LRMoo, navigating standards development processes in two communities

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Abstract:

LRMoo, the object-oriented formulation of the IFLA Library Reference Model, is, like its predecessor FRBRoo, also a compatible extension to the museum community model, the CIDOC Conceptual Reference Model. The approval process for the object-oriented models is a joint process of the two communities. LRMoo requires both IFLA standards approval, as for any other IFLA standard, and approval through the CIDOC CRM Special Interest Group, which manages the CIDOC CRM family of models within ICOM.

Keywords: LRMoo, CIDOC CRM, standards approval, ICOM.

1. Introduction

The LRMoo model is an object-oriented version of the IFLA Library Reference Model (IFLA LRM), framed using entity-relationship modeling, which was endorsed by the Professional Committee in August 2017. LRMoo follows the practice, started with FRBRoo, of creating an object-oriented model as a compatible extension to the museum community's Conceptual Reference Model (CIDOC CRM) so that the IFLA conceptual models can be adopted in the broader heritage sector.

2. IFLA Processes for Model Development and Approval

Each of the IFLA conceptual models was created by a specific working group, named by and reporting to appropriate professional units according to the IFLA structure at the time of development.

The conceptual models have been maintained and managed by a Review Group (RG) since 2003. The FRBR Review Group was renamed the Bibliographic Conceptual Models Review Group (BCM RG) in 2018. The RG originally reported to the Cataloguing Section which also used a Review Group structure to manage the International Standard Bibliographic Description (ISBD). The Cataloguing Section has had a tradition of using worldwide reviews to gather input from the broader community on near-final versions of its proposed standards. The conceptual models all naturally followed the worldwide review process in their development. The responses to the worldwide reviews could be extensive and lead to substantial further work by the working group, and sometimes even a subsequent worldwide review, prior to bringing the very final document to the unit's Standing Committee for final approval.

Since the creation of the Committee on Standards (CoS) in 2013, approval by CoS, following assessment by reviewers independent of the working group or of the sponsoring professional unit, has been added to the end of the process. CoS then recommends a standard for endorsement by the Professional Council, the final and highest approval step.

This IFLA process was applied to all the entity-relationship models: first FRBR in 1998, then FRAD and FRSAD in 2009, and most recently IFLA LRM, which received Professional Committee endorsement in August 2017.

3. Model Development and Approval Processes in the Museum Community

Within the International Council of Museums (ICOM), the International Council for Documentation (known as CIDOC) maintains the Conceptual Reference Model (CIDOC CRM), which was originally developed by its Documentation Standards Working Group in 1996-1998. Since 2000, the model has been maintained by the CIDOC CRM Special Interest Group (SIG).

The SIG meets two to four times per year to discuss and resolve issues relating to CIDOC CRM itself or any of its family of compatible extensions. This includes LRMoo and its forerunner, FRBRoo. Generally, a solution to an issue will be discussed at two meetings before being adopted by a formal vote of those SIG members present. All documentation and summaries of the SIG discussions is available on the SIG website and through its email list. There are also special procedures for e-votes through the email list. This process is generally used for more minor issues, or to approve the final edited text of a proposal already approved in principle during a SIG meeting. Adopted changes are integrated into a new release of the relevant model. A new model release is issued after each meeting, even if the text is still considered to have "draft" status.

The other part of the CIDOC CRM process, and this applies only to the CIDOC CRM model itself, not to compatible extensions, is that it also follows the ISO approval process. CIDOC CRM has been endorsed as an official ISO standard, ISO 21127 *Information and documentation — A reference ontology for the interchange of cultural heritage information.* Only major releases are submitted to the ISO process through ISO/TC46/SC4 Technical Interoperability. The ISO version was first adopted in 2006, then there was a major update in

2014 (based on version 5.0.4 of the CIDOC CRM). The most recent major release, CIDOC CRM 7.1.2 (June 2022), is currently in the ISO approval process at the ISO/DIS (draft information standard) stage.

4. A History of Cross-Community Work in Conceptual Models

During the 1990s, FRBR within IFLA and CIDOC CRM within ICOM were developed entirely separately. This turned into exchanges and a desire for harmonisation within a larger model family once the two communities became aware of the common scope of their respective models. This was first articulated at the 24th European Library Automation Group (ELAG) meeting in Paris in 2000. Patrick Le Boeuf, who became the first chair of the FRBR RG, was instrumental in making contact with the CIDOC CRM SIG and pursuing this collaborative work. A joint working group was formed in 2003. It functioned as a subgroup of the CIDOC CRM SIG and met with the SIG, while also reporting regularly to the FRBR RG.

This work led to the development of the FRBRoo model, a version of IFLA's FRBR model formulated as a compatible extension of CIDOC CRM. FRBRoo version 1.0, approved in 2009, was the first model subject to approval processes of both communities. The same has held for all subsequent object-oriented models, version 2.4 of FRBRoo (2015), PRESSoo (2015), and now LRMoo.

5. Stages in the Development of LRMoo and its Approval Process

The process of transforming FRBRoo into LRMoo started even as IFLA LRM was in its final approval stages within IFLA. A small working group, under the BCM RG, was tasked with the development, starting work in 2017. As the LRMoo WG members were all active within the CIDOC CRM SIG and regularly attended its meetings, most of the development took place at SIG meetings, using the SIG issues procedures. Regular online meetings and a common workspace were used to prepare. This allowed for iterative development and refinement, once the more fundamental decisions had been taken during SIG meetings.

Documentation and drafts have been public, using the SIG procedures, both on the SIG "issues" pages (see Issue 360 for most of the history), and through the SIG listserv.

The LRMoo WG also reports at each WLIC, regularly consulting and seeking feedback from the BCM RG. Once all issues raised by the RG during the WLIC 2022 consultation were resolved, and the solutions accepted at the SIG at its meetings in September and December 2022, the full document was compiled in a version ready for worldwide review.

LRMoo was issued for worldwide review in February 2023, until the end of March. The worldwide review was announced on the IFLA website, on IFLA listservs (IFLA-L, metadata sections), other relevant library lists, and also on the CIDOC CRM list.

In April, the LRMoo WG analysed the responses received and brought the issues with recommended solutions to the May 9-12, 2023, SIG meeting. The SIG voted to approve the solutions to all of the issues, resulting in a complete draft of LRMoo with no unresolved issues.

At WLIC 2023 this version of LRMoo will be recommend to the BCM RG. If no issues are raised at this point, the LRMoo WG will be able to submit LRMoo for CoS standards approval in fall 2023. If the review team recommends approval, then the model will be forwarded to the Professional Council for endorsement and publication. LRMoo will then be published both in

the IFLA repository and on the CIDOC CRM website. The CIDOC CRM SIG makes RDF representations of all its models available. In parallel, LRMoo will be added to the IFLA namespace.

Should either the BCM RG or CoS raise any issues (beyond editorial matters), the LRMoo WG will need to return to the SIG before returning to the IFLA standards approval process.

6. Conclusion

The dual approval processes that are inherent in finalizing a standard in two different communities do add steps to the process, which some would say is long enough as it is. However, having the full approval of each community according to its established processes leads to a shared model that is fully integrated into and accepted by both communities.

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Web links
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A Short introduction to CIDOC CRM. https://cidoc-crm.org/node/1736
Compatible models & collaborations. https://cidoc-crm.org/collaborations
Issue 360: LRMoo. https://cidoc-crm.org/Issue/ID-360-lrmoo