M4.11—Prototype of collaborative community interface

Milestone report for ViBRANT

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Standardisation of ontology vocabularies and their documentation in a collaborative manner is an important basis to establish a virtual biodiversity infrastructure. The present milestone explores the possibility to use a MediaWiki system with it's built in collaboration and trust-building mechanisms, including full revision control. MediaWiki provides semantic web extensions (which are presently planned to deploy in the near future on Wikipedia itself). The major extensions are SemanticMediaWiki and SemanticForms, providing a markup-mechanism, to enrich simple text data with defined semantic properties, that combine human-readable text content with semantic markup. The semantic markup itself is used only to a limited extent for reasoning purposes within the wiki itself. However, it is exposed and provided for harvesting in the form of RDF, allowing third parties to leverage on the full power of semantic machine reasoning.

At the present point of this milestone (6 month after the project start), the following progress has been made:

- The MediaWiki and server setup have been optimized for ViBRANT use.
- The Semantic MediaWiki extension have been installed and extensively tested.
- A prototype interface was developed on http://species-id.net/wiki/ to illustrate the possibilities of a collaborative community interface for an ontology standardisation.
- An example vocabulary case using the taxpub vocabulary (together with the ViBRANT partner Pensoft) has been imported.
- As an external vocabulary to be used in the definition of new terms, the mapping relation definitions of the Simple Knowledge Organisation System¹ (SKOS) have been imported. (In SemanticMediaWiki it is possible to reuse external ontology vocabularies by creating a special import definition, Terms can then be related internally to each other by setting up sub-property relationships (figure 2). Local term definitions within the Wiki system can be exported using the Resource Description Framework² (RDF) export function of SemanticMediaWiki and thus they can be read for instance by RDF/ontology browsers³.)
- To facilitate data inputs by biologists, web forms are provided, helping users to fill in appropriate data
 without having to know the technical background or the syntax of semantic properties (figure 1). Appropriate form data can be provided as selectable options or by saving input data internally in semantic properties and let them be proposed using automatic word completion while typing in words.

Conclusions

We conclude that Semantic MediaWiki is a powerful medium for human readable and potentially richly illustrated term definitions.

Future work:

We need a real case involving a community of interested users to integrate this approach with the Drupal-based ViBRANT Scratchpads and the identification tools. Ideally would be a rich glossary-like vocabulary that is available as open content (Creative Commons CC by, CC by-sa, or CC0).

http://www.w3.org/TR/skos-reference/skos.html

² http://www.w3.org/RDF/

³ http://owl.cs.manchester.ac.uk/browser/ or http://pellet.owldl.com/ontology-browser

	Property	Discussion	Read	Edit with form	Edit	View history	☆	Search		Q	
species	Edit Property used in ontologies: Property:Skos:mappingRelation										
	Label:	Label: is in mapping relation with									
	Type:	▼ or Imported from: skos:mappingRelation									
Main page	Full UR										
Your suggestions Recent changes	Short U	RI									
All pages	Collect	(if a number of terms form a set, you can give this a name here)									
Help	Definit	on: SKOS									
▼ Toolbox What links here		kelates two concepts ⊋oming meanings	, ву с	onvention, f	rom c	lifferent sc	hemes,	and that hav	e comparable		
Related changes Upload file	Remark	s: (free-form text with supplementary i	notes or	comments)							
Special pages Browse properties ▼ Sister projects Open Media Commons		These concept mapping relations mirror semantic relations, and the data model defined below is similar (with the exception of skos:exactMatch) to the data model defined for semantic relations. A distinct vocabulary is provided for concept mapping relations, to provide a convenient way to differentiate links within a concept scheme from links between concept schemes. However, this pattern of usage is not a formal requirement of the SKOS data model, and relies on informal definitions of best practice.									
ON (German)	Part of:										
Biowikifarm	ls a:										
	Mapping Add an	gs (SKOS: Simple Knowledge Organ other	ization	System) @							

Figure 1: Editing the page "Property:Skos:mappingRelation" on http://species-id.net/wiki/ for an imported property from the Simple Knowledge Organisation System using the extension SemanticForms. All types of form elements can be used: options, radio buttons etc. In addition, auto completion lists (dark blue) provide appropriate data values; fields in pale yellow indicate filled data (a customization created by JKI).

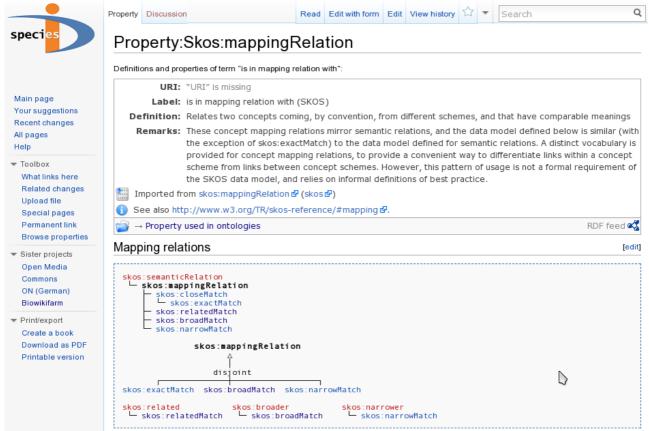


Figure 2: Rendered wiki page "Property:Skos:mappingRelation" on http://species-id.net/wiki/ after filling in the web form. In addition, mapping relations are illustrated below the property definitions using a simple MediaWiki template.