Variations/FRBR Cataloging Tool Design Wireframes

1. Background & Purpose

The Indiana University Variations/FRBR Cataloging Tool (v/FRBR-CT) is an interface to the “FRBR-ized” implementation of the Variations music cataloging system (now referred to as Scherzo) designed specifically for the music cataloger. In creating these design wireframes, it was assumed that a cataloger is not necessarily a library science professional. The cataloger might be a music instructor or a music graduate student, for example. These users might catalog manifestations for teaching or for research purposes. For this reason, the cataloging system design is not always constrained by existing cataloging practice. Indeed, the purpose of the design is to illustrate how a cataloging system based on FRBR might improve upon existing cataloging practices.

This document summarizes the design wireframes that have been produced so far. The purpose here is primarily to i) organize the work that has been done and ii) explain the designs themselves. The hope is that this will make it easier for others to make use of the work as they see fit.

2. The Design Documents

This section describes and organizes the design documents themselves. These were originally intended simply as wireframes for the developing interface. As the wireframes evolved, they came to include visual and interaction design concepts and helped to clarify the design of the cataloging process itself. The documents are all in Microsoft PowerPoint format and are available for download at:

http://www.dlib.indiana.edu/projects/vfrbr/projectDoc/metadata/catalogingTool/

2.1. Flowcharts

A file containing a series of flowchart diagrams helps organize the many parts of the cataloging process and describes the intended workflow.

2.2. The Design Wireframes (/Scenarios)

The design wireframes, or scenarios, are the last in a series of designs. These files contain detailed illustrations of design concepts that are summarized here.

3. Discussion

This section describes the cataloging process as illustrated in the three series of design wireframes and flowcharts.

3.1. Cataloging a Manifestation

In many circumstances, a cataloger might want to add works or contributors independently to a catalog. The usual sort of case, however, involves adding contributions and expressed works to a given manifestation. This context is generally assumed throughout the design wireframes.
Creating a new manifestation basically involves three key steps. The cataloger has to 1) enter the manifestation information, 2) add contributions, and 3) add content (/expressed works). Adding contributions might require a cataloger to create a new contributor. If a search for the contributor fails, for example, then a new contributor is created and this is then linked to the manifestation. If a search for the contributor succeeds, then the existing contributor can be selected from among the search results and linked to the manifestation.

This pattern of interaction is typical. Catalogers create relationships among entities (e.g., manifestations and contributors) and this sometimes involves creating at least one of the related entities. Thus, for example, adding a contribution (i.e., to a manifestation) might require creating a contributor. Adding content (/expressed works) can be more complex. This is because works and expressions are distinct. Thus, if a work does not already exist then both the work and the expression will have to be created. Typically, however, it is assumed that the work already exists and only the expression is created. (Note, however, that in the case of a re-issue, the expression itself might also already exist.)

Because a cataloger may or may not have to create a number of contributors (persons or groups), works or expressions, the process of cataloging a manifestation can, in practice, become considerably more complex than the “three step” process described so far might initially suggest. We can nevertheless manage this extra complexity by recognizing the essential parts of each possible case associated with each step. If we do this, then there are a total of eight particular cases to consider. After entering manifestation information, there are two possible cases associated with adding a contribution. As already described, in one case an existing contributor is linked to the manifestation. In the other possible case, a new contributor is created then linked.

There are, in addition, three possible cases associated with adding content. As already mentioned, the typical case involves identifying an existing work and creating a new expression to associate with the manifestation being cataloged. Another case involves reusing an existing expression. The third case involves creating the work along with the expression. These cases are all represented in the “Overview” flowchart below.
Creating a new work itself involves at least two further important possible cases we need to consider. The first case is associated with a complex work that has structure, which may involve creating and linking child works. The second case is associated with source or derived works, implying a different kind of work-work relationship. A third possible case is left implicit here; it is the case in which only the work-expression relationship is being created.

3.2. Interface Basics

The interface for the cataloging tool has two sides. The right hand side is dedicated to searching and browsing search results. The left hand side is dedicated to creating and editing processes. On the right, search results can be selected, expanded, and entity data and relationships can be explored, inline. On the left, relationships are created by adding the relevant entities, selected from among search results displayed on the right.
The right side contains a search box (1) and an area below it for displaying search results. The search box includes tabs to allow for distinct types of search (i.e., works, manifestations, contributors.) The individual items returned by any search can be expanded inline and the entity data (“info”) and relationships can be explored. An expanded entity contains a row of links to different “pages” or sections of the form. In the illustration above, a work search for Vivaldi’s Four Seasons has already been performed and one item (2) has been expanded to reveal the existing expressions of the work. The work is identified by the blue box-icon; the expressions are each indicated by green box-icons. Notice that the third expression in this list is highlighted in orange, indicating that it is currently being created/edited at the left.

Search results are grouped (3) according to their source. The task of adding items to the system is made more efficient by the ability to import results retrieved from third-party sources.

Adding an expression (4) is a typical step in adding content to a manifestation. This context (5) is represented in the editing display at left by bars that expand the context when clicked. It is assumed that only one entity is expanded at a time. Individual sections of the form are likewise expanded by clicking the section header inside the entity being edited (an expression in this case). This scheme allows a fairly rich degree of nesting to remain manageable within a single display.

3.3. Entering Data

As already noted, adding a new manifestation to the system involves three high-level steps. The first step involves entering manifestation data. There are six informational sections of the form, grouped into two main sections with
three subsections each. Again, the cataloger navigates between sections of the form by clicking the header-bar for a given section. It is further assumed that the cataloger can also navigate through the form using a keyboard shortcut, such as the TAB key.

Most fields accept multiple values. The cataloger can add additional values by clicking on the right-hand PLUS symbol to create a new field. Fields are removed by simply deleting the values they contain. Work, Contributor, and Expression records all contain informational sections and these are detailed in the flowcharts and the design wireframes.

3.4. Adding Contributions

Adding a contribution follows the general pattern that was described above. A contributor search is performed. If the contributor exists, then it is selected (1) and added (i.e., linked) to the manifestation. This is accomplished by clicking the large purple ADD CONTRIBUTION icon (2) or by simply dragging and dropping the selected contributor onto the associated drop area, indicated by the dashed line.

Adding the contribution is not complete until a ROLE (3) for this contributor is selected and the CREATE LINK link is clicked.
Manifestation, Work, and Expression entity forms each contain a contributions section and each type of contribution is associated with a specific set of ROLES (e.g., producers for manifestations, composers for works, and performers for expressions). In some cases the contributor does not already exist and must be created. If no contributor is selected on the right, then clicking the purple ADD CONTRIBUTION icon on the left automatically creates a new contributor inline. In the illustration below, for example, a record for Mozart is being created as a step in the process of creating a work, which is itself just a step in the process of adding content to a new manifestation.
3.5. Adding Content

Typically, adding content involves locating (/searching) the relevant work and creating a new expression to link to the manifestation. This is our basic search-and-create-if-necessary pattern again, though adding content can become a complex affair. As already mentioned, there are several other possible cases that might be involved. For example, the expression might already exist (see below) or the work might not exist and must be created as well. This section of the discussion concentrates on the typical case. The associated flow might look like this:
The following illustration shows that once a work is selected (1) from among the search results, the list of available expressions is displayed in the expanded view of the work at right. If the expression does not already exist, then a new expression of the selected work is created and automatically linked to the manifestation. Again, this is accomplished either by clicking the (BLUE/GREEN) ADD NEW EXPRESSION OF [WORK] icon (2) or by dragging and dropping the work onto the associated drop area.
Once the work-expression is added, the new expression is opened for editing. Notice the new expression, just created, is added to the list in the display at right. It is highlighted here because it is currently being edited at left.
The many expressions on a given manifestation might typically have much information in common. For this reason, adding content includes a step that allows a cataloger to selectively re-use the expression data that accumulates as content is added. In the illustration below, the cataloger is prompted to choose expression information to re-use in the new work-expression she is about to add.
These, then, are the basic steps involved in adding a new manifestation to the system: 1) entering the manifestation information, 2) adding contributions, and 3) adding content. Adding content involves creating a new expression, except where an existing expression is being re-used. Also, it sometimes involves creating a new work as well. These and other special cases are described in the remaining sections.

### 3.6. Reusing Expressions

One important special case involves reusing existing expressions in cataloging a new manifestation. This can happen, for example, when previously released work-expressions are published anew, perhaps as a re-issue. In cataloging the re-issue, the cataloger may only need to create new relationships for work-expressions that already exist in the system, associated with one or several existing manifestations.

These interactions are illustrated in the first slide series under “Cataloging a Pop Album.” In addition, the slides in this series illustrate some of the issues that might arise when cataloging a pop album. For example, the original US/Capitol release of The Beatles’ album *Rubber Soul* is different from the original UK/Parlophone release. To create the US release, four songs were removed from the UK release. In addition, two songs from the UK release of *Help!* that were not included in its US release were added. In cataloging a new manifestation for the original US/Capitol release, it is not necessary to locate each work-expression one-by-one. Instead, a cataloger might simply search for the earlier manifestations (i.e., the original UK/Parlophone releases) in order to locate and link multiple work-expressions at once.
In the above figure, for example, a cataloger has selected multiple work-expressions from the 1965 Parlophone manifestation and is about to link these anew to the 1965 Capitol manifestation currently being cataloged. Next, the cataloger can search for the Parlophone release of Help! to add two work-expressions from it to the new manifestation as well.

In 1987, the entire Beatles catalog was re-issued on CD format. The original 1965 Parlophone list of songs was used for this re-issue. Again, in cataloging the 1987 CD re-issue, the most efficient method would be to simply search for the 1965 Parlophone manifestation record and create new relationships for the work-expressions that can be accessed from there.
Here, however, there is a problem that might require a cataloger’s judgment. The songs on the 1987 CD reissue of *Rubber Soul* are in fact remixes, created by George Martin specifically for the 1987 CD reissue. Thus the question arises whether the expressions on a new manifestation for the 1987 CD reissue are in fact new expressions of the original works or not. If they are, then new expressions for all the works associated with the 1965 Parlophone release must be created. It would therefore be very useful to have a way of COPYing the set of work-expressions (implying the creation of new expressions only) from any manifestation as opposed to creating new relationships for expressions that already exist.

### 3.7. Adding a New Group

Adding a new contributor requires specifying whether the contributor is a *person* or a *group* (/corporate body). This process is also illustrated in second slide series under “Cataloging a Pop Album,” where the group *The Beatles* is added to the system. Adding a group-contributor is essentially no different from adding a person-contributor though some of the information fields a cataloger must fill out will be different.
Notice in the above illustration that the context (top-left) indicates that the cataloger is adding a new contributor to an expression, which is itself being added as content to a manifestation. This slide illustrates the selection of GROUP from the drop down list of contributor types.

In ordinary cataloging practice, group and person contributors are unrelated. But the FRBR model makes associations between groups and persons (i.e., group members) possible. Such associations may indeed be very useful, particularly with respect to pop music catalogs. For example, a user may want to identify the previous members of a group or the groups a person has been associated with at various points in their career. Some of these relationships are illustrated in the following slide, where members are added to a group entity in much the same way that contributors are added to a manifestation or work entity.
3.8. Work Structure & Relationships

Some works have a complex structure. A complex work can have several parts and some of these parts might themselves be works (/child works). So work structure can involve work-work (/parent-child) relationships.

The design attempts to make the creation of complex work structure easy and intuitive. Every work has a primary root node (1) and the work structure can be expanded and collapsed by clicking the associated left-hand PLUS/MINUS icon. Child nodes are created by clicking the right hand PLUS (2) associated with a parent node. They are deleted by clicking the associated RED X. Any child node can be made a work by clicking its associated BOX icon (3), which changes color to blue to indicate the node is a child work.
Associated (non-child) structure may be added by clicking the HOLLOW PLUS (4) at the bottom of the work structure area. Existing works can be linked to the work structure in the usual way, i.e., by first selecting the work and then clicking or dragging and dropping the selected work onto the drop area. Names for each node can be edited inline by clicking the label of the node to make the text field editable.

To illustrate how this interface might handle a fairly complex work, the second slide series under “Adding and Editing Work Structure” illustrates how a cataloger might attempt to add Wagner’s Ring in its entirety while cataloging a manifestation containing the entire work.
4. Concluding Remarks

A video screencast presentation of some of the designs described in this document is available here:

http://www.dlib.indiana.edu/projects/vfrbr/projectDoc/metadata/catalogingTool/