

Scaling Topic Maps

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TMRA 2007, 2007-10-11



Acknowledgments

This presentation is internally structured in DocBook (slides.dtd) and rendered using the excellent Open Source L^AT_EX beamer package.

Many of these slides build are borrowed with kind permission from a presentation of the eGovernment Focus Group's chairman, Peter Brown (Pensive) and other members of the project team as a practical proof of resource sharing.

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Overview

- 1 Shaping Knowledge
- 2 Beyond the Encyclopedia
- 3 A Use Case: eGovernment Resource Network
- 4 Scaling Topic Maps



Powder and Powder

Il est plaisant, dit M. le duc de Nivernois, que nous nous amusons tous les jours à tuer des perdrix dans le parc de Versailles [...] sans savoir précisément avec quoi l'on tue.

Hélas ! nous en sommes réduits là sur toutes les choses de ce monde, répondit Mme de Pompadour ; je ne sais de quoi est composé le

rouge que je mets sur mes joues [...]



Powder and Powder

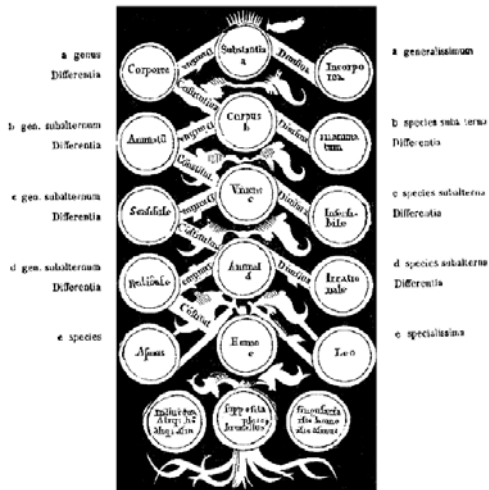
« C'est dommage, dit alors le duc de La Vallière, que Sa Majesté nous ait confisqué nos dictionnaires encyclopédiques [...] : nous y trouverions bientôt la décision de toutes nos questions.» [...]

Il envoya sur la fin du souper chercher un exemplaire par trois garçons de sa chambre, qui apportèrent chacun sept volumes avec bien de la peine. Chacun se jetait sur les volumes [...]; chacun y trouvait à l'instant tout ce qu'il cherchait.



Tree of Porphyry

IN PORPHYRIUM DIALOGUS I.

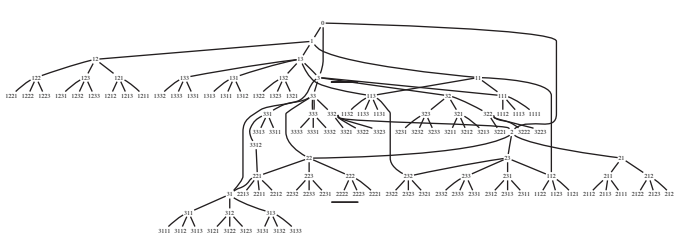


Chambers' Cyclopaedia

Classification is *a thing merely artificial, and the work of imagination* (Chambers, 1728)



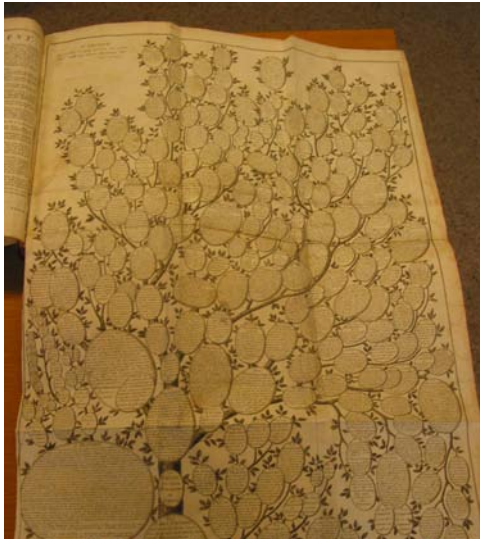
Encyclopédie



a
b
c
d
e
f
...
z



The Encyclopédie méthodique

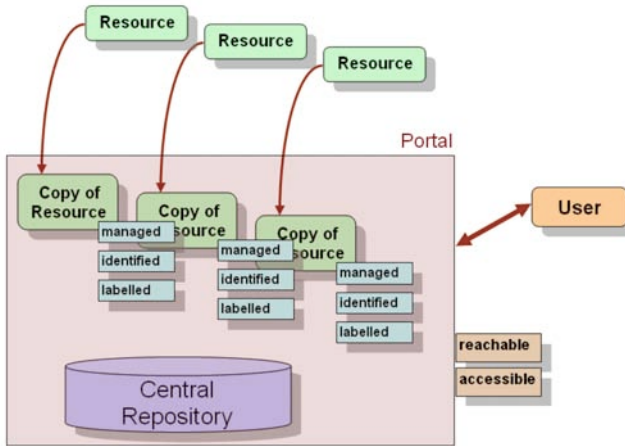


Overview

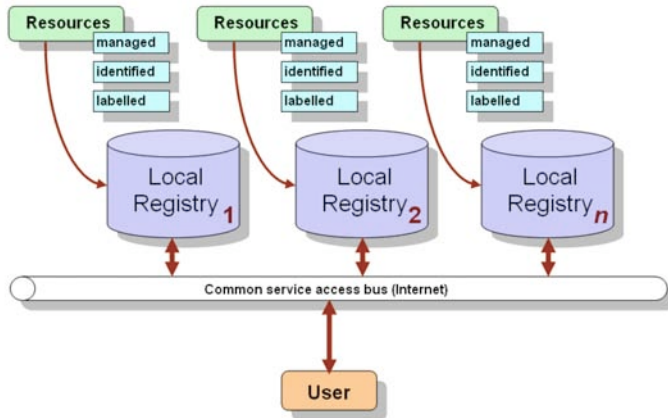
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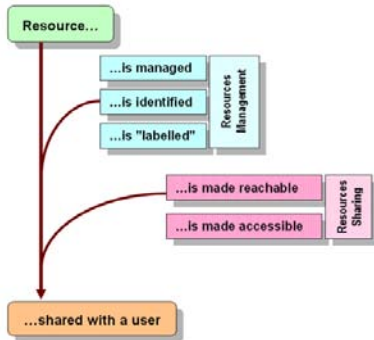
The Encyclopedic Framework



Transcending the Encyclopedia



Pre-requisites for Sharing



Role for Standards:

- Exchange Model
- Information Model
- Collaboration Model



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CEN/ISSS eGovernment Focus Group

- Peter Brown (Pensive)
- Call for experts, October 2005. Project team formed with
 - Marc W. Küster
 - Makx Dekkers
 - Graham Moore
- SUN grant, March-April 2006, to design an initial ontology for services and standards, to build demonstrator and to present at meeting of Focus Group
- Commission Grant approved starting March 2007 to determine potential of the use of standards, to map the territory, to perform gap analysis and to make recommendations for creation, delivery and maintenance of the standards



Objectives of the SUN grant

- Design initial ontology for describing government services and the use of relevant standards
 - Evaluate existing ontologies for eGovernment services
 - Propose and create outline ontology
 - Apply ontology to some services and standards
- Build demonstrator as a rudimentary eGovernment Resource Navigator

Grant volume ca. 20 person days in total



Second Phase

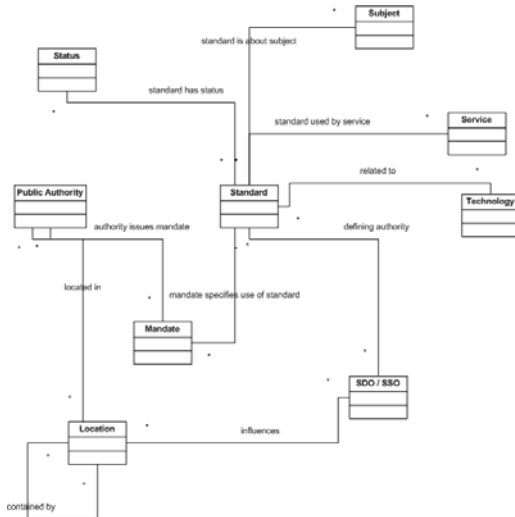
In the second, EU-funded phase the Project Team prepares a report on

- the digital provision of services by single and multiple government or public sector agencies, at national, regional and local level, including cross-jurisdiction/cross border issues;
- the “government” of eGovernment, including how the digital provision of services is managed, quality criteria, conformance testing/certification, best practice, etc. and according to what standards and decided by whom.

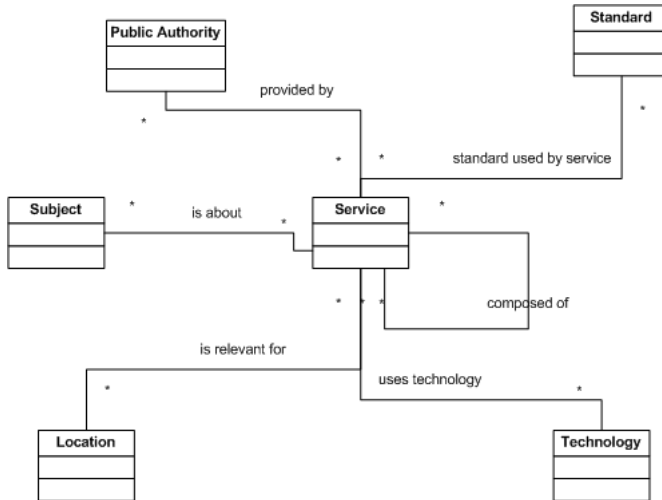
(Terms of References)



Outline of the Information Model: Standards



Outline of the Information Model: Services



Data Capture

Type of standard *: Semantic Standard ▾
Classification of this standard

Originating standards body *: ISO ▾

Formal identification *: ISO/IEC 13250:2002 Topic

Long name: Topic Maps

Short name: Topic Maps

Version: 2

Status: International Standard ▾

Subjects *:

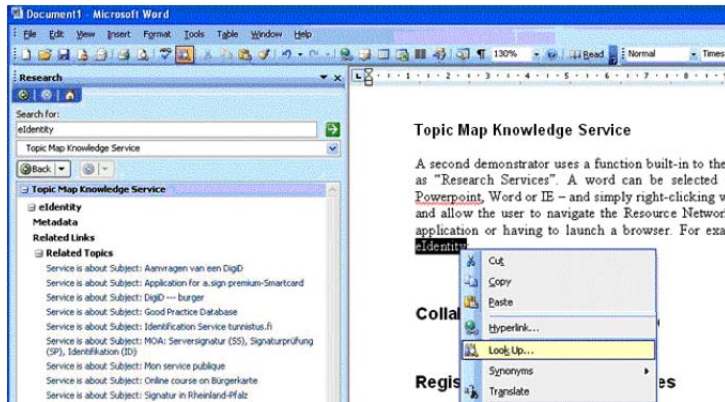
- File Formats - Text
- File Formats - Fonts
- File Formats - Images/Photographs
- File Formats - Moving Picture
- File Formats - Sound and Speech
- File Formats - Speech Synthesis
- File Formats - Geospatial Data
- File Formats - VR/3D
- File Formats - eBooks
- File Formats - Newsfeeds
- Computer Aided Design Formats
- Operating Systems
- Integrated Development Environments
- Software Creation Standards
- Metadata
- Identification



Topic Map Demonstrator

eGRN (eGovernment Resource Network) Access Point		
Subjects Metadata Description Identification (0) (+)	Standards GED Entity Relationship Diagrams Extensible HTTP-C# XML ISO/IEC 15926-2002 Topic Maps ISO/IEC 15926-1999 ISO 14721 OAI ISO 15913: Geographic Information - Metadata	Technologies Web Portal (0) JMCare (0) Curling Knowledge Suite (OKS) (0) P4M (0) Alaya SemanticWorkshop (0) Huskey (0) Web Semantic Web Toolkit for GLOS (0) Apple Safari browser (0)
Handles SAGA (4) CEX eGov Resource Navigator (2) Sonnetkesset des Bundes (Sept 2001) (0) Sonnetkesset (gov) Österreich (0) VGA-Straßen (0)		SSO ISO ODN (0) OASIS (0) VOC (0) IEEE (0) DSS (0) OBI (0) Java Community Process (0) ECMA (0) ITU-T (0) IANA (0) IETF (0) ISA-Labs (0) CompuLink (0) JGFP (0) RTF (0) OGC (0) EDS (0) DHL (0) ETSI (0) EC (0) Unknown (0) Xen One Foundation (0) The Open Group (0) ISO: Inspec Standard (0)

Knowledge Service



The screenshot shows a Microsoft Word document titled "Document1 - Microsoft Word". The "Research" task pane is open on the left, displaying a search for "eIdentity" within the "Topic Map Knowledge Service". Below the search bar, a list of "Related Topics" is shown, including "Service is about Subject: Aanvragen van een DigID", "Service is about Subject: Application for a.sign premium-Smartcard", "Service is about Subject: DigID --- burger", "Service is about Subject: Good Practice Database", "Service is about Subject: Identification Service tunnustus.fi", "Service is about Subject: MOA: Serversignatur (SS), Signaturprüfung (SP), Identifikation (ID)", "Service is about Subject: Mon service publique", "Service is about Subject: Online course on Bürgerkarte", and "Service is about Subject: Signatur in Rheinland-Pfalz".

On the right, a right-click context menu is open over the word "eIdentity". The menu options are: Cut, Copy, Paste, Hyperlink..., Look Up... (highlighted), Synonyms, and Translate. The word "eIdentity" is underlined in the text.

Topic Map Knowledge Service

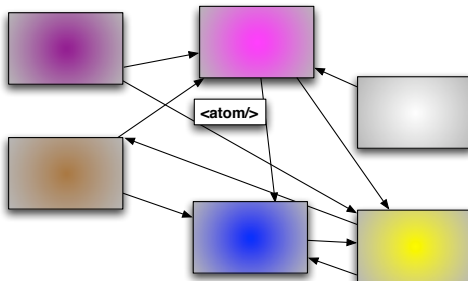
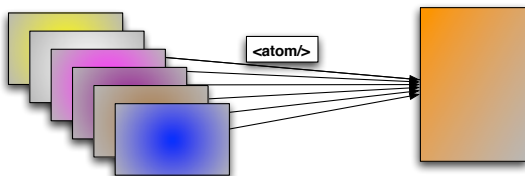
A second demonstrator uses a function built-in to the as "Research Services". A word can be selected - Powerpoint, Word or IE - and simply right-clicking w and allow the user to navigate the Resource Network application or having to launch a browser. For exam

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Registry Collaboration Scenarios



Linking TM engines

- General Requirements:
 - Separate exchange, data and collaboration models
 - Transmit data in a machine and human readable form
 - Choose technology neutral standards
 - Fit in a resource-oriented world
 - Support publish subscribe and P2P collaboration models
- Protocol Design Principles:
 - Use the ATOM syndication format
 - Build on XTM fragments
 - Transmit transactions which use topic fragments
 - Focus on instance data



Protocol Details

- Each atom item has a datetime stamp, a unique key (GUID) and a link to the transaction object
- Each client engine is required to process the transaction and then add it to its transaction queue, including the original key
- All transactions are enclosed in `topicMapTransaction-elements`:
 - `updateFragment`: All topics listed are replaced by the contents of the fragment along with all their associations
 - `deleteFragment`: All topics are deleted with their associations, all associations are deleted
 - `addFragment`: The fragment is merged with the current map

