Application Profiles and OWL Ontologies

DCMI Special Session

http://dcevents.dublincore.org/IntConf/index/pages/view/APaltOO

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Session I

- Presentations
  - Tom Baker: History and Background of the Description Set Profile
  - Karen Coyle: Annotations, an Application Profile case study
  - Gordon Dunsire: FRBRer, an OWL Ontology
- Discussion

Session II

- Presentation
  - Antoine Isaac: Europeana and its implementation of validation
- Discussion of Key Questions
- Next steps

Summary of thesis

OWL ontologies

- Define a model of an information space - classes of things that are found in that world, their properties, and their relationships
- These can be leveraged to infer additional information about things that are described using the ontology.

OWL ontologies do NOT provide constraints that one would typically view as data validation.

Summary of thesis

Application profiles

- can define constraints on data creation similar to those provided by XML schema
- or application-specific rules that are used for the validation of instance data.

Machine-actionable APs can document such rules both for quality control usage during data creation and data re-use, and for documenting shared data.

Summary of thesis

This session examines how the dual requirements of (data-oriented) quality control and (Web-oriented) interoperability are addressed using minimally constrained ontologies with Application Profiles.

This topic is particularly timely in light of interest in RDF validation in the W3C community

Key premises and Questions

- **Premise**:
  - Inference schemas, such as OWL Ontologies, specify a simplified, "cartoon" universe that can be leveraged to infer additional knowledge based on what is already known.
  - The more tightly that cartoon universe is defined, the more information one will be able to infer.

- **Questions:**
  - For what purposes is it most appropriate to define an ontology, or inference schema, using strong semantic constraints?
  - What advantages do such schemas offer to a community of practice?

Key premises and Questions

- **Premise**:
  - Validation schemas, such as Application Profiles, are designed to ensure the quality and consistency of data by specifying constraints on the structure and content of that data.

- **Questions:**
  - For what purposes is it most appropriate to specify a validation schema such as an Application Profile?
  - If a given dataset was created using a validation schema, such as an Application Profile, how can the creators of data advertise, and consumers of the data discover, the schema or profile used?
  - Might datasets describe themselves using a property for this purpose?

Key premises and Questions

- **Premise**:
  - To make use of existing vocabularies in a linked environment, it is important that users can understand the semantics of the elements they are re-using and to be able to use these correctly.

- **Questions:**
  - When is it desirable to define properties strongly linked to specific data models, and when is it better to anticipate that they be used with other models?
  - What are the implications of strongly versus weakly constrained vocabularies for their uptake and consumption by users who do not know (or understand) a given data model?

Next steps