

BIBFRAME Expectations for ILS tenders

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1.0. draft : Organizer Group 2018 European Workshop BIBFRAME and Tiziana Possemato

Forword

At the *European BIBFRAME Workshop 2017¹* in Frankfurt in September 2017 the requirements for Integrated Library Systems (ILS) vendors to fulfil BIBFRAME conformance were discussed.

Based on this discussion the Organizer Group for the 2018 European BIBFRAME Workshop asked Tiziana Possemato to draft a specification about BIBFRAME Expectations for ILS tenders. During a dialogue between the Organizer Group and Tiziana, the draft is developed further into this specification. The aim of the specification is for libraries to use as a reference for invitations to tender.

The specification can be used for requirements for fulfilment of a specific level of service, asking the vendors to specify which and when their ILS system will fulfill some or all of them – or more openly just asking for a description of development plans.

Introduction

This draft document aims to define a list of possible requirements to be addressed by ILS providers in a tender. In this context, when we refer to an ILS we refer mainly (but not exclusively) to the cataloguing module.

These requirements are focused on BIBFRAME but, generally speaking, they refer to a more agnostic Linked Open Data environment.

¹ <https://wiki.dnb.de/display/EBW/>.

The document is not intended to be exhaustive and detailed, but it serves the purpose of starting a discussion around the different stages of evolution of ILS in this transitional period between the old and the new ILS environments.

The list starts with an entry level item, defining a more traditional scenario, ending with a high level item, already in a future technological scenario (but already under construction). For each item the Library should assign a score, used to evaluate the level of adhesion and of reception of the BIBFRAME specifications by vendors.

In this synopsis only general, basic information about the technology is provided. More detailed, complete information about the technological stack in different scenarios is required in a technical document. We refer to a database (a *relational database* as a traditional environment; *triple store/graph database* as linked open data environment) to indicate different scenarios; but the two different technological stacks are increasingly complicated compared to this simplification. In the diagram below, we give information about the *master/slave*² relationships between a traditional (RDB) and a linked open data (TS/Graph) environment.

In this document, we use ‘system’ to indicate the ILS (both terms are used here interchangeably).

When discussing the future of library systems we should talk about Library Service Platforms, but this definition includes more **complex** aspects, not included in this first analysis of ILS expectations.

Before defining the requirements for a new ILS compliant with BIBFRAME the Library needs to clearly establish who is the end user that will use the linked data: should the project to publish or produce data in BIBFRAME be designed to be read by machines (to allow for reasoning processes, semantic indexing and so on) or people? This choice will determine the final specifications and dictate the direction of the project. In the case of a project designed for both machines and people, the specifications for searching/using data system become more complex, because the Graphical User Interface (GUI) needs advanced features to publish, show in a user-friendly way and use the RDF data. We have postponed this analysis for another time.

BIBFRAME conformance levels for ILS

1. First level (entry level): the ILS needs to manage formats and be able to produce ‘well-done’ data, ready for conversion into BIBFRAME. The system is still in a traditional environment but the vendor has improved the cataloguing standard or the format to make legacy MARC records more conversion-friendly. Some examples of these features are:
 - the possibility to manage attributes and relationships useful to convert data into BIBFRAME;
 - the possibility to catalogue using RDA instructions and guidelines;
 - the possibility to manage and enrich MARC records with URIs;
 - the possibility to manage linking between bibliographic and authority records on the ILS level makes conversion much easier, since the system ensures the consistency of the links.

² Master/slave (technology): “is a model of communication where one device or process has unidirectional control over one or more other devices. In some systems a master is selected from a group of eligible devices, with the other devices acting in the role of slaves”. Wikipedia, [https://en.wikipedia.org/wiki/Master/slave_\(technology\)](https://en.wikipedia.org/wiki/Master/slave_(technology)).

In general, any functionality that improves data quality is helpful for conversions later on. In this scenario, the cataloguing module is totally record-oriented.

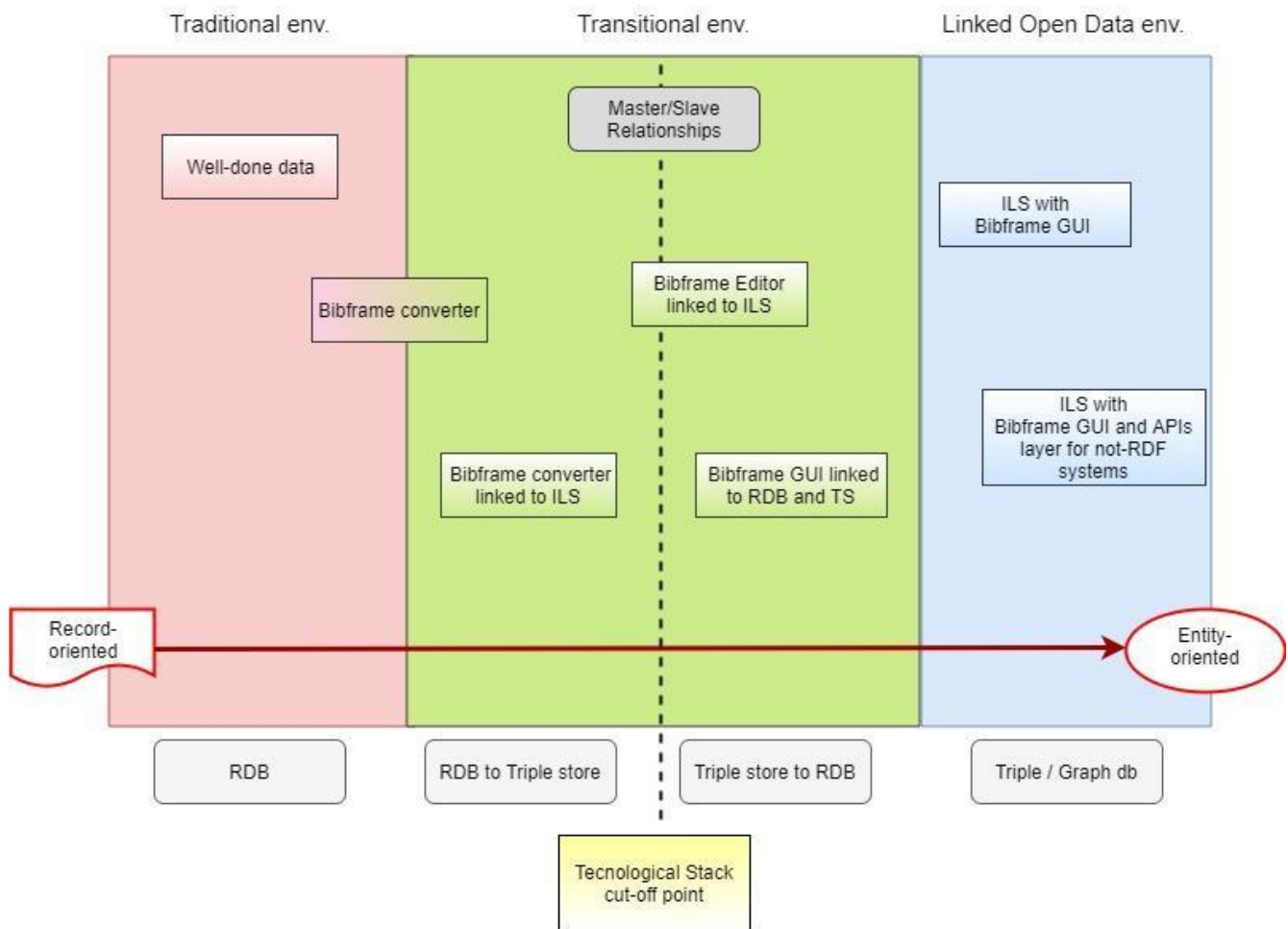
2. The vendor can provide a conversion tool (from MARC/MODS... formats to BIBFRAME), not included within the ILS but available to convert data. In this scenario, the cataloguing module is totally record-oriented, and the conversion into BIBFRAME is realized afterwards. The relational database is master respect to the triple store (slave).
3. The vendor can provide a BIBFRAME convertor connected to the ILS: this means that the massive data conversion is realized all at once, but the system should allow record-by-record updates of the RDF (BIBFRAME) dataset. In this scenario, the cataloguing module is still totally record-oriented, and the conversion into BIBFRAME is realized afterwards. The relational database is the master with respect to the triple store (slave). The two environments should stay aligned.
4. The ILS facilitates the use of a BIBFRAME editor, to create data in BIBFRAME. The vendor makes available an API layer to convert and download RDF data into the relational database (in traditional formats). In this scenario data become entity-oriented and they are converted into a traditional format to allow other services that use traditional data (for circulation and so on). In this scenario the master/slave relationship is determined by the 'editor' (it can have a storage system or not).
5. The ILS has its own BIBFRAME interface (in the figure referred to as GUI), so that cataloguing is no longer record-oriented but entity-oriented. The system manages two different databases (relational and triple store) and each cataloguing action (post – edit – delete – get) updates at the same time in both environments. In this case, the Master is the triple store, and the slave is the relational database.
6. The system allows the original cataloguing to take place in RDF/BIBFRAME environment. The cataloguing process is totally entity-oriented (linked open data environment), and it is likely that the entire ILS produces and manages data in RDF [or this may not be the case, however this scenario is not within the scope of this document]. There is no reason to have a parallel environment, because the transition to a new linked open data environment is completely realized.
7. The system allows the original cataloguing to take place in RDF/BIBFRAME environment. The cataloguing process is totally entity-oriented (linked open data environment); the vendor makes available APIs/Web services to connect the system with traditional systems (to convert and manage data coming from traditional systems). There is no necessity to have a parallel, traditional environment, but the library wishes to remain in touch with the existing traditional environment.
8. The Vendor will ensure that the previously mentioned tools/technologies will take into consideration the BIBFRAME evolution; specific components will be updated absorbing changes in the BIBFRAME model and vocabulary, by ... *[define a certain time, such as by one year from the publication of the new BIBFRAME version]*.

9. The vendor will provide a discovery tool which is able to give evidence to the entity-relationship model that BIBFRAME proposes. The details for an OPAC/Discovery BIBFRAME-oriented system would need another section of this document (or another specific document). In terms of the OPAC/Discovery tool this list does not give a comprehensive outlook of the possible evolution of front-end systems.

10. The vendor must ensure the sharing of all project documents (technical and practical) to enable the management of the system in the future, outside of the exclusive domain of the vendor.

Diagram of Bibframe Expectations for ILS tenders

Bibframe Expectations for ILS tenders
 How to evaluate the level of adhesion and of reception of the Bibframe specification by vendors



Legenda:
 RDB: Relational Database
 TS: Triple store
 GUI: Graphical User Interface