

Alignment of VIVO ontology and platform with the CodeMeta schema

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Agenda

- Background - Overview of VIVO as an open-source scholarly platform
- Importance of aligning research outputs with FAIR principles
- Motivation
- Problems and solution with Aligning ontology

Background

- **VIVO:** Open-source platform for academic data and its features (e.g., manual maintenance, automated import, integration with external databases).
- **CodeMeta:** Metadata schema for research software.
- **FAIR Principles:** Ensure research software is findable, accessible, interoperable, and reusable.

Motivation

Motivation

- Research software is vital but often poorly represented.
- FAIR principles call for better metadata for discoverability and reuse.
- Aligning VIVO with CodeMeta improves standardization and interoperability.
- The CoARA agreement promotes recognizing software as an essential research output.

Objectives

- Improve software representation in VIVO.
- Define a metadata crosswalk for consistency.
- Build a REST API for managing software records.

Problem Statement

Current Situation:

- VIVO supports cataloging software but lacks structured metadata.
- No standard alignment with CodeMeta for interoperability.

Challenges Identified:

- Metadata inconsistency.
- Limited API capabilities for software records.

Solution

- Alignment of VIVO ontology with CodeMeta schema
- New properties added to the Software class in VIVO (e.g., SWHID, authorship relation, funding information)
- Crosswalk definition and its role in metadata consistency
- **API Implemented:** CodeMeta-JSON endpoint in VIVO.

Example of REST API output

```
{
  "internalIdentifier": "http://vivo.mydomain.edu/individual/85d22b70-cc63-41a5-9edd-738dde451312",
  "name": "Novi 1",
  "datePublished": "2024-06-06",
  "authors": [
    {
      "name": "PMF",
      "type": "http://xmlns.com/foaf/0.1/Organization"
    },
    {
      "name": "Jovan, Joksimovic",
      "type": "http://xmlns.com/foaf/0.1/Person",
      "identifier": "0000-0002-5376-4106"
    },
    {
      "name": "Krstó, Prelevic",
      "type": "http://xmlns.com/foaf/0.1/Person"
    }
  ],
}
```

```
"fundings": ["College of Arts and Humanities"],
"funders": [
  {
    "name": "College 2 Test",
    "type": "http://xmlns.com/foaf/0.1/Organization",
    "grantName": "Grantic"
  }
],
"version": "version",
"description": "abstract",
"identifiers": ["swhid"],
"keywords": "aaa, ccc, nnn"
}
```

Impact and Future Work

- Enhanced software cataloging in VIVO aligned with FAIR principles
- Improved interoperability for research software records
- Future plans: resolving pending issues, community feedback

Acknowledgement and References

- Acknowledgement of FAIR-Impact project support (Grant No. 101057344)

Key references:

- [CoARA](#) agreement
- CodeMeta [PR 366](#) and VIVO [PR 4014](#)

Thank you