A model to link them all: IFLA LRM as a driver for harmonization of cataloguing standards related to serials and other continuing resources

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1 Abstract:

The publication and the official endorsement of the IFLA Library Reference Model, in August 2017, represents a significant achievement for the library community as a whole. This overarching model covers all types of bibliographic resources, and represents an important opportunity for harmonization among the different cataloguing standards. This paper intends to demonstrate the
harmonization potential for a particular kind of publication: continuing resources. These resources present indeed significant characteristics in terms of modelling and bibliographic description, which are specifically addressed by the IFLA-LRM. The implications of IFLA-LRM statements about serials and other continuing resources needed therefore to be thoroughly assessed. More precisely, the paper will present the activity and outcomes, so far, of the “Serials Task Force”, an ad-hoc expert group depending on the Aggregates Working Group of the RDA Steering Committee. This task force is charged with redefining the modelling and providing broad recommendations for revising the instructions in RDA that relate to continuing resources, to align them with the IFLA-LRM. It also seeks to maintain consistency with other cataloguing standards related to continuing resources, particularly the ISSN Manual.

**Keywords:** IFLA-LRM, RDA, ISSN Manual, ISBD, Serials, Continuing resources.

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**Introduction**

In 1991, even before the current proliferation of e-journals, blogs, digital repositories, subscription databases, and periodicals formatted for Smartphones or flash drives, Jim Vickery of the British Library wrote: “For complexity and instability, serials take the bibliographic biscuit.” [Vickery, 1991]. Modelling serials has proved immensely challenging over many decades. The introduction to IFLA’s Functional Requirements for Bibliographic Records had to acknowledge in the introduction that the model did not fully account for “seriality.”

Section 1.3 Areas for Further Study states: “Certain aspects of the model merit more detailed examination. The identification and definition of attributes for various types of material could be extended through further review by experts and through user studies. In particular, the notion of “seriality,” and the dynamic nature of entities recorded in digital formats merit further analysis” [IFLA, 1998]

The 2002 revision of the Anglo-American Cataloguing Rules introduced a model based on the concept of “continuing resources,” defined as “A bibliographic resource that is issued over time with no predetermined conclusion. Continuing resources include serials and ongoing integrating resources.” However, by the time Resource Description and Access was published (see below), the concept of “continuing resources” was not to be found in its pages even though continuing resources remained the scope of ISSN, and remained in community usage.

With the first publication of PRESS00 in 2014, its adoption as an IFLA standard in 2016, and its influence on the IFLA-Library Reference Model, the library community may finally be on the verge of having a viable model for serials and incorporating instructions based on that model into an international cataloguing code RDA. This paper will describe these developments and their current status.

**The moving landscape of bibliographic standards**

In 1998, the publication of Functional Requirements for Bibliographic Records, better known under the famous acronym “FRBR”, was a significant achievement for the library community as a whole, and specifically, for librarians in charge of creating bibliographic records for the resources in library collections [IFLA, 1998]. The original objective of FRBR was, as stated by its title, to identify the main goals of bibliographic records. The 1990s, which witnessed the growing importance of the web as a source of information, were a period
of questioning for those in charge of library catalogues. A complete re-evaluation of bibliographic records was deemed necessary.

The working group on FRBR, under the auspices of the International Federation of Library and Information Associations (IFLA), developed four generic tasks that are performed by users when searching and making use of national bibliographies and library catalogues: find, identify, select, and obtain. But more globally, the group ended up with a complete conceptual model for bibliographic information, i.e. it conceptualized what were, in essence, the bibliographic resources with which the cataloguers were dealing every day. The WEMI—an acronym almost as famous as the FRBR—was born: within the “resource”, four aspects or levels of description were identified. The entity at the highest level was the work (a distinct intellectual or artistic creation), then came the expression (the intellectual or artistic realization of a work), the manifestation (the physical embodiment of an expression of a work), and the item (a single exemplar of a manifestation). It was the first time the apparently obvious and indivisible notion of “resource” was so fundamentally re-assessed.

The family of models was completed by the FRAD model (Functional Requirements for Authority Data) [IFLA, 2009], followed by the FRSAD model Functional Requirements for Subject Authority Data) [IFLA, 2010]. All of them were entity-relationship models. In parallel, FRBRoo, the “object-oriented” version of FRBR, was published in 2010 [IFLA, 2015]. It emerged from a joint project between library and museum communities in order to achieve the interoperability of their respective data models (FRBR for libraries and CIDOC-CRM for museums1). FRBRoo is in fact an extension of CIDOC-CRM.

These different conceptual models have influenced the other standards applicable to bibliographic entities. For example, the Statement of International Cataloguing Principles (ICP), first published in 2009, and revised in 2016, re-uses some of the most important elements of the FRBR family of standards: the list of entities, and the list of objectives and functions of a catalogue [IFLA, 2016-1]. These models were also intended to influence the cataloguing content standards, i.e. the set of rules and instructions related to the practical description of bibliographic entities. One of the goals of RDA: Resource Description and Access (RDA), the cataloguing standard which was first released in 2010, was precisely to implement the FRBR concept.

As soon as FRSAD was published, discussions started about the consolidation of FRBR, FRAD and FRSAD in a single document. A unified model was deemed easier to use; besides, there were some inconsistencies between the different standards, as they were produced at different periods. A Consolidation Editorial Group was formed, and in 2016 it issued a draft for a world-wide review. An amended version was published and officially endorsed by the IFLA Professional Committee in August 2017, under the title “IFLA-Library Reference Model, or IFLA-LRM [IFLA, 2017]. In itself, this change of name is significant. The term LRM is coined from the “Conceptual Reference Model” of the museum community, and it has the same goals. The objective of the IFLA-LRM is not restricted to the definition of what the “records” should be; it really seeks to provide a conceptual foundation for all activities related to the description of bibliographic entities. The IFLA-LRM is an overarching model, covering all kind of entities, removing therefore the traditional barriers between “bibliographic” and “authority” information. However, as a conceptual model, it is not intended to be directly used for cataloguing. It needs to be implemented in cataloguing standards, whose two prominent examples are RDA and the ISBD.

1 CIDOC, or “Comité International de la Documentation”, is the committee dedicated to documentation affiliated to ICOM, the International Council of Museums. The CIDOC-CRM is the “Conceptual Reference Model” of museums, and more broadly, of cultural heritage (except archives and libraries). See http://www.cidoc-crm.org/.
**RDA**

RDA: Resource Description and Access is an international cataloguing standard managed and maintained by the RDA Board (previously the Committee of Principals for RDA, CoP) and the RDA Steering Committee (RSC, previously the Joint Steering Committee for Development of RDA, JSC). “RDA is a package of data elements, guidelines, and instructions for creating library and cultural heritage resource metadata that are well-formed according to international models for user-focused linked data applications.” [CoP, 2015]

The standard is a successor to the second edition of the Anglo-American Cataloguing Rules (AACR2). As such, it provides guidance and instructions on recording descriptions of information resources found in library and cultural heritage collections. RDA also determines the types and characteristics of things that are useful to record for retrieval and access of information resources.

RDA emerged from attempts to revise AACR2 to meet the needs of the global digital information environment, at the same time as IFLA was developing FRBR. The differences between the two standards were too great to allow a smooth evolution of AACR2 to compatibility with the FRBR model, and the CoP concluded that it would be more effective to create a new standard for the practical implementation of FRBR. Eventually, RDA partially implemented the FRAD and FRSAD models following their publication by IFLA. [Dunsire, 2014]

During this time the FRBR Review Group’s Working Group on Aggregates published its final report [IFLA, 2011]. The Working Group “recommended that this report be considered as part of the consolidation process” which anticipated bringing together the three models. The report was contentious and offered two distinct models for aggregations. The JSC decided to wait for the development of the consolidated model before developing the treatment of aggregates and serials in RDA, and continued to work closely with the FRBR Review Group through shared membership and formal liaisons.

The JSC created an Aggregates Working Group in 2015 to analyse the likely impact of IFLA-LRM, which was then in the final stages of development. [JSC, 2015]. The Working Group specifically investigated the potential influence of FRBRoo on the treatment of aggregates in RDA, on the assumption that the LRM would eventually integrate with FRBRoo. [AWG, 2015]

The RSC submitted a response to the world-wide review of IFLA-LRM in 2016. Later that year, the RSC decided to include the development of RDA as an implementation of the IFLA-LRM in the RDA Toolkit Restructure and Redesign Project. [RSC, 2016-3] The new version of RDA Toolkit will be released in June 2018 in a beta version for feedback and community development.

The general impact of IFLA-LRM on RDA is driven by the introduction of new entities for Agent, Collective Agent, Nomen, and Timespan, and also RDA Entity, which constrains the semantic scope of IFLA-LRM’s Res entity to the scope of RDA. This results in the recasting of RDA attribute elements as relationship elements, and the generation of an additional inverse element in each case. The Nomen entity allows RDA to categorize its existing elements for names, titles, and identifiers as types of appellation, to introduce specific elements for authority control, and to generalize coverage to all RDA entities. The result is a proliferation of elements within a more articulate semantic structure, covering a wider range of metadata requirements.
ISBD and ISSN

The publication of IFLA-LRM will also have an impact on the ISBD (International Standard Bibliographic Description), the main cataloguing standard maintained by IFLA. The goals of ISBD are twofold:
- on the one hand, it is a content standard, in the sense that it provides transcription rules, it indicates what information sources should be favoured, etc.;
- on the other hand, it is an encoding standard, defining sets of punctuation for delimiting and displaying specific components of a record, for example distinguishing blocks of descriptive information with the “. – “ separator. As such, it provides a specific way to display information.

The publication of the ISBD follows the IFLA objective of providing accessible and open standards and tools for all, including communities who need simple and easy to use rules for describing resources. It is freely accessible on the IFLA website, in more than ten different languages. However, even though it has been last revised in 2011, it is still focused on the pre-FRBR notion of “resource”. Besides, it is limited to “bibliographic” information, in the stricter sense of the term, and does not deal with authority data or access points. Within IFLA, there are other standards covering these areas, such as the “GARR”, Guidelines for Authority Records and References [IFLA, 2001]. The ISBD is maintained by the ISBD Review Group, a body of experts which depends on IFLA Committee on Standards. The ISBD RG decided, during the 2017 IFLA annual meeting, to produce a revised version of the ISBD; one the main goals of this revision is to develop an alignment between the ISBD and the IFLA-LRM.

The ISBD is designed to be simple, easy-to-use, and as generic as possible, in order to be adapted to different cataloguing traditions. It is also possible to use it as a basis for the design of more specialized cataloguing instructions, for specific contexts or specific types of documents. For instance, there is a specialized network for serials and other continuing resources: the ISSN Network. It groups together ninety National Centres (hosted in National Libraries, Research Institutions or Book Chambers), which are in charge of assigning ISSN identifiers and of producing the corresponding bibliographic records. These records are regularly transferred to the ISSN Register, the comprehensive database of all records; which is maintained by the ISSN International Centre. The instructions specifying how to create these records are listed in the ISSN Manual. It is based, on one hand, on the assignment rules expressed in the ISSN standard (ISO 3297), and on the other hand, on the ISBD description rules. Compared to the ISBD, the ISSN Manual provides additional instructions, for example to design the key-title of a resource\(^2\). The ISSN Manual is maintained and updated by the ISSN Review Group, a group of experts from the ISSN Network [Oury, 2017]. As the ISBD will be revised in order to align with the IFLA-LRM, it has been recognized by the ISSN RG that the ISSN Manual itself will be, ultimately, aligned with the IFLA-LRM.

Harmonization

The publication of the IFLA-LRM is not only a significant outcome thanks to the inherent quality of that document. It also represents a unique opportunity for harmonization between the different cataloguing standards, notably for the bibliographic description of

\(^2\) The key-title is a title, unique in the ISSN Register, created by the ISSN Network, and permanently attached to the ISSN number. The key-title is based on the title proper of the resource, and made unique if necessary by the adjunction of a qualifier.
continuing resources. This type of resource includes not only serials such as periodicals, newspapers, and continuing monographic series, but also integrating resources such as websites or databases. There are currently divergences, not to say inconsistencies, between RDA and ISBD/ISSN rules: for example, in respect of the cases and conditions where a new description of a resource should be created. The notion of continuing resources, which was incorporated in AACR2, does not even exist in the current version of RDA. Basing the different cataloguing rules on a single model should help in solving these discrepancies.

Collaboration between the JSC, the ISBD Review Group, and the ISSN Network on harmonization of the standards for serials began with a meeting hosted by the Library of Congress in 2000. Further meetings with the different groups took place at the JSC annual meetings in Glasgow, Scotland in 2011 [JSC, 2012] and Edinburgh, Scotland in 2015 [RSC, 2015-2], respectively. One outcome of this collaboration was the submission of five papers by the ISSN International Centre to the JSC between 2012 and 2014, covering mode of issuance, change of media type, and major and minor changes to serials and other continuing resources. A light-weight protocol for communication between the JSC and ISSN International Centre was published in 2015 and updated to reflect the change of name to RSC in 2016. [RSC, 2016-1]. There is a similar protocol between the RSC and the ISBD Review Group. [RSC, 2016-2].

The attendance of members of the ISSN International Centre, FRBR Review Group, ISBD Review Group, and RSC at the IFLA World Library and Information Congress in Wrocław, Poland, provided the opportunity for a one-day meeting on the impact of the LRM on the ISBD, ISSN, and RDA treatment of serials. [RSC, 2017]. This meeting highlighted the complex specificities of serials and examined how these characteristics were reflected in the IFLA-LRM. It also discussed how IFLA-LRM modelling choices should be implemented in cataloguing standards.

The MODELLING OF SERIALS IN IFLA-LRM

As a matter of fact, the IFLA-LRM provides some radical approaches for the modelling of serials and other continuing resources – several of these approaches were inspired by PRESS00, the IFLA conceptual model for bibliographic information pertaining to serials and other continuing resources [IFLA, 2016-2]. The IFLA-LRM dedicates a specific section (5.8) to serials; many of the statement expressed in this section are also applicable to other continuing resources. The IFLA-LRM defines serials as “complex constructs that combine whole/part relationships and aggregation relationships”. There are indeed two levels of “construction”. At the higher level, there is a whole/part relationship between the complete serial manifestation (the whole) and the individual issues that are published successively over time (the parts). This whole/part relationship is not complete until the serial publication has ended.

At the lower level, there is an aggregation relationship, in IFLA-LRM terms. The issue is an aggregate manifestation. It embodies multiple aggregated expressions of one or more works (the articles). However, the aggregate manifestation also embodies an aggregating expression (that realizes an aggregating work), which is the intellectual activity of the agent(s) who decided on the selection, arrangement, etc. of the articles. For example, the editor of a special issue of a serial will be considered the author of the aggregating work for that issue, while the different authors of the different articles published in the issue will be authors of the aggregated works. At first sight, this modelling may look particularly complex (our apologies to our readers!). However, it allows for a precise distinction between the different types of creators. Besides, the IFLA-LRM is only a model; for example, it does not demand that all creators are described. The decision on which creators should be recorded
depends on the cataloguing standard, on the local cataloguing policies, and ultimately, on the catalogers' judgement.

Another critical aspect emphasised by the IFLA-LRM is the dynamic nature of continuing resources: serials, as well as other continuing resources, are changing over time, provided their publication has not ended. Therefore, the description of serial works “does not limit itself to a description of the past, but is also intended to allow end-users to make assumptions about what the behaviour of a serial work will be, at least in the near future”. As a consequence, it is impossible to state that, for example, two serials in different language editions are two expressions of the same work; or even that two serials in different medium versions (for example print and online) are two manifestations of the same expression, “as it is impossible to predict that this relationship will hold in the future”. [IFLA, 2017]

Practically, these statements mean that collocation based on commonality of content is not applicable to serials: “It ensues that any serial work can be said to have only one expression and only one manifestation.” This issue, which has been called the “WEM lock”, may look frustrating for serial librarians. It was one of the concerns pointed out by the ISSN Review Group, in its official response to the draft IFLA-LRM, when it was submitted to its worldwide review process (in the first-half of 2016). Indeed, for decades, one of the most significant goals of the cataloguing of serials has been to identify the complex network of links and relationships between these resources (for example “is another medium version of”, “is a continuation of”, etc.). However, the IFLA-LRM acknowledges that it is possible, as an extension to the model, to define “additional entities that comprise, say, the paper edition of a journal and its edition on the web; all linguistic editions of a journal that is published in more than one language as separate editions; all local editions of a journal…”. [IFLA, 2017] The identification of these “work clusters” will make it possible to group together serial works showing similar patterns.

The Serials Task Force

The main outcomes of the LRM-alignment meeting, in August 2017, were summarized in a discussion paper issued jointly by the RSC Chair and the ISSN International Centre. [RSC, 2018]. In addition, that paper also demonstrated that the alignment with IFLA-LRM would radically modify current instructions related to serials, in RDA as well as in other standards. On the RDA side, serials—as aggregates—fall under the scope of the RSC Aggregates Working Group (formerly JSC Aggregates Working Group). However, it was subsequently felt that there was a need for more specific expertise, involving other cataloguing agencies, which led to the creation of an informal “Serials Task Force” or STF. This task force includes, on the RDA side, the chair of RSC and the chair of the Aggregates Working Group; on the ISSN side, the chair of the ISSN Review Group and the head of the US ISSN Centre; and also, two experts from CONSER³. The STF met from January to March 2018 and issued a set of recommendations to the AWG in April.

The first step was to define the scope of the recommendations. The STF decided to produce recommendations for all “diachronic works”, i.e. works intended to be issued over time, as opposed to “static works”. The concept of diachronic works, promoted by the RSC, groups together works published over a limited time (“finite” works) and over an indefinite time (“continuing” works”). When a work is diachronic in nature, most RDA elements can themselves have a diachronic aspect in the sense of a related time-span. To characterize the diachronic nature of a work, the STF endorsed the proposed use of two attributes from the

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³ CONSER is the Cooperative Serials Program of the Program for Cooperative Cataloguing. See http://www.loc.gov/aba/pcc/conser/.
RDA ONIX Framework for Resource Categorization—ExtensionTermination and ExtensionMode—that can be combined into a single RDA element, tentatively labelled “extension plan”, indicating both whether a work has a continuing or a predetermined end and whether its associated content is extended by the successive release of discrete parts or by the integration of added content into existing content. For example, a serial may be defined as a “successive indeterminate aggregating work”.

Regarding the “WEM lock” for diachronic works, the STF acknowledged the protocol between the RSC and the ISSN International Centre mentioned above. It recommended no change from current RDA cataloguing practice about the boundaries of a serial work (at least for now), save that the conditions that currently trigger the description of a new manifestation would, due to the “WEM lock”, trigger the description of a new expression and work as well. It also underlined the need to accommodate, or even harmonize, the rules between RDA, ISSN and ISBD on that point. Moreover, the group acknowledged that the concept of a diachronic work might have implications for finite resources issued over time (e.g. an Encyclopedia published in several volumes over time), especially the application of a “WEM lock”. However, evaluating this impact was not in the scope of the Task Force, and it was recognized that further work of the RSC was needed on that question.

With this common frame of reference for the scope of a continuing resource as a work, the STF recommended that the choice of the issue to serve as the basis for identification of a serial manifestation be left up to the implementing agency. This latitude would allow agencies with different cataloguing traditions—describing based on the earliest issue, latest issue, or some intermediate issue—to continue following those traditions without violating RDA. Such latitude is already available to agencies within the ISSN Network.

To address the desire to bring together related continuing resources, the STF incorporated the IFLA-LRM concept of “clustering” though not the mechanism—defining “additional entities”—suggested in LRM 5.8. Instead, the STF accepted the recommendation of the RSC Chair to use a nomen string common to the resources to be clustered. An ISSN-L would be an example of such a nomen string in the form of an identifier for related works issued using different types of carriers, though other clusters might be declared (e.g., official publications appearing in more than one language) based on agency priorities.

Recognizing the “WEM lock”, the STF recommended that certain elements—frequency and elements such as the ISSN or the key-title, that identify a work—be related to the work rather than the manifestation as currently in RDA. The STF recognized that virtually any element can have a diachronic aspect, and that this aspect can be expressed by relating an instance of the element to a given time frame or, when this is not sufficiently precise, to a specific set of issues or iterations.

Finally, the STF recommended that, in conformity with the IFLA-LRM, relationships between continuing resources should be characterized as transformations. Transformations may be sequential (e.g., continuations, absorptions) or symmetrical (e.g., other language version, other carrier version), and may be triggered by a change or variation in policy (e.g., a decision to significantly change the title, a decision to issue a version for a different target audience) or by a change of extension plan (e.g., from serial to integrating).

Conclusion

The STF represents an interesting example of an expert ad-hoc group where representatives of different communities worked together to solve the long-standing challenge of modelling serials and providing standardized instructions for describing serials based on that model. Its recommendations have been taken into account by the AWG, and
they have influenced the instructions to describe diachronic works in the new RDA toolkit, whose beta version has been released on June 13th, 2018. However, as these recommendations are derived from the IFLA-LRM, and were influenced by the outcomes of an RDA/ISBD/ISSN meeting, they will hopefully provide inspiration to other related cataloguing standards.

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