professional life working on geographic information, both in the private and the public sector. Mr Rizzi joined the European Commission in 1993, where from 2004 to 2012 he worked on the adoption and implementation of the INSPIRE Directive. Since December 2012 he deals with the Commission Open Data policies in DG Communications Networks, Content and Technology, working in particular on the deployment of Open Data Portals.
In his presentation, Mr. Rizzi explained the concept and practice of making Open Data work for Europe. Furthermore he highlighted the Open Data Portal that is an infrastructure for open data.

Nikolaos Loutas, Manager, PwC

Nikolaos Loutas is manager at PwC's Technology Consulting practice, involved mainly in projects on interoperability of trans-European ICT solutions, data and software products. He specialises in semantic aspects of interoperability, through the application of Semantic Web technologies and Linked Data. He has deep insights into open semantic standards, such as the Asset Description Metadata Schema, the e-Government Core Vocabularies and the DCAT Application Profile for data portals in Europe. He is the project manager of Open Data Support.
At the event, Mr. Loutas has mentioned how the Open Data Support project aims to improve the visibility of high-value datasets on national data portals, provides trainings and facilitates the access to datasets to increase their reuse.

"Become an open data master! Follow training.opendatasupport.eu"

Conference Highlights

Open vocabularies, a need for linked open data infrastructures
Johannes Keizer, Information Systems Officer, UN FAO

Johannes Keizer is working with the Food and Agriculture Organization of the UN. For the last 10 years, he has been leading the AIMS team (Agricultural Information Management Standards and Services). The AIMS team takes care of the multilingual agricultural concept scheme 'AGROVOC', facilitates The International Information Systems for Agricultural Science and Technology (AGRIS) and works together with the Global Forum on Agricultural Research (GFAR) on the Roadmap to Information Nodes and Gateways (CIARD RING). The AIMS website (https://aims.fao.org) has become one of the most important access points for standards, tools and advice in agricultural information management.
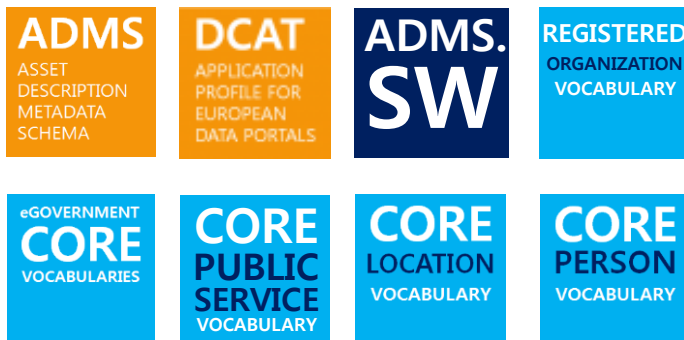
At the conference Mr Keizer introduced AGROVOC, which consists of over 32,000 concepts available in up to 20 languages and used for indexing, retrieving and organizing data in agricultural information systems and web pages. AGROVOC is edited through VocBench, an open-source, web-based collaborative large-scale editing tool for multilingual thesauri.

"VocBench is an open-source, web-based tool to manage large, multilingual thesauri, taxonomies, and code lists. VocBench is completely conform to the SKOS (XL) standard."

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An action supported by ISA

This activity is supported by the European Commission's ISA programme. ISA stands for interoperability solutions for European Public administrations.

Why ISA?

Administrative procedures have a reputation for being lengthy, time-consuming and costly. Electronic collaboration between Public administrations can make these procedures quicker, simpler and cheaper for all parties concerned, in particular when transactions need to be done cross-border and/or cross-sector. ISA supports such electronic collaboration. Through its more than 40 actions it provides tools, services and frameworks for the Modernisation of Public administrations in Europe, across e-borders and sectors.

More on the programme:

http://ec.europa.eu/isa/

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