

# Towards Digital Government by XML Standardization: Methods and Experiences

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XML Finland

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# Outline

1. Digital government research at the University of Jyväskylä
2. The use of XML in public administration
3. XML standardization
4. The RASKE methodology
5. Challenges
6. Conclusion

## Digital Government

Attempts to achieve more strategic use of information technology in the public sectors

# Digital Government Projects

- RASKE (Rakenteisten asiakirjojen kehittäminen) 1994 - 1998
- EULEGIS (European User Views to Legislative Information in Structured Form) 1998-2000
- RASKE2 (Methods for the Integration of Systems and Services in e-Government ) 2003-2006 (also called MetaRASKE)
- AirXML (XML and Data Warehousing in Air Defence) 2002-2004

# RASKE

Developed methods for improving document management in organization, in particular, for SGML/XML standardization.

The methods were developed and tested in the standardization of the Finnish Parliamentary documents.

Funded by: The Parliament of Finland, Ministry of Foreign Affairs, Ministry of Finance, Prime Minister's Office, Academy of Finland, Tekes

<http://www.cs.jyu.fi/~airi/docman.html#raske>

# EULEGIS

A consistent user interface to retrieve legal information created in different legal systems and at different levels - the European Union, a member state, a region, or a municipality.

Contextual metadata by graphical user interfaces, ontologies to support text search.

Funded by: EU Telematics Application Programme

<http://www.cs.jyu.fi/~airi/docman.html#eulegis>

# RASKE2 (MetaRASKE)

Continues the work of RASKE and EULEGIS.

Methods for metadata standardization and integration of e-government services.

A special focus is in the metadata and services related to the Finnish legislative process.

Funded by: The Parliament of Finland, Ministry of Finance, Ministry of Justice

<http://www.it.jyu.fi/raske>

# AirXML

Methods for the requirements analysis phase in developing data warehousing solutions.

A special focus is on the needs of air defence.

Applicability of XML investigated.

Funded by: The Finnish Air Force

<http://www.cs.jyu.fi/~airi/docman.html#AirXML>



## 2. The use of XML in public administration

Format for data interchange

Format for managing information assets

# Format for data interchange

- Integration of systems by a common user interface
- Integration of services by portal solutions
- Data exchange between systems
- Data exchange between organizations

Goals: improvements in information access, usability, work processes, communication, consistency of data storages

# Format for managing information assets

- As a format for documents produced and used in the work processes of public administration
- As a format for metadata

# XML as document format

to support:

- consistency and correctness in documents
- information retrieval
- information reuse and multichannel publishing
- independency of particular software providers
- long-term accessibility of information

# XML as a format for metadata

to support:

- integration of data, systems, and services
- building of semantic web services
- preservation of the meaning of data
- security and trust

### *XML:n soveltamiskohteet:*

1. Yhteiset asiointiliittymät yhdistämään erilaisia perusjärjestelmiä
2. Rajapinnat perusrekistereihin perusrekistereiden ja niihin liittyvien järjestelmien väliseen tiedonvaihtoon
3. Organisaatioiden välinen tiedonvaihto (OVT/EDI)
4. Tekstitiedon rakenteistaminen
5. Monikanavajulkaiseminen
6. Tiedon haun parantaminen
7. Tiedon pitkäaikaissäilytyksen varmistaminen

# Examples in Finland

- The Finnish Parliamentary documents (document authoring, storage, and exchange format)
- Suomi.fi, Lomake.fi, TYVI, VAHTI, VIPU, Kalkati.net (data exchange format)
- SÄHKE: Sähköisten tietoaaineistojen käsittelyn ja pitkäaikaissäilytyksen kehittämishanke (metadata format)

### Standardization levels

- *Universal*: rules for wide use for various application domains; development at W3C
- *Sectoral*: rules for a specific sector
- *Local*: rules, practices, and implementations in a particular environment



# Standardization in public administration

- *Sectoral*: both international (e.g. ebXML and ParIML), and national (e.g. recommendations in the XML strategy report of the Ministry of Finance in Finland) standardization activities
- *Local*: the extent of work and effects depends on the type of standardization

## The extent of work needed in local standardization depends on its type

- *Data exchange format*: requires technical knowledge and agreements between system owners; not necessarily changes in user interfaces or work processes
- *Metadata format*: the major concern in creating and maintaining the metadata; metadata may be produced automatically or manually
- *Document format*: overall understanding of document management, structured documents, and XML needed; may cause major changes in document production

### Methods for

- analyzing and describing creation and use of documents in inter-organizational processes
- user needs analysis
- evaluation

# The analysis and description concerns

- inter-organizational and intra-organizational work processes
- organizations and people as actors in the processes
- documents and their metadata
- systems in the processes
- needs of organizations and people

The existing methods have been developed and tested in the standardization of the Finnish parliamentary documents.

In the MetaRASKE the methods will be further developed for the purposes of metadata analysis and standardization.

Will be tested in the metadata standardization related to the Finnish legislative process.

## 5. Challenges

- Continuous changes in specifications and in software
- Parallel development of related / competing specifications at W3C and industry sectors
- Requires effective collaboration among partners, either within a single sector or among partners crossing industry and public sector boundaries; good communication skills needed

- Partners may need to use (and depend on) universal or sectoral level specifications before they are finalized
- Developing and finding agreements about ontologies and document structures may be extremely hard

- In document standardization the document production practices and tools may radically change
- The benefits of new solutions not necessarily to the people experiencing most of the changes in their work
- Standards once implemented require maintenance
- The vulnerability of the Internet



## 6. Conclusions

- Methods and experiences developed in long-time collaboration with public sector organizations
- Wide possibilities for the use of XML in public administration
- Major differences in the extent of work needed for XML standardization
- Challenges in all types of XML standardizations
- The RASKE methodology intended to help the standardization

## For more information see

- Digital government research at the University of Jyväskylä:  
<http://www.cs.jyu.fi/~airi/docman.htm>
- MetaRASKE project: <http://www.it.jyu.fi/raske>
- Publications related to the RASKE and MetaRASKE projects:  
<http://www.it.jyu.fi/raske/julkaisut>
- XML family of languages. Overview and classification of W3C specifications: <http://www.cs.jyu.fi/~airi/xmlfamily>

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