Recent Advances of the Open-Source VIVO Research Information Management System That Enhance Usability, Interoperability, and Internationalization: A Project Brief

CNI Project Briefing Video Series * October 2022

Rebecca Bryant
Senior Program Officer
OCLC Research
bryantr@oclc.org, @RebeccaBryant18
orcid.org/0000-0002-2753-3881

Bruce Herbert
Professor & Chair, VIVO Leadership
Texas A&M University
beherbert@tamu.edu, @drbruceherbert
orcid.org/0000-0002-6736-1148
What the %$&! is Research Information Management?

Research Information Management (RIM) systems support the transparent aggregation, curation, and utilization of data about institutional research activities.
Research Information Management in the United States

Project Team

Rebecca Bryant, PhD, OCLC Research co-PI
Jan Fransen, University of Minnesota co-PI
Pablo de Castro, euroCRIS & Strathclyde University
Brenna Helmstutler, Syracuse University
David Scherer, Carnegie Mellon University

Reports

oc.lc/us-rim-report
Research Information Management in the United States

Methodology

- Case study approach
- 5 US research universities with a diversity of:
  - Uses
  - Products
  - Scale
  - Stakeholders
- Semi-structured interviews with 39 individuals at 8 institutions

Case study institutions

- Penn State
- Texas A&M
- Virginia Tech
- UCLA
- University of Miami

[oc.lc/us-rim-report]
6 High Level RIM Use Cases

- **Public portal**
  - Public profiles
    - Promotes expertise discovery, reputation management, economic development
  - Public profiles

- **Metadata reuse**
  - Using to update faculty web pages, etc.
    - Reduces data re-entry, saves time

- **Strategic reporting & decision support**
  - Reports, visualizations, & dashboards
    - Ex: accreditation, grant preparation, strategic planning

- **Faculty activity reporting (FAR)**
  - Workflows for annual academic review &/or P&T processes.
    - Ex: accreditation, grant preparation, strategic planning

- **Open access workflow**
  - Streamlines process for depositing OA content, harmonizing metadata between RIMS & Repository
    - In response to institutional or national policies

- **Compliance monitoring**
  - Most prominent outside US
    - Tracking to ensure both individual & institutional compliance with external requirements

---

[oc.lc/us-rim-report]
RIM System Framework

DATA SOURCES
- Publication Databases
- Local Data Sources
- Local Knowledge

DATA PROCESSING
- ETL Processes
  - Publication Harvester
- Metadata Editor

DATA

STORE

DATA TRANSFER METHODS

DATA CONSUMERS

6 high level RIM use cases

oc.lc/us-rim-report
Key findings

The US landscape is characterized by decentralization & duplication
- Most institutions have >1 RIM system
- Multiple stakeholders create silos

Widespread confusion about what RIM systems are and do
- Different stakeholder groups use different terminology

RIM systems can support an array of high-level use cases
- Although we often observed siloed systems supporting only one use

No national mandates
- Reporting requirements in Europe have driven their adoption; however, RIM systems are rarely used for compliance monitoring in the US

Libraries are important stakeholders
- Librarians possess extensive expertise in publications metadata and scholarly communications; no other campus stakeholder holds this knowledge.
OCLC Has Identified an Important Challenge

Siloed University Research Data in a Range of Systems

RIM systems can act as hubs of these siloed systems with four strategies:

• Consistent use of persistent identifiers (PIDs) for people, objects, and institutions.
• (Reasonably) consistent data models or ontologies across the systems.
• Systems have application programming interfaces (API), so that data can be shared automatically.
• The development of a good data governance policies that balances openness and security.
VIVO: Open Source, Community Supported program

- Open-source RIM system built by, for, and with communities
- Customizable including the ontology
- Institutions own and control their data
- Semantic technology that supports open science practices

https://www.lyrasis.org/Pages/Main.aspx
VIVO Core Values

OPEN SOURCE
VIVO, and all VIVO components are provided as open source. Download from GitHub.

OPEN COMMUNITY
The VIVO community is open to everyone. You can follow the work of VIVO at the VIVO wiki.

OPEN DATA
VIVO produces Linked Open Data which is easily shared and combined across VIVO sites.

USE
JOIN
SHARE
VIVO Roadmap

Usability and Utility

- Dynamic API

Software evolution

- VIVO 1.13.0 release.

Interoperability

- CERIF2VIVO mapping - Collaboration with EuroCris to align CERIF model to VIVO ontology. (ongoing)
  https://wiki.lyrasis.org/display/VIVO/Ontology+Interest+Group

- Integrating DSpace and VIVO: (ongoing)
  https://wiki.lyrasis.org/display/VIVO/DSpace-VIVO+integration+task+force

- Enhance interoperability with Fedora, & ORCID
VIVO Roadmap. Dynamic API

Dynamic API will Decoupling Frontend and Backend, and Enable Easier Customization of VIVO

Dynamic custom entry forms  
New web interfaces  
Better integration with external applications

Source: https://zenodo.org/record/6652252#YrAjguxBxPY
VIVO 1.13.0 Has Been Released for Community Testing

What’s new:

- A new functionality to upload a file and link it with an individual in VIVO (for example, a book).
- Password authentication on external smtp servers
- New features for SPARQL update API
- Online translator editor, also enhancing Slavic languages.
- Deletion of individuals and related information
- Other minor improvements

Source: [https://wiki.lyrasis.org/display/VIVODOC113x/VIVO+1.13.x+Documentation](https://wiki.lyrasis.org/display/VIVODOC113x/VIVO+1.13.x+Documentation)
VIVO Roadmap. CERIF2VIVO mapping

MOU with EuroCRIS

- Align CERIF framework and VIVO ontology
- Collaborate on interoperability
- Communications between the communities
- Attend mutual conferences

Takes advantage of mutual interests
VIVO Roadmap. CERIF2VIVO mapping

Benefits of the mapping:

- Interoperability between VIVO platforms and CERIF-compatible CRIS systems
- Knowledge transfer
- Improvement of CERIF model and VIVO ontology
- Extensions of the data models
- Addition of descriptions and annotations
- Machine-executable mapping for various purposes and in various notations, for example, for a CERIF-compliant data export from VIVO
VIVO Roadmap. Interoperability of DSpace & VIVO

Goal: Use VIVO as a frontend for one or multiple DSpace instances at the institution

- A new presentation of DSpace items and semantic web aspect to existing DSpace repositories
- DSpace-VIVO migration assigns a unique ID to the researchers and subjects (keywords)
- The 'Capability Map' allows an expertise mapping across data sources

Project information:
https://github.com/vivo-community/DSpace-VIVO
https://wiki.lyrasis.org/display/VIVO/DSpace-VIVO+Technical+Documentation
VIVO Community Continues to Grow

Access the interactive VIVO map!

+60 institutions and agencies
+20 countries implementing VIVO
2021-23 Community Events

- VIVO 2021 conference (Virtual) – 252 attendants, most international, from 32 countries worldwide
- North American User Group Meeting
- Launch of the Spanish-speaking User Group Meeting with more than 600 attendants
- VIVO track at the CRIS2022
- New German User Group Meeting in progress
- VIVO 2023 conference is being planned
Interested in learning more?

Get involved in the VIVO community!

- Visit vivoweb.org
- Read more at https://wiki.lyrasis.org/display/VIVO/VIVO
- Follow @vivocollab on Twitter
- Join VIVO mailing lists
- Email anna.guillaumet@sigmaaie.org or beherbert@tamu.edu