

Practical application of FRBR and RDF

by

Poul Henrik Jørgensen
Danish Library Center

This paper describes how IFLA FRBR in combination with the W3C RDF is used by the VisualCat system for Cataloguing, Authority Control and Searching across different types of electronic materials. Different communities use different metadata vocabularies (ontologies), e.g. MARC21, danMARC2 or the Dublin Core. In order to handle a wide range of resources from different sources it is therefore necessary to address the problem of different metadata standards. One possible approach is to convert the different types of metadata into one lowest common denominator such as basic Dublin Core, but this may obviously lead to significant loss of information. An alternative solution is to define the abstract relationships between different metadata standards. VisualCat utilize W3C RDF Schemas used to specify the relevant metadata ontologies in terms of their types of attributes and classes.

VisualCat represents all types of metadata including attributes and relations as RDF statements about the corresponding objects. Since RDF is independent of any specific metadata standard, the system can use the RDF statements to link different types of metadata and objects. FRBR is specified as the most general ontology in the RDF schema, where other metadata vocabularies are defined in relation to FRBR.

VisualCat interprets the RDF statements in combination with the RDF schema and use this to search and navigate among different types of objects. The simplest type of search is based on attribute values, e.g. "Find the Danish National authorized name of a person with the synonym Isac Dinesen". A more advanced type of search is based on relationships, e.g. "Find the titles of works *created* by the person identified by the name (or synonym) Karen Blixen".

The RDF Schema is utilized to perform inferences based on the abstract relationships between metadata relations and object types. The Dublin Core *Creator* is for example a subclass of the FRBR *Created-by* relation. Searching for the FRBR *Created-by* relation will therefore also imply a search for DC *Creator* – but not vice versa. It is possible to treat all types of metadata as "authority data" in VisualCat, since any object can be linked to any other object via RDF. Different users may designate different objects as "authoritative" for the same subjects.

Summary

RDF schemas specify various metadata ontologies where FRBR is used as an "umbrella" for other types of metadata. Different types of metadata are represented by means of RDF statements. This approach makes it possible to handle different types of materials and metadata within a common framework. Searches are performed against attributes and relations represented by the RDF statements. The RDF schema with abstract relationships between metadata relation types etc. is utilized to guide automatic inference as part of more advanced search processing.