

MINUTES OF JANUARY 2020 MEETING
RDA Steering Committee
Asynchronous Meeting
6-9 January 2020

Attending: Catherine Amey, Oceania representative
Linda Barnhart, RSC Secretary
Renate Behrens, Europe representative
Thomas Brenndorfer, North America representative
Ahava Cohen, Europe back-up representative
Gordon Dunsire, Technical Team Liaison Officer
Kathy Glennan, RSC Chair
James Hennelly, Director, ALA Digital Reference
Ebe Kartus, Wider Community Engagement Officer
Honor Moody, RDA Example Editor
Daniel Paradis, Translations Team Liaison Officer

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Executive Session

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RDA Discussion Topics

209 SES Project

209.1 The RDA Steering Committee discussed the treatment and accommodation of string encoding schemes (SESs) during its 2019 meeting in Santiago (agenda item 192.6). It agreed to test an approach that moves the content of SESs out of the element pages to an area of the Toolkit where they can be better maintained. A [briefing paper](#), drafted by Gordon Dunsire, presented the results of the test so far and made recommendations for the next stages of development. The RSC was asked to decide between three options and weigh in on the five recommendations outlined in the briefing paper.

Option 1: Completely remove the SES boxes, together with associated Condition boxes and Examples boxes, from the element instructions.

Option 2: Develop the beta Toolkit with the approach used in the test.

Option 3: Retain the current approach in the beta Toolkit.

209.2 The RSC unanimously supported Option 1. Key arguments in favor of this approach included:

- SES content (value selection and punctuation patterns) is more appropriately shifted to Policy Statements, as an SES pertains to a specific community

- Moving SES text removes the prescriptiveness of RDA and returns it to a library's choice of policies
- A re-location of SES instructions is less disruptive now than later. Training materials have not been developed yet, and people are not yet actively and regularly looking at the beta RDA instructions
- This re-location would reduce the length of some of the longest pages in the beta Toolkit
- There are concerns about the scalability of SESs that could raise problems if contained in RDA itself
- With testing of Policy Statement display and functionality expected in the April release, incorporating SES re-location as part of that test could be undertaken
- Shifting this content is the best strategy in the long term and avoids multiple interim steps; taking this action is "future-proofing."

209.3 There was general agreement with the five recommendations in the briefing paper, however it was noted that not all now apply with the endorsement of Option 1. There was strong support for using (and defining) the term "base access point" within instructions.

ACTION ITEM: Dunsire will edit the appropriate appellation element files in the CMS to implement Option 1 and applicable recommendations. It is not expected that this will happen in time for the next Toolkit release.

209.4 The RSC recognized the practical issue of getting the SES content into Policy Statements and will be working with the Policy Statement writers. Dunsire described a spreadsheet from the British Library that can be edited to include SES links for relevant options, which may make the process easier.

ACTION ITEM: Dunsire and other RSC members will provide information and assistance to the Policy Statement writers to support the re-location of SES instructions.

210 RDA Content Elements Follow-up

210.1 This agenda item is a follow-up to a discussion held at the RSC meeting in Santiago (agenda item 184). The original recommendations in the Santiago briefing paper with the same title have been revised as a result of discussion and further consultation. [This follow-up briefing paper](#) makes recommendations for developing expression "content" elements to conform to the RDA implementation of the treatment of aggregates in the IFLA Library Reference Model (LRM). The RSC was asked to approve five recommendations.

210.2 The RSC held an extensive discussion via Basecamp and via commenting within the briefing paper and raised questions both about concepts and about detailed wording. Dunsire posted a new document that clarified some appendices, as well as new definitions and instructions for *colour content* and *sound content*. A

substantive comment from the Bibliothèque nationale de France was posted by Behrens.

- 210.3 **Recommendation 1:** Add specific optional instructions for representative expression elements for aggregating works. Three sub-recommendations were also articulated here. The RSC will continue to work on this recommendation until there is broader understanding and buy-in for this approach. The topic will be raised again at the April asynchronous meeting.
- 210.4 **Recommendation 2:** Relocate the content elements to the Manifestation entity. Sub-recommendations for each of the five specific elements were also articulated here.
- Recommendation 3:** Add an element for *Expression: colour*
- Recommendation 4:** Remove *Expression: details of colour content* and *Expression: details of illustrative content* from RDA.
- Recommendation 5:** Update relevant Toolkit Guidance content to reflect the changes in content elements and the use of representative expressions for aggregating works.
- The RSC generally supported recommendations 2-4 and the relevant parts of 5. Dunsire suggested that it is important to apply these recommendations as soon as possible because of the impact on translators and policy statement writers.
- ACTION ITEM:** Dunsire will adjust the RDA text in the CMS to accommodate these recommendations in time for the next Toolkit release.

211 RDA Implementation Scenarios

- 211.1 The RSC was asked to approve the wording of the new RDA Implementation Scenarios guidance chapter as published on the development site. Discussion points included questions about concepts, suggestions for additional links, recommendations for changed wording, and ideas for the rearrangement of text for a better flow between introductory and detailed material. Dunsire provided a revised draft on 8 January for further comment. Discussion then ensued about the label for Scenario C and the alignment of appellation elements with recording methods. Behrens asked about defining a target audience for this and other guidance chapters. Dunsire provided updated drafts on 9 and 10 January that incorporated RSC suggestions. The RSC approved the [10 January version](#).
- ACTION ITEM:** Dunsire will update the CMS using the wording in the 10 January version in time for the next Toolkit release.

RSC Administrative Topics

212 Review of Action Items and Reminder of Pending Work

- 212.1 At its Santiago meeting, the RSC indicated that the review of action items should be a standing agenda item at all RSC meetings. RSC members reviewed and updated two spreadsheets linked in Google Drive that listed tasks assigned from the September 2019 asynchronous meeting and the October 2019 in-person meeting.
- 212.2 No items were put forward as a “reminder of pending work” or to prioritize for action by the RSC.

213 Other Business

- 213.1 Behrens asked the RSC about topics and priorities for the IFLA Satellite meeting “RDA in Europe” in August 2020. Application profiles will be a main focus. No other suggestions or priorities were offered.

214 Review of Meeting 2020 January

- 214.1 This discussion item provided an opportunity for RSC members to evaluate this asynchronous meeting and suggest improvements.
- 214.2 There were a number of positive comments about the engagement of members and the overall structure and process for the meeting. A suggestion was made to add a subscription to each page for each member so that regular notifications will be received.
- 214.3 A concern about managing the number and complexity of the topics was raised. Finding a good balance between complex or difficult agenda items and more routine or pro forma agenda items is desirable. Some topics may not be able to be resolved within a single meeting especially if more consultation is needed. Responses to complex topics may take time to assess and may necessitate additional consultation. Brenndorfer commented that “time to evaluate and reflect should be commensurate with the scale of the issue.” The group was reminded that if more time is needed, it is helpful to specify how much time is needed and why. The group was also reminded to suggest improvements to wording when providing feedback. The RSC was urged to continue its efforts in communication through its actions and documents during this pre-training phase of RDA.

Approved by the RSC
25 February 2020

Appendix to the Public Minutes

Agenda item 209: SES Project

String encoding schemes in RDA Toolkit

Gordon Dunsire, RSC Technical Team Liaison Officer
Discussion paper / December 2019

Background

A string encoding scheme (SES) is “A set of string values and an associated set of rules that describe a mapping between that set of strings and a value of an element”.

An SES specifies a set of strings and rules for assembling them into a single string that is the value of a structured description of specific kinds of RDA element.

Two distinct kinds of string can be specified:

- The value of another RDA element recorded as an unstructured description, structured description, or identifier.
- A fixed text string or boilerplate value.

The ‘rules’ for mapping the component strings to the final value string may include:

- The component strings and the order in which they are to be assembled. This may be termed a **value selector**.
- Punctuation or other delimiters of one or more of the component strings. This may be termed a **punctuation pattern**.

An example of a value selector from **Work: authorized access point for work** is given in Figure 1.

OPTION

Record a value that includes, in this order:

1. a value of Agent: authorized access point for agent for an agent who creates the works
2. the conventional collective title Works

Treat compilations that are complete at the time of publication as complete works.

Figure 1: Value selector displayed as a standard option in beta Toolkit

The value selector gives the strings and their order of assembly:

- 1: is a string that is the value of another element.
- 2: is a fixed string “Works”.

No explicit punctuation pattern is given, but a common pattern is to insert a stop-space between the two component strings. This pattern might be presented as “Value 1. Value2”.

SEs are often recorded and maintained separately from the instructions that use them. For example, ISBD presents a set of “punctuation patterns” that includes the labels of component elements at the beginning of the stipulations for each area of description. The original RDA Toolkit specifies punctuation patterns for specified elements in *Appendix E: Record syntaxes for access point control*, as well as within the content of the instructions.

Beta Toolkit

The original RDA Toolkit contains several value selectors and punctuation patterns.

In the beta Toolkit, value selector specifications have been moved to instructions for authorized and variant access point elements. There are more specifications for Person and Corporate Body than other entities, and none at all for new entities (Agent, Collective Agent, Timespan). RDA Entity is unlikely to require any SEs, and Nomen is out of scope for access point construction.

The original Toolkit has examples of the same value selector used with different punctuation patterns. This results in two separate SEs.

The ultimate number of combinations of value selectors and punctuation patterns is dependent on the communities and applications that use RDA metadata. This presents a challenge to the future development and maintenance of RDA as a tool for constructing access points and other structured descriptions in an international context.

The RDA Steering Committee discussed the treatment and accommodation of SEs during its 2019 meeting in Santiago, Chile. It was agreed to test an approach that moves the content of SEs out of the element pages to an area of the Toolkit where they can be better maintained. The content remains available in an element page using a link or an expandable box. A similar approach is already in used for maintaining and displaying examples in the new Toolkit.

This paper presents the results of the test so far and makes recommendations for the next stages of development.

Scaling issues

There are no global SEs that are used by all libraries and cultural heritage organizations for all resources meeting specified conditions. The specification of an SE is dependent on the local application and is generally considered to be in the scope of a policy statement or application profile.

It is difficult to estimate the number of different value selectors that might be required to meet the needs of the wider international and cultural heritage communities. A difference in the selection of component strings or in their order requires a separate SES. A translation of a fixed component string does not require a separate SES.

Table 1 gives the numbers of selectors extracted for each entity.

Table 1: Number of value selectors used for access points for an entity

Entity	Value selectors
Corporate Body	65
Expression	5
Family	1
Manifestation	3
Person	10
Place	5
Timespan	10
Work	90

The numbers for Corporate Body and Work are inflated because the value selectors specify which instance of an entity is the source of a component string. For example, a value of **Corporate Body: preferred name of corporate body** may be filtered as pertaining to a broader/parent instance, an intermediary instance, or the instance being described.

It is also difficult to ascertain the number of different punctuation patterns that might be required. As well as the original Toolkit Appendix E, specific punctuation patterns may conform to international standards such as ISBD, national and language standards as recorded by IFLA, or specific application profiles and policies.

Table 2 shows the initial results from extracting punctuation patterns from the element instructions. Patterns are given explicitly and implicitly in the instructions.

Table 2: Number of punctuation patterns for each number of selected strings

Number of selectors	Number of patterns
1	2
2	4
2 +	2
3	4
3 +	2
4	1
5	1

The plus (+) indicates that there is an indeterminate repeat of a selector string in the pattern. For example, if a corporate body hierarchy spans more than two levels, there is an unspecified number of intermediary bodies between the corporate body being described and its top-level parent body.

The number of distinct SESs moved from the RDA instructions is well over 100. It is not easy to count them at this stage.

Toolkit element page

SESs mainly apply to elements for authorized and variant access points, in the context of instructions for constructing specific access points.

The use of any SES is optional.

There is no more than one RDA SES in each Toolkit option box.

Examples are tied to a specific (RDA) SES.

Figure 2 gives the generic components and their sequence in a new beta Toolkit option box.

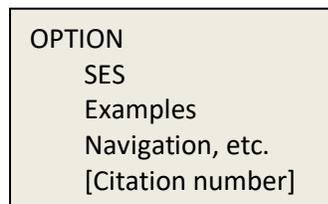


Figure 2: Components of an Option box

Potential display of SES

An SES can be displayed from the option block:

1. As a preview in the right rail. There should be sufficient depth in the preview pane to display the whole content of most SESs, but not all.
2. As an expandable box. This would be the same as for examples and provides maximum flexibility for display.

1. has the potential for screen clutter if policy statements are open.
2. uses the same approach as for examples, which have similar scaling issues. Only minor development of existing software and scripts is required to implement this option.

Recommendation 1: Configure the display of an RDA SES as an expandable box

Layout of access point elements

Access point, authorized access point, and variant access point elements have a standard layout that separates out instructions for the base of an access point from instructions for qualifying the base.

There are issues with the clarity of instructions that reference the output of applying 'related' instructions, for example, a variant access point that depends on the option that was chosen for an authorized access point. Many of these instructions appear in variant access point elements.

Variant access point elements use the name or title of the entity as the base. This blurs any distinction between preferred and variant names and titles.

There are two distinct categories of variant access point:

1. Access points that are variants for the same base as an authorized access point.
2. Access points that use a different base as an authorized access point.

Category 2 is not accommodated in the new Toolkit.

Note that category 2 should use both the instructions for authorized access point, and the instructions in category 1 for variant access point.

To avoid proliferation of value selectors, they should refer to the broader name/title or access point element where possible and leave selection of preferred/authorized to preliminary instructions (for the selection of base and qualifiers).

Element layout sections:

Access point

Select base: name/title element

Format base

General conditions/options

Qualifiers: list elements. Do not list specific designators (fixed text).

Data provenance

Authorized access point

Select base: preferred name/title element

Format base

Cross-reference: access point Format base

Conditions/options for authorized access point format

Qualify base

Conditions/options for authorized access point qualifiers

Data provenance

Variant access point

Select base 1: variant name/title element

Format base 1

Cross-reference: authorized access point Format base

Cross-reference: variant access point Format base 2

Qualify base 1

Cross-reference: authorized access point Qualify base

Select base 2: preferred name/title element

Format base 2

Conditions/options for variant access point format

Qualify base 2

Conditions/options for variant access point qualifiers Data provenance

This layout has been applied to the authorized access point and variant access point elements in the **Toolkit Development** site.

Recommendation 2: Apply a regular layout reflecting the base+qualifiers workflows for the construction of access points.

Terminology

The LRM discusses access points in the context of the Nomen entity and does not describe the construction of access points in any detail. The proposed layout of options in RDA access point elements follows FRAD: select a base for the access point; format the base if necessary; add qualifiers for various purposes.

The element page menu headings for the standard layout use the phrase ‘basis of access point’. This is slightly ambiguous, as it may imply that a qualifier must be added to form the access point. The FRAD terminology of ‘base access point’ is better at indicating that it may be a full access point without adding qualifiers.

Recommendation 3: Use ‘base access point’ instead of ‘basis of access point’ in RDA Toolkit headings and instructions.

Categorization of access point qualifiers

Some options for adding qualifiers to access points for some elements are assigned one of the categories:

- to distinguish the access point from a value of an access point for another entity
- to assist in the identification of the entity
- to conform to a string encoding scheme

The categories are derived from the wording of the current Toolkit; the last is a catch-all and is a tautology because all access points conform to an SES.

The categories are even less useful in the treatment of SESs proposed in this document.

A qualifier can only be assigned to one category, but local applications may want to use the option under another category. It is better to devolve all categorization of qualifiers to policy statements and application profiles.

Recommendation 4: Remove the explicit categorization of access point qualifiers by removing the headings in access point elements, but retain the list of reasons for qualification to support context and cataloguer’s judgement.

Layout of string encoding scheme box

Figure 3 shows a draft layout and boilerplate for an SES for an authorized access point for Work.

STRING ENCODING SCHEME

Record a value that includes, in this order:

1. a value of Agent: access point for agent
2. a value of a base access point for a work

Apply the string punctuation pattern:

"value 1. value 2"

Join each of the values with a full stop followed by a space.

This SES is the first one given in the example in the Appendix.

Recommendation 5: Apply a standard layout and boilerplate for the value selector and punctuation

Figure 3: Draft layout and boilerplate for an SES box

pattern components of an SES.

Other issues from the test

The example in the Appendix illustrates several issues arising from this approach.

Both of the Condition boxes shown have only SES options, some with and some without accompanying examples. This occupies a significant amount of screen real estate.

There is no means of distinguishing the Option boxes. The only way of doing this is to expand the SES box. It is not feasible to label either the Option box or the SES box.

The overall length of the display is significantly reduced. The seven lines of Figure 3 are collapsed to a single line with an icon/button.

The retention of an Option box for each SES allows a boilerplate or simple Policy Statement to be applied: Use this option = apply this string encoding scheme.

Policy Statement writers and Translators have been informed of the element pages that are likely to change in layout and have been asked to avoid processing these files for the time being.

RSC needs to decide on the strategy for future development of SESs in the context of Policy Statements and application profiles to allow early release of the affected content to writers and translators.

The test offers three options for further development:

Option 1: Completely remove the SES boxes, together with associated Condition boxes and Examples boxes, from the element instructions.

The SES boxes would retain an individual URL so that each can be referenced from within the content of a Policy Statement or from the SES column of an RDA application profile.

This option removes the major part of the screen display for access point elements, as indicated by Table 1.

This option requires significant development of the CMS data and management infrastructure but provides the best future-proof path.

Option 2: Develop the beta Toolkit with the approach used in the test.

The impact on Toolkit users can be tested while the Toolkit is in beta. It is essential to include a facility to turn on or off the expansion of an SES box for a session, as with Example boxes.

This option requires minor development of the CMS software, and further development will be required if new RDA communities require additional SESs.

This option allows quick addition of Policy Statements for SESs.

Variation: develop a Tooltip display for the SES box.

Option 3: Retain the current approach in the beta Toolkit.

The immediate issue with punctuation pattern displays can be resolved by replacing the SES box button in an Option box with the hard-coded information given in Figure 3.

Other inconsistencies and gaps found in the test can be applied to the instructions in the same way. This will result in a significant increase in the length of some element pages.

This option allows quick addition of Policy Statements for SESs.

Options and recommendations

Option 1: Completely remove the SES boxes, together with associated Condition boxes and Examples boxes, from the element instructions.

Option 2: Develop the beta Toolkit with the approach used in the test.

Option 3: Retain the current approach in the beta Toolkit.

Recommendation 1: Configure the display of an RDA SES as an expandable box

Recommendation 2: Apply a regular layout reflecting the base+qualifiers workflows for the construction of access points.

Recommendation 3: Use 'base access point' instead of 'basis of access point' in RDA Toolkit headings and instructions.

Recommendation 4: Remove the explicit categorization of access point qualifiers by removing the headings in access point elements but retain the list of reasons for qualification to support context and cataloguer's judgement.

Recommendation 5: Apply a standard layout and boilerplate for the value selector and punctuation pattern components of an SES.

Appendix: Examples of proposed Toolkit layout

Element: Work: authorized access point for work

Single works

CONDITION	OPTION
A work is a	String encoding scheme
A work is d	Example

CONDITION
A work is a <i>single work</i> .
A work is created by two or more agents in collaboration.

OPTION
String encoding scheme
Example

OPTION
OPTION
String encoding scheme

=====

Agenda Item 210: RDA Content Elements Followup

RDA content elements

Gordon Dunsire, RSC Technical Team Liaison Officer, December 2019

Abstract

This paper makes recommendations for developing expression “content” elements to conform to the RDA implementation of the treatment of aggregates in the IFLA Library Reference Model (LRM). The recommendations include the refinement of the utility of representative expression elements for aggregating works.

The recommendations are based on a briefing paper, with the same title, discussed by the RDA Steering Committee during and after its meeting in Santiago, Chile. The recommendations of the briefing paper have been revised as a result of discussion and further consultation.

Background

Aggregates model

Figure 1 shows the basic model for aggregates in the IFLA Library Reference Model:

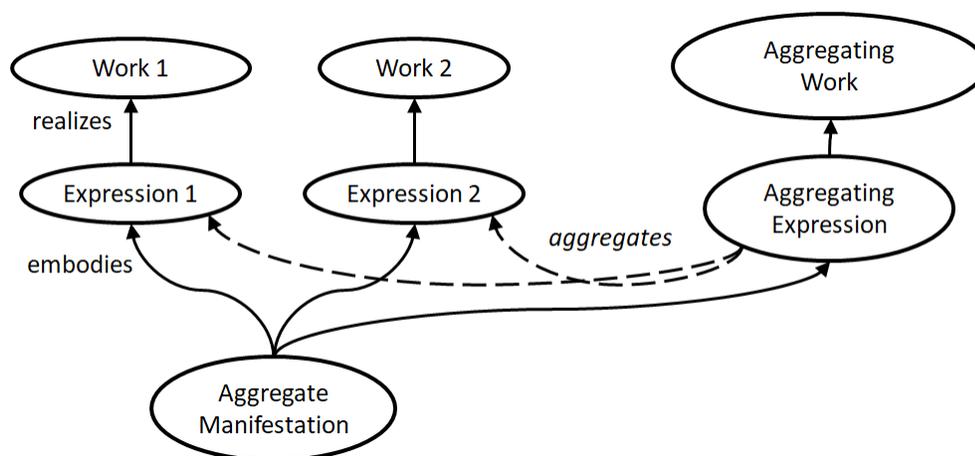


Figure 1: Basic model for aggregates

Solid arrows indicate direct relationship elements; dashed arrows indicate shortcut relationship elements.

An aggregate manifestation embodies two or more distinct expressions¹ and an aggregating expression that realizes the plan for aggregating the other expressions.

An aggregating expression is related to an expression that is aggregated by the shortcut relationship element **Expression: aggregates**. The full relationship is the chain from aggregating expression to aggregate manifestation to expression that is aggregated:

- Aggregating Expression [has] **manifestation of expression** Aggregate Manifestation
- Aggregate Manifestation [has] **expression manifested** Expression X

The shortcut omits a description of the aggregate manifestation and a direct relationship between the aggregate manifestation and an expression that is aggregated. The latter usage reduces duplication if the same aggregating expression is embodied in multiple manifestations: the aggregate manifestation is described and related only to the aggregating expression.

The recording of separate entities for the expressions or works embodied by an aggregate manifestation is optional. An application can choose to record any or all of the aggregating expression and work, or any or all of the expressions that are aggregated and their works.

Contributor relationship elements

There are use cases for associating an agent who creates an expression or work with the aggregate manifestation, without recording the intermediary expression or work.

The original ‘contributor’ relationship designators have been recast as shortcut relationship elements in the beta Toolkit. A shortcut is a linked chain of two or more relationship elements that omits the intermediary entities.

For example, an aggregate manifestation can be directly associated with an agent who creates an expression that is aggregated using **Manifestation: contributor agent to aggregate**. This is a shortcut for:

1. Aggregate Manifestation [has] **expression manifested** Expression 1
2. Expression 1 [has] **creator agent of expression** Agent 1

Sub-types of this shortcut relationship element accommodate specific kinds of expression and work that are based on the RDA Content Type vocabulary encoding scheme (VES). For example, **Manifestation: contributor agent of music** is restricted to intermediary expressions that have content type ‘notated music’, ‘performed music’, or ‘tactile notated music’. Any of these indicates an expression of a ‘musical work’. This ties references in the original Toolkit to ‘musical work’, ‘moving image work’, etc. to the RDA/ONIX Framework as a set of ‘soft’ categories for work that are defined in the Glossary but are not a formal VES.

¹ In some cases, there is only one expression that is aggregated. For example, the plan may be to aggregate an ‘annual top 5’ of expressions; if no expressions are published in a particular year, the aggregate is not published, if only one expression is published that year, the ‘aggregate’ is published.

Recasting the original ‘contributor’ elements to conform to the aggregates model required changing the domain from Expression to Manifestation, as well as clarifying the definitions and amending the labels for consistency.

Content elements

The following original Toolkit elements have not yet been recast to align them with the aggregates model:

- Expression: accessibility content
- Expression: colour content
 - Expression: details of colour content
 - Work: colour content of representative expression
- Expression: illustrative content
 - Expression: details of illustrative content
- Expression: sound content
 - Work: sound content of representative expression
- Expression: supplementary content

The current definitions of the elements are given in Appendix 1.

Most of the content elements have the context of an augmentation aggregate of two or more distinct expressions, with an assumption that one or more expressions are ‘primary’ and the rest are ‘supplementary’. Some of the elements are also applicable to a collection aggregate, where all the expressions are more or less equal.

Expression: content type is a fundamental element for categorizing a distinct expression. The content elements can be aligned with all or some of the RDA Content Type terms, as shown in Table 1.

This provides the basis of two categories of content element:

- Elements that indicate a category of content (i.e. category of expression) that is not specifically based on content type:
 - accessibility content
 - supplementary content
- Elements that are restricted to a subset of content types:
 - colour content
 - illustrative content
 - sound content

The content elements are redundant in the context of describing an expression that is aggregated because the expression can be assigned a content type or category of expression that conveys the same information at a finer level of granularity.

The elements represent a range of semantics with respect to the RDA ontology.

“accessibility content” and “supplementary content” record values that may be taken from a VES. The context is too wide to justify the development of RDA VESs for these elements.

“illustrative content” records values from a VES, and RDA provides a VES. The data are only relevant to expressions with ‘image-like’ content types, including tactile images.

“colour content” records values from a VES, and RDA provides a VES. The data are only relevant to expressions with ‘image’ and ‘text’ content types, excluding tactile images and text. “details of colour content” is used for unstructured descriptions and colour terms and should be removed. A new element for ‘colour’ can record values from a VES. The context is too wide to justify the development of an RDA VES for this element.

The ‘sound content’ values of ‘sound’ and ‘silent’ correspond to a content type of performed music, sounds, or spoken word, or the absence of these content types, respectively. These values are a ‘dumbing-up’ or lossy indicators of the specific content types. An additional factor is that this element is currently the basis of a representative expression element, so there is some utility for a Work element for this characteristic. This element only has utility in the context of an aggregate, as a sound expression augmenting a primary expression.

Aggregating expression

The RDA term ‘aggregating expression’ is defined as: An expression that is the realization of an aggregating work that selects and arranges expressions of one or more works and embodies them in an aggregate.

The definition refers only to the context of the aggregating work.

The RDA term ‘aggregating work’ is defined as: A work that is a plan to select and arrange one or more expressions of one or more works and embody them in an aggregate.

The definition does not refer to an aggregating expression.

The definitions reflect the LRM’s treatment of aggregating works and expressions. The LRM defines an aggregating expression in terms of the aggregating work. The LRM uses ‘aggregating expression’ and ‘expression of an aggregating work’ interchangeably. The only additional information about an aggregating expression is given in the scope note for LRM-R25 (was aggregated by/aggregated):
“Unlike the whole-part relationship between *expressions*, the *expressions* selected to appear together in the aggregate *manifestation* do not become components of the aggregating *expression*. Furthermore, the relationship between these *expressions* is not an inherent feature of the *works* that these *expressions* realize, and thus it does not hold in other *expressions* of those *works*.”

An aggregating expression does not accumulate or inherit the characteristics of the expressions that are aggregated.

An aggregating expression that ‘aggregates’ a set of expressions that are English texts does not itself have English as a language of expression or text as a content type.

No attribute elements for an expression are applicable to an aggregating expression because an aggregating expression has no intrinsic characteristics that are worth recording.

The general element **Expression: note on expression** can be used as a catch-all for applications. A description of an aggregating expression must conform to the minimum description of an expression:

- At least one appellation element
- **Expression: work expressed** for the aggregating work
- **Expression: manifestation of expression** for the aggregate manifestation.

The direct (primary) relationship elements for a minimum description are applicable to an aggregating expression.

The only other element that is applicable to an aggregating expression is the shortcut relationship **Expression: aggregates**.

This results in the complete structure for a metadata description set for an aggregating expression shown in the diagram.

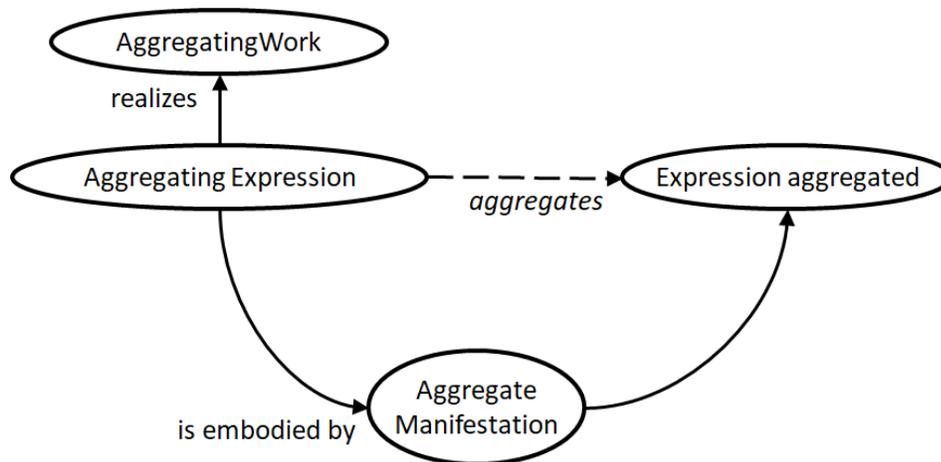


Figure 2: Complete shell for aggregating expression

Representative expression of an aggregating work

An aggregating work is realized by one and only one aggregating expression. This means that the aggregating expression is the only possible representative expression for an aggregating work.

An aggregating expression has no utility as a representative expression because it has no characteristics that are useful for identifying or distinguishing its aggregating work. Therefore, the representative expression elements for an aggregating work have no source of values unless special instructions are added.

Recommendation 1: add specific optional instructions for representative expression elements for aggregating works.

Values from single expressions that are aggregated

The following representative expression elements can record values taken from one or more of the expressions that are aggregated:

- Work: aspect ratio of representative expression
- Work: content type of representative expression
- Work: date of capture of representative expression
- Work: date of representative expression
- Work: intended audience of representative expression
- Work: key of representative expression
- Work: language of representative expression
- Work: medium of performance of choreographic content of representative expression
- Work: medium of performance of musical content of representative expression
- Work: place of capture of representative expression
- Work: projection of cartographic content of representative expression
- Work: scale of representative expression
- Work: script of representative expression

Recommendation 1.1: Add a condition and option template to the Recording section of each of the representative expression elements for single expressions that are aggregated.

Condition: A work is an aggregating work.

Option: Record a value of an [Expression: language of expression] for one or more of the expressions that are aggregated.

Option: Record a value of an Expression: language of expression that is common to all of the expressions that are aggregated.

Values from the cumulated content of expressions that are aggregated

The following representative expression elements can only record a cumulation of values taken from all of the expressions that are aggregated:

- Work: duration of representative expression
- Work: extent of representative expression
-

Recommendation 1.2: Add a condition and option template to the Recording section of each of the representative expressions of cumulated aggregated content.

Condition: A work is an aggregating work.

Option: Record a value that is a cumulation of values of [Expression: duration of expression] for each of the expressions that are aggregated.

Values from the shortcut content of expressions that are aggregated

The following representative expression elements record a value from an aggregate manifestation shortcut content element:

- **Work:** colour content of representative expression
- **Work:** sound content of representative expression
-

Recommendation 1.3: Add a condition and option template to the Recording section of each of the representative expressions of shortcut aggregate content elements.

Condition: A work is an aggregating work.

Option: Record a value of [Manifestation: colour content] for a manifestation that realizes an aggregating work.

Element domain

The content elements have utility as shortcuts from an aggregate manifestation to an indication of the content type or category of an expression that is aggregated.

The content and contributor elements are used when an expression that is aggregated is not recorded as a separate description set. The elements record values from an expression or its relationships without the overhead of a minimal description of an expression.

The advantages in relocating the content elements to the manifestation entity are:

- There is consistency with the contributor element shortcuts.
- The overhead of a minimal description of an aggregating expression is avoided.

The advantage of keeping the content elements with the expression entity is:

- The data for an aggregating expression are recorded once, irrespective of the number of manifestations of the aggregate.

It is much more likely for an aggregating work and expression to be embodied by a single manifestation than in multiple manifestations, because only reproductions can be made. Any change in the expressions that are aggregated requires a new aggregating work: replacement of a single poem in an anthology results in a new aggregating work.

Optimizing the content and contributor shortcuts for the description of an aggregate manifestation is shown in Figure 3.

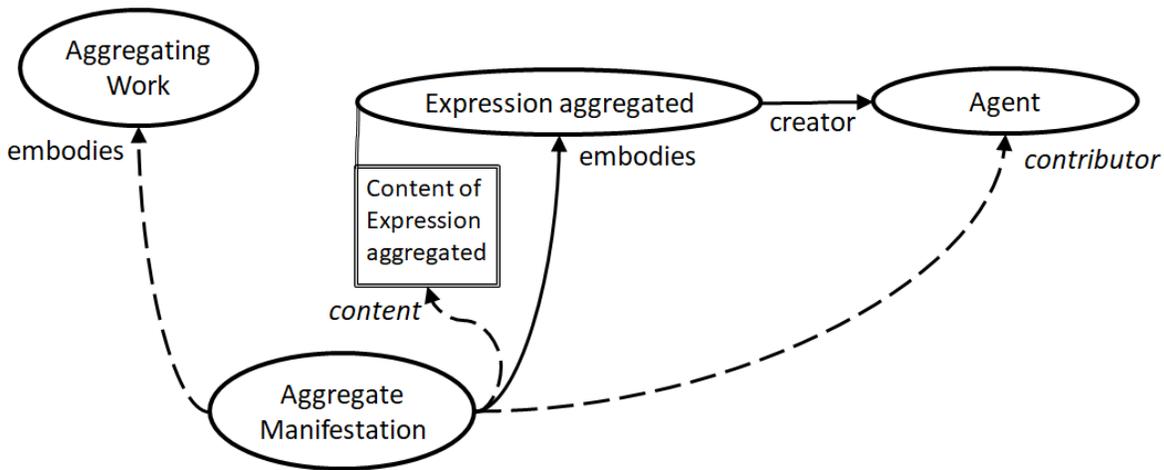


Figure 3: Shortcuts for aggregate

Recommendation 2: Relocate the content elements to the Manifestation entity.

supplementary content

Recommendation 2.1: Redefine Expression: supplementary content as a Manifestation shortcut.

Shortcut:

1. **Manifestation: expression manifested** [for an expression that is aggregated]
2. **Expression: category of expression** [for a category of supplementary content taken from an unspecified VES]

Definition: An indication of the kinds of expression that supplement the main expressions that are embodied by an augmentation aggregate.

Scope note: Supplementary content includes an index, a bibliography, an appendix, etc.

accessibility content

Recommendation 2.2: Redefine Expression: accessibility content as a Manifestation shortcut

Shortcut:

1. **Manifestation: expression manifested** [for an expression that is aggregated]
2. **Expression: category of expression** [for a category of accessibility content taken from an unspecified VES]

Definition: An indication of the kinds of expression that provide alternative sensory modes to perceive the main expressions that are embodied by an augmentation aggregate.

Scope note: Accessibility content includes accessible labels, an audio description, captioning, image descriptions, sign language, and subtitles. Accessibility content does not include subtitles in a language different from the spoken content.

This is an element sub-type of **Manifestation: supplementary content**.

This shortcut allows information about accessibility of content and carrier to be recorded for a manifestation.

illustrative content

Recommendation 2.3: Redefine Expression: illustrative content as a Manifestation shortcut.

Shortcut:

1. **Manifestation: expression manifested** [for an expression that is aggregated]
2. **Expression: category of expression** [for a category of illustrative content taken from the **RDA Illustrative Content VES**]

Definition: An indication of the kinds of expression of image content that supplement the main expressions that are embodied by an augmentation aggregate.

Scope note: Illustrative content applies to an aggregate that embodies an expression with a content type of “cartographic image”, “cartographic moving image”, “cartographic tactile image”, “cartographic tactile three-dimensional form”, “cartographic three-dimensional form”, “three-dimensional moving image”, “two-dimensional moving image”, “tactile three-dimensional form”, “three-dimensional form”, “still image”, or “tactile image”. Tables containing only words or numerical data are excluded.

This is an element sub-type of **Manifestation: supplementary content**.

colour content

Recommendation 2.4: Redefine Expression: colour content as a Manifestation shortcut.

Shortcut:

1. **Manifestation: expression manifested** [for an expression that is aggregated]
2. **Expression: category of expression** [for a category of illustrative content taken from the **RDA Colour Content VES**]

Definition: An indication of the presence of colour, tone, etc., in one or more of the expressions that are embodied by an augmentation aggregate.

Scope note: Black, white, single colour shades of black, single colour tints of white, and single colour tones of gray are considered to be single colours. Colour content applies to an expression with a content type of “cartographic image”, “cartographic moving image”, “cartographic three-dimensional form”, “notated movement”, “notated music”, “performed movement”, “still image”, “text”, “three-dimensional moving image”, “three-dimensional form”, or “two-dimensional moving image”.

sound content

Recommendation 2.5: Redefine Expression: sound content as a Manifestation shortcut.

Shortcut:

1. **Manifestation: expression manifested** [for an expression that is aggregated]
2. **Expression: category of expression** [for a category of sound content taken from the **RDA Sound Content VES**]

Definition: An indication of the presence or absence of sound in the expressions that are embodied by an augmentation aggregate.

Scope note: Sound content is present in an expression with a content type of “recorded music”, “sounds”, or “spoken word”.

Colour

Recommendation 3: Add an element for Expression: colour

Definition: A categorization reflecting a hue of the visual content of an expression.

Scope note: Colour may be present in an expression with a content type of “cartographic image”, “cartographic moving image”, “cartographic three-dimensional form”, “notated movement”, “notated music”, “performed movement”, “still image”, “text”, “three-dimensional moving image”, “three-dimensional form”, or “two-dimensional moving image”.

This element partially subsumes **Expression: details of colour content**. The remaining scope of the deprecated element is subsumed as an unstructured description of **Manifestation: colour content**.

A structured description, identifier or notation, or IRI are taken from a local VES for colours. There are many controlled vocabularies for colour.

The element uses the default layout and instructions for VES elements that do not have an associated RDA VES.

Details elements

For consistency and coherency, **Expression: details of colour content** and **Expression: details of illustrative content** should be redefined as Manifestation elements.

These elements have a status of soft-deprecation and should not undergo further development.

Recommendation 4: Remove Expression: details of colour content and Expression: details of illustrative content from RDA.

Guidance

Recommendation 5: Update relevant Toolkit Guidance content to reflect the changes in content elements and the use of representative expressions for aggregating works.

Impact

The content elements require significant amendment to conform to the aggregates model and to be consistent with the contributor elements.

The number of elements that are affected is small.

There is no impact on the RDA VESs for specific contents elements.

There is no significant impact on legacy data in RDA implementation scenario C: Bibliographic/authority data, where there is no clear distinction between expression and manifestation description sets.

Relocating the domain of the content elements from Expression to Manifestation breaks the semantics of RDA Vocabularies, but this is unlikely to have a serious impact on applications. This should be reflected in the semantic version number of the GitHub release of RDA Vocabularies in due course, by incrementing the middle integer.

Further development

A comprehensive review of the 'cumulation' representative expression elements for an aggregating work (duration ... and extent ...) is part of the planned development of the treatment of extent.

Recommendations

Recommendation 1: add specific optional instructions for representative expression elements for aggregating works.

Recommendation 1.1: Add a condition and option template to the Recording section of each of the representative expression elements for single expressions that are aggregated.

Recommendation 1.2: Add a condition and option template to the Recording section of each of the representative expressions of cumulated aggregated content.

Recommendation 1.3: Add a condition and option template to the Recording section of each of the representative expressions of shortcut aggregate content elements.

Recommendation 2: Relocate the content elements to the Manifestation entity.

Recommendation 2.1: Redefine Expression: supplementary content as a Manifestation shortcut.

Recommendation 2.2: Redefine Expression: accessibility content as a Manifestation shortcut

Recommendation 2.3: Redefine Expression: illustrative content as a Manifestation shortcut.

Recommendation 2.4: Redefine Expression: colour content as a Manifestation shortcut.

Recommendation 2.5: Redefine Expression: sound content as a Manifestation shortcut.

Recommendation 3: Add an element for Expression: colour

Recommendation 4: Remove Expression: details of colour content and Expression: details of illustrative content from RDA.

Recommendation 5: Update relevant Toolkit Guidance content to reflect the changes in content elements and the use of representative expressions for aggregating works.

Appendices: Clean versions of new and amended Toolkit pages

The appendices (53 pp.) are listed below but these clean versions are not provided here due to length.

Appendix 1: **Work:** language of representative expression

Appendix 2: **Work:** duration of representative expression

Appendix 3: **Work:** colour content of representative expression

Appendix 4: **Work:** sound content of representative expression

Appendix 5: **Manifestation:** accessibility content

Appendix 6: **Manifestation:** supplementary content

Appendix 7: **Manifestation:** illustrative content

Appendix 8: **Manifestation:** colour content

Appendix 9: **Manifestation:** sound content

Appendix 10 **Expression:** colour

Appendix 11: **Guidance:** Representative expressions

Appendix 12: **Guidance:** Aggregates

Appendix 13: **Guidance.** Resource description: Describing a manifestation

Appendix 14: **Guidance.** Resource description: Describing an expression

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Agenda Item 211: RDA Implementation Scenarios

Below is the agreed-upon final draft from 10 January 2020 that will be implemented in the CMS:

RDA implementation scenarios

There are many database structures that are suitable for storing and supplying RDA data. The scenarios described below illustrate the range of potential configurations of RDA data and reflect the distinct structures that are commonly used for library and cultural heritage metadata.

- Scenario A: Linked open data
- Scenario B: Relational or object-oriented data
- Scenario C: Bibliographic/authority data
- Scenario D: Flat file data

RDA data are metadata created using RDA instructions and recorded with RDA entities and elements.

The RDA entities and elements are conformant with the IFLA Library Reference Model, and constitute a comprehensive implementation of the model.

The RDA entities, elements, and controlled terminologies are published in the RDA Registry in Resource Description Framework (RDF). This provides a consistent and coherent machine-readable ontology for Semantic Web applications, and ensures that descriptions of granular entities using granular elements can be automatically re-used in broader applications. For example, any description of a *Person* entity is also a description of an *Agent* entity.

All RDA data consist of one or more *metadata statements* recorded as *metadata description sets*. A metadata statement has an implicit three-part subject-predicate-object structure: the subject of the statement is the entity being described; the predicate of the statement is the characteristic (attribute or relationship) being recorded; the object of the statement is the value of the characteristic, using any applicable recording method.

The utility of recording methods in automated applications of RDA data is clarified and extended to all RDA elements where applicable. The appellation elements for name/title, access point, and identifier are aligned respectively with the recording methods *unstructured description*, *structured description*, and *identifier*. For further information, see Guidance: Nomens and appellations. Recording methods.

The recording methods for all RDA elements allow RDA data to accommodate a wide range of implementation factors such as the efficiency of data creation and maintenance, the interoperability of data with other RDA and non-RDA data, and the ease and effectiveness with which users are able to apply the functional objectives that RDA is designed to fulfil.

For example, automated transcription of an unstructured description is a very efficient method of creating data, but the resulting string is only effective for keyword searching.

As another example, the use of separate descriptions for works and expressions in a relational or object-oriented database structure ensures access not only to all works and expressions associated with a particular person, but also to all related works (adaptations, etc.) as well, regardless of whether the name of that person is used to construct the authorized access points representing those works or not.

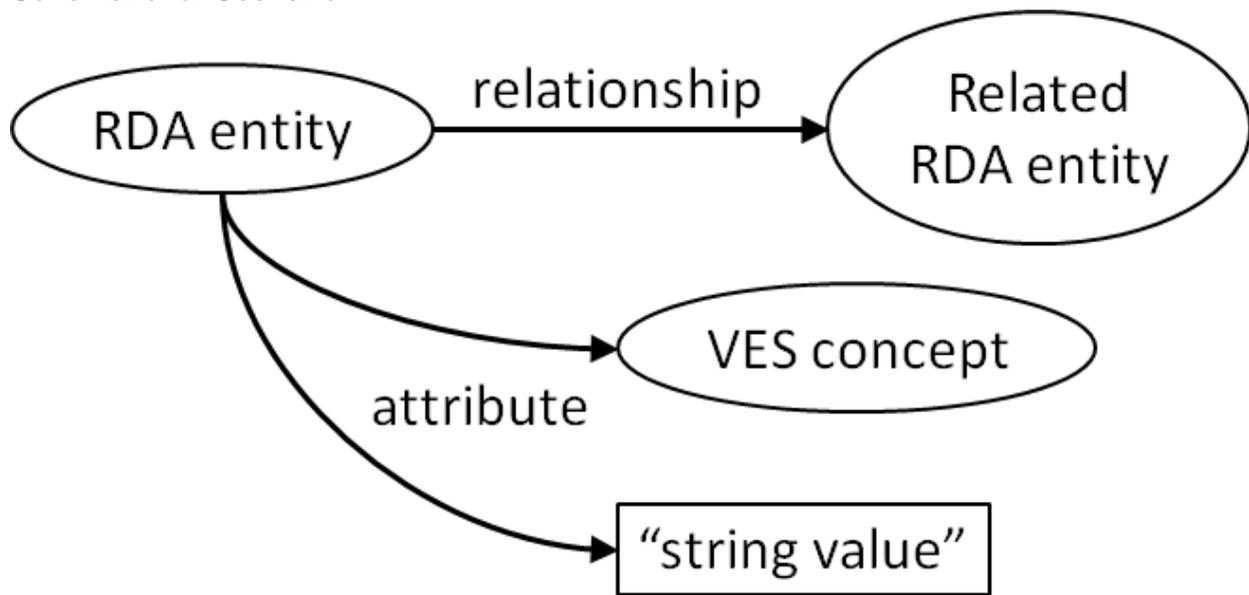
The RDA ontology and guidance on recording methods allows RDA data to be moved or shared between implementation scenarios with a defined level of interoperability. In general, data for any scenario can be re-used, with loss of detail, in a scenario later in the enumerated sequence.

For example, Scenario A (Linked open data) can be ‘collapsed’ into a Scenario D (Flat file data) implementation, and Scenario B (Relational and object-oriented data) can be coarsened into Scenario C (Bibliographic/authority data).

Operational RDA metadata applications may use a mix of different implementation scenarios.

Scenario A: Linked open data

Schematic for Scenario A



Characteristics

Metadata description sets are expressed in Resource Description Framework using IRIs taken from the RDA Registry.

Descriptions of the resource entities that comprise a single information resource are recorded in a separate metadata description set for each entity.

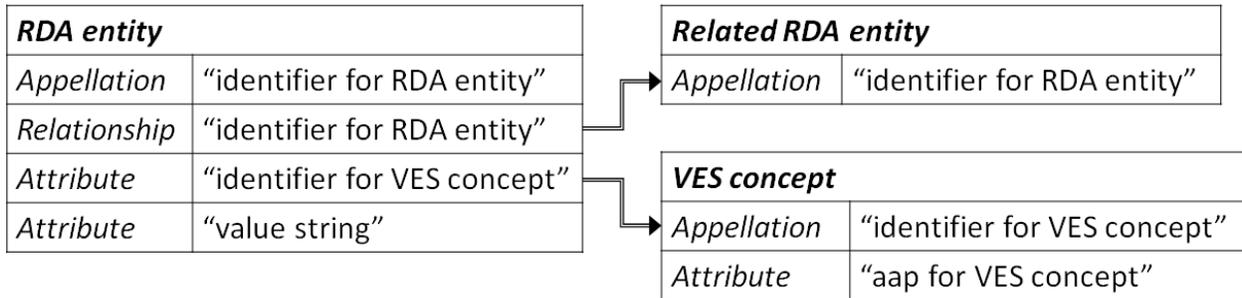
Descriptions of other entities that are associated with an information resource are recorded in a separate metadata description set for each entity.

The IRI recording method is used for values taken from a vocabulary encoding scheme, when available.

A metadata description set for an entity is linked to a metadata description set of a related entity using an IRI of the related entity.

Scenario B: Relational or object-oriented data

Schematic for scenario B



Characteristics

Metadata description sets are expressed in a set of structured data tables and columns that correspond directly to entities and elements taken from the RDA Registry.

Descriptions of the resource entities that comprise a single information resource are recorded in a separate metadata description set for each entity.

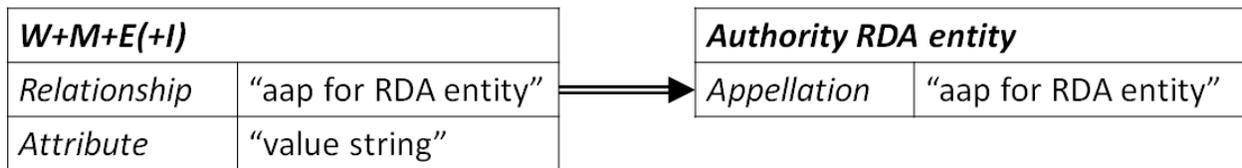
Descriptions of other entities that are associated with an information resource are recorded in a separate metadata description set for each entity.

The identifier recording method is used for values taken from a vocabulary encoding scheme, when available.

A metadata description set for an entity is linked to a metadata description set of a related entity using an identifier for the related entity based on primary keys taken from a relational or object-oriented database.

Scenario C: Bibliographic/authority data

Schematic for scenario C



Characteristics

Metadata description sets are expressed in an encoding schema that aligns with entities and elements taken from the RDA Registry.

Data are stored in "bibliographic records" and in "authority records", and in some implementations in "holdings records" as well.

Descriptions of the resource entities that comprise a single information resource are recorded in a single integrated metadata description set. The component *Work*, *Expression*, *Manifestation*, and *Item* entities are not explicitly identified.

Descriptions of other entities that are associated with an information resource are recorded in a separate metadata description set for each entity.

The structured description recording method is used for values taken from a vocabulary encoding scheme, when available.

A metadata description set for an entity is linked to a metadata description set of a related entity using an access point for the related entity.

Scenario D: Flat file data

Schematic for scenario D

<i>Combination of RDA entities</i>	
<i>Relationship</i>	“value string”
<i>Attribute</i>	“value string”

Characteristics

Metadata description sets are expressed in a layout that uses a set of string encoding schemes to specify entities and elements taken from the RDA Registry.

Descriptions of the resource entities that comprise a single information resource are recorded in a single integrated metadata description set.

Descriptions of other entities that are associated with an information resource are recorded in a separate metadata description set for each entity.

The structured description recording method is used for values taken from a vocabulary encoding scheme, when available. The unstructured description recording method is used for values of other descriptive elements.

A metadata description set for an entity is not linked to a metadata description set of a related entity.