

**Functional Analysis  
of the MARC 21 Bibliographic and Holdings Formats**

**Prepared for the  
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## Foreword

This study was commissioned by the Network Development and MARC standards Office in order to link MARC 21 format data with models identified in major studies that have recently been developed in the area of bibliographic control. Applying the new models from the *Functional Requirements for Bibliographic Records* (FRBR) and the related *The Logical Structure of the Anglo-American Cataloguing Rules* to the data elements accommodated in MARC 21 records was a logical step to assist bibliographic data research. The expert largely responsible for both of the above studies carried out the analysis on contract to the Office, Tom Delsey, of Thomas J. Delsey Consulting. By sponsoring the analysis and making it available, the MARC office and others can use the information when analyzing or making decisions on MARC 21 data related to format maintenance, system implementation, and data sharing. It will be an important tool for continuing development of MARC 21.

Mr. Delsey also carried out studies of several special topics based on this analysis, which will be made available separately.

The MARC 21 format data element set has grown in response to user requests to satisfy existing needs, the description requirements of new media, new functions identified for bibliographic data in automated systems, and changing description practices. While all additions and changes have been widely reviewed and discussed to assure that they met the principles for the format content, the emergence of an internationally accepted bibliographic data model provided an excellent opportunity to undertake a general review. The decision was made to examine MARC 21 from several perspectives: the FRBR model, a cataloguing code model, and a set of user tasks that the format might logically support. This study used the *Anglo American Cataloguing Rules* (AACR) for the cataloguing code perspective since there was already a study relating the AACR to the FRBR model. Since the AACR rules use the *International Standard Bibliographic Description* (ISBD) guidelines for a key part of the description, the rules analysis may be useful to MARC 21 users who follow other ISBD-based cataloguing codes.

The analysis was originally carried out using the *MARC 21 Format for Bibliographic Data* and the *MARC 21 Format for Holdings Data*, including their year 2000 updates. Although the original study continues to be useful, the Network Development and MARC Standards Office has updated it to include the MARC 21 updates through 2003. Please note, however, that NDMSO plans not to maintain the "Mapping of AACR to MARC Data Elements" table because the AACR study is further being elaborated on and thus, it is impossible to maintain accurately. The mapping of AACR to MARC continues to be made available online at: [www.loc.gov/marc/marc-functional-analysis/foriginal\\_frbr.html](http://www.loc.gov/marc/marc-functional-analysis/foriginal_frbr.html).

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## 1. Background

The scope and complexity of the MARC formats have increased substantially over the course of its thirty-five year history. What originated as a single format for communicating bibliographic data pertaining to printed texts has evolved into a suite of formats tailored to accommodate descriptions for a wide range of media, from sound recordings and audiovisual materials through to geo-spatial data files and networked electronic resources. Its original focus on library cataloguing has been extended to encompass a broad range of applications, from the management of archival holdings to the description of community information resources. Originally conceived to serve as a vehicle for communicating bibliographic data on magnetic tape from one stand-alone system to another, it now functions within a fully networked environment linking libraries with a wide range of other information providers.

In the past decade, the rapid evolution of digital information media and communications networks has posed significant challenges for the continued development and viability of the MARC format. Adapting the format to the demands of this new environment entails more than simple incremental enhancement to format specifications; it requires extensive re-examination of the underlying logical structure of the format and its application.

Over the past few years, the new technologies for recording and disseminating information, and the impact of those technologies on traditional information management practices have prompted those within the information sector to re-assess their approach to document description, resource discovery, information processing, and communication. Within the library community there have been major studies undertaken by the International Federation of Library Associations and Institutions (IFLA) and the Joint Steering Committee for Revision of the Anglo-American Cataloguing Rules (JSC), which have contributed to a clearer understanding of the nature and uses of bibliographic records and the conventions used to create those records. The models produced in those studies, as well as models developed for the publishing, sound recording and film industries, archives, and museums have the potential to significantly influence the future development of information management standards and practices both within the library community and more broadly across the information sector.

The development of the MARC formats has always been closely tied to the development of descriptive standards within the library community, and increasingly is linked to a wider repertoire of standards being developed across the broader information sector. As those standards evolve to adapt to a changing environment, it is essential for MARC format development not just to keep pace, but also to anticipate as far as possible future directions.

## 2. Objective

The functional analysis of the MARC format undertaken in this study has four primary objectives:

- to clarify the relationships between the data structures embodied in the MARC formats and the FRBR model
- to develop a model (based on FRBR) that reflects the full extent of data contained in the MARC formats
- to relate individual data elements within the MARC record to the uses they are designed to support
- to assist in an understanding of key issues for the future development of the MARC formats

## 3. Scope

The analysis covers all data elements specified in the leader, control fields and variable fields of the MARC 21 formats for bibliographic and holdings data.

All references to MARC data elements are based on the 1999 edition of the *MARC 21 Format for Bibliographic Data* and the 2000 edition of the *MARC 21 Format for Holdings Data*, both incorporating updates to October 2003.

## 4. Approach

The study is divided into three segments.

The first segment correlates the content specified in the MARC 21 bibliographic and holdings formats with the model that has been developed for IFLA in the *Functional Requirements for Bibliographic Records* (FRBR). Each data element specified in the bibliographic and holdings formats is mapped to the corresponding entity and associated logical attribute or relationship as defined in the FRBR model. The mapping to FRBR is intended to serve as a means of relating the design of the format, at a logical or conceptual level, to the design of descriptive standards that govern the key data content of the MARC record.

The second segment of the study identifies data elements specified in the MARC bibliographic and holdings formats that fall outside the scope of the model defined for FRBR, and extends that model to incorporate definitions for entities and associated logical attributes and relationships corresponding to that additional MARC data content. The extended model serves as a means of clarifying the extent of the information contained in MARC records and the interrelationships between and among elements of that information.

The third segment of the study provides a functional analysis of the data content of the MARC bibliographic and holdings formats, building on the correspondence of logical attributes and relationships to user tasks that was developed for the FRBR study. The matrices developed for the FRBR study have been extended to reflect the additional entities, logical attributes, and relationships identified in the extended model as well as additional user tasks associated with resource use and data management.

## 5. Mapping of MARC Data Elements to FRBR

**Table 1** contains a detailed mapping of data elements specified in the MARC bibliographic and holdings formats to the model developed for IFLA in the *Functional Requirements for Bibliographic Records* (FRBR).

Not surprisingly, there is a significant level of correspondence between the data elements specified in MARC (some 2600 in total) and the entities, attributes, and relationships defined in the FRBR model. Approximately 1200 MARC data elements can be mapped to the entities, attributes and relationships defined in the FRBR model. However, the correspondences are not in all cases exact. Approximately ten percent of the correspondences to FRBR must be qualified in some form or other, usually because the MARC data element comprises a mix of values pertaining to different entities or to different attributes of the same entity. Those inexact correspondences are marked in the **Table 1**, and each is annotated with an explanation of the anomaly.

**Table 2** contains a detailed reverse mapping of the entities, attributes and relationships defined in FRBR, respectively, to the corresponding data elements specified in MARC.

### 5.1 Correlation with FRBR

The reverse mapping of FRBR to MARC reveals a rather complex distribution of attributes and relationships associated with the four primary entities defined in the FRBR model (*work*, *expression*, *manifestation*, and *item*).

#### 5.1.1 Attributes of work, expression, manifestation and item

Attributes associated with the FRBR entity *work* tend to be concentrated, as might be expected, in heading fields (100-130, 600-658, 700-754, and 800-830), title fields (240-245), and field 006/008. Within the heading and title fields attributes associated with the entity *work* are consistently designated at the subfield level. In field 006/008, however, the attributes of the FRBR entity *work* are less consistently structured. For example, the attribute “form of work” surfaces in five data elements in field 006/008 for books, in four for maps, in three for music, in three for serials, and in one for visual materials, and the positioning of those data elements differs significantly from one configuration of the field to another. Furthermore, the correlation between a particular attribute associated with *work* as defined in FRBR and the corresponding data element specified in field 006/008 is in a number of cases inexact, inasmuch as the MARC data element sometimes mixes or concatenates values for an attribute of *work* with attributes of other entities.

Attributes of the FRBR entity *expression* are recorded in textual form in a number of heading and title fields (e.g., subfield †l – language, subfield †o – arranged statement); in certain material specific fields (254, 255, and 256), in certain physical description fields (310, 321, 342 and 343), and in certain note fields (505, 514, 516, 520, 546, 562, and 586). Attributes of *expression* are recorded as fixed length data elements both in field 006/008 and in field 007. As with the attributes of *work*, the correlation between a particular attribute associated with *expression* as defined in FRBR and the corresponding data element specified in field 006/008 or 007 is in a number of cases inexact, inasmuch as the MARC data element sometimes mixes or concatenates

values for an attribute of *expression* with attributes of other entities. Attributes of *expression* also occur in coded form in fields 034 (coded cartographic mathematical data), 041 (language), and 306 (playing time).

Attributes of the FRBR entity *manifestation* tend to be concentrated in the numbers fields (013, 018, 020, 022, 024, 027, 028, 030, 032, 036, 037, 074, 086, and 088), title and title-related fields (210, 222, 242, 245, 246, and 247), edition, imprint, etc. fields (250, 256, 260, and 270), and physical description fields (300, 340, 352, and 362). Attributes of *manifestation* may also occur in added entry fields (subfield †h – medium, and subfield †x - ISSN), and in an added entry field defined specifically for computer files (753). In coded form, attributes of *manifestation* occur in both field 006/008 and in field 007, as well as in field 046. As with the attributes of *work* and *expression*, the correlation between a particular attribute associated with *manifestation* and the corresponding data element specified in field 006/008 or 007 is in a number of cases inexact, inasmuch as the MARC data element sometimes mixes or concatenates values for an attribute of *manifestation* with attributes of other entities.

Attributes of the FRBR entity *item* occur primarily in call number fields (050, 051, 055, 060, 061, 070, 071, 080, 082, and 084), some numbers fields (026) and in holdings fields (852-878). Attributes of *item* may also occur in series statements (490), and in certain note fields (541, 562, 563, 583, and 585). In coded form, attributes of *item* occur in field 007 for motion pictures. Attributes that may be associated either with *manifestation* or with *item* occur in fields 355, 357, 506, 540, and 845.

### **5.1.2 Relationships between works, expressions, manifestations, and items**

*Work-to-work* relationships are reflected in a variety of MARC data elements. Added entry fields (700-730) may contain data pertaining to a related *work*. Certain linking entry fields (770 and 772) are defined specifically to convey *work-to-work* relationships, while others (760-786), although not specifically defined as *work-to-work* relationships, may contain data associated with the related entity at the *work* level (e.g., in the form of a uniform title in subfield †s). A number of note fields (510, 525, 555, and 556) also contain data reflecting a *work-to-work* relationship.

*Expression-to-expression* relationships may appear in added entry fields (700-730), and in certain linking entry fields (765, 767, and 775).

*Manifestation-to-manifestation* relationships appear in series added entries (440, 800-830), in certain note fields (530, 533 and 534), and in a number of linking entry fields (760, 762, 773, 774, and 776). *Manifestation-to-manifestation* relationships may also appear in added entries (700-730). Aspects of *manifestation-to-manifestation* relationships are also reflected in coded form in field 006/008 for serials and in field 007 for maps, globes, and computer files.

An *item-to-item* relationship is reflected in field 544.

## 5.2 Implications for cross-sector exchange of data

The extent to which MARC data elements can be mapped to the entities, attributes, and relationships defined in the FRBR model provides some indication of the potential for developing effective cross-walks between the MARC format and data formats developed by other communities and organizations within the broader information sector. The FRBR model defines entities and relationships at a conceptual or logical level. It has been recognized fairly widely across related communities as a useful tool for understanding the nature of bibliographic data, and has had a significant influence on the development of similar models for use within those communities. **The relatively high level of correlation between MARC and the FRBR model suggests, therefore, that the level of compatibility between MARC and standards reflecting the FRBR and related models should be relatively high, at least at the logical level.**

On a practical level, the mapping of individual MARC data elements to the FRBR model can be used in the development of cross-walks to other bibliographic data formats as a means of clarifying correspondences and anomalies at a logical level that might otherwise be obscured by naming conventions and the formal structures embodied in the respective formats. The mapping serves to flag data elements in MARC that have an inexact or anomalous correspondence with the attributes and relationships defined in FRBR. It also flags data elements that require additional analysis before the correspondence with FRBR (and presumably with data defined in other bibliographic formats) can be confirmed.

## 6. Mapping of MARC Data Elements to User Tasks

**Table 1** contains a detailed mapping of data elements specified in the MARC bibliographic and holdings formats to a defined set of user tasks. For the purposes of this analysis user tasks are divided into three broad categories: (1) tasks pertaining to resource discovery, (2) tasks pertaining to resource use, and (3) tasks pertaining to data management. The twelve tasks are defined as follows:

### *Resource Discovery*

<b>Search</b>	Search for a resource 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 a resource (i.e., to confirm that the entity described or located corresponds to the entity sought, or to distinguish between two or more entities with similar characteristics).
<b>Select</b>	Select a resource that is appropriate to the user's needs (i.e., to choose an entity that meets the user's requirements with respect to content, physical format, etc., or to reject an entity as being inappropriate to the user's needs).
<b>Obtain</b>	Access a resource either physically or electronically through an online connection to a remote computer, and/or acquire a resource through purchase, licence, loan, etc.

### *Resource Use*

<b>Restrict</b>	Control access to or use of a resource (i.e., to restrict access to and/or use of an entity on the basis of proprietary rights, administrative policy, etc.).
<b>Manage</b>	Manage a resource in the course of acquisition, circulation, preservation, etc.
<b>Operate</b>	Operate a resource (i.e., to open, display, play, activate, run, etc. an entity that requires specialized equipment, software, etc. for its operation).
<b>Interpret</b>	Interpret or assess the information contained in a resource.

### ***Data Management***

- Identify** Identify a record, segment, field, or data element (i.e., to differentiate one logical data component from another).
- Process** Process a record, segment, field, or data element (i.e., to add, delete, replace, output, etc. a logical data component by means of an automated process).
- Sort** Sort a field for purposes of alphabetic or numeric arrangement.
- Display** Display a field or data element (i.e., to display a field or data element with the appropriate print constant or as a tracing).

## 6.1 Summary of Mapping to User Tasks

The mapping of MARC data elements to user tasks reflects assumptions made in the design of the format as to the expected use of a data element either in the automated processing of the data or in the course of consultation by a user.

The table that follows provides a high-level summary of the detailed mapping of data elements contained in **Table 1**. The table identifies broad data groups (based on the major divisions used to organize the format documentation), and for each data group provides a summary of the user tasks that the data is designed to support. A solid square (■) indicates the primary user tasks the data elements in the group are designed to support (i.e., those that appear most frequently in the mapping of individual data elements in that group to user tasks in the detailed tables). An open square (□) indicates secondary user.

**Table 1: Summary of Mapping to User Tasks**

Data Group	Fields	Resource Discovery				Resource Use				Data Management			
		S E A R C H	I D E N T I F Y	S E L E C T	O B T A I N	R E S T R I C T	M A N A G E	O P E R A T E	I N T E R P R E T	I D E N T I F Y	P R O C E S S	S O R T	D I S P L A Y
Leader											■		
Control fields	001-005									■	■		
Control fields	006-008		■	■	□		□	□	☒				
Numbers and codes	010-088	■	■	□	■					□	□		
Main entries	100-130	■	■										
Title and title-related	210-247	■	■	□	■								
Edition, imprint, etc.	250-270		■	■	■			□	□				
Physical description, etc.	300-362		■	■			■	■	☒				
Series statements	440-490	■	■	■	■								
Notes	500-586		■	■	□	□	□	□	□				
Subject access	600-658	■	■										
Added entries	700-754	■	■										
Linking entries	760-787		■	■	■								
Series added entries	800-830	■	■										
Holdings, alternate graphics, etc.	841-886		■		■	□	■						

Tasks that data elements in the group are designed to support (i.e., those that appear less frequently in the mapping of individual data elements in that group to user tasks in the detailed tables in **Table 1**). A square containing an “x” (☒) indicates user tasks that a limited number of data elements in the group are designed to support (i.e., those that appear on an exceptional basis in the mapping of individual data elements in that group to user tasks in the detailed tables in **Table 1**). Note that the summary table does not reflect the use of data recorded in indicators and control subfields for data management purposes.

The following general observations can be drawn from the mapping of data elements to user tasks:

- the predominant assumed use of data throughout the record as a whole is resource discovery
- the identification of a resource is the single most frequently occurring use in the mapping
- support for searching has been extended beyond the conventional parameters of descriptive and subject cataloguing to include index terms designed to serve special purposes or specific communities of users (e.g., genre, occupation, function, curriculum objective, make, model, programming language, and operating system, and taxonomic names)
- the inclusion of data to support resource use (particularly the management and operation of resources) is significant but more limited than data supporting resource discovery
- the more recent addition of data supporting interpretation is linked in a large part to the description of digitally encoded content (e.g., remote sensing imagery, geo-spatial data; digital graphic representation; data quality, and entity and attribute information)

## 7. Extending the FRBR Model

The extended model provides a comprehensive structured representation—at a conceptual or logical level—of all the information contained in the MARC bibliographic and holdings formats. As such, it serves as a means of clarifying the extent of information covered by the formats and the interrelationships between and among elements of that information.

The model is presented in four segments: (1) FRBR entities and primary relationships; (2) additional entities related to *work*; (3) additional entities related to *item*; and (4) “record metadata” entities.

### 7.1 FRBR Entities and Primary Relationships

The first segment of the extended model (**Figure 1, Tables 1, 1.1-1.10**) contains capsule versions of the FRBR entity-relationship diagrams, entity, attribute, and relationship definitions, supplemented with definitions for additional attributes and relationships to reflect data specified in the MARC bibliographic and holdings formats that correspond to the entities originally defined in the FRBR model.

#### 7.1.1 Additional attributes associated with work

The extended model includes the following additional (\*) attributes associated with the entity defined in FRBR as *work*, derived from the analysis of MARC data:

- nature of work\*
- purpose of work\*
- reading level\*
- point value\*
- level of interest\*
- source of work\*

#### 7.1.2 Additional attributes associated with expression

The extended model includes the following additional (\*) and redefined (\*\*) attributes associated with the entity defined in FRBR as *expression*, derived from the analysis of MARC data:

- symbology\*
- date of current expected frequency\*
- date of former expected frequency\*
- scale (extended to include scale for technical drawings/models)\*\*
- entities and attributes\*
- quality of data set\*
- case file characteristics\*

### **7.1.3 Additional attributes associated with manifestation**

The extended model includes the following additional (\*) and redefined (\*\*) attributes associated with the entity defined in FRBR as *manifestation*, derived from the analysis of MARC data:

- type of component unit\*
- date of production\*
- place of production\*
- contact information for source\*
- manifestation designation\*
- numbering continuity\*
- calendar change for numbering\*
- kind of disc, cylinder, or tape\*
- system requirements (extended to include requirements for manifestations other than computer files)\*\*
- file characteristics (extended to include compression/decompression)\*\*
- organization and arrangement\*
- quality assurance targets\*
- reformatting quality\*
- access instructions\*
- hours of availability \*

### **7.1.4 Additional attributes associated with item**

The extended model includes the following additional (\*) attributes associated with the entity defined in FRBR as *item*, derived from the analysis of MARC data:

- date of acquisition\*
- method of acquisition\*
- acquisition price\*
- location of item\*
- extent of item\*
- rate of accumulation\*
- completeness of item\*
- reproduction restrictions on item\*
- frequency of use of item\*

### **7.1.5 Additional attributes and relationships associated with person**

The extended model includes the following additional (\*) attributes and relationships associated with the entity defined in FRBR as *person*, derived from the analysis of MARC data:

- biography/history\*
- has custody of ⇨ item\*
- affiliated with ⇨ corporate body\*

### **7.1.6 Additional attributes and relationships associated with corporate body**

The extended model includes the following additional (\*) attributes and relationships associated with the entity defined in FRBR as *corporate body*, derived from the analysis of MARC data:

- address\*
- biography/history\*
- has custody of ⇨ item\*
- affiliated with ⇨ corporate body\*

### **7.1.7 Additional attributes associated with event**

The extended model includes the following additional (\*) attributes associated with the entity defined in FRBR as *event*, derived from the analysis of MARC data:

- type of event\*
- time/date of event\*
- location of event\*

## **7.2 Additional Entities Related to Work**

The second segment of the extended model (**Figure 2, Tables 2, 2.1-2.8**) introduces eight newly defined entities, derived from the analysis of MARC data, that are related directly or indirectly to the entity defined in FRBR as *work*. Three of the new entities represent activities from which a *work* may result (*task*, *project*, and *program*). Related to those three entities are one representing the *work unit* responsible for performing the activity, and two representing sources of funding for such activities (*contract* and *grant*). The remaining two new entities represent activities in which a *work* may be used (*study program* and *curriculum*).

### **7.2.1 Attributes and relationships associated with task**

The extended model includes the following attributes and relationships associated with the entity defined as *task*, derived from the analysis of MARC data:

- task identifier
- produces ⇔ work
- performed by ⇔ work unit
- part of ⇔ project
- funded through ⇔ contract
- funded through ⇔ grant

### **7.2.2 Attributes and relationships associated with project**

The extended model includes the following attributes and relationships associated with the entity defined as *project*, derived from the analysis of MARC data:

- project identifier
- produces ⇔ work
- comprises ⇔ task
- part of ⇔ program
- funded through ⇔ contract
- funded through ⇔ grant

### **7.2.3 Attributes and relationships associated with program**

The extended model includes the following attributes and relationships associated with the entity defined as *program*, derived from the analysis of MARC data:

- program identifier
- produces ⇔ work
- comprises ⇔ project
- funded through ⇔ contract
- funded through ⇔ grant

### **7.2.4 Attributes and relationships associated with work unit**

The extended model includes the following attributes and relationships associated with the entity defined as *work unit*, derived from the analysis of MARC data:

- work unit identifier
- performs ⇔ task

### **7.2.5 Attributes and relationships associated with contract**

The extended model includes the following attributes and relationships associated with the entity defined as *contract*, derived from the analysis of MARC data:

- contract identifier
- funds ⇔ task
- funds ⇔ project
- funds ⇔ program
- funded by ⇔ corporate body

### **7.2.6 Attributes and relationships associated with grant**

The extended model includes the following attributes and relationships associated with the entity defined as *grant*, derived from the analysis of MARC data:

- grant identifier
- funds ⇔ task
- funds ⇔ project
- funds ⇔ program
- funded by ⇔ corporate body

### **7.2.7 Attributes and relationships associated with study program**

The extended model includes the following attributes and relationships associated with the entity defined as *study program*, derived from the analysis of MARC data:

- study program identifier
- name of study program
- uses ⇔ work
- part of ⇔ curriculum

### **7.2.8 Attributes and relationships associated with curriculum**

The extended model includes the following attributes and relationships associated with the entity defined as *curriculum*, derived from the analysis of MARC data:

- curriculum identifier
- uses ⇔ work
- comprises ⇔ study program

### 7.3 Additional Entities Related to Item

The third segment of the extended model (**Figure 3, Tables 3, 3.1-3.3**) introduces three newly defined entities, derived from the analysis of MARC data, that are related directly or indirectly to the entity defined in FRBR as *item*. One of the newly defined entities represents an *action* pertaining to the item; another represents the *authority* governing the *action*; and the third represents the *position* responsible for the action.

#### 7.3.1 Attributes and relationships associated with action

The extended model includes the following attributes and relationships associated with the entity defined as *action*, derived from the analysis of MARC data:

- action identifier
- name of action
- action status
- time/date of action
- action interval
- contingency for action
- method of action
- site of action
- pertains to ⇨ item
- governed by ⇨ authority
- responsibility of ⇨ person
- responsibility of ⇨ position
- responsibility of ⇨ corporate body
- performed by ⇨ person
- performed by ⇨ position
- performed by ⇨ corporate body

#### 7.3.2 Attributes and relationships associated with authority

The extended model includes the following attributes and relationships associated with the entity defined as *authority*, derived from the analysis of MARC data:

- citation for authority
- governs ⇨ action

### **7.3.3 Attributes and relationships associated with position**

The extended model includes the following attributes and relationships associated with the entity defined as *position*, derived from the analysis of MARC data:

- title of position
- responsible for ⇔ action
- performs ⇔ action

## 7.4 “Record Metadata” Entities

The fourth segment of the extended model (**Figure 4, Tables 4, 4.1-4.4**) provides a schematic representation of the “record metadata” (i.e., the data about data) contained in the MARC format. The four entities represented in the “record metadata” segment of the extended model are *record*, *segment*, *field*, and *data element*. All are derived from an analysis of the data in the MARC record that has an internal focus—data that is contained primarily in the leader, coded data fields, indicators, and control subfields.

**Table 4** contains a mapping of the “resource metadata” entities to data elements in the MARC 21 format. The analysis in this appendix is intended to facilitate a review of data in the MARC record that is designed to support data management, as distinct from simple information exchange.

### 7.4.1 Attributes and relationships associated with record

The extended model includes the following attributes and relationships associated with the entity defined as *record*, derived from the analysis of MARC data:

- record identifier
- type of record
- ownership of record
- record status
- date entered on file
- date/time of latest transaction
- bibliographic level
- language of cataloguing
- character coding scheme
- type of control
- descriptive cataloguing form
- type of entry
- encoding level
- linked record requirement
- data source
- transcribing agency
- modifying agency
- authentication source
- length of record
- base address of data
- comprises ⇨ segment
- comprises ⇨ field

#### **7.4.2 Attributes and relationships associated with segment**

The extended model includes the following attributes and relationships associated with the entity defined as *segment*, derived from the analysis of MARC data:

- segment identifier
- type of segment
- part of ⇨ record
- comprises ⇨ field

#### **7.4.3 Attributes and relationships associated with field**

The extended model includes the following attributes and relationships associated with the entity defined as *field*, derived from the analysis of MARC data:

- type of field
- length of field
- function of field
- field display constant
- note controller
- level of content designation
- form of field
- field encoding level
- part of ⇨ record
- part of ⇨ segment
- comprises ⇨ data element
- parallels ⇨ field

#### **7.4.4 Attributes and relationships associated with data element**

The extended model includes the following attributes and relationships associated with the entity defined as *data element*, derived from the analysis of MARC data:

- type of data element
- source of data element
- filing of data element
- language of data element
- level of data element
- format of data element
- compressibility of data element
- applicability of data element
- evaluation of data element
- part of ⇨ field
- references ⇨ data element

## 7.5 Extending the FRBR Model Table

### Purpose

This extended model is a structured representation of the information contained in the MARC bibliographic and holdings formats.

It is intended to serve as a means of clarifying the extent of the information contained in MARC records and the interrelationships between and among elements of that information.

### Scope

The model covers all the information contained in the record (including information pertaining to the record itself, and the fields and data elements contained in the record.) The model, however, reflects the content of the record at the entity, logical attribute and type of relationship level, not at the individual data element level.

### Diagramming Conventions



A rectangle represents an entity (i.e., an object, agent, activity, event, etc.) about which information is needed in order to support a process or user task.



A single-headed arrow on a line represents a relationship in which any given instance of the entity at the opposite end of the line may be associated with only one instance of the entity to which the arrow is pointing.



A double-headed arrow on a line represents a relationship in which any given instance of the entity at the opposite end of the line may be associated with one or more instances of the entity to which the arrow is pointing.



A dotted-line rectangle surrounding a group of two or more entities indicates that a relationship represented by an arrow contiguous with the dotted line may apply to any and/or all of the entities represented within the rectangle.

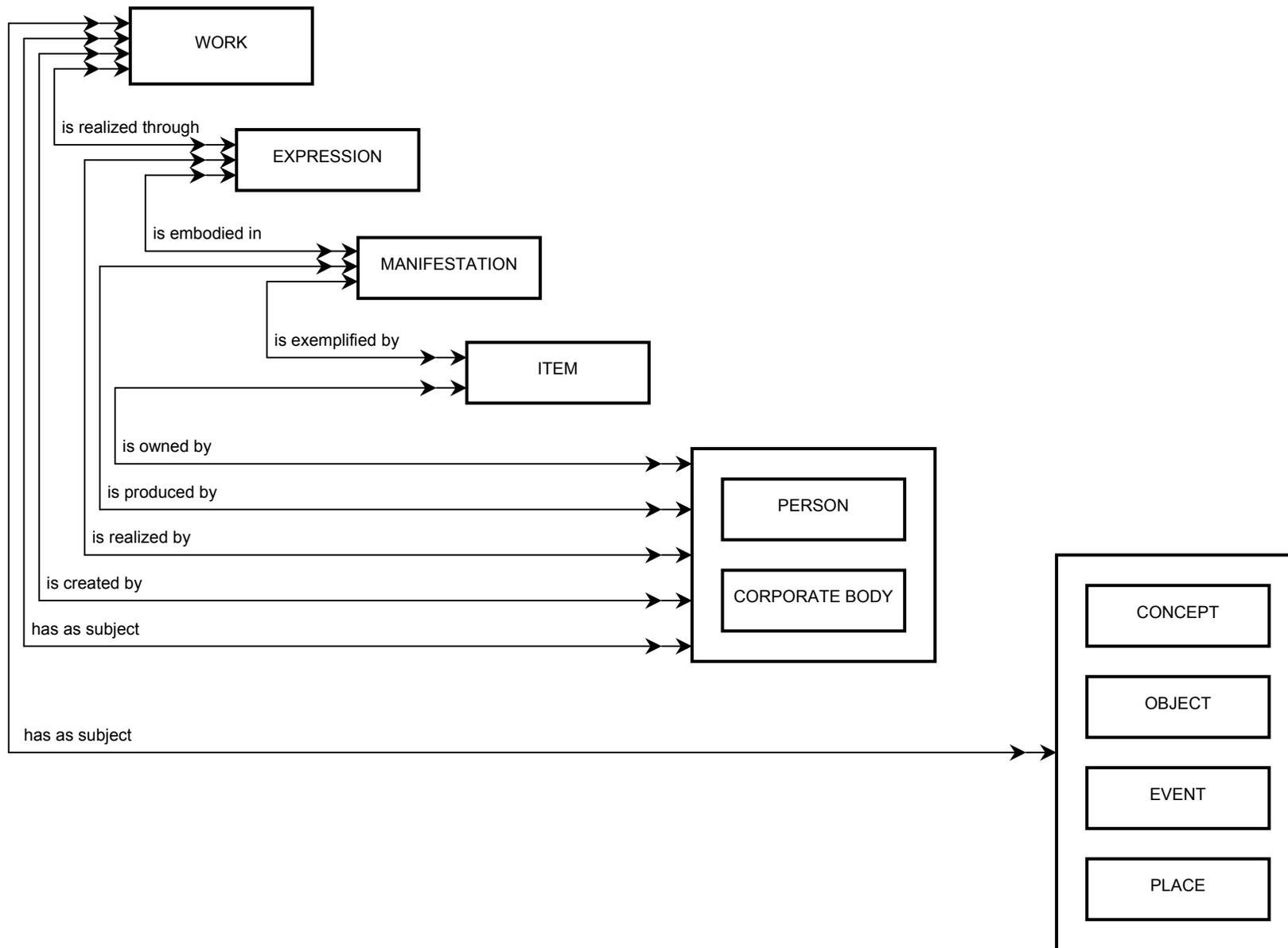
## **Structure of the Model**

The model is presented in four segments:

1. FRBR Entities and Primary Relationships
2. Additional Entities Related to "Work"
3. Additional Entities Related to "Item"
4. "Metadata" Entities

Each segment contains an entity-relationship diagram, followed by a table containing definitions for each of the entities depicted in the diagram. Those tables are followed in turn by a set of tables containing definitions for the attributes and relationships associated with each of the entities in the diagram.

The entity definitions in Table 1 and the attribute definitions in Tables 1.1 through 1.10 are condensed forms of the definitions provided in FRBR.



**Figure 1: FRBR Entities and Primary Relationships**

**Table 1: FRBR Entities - Entity Definitions**

<b>Entity</b>	<b>Definition / Inclusions / Exclusions</b>
<b>Work</b>	A distinct intellectual or artistic creation. FRBR includes variants—such as revisions, updates, abridgements; added parts, accompaniment, transcriptions and arrangements of music; dubbed or subtitled versions of films, and translations—as expressions of the same original work. Modifications involving a significant degree of independent intellectual or artistic effort—such as paraphrases, rewritings, parodies, musical variations on a theme, dramatizations, adaptations, abstracts, digests, and summaries—are viewed as new works.
<b>Expression</b>	The intellectual or artistic realization of a work in the form of alpha-numeric, musical, or choreographic notation, sound, image, object, movement, etc., or any combination of such forms. Expression encompasses the specific words, sentences, paragraphs, etc. resulting from the realization of a work in the form of a text. Expression excludes aspects of physical form—such as typeface and page layout—that are not integral to the intellectual or artistic realization of the work as such.
<b>Manifestation</b>	The physical embodiment of an expression of a work. Manifestation includes unique embodiments of a work (e.g., an author’s manuscript, an original painting), as well as embodiments produced in multiple copies, either for broad dissemination (e.g., a published book, a commercial sound recording) or for more limited purposes (e.g., a photocopy of an original typescript, a dubbing of a recording of an original piece of music). The set of copies produced in each case constitutes a manifestation.
<b>Item</b>	A single exemplar of a manifestation. The item may be a single physical object (e.g., a copy of a one-volume monograph, a single audio cassette), or it may comprise more than one physical object (e.g., a monograph issued in two separately bound volumes, a recording issued on three separate compact discs).
<b>Person</b>	An individual. Includes individuals that are deceased as well as those that are living.
<b>Corporate Body</b>	An organization or group of individuals and/or organizations acting as a unit. Includes organizations and groups of individuals that are identified by a particular name, including occasional groups and groups that are constituted as meetings, conferences, congresses, expeditions, exhibitions, fairs, festivals, etc. Includes organizations that act as territorial authorities exercising government functions over a certain territory, such as a federation, a state, a region, a local municipality, etc. Includes organizations that are defunct as well as those that continue to operate.

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<b>Concept</b>	An abstract notion or idea. Includes fields of knowledge, disciplines, schools of thought (philosophies, religions, political ideologies, etc.), theories, processes, techniques, practices, etc. Includes broadly defined concepts as well as those that are narrowly defined and precise.
<b>Object</b>	A material thing. Includes animate and inanimate objects occurring in nature, fixed, movable, and moving objects that are the product of human creation. Includes objects that no longer exist.
<b>Event</b>	An action or occurrence. Includes historical events, epochs, periods of time, etc.
<b>Place</b>	A location. Includes terrestrial and extra-terrestrial locations, historical and contemporary locations, geographic features and geo-political jurisdictions.

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**Table 1.1: Work - Attributes and Relationships**

<b>Attribute</b>	<b>Definition / Examples</b>
<b>Title of work</b>	A word, phrase, or group of characters naming the work.
<b>Form of work</b>	The class to which the work belongs (e.g., novel, play, poem, symphony, concerto, sonata, map, drawing, painting, photograph).
<b>Date of work</b>	The date (normally the year) the work was originally created.
<b>Other distinguishing characteristic</b>	Any characteristic that serves to differentiate the work from another work with the same title (e.g., place of origin).
<b>Intended termination</b>	An indication of whether the work has been conceived as having a finite end or is intended to continue indefinitely.
<b>Nature of work*</b>	The general character of a work (e.g., interim report, historical time chart).
<b>Purpose of work*</b>	The purpose for which the work was created (e.g., dissertation).
<b>Source of work*</b>	An indication of whether a work emanates from a government body or from a conference.
<b>Intended audience</b>	The class of user for which the work is intended, as defined by age group (e.g., children, young adults), educational level (e.g., primary, secondary), or other categorization.
<b>Reading level*</b>	An indication of the reading level of a work as assigned by a study program.
<b>Point value*</b>	An indication of the point value of a work as assigned by a study program.

<b>Level of interest*</b>	An indication of the expected level of interest in a work (e.g., local/national interest, international interest) or the interest level assigned to a work by a study program.
<b>Context for work</b>	The historical, social, intellectual, artistic, or other context within which the work was originally conceived (e.g., the Enlightenment, the Aesthetic Movement).
<b>Medium of performance</b>	The instrumental, vocal, and/or other medium of performance for which a musical work was originally intended (e.g., piano, orchestra, men's voices).
<b>Numeric designation</b>	A serial number, opus number, or thematic index number assigned to a musical work.
<b>Key</b>	The set of pitch relationships that establishes a single pitch class as a tonal centre for the work as originally composed (e.g., D major).
<b>Coordinates</b>	The degrees, minutes, and seconds of longitude and latitude, or the angles of declination and ascension that form the outer boundaries for the area represented in a cartographic image or object.
<b>Equinox</b>	The year that serves as the point of reference for a celestial chart or model.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Realized through ⇒ expression</b>	The relationship between the work and an expression that is a realization of the work.
<b>Created by ⇒ person</b>	The relationship between the work and a person responsible for the creation of the work.
<b>Created by ⇒ corporate body</b>	The relationship between the work and a corporate body responsible for the creation of the work.

<b>Has as subject ⇒ person</b>	The relationship between the work and a person that is the subject of the work.
<b>Has as subject ⇒ corporate body</b>	The relationship between the work and a corporate body that is the subject of the work.
<b>Has as subject ⇒ concept</b>	The relationship between the work and a concept that is the subject of the work.
<b>Has as subject ⇒ object</b>	The relationship between the work and an object that is the subject of the work.
<b>Has as subject ⇒ event</b>	The relationship between the work and an event that is the subject of the work.
<b>Has as subject ⇒ place</b>	The relationship between the work and a place that is the subject of the work.
<b>Has as subject ⇒ work</b>	The relationship between the work and another work that is the subject of the work.
<b>Has as subject ⇒ expression</b>	The relationship between the work and an expression that is the subject of the work.
<b>Has as subject ⇒ manifestation</b>	The relationship between the work and a manifestation that is the subject of the work.
<b>Has as subject ⇒ item</b>	The relationship between the work and an item that is the subject of the work.
<b>Subject of ⇒ work</b>	The relationship between the work and another work in which the work is a subject.
<b>Successor ⇒ work</b>	The relationship between the work and a succeeding work or between the work and a work that it succeeds.

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<b>Supplement ⇒ work</b>	The relationship between the work and a supplementary work or between the work and a work that it supplements.
<b>Complement ⇒ work</b>	The relationship between the work and a complementary work or between the work and a work that it complements.
<b>Summarization ⇒ work</b>	The relationship between the work and a summarizing work or between the work and a work that it summarizes.
<b>Adaptation ⇒ work</b>	The relationship between the work and an adaptation or between the work and a work on which it is based.
<b>Transformation ⇒ work</b>	The relationship between the work and a transformation of the work or between the work and a work on which it is based.
<b>Imitation ⇒ work</b>	The relationship between the work and an imitation of the work or between the work and a work that it imitates.
<b>Whole/part ⇒ work</b>	The relationship between the work and a work that forms part of the work or between the work and a larger work of which it is a part.

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**Table 1.2: Expression - Attributes and Relationships**

<b>Attribute</b>	<b>Definition / Examples</b>
<b>Title of expression</b>	A word, phrase, or group of characters naming the expression.
<b>Form of expression</b>	The means by which the work is realized (e.g., through alpha-numeric notation, musical notation, spoken word, musical sound, cartographic image, sculpture, dance)
<b>Date of expression</b>	The date the expression was created (e.g., the date the particular text was written or revised, the date a song was performed).
<b>Language of expression</b>	The language or languages in which the work is expressed.
<b>Symbology*</b>	The system of symbols, conventions, etc. used to convey meaning (e.g., Braille, moon type).
<b>Other distinguishing characteristic</b>	Any characteristic of the expression that serves to differentiate the expression from another expression of the same work (e.g., various versions of the English text of the Bible).
<b>Extensibility of expression</b>	The expectation that the expression will have additional intellectual or artistic content added to it.
<b>Revisability of expression</b>	The expectation that the intellectual or artistic content of the expression will be revised (e.g. a directory that is expected to be updated periodically).
<b>Extent of expression</b>	A quantification of the intellectual content of the expression (e.g., number of words in a text, statements in a computer program, images in a comic strip).
<b>Summarization of content</b>	An abstract, summary, synopsis, etc., or a list of chapter headings, songs, parts, etc. included in the expression.

<b>Context for expression</b>	The historical, social, intellectual, artistic, or other context within which the expression was realized (e.g., the Art Deco period).
<b>Critical response to expression</b>	The reception given to the expression by reviewers, critics, etc., as encapsulated in an annotation (e.g., "critically acclaimed for its use of ...").
<b>Use restrictions on expression</b>	Restrictions on access to and use of an expression (e.g., copyright restrictions, licence restrictions).
<b>Sequencing pattern</b>	The form anticipated to be used in designating volumes/issues, etc. and/or dates for the individual units in a serial (e.g., Volume ..., number ...).
<b>Expected regularity of issue</b>	The anticipated regularity of release of individual issues of a serial (e.g., regular, irregular).
<b>Expected frequency of issue</b>	The interval at which individual issues of a serial are anticipated to be released (e.g., weekly, monthly, quarterly).
<b>Date of current expected frequency*</b>	The date at which the current frequency of issue of a serial began.
<b>Dates of former expected frequency*</b>	The beginning and end dates of the former frequency of issue of serial.
<b>Type of score</b>	The format used to represent a musical composition (e.g., short score, full score).
<b>Medium of performance</b>	The instrumental and/or vocal medium of performance represented in the expression of a musical work (e.g., two pianos, soprano and alto).
<b>Scale**</b>	The ratio of distances in a cartographic or technical image or object to the actual distances they represent.

<b>Projection</b>	The method or system used to represent the surface of the Earth or of a celestial sphere on a plane (e.g., transverse Mercator, azimuthal equidistant).
<b>Presentation technique</b>	The method used to represent geographic or other features in a cartographic image (e.g., anaglyphic, diagrammatic, pictorial).
<b>Representation of relief</b>	The technique used to depict the elevations or the inequalities of a land surface or of the bed of a body of water in a cartographic image (e.g., contours, shading, hachures).
<b>Geodetic, grid, and vertical measurement</b>	Information on the spheroid used to construct a cartographic image, the grid or referencing systems used in the image, horizontal datum, vertical datum, mathematical data on contour intervals, bathymetric intervals, etc.
<b>Recording technique</b>	The technique used to capture an image through remote sensing (e.g., multispectral photography, infrared line scanning, SLAR).
<b>Special characteristic</b>	The altitude and attitude of the sensor, the position of the platform, the category and name of the satellite, the number of spectral bands involved, the quality of the image, the extent of cloud cover, or the mean value of the ground resolution in an image produced by aerial photography.
<b>Entities and attributes*</b>	The entity types, attributes, and attribute value domains in a cartographic or geo-spatial expression.
<b>Quality of data set*</b>	An indication of the accuracy, logical consistency, completeness, etc. of the data set constituting a cartographic or geo-spatial expression.
<b>Case file characteristics*</b>	Information pertaining to the number of cases or variables in a file, the names of the variables, the unit of analysis, the scope of data collection, the methodology used to collect the data, the filing scheme, etc.
<b>Technique</b>	The method used to create a graphic image (e.g., engraving), or to realize motion in a projected image (e.g., animation, live action, computer generation, 3D).

<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Realization of ⇒ work</b>	The relationship between the expression and the work realized through the expression.
<b>Embodied in ⇒ manifestation</b>	The relationship between the expression and a manifestation embodying the expression.
<b>Subject of ⇒ work</b>	The relationship between the expression and a work in which the expression is a subject.
<b>Realized by ⇒ person</b>	The relationship between the expression and a person responsible for its realization.
<b>Realized by ⇒ corporate body</b>	The relationship between the expression and a corporate body responsible for its realization.
<b>Successor ⇒ work</b>	The relationship between the expression and a succeeding work or between the expression and a work that it succeeds.
<b>Supplement ⇒ work</b>	The relationship between the expression and a supplementary work or between the expression and a work that it supplements.
<b>Complement ⇒ work</b>	The relationship between the expression and a complementary work or between the expression and a work that it complements.
<b>Summarization ⇒ work</b>	The relationship between the expression and a summarizing work or between the expression and a work that it summarizes.
<b>Adaptation ⇒ work</b>	The relationship between the expression and an adaptation or between the expression and a work on which it is based.

<b>Transformation ⇒ work</b>	The relationship between the expression and a transformation of the expression or between the expression and a work on which it is based.
<b>Imitation ⇒ work</b>	The relationship between the expression and an imitation of the expression or between the expression and a work that it imitates.
<b>Abridgement ⇒ expression</b>	The relationship between the expression and an abridgement or between the expression and an expression that it abridges.
<b>Revision ⇒ expression</b>	The relationship between the expression and a revision or between the expression and an expression that it revises.
<b>Translation ⇒ expression</b>	The relationship between the expression and a translation or between the expression and an expression that it translates.
<b>Arrangement ⇒ expression</b>	The relationship between the expression and an arrangement or between the expression and an expression that it arranges.
<b>Supplement ⇒ expression</b>	The relationship between the expression and a supplementary expression or between the expression and an expression that it supplements.
<b>Complement ⇒ expression</b>	The relationship between the expression and a complementary expression or between the expression and an expression that it complements.
<b>Summarization ⇒ expression</b>	The relationship between the expression and a summarizing expression or between the expression and an expression that it summarizes.
<b>Adaptation ⇒ expression</b>	The relationship between the expression and an adaptation or between the expression and an expression on which it is based.

<b>Transformation ⇒ expression</b>	The relationship between the expression and a transformation of the expression or between the expression and an expression on which it is based.
<b>Imitation ⇒ expression</b>	The relationship between the expression and an imitation of the expression or between the expression and an expression that it imitates.
<b>Whole/part ⇒ expression</b>	The relationship between the expression and an expression that forms part of the expression or between the expression and a larger expression of which it is a part.

\*Attributes and relationships marked with an asterisk represent additions to those identified in *Functional Requirements for Bibliographic Records*.

\*\*Attributes and relationships marked with a double asterisk have been given a broader scope than the corresponding attribute or relationship defined in *Functional Requirements for Bibliographic Records*.

**Table 1.3: Manifestation - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Title of manifestation</b>	A word, phrase, or group of characters naming the manifestation.
<b>Original alphabet of title*</b>	The alphabet in which the title is represented in the manifestation.
<b>Statement of responsibility</b>	A statement appearing in the manifestation (normally in conjunction with the title) that names one or more individuals or groups responsible for the creation or realization of the intellectual or artistic content embodied in the manifestation.
<b>Edition/issue designation</b>	A word or phrase appearing in the manifestation that normally indicates a difference in either content or form between the manifestation and a related manifestation previously issued by the same publisher/distributor (e.g., second edition), or simultaneously issued by either the same publisher/distributor or another publisher/distributor (e.g., large print edition, British edition).
<b>Place of publication/ distribution</b>	The city, town, or other locality associated in the manifestation with the name of the publisher/distributor.
<b>Publisher/distributor</b>	The individual, group, or organization named in the manifestation as being responsible for the publication, distribution, issuing, or release of the manifestation.
<b>Date of publication/distribution</b>	The date (normally a year) of public release of the manifestation. In the absence of a date designated as the date of publication or release, a copyright date or a date of printing or manufacture may serve as a substitute.
<b>Projected date of publication/distribution*</b>	The date (normally a month and year) the manifestation is expected to be published.
<b>Place of manufacture*</b>	The city, town, or other locality associated in the manifestation with the name of the manufacturer.

<b>Fabricator/manufacturer</b>	The individual, group, or organization named in the manifestation as being responsible for the fabrication or manufacture of the manifestation.
<b>Date of production*</b>	The date (normally a year) of production or reproduction of a manifestation.
<b>Place of production*</b>	The city, town, or other locality associated with the principal offices of the producing entity of a film.
<b>Series statement</b>	A word, phrase, or group of characters appearing in the manifestation naming the series to which the manifestation belongs.
<b>Form of carrier</b>	The specific class of material to which the physical carrier of the manifestation belongs (e.g., sound cassette, videodisc, microfilm cartridge).
<b>Type of component unit*</b>	The type of container used to house the components of an aggregate manifestation (e.g., file folders, boxes).
<b>Extent of carrier</b>	A quantification of the number of physical units making up the carrier (e.g., number of sheets, discs, reels).
<b>Physical medium</b>	The type of material from which the carrier is produced (e.g., paper, wood, plastic, metal). The medium may include both a base material and any material that is applied to the base (e.g., oil paint applied to canvas).
<b>Capture mode</b>	The means used to record notation, sound, or images in the production of a manifestation (e.g., analogue, acoustic).
<b>Dimensions of carrier</b>	The measurements of the physical components and/or container of the manifestation. Includes measurements of height, and/or width, and/or depth, or diameter.
<b>Dimensions of component unit*</b>	The measurements of the containers used to house the components of an aggregate manifestation. Includes measurements of height, and/or width, and/or depth, or diameter.

<b>Manifestation identifier</b>	A number or code uniquely associated with the manifestation that serves to differentiate that manifestation from any other manifestation.
<b>Source for acquisition/access authorization</b>	The name of a publisher, distributor, etc. indicated in the manifestation as the source from which the manifestation may be acquired or through whom access may be authorized.
<b>Contact information for source*</b>	The address, telephone number, and other contact information for a publisher, distributor, etc. from which the manifestation may be acquired or through whom access may be authorized. Includes hours that the contact or telephone number is available.
<b>Terms of availability</b>	The terms indicated in the manifestation under which the supplier (i.e., the source for acquisition/access authorization) will normally make the manifestation available (e.g., free to member of a particular association), or the price for which the manifestation sells.
<b>Access restrictions on manifestation</b>	Restrictions on access to and use of a manifestation (e.g., copyright restrictions, licence restrictions).
<b>Manifestation designation*</b>	A term or phrase used to designate an individual component of a manifestation.
<b>Typeface</b>	The style of type used to print a book (e.g., Baskerville, Times New Roman).
<b>Type size</b>	The size of the characters in a printed book (e.g., 10 point).
<b>Foliation</b>	An indication of the number of folds made in a printed sheet to form a gathering of leaves (e.g., a sheet folded twice to form a quarto).
<b>Collation</b>	The sequence of gatherings in a book as indicated by signatures on each gathering (e.g., four gatherings bearing signatures A through D).

<b>Publication status</b>	The status of a serial with respect to its continuing publication (i.e., whether the serial is currently published or has ceased publication).
<b>Numbering</b>	The designation of volume/issue, etc. and/or date appearing in a serial.
<b>Numbering continuity*</b>	An indication as to whether the numbering is continuously incremental or whether it restarts at the completion of a unit.
<b>Calendar change for numbering*</b>	The quarter, month, and/or day on which an incremental change in numbering occurs.
<b>Playing speed</b>	The speed at which the carrier of a sound recording must be operated in order to produce the intended sound (e.g., 33 1/3 rpm, 19 cm/s).
<b>Groove width</b>	An indication of the number of grooves per inch cut on a disc or cylinder (e.g., microgroove—i.e., 200 grooves per inch).
<b>Kind of cutting</b>	The direction in which the grooves are cut on a disc or cylinder (e.g., lateral, vertical).
<b>Tape configuration</b>	The number of tracks on a sound tape (e.g., eight track, twelve track).
<b>Kind of sound</b>	An indication of the number of sound channels used to make the recording (e.g., monaural, stereophonic).
<b>Kind of disc, cylinder or tape*</b>	An indication of the type of disc, cylinder or tape (e.g., mass produced, test pressing, mother, stamper).
<b>Special reproduction characteristics</b>	The equalization system, noise reduction system, etc. used in making the recording (e.g., NAB, DBX, Dolby).

<b>Colour</b>	The colour(s), tone(s), etc. (including black and white) used in the production of an image.
<b>Reduction ratio</b>	The degree to which a text or image has been reduced in the process of microfilming (e.g., 42x, very high reduction—i.e., in the range of 61x to 90x).
<b>Polarity</b>	The relationship of the colours and tones in an image on film to the colours and tones of the object filmed (e.g., positive, negative).
<b>Generation</b>	An indication of the number of times an image on film has been transferred from one carrier to another (e.g., a first generation camera master, a second generation printing master).
<b>Presentation format</b>	The format used in the production of a projected image (e.g., wide screen, Beta, VHS).
<b>Sound characteristic*</b>	An indication of the presence or absence of sound or the technical nature of the sound component of a film, videorecording, or computer file.
<b>System requirements**</b>	Requirements related to hardware (e.g., machine make and model, RAM capacity), software (e.g., operating systems, programming language), and peripherals (e.g., monitor, mouse) required to access/operate an electronic resource or other type of manifestation requiring special equipment for playback, etc.
<b>File characteristics**</b>	Standards or schemes used to encode an electronic file (e.g., ASCII, SGML), physical characteristics of the file (e.g., recording density, parity), and other characteristics that have a bearing on how the file can be processed (including compression and decompression methods).
<b>Organization and arrangement*</b>	The system or method by which a collection of materials is organized or arranged (e.g., classification, filing arrangement).
<b>Quality assurance targets*</b>	An indication of the presence or absence of quality assurance targets in a digitized reproduction.
<b>Reformatting quality*</b>	An indication of the quality of a digitized reproduction (e.g., preservation quality, access quality).

<b>Mode of access</b>	The means of accessing a remote electronic resource (e.g., Internet, World Wide Web).
<b>Access address</b>	An alpha-numeric code (e.g., URL) used to facilitate remote access to an electronic resource.
<b>Access instructions*</b>	Details pertaining to commands, passwords, logon procedures, settings, terminal emulation, technical assistance, location of host, host operating system, transmission rate, etc.
<b>Hours of availability*</b>	The days and/or hours an electronic resource is accessible. Includes additional information on downtime, holidays, etc.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Embodiment of ⇒ expression</b>	The relationship between the manifestation and the expression embodied in the manifestation.
<b>Exemplified in ⇒ item</b>	The relationship between the manifestation and an item that is an exemplar of the manifestation.
<b>Subject of ⇒ work</b>	The relationship between the manifestation and a work in which the manifestation is a subject.
<b>Produced by ⇒ person</b>	The relationship between the manifestation and a person responsible for producing the manifestation.
<b>Produced by ⇒ corporate body</b>	The relationship between the manifestation and a corporate body responsible for producing the manifestation.
<b>Reproduction ⇒ manifestation</b>	The relationship between the manifestation and a manifestation that is a reproduction or between the manifestation and a manifestation that it reproduces.

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**Alternate ⇒ manifestation**    The relationship between the manifestation and a manifestation that is an alternate or between the manifestation and a manifestation for which it is an alternate.

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**Issued with ⇒ manifestation**    The relationship between a component manifestation and another component manifestation that is issued with it.

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**Whole/part ⇒ manifestation**    The relationship between the manifestation and a manifestation that forms part of the manifestation or between the manifestation and a larger manifestation of which it is a part.

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**Reproduction ⇒ item**    The relationship between the manifestation and an item that it reproduces or between an item and a manifestation that is a reproduction.

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\*Attributes and relationships marked with an asterisk represent additions to those identified in *Functional Requirements for Bibliographic Records*.

\*\*Attributes and relationships marked with a double asterisk have been given a broader scope than the corresponding attribute or relationship defined in *Functional Requirements for Bibliographic Records*.

**Table 1.4: Item - Attributes and Relationships**

<b>Attribute</b>	<b>Definition / Examples</b>
<b>Item identifier</b>	A number or code that is uniquely associated with the item, and serves to differentiate that item from any other item in the same collection and/or institution (e.g., call number, accession number, bar code).
<b>Provenance of item</b>	A record of previous ownership or custodianship of the item.
<b>Date of acquisition*</b>	The date on which the item was acquired by or deposited with the owner/custodian.
<b>Method of acquisition*</b>	The means by which the item was acquired by the owner/custodian.
<b>Acquisition price*</b>	The cost of acquiring the item.
<b>Marks/inscriptions</b>	Signatures, numbering, annotations, etc. that have been applied uniquely to the item by the artist, fabricator, owner, etc.
<b>Exhibition history</b>	A record of public exhibitions of an item, including dates, venues, etc.
<b>Location of item*</b>	The collection and/or institution in which the item is held.
<b>Extent of item*</b>	A quantification of the number of physical units making up an aggregate item (e.g., number of boxes, file folders, etc.).
<b>Rate of accumulation*</b>	The rate at which an item accumulates (e.g., number of linear feet per year).
<b>Condition of item</b>	The physical condition of the item, particularly any variances between the physical makeup of the item and that of the manifestation it exemplifies (e.g., missing pages, plates), or other aspects of the physical condition of the item (e.g., brittleness, foxing, faded images).

<b>Completeness of item*</b>	An indication of what portion of an item is held relative to the manifestation as issued.
<b>Access restrictions on item</b>	Any limitation placed on physical access to the item (e.g., restricted to supervised on-site use).
<b>Reproduction restrictions on item*</b>	Any limitation placed on reproduction of the item (e.g., reproduction not permitted).
<b>Frequency of use of item*</b>	An indication of the frequency of use that is made of an item (e.g., frequent, occasional, minimal).
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Exemplifies ⇒ manifestation</b>	The relationship between the item and the manifestation exemplified by the item.
<b>Subject of ⇒ work</b>	The relationship between the item and a work in which the item is a subject.
<b>Owned by ⇒ person</b>	The relationship between the item and a person who owns the item.
<b>Owned by ⇒ corporate body</b>	The relationship between the manifestation and a corporate body that owns the item.
<b>In custody of ⇒ person*</b>	The relationship between the item and a person who has custody of the item.
<b>In custody of ⇒ corporate body*</b>	The relationship between the item and a corporate body that has custody of the item.
<b>Reconfiguration ⇒ item</b>	The relationship between the item and an item with which it is reconfigured.

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**Reproduction ⇒ item**

The relationship between the item and an item that it reproduces or between the item and an item that is a reproduction.

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**Whole/part ⇒ item**

The relationship between the item and an item that forms part of the item or between the item and a larger item of which it is a part.

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\*Attributes and relationships marked with an asterisk represent additions to those identified in *Functional Requirements for Bibliographic Records*.

**Table 1.5: Person - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Name of person</b>	A word, character, or group of words and/or characters by which the person is known. Includes forenames (or given names), matronymics, patronymics, family names (or surnames), sobriquets, dynastic names, etc.
<b>Dates of person</b>	Dates associated with a person. Includes precise or approximate date of birth and/or death, dates indicating the period in which the person was known to be active in a given field of endeavour, etc.
<b>Title of person</b>	A word or phrase indicative of rank, office, nobility, honour, etc., or a term of address associated with the person.
<b>Other designation associated with the person</b>	A numeral, word, or abbreviation indicating succession within a family or dynasty, or an epithet or other word or phrase associated with the person (e.g., “the Brave,” “Professional Engineer”).
<b>Biography/history*</b>	Information pertaining to the life or history of the person.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Creates ⇒ work</b>	The relationship between the person and a work created by the person.
<b>Subject of ⇒ work</b>	The relationship between the person and a work in which the person is a subject.
<b>Realizes ⇒ expression</b>	The relationship between the person and an expression realized by the person.
<b>Produces ⇒ manifestation</b>	The relationship between the person and a manifestation produced by the person.
<b>Owns ⇒ item</b>	The relationship between the person and an item owned by the person.

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**Has custody of ⇒ item\***

The relationship between the person and an item in the custody of the person.

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**Affiliated with ⇒ corporate  
body\***

The relationship between the person and a corporate body with which the person is affiliated.

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\*Attributes and relationships marked with an asterisk represent additions to those identified in *Functional Requirements for Bibliographic Records*.

**Table 1.6: Corporate Body - Attributes and Relationships**

<b>Attribute</b>	<b>Definition / Examples</b>
<b>Name of corporate body</b>	A word, character, or group of words and/or characters by which the body is known.
<b>Number associated with corporate body</b>	A numerical designation sequencing a meeting, conference, exhibition, fair, etc. that constitutes one of a series of related meetings, conferences, exhibitions, fairs, etc., or any other numerical designation associated with the corporate body.
<b>Place associated with corporate body</b>	A city, town, or other designation of location in which a meeting, conference, exhibition, fair, etc., was held, or the location with which the corporate body is otherwise associated (e.g., the location of its headquarters). May include the name of the state, province, territory, and/or country as well as the local place name.
<b>Date associated with corporate body</b>	A date or range of dates on which a meeting, conference, exhibition, fair, etc. was held, or a date with which the corporate body is otherwise associated (e.g., the date of its incorporation).
<b>Other designation associated with corporate body</b>	A word, phrase, or abbreviation indicating incorporation or legal status of the body, or any term serving to differentiate the body from other corporate bodies, persons, etc. (e.g., “firm,” “musical group”).
<b>Address*</b>	The address of the corporate body. Includes postal address, electronic communications address, location code, etc.
<b>Biography/history*</b>	Information pertaining to the life or history of the corporate body.

<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Creates ⇒ work</b>	The relationship between the corporate body and a work created by the corporate body.
<b>Subject of ⇒ work</b>	The relationship between the corporate body and a work in which the corporate body is a subject.
<b>Realizes ⇒ expression</b>	The relationship between the corporate body and an expression realized by the corporate body.
<b>Produces ⇒ manifestation</b>	The relationship between the corporate body and a manifestation produced by the corporate body.
<b>Owns ⇒ item</b>	The relationship between the corporate body and an item owned by the corporate body.
<b>Has custody of ⇒ item*</b>	The relationship between the corporate body and an item in the custody of the corporate body.
<b>Affiliated with ⇒ corporate body*</b>	The relationship between the corporate body and another body with which the corporate body is affiliated.

\*Attributes and relationships marked with an asterisk represent additions to those identified in *Functional Requirements for Bibliographic Records*.

**Table 1.7: Concept - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Term for concept</b>	A word, phrase, or group of characters used to name or designate the concept. Includes both controlled and uncontrolled index terms. Also includes classification numbers and subject category codes.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Subject of ⇒ work</b>	The relationship between the concept and a work in which the concept is a subject.

**Table 1.8: Object - Attributes and Relationships**

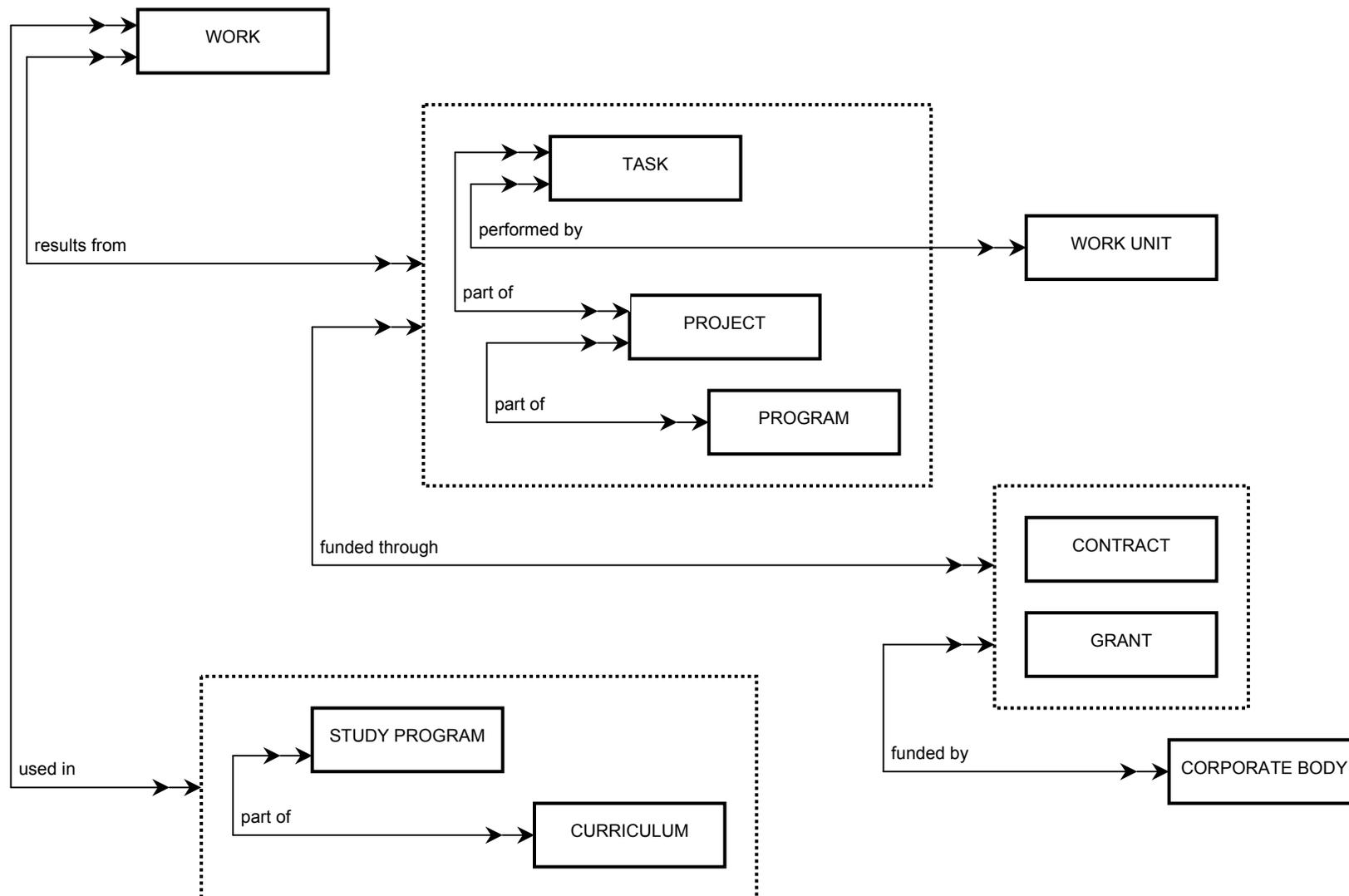
<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Term for object</b>	A word, phrase, or group of characters used to name or designate the object. Includes both controlled and uncontrolled index terms. Also includes classification numbers and subject category codes.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Subject of ⇒ work</b>	The relationship between the object and a work in which the object is a subject.

**Table 1.9: Event - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Term for event</b>	A word, phrase, or group of characters used to name or designate the event. Includes both controlled and uncontrolled index terms. Also includes classification numbers and subject category codes.
<b>Type of event*</b>	A categorization or generic descriptor for the event.
<b>Time/date of event*</b>	The date and/or time that the event occurred.
<b>Location of event*</b>	The place in which the event occurred.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Subject of ⇒ work</b>	The relationship between the event and a work in which the event is a subject.

**Table 1.10: Place - Attributes and Relationships**

<i><b>Attribute</b></i>	<i><b>Definition / Examples</b></i>
<b>Term for place</b>	A word, phrase, or group of characters used to name or designate the place. Includes both controlled and uncontrolled index terms. Also includes classification numbers and subject category codes.
<i><b>Relationship</b></i>	<i><b>Definition / Examples</b></i>
<b>Subject of ⇒ work</b>	The relationship between the place and a work in which the place is a subject.



**Figure 2: Additional Entities Related to “Work”**

**Table 2: Additional Entities Related to “Work” - Entity Definitions**

<b>Entity</b>	<b>Definition / Inclusions / Exclusions</b>
<b>Work</b>	See definition in Table 1.
<b>Task</b>	A discrete activity or operation associated with a project.
<b>Project</b>	A plan or set of tasks associated with the achievement of a specific objective or initiative.
<b>Program</b>	A set of activities, functions, and/or projects associated with a broad organizational objective.
<b>Work Unit</b>	A component of an organization. Includes departments, directorates, divisions, sections, work units, project teams, etc. established as part of an overall organization.
<b>Contract</b>	An agreement with a vendor, dealer, or service provider covering the supply of products or services according to established terms and conditions.
<b>Grant</b>	An allocation of funds to an applicant for a specified purpose.
<b>Corporate Body</b>	See definition in Table 1.
<b>Study Program</b>	A course of study set by an educational institution.
<b>Curriculum</b>	A plan designed to further an educational goal.

**Table 2.1: Task - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Task identifier</b>	A number or code uniquely associated with a task that serves to differentiate that task from any other.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Produces ⇒ work</b>	The relationship between the task and a work produced by the task.
<b>Performed by ⇒ work unit</b>	The relationship between the task and a work unit performing the task.
<b>Part of ⇒ project</b>	The relationship between the task and a project under which the task is performed.
<b>Funded through ⇒ contract</b>	The relationship between the task and a contract under which the task is funded.
<b>Funded through ⇒ grant</b>	The relationship between the task and a grant under which the task is funded.

**Table 2.2: Project - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Project identifier</b>	A number or code uniquely associated with a project that serves to differentiate that project from any other.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Produces ⇒ work</b>	The relationship between the project and a work produced by the project.
<b>Comprises ⇒ task</b>	The relationship between the project and a task that is part of the project.
<b>Part of ⇒ program</b>	The relationship between the project and a program under which the project is performed.
<b>Funded through ⇒ contract</b>	The relationship between the project and a contract under which the project is funded.
<b>Funded through ⇒ grant</b>	The relationship between the project and a grant under which the project is funded.

**Table 2.3: Program - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Program identifier</b>	A number or code uniquely associated with a program that serves to differentiate that program from any other.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Produces ⇒ work</b>	The relationship between the program and a work produced by the program.
<b>Comprises ⇒ project</b>	The relationship between the program and a project that is part of the program.
<b>Funded through ⇒ contract</b>	The relationship between the program and a contract under which the program is funded.
<b>Funded through ⇒ grant</b>	The relationship between the program and a grant under which the program is funded.

**Table 2.4: Work Unit - Attributes and Relationships**

<i>Attribute</i>	<i>Definition / Examples</i>
<b>Work unit identifier</b>	A number or code uniquely associated with a work unit that serves to differentiate that work unit from any other.
<i>Relationship</i>	<i>Definition / Examples</i>
<b>Performs ⇒ task</b>	The relationship between the work unit and a task performed by the work unit.

**Table 2.5: Contract - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Contract identifier</b>	A number or code uniquely associated with a contract that serves to differentiate that contract from any other.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Funds ⇒ task</b>	The relationship between the contract and a task funded through the contract.
<b>Funds ⇒ project</b>	The relationship between the contract and a project funded through the contract.
<b>Funds ⇒ program</b>	The relationship between the contract and a program funded through the contract.
<b>Funded by ⇒ corporate body</b>	The relationship between the contract and a corporate body funding the contract.

**Table 2.6: Grant - Attributes and Relationships**

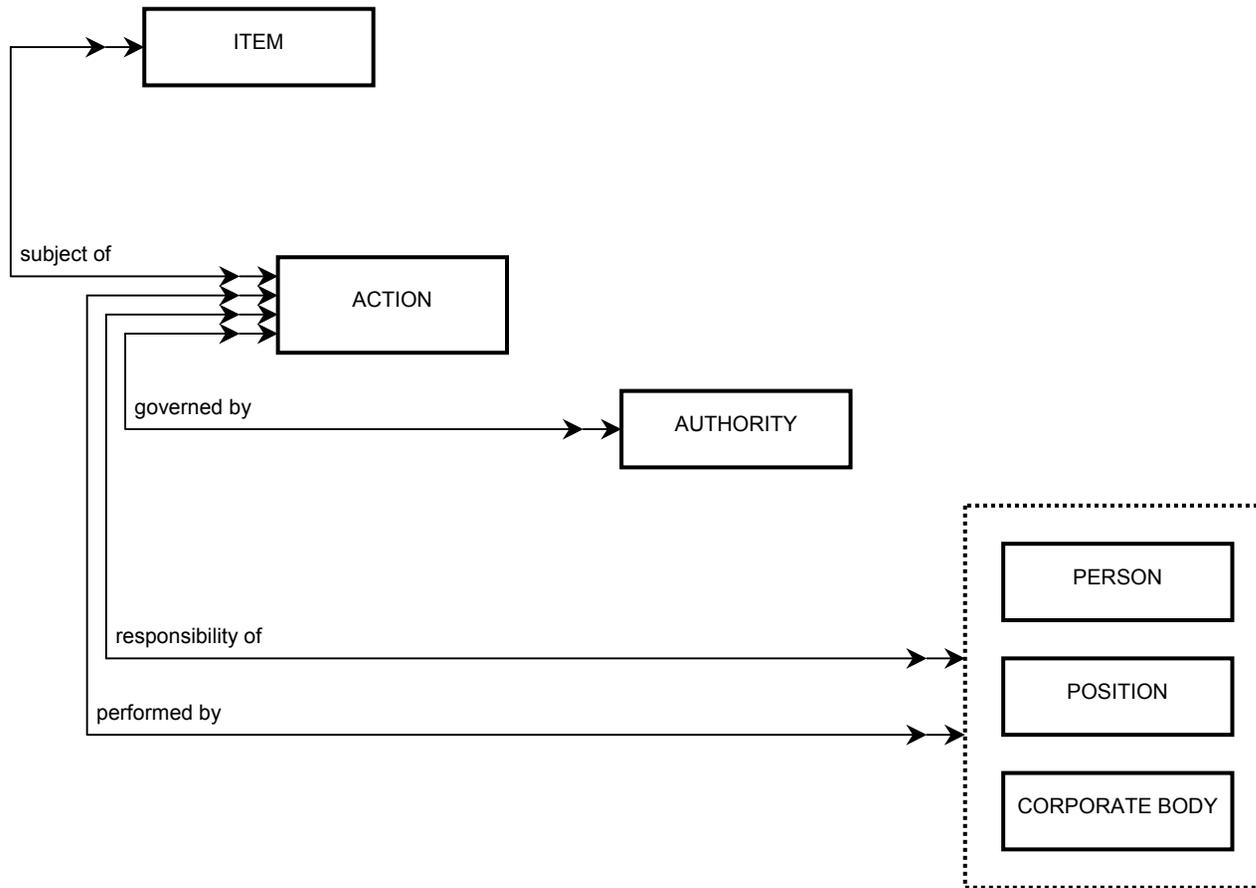
<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Grant identifier</b>	A number or code uniquely associated with a grant that serves to differentiate that grant from any other.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Funds ⇒ task</b>	The relationship between the grant and a task funded through the grant.
<b>Funds ⇒ project</b>	The relationship between the grant and a project funded through the grant.
<b>Funds ⇒ program</b>	The relationship between the grant and a program funded through the grant.
<b>Funded by ⇒ corporate body</b>	The relationship between the grant and a corporate body funding the grant.

**Table 2.7: Study Program - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Study program identifier</b>	A number or code uniquely associated with a study program that serves to differentiate that study program from any other.
<b>Name of study program</b>	A word, character, or group of words and/or characters by which the study program is known.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Uses ⇒ work</b>	The relationship between the study program and a work used in the study program.
<b>Part of ⇒ curriculum</b>	The relationship between the study program and a curriculum of which the study program is part.

**Table 2.8: Curriculum - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Curriculum objective</b>	An educational objective established as part of a curriculum.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Uses ⇒ work</b>	The relationship between the study program and a work used in the study program.
<b>Comprises ⇒ study program</b>	The relationship between the curriculum and a study program that is part of the curriculum.



**Figure 3: Additional Entities Related to “Item”**

**Table 3: Additional Entities Related to “Item” - Entity Definitions**

<b><i>Entity</i></b>	<b><i>Definition / Inclusions / Exclusions</i></b>
<b>Item</b>	See definition in Table 1.
<b>Action</b>	A procedure, treatment, task, etc. performed on or in relation to an item.
<b>Authority</b>	A statute, order, policy, rule, etc. governing action.
<b>Person</b>	See definition in Table 1.
<b>Position</b>	An office, function, or set of duties and responsibilities assigned to an individual.
<b>Corporate Body</b>	See definition in Table 1.

**Table 3.1: Action - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Action identifier</b>	A number or code uniquely associated with an action that serves to differentiate that action from any other (e.g., an accession number, a service request number).
<b>Name of action</b>	A term used to refer to an action.
<b>Action status</b>	The status of an action (e.g., completed, deferred, active, cancelled).
<b>Time/date of action</b>	The date and/or time that an action is scheduled to be performed, or the date and/or time that an action is initiated, or completed.
<b>Action interval</b>	The time interval or period at which an action is scheduled to be performed (e.g. every six months, at end of academic term).
<b>Contingency for action</b>	An unpredictable event on which the scheduling or performance of an action is contingent.
<b>Method of action</b>	The means or technique by which an action is performed.
<b>Site of action</b>	The location in which an action is performed.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Pertains to ⇒ item</b>	The relationship between the action and an item that is the subject of the action.
<b>Governed by ⇒ authority</b>	The relationship between the action and an authority that governs the action.

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**Responsibility of ⇒ person**    The relationship between the action and a person responsible for the action.

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**Responsibility of ⇒ position**    The relationship between the action and a position responsible for the action.

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**Responsibility of ⇒ corporate body**    The relationship between the action and a corporate body responsible for the action.

---

**Performed by ⇒ person**    The relationship between the action and a person performing the action.

---

**Performed by ⇒ position**    The relationship between the action and a position performing the action.

---

**Performed by ⇒ corporate body**    The relationship between the action and a corporate body performing the action.

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**Table 3.2: Authority - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Citation for authority</b>	The name, title, number, date, etc. by which an authority is cited.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Governs ⇒ action</b>	The relationship between the authority and an action governed by the authority.

**Table 3.3: Position – Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Title of position</b>	The name used to refer to a position.
<hr/>	
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Responsible for ⇒ action</b>	The relationship between the position and an action for which the incumbent of the position is responsible.
<b>Performs ⇒ action</b>	The relationship between the position and an action performed by the incumbent of the position.

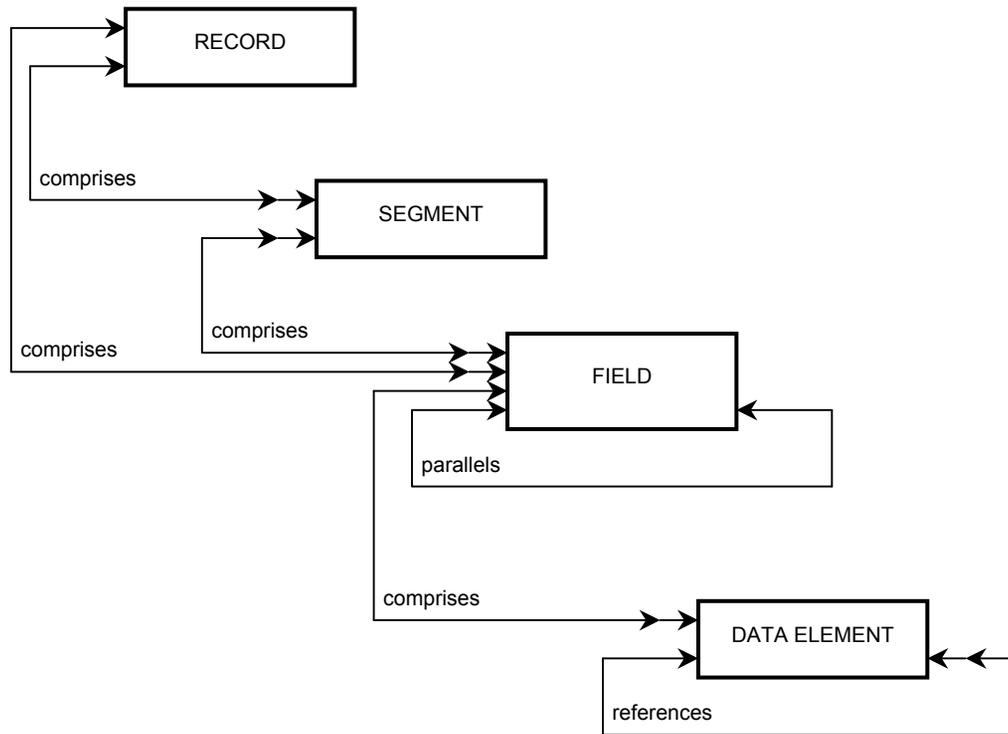


Figure 4: “Metadata” Entities

**Table 4: “Metadata” Entities - Entity Definitions**

<b><i>Entity</i></b>	<b><i>Definition / Inclusions / Exclusions</i></b>
<b>Record</b>	A logically discrete set of fields.
<b>Segment</b>	A logically discrete subset of fields within a record.
<b>Field</b>	A logically discrete set of data elements.
<b>Data element</b>	A logically discrete unit of data.

**Table 4.1: Record - Attributes and Relationships**

<b>Attribute</b>	<b>Definition / Examples</b>
<b>Record identifier</b>	A number or code uniquely associated with a record that serves to differentiate that record from any other (e.g., record control number).
<b>Type of record</b>	A categorization or generic descriptor for the record.
<b>Ownership of record</b>	An indication of the body that owns and/or licenses the record.
<b>Record status</b>	An indication of the relationship of the record to a file for maintenance purposes (e.g., new, corrected or revised, modified, deleted).
<b>Date entered on file</b>	The date (normally a year, month, and day) the record was originally input to a file.
<b>Date/time of latest transaction</b>	The date and time of the latest transaction performed on the record.
<b>Bibliographic level</b>	An indication of the bibliographic level of the material described in the record (e.g., monographic, serial, collection).
<b>Language of cataloguing</b>	The language in which the catalogue record was produced.
<b>Character coding scheme</b>	The character coding scheme used in the record. Includes primary as well as alternate coding sets.
<b>Type of control</b>	An indication of the type of bibliographic control reflected in the record (e.g., archival, library cataloguing).
<b>Descriptive cataloguing form</b>	The cataloguing standards or rules under which the record was created.

<b>Type of entry</b>	An indication of whether the record for a serial publication is a latest entry or successive entry record.
<b>Encoding level</b>	An indication of the fullness of bibliographic information and/or content designation in the record.
<b>Linked record requirement</b>	An indication of whether access to a related record is necessary to generate a fully intelligible display of information pertaining to related materials referenced in the record.
<b>Data source</b>	The original source of the bibliographic data contained in the record.
<b>Transcribing agency</b>	The agency responsible for transcribing the record into machine-readable form.
<b>Modifying agency</b>	An agency responsible for modifying the record.
<b>Authentication source</b>	The agency, program, etc. responsible for reviewing the record and verifying its content.
<b>Length of record</b>	The length of the record.
<b>Base address of data</b>	The first character position of the first variable control field in the record.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Comprises ⇒ segment</b>	The relationship between the record and a segment of the record.
<b>Comprises ⇒ field</b>	The relationship between the record and a field contained in the record.

**Table 4.2: Segment - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Segment identifier</b>	A number or code uniquely associated with a segment that serves to differentiate that record from any other segment within the record (e.g., field linking number).
<b>Type of segment</b>	A categorization or generic descriptor for the segment (e.g., constituent item segment).
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Part of ⇒ record</b>	The relationship between the segment and the record containing the segment.
<b>Comprises ⇒ field</b>	The relationship between the segment and a field that is part of the segment.

**Table 4.3: Field - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Type of field</b>	A categorization or generic descriptor for the field.
<b>Length of field</b>	The length of the field.
<b>Function of field</b>	The function the field serves within the record (e.g., added entry, note).
<b>Field display constant</b>	The form of text generated to precede the data contained in the field.
<b>Level of content designation</b>	An indication of the level of content designation applied to the data in the field.
<b>Form of field</b>	The form in which the data in the field has been recorded (e.g., compressed, uncompressed).
<b>Field encoding level</b>	The level of specificity of data in the field (e.g., level of holdings reporting).
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Part of ⇒ record</b>	The relationship between the field and the record in which it is contained.
<b>Part of ⇒ segment</b>	The relationship between the field and a segment to which the field belongs.
<b>Comprises ⇒ data element</b>	The relationship between the field and a data element contained in the field.

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**Parallels ⇒ field**

The relationship between the field and another field containing the same date in another language and/or script.

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**Table 4.4: Data Element - Attributes and Relationships**

<b><i>Attribute</i></b>	<b><i>Definition / Examples</i></b>
<b>Type of data element</b>	A categorization or generic descriptor for the data element.
<b>Source of data element</b>	The agency responsible for creating the data element and/or the source from which the data element is derived.
<b>Filing of data element</b>	An indication of how the data element is to be processed for purposes of filing or sorting.
<b>Language of data element</b>	The language in which the data element is recorded.
<b>Format of data element</b>	The format in which the data is recorded.
<b>Compressibility of data element</b>	An indication of whether the data can be compressed or expanded.
<b>Applicability of data element</b>	The parameters within which a data element is applicable (e.g., the date at which a specific publication frequency began and/or ended).
<b>Evaluation of data element</b>	An indication of whether the data has been verified.
<b><i>Relationship</i></b>	<b><i>Definition / Examples</i></b>
<b>Part of ⇒ field</b>	The relationship between the field and the record in which it is contained.
<b>References ⇒ data element</b>	The relationship between the data element and another data element that it references.

