ConceptTerms

http://ontologydesignpatterns.org/wiki/Submissions:ConceptTerms

Pierre-Yves Vandenbussche[1,2] and Jean Charlet[1,3]

[1] INSERM UMRS 872, éq.20, 15, rue de l'école de médecine, 75006 Paris, France
[2] MONDECA, 3, cité Nollez, 75018 Paris, France
[3] DSI AP-HP, Paris, FRANCE
pierre-yves.vandenbussche@etu.jussieu.fr
jean.charlet@spim.jussieu.fr

1 Introduction

The integration of domain terminological resources is a major issue for their full utilization. This integration is made difficult by the nature of these resources and their formal representation heterogeneity. In order to tackle this integration problem, we foster a solution based on metamodeling: the unfied metamodel for structured vocabularies. In this abstract, we sketch out assets for using Ontology Design Patterns (ODPs) in a unified metamodel by reusing n-ary relation pattern and describing new ODP for concept-terms representation. This ConceptTerms ODP allows designers to represent jointly conceptual and linguistic part of a vocabulary. The pattern purpose is not to encompass all linguistic complexity as Linginfo or LMF does, but to describe linguistic information in more details than SKOS which names concept with simple labels.

2 Pattern

2.1 Problem

Intent ConceptTerms pattern allows designers to represent jointly conceptual and linguistic part of a vocabulary. The pattern purpose is not to encompass all linguistic complexity as Linginfo or LMF does, but to describe linguistic information in more details than SKOS which names concept whith simple labels.

Domains Linguistic, Vocabulary.

Covers Requirements What preferred terms and synonyms (simple non preferred term) have a concept? What is the preferred term of a concept in a specific language? By which preferred term a coumpound non preferred term is composed?

2.2 Solution

A concept is named in a particular language by a preferred term and a set of simple non preferred terms (multilinguism). Those terms artifacts specialize the term entity which owns common properties. This list of properties may be extended depending on vocabulary specific needs. This pattern suits for various vocabularies (thesaurus, terminology, taxonomy) and has been applied to GEMET, Eurovoc, CIM10 among other. Modeling takes into account: - the possibility to extend the current pattern in order to add some more precise linguistic information (for instance represent translation relation between two terms since term is a class) - minimal linguistic artifacts necessary for vocabulary resource access by providing a preferred Term to name a concept and some synonyms which are Simple non preferred terms.
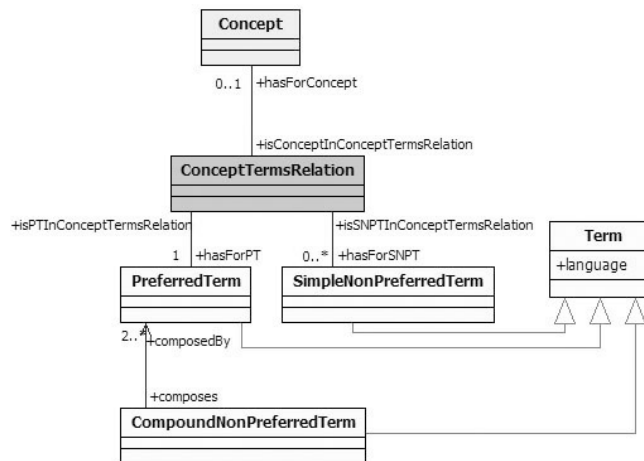

Fig. 1. The ConceptTerms Content ODP's graphical representation in UML.

Consequences Compare to labels on a concept class, this solution has a higher data load.

2.3 Example

Used for vocabulary representation. For example in Eurovoc (http://europa.eu/eurovoc/), a concept has a preferred term *social sciences* in english and a simple non preferred term (i.e. synonyms) *humanities* in the same language whereas the same concept has a preferred term *sciences sociales* in french and a simple non preferred term *sciences humaines* in this language. If we wanted to add a

translation relation between terms we could state that *social sciences* english term is a translation of *sciences sociales* french term. If we consider a second preferred term in english *award* which names a concept, in a particular information retrieval context, we could define a coumpound non preferred term *social sciences awards* which is related to preferred terms *social sciences* and *award* .

2.4 Related Resources

In BS8723 model, triangular-shaped relations are defined between a *thesaurus concept*, a *preferred term* and some *simple non preferred terms*. We are convinced that maintaining this model can be optimized by reifying those relations in a single relation class. That is why we defines the *Concept-Terms relation* which reusing N-ary pattern in order to represent terms on a concept. Between all terms, we distinguish a preferred term and some synonyms (simple non preferred terms).

3 Pattern Usage

This pattern suits for various vocabularies (thesaurus, terminology, taxonomy) and has been applied to Eurovoc authoring management.

4 Summary and Future Work

This pattern allows ontology designers to represent jointly conceptual and linguistic part of a vocabulary. Therefore, it is a complementary pattern to linguistic ones.