SKOS: A W3C Recommendation

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(Who gets by with a little help from Ed Summers)
What is it?

Simple Knowledge Organisation System(s)

- SKOS is an **RDF Vocabulary**...
- for *declaring* and *publishing taxonomies, thesauri* or *classification schemes*, for use in a distributed, decentralised information system (i.e. a semantic web).
- for *describing Concepts* and *creating relationships between Concepts and Terms*
- A practical application of **RDF**
- the application of library science to the semantic web.
  - SKOS provides a **formal language** for representing controlled, structured vocabularies
RDF Vocabularies

- RDFS/OWL Classes and properties describing a single knowledge domain
- Can be described using OWL (Web Ontology Language) or RDFS (RDF Schema)
- Relatively simple compared to Ontologies
OWL Ontologies

- RDFS/OWL Classes and properties describing a complex knowledge domain
- Must be described using OWL, but may include RDFS properties
- Relatively complex compared to simple RDF Vocabularies
- Makes use of multiple RDF Vocabularies
The SKOS data model

…views a knowledge organization system as a concept scheme comprising a set of conceptual resources (concepts).

– These concept schemes and conceptual resources are identified by URIs.

– The model is multilingual and extensible

– Not intended to be used to describe ‘things’ that are not concepts

• Can describe/define the concept ‘car’

• Cannot describe/define the properties of a car
Concepts can be…

labeled with any number of strings. One label, in any given language, can be indicated as the "preferred" label for that language, and all others as "alternate" labels, "hidden" labels, or using a notation:

- `skos:prefLabel`
- `skos:altLabel`
- `skos:hiddenLabel`
- `skos:notation`
Concepts can be documented with any number of notes of various types. This is intended to provide an extensible framework for more specific types of notes:

- skos:note
- skos:changeNote
- skos:definition
- skos:editorialNote
- skos:example
- skos:historyNote
- skos:scopeNote
Concepts can be... linked to one or more concept schemes.

- `skos:inScheme`, a property of a concept
- `skos:hasTopConcept`, a property of a concept scheme.
Concepts can be... linked to other concepts within the same concept scheme.

- Hierarchical links:
  - `skos:broader` and `skos:narrower`
  - `skos:broaderTransitive` and `skos:narrowerTransitive`

- Associative links:
  - `skos:related`
Concepts can be grouped into collections, which can be labeled and/or ordered.

- `skos: Collection`
- `skos: OrderedCollection`
- `skos: member`
- `skos: memberList`
Concepts can be... mapped to other concepts in different concept schemes.

- Hierarchical mapping:
  - skos:broadMatch
  - skos:narrowMatch

- Associative mapping:
  - skos:relatedMatch
  - skos:closeMatch
  - skos:exactMatch
allows labels to be resources:

- **skosxl:Label** The skosxl:Label Class
- **skosxl:literalForm** The skosxl:Label Class
- **skosxl:prefLabel** Preferred skosxl:Label
- **skosxl:altLabel** Alternate skosxl:Label
- **skosxl:hiddenLabel** Hidden skosxl:Label
- **skosxl:labelRelation** Links Between skosxl:Labels
SKOS Documentation

- W3C Semantic Web Deployment Working Group
  - W3C Recommendation Track
    http://www.w3.org/2006/07/SWD/
- SKOS Use Cases and Requirements
  - W3C Working Group Note (August 18, 2009)
    http://www.w3.org/TR/skos-ucr/
- SKOS Reference and Primer
  - W3C Recommendation (August 18, 2009)
    http://www.w3.org/TR/skos-reference
    http://www.w3.org/TR/skos-primer
- SKOS Web Site
  - http://www.w3.org/2004/02/skos/intro
  - LCSH, SKOS and Linked data
    http://arxiv.org/abs/0805.2855
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Cyberlearning and 21st Century Education

The Achievement Standards Network

Student Certification Program

The Dell Academy

Technical Certification

Microsoft’s Partners in Learning