

Making use of Ontologies: Tools, Services, and Techniques - Synthesis II

Ontology Summit 2014

[http://ontolog.cim3.net/cgi-bin/wiki.pl?
OntologySummit2014_Ontology_Tools_Services_
Techniques_Synthesis](http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2014_Ontology_Tools_Services_Techniques_Synthesis)

Christoph Lange¹, Alan Rector²

¹Enterprise Information Systems,
University of Bonn / Fraunhofer IAIS, Germany
²Medical Informatics, School of Computer Science
University of Manchester, UK

Lightweight means Scalable

- Heavyweight approaches to semantic web services have failed
(JoseMariaGarcia, Linked Services Initiative)
- A little RDF goes a long way
(MikeBergman, Open Semantic Framework)
- Lightweight ontologies = vocabularies can be engineered systematically
(MariaPovedaVillalon, Linked Open Terms)

Lightweight Semantic Web Services

- Linked Services Initiative (JoseMariaGarcia)
- Before:
 - web services exchanging heavy XML messages over SOAP
 - semantics-first modeling using expressive WSMO or OWL-S ontologies
- Face the reality:
 - lightweight REST interfaces much more popular
 - describe their semantics bottom-up with linked data style RDF(S)

Complex Web Applications based on a Canonical RDF Data Model

- Open Semantic Framework (MikeBergman)
- OSF represents structured, semi-structured, even unstructured data in RDF, plus some OWL
- On the user interface, these lightweight ontological structures . . .
 - inform interface displays,
 - define component behaviors,
 - guide visualization template selection and content filtering, and
 - help to navigate and organize web portals.

Engineering Vocabularies

- Linked Open Terms (MariaPovedaVillalon)
- An agile engineering technique:
 - 1 determine the terms needed to describe your data
 - 2 look for them in existing vocabularies (a lot exist on the Web!)
 - 3 create your own when necessary, but link to existing ones
 - 4 continuous evaluation

“Lightweight” theme in Session I

- Watson (ChrisWelty): anything but heavyweight ontological reasoning
- Biomedical practice (AlanRector): don't build ontologies to represent all knowledge, but use selected ontologies to annotate data with terms
- OntoOp (TillMossakowski): retrofit linked data principles into pre-Web (heavyweight) ontology languages

Preliminary Conclusion

- Ontological applications on the (big) Web of Data need to be lightweight.
- Light weight does not compromise smartness.
- RDF enforces low ontological commitment but still allows to link to complex descriptions.