Call for use cases for the ontology-lexicon model

Since December 2011, the W3C Community Group on Ontology Lexica [1] has started its work.

*** Motivation ***

Ontologies have numerous applications and they represent the conceptual backbone of the Semantic Web. In fact, significant efforts have gone into standardization efforts under the auspices of the W3C to produce „recommendations“ for data and knowledge representation languages, i.e. the Resource Description Framework (RDF) and the Web Ontology Language (OWL).
While such ontology languages allow us to define logical theories consisting of ungrounded symbols and corresponding axioms, a grounding in language is crucial in order to render such ontologies for human consumption and thus support meaningful interaction with them by human users. Going further, it seems reasonable to assume that acces to the Semantic Web will be to a large extent mediated by language as this is the natural means of expression and communication employed by humans.
However, current web-based knowledge representations languages such as OWL and RDF(S) lack the rich linguistic grounding that is required for language-mediated access to ontologies. OWL and RDF(S) rely on a property rdfs:label to capture the relation between a vocabulary element and its (preferred) lexicalization in a given language. This lexicalization in some sense provides a lexical anchor that makes the concept, property, individual etc. understandable to a user. The mechanisms for linguistic grounding available in OWL and RDF(S) can be seen at best as rudimentary. They are far from being able to capture the necessary linguistic and lexical information that NLP applications working with a particular ontology need. Such NLP applications are for example:

- Natural language generation systems that produce coherent discourses verbalizing a set of triples.
- Question Answering systems that interpret user questions with respect to ontologies.
- Text interpretation systems that interpret texts with respect to a given ontological vocabulary, extracting triples with respect to this vocabulary
- Information retrieval systems
- ...

*** Mission and Goals ***

The mission of the Ontology-Lexicon community group is to: (1) Develop models for the representation of lexica (and machine readable dictionaries) relative to ontologies. These lexicon models are intended to represent lexical entries containing information about how ontology elements (classes, properties, individuals etc.) are realized in multiple languages. In addition, the lexical entries contain appropriate linguistic (syntactic, morphological, semantic and pragmatic) information that constrains the usage of the entry. (2) Demonstrate the added value of representing lexica on the Semantic Web, in particularly focusing on how the use of linked data principles can allow for the re-use of existing linguistic information from resource such as WordNet. (3) Provide best practices for the use of linguistic data categories in combination with lexica. (4) Demonstrate that the creation of such lexica in combination with the semantics contained in ontologies can improve the performance of NLP tools. (5) Bring together people working on standards for representing linguistic information (syntactic, morphological, semantic and pragmatic) building on existing initiatives, and identifying

collaboration tracks for the future. (6) Cater for interoperability among existing models to represent and structure linguistic information. (7) Demonstrate the added value of applications relying on the use of the combination of lexica and ontologies.

*** Call for Use Cases ***

With this call for use cases, we intend to expand the scope of our current use cases (see [2]) by including use cases that are inspired in more concrete and real applications.

We thus call for participation by industrial stakeholders and application developers in the Community Group by providing a description of a use case along the following template:

I. Motivation

This should contain a short motivation of the use case, including a description of the application context and why it is relevant to specify the meaning of words with respect to a given ontology in the context of the application.

II. Description of the use case

This section should describe the use case in more detail, specifying how the lexicon-ontology interface would need to look like from the point of view of the application and how the lexicon-ontology interface is exploited in the context of the given application. If available, the ontology for the application should be briefly described.

III. Limitations of existing models

This section should discuss existing models and their limitations with respect to the needs of the application of question.

IV. Example

This section should provide a concrete example illustrating what kind of knowledge should be stated in the lexicon-ontology interface from the point of view of the application and how it would be exploited by the application.

V. Requirements

This section is optional and might already advance concrete requirements on the lexicon-ontology model.

*** Participation in the Group ***

People interested in the group are welcome to join the group at [1].

[1] http://www.w3.org/community/ontolex/
[2] http://www.w3.org/community/ontolex/wiki/Specification_of_Use_Cases