The new ISBD Area 0 and the teaching of cataloging of non-book materials

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Introduction

The new International Standard Bibliographic Description (ISBD) Area 0 was published for the first time in the new ISBD Consolidated Edition in July 2011. With the purpose of introducing this new area, the General Material Designation (GMD) is taken as a precedent: a term or phrase that identified the material to catalogue, its addition was optional and had to be registered in brackets and after the title proper.

Different problems identified in the GMD took to the creation of the Area 0, among which have stood: "the steadily proliferation of the numbers and types of resources published in more than one physical and/or digital medium", "the GMD terms reflected a confusing mix of physical format, class of material, form of carrier, and notation (e.g., Braille)"; [and], "the location of the GMD immediately following the title proper was seen as interrupting the logical order and sequencing of title information" (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, "ISBD : International Standard Bibliographic Description: Area 0, Content Form and Media Type Area").

For these and other reasons, in 2003 was created the Material Designations Study Group (MDSG) that proposed, between 2005 and 2007, the creation of "a separate, unique, high level component, a "content/carrier" or "content/medium" designation, mandatory for recording in bibliographic records" ("ISBD : International Standard Bibliographic Description: Area 0, Content Form and Media Type Area"). The result has been the incorporation of a new area, comprising two mandatory elements: Content form (with Content qualifications) and Media type.

The purpose of this new area is "to indicate at the very beginning of the description both the fundamental form or forms in which the content of a resource is expressed and the type or types of carrier used to convey that content so as to assist catalogue users in identifying and selecting resources appropriate to their needs" (*ISBD : International Standard Bibliographic Description (Consolidated ed.)*).

Brief history of GMD and its application through AACR2 and different versions of the ISBD

The need for GMD arises, between 1950 and 1960, when "non-book" or special materials started to be visible in library collections. First, it was identified the emergence of a document type designation for some materials in the *Rules for descriptive cataloging in the Library of Congress* published in 1952. These designations were incorporated into the Anglo-American Cataloguing Rules (AACR) when it was published in 1967 under the name of *qualifiers*, descriptive terms to identify the kind of material. In 1975, a review was made of certain chapters of AACR and material designations are renamed *medium designators*, and was enriched the vocabulary of terms that

identified bibliographic media and carriers (Chiverto). This review was undertaken by the American Library Association, the Canadian Library Association, and the Library of Congress (Tillett, "General Material Designations (GMDs) (4JSC/Chair/73)").

Moreover, "the term *general material designation* first appeared in 1977 ISBD (G) and 1977 ISBD (NBM) [and] the abbreviation 'GMD' appeared in the ISBD (G) examples" ("General Material Designations (GMDs) (4JSC/Chair/73)"). After the joint initiative of the Library of Congress and the Joint Advisory Committee on Non-book Materials, a list of designations was drew up that could be equally useful to librarians and the general public and, in line with ISBD, the name of *medium designators* was changed to *general material designations* (Chiverto).

This list was formalized with the publication of AACR in 1978. In 1981, during a review of the ISBD, its location was set invariably next to the title proper, as an "early warning" about the type of resource of bibliographic description (Chiverto).

GMD was, according to ISBD Preliminary Consolidated Edition (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, "ISBD : International Standard Bibliographic Description (Preliminary Consolidated ed.)"): "a term indicating broadly, the class of material to which a resource belongs". Meanwhile, the Anglo-American Cataloguing Rules, 2nd edition (AACR2) define it as "a term or phrase that expresses and identifies the material to be cataloged". Its addition was optional and should be registered in brackets, in the language of cataloging agency, singular, lowercase, and after the title proper.

The AACR2 (1.1C1) prescribed as optional the use of this element of description and for that made two lists available, corresponding to the designations used by British institutions on one hand, and on the other hand, those used by institutions in Australia, Canada, the

United States and Latin America:

- List 1 (for Britain): braille, sound recording, manuscript, cartographic material, graphic, microform, multimedia, music, object, motion picture, electronic resource, text and videorecording.

- List 2 (for North America, Australia and Latin America): braille, kit, chart, slide, technical drawing, diorama, picture, filmstrip, sound recording, game, toy, manuscript, cartographic material, microform, model, music, art original, motion picture, microscope slide, realia, art reproduction, electronic resource, activity card, flash card, text, transparency and videorecording.

In addition, the AACR2 indicated the possibility to add "(large print)" or "(tactile)" to any term of the List 2, for materials produced for the visually impaired. Also, "(braille)" could be added to any term of the List 2, other than braille or text.

Finally, the AACR2 (1.1C4) considered the possibility that a resource could contain parts that relate to materials covered by two or more categories of the selected list. In this case, the AACR2 indicated the designation "multimedia" or "kit" if none of these parts was the predominant element of the resource. In the preliminary consolidated edition of the ISBD (1.2), it was also stated that the GMD "is optional, but its inclusion is useful in integrated catalogues or bibliographies".

There are very interesting articles on the emergence and evolution of the GMD over the past 60 years. Particularly, Tillett ("General Material Designations (GMDs) (4JSC/Chair/73)"), Guerrini ("GMD: its Function and its History") and Salamanca Chiverto ("La Categorización de Contenidos y Medios en la Descripción Bibliográfica: la Designación General de Material (DGM) y su Pasado, Presente y

Futuro en la Era Digital"), perform a detailed analysis of the emergence of GMD and they all conclude in the need to be modified or rethought.

According to Guerrini ("GMD: its Function and its History"), "the use of GMD must be considered difficult for the following reasons:

1. its hybrid, "classificatory" and functional nature;

2. the existence of many different lists;

3. the incomprehensibility of some terms for cataloguers and/or users;

4. the difficult application for multiple characteristic resources, because many terms are too general;

5. its optional application;

6. its display in the OPAC".

For hybrid nature, Guerrini ("GMD: its Function and its History") highlights Delsey's observations about "the large inconsistency of the list of GMDs, which includes terms referring to the class of material, but also to physical format, form of carrier and notation (e.g. braille)". It also suggests that "issues 2, 3 and 5 could easily be solved, if only an answer could be found to the question of the real nature of GMD and to its consistent, consequent application".

Similarly, Salamanca Chiverto ("La Categorización de Contenidos y Medios en la Descripción Bibliográfica: la Designación General de Material (DGM) y su Pasado, Presente y Futuro en la Era Digital") notes "the prevailing terminological confusion surrounding the GMD, manifested in the formation of lists of terms prepared according to heterogeneous classification criteria, and in which there is coexistence of different linguistic levels alternating terms of artificial

nature with other expressed in a common vocabulary and accessible for the average user".

For her part, Tillett ("General Material Designations (GMDs) (4JSC/Chair/73)") notes after a careful investigation on GMDs, that "there is no 'cataloging theory' behind their use. They were initially created at a time when public libraries were beginning to acquire and catalog nonprint materials. These institutions wanted the catalog records for the nonprint materials to be included in their general card catalogs and they also wanted these catalog records to be easily identified as 'nonprint'".

Creation of the new Area 0

In 2003, at the first IFLA Meetings of Experts on an International Cataloguing Code (IME-ICC) in Frankfurt, Huthwaite ("Class of Materials Concept and GMDs (4JSC/ACOC rep/1)") presented a document that analyzed the problems identified in the class of material concept and GMD. In this document, Huthwaite refers to two suggestions for fundamental change introduced by Tillett ("General Material Designations (GMDs) (4JSC/Chair/73)") in her investigation of the history of the GMDs: "firstly, use a device in the bibliographic record representing the mode of expression; and secondly, moving terms representing physical format and form of carrier to area 5 (physical description) or to notes".

The Joint Steering Committee for Revision of AACR2, on May 2002, had discussed the possibility of implementing Tillett's suggestions and indeed, "terms from List 2 in AACR2 at the expression level were identified [and] the most of the remaining terms could be relocated to area 5, some of which could be used as qualifiers (e.g., "braille" and "electronic resource")" (Huthwaite). In this sense, Huthwaite states that "when terms and concepts from Functional

Requirements for Bibliographic Records (FRBR) are introduced into AACR2, it will be logical and consistent to consider the general material designation as an expression-level indicator, and the specific material designation as a manifestation-level indicator". She even mentions the possibility to "incorporate the expression-level indicator in the textual part of the bibliographic record, possibly in a new area". Finally, Huthwaite recommends the creation of "a group that compiles a complete list of expression-level indicators representing all modes of expression, including both those relocated from the list of GMDs and any others identified in FRBR". Also, recommends that "a group be formed to make recommendations on a rationalization of the terms used in area 5, and on how statements could be constructed that allow for the description of all aspects of an item/resource at the manifestation level". This group, she adds, "could be the same group examining the deconstruction of GMDs".

In 2003, the ISBD Review Group created the MDSG to investigate the Specific Material Designations (SMD) and the GMD applied to multiple formats and media. This group emerged in response to concerns that had been raised regarding the following issues:

- the steadily proliferation of the numbers and types of resources published in more than one physical and/or digital medium;

- the GMD terms reflected a confusing mix of physical format, class of material, form of carrier, and notation (e.g., Braille),

- the location of the GMD immediately following the title proper was seen as interrupting the logical order and sequencing of title information (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, "ISBD : International Standard Bibliographic Description: Area 0, Content Form and Media Type Area").

On this last point, Salamanca Chiverto ("La Categorización de Contenidos y Medios en la Descripción Bibliográfica: la Designación General de Material (DGM) y su Pasado, Presente y Futuro en la Era Digital") observes that "regarding the functional aspects and location in the bibliographic record, we see also a contradiction: an item designed for the selection of library resources through classification of its formal nature, has been incorporated into the record as "intruder" in a descriptive field, the title and statement of responsibility area". Also, the MDSG suggested the review of the situation of the GMD as an optional element within the ISBD, taking into account its relative importance to the catalog user in identifying and selecting appropriate resources.

Escolano Rodríguez ("Edición Preliminar de la ISBD Consolidada") reports in detail the process of study and exchange that took place between 2005 and 2007 to reach the definition of Area 0, and emphasizes that the MDSG worked on the basis of the agreement on the importance and primacy that GMD had as an "early warning device" for catalog users. At the ISBD Review Group IFLA 2005 meetings in Oslo, the MDSG proposed the creation of "a separate, unique, high level component, a "content/carrier" or "content/medium" designation, mandatory for recording in bibliographic records" ("ISBD : International Standard Bibliographic Description: Area 0, Content Form and Media Type Area"). Some of the following assumptions were incorporated in the proposal:

- should, likewise, serve as an "early warning" or filtering device, assisting catalogue users;

- the structure of terms should be logical, the categories mutually exclusive, and the terminology clear, unambiguous, and readily understood by users;

- existing ISBD terminology should be retained wherever pos-

sible and applicable, to support compatibility with legacy records, and to minimize the number of new terms requiring extensive systems updates;

- carrier categories in particular should be sufficiently flexible to accommodate new formats and types of resources as they evolve or are identified;

- terminology should be as compatible as possible or appropriate with that used by other metadata communities (e.g., publishing, museums, archives) to support interoperability.

The ISBD Review Group commissioned the MDSG to prepare a final text. In 2007 IFLA meetings in Durban, the Preliminary Consolidated Edition of the ISBD had been published, and the MDSG had drafted the proposal for a content/carrier component for ISBD Review Group discussion.

In November 2008 was distributed for review at global level, the draft proposal for a new ISBD area for description, with the number 0 (zero) and entitled "Content Form and Media Type Area". As states Escolano Rodriguez ("Estado de la Cuestión de ISBD"), the decision to designate with the number 0 (zero), the content form and media type area, was the intention of "not to alter the previous numerical structure firmly rooted, established in numbered areas, which numeric order reflected the relative importance of information encompassing the areas". Furthermore, "according to MDSG recommendation: the information contained in this area occupies a prominent place as a first call user's attention, to serve for an initial selection of resources". After an analysis of the responses received and further consideration by the ISBD Review Group, by 2009 the final text was approved and referred to the Standing Committee of the IFLA Cataloguing Section for publication in a preliminary edition independently of ISBD Consolidated Edition. By 2009, the

preliminary version of Area 0 was published, composed of three mandatory elements, if they are applicable: Content form, Content qualification, and Media type. The purpose of this new area is "to indicate at the very beginning of the description both the fundamental form or forms in which the content of a resource is expressed and the type or types of carrier used to convey that content so as to assist catalogue users in identifying and selecting resources appropriate to their needs" (*ISBD : International Standard Bibliographic Description (Consolidated ed.)*). In May 2010 the draft of the definitive edition of the ISBD Consolidated was published for worldwide review until July 11, 2010. Among other general amendments to the text, this draft no longer had the GMD in Area 1 and included the Area 0. Gordon Dunsire published later on versions in English and Spanish of the vocabulary of ISBD Area 0 Content forms, Content qualifications and Media types in the Open Metadata Registry. Finally, in July 2011, the publication of the ISBD consolidated edition was released, edited by the Standing Committee of the IFLA Cataloguing Section. To date it is only available in English language, in printed and electronic formats, published by De Gruyter Saur.

Structure of Area 0

The introductory note of the ISBD Consolidated (*ISBD : International Standard Bibliographic Description (Consolidated ed.)*) Area 0 stands: "the increasing variety and complexity of resource content and types of media, along with a growing diversity of users with particular information needs, require greater specificity in describing content form and media type early in the record". A major difference between the version of Area 0 independently published in 2009 and the draft of the consolidated edition published in 2010 is that, in the final version, Area 0 had been reduced to two elements

(instead of three): Content form and Media type. The qualifiers were included in the first element, rather than appearing as a separate item. Furthermore, the most significant difference with regard to the former GMD is the mandatory nature of both elements. In the preliminary edition of Area 0 the media type was mandatory only if it was applicable, meaning it was assumed that the resource was accessible "unmediated" if it required no mediating device to use or perceive the resource and therefore not media type was recorded. Currently, the media type is always required. For example, in the case of printed books (content form "Text") media type "unmediated" should always be included → Text (visual or tactile) : unmediated.

Elements of Area 0: 1. Content form: one or more terms reflecting the fundamental form or forms in which the content of a resource is expressed, to which may be added one or more content qualifications, specifying the type, sensory nature, dimensionality, and/or presence or absence of motion for the resource being described. **2. Media type**: indicating the type or types of carrier used to convey the content of the resource.

Prescribed punctuation:

Content form (content qualification) : media type

Different content qualification terms are applicable to one content form: Content form (content qualification ; content qualification) : media type.

Different content forms are contained in one media type: Content form. Content form (content qualification) : media type *or* Content form (content qualification). Content form (content qualification) : media type.

A resource consists of different media types and contains different content form : Content form (content qualification) : media type + Content form (content qualification) : media type

Prescribed source: The resource itself.

Content form (0.1):[1] Content form categories reflect the fundamental form or forms in which the content of a resource is expressed. It includes one or more terms from a predefined list in the language and script chosen by the cataloguing agency.

For resources of mixed content where there is no predominant part of the resource (i.e. all parts are equally prominent or important), all terms that are applicable to the resource being described are recorded, in alphabetical order. Exceptionally, when three or more forms are applicable, the term multiple content forms may be given.

Dataset → content expressed by digitally-encoded data intended to be processed by a computer.

Examples: numeric data, environmental data etc., used by applications software to calculate averages, correlations etc., or to produce models etc., but not normally displayed in its raw form.

Excluded are digitally recorded music [see music], language [see spoken word], sounds [see sounds], computer-reproduced images [see image] and text [see text].

Cartographic database → Dataset (cartographic) : electronic
Database of trade statistics → Dataset : electronic

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[1]ISBD Content Form: http://metadataregistry.org/vocabulary/show/id/113.html.

Image → content expressed through line, shape, shading etc.; an image can be still or moving, in two or three dimensions.

Examples: art reproductions, maps, raised relief maps, photographs, remote-sensing images, stereographs, motion pictures, and lithographs.

Ballet (photographs and noted choreography)→ Image (still ; 2-dimensional ; visual). Movement (notated ; visual) : unmediated
Drawing with plush→ Image (still ; 2-dimensional ; visual ; tactile) : unmediated
GPS (Global Positioning System)→ Image (cartographic ; moving ; 2-dimensional ; visual). Spoken word : electronic
Picture→Image (still ; 2-dimensional ; visual) : unmediated
Map in slides→Image (cartographic ; still ; 2-dimensional ; visual) : projected
Map on website with geographic information→Image (cartographic). Text (visual) : electronic
Maps on video→Image (cartographic ; moving ; 2-dimensional) : video
Movie (film reels)→Image (moving ; 2-dimensional) : projected
Poster→Image (still ; 2-dimensional ; visual) : unmediated
Printed map→Image (cartographic ; still ; 2-dimensional ; visual) : unmediated
Relief printed map→Image (cartographic ; still ; 2-dimensional ; visual ; tactile) : unmediated
Stereography→Image (still ; 3-dimensional ; visual) : stereographic
Sticker with plush and smell→Image (still ; 2-dimensional ; visual ; tactile ; olfactory) : unmediated
Video recording (3D Blu-ray)→Image (moving ; 3-dimensional) : video
Video recording (DVD)→Image (moving ; 2-dimensional) : video
Visual projection (slides)→Image (still ; 2-dimensional ; visual) : projected

Movement → content expressed through motion, i.e. the act or process of changing the position of an object or person.

Examples: dance notation, stage actions, or choreography.

Excluded are moving images, such as motion pictures [see image]

> *Braille notated choreograph→Movement (notated ; tactile) : unmediated*
> *Printed notated choreography→Movement (notated ; visual) : unmediated*

Music → content expressed through ordered tones or sounds in succession, in combination, and in temporal relationships to produce a composition.
Music can be written (notation), performed, or recorded in analogue or digital formats as vocal, instrumental, or mechanical sounds having rhythm, melody, or harmony.

Examples: : written music, such as scores or parts, and recorded music, such as concert performances, opera, and studio recordings.

> *Braille printed score → Music (notated ; tactile) : unmediated*
> *Music (vinyl record)→Music (performed) : audio*
> *Music on a local disc→Music (performed) : electronic*
> *Music on an mp3 player→Music (performed) : audio*
> *Music on CD-ROM→Music (performed) : audio*
> *Printed score→Music (notated ; visual) : unmediated*
> *Score in PDF→Music (notated ; visual) : electronic*

Object → content expressed through either naturally occurring entities or human-made or machine-manufactured artifacts; also referred to as three-dimensional structures or realia.

Examples of artifacts: sculpture, models, games, coins, toys, buildings, equipment, clothing, cultural, and other items.

Examples of natural occurring entities: fossils, rocks, insects, biological specimens on slides etc.

Examples of cartographic objects: globes, relief models, and cross-sections intended to be viewed from the side in three-dimensional form.

Raised relief maps are excluded [see image].

> *Sculpture → Object (visual) : unmediated*
> *Cartographic resource (relief globe)→Object (cartographic ; visual ; tactile) : unmediated*
> *Cartographic resource (globe)→Object (cartographic ; visual) : unmediated*

Program → content expressed through digitally-encoded instructions intended to be processed and performed by a computer.

Examples: operating systems, application software etc.

> *Microsoft Office 2010 Software (CD-ROM) →Program : electronic*

Sounds → content expressed through sounds made by animals, birds, naturally occurring sources of noise, or such sounds simulated by the human voice or digital (or analogue) media.

Examples: recordings of bird songs, animal calls, and sound effects.

Excluded are recorded music [see music] and recorded human speech [see spoken word].

> *Sound of the whales (Cassette)→Sounds : audio*

Spoken word → content expressed through the sound of the human voice talking.

Examples: talking books, radio broadcasts, oral history record-ings, and audio recordings of plays, whether recorded in analogue or digital form.

> *Audio book (CD-ROM) →Spoken word : audio*

Text → content expressed through written words, symbols and numbers.

Examples: books (printed or electronic), correspondence, databases of journals and microfilmed newspapers.

> *Braille printed book→Text (tactile) : unmediated*
> *Continuing resource on CD-ROM→Text (visual) : electronic*
> *Continuing resource on microform→Text (visual) : microform*
> *Continuing resource printed and on microform→ Text (visual) : un-mediated + Text (visual) : microform*
> *E-book→Text (visual) : electronic*
> *Power Point presentation→Text (visual) : electronic*
> *Printed book→Text (visual) : unmediated*
> *Printed continuing resource→Text (visual) : unmediated*
> *Slides presentation→Text (visual) : projected*
> *Travel Guide on CD-ROM→Text (visual). Image (cartographic ;*

visual) : electronic
Website→Text (visual) : electronic

Multiple content forms → mixed content where three or more forms are applicable. Alternatively, all terms that are applicable to the resource being described can be recorded in alphabetical order.

> *Multimedia → Multiple content forms : multiple media*
> *Multimedia kit of "Microsoft Windows 98" composed of: installation guide on VHS, CD-ROM software installation and user manual → Image (movement ; 2-dimensional ; visual) : video + Program : electronic + Text (visual) : unmediated*

Other content form → content expressed through a different content form of: database, image, movement, music, object, program, sound, spoken word, text or multiple content forms.

Content qualification (0.1.1): A content form category is expanded by one or more content qualification sub-categories that are applicable to the resource being described. Content qualifications specify the type, presence or absence of motion, dimensionality, and sensory nature for the resource being described. Terms are taken from predefined lists, or their equivalents in the language and script of the cataloguing agency, using as many terms as are appropriate to expand on or further clarify the corresponding content form category.

Qualifications are added if different options are possible for a given content form.

Examples: Text (visual) o Text (tactile); Image (still ; 2-dimensional) o Image (still ; 3-dimensional); Image (movement ; 2-dimensional) o Image (movement ; 3-dimensional).

Specification of type (0.1.1.2)[2]

- Cartographic → content representing the whole or part of the Earth or any celestial body at any scale. It includes maps, atlases, globes, relief models etc.

- Notated → content expressed through a notational system for artistic purposes (e.g. music, dance, and staging) intended to be perceived visually.

- Performed → content expressed in an audible or visible form, at a given time, and recorded in a resource. It includes recorded performances of music or movement, computer-generated music etc.

For use with Content form "image" only:
Specification of motion (0.1.1.3)[3]: The content form image is qualified to show the perceived presence or absence of movement in the image content of a resource.

- Movement → Image content that is perceived to be in motion, usually by means of a quick succession of images.

- Still → Image content that is perceived to be static.

Specification of dimensionality (0.1.1.4)[4]: The content form image is qualified to show the number of spatial dimensions in which the image content of a resource is intended to be perceived.

- 2-dimensional → Image content that is intended to be perceived in two dimensions.

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[2]ISBD Content Qualification of Type: http://metadataregistry.org/vocabulary/show/id/115.html

[3]ISBD Content Qualification of Motion: http://metadataregistry.org/vocabulary/show/id/116.html

[4]ISBD Content Qualification of Dimensionality: http://metadataregistry.org/vocabulary/show/id/117.html

- 3-dimensional → Image content that is intended to be perceived in three dimensions.

Sensory specification (0.1.1.5):[5] This attribute indicates a human sense through which the content of a resource as published is intended to be perceived.

- Aural → Content that is intended to be perceived through hearing.

- Gustatory → Content that is intended to be perceived through taste.

- Olfactory → Content that is intended to be perceived through smell.

- Tactile → Content that is intended to be perceived through touch.

- Visual → Content that is intended to be perceived through sight.

Media type (0.2):[6] media type categories record the type or types of carrier used to convey the content of the resource. Categories generally reflect the format of the storage medium and housing of a carrier in combination with the type of intermediation device required to render, view, run etc., the content of a resource.

Unmediated → *For media for which no mediation device is necessary*.
Audio → *For audio player-enabled resources*. Media used to store recorded sound, designed for use with a playback device such as a turntable, audiocassette player, CD player, MP3 player, or iPod;

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[5]ISBD Content Qualification of Sensory Specification: http://metadataregistry.org/vocabulary/show/id/118.html

[6]ISBD Media Type: http://metadataregistry.org/vocabulary/show/id/114.html

includes media used to store digitally encoded as well as analogue sound.

Electronic → *For computer-enabled resources.* Media used to store electronic files, designed for use with a computer, includes media that are accessed remotely through file servers, as well as direct-access media such as computer tapes and disks.

Microform → *For microform reader-enabled resources*. Media used to store reduced-size images, not readable to the human eye, and designed for use with a device such as microfilm or microfiche reader; includes both transparent and opaque micrographic media.

Microscopic → *For microscope-enabled resources*. Media used to store minute objects, designed for use with a device such as a microscope to reveal details invisible to the naked eye.

Projected → *For projector-enabled resources*. Media used to store moving or still images, designed for use with a projection device such as a motion picture projector, slide projector, or overhead projector, includes media designed to project both two-dimensional and three-dimensional images.

Stereographic → *For stereograph viewer-enabled resources.* Media used to store pairs of still images, designed for use with a device such as a stereoscope or stereograph viewer to give the effect of three dimensions.

Video → *For video player-enabled resources*. Media used to store moving or still images, designed for use with a playback device such as a videocassette player or DVD player, includes media used to store digitally encoded as well as analogue images.

Multiple media → *For resources composed of mixed media* where three or more media types are applicable (used exceptionally).

Other media →*If none of the other terms listed applies* to the type of carrier and intermediation device required to convey, use, or perceive the content of the resource being described.

For resources of mixed media where there is no predominant part of the resource (i.e. all parts are equally prominent or important) → all terms that are applicable to the resource are recorded.
For works of mixed media where one part of the resource is predominant and other media types are minimal or incidental → media types that are not predominant may be omitted.

Compatibility with formats, standards and conceptual models: MARC, Resource Description & Access (RDA) and FRBR

> *"In other words, the problem is: how to manage the relationship between FRBR, the new international cataloging principles (ICP), the consolidated edition of ISBDs and cataloging codes (e.g., RDA, Resource Description and Access)?The bibliographic universe can be efficiently organized with the sole condition of a constant interaction between theory and practice.*
> *Nowadays, we attend a strong influence and pressure of a theoretical model on all established practices, to the point that they seem totally inappropriate for the (new?) information needs. This influence suggests breaking with past practice and making room for entirely new models and tools. The transition from past to future, however, doesn't prevent us from thinking of the present. Therefore, it is urgently needed the search for a solution to the problem of the management and the interrelationships between FRBR, ISBD and RDA."* (Bianchini and Guerrini, "Quis custodiet ipsos custodies?: observaciones sobre la relación entre FRBR, ICP, ISBD y RDA")

Compatibility and interoperability between different standards, conceptual models and formats of bibliographic description is essential in relation to compliance with international principles of cataloging and universal bibliographic control. As it stands Guerrini, we are

in a time of change and transitions given not only in the cataloging world but also in the world of information technology and publishing. In this sense, it is important to ensure compatibility, without this meaning to stop taking risks. It is not always successful the phrase *if it isn't broke don't fix it*. In some cases, even if everything is working, it might work better. However, it is important to work together, listen to opinions and perform tests before making rushed decisions, especially given the costs and difficulties that present some realities of many libraries around the world. At this point, we find four groups of key elements to consider: ISBD, RDA/AACR, FRBR/FRAD/FRSAD and MARC. Although all of these elements are closely related in its origin, the great challenge for the working groups at international level in their development is to achieve greater compatibility. The aim is that all these elements constitute and complement as a cataloger's "toolkit" and therefore, we cannot speak nowadays of a particular element of the ISBD (as Area 0) without asking: where is this located in MARC, what establishes RDA about it?, and, with which FRBR entities and attributes corresponds?

Next, we will attempt to answer these questions.

Inclusion of Area 0 in MARC format

The inclusion of Area 0 and its vocabularies still does not have a final location in MARC21 Bibliographic format. At first, would be applicable the fields created for the consignment of the RDA vocabularies for content, media and carrier types. The fields, created in 2009 for these three items, were included in the section "Physical Description etc. Fields (3XX)" [7] MARC21 located in the numbers:

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[7]MARC 21 3XX - Physical Description etc. Fields - General Information:http://www.loc.gov/marc/bibliographic/bd3xx.html

336 (Content Type), 337 (Media Type) and 338 (Carrier Type).[8].

In contrast, in the case of UNIMARC, as explained by Le Pape ("FRBR en UNIMARC: Propositions du Cfu Validées par le PUC") the decision was to include Area 0 through two coded fields and a text field. First, the coded data fields: 181 field (Content Characteristics of Expression) for ISBD Content form codes and ISBD Content qualification codes, and, the 182 field (Media Type) for ISBD Media type codes. Furthermore, in order to maintain a text field that respects natural structure of Area 0 in its entirety, field 203 was created (Content form and Media type). This field includes 3 subfields, each one with a portion of Area 0: $ a Content form; $ b Content qualification; $ c Media type. This field is optional when fields 181 and 182 are present, due to having redundant data, although in another format.

MARC 21 fields for content type, media type and carrier type and sources of terms and codes RDA

To accommodate ISBD Area 0, but using other terms, MARC21 has two ways in which to express Content form and Media type.

On one hand, the Leader Field /06 and the Control Fields 007 and 008 that are applicable to all types of documents. These are related to the ISBD Area 0, with the 3XX fields and some of 5XX note fields, since they define in encoded form many elements about content, media and carrier types.

- The Leader, a fixed field that comprises the first 24 character positions (00-23) of each bibliographic record and consists of data elements that contain numbers or coded values that define the parameters for the processing of the record. In

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[8]RDA in MARC (September 2011): http://www.loc.gov/marc/RDAinMARC29-9-12-11.html

particular, the Leader Field /06[9] (Type of record) is a one-character alphabetic code used to define the characteristics and components of the record.

- Control field 007[10] (Physical Description Fixed Field-General Information) contains special information about the physical characteristics in a coded form. The information may represent the whole item or parts of an item such as accompanying material.

- Control field 008[11] (Fixed-Length Data Elements-General Information) contains forty character positions (00-39) that provide coded information about the record as a whole and about special bibliographic aspects of the item being cataloged. These coded data elements are potentially useful for retrieval and data management purposes.

On the other hand, we can find fields: 336 (Content Type), 337 (Media Type) and 338 (Carrier type), mentioned above. They are described below:

Field 336 - Content type:[12] reflects the form of communication through which a work is expressed. Used in conjunction with Leader /06 (Type of record), which indicates the general type of content of the resource.

Field 337 - Media type:[13] reflects the format of the storage medium and housing of a carrier in combination with the media type (which

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[9]http://www.loc.gov/marc/bibliographic/bdleader.html

[10]http://www.loc.gov/marc/bibliographic/bd007.html

[11]http://www.loc.gov/marc/bibliographic/bd008.html

[12]MARC 21 336 - Content Type (R) (October 2009): http://www.loc.gov/marc/bibliographic/bd336.html

[13]MARC 21 337 - Media Type (R) (October 2009): http://www.loc.gov/marc/bibliographic/bd337.html

indicates the intermediation device required to view, play, run etc., the content of a resource). Used as an alternative to or in addition to the coded expression of media type in Control Field 007/00 (Category of material).

Field 338 - Carrier type:[14] reflects the format of the storage medium and housing of a carrier in combination with the media type (which indicates the intermediation device required to view, play, run etc., the content of a resource). Used as an alternative to or in addition to the coded expression of carrier type in field 007/01 (Specific material designation).

Subfield codes for field 336:

$a –Content type term: content type of the work being described.

    336   ##$aperformed music$bprm$2rdacontent

    336   ##$atwo-dimensional moving image$btdi$2rdacontent

$b–Content type code: Code representing the content type of the work being described.

    336   ##$aperformed music$bprm$2rdacontent

    336   ##$atext$btxt$2rdacontent$3liner notes

Subfield codes for field 337:

$a –Media type term: Term for the category of media used to convey the content of the resource.

    337   ##$aaudio$bs$2rdamedia

    337   ##$avideo$bv$2rdamedia

$b –Media type code: Code for the category of media used to convey the content of the resource.

    337   ##$aaudio$bs$2rdamedia

    337   ##$aunmediated$bn$2rdamedia$3liner notes

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[14]MARC 21 338 - Carrier Type (R) (October 2009): http://www.loc.gov/marc/bibliographic/bd338.html

Subfield codes for field 338:

$a –Carrier type term: Term for the category of carrier used to convey the content of the resource.

    338   ##$aaudio disc$bsd$2rdacarrier

    338   ##$avideodisc$bvd$2rdacarrier

$b –Carrier type code: Code for the category of carrier used to convey the content of the resource.

    338   ##$aaudio disc$bsd$2rdacarrier

    338   ##$avideodisc$bvd$2rdacarrier

Subfields present in the three fields:

$2 –Source: MARC code that identifies the source of the term or code used to record the content/media/carrier type information (Genre/Form Code and Term Source Codes).

    336   ##$athree-dimensional moving image$btdm$2rdacontent

    337   ##$avideo$bv$2rdamedia

    338   ##$asheet$bnb$2rdacarrier$3liner notes

$3 –Materials specified: Part of the described materials to which the field applies.

    336   ##$atext$2rdacontent$3liner notes

    337   ##$aunmediated$2rdamedia$3liner notes

    338   ##$asheet$2rdacarrier$3liner notes

Multiple content types, media types and carrier types from the same source vocabulary or code list may be recorded in the same field (336, 337 or 338, accordingly) in separate occurrences of subfield $a (term) and subfield $b (code). Terms from different source vocabularies are recorded in separate occurrences of the field.

110 2# $a System of a Down (Musical group)	110 2# $a System of a Down (Musical group)
245 10 $a Hypnotize / $c System of a Down	245 10 $a Hypnotize /$c System of a Down
336 ## $a performed music $2 rdacontent	336 ## $b prm $2 rdacontent
336 ## $a two-dimensional moving image $2 rdacontent	336 ## $b tdi $2 rdacontent
336 ## $a text $2 rdacontent $3 liner notes	336 ## $b txt $2 rdacontent $3 liner notes
337 ## $a audio $2 rdamedia	337 ## $b s $2 rdamedia
337 ## $a video $2 rdamedia	337 ## $b v $2 rdamedia
337 ## $a unmediated $2 rdamedia $3 liner notes	337 ## $b n $2 rdamedia $3 liner notes
338 ## $a audio disc $2 rdacarrier	338 ## $b sd $2 rdacarrier
338 ## $a video disc $2 rdacarrier	338 ## $b vd $2 rdacarrier
338 ## $a sheet $2 rdacarrier $3 liner notes	338 ## $b nb $2 rdacarrier $3 liner notes

Table 1: Example of a portion of a bibliographic record representing the manifestation using RDA terms or codes (MARC 21 Bibliographic/Authority 336 - CONTENT TYPE (R) (Draft of approved field 2009): http://www.loc.gov/marc/changes-rda-336.html; MARC 21 Bibliographic/Authority 337 - MEDIA TYPE (R) (Draft of approved field 2009): http://www.loc.gov/marc/changes-rda-337.html; MARC 21 Bibliographic/Authority 338 - CARRIER TYPE (R) (Draft of approved field 2009): http://www.loc.gov/marc/changes-rda-338.html)

Term and code list for RDA content types,[15] media types[16] and carrier types[17]

To complete these fields (336, 337 and 338), is required the use of controlled lists of terms and/or codes designated to record information about content, media and carrier types.

There are several sources of lists of terms and codes, each code consists of a maximum of 12 lowercase alphabetic characters, that will be placed in the subfield $ 2 of fields 336, 337 and 338 (MARC21

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[15]Term and code list for RDA content types: rdacontent http://www.loc.gov/standards/valuelist/rdacontent.html

[16]Term and code list for RDA media types: rdamedia: http://www.loc.gov/standards/valuelist/rdamedia.html

[17]Term and code list for RDA carrier types: rdacarrier: http://www.loc.gov/standards/valuelist/rdacarrier.html. More details in the appendix, available at http://leo.cilea.it/index.php/jlis/article/downloadSuppFile/4794/181.

Bibliographic) in the case of being used.

Genre/Form Sources contains a list of sources of terms and/or codes indicating the genre, form, and/or physical characteristics of the materials being described in bibliographic records and assigns a code to each source.

The lists relating to Area 0 are:

- RDA content types that indicate the form of communication through which a work is expressed. Examples include: cartographic dataset, notated music, or text.

- RDA media types that specify the general type of intermediation device required to view, play, run etc., the content of a resource audio, stereographic, or video.

- RDA carrier types that specify the format of the storage medium and housing of a resource. Examples include audiocassette, microfiche, or online resource.

The three lists contain RDA terms and corresponding codes: three-character lower case alphabetic code for content type, one-character lower case alphabetic code for media type and two-character lower case alphabetic code for carrier type. These types can be recorded in MARC Bibliographic and Holdings records in textual and/or coded form. In MARC21 Bibliographic records, content, media and carrier types may also be recorded, sometimes in a more granular and sometimes in a more general form, with one-character codes in MARC Bibliographic Leader/06 (Type of material), and in Control Fields 007/01 (Specific material designation) and 007/00 (Category of material).

Mapping ISBD Area 0 vocabularies to RDA content, media and carrier vocabularies via the RDA/ONIX Framework (ROF) for resource categorization

The ISBD Review Group has suggested that the alignment between the vocabularies of the ISBD and RDA should be done within the ROF, "a scheme that identifies and defines two distinct sets of attributes: one for the intellectual or artistic content of an information resource, and the other for the means and methods by which such content is carried (...) for supporting the needs of libraries and the publishing industry for categorizing resources by their content and carrier, and of facilitating interoperability between the metadata produced by those communities" (Dunsire, "Distinguishing Content from Carrier: The RDA/ONIX Framework for Resource Categorization").

The ROF is an initiative that started in 2005 between the Joint Steering Committee (JSC) for Revision of AACR and representatives of the publishing industry in the UK, and was followed up by theJSC for Development of RDA and organizations responsible for developing Online Information Exchange (ONIX), with support from the British Library. The ONIX is "a standard for the use of publishers in distributing digital metadata about their products". It includes "a standard set of codes to be used in the metadata, including elements describing product content and carrier" ("Distinguishing Content from Carrier: The RDA/ONIX Framework for Resource Categorization"). The objective of ROF initiative is "to develop a framework for categorizing resources in all media that will support the needs of both libraries and the publishing industry and will facilitate the transfer and use of resource description data across the two communities" ("RDA/ONIX Framework for Resource Categorization"). At the second meeting of the ISBD/XML Study Group held in August 2010 in Gothenburg (Sweden), Dunsire ("Analysis of

Content and Carrier Designators in the ISBD Consolidated Edition with Respect to the RDA-ONIX Framework") presented an analysis of content and carrier designators in the ISBD consolidated edition with respect to the RDA/ONIX Framework. The analysis was a mapping between elements of the ISBD Area 0 (using as a base at the time the draft consolidated edition 2010), with the RDA designations for these elements and the corresponding category in ROF. For media types, the ROF designation, the RDA vocabularies and the terminology used in the ISBD Area 0 are very compatible. Table 2 is prepared by Dunsire ("Analysis of Content and Carrier Designators in the ISBD Consolidated Edition with Respect to the RDA-ONIX Framework"), detailing the partial mapping:

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
unmediated	unmediated	not required

Table 2

Dunsire states: "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" ("Analysis of Content and Carrier Designators in the ISBD Consolidated Edition with Respect to the RDA-ONIX Framework").

In the case of area 0, this is because the ISBD has area 5 "Material Description Area" that "relates a resource to a statement including the specific material designation and extent, other physical details, the dimensions, and the accompanying material statement",[18] to describe aspects of the manifestation and carrier. Therefore, it is not expected a mapping between RDA type of carrier vocabulary and ISBD area 0. In the case of area 5, it has been preferred to allow each cataloging agency the use of appropriate vocabulary for their users, so there has been no normalization of specific material designations (DEM). In his analysis, Gordon Dunsire ("Analysis of Content and Carrier Designators in the ISBD Consolidated Edition with Respect to the RDA-ONIX Framework") makes observations and recommendations involving amendments to the ISBD. Some of these included:

1. expand the ISBD 0.1.1 instruction to alert users to potential ambiguity if qualifiers are not added because they are assumed to be implicit in the content form term;

2. redraft the definitions of "image" and "object" to ensure that there is no overlap;

3. 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 and 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.

4. the ISBD Review Group should monitor use of the media type "other media" to inform the addition of new values to the ROF IntermediationTool attribute and ISBD media types;

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[18]Element Set: ISBD elements: http://iflastandards.info/ns/isbd/elements.rdf

5. redraft the instruction concerning mixed content at ISBD 0.1 to clarify the treatment of mixed content and media resources;

6. allow the recording of any applicable content and media designators, rather than just predominate ones. 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. The absence of a categorization of this kind for ISBD creates confusion about the ambiguity of the word "predominant" to determine whether to include or not a particular Content form.

Some of these problems were already observed and resolved with the publication of the new ISBD Consolidated in 2011, mainly due to substantial changes in the mandatory nature of the two components of Area 0 (Content form and media type). For example in the case of media type "unmediated" instead of being implied by the absence of another media type, its inclusion is now mandatory. Also, in the new edition, the content qualifications are mandatory for content forms that have different options, allowing further specification. It includes also more specifically detailed instructions for content forms and qualifiers, and the "Image" and "Object" definitions were reviewed to avoid ambiguity. Regarding the use of "multiple content forms" the ISBD Consolidated (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, *ISBD : International Standard Bibliographic Description (Consolidated ed.)*) provides its exceptional use, if absolutely necessary, and recommends the implementation of all predominant content forms. On this last point we could also detect a certain ambiguity. The fact of leaving each cataloger to decide whether a form of content is predominant or not, could result in the omission of items relevant to some extent. However, the

components that still continue to have some degree of ambiguity are the content qualifications of sensory specification, especially in their application in "Image" and "Object" content forms. The preliminary edition of Area 0 ("ISBD : International Standard Bibliographic Description: Area 0, Content Form and Media Type Area"), included an example that had both content forms: "Object + Image (olfactory) *Editorial comment*: a model and graphic (a 3-dimensional model of a coffee bean and 2-dimensional card with a micro fragrance-coated image of a coffee bean that can be scratched to produce the smell of coffee)". After the publication of ISBD Consolidated Edition 2011, this example becomes obsolete due to two reasons. First, the content qualifications are now required whenever there are several possibilities for a given content form. Therefore, the term "visual" should be included in both forms of content. Secondly, the example does not include the media type, mandatory since the publication of ISBD Consolidated Edition 2011. An updated version of this example would then be: "Object (visual) + Image (still ; 2-dimensional; visual; tactile; olfative) : unmediated" However, the publication of the full examples of the ISBD Consolidated (ISBD Examples Study Group) and ISBD Review Group) no longer includes this example, and only contains the most common types of documents (texts, electronic resources, music, cartographic materials, sound recordings). Does not include more complex resources as examples, such is the case of images and objects with sensory characteristics. Therefore, there are still uncertainties on the implementation of content qualifications of sensory specification in the description of these resources. Moreover, in the mapping of RDA Content Types to ISBD Content Forms and Media Types (Hostage) (provisional, subject to revision and last updated in May 2011) the application of content qualifications of sensory specifications is rather heterogeneous, which does not help to clarify these doubts either:

RDA Content Type	ISBD Content form
cartographic image	image (cartographic ; still; 2-dimensional ; visual)
cartographic moving image	image (cartographic ; movement ; 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 ; visual)
still image	image (still ; 2-dimensional ; visual)
tactile image	image (still ; 2-dimensional ; tactile)
tactile three-dimensional form	object (tactile)
three-dimensional form	Object
three-dimensional form	image (still ; 3-dimensional)
three-dimensional moving image	image (movement ; 3-dimensional)
two-dimensional moving image	image (movement ; 2-dimensional)

Table 3

It would be important to define more specifically the application of content qualifications of sensory specification, according to the different content forms and also to improve and extend the full ISBD examples, including other types of more complex resources.

Mapping of RDA Content Types to ISBD Content Forms and Media Types (Hostage)

Table 4 also entitled *Complete RDA-ISBD mapping of content designators* (Dunsire, "Analysis of Content and Carrier Designators in the ISBD Consolidated Edition with Respect to the RDA-ONIX Framework") shows a mapping of all RDA content types (RDA section 6.9.1.3) to ISBD content forms and media types in Area 0. It was prepared by John Hostage, member of the ISBD Review Group and available on IFLA's website. This mapping is provisional, subject to revision and was last updated in May 2011. ISBD media types are included only when they are unambiguous.

An important difference between the ISBD Area 0 and vocabularies RDA is that Area 0 is composed by a syntax with specific punctuation to house each of its elements, in order to allow extensibility. The *Joint Steering Committee for Development of RDA* and the ISBD Review Group, met on 3-4 November 2011 to discuss the alignment between RDA and ISBD, and in particular between the vocabularies of the ISBD Area 0 and RDA vocabularies for content type and media type.

At this meeting, says Escolano Rodriguez ("Estado de la Cuestión de ISBD"), "it was stated that it is not possible to make all possible correspondences between ISBD as RDA vocabulary as proposed". Although both RDA and ISBD were based on ROF for the development of their vocabularies, "both standards have had differences in their results", and while the mapping performed by Hostage

RDA Content Type	ISBD Content form
cartographic image	image (cartographic ; still ; 2-dimensional ; visual)
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 ; visual)
computer dataset	dataset : electronic
computer program	program : electronic
notated movement	movement (notated)
notated music	music (notated ; visual)
other (obsolete)	other content form
performed music	music (performed) : audio
Sounds	sounds : audio
spoken word	spoken word : audio
still image	image (still ; 2-dimensional ; visual)
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
three-dimensional form	image (still ; 3-dimensional)
three-dimensional moving image	image (moving ; 3-dimensional)
two-dimensional moving image	image (moving ; 2-dimensional)

Table 4: Complete RDA-ISBD mapping of content designators

"shows some possible matches, it is not possible an absolute correspondence". "In this situation, during the meeting it was decided to make the RDF statement of this categorization and then to do mappings from each standard to the categorization RDA/ONIX ". Therefore, the ISBD Review Group shall perform the correspondences of the elements of ISBD with categorization RDA / ONIX, to identify possible differences between them.

Moreover, on January 26th, 2012 the *JSC*, the Dublin Core Metadata Initiative (DCMI) Bibliographic Metadata Task Group (formerly DCMI/RDA Task Group), and ALA Publishing (on behalf of the co-publishers of RDA) announced the publication of a second set of vocabulary terms as linked open data in the Open Metadata Registry. These vocabularies include *Carrier type*,[19] *Content type*[20] and *Media type*.[21] At the moment, they are only published in English and in a preliminary version in German. As quoted in the announcement, Gordon Dunsire said: "These vocabularies are crucial for the selection and identification of information resources. Their publication as linked data in RDF allows the terms to be used by all bibliographic metadata communities in the Semantic Web environment. I look forward to the future development and publication of mappings from the vocabularies to the RDA/ONIX Framework. Similar mappings of other content and carrier vocabularies, such as those for ISBD area 0, will support metadata interoperability between communities and improve resource discovery for all" (Tillett, "Announcement: Publication of RDA Terms for Content, Carrier, Media Type Vocabularies").

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[19]RDA Carrier Type:http://metadataregistry.org/vocabulary/show/id/46.html
[20]RDA Content Type: http://metadataregistry.org/vocabulary/show/id/45.html
[21]RDA Media Type: http://metadataregistry.org/vocabulary/show/id/37.html

Relationship between ISBD and FRBR

The ISBD Consolidated Edition 2011 reflects the effort to bring description of all materials to the same state of conformity with the Functional Requirements for Bibliographic Records (FRBR). Therefore, for practical purposes it is necessary to accurately determine the alignment between ISBD and FRBR, both in relation to the attributes as to their status as mandatory or optional elements. In 2004, Tom Delsey conducted a mapping between the conceptual schema FRBR and ISBD standard entitled "Mapping ISBD Elements to FRBR Entity Attributes and Relationships." However, it was based on the specialized ISBDs, hence did not include, of course, the creation of Area 0. The ISBD Review Group raises, in the introduction to the ISBD Consolidated (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, *ISBD : International Standard Bibliographic Description (Consolidated ed.)*), the need to update this document to specify the harmonic relationship between ISBD and FRBR.

Moreover, "in trying to adapt ISBD terminology to the FRBR terms "work", "expression", "manifestation" and "item" and to replace terms such as "publication", the group encountered difficulties, owing in large part to the fact that the terms used in FRBR were defined in the context of an entity-relationship model conceived at a higher level of abstraction than the specifications for the ISBDs" (*ISBD : International Standard Bibliographic Description (Consolidated ed.)*). Taking into account the recommendation of the IME-ICC, the ISBD Review Group expressed not having performed a massive incorporation (or replacement) of the FRBR terminology in ISBD but rather tried to keep a specific terminology having in consideration certain elements to facilitate the future integration. For example, one change is the use of the term "resource" rather than "item" or "publication". This decision was taken in order to avoid confusion, because the use of the term "item" in the former ISBDs is different

from the term "item" as used in FRBR. The mapping conducted by Delsey ("Mapping ISBD Elements to FRBR Entity Attributes and Relationships") showed "that many attributes that are present in ISBD but are not yet defined in FRBR, and also that each element in FRBR always has a correspondence to ISBD" (Bianchini and Guerrini, "From Bibliographic Models to Cataloging Rules: Remarks on FRBR, ICP, ISBD, and RDA and the Relationships Between Them"). In its introduction the FRBR document explains that "the basic elements of the model developed for the study (the entities, attributes, and relationships) were derived from a logical analysis of the data that are typically reflected in bibliographic records" and notes that "the principal sources used in the analysis included the ISBDs, the Guidelines for authority and reference entries (GARE), the Guidelines for Subject Authority and Reference Entries (GSARE), and the UNIMARC Manual" (International Federation of Library Associations and Institutions (IFLA) and IFLA Study Group on the Functional Requirements for Bibliographic Records). Therefore, "particular attention must be given to the fact that FRBR is a useful snapshot of the bibliographic universe obtained, mainly but not exclusively, of ISBD. This means that all objects (entities, relationships and attributes) extrapolated from FRBR have been identified within a description based on ISBD" (Bianchini and Guerrini, "Quis custodiet ipsos custodies?: observaciones sobre la relación entre FRBR, ICP, ISBD y RDA").

Delsey ("Mapping ISBD Elements to FRBR Entity Attributes and Relationships") performed a mapping between elements of ISBD and FRBR but, as mentioned above, since in 2004 had not yet begun work on the ISBD Consolidated Edition, the ISBDs used for this analysis were specialized ISBDs. Therefore, the element analysed by Delsey that can be taken as an antecedent of Area 0 is the General Material Designation GMD:

ISBD Area	ISBD Element	FRBR Entity	FRBR Attribute/Relationship
0. Content form and media type	0.1 Content Form 0.2 Media Type	3.2.1 Work	[Category of work]*There is no attribute currently defined in FRBR that corresponds to category of work
		3.2.2 Expression	4.3.2 Form of expression: The form of expression is the means by which the work is realized (e.g., through alpha-numeric notation, musical notation, spoken word, musical sound, cartographic image, photographic image, sculpture, dance, mime etc.).
		3.2.3 Manifestation	[Category of carrier or medium] *There is no attribute currently defined in FRBR that corresponds to category of carrier or medium

Table 5

As stated by the ISBD Review Group, it is important to update this mapping to outline the compatibility between ISBD and FRBR, taking into account the FRBR entities and attributes, the mapping methodology and the new ISBD Consolidated 2011. An important element to consider in this analysis, based on the terminology of FRBR, is that "the ISBD is applied to describe manifestations, by means of description of the item in hand as an exemplar of the entire manifestation". "In this way, the ISBD applies the Statement of International Cataloguing Principles, which establishes that "A bibliographic description typically should be based on the item as representative of the manifestation" (ISBD Review Group and IFLA Cataloguing Section. Standing Committee, *ISBD : International Standard Bibliographic Description (Consolidated ed.)*). In this sense, Escolano Rodriguez ("Estado de la Cuestión de ISBD") notes that the

area 0 is "a first classification, contributes to a grouping by content and by media, thus serving as a bridge in the relationship established with FRBR entities Work/Expression, for content, and to merge with media type the full range of types of physical resources that meet the same characteristics (Manifestation)". However, the difficulty of this new mapping including Area 0, is the need to analyse each of the content forms, qualifications and media types in terms of FRBR and their specific correspondence with attributes of works, expressions and/or manifestations. An approach to this alignment between ISBD and FRBR can also be seen in the "LC CORE ELEMENTS FOR NOVEMBER GDR 2011" (Library of Congress, "LC RDA Core Elements for November 2011"), where an analysis was made of each element of RDA, its corresponding FRBR entity and its location in MARC. Although the scheme includes all elements of the RDA and does not specify their relationship to the ISBD, both could be related to the ISBD Area 0 indirectly, where the content type would be an attribute of expression and the media type would be an attribute of manifestation. However, further analysis is required to perform an affirmation in this regard.

RDA Element	RDA no.	FRBR entity	MARC encoding (tag only)
DESCRIBING CARRIERS			
Media type	3.2	Manifestation	337
Carrier type	3.3	Manifestation	338
IDENTIFYING WORKS AND EXPRESSIONS			
Content type	6.9	Expression	336

Table 6

Teaching of cataloging of non-book materials

For over 50 years cataloging has been found on bibliographic description according to an established typology of resources based on their carrier and/or nature. Both through specialized ISBDs and the different editions of AACR, the instructions for the description were organized on the basis of these broad categories. Due to the dynamic nature of library collections and the creation of new resources and the obsolescence of some formats, the categories were changed and reorganized over time.

Cataloging of non-book materials has historically been a world quite complex, compared with cataloging of printed books, with many special features to consider. While the structure of the record in ISBD is uniform to describe all materials, regardless of their nature or carrier, there are some elements of the description that are unique for these types of materials: the GMD in area 1 (until the creation of Area 0), Area 3 (used only for certain types of materials), SMD in Area 5 and especially the Area 7, for notes.

Quite evident proof of this organization of the bibliographic description is the structure of the first edition of the AACR, published in English (one American version and one English version) in 1967 and in Spanish in 1970. It was divided into three parts: I. Entry and Heading, II. Description and III. Non-book materials (Joint Steering Committee for Development of RDA). Later on, in the second edition of the AACR2 published in 1978, the assignment of access points was moved to the second part and the description of all materials was grouped in the first part. This last was, at the same time, divided into a general section and in 9 chapters for the individual formats. Subsequently, three reviews were published in 1988, 1998 and 2002 including new amendments. The latest version of AACR2,

used until present days in libraries around the world, includes the subdivision of the first part in 13 chapters based on their nature, carrier or media type: books, pamphlets and printed sheets, cartographic materials, manuscripts, music, sound recordings, films and video recordings, graphic materials, electronic resources, three-dimensional artifacts and realia, microforms, continuing resources and analysis.

Also, the ISBD has been originated in the organization of cataloging according to different natures of documents, carriers or media types, as evidenced in the existence of 8 ISBDs prior to the creation of the ISBD Consolidated: ISBD (G) -general-, ISBD (CM) –cartographic materials-, ISBD (S) –serials-, ISBD (NBM) –non bibliographic materials-, ISBD (A) -antiquarian-, ISBD (PM) –printed music-, ISBD (M) –monographs- and ISBD (CF) –computer files- then updated for ISBD (ER) –electronic resources-. Nowadays, international research in cataloging, carried out by the Joint Steering Committee for Development of RDA, the ISBD Review Group, the IFLA Study Group on FRBR, IFLA Cataloguing Section and the Library of Congress are changing this paradigm. Both the FRBR model and the new Consolidated ISBD as RDA structure, make it clear that it is no longer about the carrier, but the entities, their attributes and the relationships between them. However, we find ourselves in a time of a change so profound and so rapid that our programs of study still do not reflect, in many cases, this paradigm shift. Balance must be found in order to bring this new axis to the classrooms but still providing practical tools for professional cataloging. The theoretical and conceptual elements are extremely important, and involve a deep reflection and analysis to enable better description and more efficient access to library resources. In this respect, Bianchini and Guerrini ("Quis custodiet ipsos custodies?: observaciones

sobre la relación entre FRBR, ICP, ISBD y RDA") reflect and affirm: "While our logical model of the bibliographic universe has changed completely, has not been abandoned, nor the Paris Principles, nor the AACR (...) No one will give up the Principles of Paris or AACR before having thoroughly tested the new proposals. This should also apply to ISBD, especially because it remains the most recognized standard and more popular worldwide and it is in the concrete base of FRBR". We are in the midst of a rapidly changing conjuncture, a time of transition and new paradigms. This will generate concerns, fears and difficulties in teaching and working with different standards. Cataloging teachers have a huge challenge: to integrate all these new elements in teaching students trying to assimilate the foundations and principles of cataloging and simultaneously incorporate new schemes to be prepared for the future. But we must not forget that not only do we offer a broad view of the bibliographic universe, allowing them to look critically and participate in the construction of the evolution of these investigations, but also practical tools for use today as cataloging librarians.

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ABSTRACT: The International Standard Bibliographic Description (ISBD) Area 0 was first included in the ISBD Consolidated Edition published in July 2011, as a replacement of the General Material Designation (GMD). This work briefly makes reference to the antecedents of area 0 and to the reasons that lead to its creation. Also, it details its structure, elements and examples of use and analyzes its compatibility with the MARC format, the RDA vocabularies and with FRBR model. Finally, in relation to the creation of this new area and to its application in the diversity of existing bibliographical resources, it reflects on the change of paradigm of cataloguing and the challenges in the teaching of cataloguing of non-book materials.
KEYWORDS: Cataloguing; FRBR; ISBD; MARC; Non-book materials; RDA