



*European conference of the Czech Presidency of the Council of the EU
TOWARDS eENVIRONMENT
Opportunities of SEIS and SISE: Integrating Environmental Knowledge in Europe
<http://www.e-envi2009.org/>*

W4 eEnvironment Terminology Workshop

Meaningful Linkage and Navigation in the Shared Information Space

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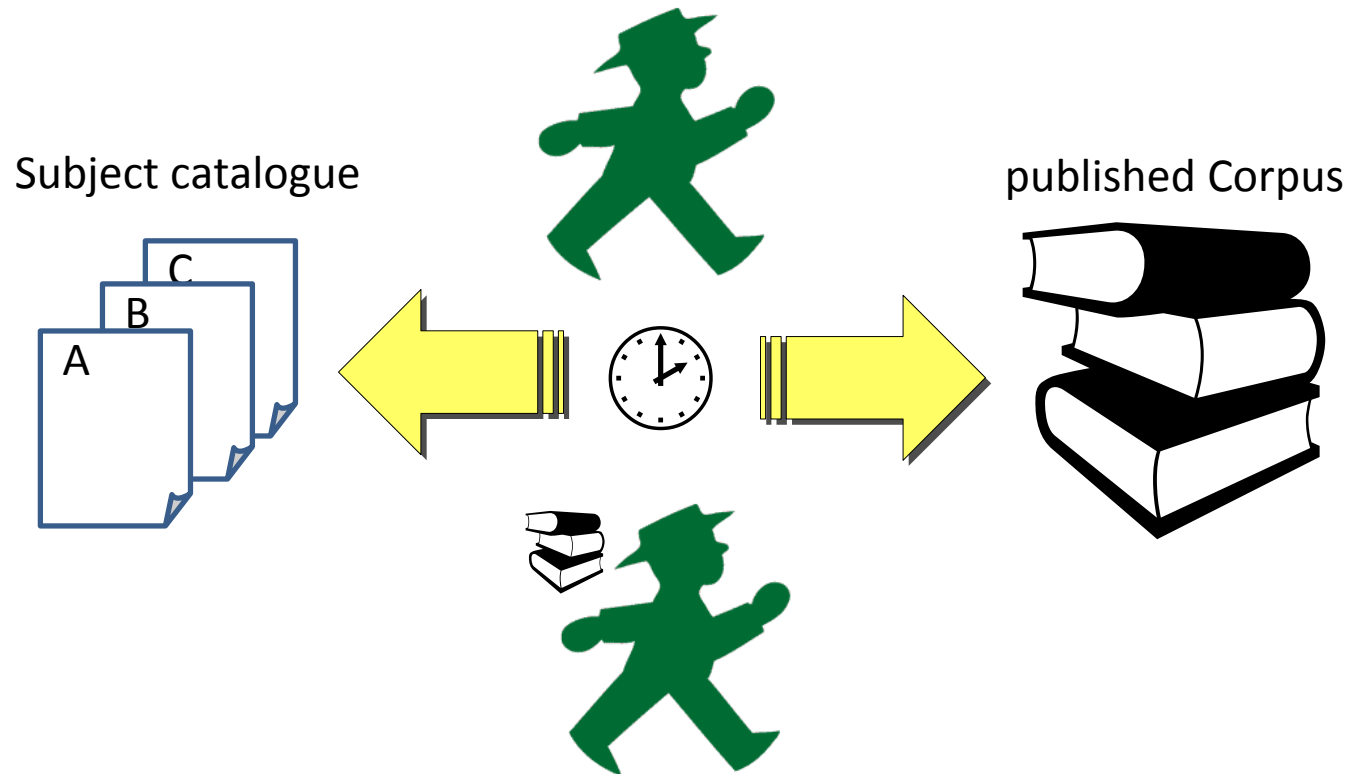
www.semantic-network.de



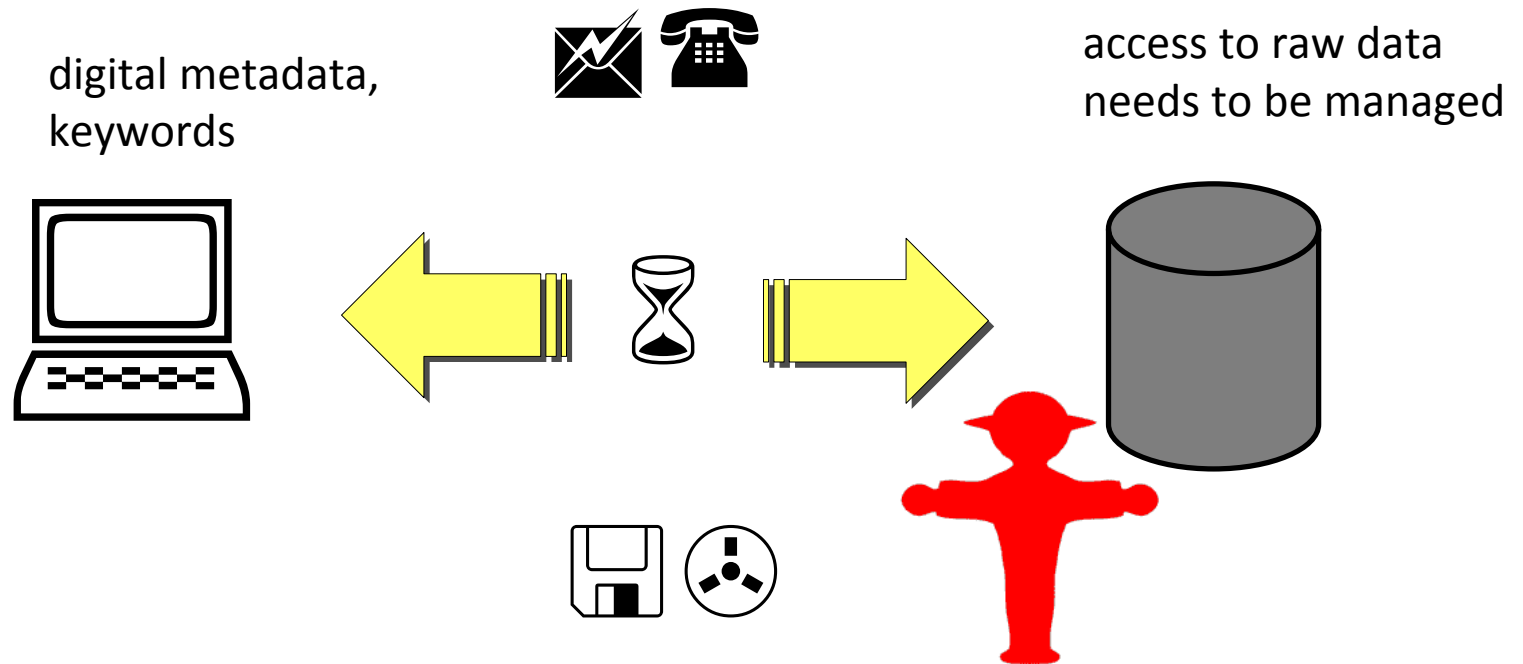
Three Trends

- **Closing the gap**
 - between data, metadata, and terminology
 - from term reference to hyperlink
- **Adding semantics** to terminology
 - "explicit formalisation of shared concepts"
 - Taxonomy, Thesaurus, Topic Map, Web Ontology, ...
- **Terminology governance**
 - who controls controlled vocabularies and why?
 - why we need versioning patterns
 - cool URIs don't change

the 70/80s: librarian classic



the 90s: Catalogue of Data Sources

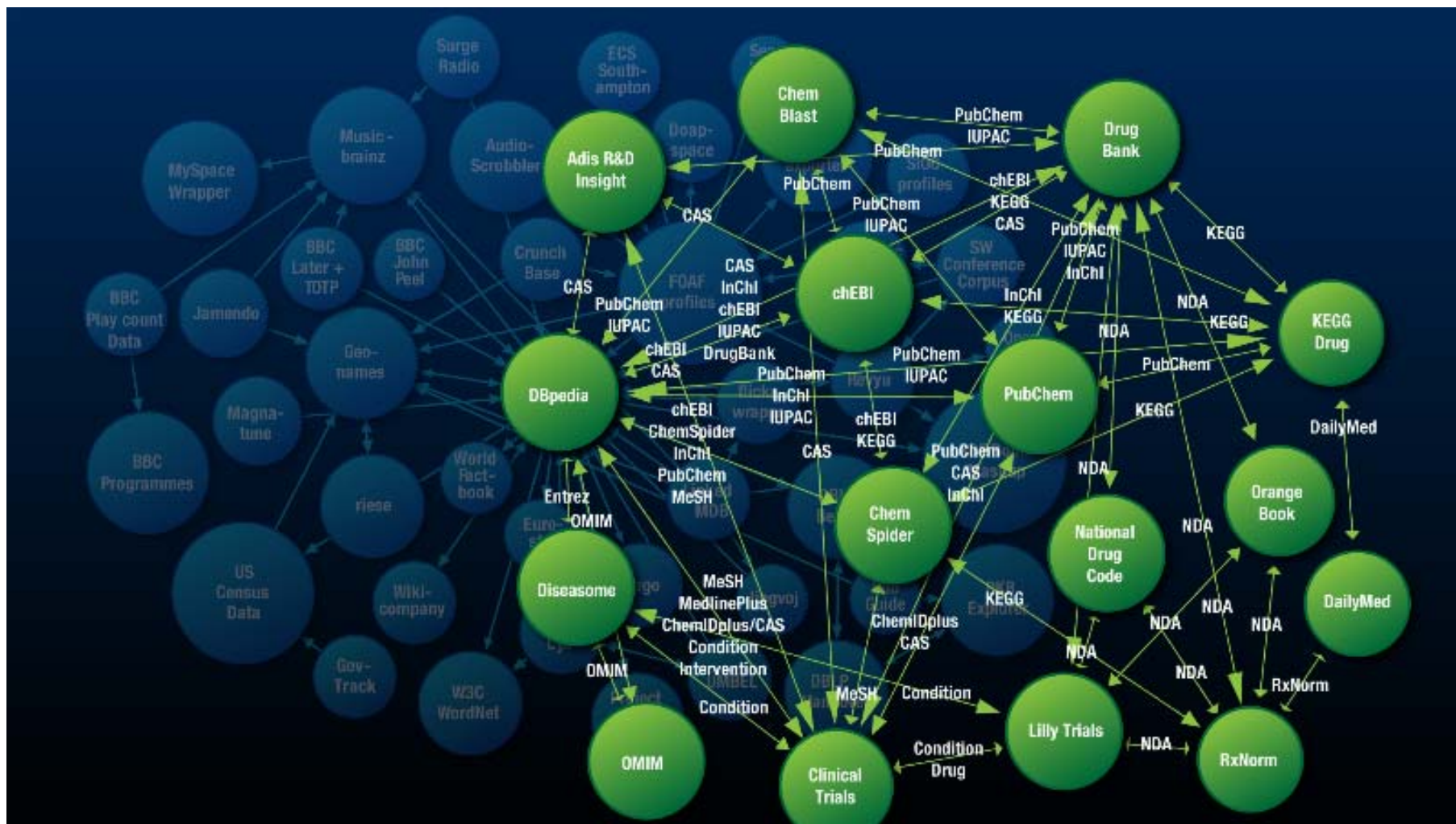


2000+: the Web – linking open data and vocabulary



<http://esw.w3.org/topic/SweoIG/TaskForces/CommunityProjects/LinkingOpenData>

Example: Linking Open Drug Data (2009)

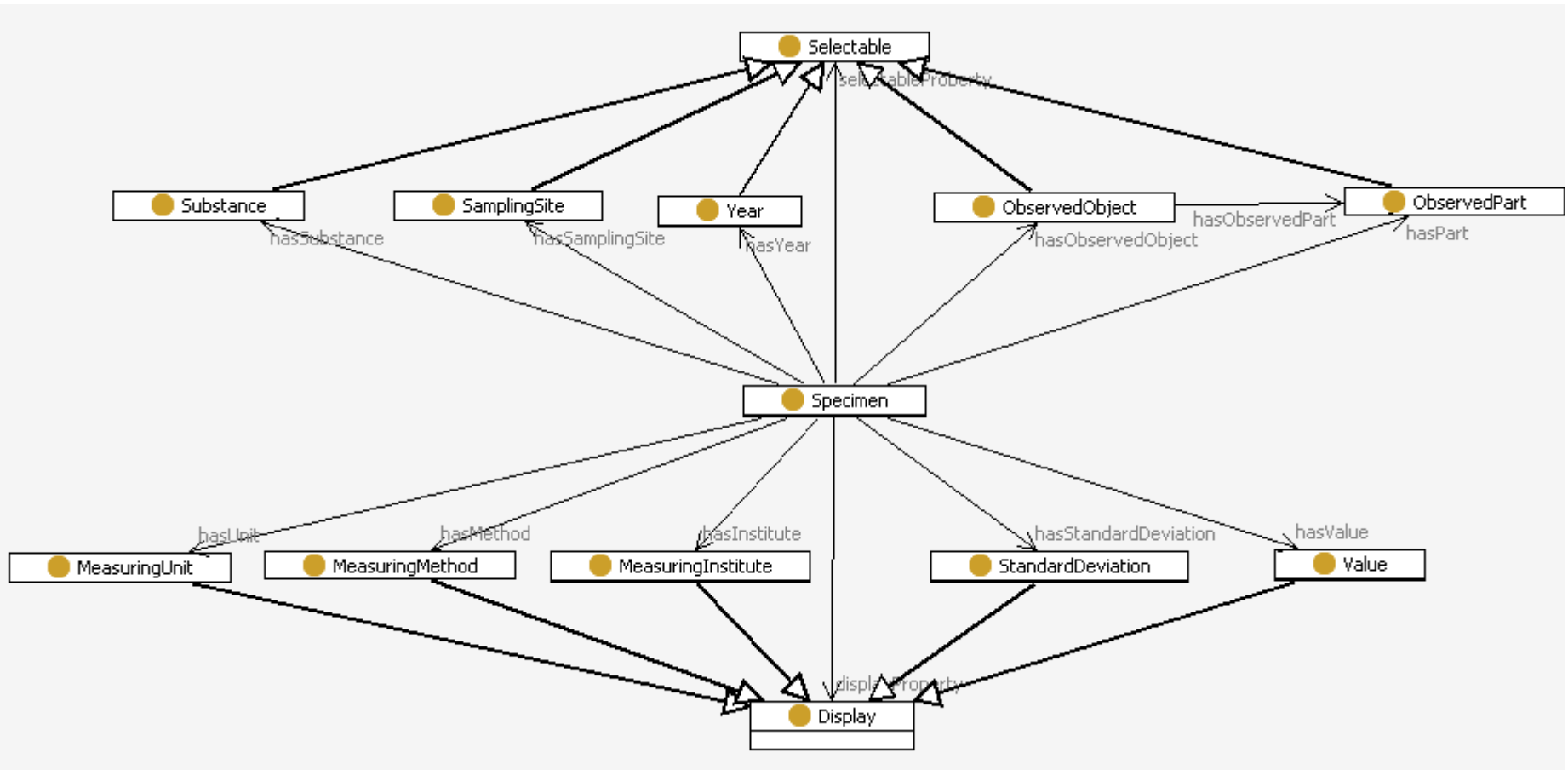


<http://esw.w3.org/topic/HCLSIG/LODD/Data/DataSetEvaluation>

Adding semantics to terminology

- **flat pick list**
- **taxonomy** – adds hierarchy
- **thesaurus** – adds generic relations and synonyms
- **topic map** – adds typed associations
 - XML representation, Topic reference by URL
- **web ontology** – adds a powerful schema language (OWL)
 - "explicit formalisation of shared concepts" (Gruber)
 - Define Classes, Sub-Classes, Properties, Sub-Properties
 - Similar to OO-Design, but: not a closed world
 - **SKOS?** uses Web Ontology formalisms for thesaurus serialisation, just a (more or less) nice exchange language.
 - "skosify" a thesaurus does not make an ontology.

Example: Project Ontology of Specimen Database



- public Web application currently under development, planned for summer 2009

Controlled Vocabulary vs. Web 2.0 Free Tagging

- INSPIRE demands "*controlled vocabularies*" hosted by a "*responsible party*".
- shared vocabulary makes a starting point for data integration.
- Controlled evolution is sometimes slow. Example: GEMET still does not have a notion of "emission trading".
- GEMET editorial board was closed in 2001
- National / Domain-specific editorial teams at work:
 - some are presenting on this workshop
- Get assistance from new semantic technologies.

Why we need Versioning of Vocabularies

- Suddenly there was a GEMET 2.0 in summer 2008.
- Obviously someone (who?) had added INSPIRE Spatial Data Themes.
- What else had changed? Who knows?
- Is GEMET 2.0 downwards compatible with GEMET 1.x?
- If someone references any GEMET 1.0 keyword, will this be valid with GEMET 2.0 as well?
- Which version should be used with INSPIRE?
- What is planned for the next version and when?
- What is the recommendation about upgrading?

Cool URIs don't change

- If someone references your vocabulary, you have to serve it in a sustainable way.
- Provide persistent HTTP URL for each term/concept.
- Make these URL resolve to term definitions.
- Add linkage to related terms and data.

"What makes a cool URI?"

A cool URI is one which does not change.

What sorts of URI change?

URIs don't change, people change them!"

Tim Berners-Lee in 1998! <http://www.w3.org/Provider/Style/URI>

2008: Cool URIs for the Semantic Web: <http://www.w3.org/TR/cooluris/>