

# An Approach to Serials with FRBR in Mind

## CONSER Task Force on Universal Holdings

Draft, Frieda 12/28/03 rev. 1/18/04 Diane 1/24/04

The IFLA working groups dealing with the concepts of FRBR (Fundamental Requirements of Bibliographic Records), FRANAR (Fundamental Requirements and Numbering of Authority Records) and FVWG (Format Variation) are exploring finite resources in their initial investigations. Continuing resources, particularly serials, represent the greatest challenges to the application of the FRBR concept. A CONSER task force chaired by Everett Allgood has been charged to "comment" on the work of the other groups, but so far has had only to speculate that serials have been left out of consideration at present because of their complexity "Serial records are multi-dimensional, often including linking references to vertically and horizontally related resources" (NELINET presentation by Allgood, November 2003). Allgood further suggests:

"Alas, there appear to be problems in applying FRBR in its current form to AACR2r serial records. Conversely, there may be problems applying FRBR to AACR2r serial records in their current form. Does this then mean AACR needs to undergo further revision regarding how to describe serial records?"

FRBR, which defines entities and their relationships, is confronted in the serial with the same complexities as in other materials (editions, versions, translations, part-whole relationships) plus one more: the possibility of multiple titles (or name-titles) sequentially identifying a publication and under current cataloging rules requiring separate cataloging for each. The question arises, in such a case: which entity represents the work-the entity we catalog (a segment of a run of issues identified by one title or name-title) or the entire run of issues associated through time?

The question is crucial for those concerned with serial holdings, because the fragmentation of holdings information between bibliographic records is the biggest stumbling block to the intelligent organization of information for display to users. The application of the current serial cataloging rules to publications that change requires multiple records with only the portion of holdings pertaining to each record attached to that record. Although the bibliographic record contains information linking title changes in sequence, a) this information is not used in full by vendors of library information systems, since only subfield \$t is searched on; b) the link is not offered where it would be of most use-at the point of viewing holdings; c) in most systems the display that results from clicking on a linking title may leave users confused. Users are quite likely to assume the worst, that the library has only the holdings shown. A missing title in the chronological chain will cause the linking entry field to fail, with no bridge to titles more than one remove from the starting title.

This failure to collocate related serial records presents a dilemma to the cataloger, who may try to compensate for capabilities lacking in vendor systems or cataloging practice with notes or other measures of limited usefulness. However, the existing record already contains much of the information needed for a solution. One possible solution that seems to offer many advantages is an approach based on the FRBR model.

Allgood suggested, as noted above, that a FRBR approach might require us to change the way we describe serials, but we suggest that this might not be necessary. In order to avoid the need for re-description (and the conflict with ISSN assignment that redefining the serial "work" would imply), we could bring to bear a concept of "super-work" and "super-record" formulated by some of the papers (particularly that by Rahmatollah Fattahi) at the JSC Conference in 1997 where FRBR was launched. Comments on the conference spoke of "families" of works as needing some sort of collocation-and as we know, family is a metaphor that has often been applied to serials!

The super-record in such a system would manage relationships between all of the component serial records (including versions, editions, and chronologically sequenced segments defined by "major changes") that are normally made in the catalog for a serial run.

In an FRBRized catalog, a serial might need a super-record as soon as it acquired any of the following relationships:

a) Chronological: the serial has undergone a major change (in title, name-title, edition, or format) where the old record is closed and a new one begins. (SherryVellucci's "sequential relationships"). Obviously, there may be the need to define when major changes might require that a new record group begin because of a major break in scope and structure, particularly when a new numbering system also begins.

b) Horizontal: the serial comes out in multiple editions or versions: print reprints, micro- reproductions, translated editions, electronic versions. The existing record continues to serve, but parallel to it, other records are necessary. The new records represent new expressions or manifestations of the serial (Vellucci's "equivalence relationships"). Clearly in this case, issues around diverging content must be addressed, as well as deviance of numbering systems. It may be that this approach makes the tying together of divergent content easier than the older MULVER approach did, simply because each manifestation retains its own bibliographic description.

The serial would not necessarily need a super-record if it acquired the following relationships, which could in most cases be adequately covered in bibliographic records:

a) Vertical: the serial is a supplement to a parent title; the serial is a parent title to a supplement.

b) Part-whole: the serial is a component of another bibliographic entity such as a monographic series; the serial has components such as monographs or subseries.

Fattahi envisioned the super-record as a bibliographic record: "The super record for a work would contain the uniform title of the work and the author heading, if applicable, along with a categorisation for different expressions and manifestations being linked to actual records and copies in the collection." He also stated that super records would be retrieved "through name authority files and/or uniform title authority files" i.e., via indexed and controlled access points. In the monographic universe, this linking scenario is normal. In the serial universe, direct links by means of control numbers could collocate the component records both in the local catalog and in the utilities far more efficiently and economically than uniform titles or other approaches based on text matching.

Since the JSC Conference, some have proposed the authority record as the best basis for the "work-level" and "expression-level" record for monographs. The authority format admits a 7XX field designed to link from one name to another, e.g., a 730 from one uniform title to another. For serials, this approach seems cumbersome, particularly since the bibliographic format already contains many of the necessary fields.

A serial super-record could be brief if it were optimized primarily to manage chronological and version relationships and to a link to a publication history record, which could provide a template and "map" for the holdings of associated component records. Clearly, super-records would need to be distinguished from regular serial records by some coding mechanism, since they would need to be managed differently. It seems likely that there could be some methods developed to construct them from associating component records. The choice of the gathering title for the super-record would have to be determined-whether earliest title, latest title or some other convention. For the purposes of the examples in this draft, the earliest is used, as it is less likely to change over time.

The following example incorporates the structure of a publication history record into the super record concept, enabling the user to go from any of the records to a complete view of either all the related titles or all their associated holdings. In preparing these examples, we rely partly on earlier work by Frieda Rosenberg, especially her paper at <http://www.lib.unc.edu/cat/mfh> and the models therein.

*Note: There is a strong perception that it is not necessary or even desirable to show an entire publication history: that users are typically coming from a citation and want a pared-down pointer to the volume they seek (including all the versions in which it may be available). Thus, the argument goes, we can emphasize the communication of the version relationships and de-emphasize the need to communicate the chronological relationships (access to either the successive titles or their concatenated holdings). In fact, the super-record might be extracted in part for specialized displays, or even created dynamically in interaction with the user. But it is also possible to argue that the fragmentation of bibliographic and holdings records through the arcane convention of successive*

entry is capable of misleading any but the most sophisticated library user. Indeed, there are valid reasons why a user might want to view the full range of holdings for the succession of titles: the possession of several citations from one publication (sometimes with an initialism that does not change when the title changes), or simply an interest in the whole publication.

*Example 1.* A serial which underwent a single major change (in title).

- Title 1, Computers and chemistry, came out in print, microform, and electronic form;
- Title 2, Computational and biological chemistry, came out in print and electronic form.

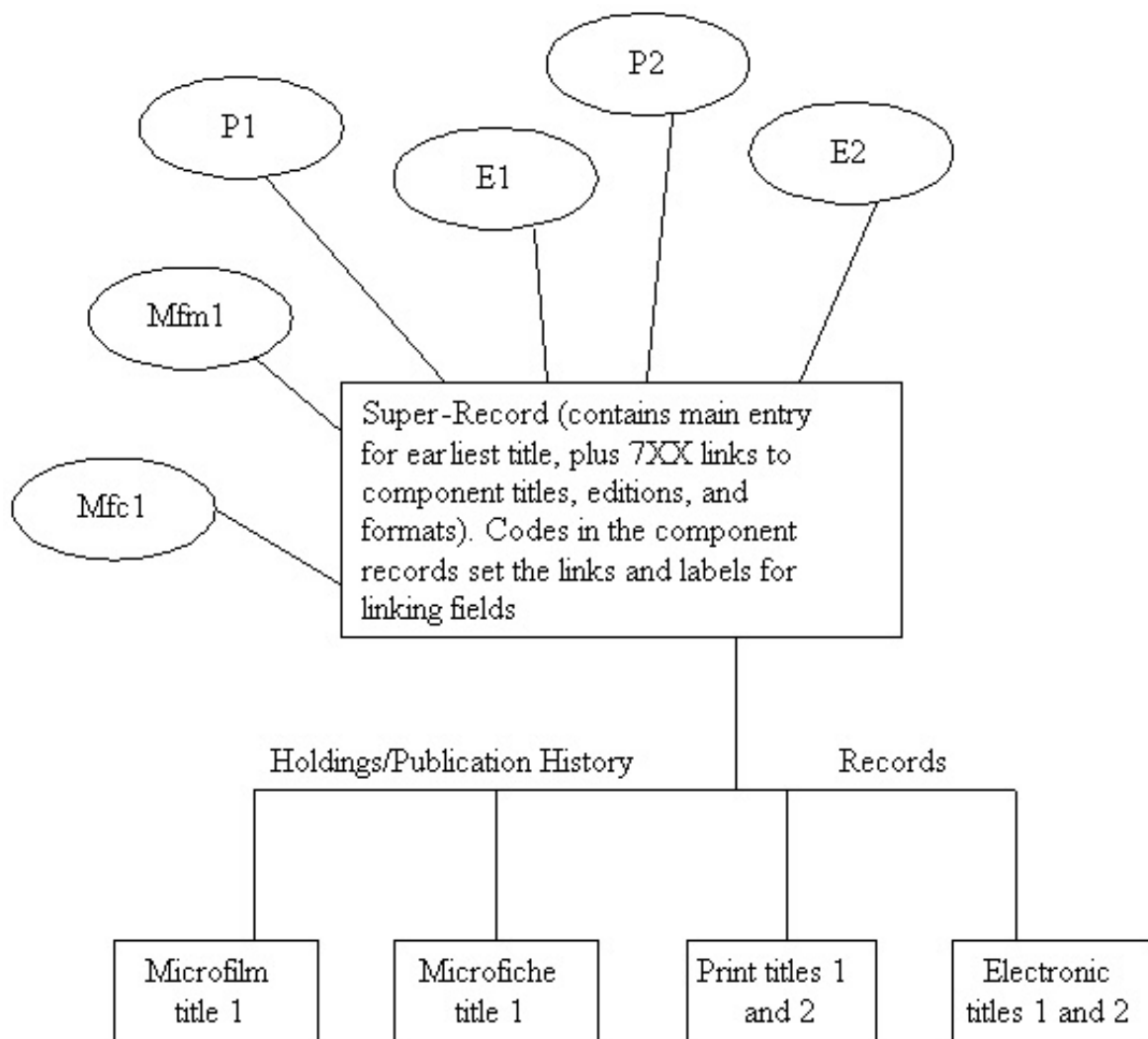
Specifically:

Computers and chemistry, v. 1-26 (1976-2002) print (Pergamon/Elsevier), fully or partially reproduced in both film and fiche in Elmsford, NY by Microforms International Marketing Co., and available in electronic format (Science Direct)

continued by:

Computational biology and chemistry, v. 27- (2003)- print and electronic (no microform record has been created, though quite possibly the new title is still published in one or both microformats)

To diagram the handling of this, we use P to represent print, Mfm for microfilm, Mfc for microfiche, and E for electronic. Title 1 and title 2 are represented by numbers. Existing records for this run include P1, Mfm1, Mfc1, E1, P2, and E2.



The structure above, whether created by catalogers or compiled by the computer from existing catalog information, could represent the cited titles in the local catalog and in a bibliographic utility or union catalog. Many different displays could be visualized, linking both to each separate bibliographic record and the complete array of holdings records. The holdings (preferably listed by

format) might be displayed in various ways; but ideally, would be available comprehensively, when needed. They might also link to actual items and copies.

In this scenario, separate holdings records are made for each separate format, edition, or other bibliographically distinct issuance of the publication, but the holdings would not normally be split chronologically when a major change occurred. [Exceptions would ideally not get super records in the first place.] Instead, the run in each format would be kept together. The holdings record would need some kind of labeling to identify the format and/or titles to which it pertained. Subfield z could be used within the holdings record (863) to identify points where the changes occurred. Automated processes (such as the ones used previously to convert separate electronic records to aggregator-neutral records) would be extremely helpful in the conversion of holdings as well, both locally and for CONSER.

A specific look at the super-record in the CONSER database follows. This is merely a suggested outline or shape with some pointers toward desirable results. It does not take into consideration the global, international dimension of the necessary decisions. It does not even specify the record type to be used (either a bibliographic or an authority record is presumed).

The main entry would be a 1XX, exact tag undetermined. The qualifier label here (Super-title) was chosen to be instantly recognizable as heading a certain type of record. It might be replaced in a local catalog with something more meaningful. It would be important to identify control numbers for each field-however, the re-use of ISSN for print, reprint, and microform reproductions results in other control numbers being necessary to distinguish those formats, and for this reason the ISSNs are listed last instead of first. Because the examples show the CONSER database, OCLC numbers are present.

#### **Bibliographic Super Record for Example 1 (variable fields):**

1XX -- Computers & chemistry \$? (Supertitle)

7XX -- \$? 001 \$t Computers & chemistry \$? (Print) \$w (DLC) 81649137 \$w (OCoLC)1351124 \$x 0097-8455 \$? [dates of title, from fixed field dates of record] 7XX -- \$? 001 \$t Computers & chemistry \$? (Microfilm) \$w (OCoLC)9421140 \$? [dates of title]

7XX -- \$t Computers & chemistry \$? (Microfiche) \$w (OCoLC)7824405 \$? [dates of title]

7XX -- \$? 001 \$t Computers & chemistry (Online)\$? (Electronic/internet) \$w (OCoLC) 38840804 \$? [dates of title]

7XX -- \$? 002 \$t Computational biology and chemistry \$? (Print) \$w(DLC) 2003-252370 (OCLC)51986982 \$x 1476-9271 \$? [dates of title]

7XX -- \$? 002 \$t Computational biology and chemistry (Online) \$? (Electronic/internet) \$w (DLC) 2003-204068 \$w (OCoLC) 51756925 \$? [dates of title]

Note: the first subfield in each 7XX in the bibliographic super record example now shows a position indicator which the title represents in the sequence of titles. This could be accomplished by other methods, perhaps a \$8. The format of a version could be coded in an indicator in addition to the format subfield following the title.

Subfield x and w contain linking control numbers. They would be available in the bibliographic format linking fields, but in the authority format such linking fields would have to be defined. Incidentally, there is an FRBR-related MARBI proposal 2003-04 dealing with standard numbers in the authority format, addressing a specific field, 024. The CONSER FRBR Task Force is studying the proposal.

A separate subfield (code to be determined) for the FRBR format qualifier is necessary so that the remainder of the field will be searchable as a title in the title index. A specific identifier, preferably readily understood, is used for each format, including plain print. If the title already has a uniform title with qualifier, the format qualifier (because it is subfielded) would be enclosed in a separate set of parentheses.

The public view of this array of titles and versions could be primarily text based, or presented in a graphic manner:

Computers & chemistry (Earliest title)  
was issued as:

Title 1:

Computers & chemistry (Print)--1976-2002  
 Computers & chemistry (Microfilm)--1976-  
 Computers & chemistry (Microfiche)--1976-  
 Computers & chemistry (Online) (Electronic/internet)--1976-2002

Continued by

Title 2:

Computational biology and chemistry (Print)--2003-  
 Computational biology and chemistry (Online)(Electronic/internet)--2003-

**Computers & Chemistry**

**Computational Biology & Chemistry**

v.1-26 (1976-2002)

v.27 (2003)-



Volumes 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

**Holdings records for Example 1**

The construction below depends on the ability to attach holdings records to CONSER database records. In this scenario, some identification should also display on the screen (beyond the optional subfield \$z) to identify the title.

Holdings Record 1

\*\*\*\*\*ny###22\*\*\*\*\*4n###4500

001 <control number>

004 <control number of related super record>

008 7604032u####0###1000uueng0040101

562 \$c Print

852; \$b PUBLICATION HISTORY RECORD \$z This record exists for informational purposes only; no particular copy is represented

853 20 \$ 8 1 \$a v. \$b no. \$u 4 \$v r \$i (year) \$w q \$x 12

863 40 \$8 1.1 \$a 1-21 \$i 1976-1997  
853 20 \$8 2 \$a v. \$b no. \$u 6 \$v r \$i (year) \$w b \$x 01  
863 40 \$8 2.1 \$a 22-26 \$i 1998-2002 \$z Title: Computers & chemistry  
853 20 \$8 3 \$a v. \$b no. \$u 6 \$v r \$i (year) \$w b \$x 01  
863 40 \$8 3.1 \$a 27- \$i 2003- \$z Title: Computational biology and chemistry

#### Holdings Records 2-3

The specific microform bibliographic information is contained in the 533 of microform records attached to the super record so this record does not need 843 (reproduction note). Coverage is only Title 1, so no 863 \$z is necessary.

\*\*\*\*\*ny\*\*\*22\*\*\*\*\*4n\*\*\*\*4500

001 <control number>  
004 <control number of related super record>  
007 ha|bmb024baca  
008 7604032u\*\*\*\*0\*\*\*\*1000uueng0040101  
562 \$c Microfilm  
852; \$b PUBLICATION HISTORY RECORD \$z This record exists for informational purposes only; no particular copy is represented  
853 20 \$8 1 \$a v. \$i (year)  
863 40 \$8 1.1 \$a 1-26 \$i 1976-2002

#### Holdings Record 4

Some have argued that holdings records are unnecessary or undesirable for electronic versions because the issues of "check in" of electronic issues has not yet been resolved. However, this assumes that holdings records are primarily useful as the underpinnings of serials control systems, which is not necessarily the case. From a user's point of view, the holdings record defines what is available to him or her. In most cases the electronic version mirrors the enumeration and chronology of the print, and in those cases the Publication History record, perhaps in a summarized form, provides the appropriate information to define display. When this is not the case, when the electronic version has diverged in publication pattern, the holdings record must also diverge.

\*\*\*\*\*ny\*\*\*22\*\*\*\*\*4n\*\*\*\*4500

001 <control number>  
004 <control number of related super record>  
007 cr\*cnu  
008 9812082u\*\*\*\*0\*\*\*\*1000uueng0040101  
562 c Electronic/internet  
852; ;b PUBLICATION HISTORY RECORD \$z This record exists for informational purposes only; no particular copy is represented  
853 20 \$8 1 \$a v. \$i (year)  
863 40 \$8 1.1 \$a 1-26 \$i 1976-2002 \$z Title: Computers & chemistry  
853 20 \$8 3 \$a v. \$i (year)  
863 40 \$8 3.1 \$a 27- \$i 2003- \$z Title: Computational biology and chemistry

#### Searching Issues related to the Super-record

The kind of search envisioned is a "cascading search" trying for a match on one control number after another until a matching record is retrieved-a search long awaited, which we ought to be asking for in our catalogs. (For a discussion, see Alan, Robert. "Linking successive entries based upon the OCLC control number, ISSN, or LCCN," *Library Resources & Technical Services* 37:3 (October 1993) p. 403-13.)

The specific order of the cascading search should be: subfield w (multiple if present), subfield x, subfield t, a and t, or a and s, depending on which is present. A title search on \$t (such as the kind of search on linking field \$t performed in most current catalogs) would not work well here because it would be circular and redundant; however, it would be accepted as the last-resort search.