ISWC 2011 – 10th International Semantic Web Conference
October, 2011

isa
Interoperability Solutions for
European Public Administrations

DIGIT Directorate-General for Informatics

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

EUROPEAN COMMISSION

A common metadata approach to support eGovernment interoperability

Abstract

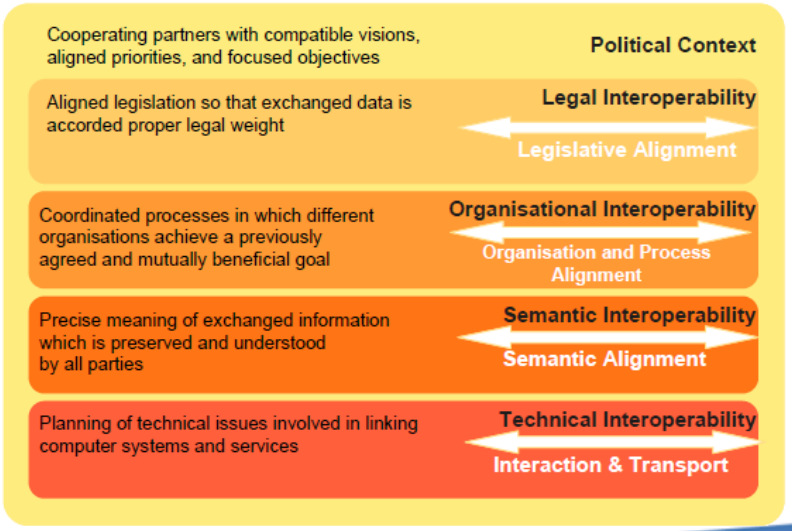
This presentation introduces the initiative of the *Semantic Interoperability Centre Europe (SEMIC.EU)* to agree on a vocabulary for the description of so-called semantic interoperability assets to support publication, exchange and re-use of these assets, which include *among others containers of code 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: meaningful exchange of information

isa Interoperability Solutions for European Public Administrations

European Interoperability Framework (EIF)
for
European public services

"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."



To achieve semantic interoperability

Find common ground: opportunities to overcome inherent differences in linguistic, cultural, legal, and administrative environments.

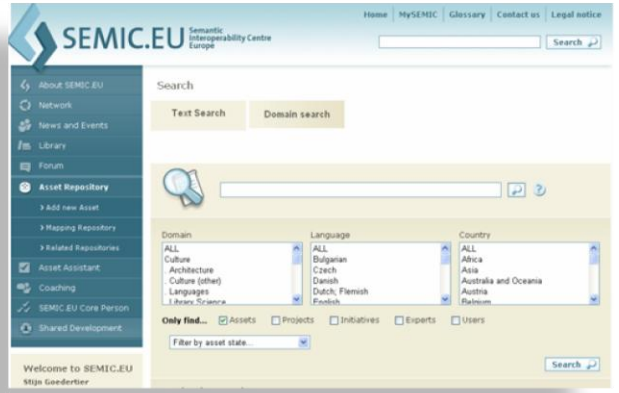
Better ways to discover and share interoperability assets across borders and domains: Providing structured information about semantics of existing services and data will create the conditions for enhanced interoperability

- 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: Semantic Interoperability Centre Europe

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

Help public administrations to

Become aware

that semantic interoperability matters

Support public administrations to

Find

semantic interoperability assets

Support public administrations to

Choose

semantic interoperability assets

Support public administrations to give and obtain

Feedback

on implementing semantic interoperability assets

Support public administrations to

Design

semantic interoperability assets

SEMIC.EU is not the only repository on the Web

Digitalisér.dk
Denmark

Xrepository.de
Germany

GOVTALK
United Kingdom

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”

Publication of asset description metadata on the Web

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

Tim Berners-Lee's Linked Open Data Guidelines
http://www.w3c.org/DesignIssues/LinkedData.html

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

Asset Description Metadata Schema (ADMS): initial draft

SEMIC.EU Semantic Interoperability Centre Europe

ADMS - Asset Description Metadata Schema

Draft Specification v0.6a for Community Consultation, 2011-03-17

Authors:

Adam Arndt (National IT and Telecom Agency, Denmark)
Renke Fahl-Spiewack (Jinit[AG, Berlin, Germany)
Nikos Loutas (DERI - Digital Enterprise Research Institute, NUI Galway, Ireland)
Vassilios Peristeras (Interoperability Solutions for European Public Administrations (ISA), Directorate-General for Informatics, European Commission)
Sebastian Sklarß (Jinit[AG, Berlin, Germany)
Sofia Zapounidou (University of Macedonia, Greece)

Copyright © 2011 SEMIC.EU. All Rights Reserved.

back to top

Abstract

The Asset Description Metadata Schema (ADMS) tackles the issue of a federation of repositories for semantic assets to make decentralised resources available through a single point of access. ADMS can be used as a common language to descnbe semantic artefacts stored in separate systems. It can also provide some directions for new initiatives to create similar repositories. In this way, ADMS will facilitate the federated use of semantic resources, especially of those used for and by public administrations.

Table of Contents

1 Introduction
2 Scope and Definitions
2.1 Scope and intended usage
2.2 ADMS Architecture
2.3 Definitions
3 ADMS - Roadmap
4 ADMS - Design principles
4.1 ADMS development: Keep it as simple as possible
4.2 Guidelines of ADMS development
4.3 ADMS - Use cases
5 ADMS - Asset Description Metadata Schema
5.1 ADMS Overview
5.2 ADMS Core Elements
5.3 ADMS Extension Elements
6 Acknowledgements

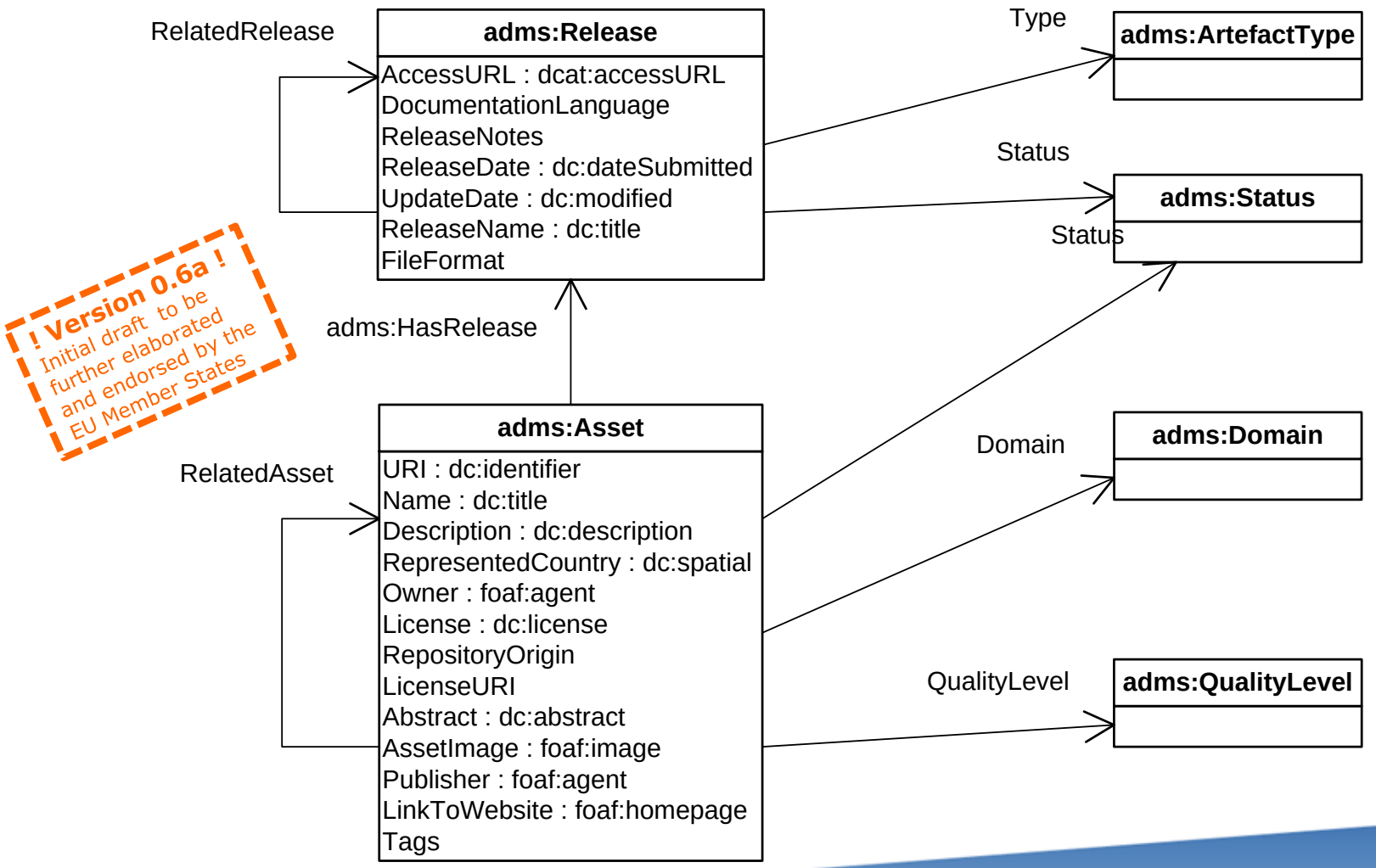
! Version 0.6a ! Initial draft to be further elaborated and endorsed by the EU Member States

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

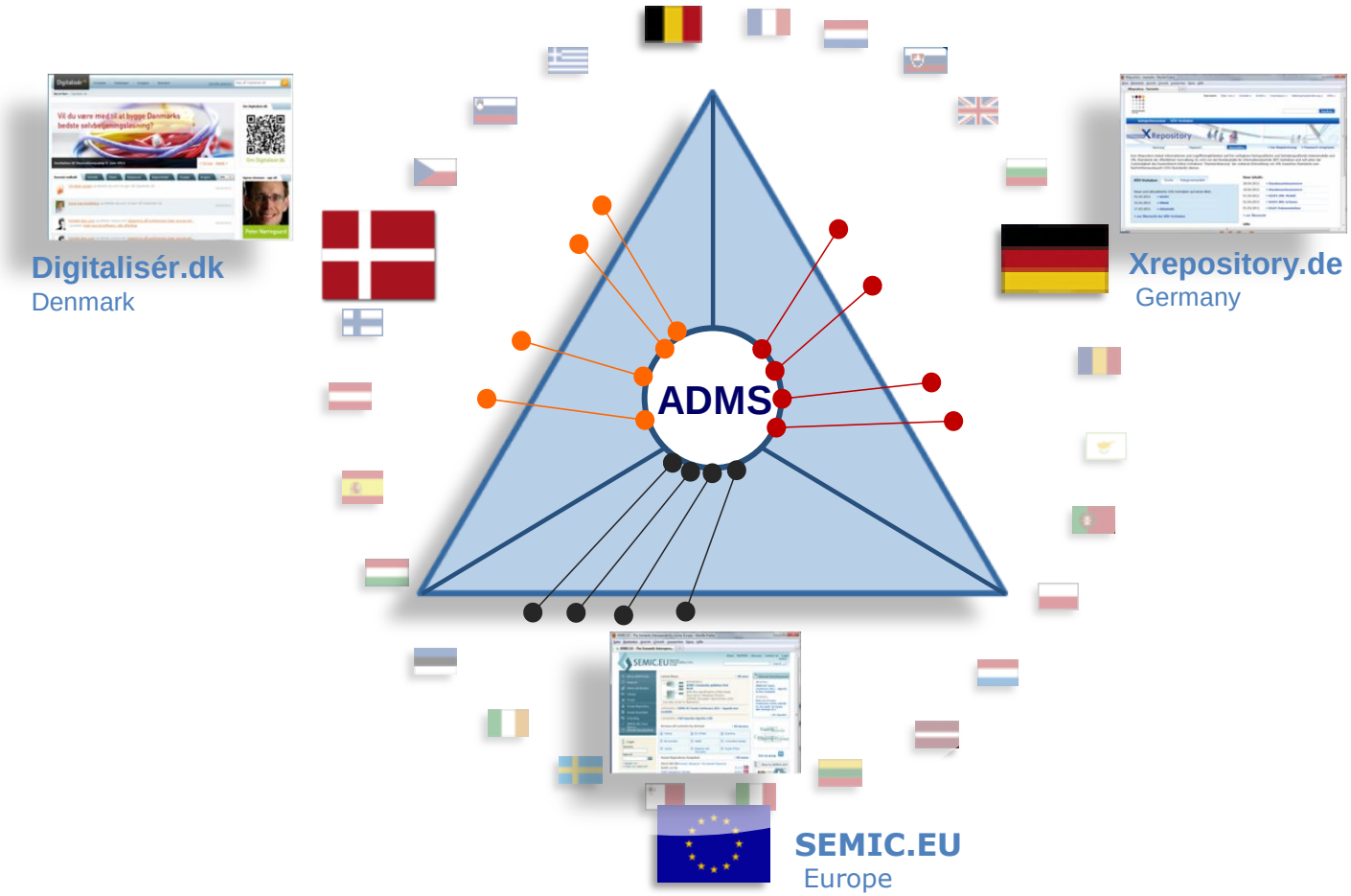
Asset Description Metadata Schema (ADMS): initial draft



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

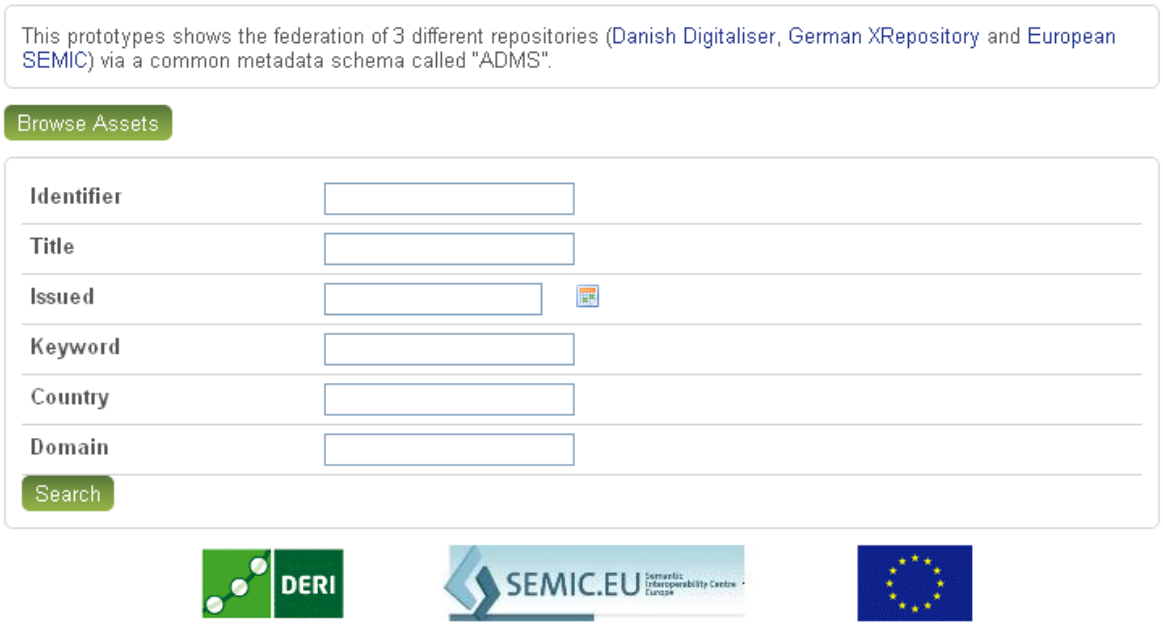
A prototype federates asset metadata from three repositories



The federated repository is accessible through a central portal

Federated Portal

Of Repositories on Semantic Interoperability Solutions



http://vmudi205.deri.ie/elda/index.html

Roadmap

- 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

The specification of the ADMS is open to all stakeholders

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.

Conclusion

- 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!