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CATALOGUING SECTION
IFLA Cataloguing Section's ISBD Review Group
ISBD/XML Study Group
http://www.ifla.org/en/events/isbdxml-study-group

2nd meeting,
Wednesday 11 August – 8.00-10.00 – Room 34
Thursday 12 August - 16.00-18.00 – Room G1
Ad hoc meetings: Wednesday 11 August – 14.00-16.00 & Friday 13 August – 13.30-16.30

Draft Minutes, Appendix 1

Analysis of content and carrier designators in the ISBD consolidated edition with respect to the RDA/ONIX Framework

Background

This analysis was carried out as part of the work of the ISBD/XML Study Group. The content and carrier designators defined in Area 0 of the 10 May 2010 draft of the consolidated edition of International Standard Bibliographic Description (ISBD) released for world-wide review (http://www.ifla.org/files/cataloguing/isbd/isbd_wwr_20100510.pdf) have been given an RDF/XML representation using the NSLD Metadata Registry. The representations can be found at:

- http://metadataregistry.org/vocabulary/show/id/113.html (ISBD Content Form)
- http://metadataregistry.org/vocabulary/show/id/117.html (ISBD Content Qualification of Dimensionality)
- http://metadataregistry.org/vocabulary/show/id/116.html (ISBD Content Qualification of Motion)
- http://metadataregistry.org/vocabulary/show/id/118.html (ISBD Content Qualification of Sensory Specification)
- http://metadataregistry.org/vocabulary/show/id/115.html (ISBD Content Qualification of Type)
- http://metadataregistry.org/vocabulary/show/id/114.html (ISBD Media Type)

This analysis identifies interoperability issues that arise when linking the ISBD designators to RDA/ONIX Framework for Resource Categorization, version 1.0 (ROF) (http://www.loc.gov/marbi/2007/5chair10.pdf) in a Semantic Web environment, through the Vocabulary Mapping Framework (VMF) matrix (http://cdlr.strath.ac.uk/VMF/documents.htm) or other

mechanism, and to other content and carrier vocabularies based on ROF. The principal examples of such other vocabularies come from RDA: resource description and access.

Methodology
ROF attributes were recorded in an MS Access database. ROF provides a set of sample content and carrier terms mapped to attributes, and these were also included in the database to act as a guide and check.

RDA does not provide explicit mappings to the ROF attributes so these were derived by analysing the definitions of RDA content and carrier terms. The RDA terms, definitions and mappings were added to the database.

The same procedure was carried out with the ISBD vocabularies.

Mappings between ISBD and RDA terms were then derived from their mappings to ROF attributes.

The mappings between ISBD and RDA and ROF were then used to determine the extent of interoperability between terms in ISBD and RDA vocabularies, and between those terms and ROF.

This report makes a number of recommendations to improve the interoperability of ISBD content and carrier designators, and to improve their utility within ISBD.

Content designators

Full base content categories
The following ISBD designators can be mapped to a **base content category** in ROF. A base content category contains values for the attributes *Character*, *SensoryMode*, *ImageDimensionality*, and *ImageMovement*. The sets of values for all four attributes are "covering" sets; all possibilities are covered.

The RDA label for the same base content category is given where available.

ISBD designator	RDA label
program; dataset *	computer program; computer dataset; cartographic dataset
sounds	sounds
spoken word	spoken word

* Two ISBD and three RDA categories map to the same ROF base content category.

Partial base content categories
The following ISBD designators can be mapped to one or more, but not all, ROF base content category attributes.

There are no equivalences with RDA because every RDA label can be mapped to all attributes in a specific ROF base content category.

The number of ROF base content category attributes mapped is given.

ISBD designator	No. of ROF attributes
2-dimensional	2
3-dimensional	2
aural	1
gustatory	1
image	2
movement	1
moving	2
music	1
object	1
olfactory	1
still	2
tactile	1
text	3
visual	1

The following designators do not map to any attribute in a ROF base content category.

ISBD designator
cartographic
multiple content forms
notated
other content form
performed

Aggregate ISBD designators

The following RDA content types map to an aggregate ISBD designator.

RDA label	ISBD designator (aggregated)
cartographic image	image (cartographic ; still ; 2-dimensional)
cartographic moving image	image (cartographic ; moving ; 2-dimensional)
cartographic tactile image	image (cartographic ; still ; 2-dimensional ; tactile)
cartographic tactile three-dimensional form	object (cartographic ; tactile)
cartographic three-dimensional form	object (cartographic ; still ; 3-dimensional)
notated movement	movement (notated)
notated music	music (notated)
performed music	music (performed)
still image	image (still ; 2-dimensional)
tactile image	image (still ; 2-dimensional ; tactile)
tactile notated movement	movement (notated ; tactile)
tactile notated music	music (notated ; tactile)
tactile text	text (tactile)
tactile three-dimensional form	object (tactile)

text	text (visual)
three-dimensional form	object (still ; 3-dimensional)
three-dimensional moving image	image (moving ; 3-dimensional)
two-dimensional moving image	image (moving ; 2-dimensional)

Complete RDA-ISBD mapping of content designators

Mapping of all RDA content types to ISBD:

RDA label	**ISBD designator**
cartographic dataset	dataset (cartographic)
cartographic image	image (cartographic ; still ; 2-dimensional)
cartographic moving image	image (cartographic ; moving ; 2-dimensional)
cartographic tactile image	image (cartographic ; still ; 2-dimensional ; tactile)
cartographic tactile three-dimensional form	object (cartographic ; tactile)
cartographic three-dimensional form	object (cartographic ; still ; 3-dimensional)
computer dataset	dataset
computer program	program
notated movement	movement (notated)
notated music	music (notated)
other	other content form
performed music	music (performed)
sounds	sounds
spoken word	spoken word
still image	image (still ; 2-dimensional)
tactile image	image (still ; 2-dimensional ; tactile)
tactile notated movement	movement (notated ; tactile)
tactile notated music	music (notated ; tactile)
tactile text	text (tactile)
tactile three-dimensional form	object (tactile)
text	text (visual)
three-dimensional form	object (still ; 3-dimensional)
three-dimensional moving image	image (moving ; 3-dimensional)
two-dimensional moving image	image (moving ; 2-dimensional)

Interoperability of content designators

The main issue affecting interoperability between ISBD and RDA content designators is likely to be the ambiguity of the instruction for qualifying ISBD content designators (ISBD 0.2): "[Use] ... as many terms as are appropriate to expand on or further clarify the corresponding content form category ."

This may result, for example, in the ISBD aggregate designator "image (still)" which would appear on the surface to have the same meaning as the RDA designator "still image". But the RDA definition specifically mentions two-dimensionality, and the equivalent RDA designator for three dimensions is "three-dimensional form". So ISBD "image (still)" could refer to either of RDA "still image" or "three-dimensional form".

Recommendation: Include a mapping from RDA to ISBD content designators in ISBD, or refer from ISBD to separately published mapping.

Recommendation: Expand the ISBD 0.2 instruction to alert users to potential ambiguity if qualifiers are not added because they are assumed to be implicit in the content form term.
Note that this example exposes another area of ambiguity within ISBD. RDA "three-dimensional form" is mapped to ISBD "object (still ; 3-dimensional)", but could equally well map to "image (still ; 3-dimensional)" because ISBD's definitions of "image" and "object" overlap: both refer to visual resources in three-dimensions.

Recommendation: Redraft the definitions of "image" and "object" to ensure that there is no overlap. These issues also affect the interoperability of ISBD and the VMF matrix, which includes the ROF attributes.

Utility of content designators
All RDA content designators map to a ROF base content category, and therefore all ISBD designators mapped to RDA also map to a base content category. A base content category allows the retrieval of metadata for all resources with a specific valuefor one or more of the four attributes *Character*, *SensoryMode*, *ImageDimensionality*, and *ImageMovement*. For example:

- Resources which require hearing (SensoryMode equals "hearing")
- Resources which do not require a visual sense (SensoryMode not-equal-to "sight")
- Resources which are two-dimensional images (Character equals "image" and ImageDimensionality equals "two-dimensional")

ISBD designators which do not, or only partially, map to a base content category (either directly or via RDA) lose some or all of this utility. For example, ISBD "text" does not map to a single specific value for SensoryMode ("sight" or "touch" are possibilities), whereas "text (visual)" and "text (tactile)" do. Therefore "text" as an ISBD designator cannot support the second example given above. But "text" is given in the examples following ISBD 0.3. This could be taken to imply that "text" defaults to "text (visual)", but does not prevent the loss of retrieval utility. Since the cataloguer has the "book" (the example of a "text" given in ISBD) in hand, and must know that it is either "text (tactile)" (e.g. a Braille book) or "text (visual)" (e.g. a printed or handwritten "book"), or even "text (olfactory)" (a smelly book), there is no need for ISBD to use the less useful designator "book".

The utility of ISBD area 0 "to assist catalogue users in identifying and selecting resources appropriate to their needs" would be better served by an indication of how the content (and carrier) designators would work in practice (and especially in relation to online retrieval), and the use of examples that clearly support such processes.

Recommendation: Add an explanation to ISBD area 0 to show how content and carrier designators can be used in practice in an online environment to meet the needs of users.

Recommendation: Use examples in ISBD area 0 that are not ambiguous and clearly support the utility of area 0, or which illustrate problems when implicit assumptions are made.

Carrier designators
The ISBD media type is equivalent to the RDA media type. Neither can be mapped to a **base carrier category** in ROF, which contains values for the attributes *StorageMediumFormat*, *HousingFormat*, and *IntermediationTool*. Instead, ISBD and RDA media types map to the single attribute IntermediationTool.

ISBD label	RDA label	ROF label
audio	Audio	audio player
electronic	Computer	computer
microform	Microform	microform reader
microscopic	Microscopic	microscope
multiple media		
other media		
projected	Projected	projector
stereographic	Stereoscopic	stereoscope
video	Video	audiovisual player
[blank]	Unmediated	not required

ISBD does not provide a controlled vocabulary equivalent to RDA's carrier type, or other ROF carrier attributes.

Interoperability of carrier designators
The only issue affecting interoperability of ISBD media types with RDA and ROF (and therefore the VMF matrix) is the value "other media". This term is not in conflict with ROF because the attribute IntermediationTool does not have a "covering" set of values that exhausts all possibilities. There is therefore a possibility that new values will be added to ROF in the future.

Recommendation: The ISBD Review Group monitors use of the media type "other media" to inform the addition of new values to the ROF IntermediationTool attribute and ISBD media types.

Multiple content and carrier designators
Although ROF does not require all applicable content and carrier categories to be recorded for a resource, it does provide a set of five values to indicate the extent of applicability of a category to a resource (full, predominate, substantial, some, none).

ISBD does not provide explicit indicators. ISBD provides the value "multiple content forms" as an alternative to recording three or more categories of equal predominance. This value contains no information about any specific type of content, and is therefore not interoperable with other content designators within ISBD or external to ISBD.

ISBD does not adequately address the issue of predominant categories applicable to the main resource. There is an instruction covering the situation for accompanying material: "For works of mixed content where one part of the resource is predominant and other content is considered accompanying material (*see* 5.4), the term corresponding to the predominant part of the resource is recorded." (ISBD 0.1) but this does not cover the case where other (non-predominant) content is NOT considered accompanying material. It is not clear, for example, how to record content designators for a printed book containing more than a few illustrations (but not enough to be considered predominant). As it stands, the likely

interpretation of this instruction is to NOT record the designator "image (still ; 2-dimensional)" in addition to "text (visual)". The information about illustrations can be recorded in ISBD area 5 (Physical description), but the absence of a controlled vocabulary for this area means that any such information will not be easily interoperable between ISBD records, and between ISBD records and other metadata formats.

Absence of controlled designators for non-predominate aspects of a resource is also detrimental to the utility of ROF in meeting user needs for specific types of content and carrier. A restrictive approach based on predominance forces libraries to ignore the needs of user communities.

Recommendation: Redraft the instruction concerning mixed content at ISBD 0.1 to clarify the treatment of mixed content and media resources.

Recommendation: Allow the recording of any applicable content and media designators, rather than just predominate ones.

Gordon Dunsire
23 June 2010