From linked data editors to the Alma ILS: A case study of BIBFRAME interoperability

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Abstract

This project report presents a process for achieving interoperability of linked data editors with the ExLibris Alma Integrated Library System (ILS). The process utilized web-based APIs from the Alma ILS and from the LD4 community, notably, the open-source ILS-middleware codebase. Interoperability among the different systems relies on a shared BIBFRAME model from the Library of Congress.

Keywords

BIBFRAME, Interoperability, Linked Data Cataloging

1. Introduction and Background

Metadata is often seen as the keystone element to interoperability among disparate library systems. In 2024, library vendors such as Share-VDE, ExLibris, OCLC, and EBSCO have created new product offerings for linked data capabilities. A test of metadata interoperability among the new linked data systems is necessary to ensure linked data can be utilized across systems. This report will detail efforts to export BIBFRAME linked data created using a linked data editor to an Integrated Library System (ILS). This test took place as part of a yearlong linked data focus group that tested exporting linked data to the Alma ILS. The Penn Libraries envisions working within a hybrid environment which supports both linked data and traditional descriptions in MARC. A requirement to this environment is that the ILS must support both MARC and BIBFRAME, side by side.

According to the Library of Congress BIBFRAME website, the motivation for developing BIBFRAME was to provide "...a foundation for the future of bibliographic description, both on the web, and in the broader networked world that is grounded in Linked Data techniques. A major focus of the initiative is to determine a transition path for the MARC 21 formats while preserving a robust data exchange that has supported resource sharing and cataloging cost savings in recent decades" [1]. The BIBFRAME model has three core classes: the BIBFRAME Work, the Instance, and the Item. The Library of Congress makes MARC-to-BIBFRAME[2] and BIBFRAME-to-MARC[3] crosswalks available as part of its standards support. The crosswalks are utilized within the Alma system to generate MARC from BIBFRAME and BIBFRAME from MARC.

DCMI-2024 International Conference on Dublin Core and Metadata Applications
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https://doi.org/10.23106/dcmi.952433788

Sinopia was the primary linked data editor used throughout the test to create BIBFRAME data. The Sinopia editor "is developed by the Linked Data for Production: Pathway to Implementation (LD4P2) project" as an "environment where libraries can create data in a linked data environment without having to set up and maintain tools [and] learn best practices related to linked data creation" [4]. BIBFRAME Work, Instance, and Item data was created in Sinopia using resource templates (similar to metadata application profiles) created by the Program for Cooperative Cataloging and the University of Pennsylvania Libraries.

2. Process

In order to create a set of data for the test, a small group of gift collection material was chosen and cataloged in BIBFRAME using the Sinopia editor. The material consisted of a variety of monographs, chosen to test the modeling of both simpler bibliographic material as well as translations, bound-withs, related resources, and local item information in BIBFRAME. The BIBFRAME data describing each resource was exported to the Alma ILS following its creation. There are two ways that data can be sent into the Alma ILS: through an integration of the ILS and linked data editor that uses the ILS-Middleware, or using a Jupyter notebook outside of the linked data editor. The focus group tested the integration using the ILS-Middleware, which made it simple for group members to export to Alma Sandbox from Sinopia-Dev [5]. The code used in ILS-Middleware is available in two Jupyter notebooks (one for Work and one for Instance) which can export Sinopia data into Alma [6]. The ILS-Middleware requires a URI for an Instance and an API key specific to the Alma system.

3. Next Steps

Penn Libraries will initiate a pilot project for exporting RDF data to the production Alma system. This is to test the feasibility of using RDF editors in existing production workflows. Next steps may include batch workflows as well as original cataloging with linked data editors.

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https://doi.org/10.23106/dcmi.952433788