Structuring Serials Bibliographic Relationships through ID Linking

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Keywords: linked data; serials bibliographic relationship; information organization.

Abstract

Structuring bibliographic relationships of serials through ID linking is a 2009-2010 pre-research project led by the Institute of Science and Technology Information (ISTIC) and founded by the National Science and Technology Library (NSTL). The project arises from the needs of integration and reconstruction of NSTL workflow. NSTL, established in 2000 by the Ministry of Science and Technology, is a library federation and STM literature sharing platform consisting of nine special national libraries serving basic science, agricultural sciences, medical sciences, and engineering. The workflow components are comprised of the Union Acquisition System, Union Catalog System, Union Data (abstracts, contents and citations) Processing System, Central Repository and the Union Service System supporting cooperative collection of STM, integrated abstracts retrieval and contents browsing, and interlibrary loan service. The union collection emphasis is on STM journals and proceedings. The Union Catalog System is the origin of the NSTL workflow and the base of resource organization. For the seriality and dynamicity characteristics of serials, describing and structuring the bibliographic relationship levels becomes more and more important in identifying, selecting, and formulating to meet different requirements from other NSTL work systems.

The goal and objectives of the project are: (a) to build structured URI based on FRBR and semantic relationships for the serials publications; (b) to advance the ability of resource describing and organization of the Union Catalog System; (c) to enhance bibliographic and management intelligence by new insights into resources relationships operating at different levels; (d) to optimally streamline NSTL workflow such as helping the Union Data Processing System to identify relationships and match related metadata; and (e) to support Central Repository and Union Service System by superior presentation of the seriality and dynamicity of the serials in search results.

The key of the project is to structure the relationship between bibliographic records. First, we defined relationship types and relationship hierarchies (see Table 1) based on FRBR and the semantic relationship of the serials. Second, we assigned different hierarchy identifiers and relationship identifiers to every record. The hierarchy identifiers are series ID comprised of Super-Work-ID, Work-ID, Expression-ID and Manifestation-ID. At same time some relationship identifiers are created, librarians can operate at superior level to create junior IDs and link them, such as horizontal relationships. Repeated keying of work-related information is reduced. Other relationship identifiers can be created by librarians linking records and selecting descriptive words such as *continue to*, *merge to*, *split to* and so on (see Figure 1). Then the Union Catalog System can publish those representations using the standard OAI-PMH protocol so that relationships and links can be harvested, stored, searched or browsed anywhere (Rosenberg, 2004).

TABLE 1: Relationship Types

Class	Sub-Class	Describing
Horizontal Relationship	Super work-work	Relationship between family or aggregation work and individual work
	Work-expression	Relationship between distinct work and different intellectual or artistic realization of work, such as the serial comes out in multiple editions or versions, languages or publishers.
	Expression-manifestation	Relationship between physical embodiment and expression of a work, such as different medium
	Whole-part	Relationship between the serial and components monographs or subseries
Parallel Relationship	Chronological RS	Relationship among the serials developing and deriving , such as continuing, superseding absorbing, separating, splitting, merging and so on
	Equivalent RS	Relationship between serials in multiple editions or versions, such as other edition, state or impression in the same medium or different medium
	Accompanying RS	Relationship between a supplement serial and parent serial

Next, we will create URI for different level ID. Following the rules of Linked Data (Berners-Lee, 2006), URI created for each record are persistent and dereferenceable. Then these relationships and connections between bibliographic entities will be presented transparently and be available to normal users, other NSTL systems and machine/web robots (Martin Malmstern,2008).

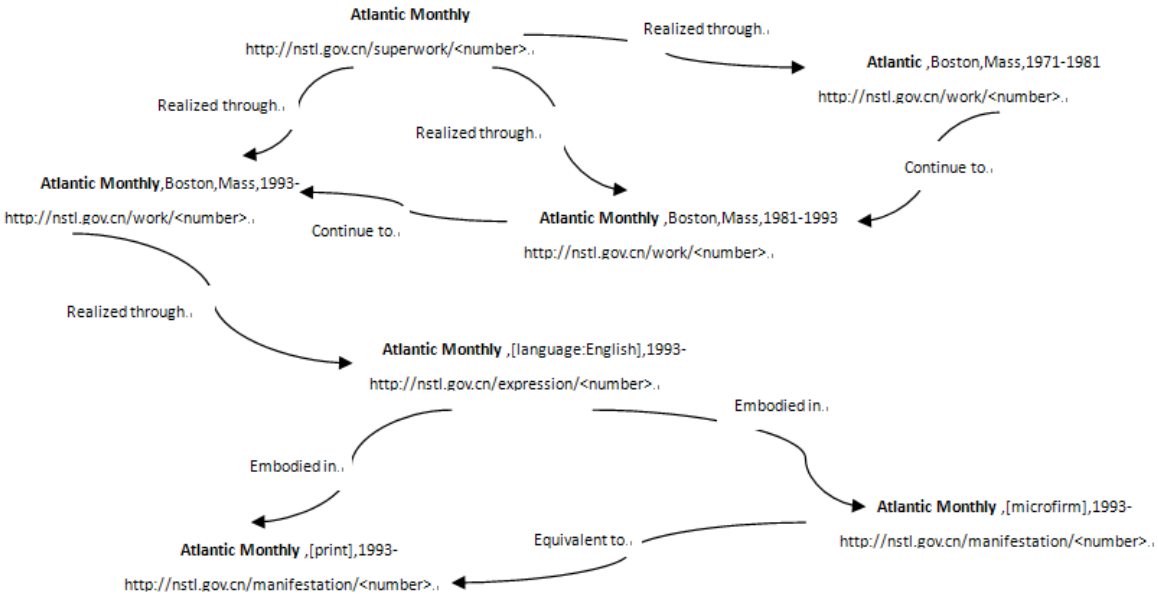

FIG. 1. Linking of serial development

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