A common metadata approach to support eGovernment interoperability

Makx Dekkers – makx@makxdekkers.com
João Rodrigues Frade – joao.frade@pwc.be
Stijn Goedertier – stijn.goedertier@pwc.be
Nikos Loutas – nikos.loutas@deri.org
Vassilios Peristeras – vassilios.peristeras@ec.europa.eu
Gofran Shukair – gofran.shukair@deri.org
Abstract
This presentation introduces the initiative of the Semantic Interoperability Centre Europe (SEMIC.EU) to agree on a vocabulary for the description of so-called semantic interoperability assets to support publication, exchange and re-use of these assets, which include among others containers of code lists, taxonomies, data models, and full-fledged ontologies. This vocabulary, the Asset Description Metadata Schema (ADMS), provides a common description approach that allows the information about the assets to be published on the Web as Linked Open Data. The publication of asset description metadata on the Web will allow the developers and users of electronic public services (eGovernment services) to more easily find, re-use semantic interoperability assets and analyse the semantic differences between countries and domains. This presentation discusses how SEMIC.EU aims to build consensus on the ADMS, in close collaboration with eGovernment representatives of the EU Member States, technical experts, and other stakeholders. In addition, this presentation gives a demonstration of a prototype of a federated asset repository developed by the Digital Enterprise Research Institute (DERI) at the National University of Ireland, Galway (NUIG) that federates the Danish Digitalisér.dk, the German XRepository, and the SEMIC.EU asset repository, using the ADMS.
Semantic interoperability is the ability of organizations to process information from external sources in a meaningful manner. It ensures that the precise meaning of exchanged information is understood and preserved by all parties.
Find common ground: opportunities to overcome inherent differences in linguistic, cultural, legal, and administrative environments.

Better ways to discover and share interoperability assets across borders and domains: Providing structured information about semantics of existing services and data will create the conditions for enhanced interoperability

- Enhance quality and visibility of information about semantic interoperability assets to support sharing and re-use
- Identify and analyse similarities and differences to help build bridges across services in different countries and domains
SEMIC.EU is a collaborative platform and a set of services around this platform to promote semantic interoperability for eGovernment in the EU Member States.

SEMIC.EU encourages public administrations to manage their code lists, taxonomies, data models as semantic interoperability assets and share them in its asset repository.
SEMIC.EU helps and supports public administrations to

- **Support public administrations to**
  - **Find** semantic interoperability assets
  - **Feedback** on implementing semantic interoperability assets
  - **Collaboration** to prioritise, align, endorse, and evaluate actions
  - **Choose** semantic interoperability assets
  - **Design** semantic interoperability assets

Help public administrations to **Become aware** that semantic interoperability matters.
The scope of SEMIC.EU is limited to EU policies and activities.

Other countries have also started to host repositories and promote the publication of semantic interoperability assets on the Web.

It is important that these repositories are linked and interoperable. Creating interoperability across repositories creates opportunities for administrations to share across borders and domains.”
The Semantic Web presents a huge opportunity to publish the **description metadata** of semantic interoperability assets as machine-readable data on the Web.

Common metadata vocabularies will facilitate interoperability across repositories.

1. Use Uniform Resource Identifiers (URIs) to uniquely identify semantic interoperability assets on the Web.
2. Use HTTP URLs corresponding to these URIs so that information can be retrieved.
3. Provide description metadata using open standards based on RDF(S).
4. Include links to related semantic interoperability assets, so that people can discover more.

Tim Berners-Lee’s Linked Open Data Guidelines
http://www.w3c.org/DesignIssues/LinkedData.html
The Asset Description Metadata Schema (ADMS) will be a common vocabulary to publish description metadata about code lists, taxonomies, data models, etc. on the Web.
Some terminology

- **Metadata**: data about data
- **Semantic interoperability asset**: a code list, taxonomy, vocabulary, data model, ontology, etc.
- **Asset description metadata**: data describing a semantic interoperability asset
- **Asset description metadata schema**: the specification (ADMS), a schema (or vocabulary) used to represent asset description metadata
Asset Description Metadata Schema (ADMS): initial draft

![Version 0.6a!] Initial draft to be further elaborated and endorsed by the EU Member States
The ADMS will enable the following benefits:

- Publication of interoperability asset description metadata in a machine-readable format.
- Create links between semantic interoperability assets on the Web.
- Exchange of asset description metadata with other repositories.
- Allow users to more easily search and retrieve information about semantic interoperability assets and discover related assets.
- Contributes to the semantic interoperability of electronic public services, leading to the benefit of citizens and businesses.
A prototype federates asset metadata from three repositories

Digitalisér.dk
Denmark

Xrepository.de
Germany

SEMIC.EU
Europe

ADMS

Semantic Interoperability  SEMIC.EU  Semantic Web  ADMS  ADMS Prototype  Roadmap
The federated repository is accessible through a central portal

Federated Portal

Of Repositories on Semantic Interoperability Solutions

This prototype shows the federation of 3 different repositories (Danish Digitaliser, German XRepository and European SEMIC) via a common metadata schema called "ADMS".

http://vmudi205.deri.ie/elda/index.html
Design process and methodology: September 2011
ADMS draft specification: October 2011
Consensus building on ADMS: March 2012
ADMS v1: April 2012
Improved search on joinup.eu based on ADMS: April 2012
Federation of semantic asset repositories: May 2012
1. **Advanced draft**: The ADMS Work Group works on an advanced draft, supported by representatives from EU Member States and external experts.

2. **Publication**: The work on the ADMS will be reflected on the joinup.eu collaborative platform.

3. **Review**: The advanced draft is open to review by all representatives from EU Member States and external stakeholders.

4. **Proof-of concept**: As proof-of-concept a federation prototype will be built federating existing repositories using ADMS as exchange format.

5. **Endorsement**: After the review period, the ADMS is presented for endorsement to the EU Member States who participate in the ISA programme.
• eGovernment code lists, taxonomies, ontologies, etc. should be managed as *assets* of semantic interoperability and MS should become aware of the importance of their metadata.

• ADMS is a vocabulary to represent description metadata about semantic interoperability assets.

• Development supported by the European Commission, open to all stakeholders.

• A first prototype has been built.

• An architecture will be developed to allow for federated search.
Questions? Thank you for your feedback!