***"… That struts and frets his hour upon the stage and then is heard no more …"*:**
the elements that should be accounted for in a conceptual model
for performing arts and the information relating to their archives

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This paper is about a definition of some of the essential elements that should be mentioned in a "conceptual model" that would be a representation of the underlying conceptualisation of the information contained in a database devoted to a collection relating to performing arts, if such a conceptual model was to be developed. (This sentence is lengthy and cumbersome; let's explain it from the end. Performing arts exist. There are libraries dedicated to the study of performing arts. Such libraries hold collections, and produce databases about those collections. Those databases contain information, which is structured according to a mental image one has about the very notion of "performing arts". That mental image is not necessarily made explicit; the effort toward an explication, as accurate and complete as possible, of that mental image can result in the development of a "conceptual model", i.e., a graphic and definitional representation of a set of notions and the interrelationships between and among those notions.)

1. What is a conceptual model? What is the purpose of developing one?

Libraries, archives, and museums first created pragmatic rules to describe their collections and make them exploitable for researchers, and developed formats in order to have those descriptions stored in machines, and indexed. Such formats were based on "data models" which already strove to explicate some of the concepts and their interrelationships, but they didn't go beyond the data actually present in descriptions; such models didn't aim at a representation of the semantic relationships that pertain inherently to the domain covered but are only implicit and unuttered in the data (e.g., a data model can relate "object" and "date", without stating that the "date" is actually the date the "object" was made, because such a statement would have seemed "obvious", although, as Martin Doerr et al. remind us, "any dating is about events" ([Doerr 2004], slide 8)). In the 1990's, libraries and museums began to develop "conceptual" or "semantic" models at the international level; such models were no longer intended for direct application in information systems, but were designed to provide a high-level view of the real-life domain covered by bibliographic and museum databases. Such models serve a number of purposes:
– they are valuable tools in order to assess the relevance of existing rules for description, formats, data models, and to improve them;

– they are intended to convey a common conceptualisation through which it is possible to develop mediation tools between heterogeneous databases (i.e., databases that do not have the same format, or not the same data model, or are not based on the same rules for description);

– as "ontologies," they are intended to contribute to the development of the "Semantic Web," i.e, a set of techniques that will allow, among other things, computer agents to draw logical inferences from complementary information scattered over several parts of the Web in distinct, heterogeneous databases.

In the field of collections dedicated to performing arts, there are actual databases, but no internationally accepted standard so far. Existing international cataloguing rules, such as ISBDs, are not appropriate for the specific issues of collections of that kind. In August 2005, on the occasion of IFLA's Annual Conference – IFLA is the International Federation of Library Associations and Institutions, and the originator of ISBDs – Kristy Davis, of the Trinity College of Music in London, declared: "There is a great need for research into the field of performing arts ephemeral materials" ([Davis 2005]). Perhaps the work of conceptualisation from existing practices could enable, precisely, to throw the bases for an international agreement to come. However, this is not my purpose here.

2. What is the difference between the specific issues about collections dedicated to performing arts and issues about "usual" library collections?
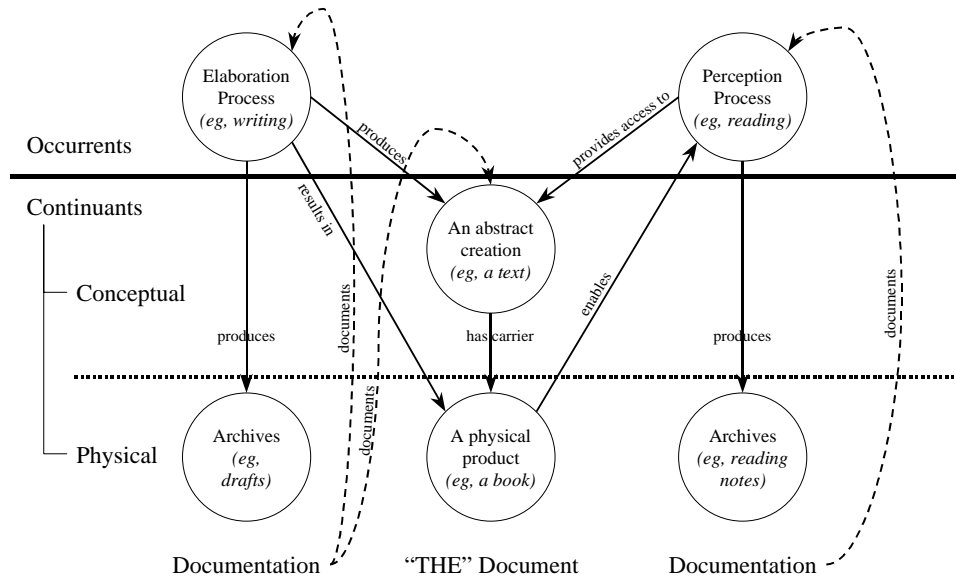
By definition, performing arts are not infixed – at least, in the current state of the art, it is not (yet?) possible to actually *record* a show without altering its nature as a show. Perhaps in the future there will be some apparatus that will be able to capture the very essence of performing arts: such a recording would require a virtual reality helmet that would make it possible to experience the show from any seat in the theatre, to watch the left side of the stage even though nothing happens there, to look at an actor who doesn't speak, to feel the physical qualities of sound, to perceive the depth of stage, to be dazzled by the lightning effects, etc. – in one word, to experience everything a videorecording doesn't permit. (Besides, if such an apparatus existed, it would make it possible to record *one* representation, but would "the" show, "the" production be recorded?)

ISBDs use the phrase "non-book materials" to refer to everything that librarians had to include over time in their collections in addition to the library material by excellence, books. Let's do the opposite, and divide the library universe into "performing arts" and "non- performing arts".
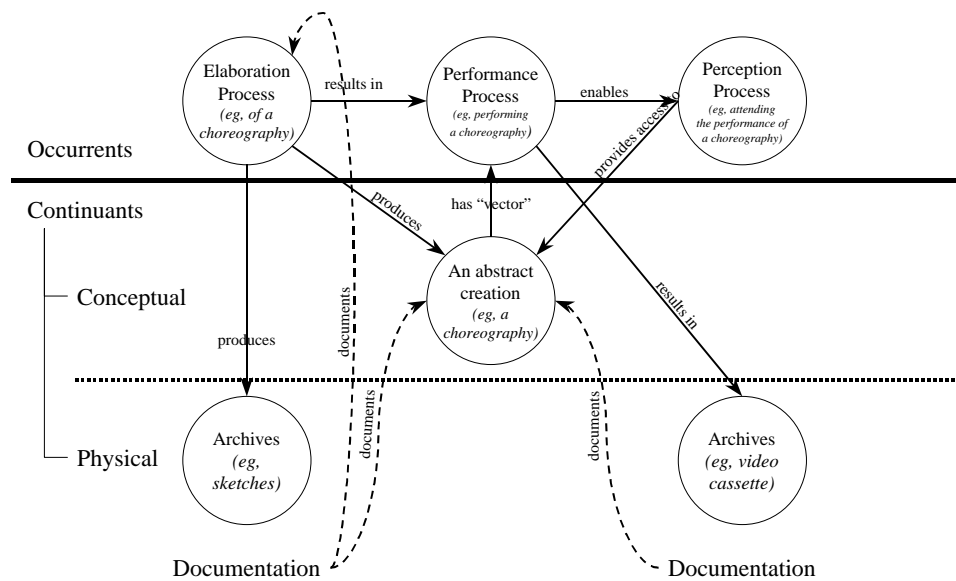
"Non- performing arts" products are physical objects that carry conceptual objects; such physical objects are the basic "documents" that are preserved in a collection and described in a catalogue; through such documents, the conceptual objects they carry are preserved and described as well; it is also possible to gather "documentation" about them, their creation, and the way they were perceived.

Performing arts products are events that convey conceptual objects; there is therefore no basic "document", but only some "documentation", which, consequently, becomes primordial, as the conceptual object conveyed by a show can be somewhat preserved and described only by preserving and describing that documentation.

Such a situation can be represented as follows:

Diagram 1: "Non-Performing Arts"

Occurrents

- Elaboration Process *(eg, writing)*
- Perception Process *(eg, reading)*

Continuants

- Conceptual
  - An abstract creation *(eg, a text)*

- Physical
  - Archives *(eg, drafts)*
  - A physical product *(eg, a book)*
  - Archives *(eg, reading notes)*

Relations: produces, provides access to, results in, has carrier, enables, produces, documents

Documentation — "THE" Document — Documentation

"Non-Performing Arts"

Diagram 2: Performing Arts

Occurrents

- Elaboration Process *(eg, of a choreography)* — results in → Performance Process *(eg, performing a choreography)* — enables → Perception Process *(eg, attending the performance of a choreography)*

Continuants

- Conceptual
  - An abstract creation *(eg, a choreography)*

- Physical
  - Archives *(eg, sketches)*
  - Archives *(eg, video cassette)*

Relations: produces, has "vector", provides access, produces, results in, documents

Documentation — Documentation

"THE" Document doesn't exist any more: there is only *documentation…*

Performing Arts

The issue of collections relating to performing arts is therefore, in a way, closer to the issue of archives than of libraries: the "object" on which such collections focus is not so much a physical object (the "document") as the event about which it is a "documentation." However, there is also an important difference between performing arts collections and archives that we should bear in mind: in archives, the documented event is not, typically, the vector for a conceptual object, an artistic creation, while in performing arts collections, the focus is at the same time on the event and the artistic creation it conveys (similarly, in other libraries, the focus is at the same time on the book as physical object and the text it is a carrier of).

3. Is there a conceptual model that could address that specific issue?

As was mentioned above, libraries and museums provided themselves, in the 1990's, with conceptual models for the information they produce, store, and exploit. Other conceptual models have been developed in connected domains. However, are they appropriate to this characteristic absence of "the" Document and the specific nature of the conceptual object performing arts collections focus on?

3.1. The FRBR Model

From 1992 to 1997, an IFLA study group developed a conceptual model for bibliographic information, FRBR (*Functional Requirements for Bibliographic Records).* It was published in 1998 [IFLA 1998]. It defines 4 levels within the object described in catalogues: the physical thing, called "Item", and 3 levels of conceptual objects: the "Manifestation" (i.e., the set of features that define a publication exemplified by its "items"), the "Work" (i.e., a set of concepts, independently from the signs that communicate it), and the "Expression" (i.e., a set of signs that express a Work, and that are infixed on a publication). In addition, the model declares a notion "Event" but in a restrained sense as it only covers, normally, events that have a "subject relationship" to a Work, i.e., events *about* which a Work is.

Besides, it is not possible, in the FRBR model, to express the fact that an abstract creation (such as a theatrical or choreographic production) is conveyed *only* by events, not by physical things ("items"). There is a problem, too, with the Expression entity: such as it is defined in FRBR, each single representation of a given production should be regarded as conveying a distinct Expression, which does not enable the recognition of various "versions" of a given production. Finally, the notion of Manifestation as defined in FRBR ("the physical embodiment of an expression of a work") does not fit well performing arts, the only embodiment of which is an event (therefore, a spatio-temporal embodiment, not just a spatial or "physical" embodiment).

I have therefore to admit here that the views I developed in two earlier papers addressing the same topic ([Le Bœuf 2002] and [Miller 2005]) are wrong, and that the FRBR model can't apply to the peculiar field of performing arts collections.

3.2. The CIDOC CRM model

The International Committee for Documentation (CIDOC) of ICOM (International Council for Museums) began in 1994 to develop a Conceptual Reference Model (CRM) for museum information (be it produced by fine arts museums, archaeological museums, or natural history museums). That Conceptual Reference Model was submitted to ISO, which will soon publish it as the ISO standard 21127.

This model is based on the notion of Event and the philosophical distinction between "occurrents" (or "perdurants") and "continuants" (or "endurants"). In the CIDOC CRM structure, the notion of Event relates the conceptual object and its physical carrier to the agent who conceived the former and produced the latter, and the context (date and place) of their creation and production.

Since CIDOC CRM focuses on the notion of Event, one could think that it could be regarded as more adequate to account for performing arts than FRBR. But just like FRBR, CIDOC CRM does not really admit the existence of an abstract creation ("Conceptual Object") that would have no physical carrier apart from the Event of its performance. CIDOC CRM makes it possible to express the idea that an activity *creates* a conceptual object or produces, modifies, or transforms a physical object, not the idea that an activity *conveys* a conceptual object and is its only "carrier" at the same time (though the term "carrier" is obviously not totally appropriate here). Besides, as it is quite natural, this model focuses on museum objects more than any other kind of object.

CIDOC CRM is therefore, on the whole, more appropriate than the FRBR model, although it is not entirely appropriate either. (But, to be fair, I have to admit that CIDOC CRM certainly doesn't lack

many things in order to account accurately for all the specific needs of the documentary treatment of performing arts, and in the rest of this paper I will priorily use the structures provided by the CIDOC CRM).

3.3. Other possible candidates

Other models, developed by other communities, could be envisioned.

Let's mention the <in*d*ecs> model (Interoperability of Data in E-Commerce Systems), which was developed between 1998 and 2000 [Rust 2000]. "Performance" is an important feature of that model, but only inasmuch as it is infixed on a carrier (such as a DVD). It is therefore not quite appropriate here.

In 1999-2001, the "Harmony" project (British, American, and Australian) resulted in the development of a model aiming at the integration of metadata relating to heterogeneous digital libraries, the ABC model [Hunter 2001]. This model features, too, the notions of "Event" and "State", but as it was primarily designed for digital collections, it is not entirely relevant in the present context.

Finally, there is currently a project to align the FRBR model with the CIDOC CRM model. Such an alignment will enable crosswalks between the two "universes of discourse" and will introduce the notion of Event in FRBR in a more complete manner than is currently the case, but in a first stage at least the issue of performing arts is not supposed to be addressed in it. Besides, there is still much work to be done.

It results from this quick survey that a conceptual model that would account accurately for the productions of performing arts and the related physical objects that an institution is likely to preserve, describe, and index as a documentation for such productions, which by nature cannot be preserved, is still to be developed.

4. What are the real-life items that should be accounted for in such a model?

I am certainly not claiming I am about to develop a model for performing arts in the present paper. The development of a conceptual model is a complex process that is based on determined techniques (see [Psyché 2003]), time-consuming, and can be validated only by agreement of a group of participants who actually need such a model. I would just like to list here some of the crucial notions that this model should definitely express, with no hint at the formalism in which it might express them.

I will investigate first the "occurrents", i.e., processes, entities that "are stretched over a given time-span and there is no part (no moment) of that time-span in which they completely exist", then the "continuants", i.e., entities that have the faculty to "endure as a whole for a given time-span" and "do not have temporal parts, but only spatial parts" ([Esfeld 2005], p. 27). The nature of these "continuants" can be abstract (concepts) or physical (objects or features that belong to the world as perceived by the senses). In the terminology of the CIDOC CRM model, which is the terminology I use preferentially, a continuant of physical nature is called "Physical Thing," and a continuant of abstract nature is called "Conceptual Object."

4.1. "Occurrents"

The basic unit of performing arts is, in my opinion, the performance. It is an Event, which, in the CIDOC CRM structures, can be related to a place (the theatre where the performance occurs), a time-span (the time-span defined by the moment the performance begins and the moment the performance ends), and agents (the company that performs the show). That event is not necessarily "contiguous", i.e., there can be several intermissions without the performance ceasing to be just *one* event.

That event, however, is not, in most cases, isolated. A performance belongs more often than not to a predetermined framework, it is part of a "run of performances" in the same place at dates that are

agreed upon in advance and advertised. A run of performances can be regarded, too, as a single event, non-contiguous, related to a time-span (the extreme dates of performance), a place, and agents.

It can happen that a run of performances is not isolated either, but is part of a set of revivals in the same place but during another season, or a set of tours in other places, during the same season or various seasons. I tend – but this is debatable[1] – to regard the set of all runs of performances, revivals, and tours as a single event in turn, non-contiguous, related to a longer time-span and a larger place since it is not one theatre in particular but the entire territory that contains all places in which successive performances took place. That "event" overlaps with the "lifecycle" of a production that can be identified and regarded as maintaining its identity despite the inevitable transformations it undergoes from performance to performance, from place of performance to place of performance, and from revival to revival, and despite, too, possible changes in cast.

These three levels of events (performance, run of performances, lifecycle of a stage production) are related, too, to other events, including: rehearsals (which can be the context, for instance, in which photographs are made), and the events relating to the production of "derived products" (e.g., the recording of several performances, and the editing of those recordings into a video cassette that is supposed to embody "one" performance).

4.2. Abstract and physical "continuants"

I would tend to distinguish between four types of continuants: the "Stage Production-Object" (and its components); its "pre-texts;" its "by-products;" and its "derived products." Caution: these are in no way "classes" or "entities" that should be declared in a fully developed model for performing arts, but a categorisation of objects that would presumably be organised otherwise in such a model. In a model basing on CIDOC CRM, this categorisation would be reflected by new properties of extant classes, rather than new classes to be declared.

4.2.1. The "Stage Production-Object" and its components

I mean by "Stage Production-Object"[2] the abstract creation of a production of performing arts over all of its performances and variants: it is the set of the concepts gathered by a stage director in a given *mise en scène*, by a choreographer in a given choreography, etc. A "Stage Production-Object" is a "Conceptual Object" in the sense of the CIDOC CRM. It is an abstract continuant, communicated by the actors (dancers, etc.) to the audience on the occasion of each single performance, but it should not be confused with the performance properly said, which is an occurrent.

Each "Stage Production-Object" can exist in more than one identifiable version. For instance, a stage director can, during the "lifecycle" of a production, decide to change a particular scene without the production on the whole being regarded as a "new" production. Photographs of that particular scene will constitute documentation for that determined version, not for the previous one. Similarly, each change in cast determines a distinct version of the same "Stage Production-Object."

Besides, each actor (dancer, etc.) is responsible for the creation of a component of the complete "Stage Production-Object," inasmuch as each of them, under the director's (choreographer's, etc.) direction, responsible for the semantic content of his/her role[3].

These three elements: "Stage Production-Object" as a whole, identifiable "Version" of a given "Stage Production-Object," and "Role," are created and developed before the performances, during the rehearsals, and are likely to evolve throughout the lifecycle of the stage production.

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[1] In the CIDOC CRM structures, it could be regarded as a "class of events" as well (see [Doerr 2004], slide 3: " 'My birthday' = class of events" [because it happens every year again]).

[2] A more accurate phrase would be "Performance Work," but this English phrase is not easily rendered into French, the language in which this paper was originally conceived, written, and delivered.

[3] I owe this idea to David Miller, from a personal email he sent me on September 23, 2002.

There is a fourth abstract continuant, which cannot evolve and exists once and for all[4]: it is the one that is created in the course of the performance itself, the specific semantic content of each single performance, which is never twice exactly the same and is never quite predictable. There always is a difference between the "Stage Production-Object" as decided by the stage director (choreographer, etc.) and the actors (dancers, etc.) during rehearsals, and the Conceptual Object actually conveyed to the audience during a performance, with all its unknown factors. Each single semantic content of that kind is obviously related to the "Stage Production-Object," but it goes inevitably astray from it, since each performance is, as an occurrent, unique and cannot be identically reproduced. (Similarly, a flaw in paper or a technical problem during the printing process can alter the external aspect of a word on a given copy of a book, and alter through that single word the entire meaning of a text which all copies of a given publication are supposed to be carriers of).

4.2.2. "Pre-texts"

Performing arts rarely, not to say exceptionally, lack a "pre-text", i.e., a distinct conceptual object the creation of which occurred earlier than the creation of the "Stage Production-Object," and on which the creation of the "Stage Production-Object" is based: the text of the staged play, the libretto of the choreographed ballet, the music of the choreographed ballet, the libretto of the staged opera, the music of the staged opera, the plot of a mime show, etc.

Additionally, each of those conceptual objects has its own history: the text of the play can be a translation, or a revised version; the music of the ballet can exist in more than one version, it can have been recorded in advance, etc. As such conceptual objects have their own physical carriers, they can be accounted for through currently available conceptual models (FRBR, CIDOC CRM). Crosswalks between such models and a possible model to be developed for performing arts will therefore have to be planned.

4.2.3. "By-products"

"By-products" is admittedly an infelicitous term; some better term is definitely to be found. I mean by this term any conceptual or physical object required in the performance of a stage production: settings, costumes, lightning effects, stage music, sound effects, props, video, software… All those objects may have been created just for a given production, or re-used from another production. For instance, if two distinct productions use the same costume, that costume documents both productions. Sometimes an object that was created for a given production is modified or transformed for another production. Inversely, the same production can drop one such object and replace it with another one. For instance, if a production starts its lifecycle with a given stage music, and ends it with another stage music, each stage music documents a distinct version of the " Stage Production-Object." Once again, each object of that kind has its own history.

Another kind of "by-products" includes those that were produced during rehearsals but do not belong to the show as such: manuscript of mise-en-scène, sketches, notation for the choreography, etc.

A third category of "by-products" includes objects that were created to "accompany" the production and were designed to be communicated to a public, e.g. for the sake of advertising the show: poster, flyer, press release, programme…

4.2.4. "Derived products"

I mean by "derived products" creations that stand on their own, are distinct from the "Stage Production-Object," and yet are based on it, the same way as the "Stage Production-Object" is based

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[4] This notion owes much to the class "Individual Work" as defined by Martin Doerr in the context of the alignment of the FRBR model with the CIDOC CRM, in working drafts that have not been published so far.

on a "pre-text." This category can include photographs, video recordings (I regard a video recording as conceptual object distinct from the "Stage Production-Object") that were made either during rehearsals or performances. It can also include clippings, which document at the same time the "Stage Production-Object" itself and the way it was perceived by the audience, or part of the audience, and therefore its role in society as a cultural object.

5. What can a conceptual model for performing arts result in, beyond the scope of performing arts?

I am convinced that a conceptual model for performing arts can influence other models as well in the field of cultural heritage information. If, as I think is desirable, the CIDOC CRM serves as the basis for the development of a conceptual model for performing arts, or FRBR aligned with CIDOC CRM, the CIDOC CRM can benefit from it and give a better account of certain forms of contemporary art that, just like performing arts, are not materialised as physical objects, but just as occurrents. For instance, the artist Douglas Gordon created in 1993 a work, titled *24 Hour Psycho*, which consists in projecting the Alfred Hitchcock movie *Psycho* at very slow speed, so that it lasts 24 hours instead of one hour and a half. This work was exhibited in several places and at several dates (in 1993 when it was created, in 1996 in London, in 2000 in Paris, in 2002-2003 in London again, in 2004-2005 in Miami…). Yet, no museum can "hold" it in its collections. Douglas Gordon said in a in interview: "My original idea was that somebody could go down to Virgin or Tower video and buy *Psycho* and watch it that way — they didn't have to have my authorisation for it." [Wainwright 2002] Any *Psycho* videocassette or DVD could therefore, theoretically, be regarded as a carrier of both *Psycho* and *24 Hour Psycho* and yet this is not sufficient to account for *24 Hour Psycho*: as a matter of fact, *Psycho* is but the "pre-text" for *24 Hour Psycho* and there is no complete overlapping between the Hitchcock motion picture and Douglas Gordon's multimedia installation. The concept of *24 Hour Psycho* can be communicated to an audience only through the "occurrent" consisting of a slow-speed projection of *Psycho*, and has no physical carrier, just like a "Stage Production-Object." How to hold, preserve, describe, and index *24 Hour Psycho*? By videorecording a projection of it? If the videorecording of *24 Hour Psycho* is projected at high speed, so as to go back to the original duration of *Psycho*, would the audience experience a projection of *Psycho* or an alteration of *24 Hour Psycho*? It is only possible to hold, preserve, describe and index "derived products" that document *24 Hour Psycho*, e.g. photographs, such as this one:

Douglas Gordon, «24 Hour Psycho»
24 Hours Psycho | © Douglas Gordon
Source: <http://www.medienkunstnetz.de/works/24-hour-psycho/>

(Interestingly, the copyright holder for this photograph is Douglas Gordon, not Alfred Hitchcock.) As a carrier-less conceptual object, a work such as *24 Hour Psycho* is not completely modelled in the CIDOC CRM, even though the CIDOC CRM allows one to express many of the properties of such a work and the archives and derived products that document it. In fact, it is essentially the relation

between this work and its "performances" that cannot be expressed directly in the CIDOC CRM such as it currently stands.

6. Conclusion

Although there is no fully developed conceptual model for performing arts yet, the CIDOC CRM displays the most adequate structures to constitute the basis for such a model, if it is to be developed in the future. It would certainly be relatively easy to design an extension to the CIDOC CRM so that it can cover performing arts. The version of FRBR aligned with the CIDOC CRM would provide the basis for crosswalks between that model and the conceptual model for library materials. Since performing arts collections hold at the same time library materials and museum objects, it is crucial to have crosswalks between a conceptual model for those two types of materials, and a conceptual model for performing arts as such.

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