JOINING UP GOVERNMENTS

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Case Study

XRepository semantic asset repository

The XRepository Semantic Asset Repository

This **case study** presents the main figures and characteristics of XRepository as a semantic asset repository.

XRepository is an example of a tool to support semantic interoperability operated by the German Federal Office for Information Technology (BIT).

Currently, other EU Members States as Denmark (Digitalisér.dk), Finland (Yhteentoimivuus.fi) and Estonia (RIHA) have also implemented initiatives in this area. Different EU Member States have different approaches implementing semantic asset repositories.

The European Commission through the ISA Programme developed a series of Case Studies to present different approaches on Semantic Asset Repositories in Europe. These Case Studies aims at promoting the awareness of proper management of semantic interoperability assets as an instrument to facilitate semantic interoperability amongst the EU Member States.

Other Case Studies	
Digitalisér.dk	DK
RIHA	EE
Yhteentoimivuus.fi	FI

XRepository is a platform that supports semantic standardisation in Germany.

Main Goal

The main objective is to achieve interoperability through the reuse of harmonised semantic assets and standards in public projects.

Owner

Federal Office for Information Technology (BIT)
Bundesstelle für Informationstechnik
http://www.bit.bund.de

Target Audience

- **German government (all levels)**
- **Software producers**
- **Standardisation bodies**

XRepository is a platform that supports semantic standardisation (XÖV) in Germany.

The main objective is to achieve interoperability through the reuse of harmonised semantic assets and standards in public projects. In addition, XRepository serves as a central repository and distribution platform for standardization as part of the former e-Government action programme "Germany-Online", building block on standardization.

XRepository according to the EIF*

XRepository has a strong focus on the storage of all data models, XML schemes and documentations of XÖV standards. XÖV stands for XML in the public administration. To become a XÖV standard a project to create and maintain a XML standard for public administrations need to undergo a formalised process described on the Manual for Development of XÖV compliant IT standards (XÖV Handbook).

The EIF defines the following "Interoperability levels" which cover the different interoperability aspects to be addressed when designing a European Public Service and provides a common vocabulary for discussing issues encountered when establishing such a service:

- **Legal Interoperability** : Aligned legislation so that exchanged data is accorded proper legal weight.
- **Organisational Interoperability**: Coordinated processes in which different organisations achieve a previously agreed and mutually beneficial goal.
- **Semantic Interoperability**: Precise meaning of exchanged information which is preserved and understood by all parties.
- **Technical Interoperability**: Planning of technical issues involved in linking computer systems and services.

Legal Architecture

- **Sharing** of models and schemas by public administrations is voluntary.
- **Re-use** of some XÖV standards are **referenced or required** by law
- No explicit license on the **use, distribution and modification** is provided by XRepository. However all XÖV specification providers approve that their standards can be freely used by other administrations

Organisational Architecture

- Work on Member State level with no policy domain restriction
- Any public administration can freely upload and download content from/to XRepository
- XRepository has a formal quality assessment process for content check and for XÖV certification.

Semantic Architecture

- Focus on supporting of the semantic interoperability layer.
- Assets available in:
  - "human- and machine readable" format (XML) and
  - "human-readable only" format (pdf)

Technical Architecture

- The XRepository platform software is open source and will be available for download in Joinup in the near future.
- Server: Microsoft IIS/6.0 (Web Server) & Windows 2003 (OS).
- Programming language: Java.
- **JavaServer Faces** framework
- Authentication and authorisation: SSL/HTTPS
- No API available for exchange of metadata information.

*EIF: European Interoperability Framework

XRepository in figures

45 Specifications (UML and XML)

19 standardisation projects

13 Certified projects

450 registered users

63 Code lists

"XRepository was developed in order to create a central location for the storage, management and standardisation of re-usable data models. The standardisation of these models intends to normalise the presentation and understanding, and thus promote a significant simplification in e-Government services."

XRepository
https://www.xrepository.deutschland-online.de/xrepository/hilfe.xhtml#benutzergruppen

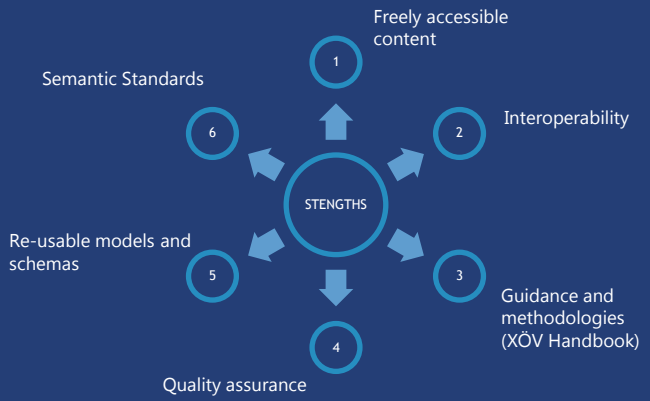
Services provided

- Standardisation (XÖV)
- Search engine
- Repository of semantic assets
- Quality assurance and certification

Strategic view on XRepository and next steps towards the ADMS based Federation

Opportunities for improvement

- Translation of metadata to other languages
- Interfaces for information exchange APIs
- Systematic standardisation, e .g. standardisation agenda
- Public administrations engagement across all levels
- Increase marketing actions



What is ADMS?

The Asset Description Metadata Schema (ADMS) is a metadata vocabulary and a common way to describe semantic interoperability assets including metadata schemas, controlled vocabularies and code lists. Better documenting semantic assets can help to improve interoperability of e-Government initiatives across Europe, and possibly beyond. The ADMS is considered to be a key element of the federation of semantic asset repositories in Europe.

ADMS Added Value

- Marketing for XRepository "XRepository goes Europe"
- Increase **interoperability** of cross-border services
- Increase **re-use** of XRepository content
- Discoverability of XRepository content
- Discover & re-use standards from other member states

Onboarding the Federation

- Map XRepository internal data model to ADMS data model
- Develop interface for exchange of XRepository metadata
- Make semantic assets retrievable through a central repository (Joinup)

To know more

Contact us

https://joinup.ec.europa.eu/contact

This Case Study was prepared for the ISA programme by

PwC EU Services EESV

References

XRepository webpage
https://www.xrepository.deutschland-online.de

ADMS Brochure
http://goo.gl/JJCPC

Metadata Management Survey Results
http://goo.gl/Mm62G

Towards Open Government Metadata
http://goo.gl/gWSw4

Report on the existing semantic asset repositories
http://goo.gl/QSRC6

ADMS ASSET DESCRIPTION METADATA SCHEMA
http://goo.gl/sLHlU

CESAR COMMUNITY OF EUROPEAN SEMANTIC ASSETS REPOSITORIES
http://goo.gl/3VCZU

eGOVERNMENT CORE VOCABULARIES
http://goo.gl/tY9ty

CORE PERSON VOCABULARY
http://goo.gl/q2RQx

CORE BUSINESS VOCABULARY
http://goo.gl/VODFF

CORE LOCATION VOCABULARY
http://goo.gl/dqOnm

ADMS F/OSS
http://goo.gl/03xkP

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