



University of Mosul  
College of Art  
Dept. of information and knowledge Techniques

Course Name: Advanced Cataloging  
Stage: Masters  
Lecturer Name: Prof. Rafal N. A.  
School Study: 2025-2026

[How FRBR and Its Family Work in Online Public Access Catalogs (OPAC): With Illustrative Examples and Comparisons]

First: What is the Problem with Traditional Cataloging that Led Us to FRBR?

Imagine you are searching the library catalog for Gabriel García Márquez's novel One Hundred Years of Solitude.

In a traditional catalog, you would be presented with a long list of records, each appearing independent of the others:

- A Spanish edition from a publisher in Madrid, 1967.
- An Arabic translation from a publisher in Beirut, 1980.
- Another Spanish edition from a publisher in Buenos Aires, 2002.
- A new Arabic edition with a different introduction, 2020.
- An electronic version (PDF).
- An audiobook.

This list can be confusing. The user does not know which one is the original "work," nor how these records relate to each other.

FRBR (Functional Requirements for Bibliographic Records) was developed to solve this problem. The core idea is: instead of treating each record as a standalone entity, we view the intellectual work as a hierarchical entity with four layers.

Second: The Four Layers of FRBR Explained Simply

Think of it as a family or a tree:



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1. Work -- The abstract idea or story.

- Example: The novel One Hundred Years of Solitude as an intellectual entity. It has no cover or specific language; it is the "intellectual content."

2. Expression -- The intellectual or linguistic realization of that work.

- Example: The expression in the original Spanish (as written by Márquez) and the expression in Arabic (translated by Saleh Almani). Each language is considered a different expression, even if it's the same work.

3. Manifestation -- The physical or digital embodiment of that expression.

- Example: The edition published by Publisher X in 1980 (paperback), the edition published by Publisher Y in 2020 (deluxe hardcover), the electronic edition from Publisher Z. All these are different manifestations of the Arabic expression.

4. Item -- The actual physical copy sitting on the library shelf.

- Example: Two copies of the 1980 edition; the first has pencil notes, the second is new. Each one is an "item" with its own unique identifier.

Linking to Conceptual Frameworks: When we designed our new catalog (e.g., the "Sierra" system), we programmed it to understand these layers. So instead of displaying ten independent records, the catalog shows a single screen for the "Work," and then under the work's classification, it presents you with options for Expressions and Manifestations.

Third: How Does This Appear to the User in the OPAC?

Let me illustrate with a practical example from our library's catalog:

When a user searches for One Hundred Years of Solitude:

Main Screen (Work Page):

- Work: One Hundred Years of Solitude / Gabriel García Márquez
- This work is available in two Expressions:



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1. Spanish (Original)
2. Arabic (Translation)

When the user clicks on the Arabic Expression:

- Expression: One Hundred Years of Solitude (Arabic)
- This Expression is available in three Manifestations:
  1. Printed book -- Beirut: Dar Al-Adab, 1980
  2. Printed book -- Casablanca: Arab Cultural Center, 2000
  3. E-book -- Hindawi Foundation, 2021

When the user selects a specific Manifestation (e.g., Dar Al-Adab, 1980):

- Manifestation: One Hundred Years of Solitude. Third edition. Beirut: Dar Al-Adab, 1980. 520 pages.
  - Items available in the library:
    - Copy number: 102345 (Available for loan -- Shelf 863 M)
    - Copy number: 102346 (Reference -- Not for loan)

This is the function of FRBR: transforming the catalog from a mere bibliographic list into a platform that reflects the natural relationships between editions.

Fourth: The FRBR Family (FRAD and FRSAD) -- How Do We Control Names and Subjects?

FRBR alone is not enough; it focused on bibliographic relationships (Work/Expression/Manifestation/Item).  
However, it has a family:

1. FRAD (Functional Requirements for Authority Data)
  - This focuses on conceptual entities such as persons, families, corporate bodies, and uniform titles.

Integration into the Catalog:



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- In the modern catalog, the author's name is not just text. It is a conceptual entity linked to a unique identifier.
- When cataloging for Márquez, we don't write his name freely. We link the record to a VIAF identifier or a local identifier for "Gabriel García Márquez."
- Benefit: If the author changes their pseudonym, or their name appears in different forms, the catalog understands it is the same person.
- Example: In the catalog, clicking on the name "Gabriel García Márquez" takes you to his specific page (an authority page) which includes:
  - All his works.
  - Different forms of the name (Gabriel García Márquez, Gabo).
  - Relationships with other entities (e.g., associated with the "Magical Realism" movement).

## 2. FRSAD (Functional Requirements for Subject Authority Data)

- This focuses on the subject content: What is the document about?

### Linking to Conceptual Frameworks:

- In the old catalog, we wrote "subject headings" as plain text. Now, we link each document to a concept within a unified authority system.

### Illustrative Example:

- A book about "Magical Realism in Latin America."

### In a catalog built on FRBR/FRSAD:

- "Magical Realism" is not treated as text, but as a concept with its own page.
- When a user searches for "Magical Realism," all works related to this concept are displayed, even if the phrase isn't literally mentioned in the title.
- The user can see the expanded definition of the concept and its relationships with other concepts (e.g., "Magical Realism" belongs to "Modern Literary Movements" and is linked to Jorge Luis Borges as an influence).

## Fifth: How Do We Integrate All This with Conceptual Frameworks in Practice?

In our library's OPAC, this integration is achieved through three layers:

1. Bibliographic Records for Each Manifestation: These contain links to:



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- The Work to which they belong.
- The specific Expression (language and translation).
- The Authors (linked via FRAD identifiers).
- The Subjects (linked via FRSAD identifiers).

2. Conceptual Entity Pages: Clicking on an author's name, subject, or uniform title navigates to a page that aggregates everything related to that concept. This page is automatically built by collating all records that refer to that unified identifier.

3. Relationship Map: The modern catalog visually or textually displays how entities are connected. For example:

- "Gabriel García Márquez" → is the creator of the work "One Hundred Years of Solitude" → this work has an Arabic translation by Saleh Almani → this translation is available in two different editions → and these editions are located on the library shelves.

## Summary

When we catalog today, we don't just think of a "bibliographic record." We think of building a network of entities:

- FRBR gives us the work hierarchy (Work ← Expression ← Manifestation ← Item) to unify all editions.
- FRAD provides authority control for author names and uniform titles as conceptual entities.
- FRSAD provides subject authority control as interconnected concepts.

All of this appears to the user in the modern OPAC in a simplified manner: instead of a long list of records, they see a single work page, from which they can seamlessly navigate between translations, editions, and copies. If they want to delve deeper, they click on the author's name or subject to discover the network of associated knowledge.

This is the essence of "expert cataloging" today: building a catalog that doesn't just present books, but tells the story of the relationships between ideas and editions.



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## How Does FRBR Work with RDA?

Simply put: FRBR is the conceptual model that describes entities and their relationships. RDA (Resource Description and Access) is the content standard that translates this model into practical instructions used to create bibliographic and authority records.

Think of it as building a house:

- FRBR is the blueprint: it defines the rooms of the house (Work, Expression, Manifestation, Item) and how they relate to each other.
- RDA is the construction manual: it details how many doors you need, how to write the title, how to describe dimensions, and where to place the relationships.

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## How Do RDA and FRBR Work Together in Practice in the Catalog?

### 1. RDA Adopted the Model and Structured Its Chapters Accordingly:

- When you open the RDA Toolkit, you find it organized according to the FRBR entities (and later the entities of the Library Reference Model LRM):
  - A chapter for dealing with the Work and the uniform title.
  - A chapter for dealing with the Expression and attributes like translation and language.
  - A chapter for dealing with the Manifestation and all physical details and publisher information.
  - A chapter for dealing with the Item and copy-specific details.
- Separate chapters for authority data: Person, Family, Corporate Body, Concept, Place, etc.
- This means the cataloger no longer thinks of a single "MARC record" but rather of an independent entity (e.g., a "Work" entity), recording its attributes (characteristics of the work) and its relationships with other entities.

### 2. Practical Example: Cataloging the Book One Hundred Years of Solitude According to RDA and FRBR



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In our modern catalog (running on a system compatible with RDA and linked data), we perform the following steps:

- First: We create the Work Entity:
  - Define the preferred title of the work according to RDA: Cien años de soledad.
  - Define the uniform title in Arabic (if in an Arabic environment): مئة عام من العزلة.
  - Link this work to the author person (Gabriel García Márquez) with the relationship: created by.
- Assign a unique identifier (URI) to each work, representing the conceptual framework for that work.
  - Second: We create the Expression Entity:
    - Example: The Arabic expression -- translation by Saleh Almani.
  - Attributes of the expression: language, translator, form of expression (written text).
  - Link this expression to the work it belongs to (relationship: is expression of).
- Link the expression to the translator person (Saleh Almani) with the relationship: has translator.
  - Third: We create the Manifestation Entity:
    - Example: Dar Al-Adab edition, Beirut, 1980.
  - Attributes of the manifestation: publisher, publication date, ISBN, number of pages, dimensions, carrier type (print).
  - Link this manifestation to the expression it embodies (relationship: is manifestation of).
- Fourth: We create the Item Entity:
  - For each physical copy in the library: accession number, shelf location, status (available, on loan).
  - Link each item to the manifestation it belongs to (relationship: is item of).
- Fifth: We create the Authority Entities:
  - For each person (author, translator), we create an authority record according to RDA/FRAD rules: preferred name, different name forms, dates.
  - We link these entities to the bibliographic entities instead of repeating the text.

### 3. How Does the Result Appear to the User in the OPAC?

- When the user searches for the book, they see the "Work" page that brings together all expressions and manifestations under one roof. This page would not have been possible had we not recorded the data according to RDA, adhering to the entities and relationships outlined by FRBR.



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## What About Encoding (MARC vs. Linked Data)?

In traditional cataloging, we used MARC21. Because RDA and FRBR were designed to work together, modifications were introduced to MARC to accommodate the model:

- We used the 3XX fields to describe manifestation attributes according to RDA.
- We used relationship fields (e.g., 700 with specific relationship designators \$e author, \$e translator) to clarify relationships between entities.
- We used linked data in modern systems where we publish data as RDF (e.g., via BIBFRAME), making entities linkable on the web.

However, the essence of the collaboration between RDA and FRBR is not about encoding, but about the way of thinking: everything we describe in RDA is an attribute of a FRBR entity, and every relationship we create is a relationship between these entities.

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## Why is This Integration Important?

1. Consistency: The catalog's database becomes logically consistent because each entity is treated uniformly. For example, every "Work" has a uniform title, every "Expression" has specific language attributes, and the user doesn't get confused.
2. Reusable Data: Instead of repeating the author's name in every manifestation record, we link all manifestations to the author entity once. This saves time and reduces errors.
3. Preparation for the Semantic Web: RDA was designed to be compatible with linked data principles. When we apply RDA with FRBR, we build a foundation that can be published as Linked Data, making the library catalog part of the global knowledge graph.

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Conclusion from a Practical Library Perspective:



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In my daily work, I use RDA as a reference to answer questions like:

- "Is this field mandatory or optional for the Manifestation entity?"
- "How do I form the uniform title for a translated work?"
- "Which relationship should I use to link a work to a series (collection)?"

And FRBR tells me why I am doing this: because I am not just describing a book; I am building knowledge layers that start from the abstract idea (Work) down to the actual copy (Item), linking all of it to persons and subjects as independent conceptual entities.

In short:

- FRBR says: "These are the entities that must exist in the catalog, and these are their relationships."
- RDA says: "Here are the detailed rules for describing each of these entities and recording their relationships."

A library that applies this integration achieves an intelligent catalog that is understandable to users and ready to evolve in the age of linked data.