LRMoo update

25 March 2026
62nd SIG
Oxford

IFLA update

LRMoo version 1.1.1 has been approved and added to the IFLA repository:

https://repository.ifla.org/handle/20.500.14598/3677.2

IFLA METATEC (metadata technical standards committee) is prioritizing the conceptual models (LRMoo and LRMer) for its new publishing platform

- This will integrate full text with RDF etc.
- Finally the LRMoo namespace will resolve

LRMoo version 1.2

A more significant update

Deals with two issues:

1. Integrating Resources
    a. Two new properties refining existing properties
2. Serials
    a. One new class: F56 Container
    b. Four new properties (so far)

These issues have also been presented at IFLA BCM RG and are to be discussed further

Made no progress on defining a full path for R8

Integrating Resources

Overview presented by Trond at previous SIG

Slides: https://cidoc-crm.org/sites/default/files/Applying%20the%20LRM%20model%20to%20integrating%20resources_0.pdf

Definition:

An IR is a resources revised by updates that do not remain discrete but are integrated into the existing manifestation (examples: websites, databases, printed loose-leaf publications, paper fire insurance maps)

R82 is diachronically embodied in (diachronically embodies)

Domain: F2 Expression

Range: F3 Manifestation

Subproperty of: F2 Expression. R4i is embodied in (embodies): F3 Manifestation

Quantification: many to many (0,n:0,n)

Scope note: This property associates an instance of F2 Expression which is an iteration of an integrating resource, with the instance of F3 Manifestation in which the iterations successively appear.

The Expressions in the series of iterations appear one at a time in the Manifestation, the most recent Expression replacing the preceding Expression. The same series of iterations may appear in more than one Manifestation, such as when alternate integrating resource Manifestations in different formats are produced. In addition to the Expressions in the series of iterations, the integrating resource Manifestation may embody other Expressions.

Examples:

MARC 21 Format for Bibliographic Data, 1999 edition, update no.34 (July 2022) is diachronically embodied in the online MARC 21 Bibliographic at https://www.loc.gov/marc/bibliographic/.

Format MARC 21 pour les données bibliographiques, édition 1999, mise à jour no 34 (juillet 2022), the French translation of MARC 21 Format for Bibliographic Data, 1999 edition, update no.34 is diachronically embodied in the Canadian MARC 21 website at https://www.marc21.ca/M21/BIB/B001-Sommaire.html.

In First Order Logic:

$R82(x,y) \Rightarrow F2(x)$

$R82(x,y) \Rightarrow F3(y)$

$R82(x,y) \Rightarrow R4(y,x)$ NOTE: subproperty of the inverse

R82

A refinement of R4 embodies. Due to the integrating resource embodiment being replaced over time

Chose to match the direction of the LRM-R3 relationship, rather than R4

R83 is next iteration of (is previous iteration of)

Domain: F2 Expression

Range: F2 Expression

Subproperty of: F2 Expression. R76 is derivative of (has derivative): F2 Expression

Quantification:one to one (0,1:0,1)

Scope note: This property associates an instance of F2 Expression to the instance of F2 Expression which is its immediate predecessor in a series of Expressions which are iterations realising the same instance of F1 Work. **This property is not transitive. It is asymmetric and irreflexive.**

The instances of F2 Expression in the series of iterations of the integrating resource are each derived in turn from their immediate predecessor. This property records the sequence of derivation. **This property is declared between an instance of F2 Expression and its immediate predecessor expression, not among all earlier Expressions in the series of iterations. The first Expression in the sequence has no predecessor and the last Expression in the sequence (the latest one published at any point in time, or when the integrating resource ceases publication) has no successor.**

Examples:

MARC 21 Format for Bibliographic Data, 1999 edition, update no.34 (July 2022) is the next iteration of MARC 21 Format for Bibliographic Data, 1999 edition, update no.33 (November 2021).

In First Order Logic:

$R83(x,y) \Rightarrow F2(x)$

$R83(x,y) \Rightarrow F2(y)$

$R83(x,y) \Rightarrow R76(x,y)$

$R83(x,y) \Rightarrow \neg R83(y,x)$

$R83(x,y) \Rightarrow (\exists z)\,[F1(z) \wedge R3(z,x) \wedge R3(z,y)]$ Both F2 Expressions must realize the same F1 Work

R83

Should the constraint be expressed in FOL? {WS said yes}

Quantification is one to one, BUT not necessary (expressions that are not for an integrating resource exist) and not dependent

Issue 636 corrected the description of this quantifier in the list of property quantifiers, the updated list to be added to LRMoo

It is a subproperty of R76 derivation between expressions, that already has a .1 property. This subproperty fixes a specific kind of derivation

What happens with inheritance of .1 from R76? {SIG: it inherits it automatically, but it is not useful so likely would not be used, that is okay}

Serials

The issue is that serials (journals, magazines, newspapers, monographic series) are considered to have a 1-1-1 constraint between F1 Work-F2 Expression-F3 Manifestation if modelled with the usual WEMI.

This seems to show this modelling is unnecessary

However, articles in serials (or books in a monographic series) show the full WEMI

Thus, proposing a new class and some properties

F56 Container {SIG remarked that label is vague}

Subclass of: E28 Conceptual Object

E99 Product Type **{SIG remarked that the F56 is not a product type, only the F3 members of it}**

Scope note: This class comprises the instances of publisher created venues for issuing manifestations of works that are seen as related to each other by an overarching concept or theme. The instances of F56 Container gain additional members over time with no predetermined end. The manifestations of works that will appear in an instance of F56 Container are not all known when the first member manifestation appears. These works may not even have been created yet.

An instance of F56 Container may have as member only a single F3 Manifestation but normally will have several.

An instance of F56 Container is normally not documented until at least one instance of F3 Manifestation has become a member of it, although the concept for the container may have been first initiated as a proposal, prior to the creation of its member manifestations.

F56

Examples:

the periodical entitled ‘The UNESCO Courier’, ISSN ‘0041-5278’

the periodical entitled ‘Courrier de l’UNESCO’, ISSN ‘0304-3118’ [French edition of the periodical titled ‘The UNESCO Courier’, ISSN ‘0041-5278’]

the series entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1843’ [a monograph series comprising volumes that were published by La Renaissance du livre from 1920 on, and some of which were reprinted, with different physical features and rearranged in a different order, from 1968 on, in a distinct series published by Albin Michel also entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1770’]

the newspaper entitled ‘The Guardian’, ISSN ‘0261-3077’

the journal entitled ‘Cataloging and Classification Quarterly’, ISSN ‘0163-9374’

In First Order Logic:

F56(x) ⇒ E28(x)

F56(x) ⇒ E99(x)

(and properties to see later)

F18 Serial Work [PRESSOO] (Deprecate)

Subclass of: F1 Work

Scope note: This class comprises works that are, or have been, planned to result in sequences of Expressions or Manifestations with common features. Whereas a work can acquire new members during the time it evolves, Expressions and Manifestations are identified with a certain state achieved at a particular point in time. Therefore there is in general no single Expression or Manifestation representing a complete serial work, unless the serial work has ended.

Serial Works may or may not have a plan for an overall expression.

The retrospective reprinting of all issues of a Serial Work at once, in the form of a monograph, is regarded to be another member of the F1 Work, which contains the Serial Work and the Work realised in the monograph. This does not make the monograph part of the Serial Work.

F18 (see these examples under F56 now)

Examples:

the periodical entitled ‘The UNESCO Courier’, ISSN ‘0041-5278’

the periodical entitled ‘Courrier de l’UNESCO’, ISSN ‘0304-3118’ [French edition of the periodical titled ‘The UNESCO Courier’, ISSN ‘0041-5278’]

the series entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1843’ [a monograph series comprising volumes that were published from 1920 on, and some of which were reprinted, with different physical features and rearranged in a different order, from 1968 on, in a distinct series also entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1770’]

In First Order Logic:

$F18(x) \Rightarrow F1(x)$

Properties: R11 has issuing rule (is issuing rule of): E29 Design or Procedure

R84 has member (is member of)

Domain: F56 Container

Range: F3 Manifestation

Subproperty of: Outside of CIDOC CRM Scope {SIG, some discussion of using “is type of”}}

Quantification: many to many (0,n:0,n)

Scope note: This property associates an instance of F3 Manifestation with an instance of F56 Container that it appears in. The property groups instances of manifestations together into a single published container product. Examples include serials of all types that contain articles, such as journals and newspapers, as well as monographic series.

An instance of F56 Container is normally related to at least one instance of F3 Manifestation.

R84

Examples:

The newspaper ‘The Guardian’, ISSN ‘0261-3077’ (F56) has member the 8 September 2024 issue (F3). [a newspaper issue which is an aggregate of multiple articles]

The 8 September 2024 issue of the newspaper ‘The Guardian’, ISSN ‘0261-3077’ (F56) has member ‘Paris Paralympics 2024: A closer look – in pictures’ (F3).
[https://www.theguardian.com/sport/gallery/2024/sep/08/paris-paralympics-2024-a-closer-look-in-pictures]

‘IFLA Series on Bibliographic Control’ (F56) has member ‘Functional Requirements for Authority Data’, published in 2009, ISBN ‘978-3-598-24282-3’ (F3). [it is vol. 34 in the series]

‘Cataloging and classification quarterly’, ISSN ‘0163-9374’, a journal published by Taylor & Francis (F56) has member the special issue entitled ‘User Studies in Bibliographic Data and Systems: Insights and Applications’, guest editor: Tanja Merčun (F3). [it constitutes combined issues 3-4 of volume 62, published in 2024, which is an aggregate manifestation consisting of 11 articles]

‘Cataloging and classification quarterly’, ISSN ‘0163-9374’, a journal published by Taylor & Francis (F56) has member Volume 59, issue 1 published in 2021 (F3). [an aggregate manifestation consisting of 5 articles]

R84

The article ‘Extending the LRM Model to Integrating Resources’ by Trond Aalberg, Edward O’Neill & Maja Žumer (F3) is member of ‘Cataloging and classification quarterly’, ISSN ‘0163-9374’, a journal published by Taylor & Francis (F56). [In volume 59, issue 1, pages 11–27. https://doi.org/10.1080/01639374.2021.1876802]

‘Le langage’ by Joseph Vendryes, published in Paris in 1921 by La Renaissance du livre (F3) is member of the series entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1843’. [a monograph series comprising volumes that were published from 1920 on, and some of which were reprinted, with different physical features and rearranged in a different order, from 1968 on, in a distinct series also entitled ‘L’évolution de l’humanité’, ISSN ‘0755-1770’ published by Albin Michel] [Volume 3 in the series, https://fr.wikipedia.org/wiki/L%27%C3%89volution_de_l%27humanit%C3%A9]

In First Order Logic:

R84(x,y) ⇒ F56(x)

R84(x,y) ⇒ F3(y)

R85 has editor (is editor of)

Domain: F56 Container

Range: E39 Actor

Quantification: many to many (0,n:0,n)

Scope note: This property associates an instance of E39 Actor with an instance of F56 Container that is edited by that actor. An editor is an actor responsible for the selection and arrangement of the Manifestations that appear in a Container. That is, the editor selects/accepts and orders the articles in a journal or journal issue, or the articles in a newspaper, or the publications in a monographic series. The editor responsible for a particular issue of a journal, a guest editor or special issue editor, is often not the same person as an editor responsible for the journal as a whole.

The actor or actors that edited a particular instance of F56 Container may be unknown or unrecorded.

R85 (full path)

This property is equivalent to the path: F56 Container. P16i was used for: E7 Activity. P14 carried out by: E39 Actor with P14.1 has type: E55 Type, where the type of actor role is to be the editor of the serial.

Full path: F56 Container. P16i was used for: E7 Activity. P14 carried out by: E39 Actor (with P14.1 has type: E55 Type = {editor}) {this is more a role for the E39, not a type of E39} {correct name of P14.1 to in the role of}

Examples:

‘Cataloging and classification quarterly’, ISSN ‘0163-9374’, a journal published by Taylor & Francis (F56) has editor Heather Moulaison Sandy (E21).

In First Order Logic:

$R85(x,y) \Rightarrow F56(x)$

$R85(x,y) \Rightarrow E39(y)$

$R85(x,y) \Leftrightarrow F56(x) \wedge E39(y) \wedge (\exists wz)\,[E7(z) \wedge E55(w) \wedge P16i(x,z) \wedge P14(z,y,w)]$ {SIG said okay}

R85

It is a shortcut of a full path that depends on a .1 property of the role of the Actor, P14.1 with a specific role

How to describe this path

- in the text
- In the full path {CEO and WS working on an issue that will cover this}
- In the FOL {SIG said okay}

{Follow issue 650: modifies .1 template, looks for examples of .1 properties}

R86 has responsible agent (is responsible for)

Domain: F56 Container

Range: E39 Actor

Quantification: many to many (0,n:0,n)

Scope note: This property associates an instance of E39 Actor with an instance of F56 Container that the actor is responsible for. Responsible agents of Containers include publishers, issuing bodies, sponsoring associations, etc. **The agent(s) responsible for the Container are distinct from the creators of the works and expressions whose manifestations are members of the container manifestation.**

The actor or actors that are responsible for a particular instance of F56 Container may be unknown or unrecorded.

R85 (full path and .1 property)

This property is equivalent to the path: F56 Container. P16i was used for: E7 Activity. P14 carried out by: E39 Actor with P14.1 has type: E55 Type, where the type of actor role is some form of responsibility of the serial. {correct name of P14.1 to in the role of}

Full path: F56 Container. P16i was used for: E7 Activity. P14 carried out by: E39 Actor (with P14.1 has type: E55 Type = {responsible agent})

Properties: R86.1 has type: E55 Type

This property allows for specifying the particular type of responsibility relationship (publisher, sponsoring association, issuing body, funding body) that holds between an instance of E39 Actor and an instance of F56 Container.

R85

Examples:

‘Cataloging and classification quarterly’, ISSN ‘0163-9374’, a journal published by Taylor & Francis (F56) has responsible agent Taylor & Francis (F11) with has type {publisher} (E55).

‘IFLA Journal’, ISSN ‘0340-0352’ a journal published by Sage Journals on behalf of the International Federation of Library Associations and Institutions (F56) has responsible agent Sage Journals (F11) with has type {publisher} (E55).

The International Federation of Library Associations and Institutions (F11) is responsible for ‘IFLA Journal’, ISSN ‘0340-0352’ (F56) with has type {sponsoring association}.

In First Order Logic:

R86(x,y) ⇒ F56(x)

R86(x,y) ⇒ E39(y)

R86(x,y) ⇔ F56(x) ∧ E39(y) ∧ (∃wz) [E7(z) ∧ E55(w) ∧ P16i(x,z) ∧ P14(z,y,w)] {SIG said okay}

R85

Renamed since last presented (was: has creator) since it isn't really about the initial creation of the container, but about ongoing responsibility roles for continuing it

Similar structure to R84, except that the type of responsibility varies

So it has a .1 under a path that uses a .1 that is similar in meaning

{better name for .1: in the role of, to match correct name of P14.1}

R87 has related container (is container related to)

Domain: F56 Container

Range: F56 Container

Subproperty of: E70 Thing. P130 shows features of (features are also found on): E70 Thing

Quantification: many to many (0,n:0,n)

Scope note: This property associates an instance of F56 Container with another instance of F56 Container that is related to it. This property can express that one serial may derive from another. Examples include language editions, earlier/later titles, splits, mergers, supplements and more generally borrowing of an idea.

This is a high-level property that captures the relationship between two instances of F56 Container. It is expected that this property will be subtyped in applications. **This property is not necessarily transitive. It is generally not symmetric. It is irreflexive.**

R87

Properties: R87.1 has type: E55 Type

This property allows specifying the particular type of relationship between the two Containers, such as expressing the type of derivation. Most subtypes are asymmetric.

In First Order Logic:

$R87(x,y) \Rightarrow F56(x)$

$R87(x,y) \Rightarrow F56(y)$

$R87(x,y) \Rightarrow P130(x,y)$

$R87(x,y,z) \Rightarrow R87(x,y) \wedge E55(z)$

$\neg R87(x,x)$

R87, examples

Examples:

The periodical entitled ‘Courrier de l’UNESCO’ (ISSN ‘0304-3118’) (F56) has related container the periodical entitled ‘The UNESCO Courier’ (ISSN ‘0041-5278’) (F56) with has type {alternative language} (E55).

The periodical entitled ‘Colloids and surfaces’ (ISSN ‘0166-6622’) (F56) has related container the periodical entitled ‘Colloids and surfaces. A, Physicochemical and engineering aspects’ (ISSN ‘0927-7757’) (F56), with has type {split into} (E55).

The periodical entitled ‘Colloids and surfaces’ (ISSN ‘0166-6622’) (F56) has related container the periodical entitled ‘Colloids and surfaces. B, Biointerfaces’ (ISSN ‘0927-7765’) (F56), with has type {split into} (E55).

R87, examples, continued

The periodical entitled ‘Animal research’ (ISSN ‘1627-3583’) (F56) has related container the periodical entitled ‘Animal’ (ISSN ‘1751-7311’) (F56), with has type {merged into} (E55).

The periodical entitled ‘Animal science’ (ISSN ‘1357-7298’) (F56) has related container the periodical entitled ‘Animal’ (ISSN ‘1751-7311’) (F56), with has type {merged into} (E55).

The periodical entitled ‘Reproduction nutrition development’ (ISSN ‘0926-5287’) (F56) has related container the periodical entitled ‘Animal’ (ISSN ‘1751-7311’) (F56), with has type {merged into} (E55).

The periodical entitled ‘Animal research’ (ISSN ‘1627-3583’) (F56) has related container the periodical entitled ‘Animal science’ (ISSN ‘1357-7298’), with has type {merged together} (E55).

The periodical entitled ‘Applied economics quarterly’ (ISSN ‘1611-6607’) (F56) has related container the periodical entitled ‘Applied economics quarterly. Supplement’ (ISSN ‘1612-2127’) (F56), with has type {supplement} (E55).

R87

Renamed to make distinct forwards and inverse names, since generally not symmetric

.1 property to express the relationship, similar to R56 between F12 Nomen

Properties of F56 Container still needed

Something to replace R11 has issuing rule R: E29 Design or Procedure

(Note that PRESSoo did not used R11, but had classes Z10 Sequencing Pattern, Z12 Issuing Rule and Z5 Issuing Rule Change, and 13 related properties for this information)

Indicating the intended audience of the Container

Indicating the general topic of the articles in the Container