

# FRANAR: A Conceptual Model for Authority Data

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## Background

Looking back from the admittedly short-term perspective of five years, the publication of the IFLA *Functional Requirements for Bibliographic Records* in 1998 stands out as a defining moment in the history of cataloging as the library world approached the 21<sup>st</sup> century. The model developed by the FRBR Study Group focuses on the entities associated with bibliographic records and on the various types of relationships between those entities and the bibliographic record. The introduction to the report notes that the model “does not analyse the additional data that are normally recorded in an authority record, nor does it analyse the relationships between and among those entities that are generally reflected in the syndetic apparatus of the catalogue” and then goes on to say, “the study group recognizes the need to extend the model at some future date to cover authority data.”<sup>1</sup>

Another group, the IFLA UBCIM Working Group on Minimal Level Authority Records and ISADN, was addressing for authority data part of what FRBR does for bibliographic data — the specification of a basic level of data to be included in records that are shared. The group’s report, *Mandatory Data Elements for Internationally Shared Resource Authority Records*, issued in 1998,<sup>2</sup> also raised the possibility of a virtual shared resource authority file under the auspices IFLA.

In response to these two suggested activities as well as to recommendations from the International Conference on National Bibliographic Services, held in Copenhagen in November 1998,<sup>3</sup> and at various other international meetings, the Coordinating Board of the IFLA Division of Bibliographic Control agreed at its April 1999 meeting to set up a new Working Group under the joint auspices of the Division and the Universal Bibliographic Control and International MARC Programme (UBCIM).

## The Working Group and Its Terms of Reference

Members of the Working Group on Functional Requirements and Numbering of Authority Records (FRANAR) as originally appointed were Françoise Bourdon (Bibliothèque nationale de France); Olga Lavrenova (Russian State Library); Andrew McEwan (The British Library); Eeva Murtomaa (Helsinki University Library, Finland); Glenn Patton (OCLC, USA); Reinhard Rinn (Die Deutsche Bibliothek, Germany); Henry Snyder (University of California, Riverside, USA); Barbara Tillett (Library of Congress, USA); Hartmut Walravens (International ISBN Agency, Germany); and, Mirna Willer (National and University Library, Croatia). Mme Bourdon served as the initial chair of

the group with Glenn Patton taking over that role in January 2002. Reinhard Rinn was replaced following his retirement by Christina Hengel-Dittrich, also of Die Deutsche Bibliothek. Throughout its work, the group has been assisted by Marie-France Plassard, UBCIM Programme Director. In October 2001, Tom Delsey (retired from the National Library of Canada) agreed to join the Working Group as a consultant. His long experience (including serving as a consultant to the IFLA Study Group on the Functional Requirements for Bibliographic Records) has proved invaluable. The FRANAR Working Group agreed to 3 terms of reference proposed by Françoise Bourdon during discussions with the IFLA Coordinating Board:

1. to define functional requirements of authority records, continuing the work that the "Functional requirements of bibliographic records" for bibliographic systems initiated.
2. to study the feasibility of an International Standard Authority Data Number (ISADN), to define possible use and users, to determine for what types of authority records such an ISADN is necessary, to examine the possible structure of the number and the type of management that would be necessary.
3. to serve as the official IFLA liaison to and work with other interested groups concerning authority files : INDECS (Interoperability of Data in E-Commerce Systems), ICA/CDS (International Council on Archives / Committee on Descriptive Standards), ISO/TC46 for international numbering and descriptive standards, CERL (Consortium of European Research Libraries), etc.

In the remainder of this paper, I would like to review the Working Group's activities in each of these areas and then comment on the next steps for the group.

### **Liaison Activities**

The liaison aspect of the Working Group's activity has proved to be the easiest to achieve. Some relationships, such as the suggested one to ISO/TC46 and to CERL, were easy because of group members' activities in those groups. In particular, the Working Group has spent considerable time commenting on the activity of ISO/TC46/SC9 Working Group 3 and the evolving International Standard Text Code (ISTC).<sup>4</sup> In the case of the ICA Committee on Descriptive Standards, a joint meeting of IFLA and ICA members in Beijing in 1995 had laid the groundwork for a mutual liaison relationship, which has continued during that group's work on revisions to the *International Standard Archival Authority Record for Corporate Bodies, Persons, and Families*.

At the time that FRANAR was initiated, the <indecs> Project (Interoperability of Data in E-Commerce Systems)<sup>5</sup> was well underway and it was already clear that this effort "focused on the practical interoperability of digital content identification systems and related rights metadata within multi-media e-commerce"<sup>6</sup> was related to the potential scope of FRANAR. IFLA was an affiliate organization in this European Commission-funded project. The work of the <indecs> project is currently carried on by INTERPARTY.<sup>7</sup> IFLA is a project partner in INTERPARTY as is the British Library, with the Library of Congress and OCLC acting as "unfounded" partners, so Working

Group members have many opportunities to keep up with INTERPARTY activity as well as to share news of FRANAR work.

In addition, other authorities-related projects have come to the Working Group's attention during the course of our activities. Recent meeting agendas and postings on the group's electronic discussion list have also included reports of the activities of the MALVINE (Manuscripts and Letters via Integrated Letters in Europe)<sup>8</sup> and LEAF (Linking and Exploring Authority Files)<sup>9</sup> Projects, the DELOS/NSF Actors and Roles Working Group<sup>10</sup>, the Dublin Core Agents Working Group,<sup>11</sup> the HKCAN (Hong Kong Chinese Authority Name Work Group),<sup>12</sup> the HKUST XML Name Access Control Repository,<sup>13</sup> the MACS (Multilingual ACcess to Subjects) Project,<sup>14</sup> METAPERS,<sup>15</sup> the AFNOR Working Group on Authority Metadata, and the Virtual International Authority File (VIAF) Proof of Concept Project,<sup>16</sup> many of which are topics for this conference.

### **The Feasibility of an ISADN**

In a paper prepared for the IFLA Conference in Boston in 2001,<sup>17</sup> Françoise Bourdon laid out the conundrum that the International Standard Authority Data Number has posed for the Working Group. The potential for the ISADN has a long history going back to the publication of the *Guidelines for Authority and Reference Entries (GARE)* in 1984. When the UNIMARC Authorities Format was first published as the universal exchange format for authority data, a field was reserved for the ISADN even though no structure for the number had yet been defined.

Mme Bourdon laid out a structure for the ISADN in her report, *International Cooperation in the Field of Authority Data*<sup>18</sup> and, at the same time, attempted to lay to rest previous uncertainty about whether the ISADN as a number was to be assigned to an authority heading or an authority record by specifying that the number should apply to the record as a whole. Later in the decade of the 1990s, an IFLA Seminar held in Vilnius and the International Conference on National Bibliographic Services held in Copenhagen continued to call for international exchange of authority data and to look for a standard number to help in the exchange process.

The ISADN also shows up in the work of the IFLA Working Group on Minimal Level Authority Records and ISADN, which was active from 1996 through 1998. During the work of that group, however, we begin to see a shift from the traditional goal of Universal Bibliographic Control — requiring everyone to use the same form of heading globally — toward a more user-centered view of using headings that meet the user's needs and expectations. That shift has brought with it the idea of linking together authority records that document headings established by different bibliographic agencies that represent the same entity. At the same time, it also became clear, because of the IFLA involvements with <indecs> (and with the successor project, INTERPARTY) and with the International Council on Archives, that there were other players emerging that had interests in the names used to identify persons, corporate bodies and the other entities in the bibliographic world.

Mme Bourdon goes on to describe that the initial meetings of FRANAR concentrated on attempts to bring some conclusion to this multi-year (even multi-decade) discussion of a standard number. The Working Group set forth a basic principle that we would not create

a new standard number; rather, we would look toward the use of existing numbers such as the numbers already assigned automatically by systems in which authority records are created or the rapidly growing set of ISO standard numbers such as the ISAN, the ISWC, the ISRC, etc. Throughout these discussions, there remained the nagging question of “what exactly were we attempting to number?” Was it the entity regardless of the form of the heading used for that entity? Was it each different authorized heading that entity? Was it the authority record itself to which the number applied?

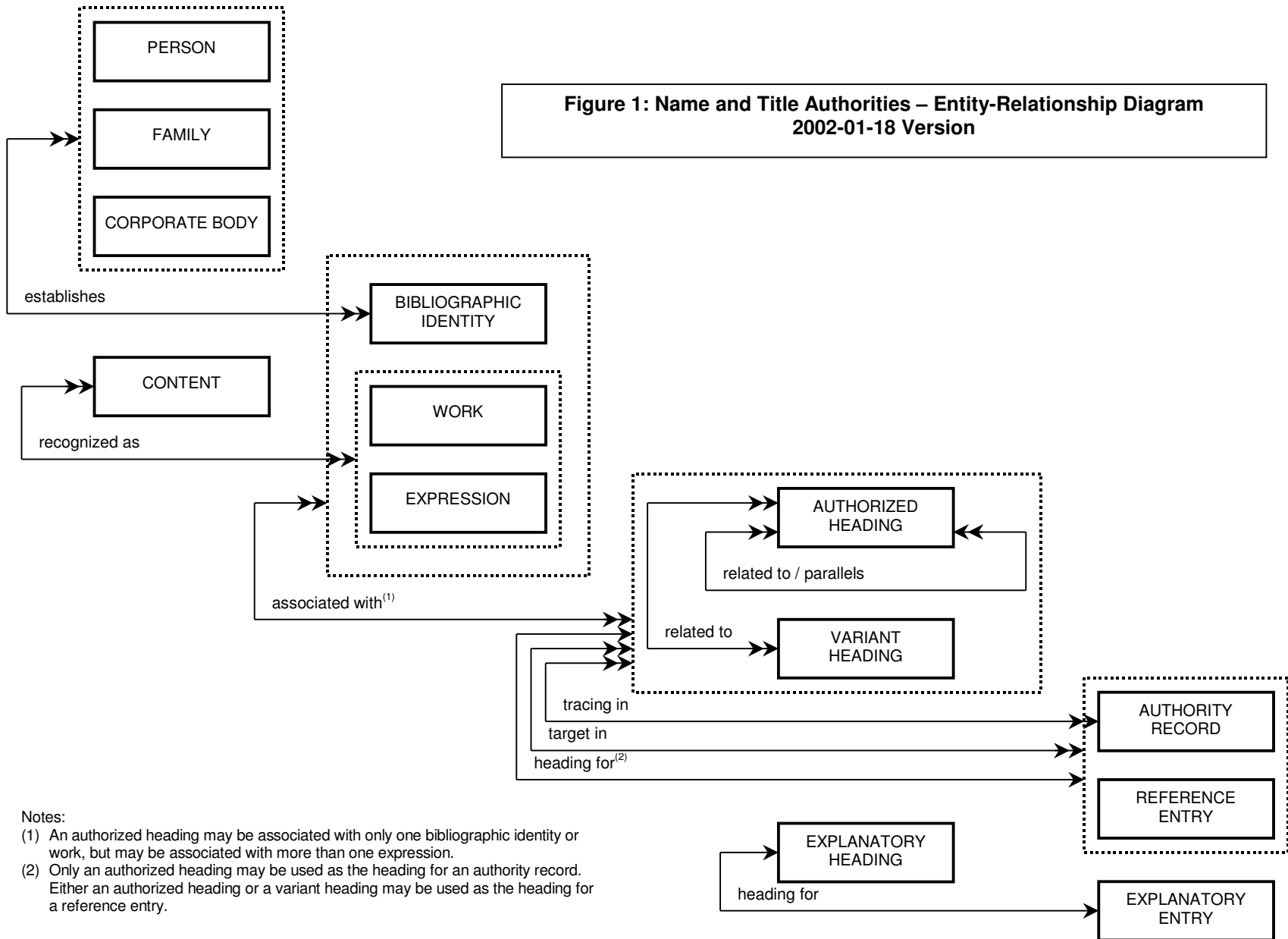
That led the group to the conclusion that we needed to put aside the question of the ISADN for the moment and concentrate our efforts on the third of our charges, the definition of functional requirements for authority records. The group approached that effort with the hope that a clearer understanding of the functions of data in authority records would clarify the questions surrounding the number, especially in an environment that places more importance on the potential sharing of the intellectual aspects on authority data rather than the exchange of physical authority records.

Since we are still in the process of refining an entity-relationship model for authority data, it is too soon to know for certain whether that “clearer understanding” will emerge. It is clear, however, ongoing work in other projects, such as INTERPARTY and VIAF, will inform our discussions.

### **Functional Requirements and the Evolving Conceptual Model**

After some examination of the entities recorded in authority records and the uses that authority records serve, the Working Group’s real consideration of the functional requirements began with discussion of a “straw man” document prepared for the group by Tom Delsey in January 2002. This initial draft was designed to provide a first cut at laying out functional requirements. It was focused on authority records for name headings used for persons, families, and corporate bodies and for name-title and title headings associated with FRBR works and expressions and with series. Authority data for subject headings or thesauri terms, for geographic names and for series were excluded from this initial version of the model. Figure 1 shows this first model.

**Figure 1: Name and Title Authorities – Entity-Relationship Diagram  
2002-01-18 Version**



Notes:

- (1) An authorized heading may be associated with only one bibliographic identity or work, but may be associated with more than one expression.
- (2) Only an authorized heading may be used as the heading for an authority record. Either an authorized heading or a variant heading may be used as the heading for a reference entry.

The group discussed this model (and associated definitions of the entities and their attributes along with a draft set of user tasks) electronically over the following months and at a meeting in May 2002. During the face-to-face meeting, members quickly came to the realization that, while this model is an accurate representation of the traditional relationships among bibliographic entities, the headings that represent those entities and the records that embody those headings, it did not incorporate any of the concepts that the group had encountered through our liaison activities. Our consultant, Tom Delsey, was quickly able to sketch out a new model that built on the traditional model while making relationships to the broader world of entities. Needless to say, the graphic representation of this new model is much more complex.

Since the May 2002 meeting, the model has continued to evolve as Working Group members have made comments on both the diagrams and the draft text. The version of the diagram used in this paper is currently being evaluated and may be further revised.<sup>19</sup>

The conceptual model for authority records is presented graphically in **Figures 2A** and **2B**. The entity definitions have been derived largely from five sources: *Functional Requirements for Bibliographic Records* (FRBR); *Guidelines for Authority Records and References*<sup>20</sup> (GARR), and *The <indecs> Metadata Framework*<sup>21</sup> (<indecs>).

The first entity-relationship diagram (**Figure 2A**) focuses on the entities associated with the *names* and *identifiers* that are registered in authority files. The center column of the diagram incorporates the ten entities defined in FRBR (*work, expression, manifestation, item, person, corporate body, concept, object, event, and place*), plus the additional entity *family*, which the Working Group believes to be an essential addition based on our liaison activity with the archival community.

The second diagram (**Figure 2B**) focuses on the formal or structural entities that come into play when a *name* or *identifier* is used to formulate an *access point* and the access point is subsequently registered in an authority file as a *authorized heading*, or *variant heading* in an *authority record* or *reference record*, or when an *explanatory heading* is registered in a *general explanatory record*. The diagram also highlights two entities that are instrumental in determining the content and form of authority records (*rules* and *agency*).

The entities depicted in the center column of the Figure 2A (the *FRBR entities* with the addition of *family*) are “bibliographic” entities. They reflect intellectual constructs or concepts that are integral to the rules used to create library catalogues.

The entities depicted to the left portion of the Figure 2A are the five “primitive” entities defined in the <indecs> model: BEING, THING, CONCEPT, EVENT, and SITUATION. These entities are defined as follows in the <indecs> model:

BEING: An entity which has the characteristics of animate life; anything which lives and dies.

THING: An entity without the characteristics of animate life.

CONCEPT: An entity which cannot be perceived directly through the mode of one of the five senses; an abstract entity, a notion or idea; an unobservable proposition which exists independently of time and space.

EVENT: A dynamic relation involving two or more entities; something that happens; a relation through which an attribute of an entity is changed, added, or removed.

SITUATION: A static relation involving two or more entities; something that continues to be the case; a relation in which the attributes of entities remain unchanged.

These “primitive” entities have been included in the model for two purposes. The first purpose is to highlight the fact that the bibliographic entities defined in FRBR represent complex classes or types that are derived from and are specific to bibliographic practice in a library context. The mapping of the FRBR entities to the <indec> "primitive" entities serves to illustrate the fact that any one FRBR entity may comprise a mix of generic entity types (e.g., a specific instance of the entity PERSON, as defined in FRBR, may be either a "real" human being, a "fictional" character, or possibly even an inanimate object).

The second purpose for including the “primitive” entities is to show how the “bibliographic” entities associated with the names and identifiers registered in library authority files map to a more generic set of entities that might be used as a common point of reference by other communities that also create files that serve a similar though not necessarily identical purpose in other sectors (archives, museums, rights administration organizations, etc.).

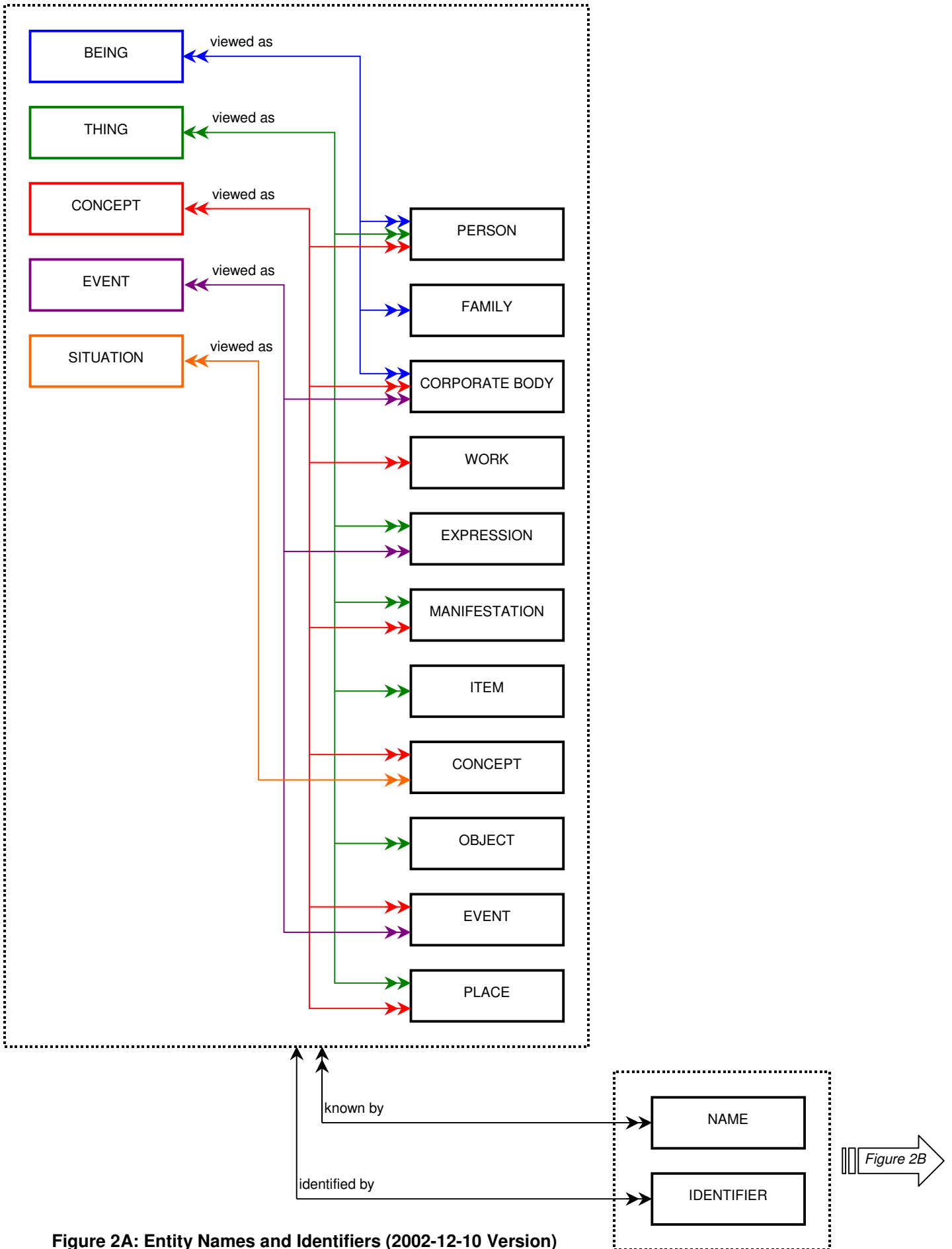
The entities depicted in the center of the Figure 2B (*authorized heading, variant heading, explanatory heading, authority record, reference record, and general explanatory record*) reflect the logical groupings of data that make up an authority file. In the FRBR model, the record and individual parts of the record (headings, areas of the description, etc.) were not represented as separate entities. The reason for that was that the FRBR model was designed simply to highlight the kind of information contained in a typical bibliographic record. Its focus was on providing a clearer understanding of the “external” entities that are the center of interest to users of bibliographic records. This model for authorities is similar in that it also reflects the “external” entities that are of interest to users of authority records (both the “real world” entities and the “bibliographic” entities noted above). However, the model for authorities has been developed not only to assist in clarifying the relationship of the information contained in authority files to those “external” entities, but also to address a number of critical issues related to the management of authority data *per se*. It is essential, therefore, that the model

reflect the key logical groupings of authority data (i.e., headings and records) as entities in their own right.

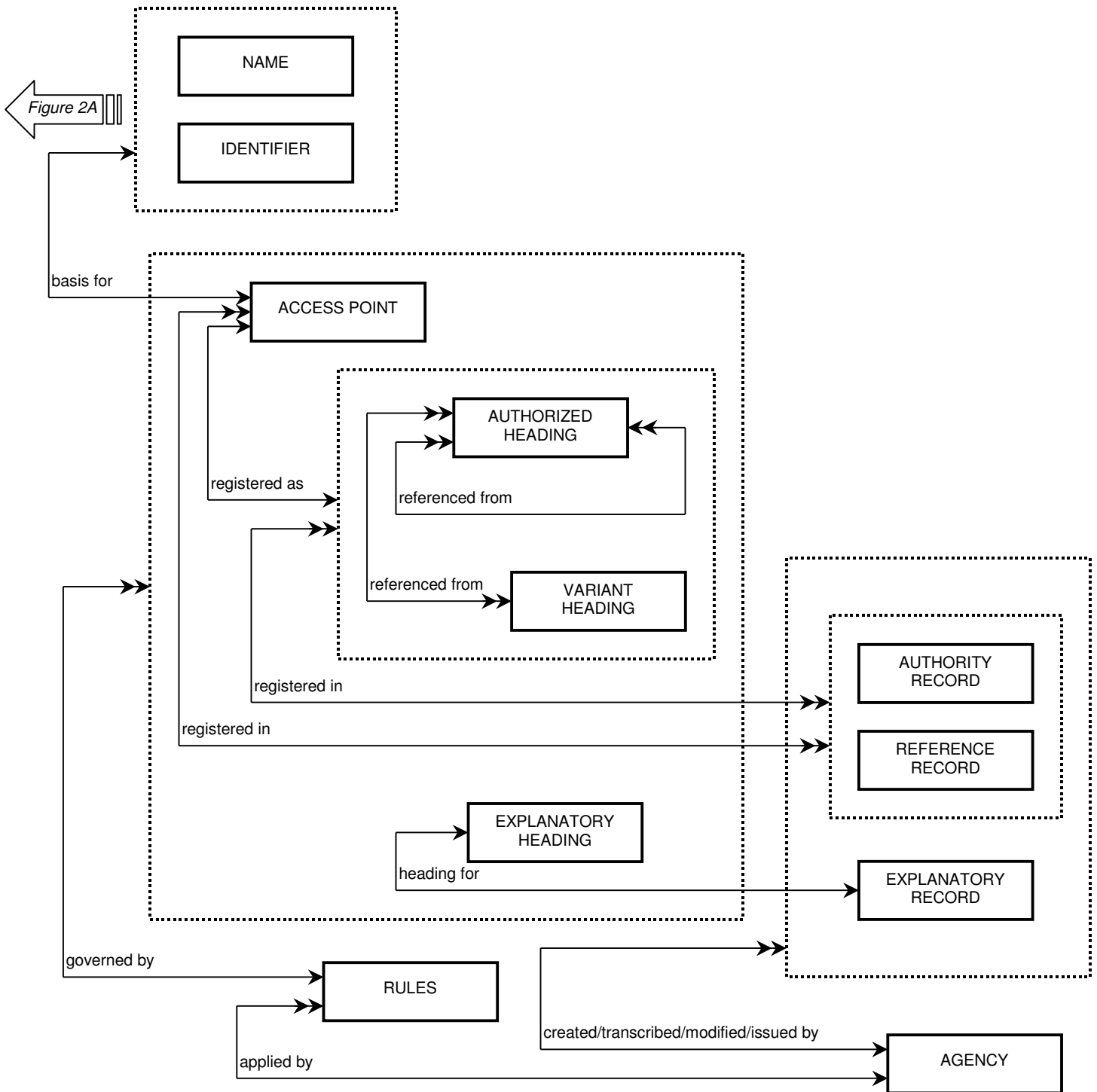
The kinds of relationships depicted in **Figure 2A** also differ somewhat from those depicted in the FRBR model. The entity-relationship diagram in FRBR reflected the high-level relationships between entity types (e.g., a *work* is realized through *expression*). Although those same relationships are conceptually valid for the FRBR entities that are represented in the conceptual model for authorities, they have not been shown explicitly in the entity-relationship diagram, largely because they have no direct functional relevance in the context of authority files. The relationships reflected in the entity-relationship diagram for authorities are those that have a direct bearing on the construction and compilation of authority records.

In addition to the relationships shown in Figures 2A and 2B, the Working Group recognizes that there are also other types of relationships. Elsewhere in the description of the model are descriptions of the relationships between and among entities that are reflected in the reference structures in authority records. Examples of these include earlier name/later name relationships between corporate bodies, real name/pseudonym relationships, whole/part and adaptation relationships between works, and relationships between individuals and groups of which they are a part. Also described are “linking” relationships such as those which exist between headings that are parallel language forms of heading for the same entity or those that are alternate script forms of heading for the same entity.





**Figure 2A: Entity Names and Identifiers (2002-12-10 Version)**



**Figure 2B: Access Points and Authority Records (2002-12-10 Version)**

Finally the conceptual model defines user tasks and maps the entity attributes and relationships to those user tasks. In considering the user tasks, Working Group members first defined three groups of users:

- ♣ cataloguers and reference librarians who use authority files directly
- ♣ library patrons who use authority information either through direct access to authority files or indirectly through the headings and references in library catalogues, national bibliographies, etc.
- ♣ database management and applications software designed to support the creation, maintenance, search and retrieval of data contained in bibliographic and authority files.

User tasks fall into two broad categories: those that are associated with resource discovery and those associated with data management. Working group members currently have defined a total of eight tasks defined as follows:

### **Resource Discovery**

- |                 |   |
|-----------------|---|
| <b>Search</b>   | Search for an entity corresponding to stated criteria (i.e., to search either a single entity or a set of entities using an attribute or relationship of the entity as the search criteria).  |
| <b>Identify</b> | Identify an entity (i.e., to confirm that the entity represented corresponds to the entity sought, or to distinguish between two or more entities with similar characteristics).  |
| <b>Control</b>  | Control the form of heading used for entries in a catalogue, bibliography, list, etc. (i.e., to ensure that the form of heading representing a particular entity is used consistently in order to support collocation).   |
| <b>Relate</b>   | Establish or clarify the relationship between one entity and another (i.e., to establish the relationship between two or more authorized headings or between variant headings and the authorized heading, or to clarify the relationship between two or more corporate bodies, works, etc.) |

### **Data Management**

- |                |   |
|----------------|---|
| <b>Process</b> | Process a record or heading (i.e., to add, delete, replace, output, etc. a logical data component). |
| <b>Sort</b>    | Sort a heading or record for purposes of alphabetic or numeric arrangement.                         |

<b>Display</b>	Display an entry, heading, or data field (i.e., to display data or generate a print constant in a form appropriate for the user, or to suppress a display).
<b>Integrate</b>	Integrate a record, entry, or heading into an existing authority file (i.e., to import data from an external source for purposes of adding to or updating an existing file in a manner that is consistent with the rules and conventions reflected in that file).

## What's Next?

The next goal for the Working Group is to complete work on the draft functional requirements document so that it can be made available for an initial worldwide review. It is my hope that we can accomplish that before the end of 2003. Following that initial review, the group must respond to comments received and, then, we must return to the issue of numbering before we can complete our work.

It has also become clear during the Working Group's discussions that, as a result of the analysis that we have undertaken, revisions to some existing IFLA publications may be necessary. We have identified *Guidelines for Authority Records and References*, *Mandatory Data Elements for Internationally Shared Resource Authority Records*, and the *UNIMARC Manual - Authorities Format* and there may be others. Working Group members have agreed to recommend changes.

I encourage you to watch for announcements of future reviews and to help us complete these important tasks. I noted at the beginning of this paper that the FRBR Study Group recognized the need to extend their model to cover authority data. Just as their work has changed how we think about bibliographic data, we hope that our work will bring a clearer understanding of authority data and its relationships to the catalog.

## Notes

<sup>1</sup> *Functional requirements for bibliographic record: final report*. München: K. G. Saur, 1998, p. 5. Also available online < <http://www.ifla.org/VII/s13/frbr/frbr.pdf>>.

<sup>2</sup> *Mandatory data elements for internationally shared resource authority records*. Frankfurt-am-Main: IFLA UBCIM, 1998. Also available online < <http://www.ifla.org/VI/3/p1996-2/mlar.htm>>

<sup>3</sup> <http://www.ifla.org/VI/3/icnbs/fina.htm>

<sup>4</sup> <http://www.nlc-bnc.ca/iso/tc46sc9/wg3.htm>

<sup>5</sup> <http://www.indecs.org>

<sup>6</sup> <indecs>. *Summary final report*. August 2002, p. 3. Available online <<http://www.indecs.org/pdf/SummaryReport.pdf>>.

<sup>7</sup> <http://www.interparty.org/>

<sup>8</sup> <http://www.malvine.org>

<sup>9</sup> <http://www.leaf-eu.org>

<sup>10</sup> <http://www.delos-nsf.actorswg.cdlib.org/>

<sup>11</sup> <http://dublincore.org/groups/agents/>

<sup>12</sup> <http://hkcan.ln.edu.hk/>

<sup>13</sup> <http://library.ust.hk/info/reports/xmlnac.html>

<sup>14</sup> <http://infolab.kub.nl/prj/macs/>

<sup>15</sup> [http://deposit.ddb.de/meta\\_pers.htm](http://deposit.ddb.de/meta_pers.htm)

<sup>16</sup> <http://www.oclc.org/research/projects/viaf/index.shtm>

<sup>17</sup> Bourdon, Françoise. Functional requirements and numbering of authority records (FRANAR): to what extent authority control can be supported by technical means? In: *67th IFLA General Conference and Council, August 16th-25th, 2001, Boston, USA* [on line]. The Hague: International Federation of Library Associations and Institutions, 2001. Available from World Wide Web: <http://www.ifla.org/IV/ifla67/papers/096-152ae.pdf>.

<sup>18</sup> Bourdon, Françoise. *International Cooperation in the field of Authority Data: an analytical Study with recommendations*. München: K. G. Saur, 1993, p. 79-80.

<sup>19</sup> This description of the current version of the model is adapted from text prepared for the Working Group by Tom Delsey.

<sup>20</sup> *Guidelines for authority records and references*. 2d edition. München : K.G. Saur, 2001.

<sup>21</sup> Rust, Godfrey, and Mark Bide. *The <indec> metadata framework: principles, model and data dictionary*. June 2000. <<http://www.indec.org/pdf/framework.pdf>>