US RAiD Pilot

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SAN DIEGO SUPERCOMPUTER CENTER

GO FAIR US

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Agenda

- Intro to RAiD
- US RAiD Pilot Overview
- RAiD Use Case Examples
- Pilot Cases & Next Steps

US RAiD Pilot Staff

Sheila Rabun

https://orcid.org/0000-0002-1196-6279

Lead Strategist, Research Infrastructure Programs, Lyrasis

Christine Kirkpatrick

https://orcid.org/0000-0002-4451-8042

Division Director,
Research Data Services,
San Diego Supercomputer Center (SDSC), UCSD

Chris Erdmann

https://orcid.org/0000-0003-2554-180X

Head of Open Science,
SciLifeLab Data Centre, &
Data Initiatives, SDSC

Julie Christopher

https://orcid.org/0009-0006-4290-1810

Technical Project Manager, SDSC,
University of California, San Diego

Kevin Coakley

https://orcid.org/0000-0003-4976-8136

Senior Cloud Integration Engineer, SDSC,
University of California, San Diego

Doug Fils (SDSC) attending the workshop

RAiD Staff at ARDC

Natasha Simons

https://orcid.org/0000-0003-0635-1998

Director, National Coordination, Australian Research Data Commons (ARDC)

Matthias Liffers

https://orcid.org/0000-0002-3639-2080

Product Manager (Persistent Identifier Services), Australian Research Data Commons (ARDC)

Intro to RAiD

What is RAiD?

Research Activity Identifier (RAiD) is a persistent identifier (PID) and global registry for research projects, designed to store, update, share, and link project information.

RAiDs focus on the **project** as the central object, to connect research components and relevant entities via other PIDs over time, even as they change

RAiD is an ISO standard (ISO 23527:2022), published in 2022 and developed by the Australian Research Data Commons.

Missing, not represented in PID network graph

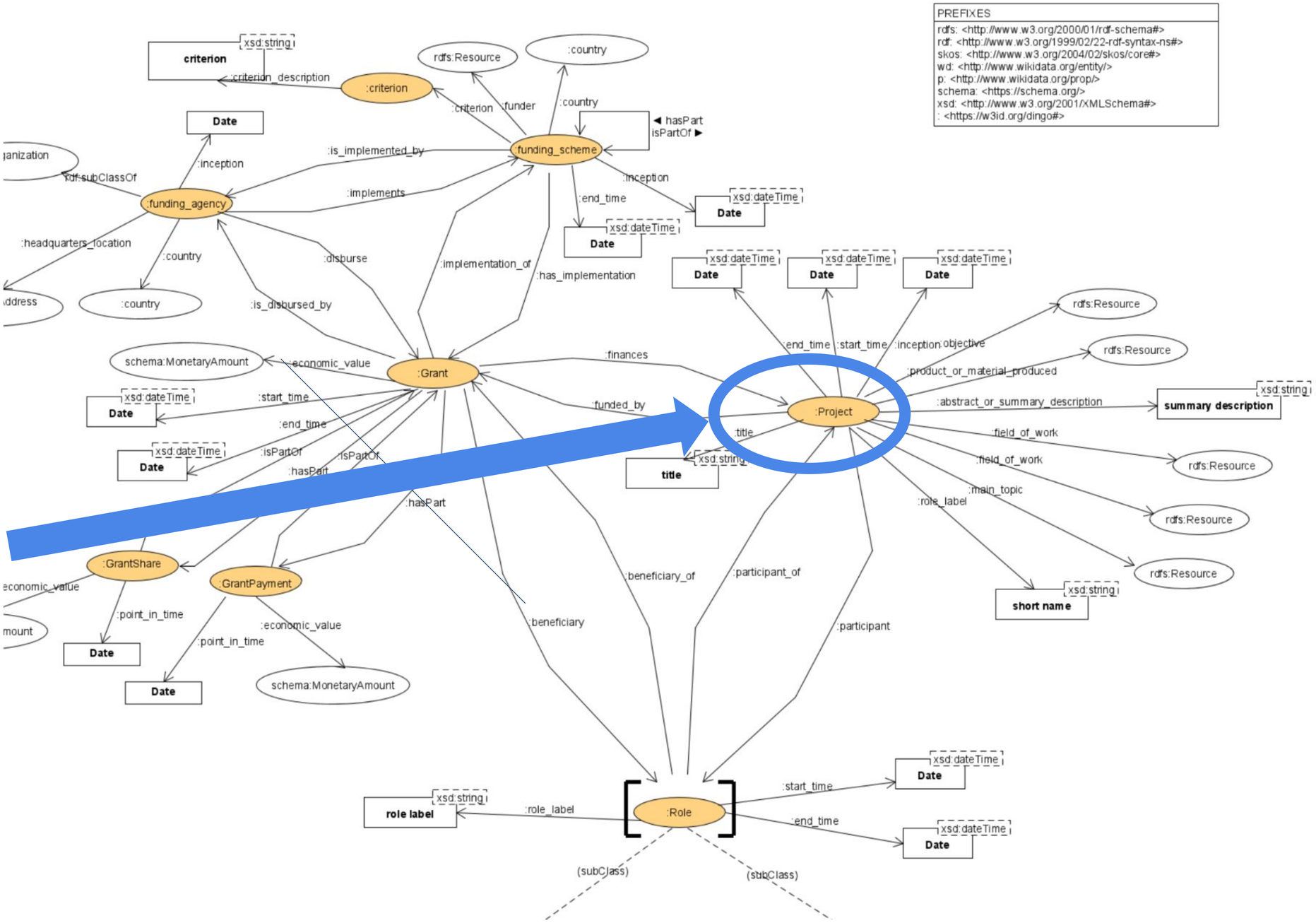
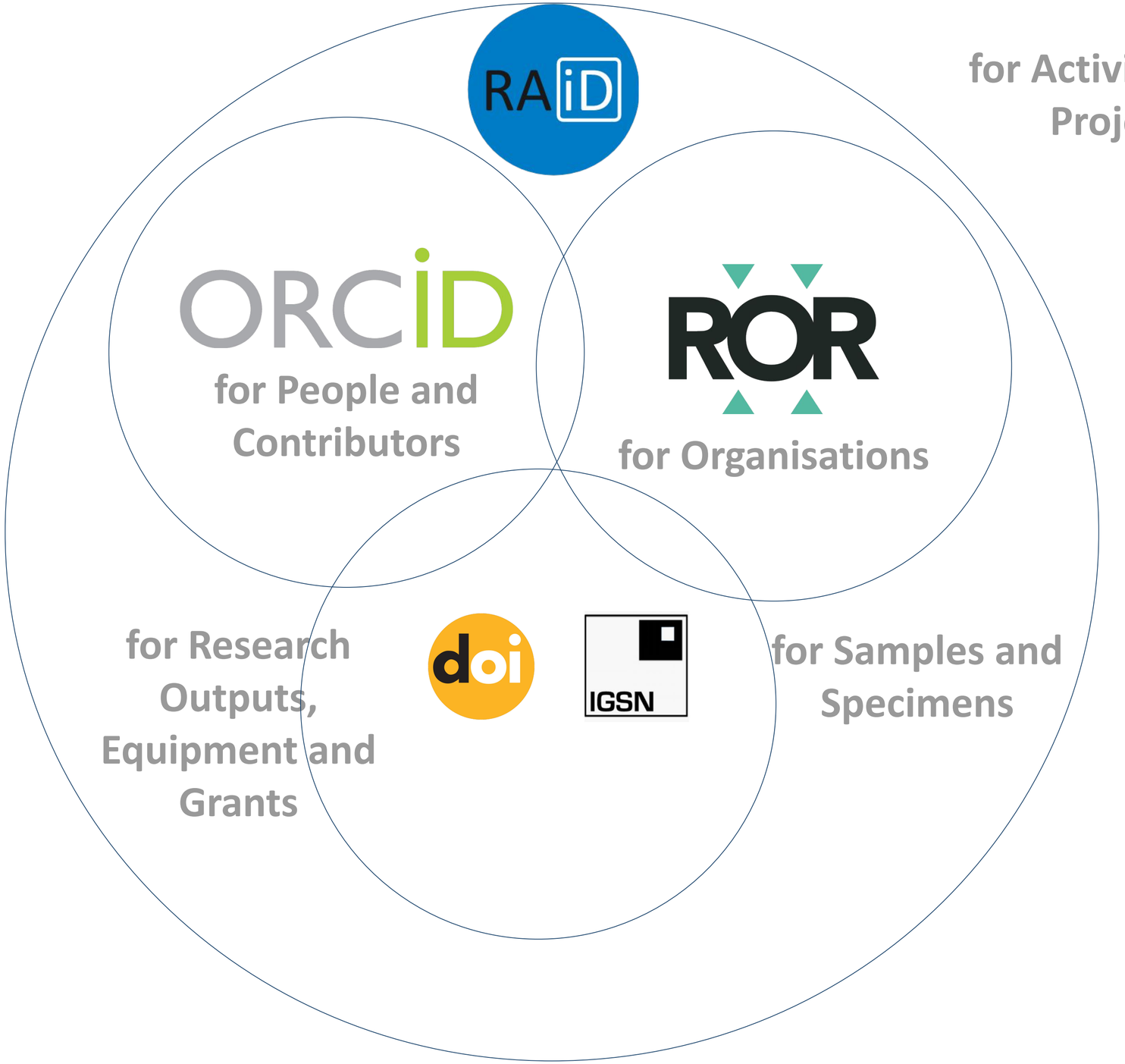


Image from https://dcodings.github.io/DINGO/ DINGO: a knowledge graph ontology for projects and grants (with ontology mappings) D. Chialva et. al.


RAiD
for Activities and Projects
ORCID
for People and Contributors
ROR
for Organisations
for Research Outputs, Equipment and Grants
doi
IGSN
for Samples and Specimens

What is a research project?

A "project" is defined as a temporary endeavor with a defined scope aimed at advancing knowledge or achieving specific goals over a limited period, distinct from a grant (which is funding) or an organization

However,

We do not want to be prescriptive - tell us your use case

RAiD is (largely) a container for other PIDs

https://raid.org/10.12345/j6k28

Title (primary) Lorem Ipsum Project
Title (acronym) LIP
Start date 2023-01-30
Description (short) Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas vitae condimentum nisl, eget ornare felis.

Principle investigator orcid.org/0000-0002-3843-0000
Role https://credit.niso.org/contributor-roles/conceptualization/
Co-investigator orcid.org/0000-0002-3639-2080
Role https://credit.niso.org/contributor-roles/data-curation/

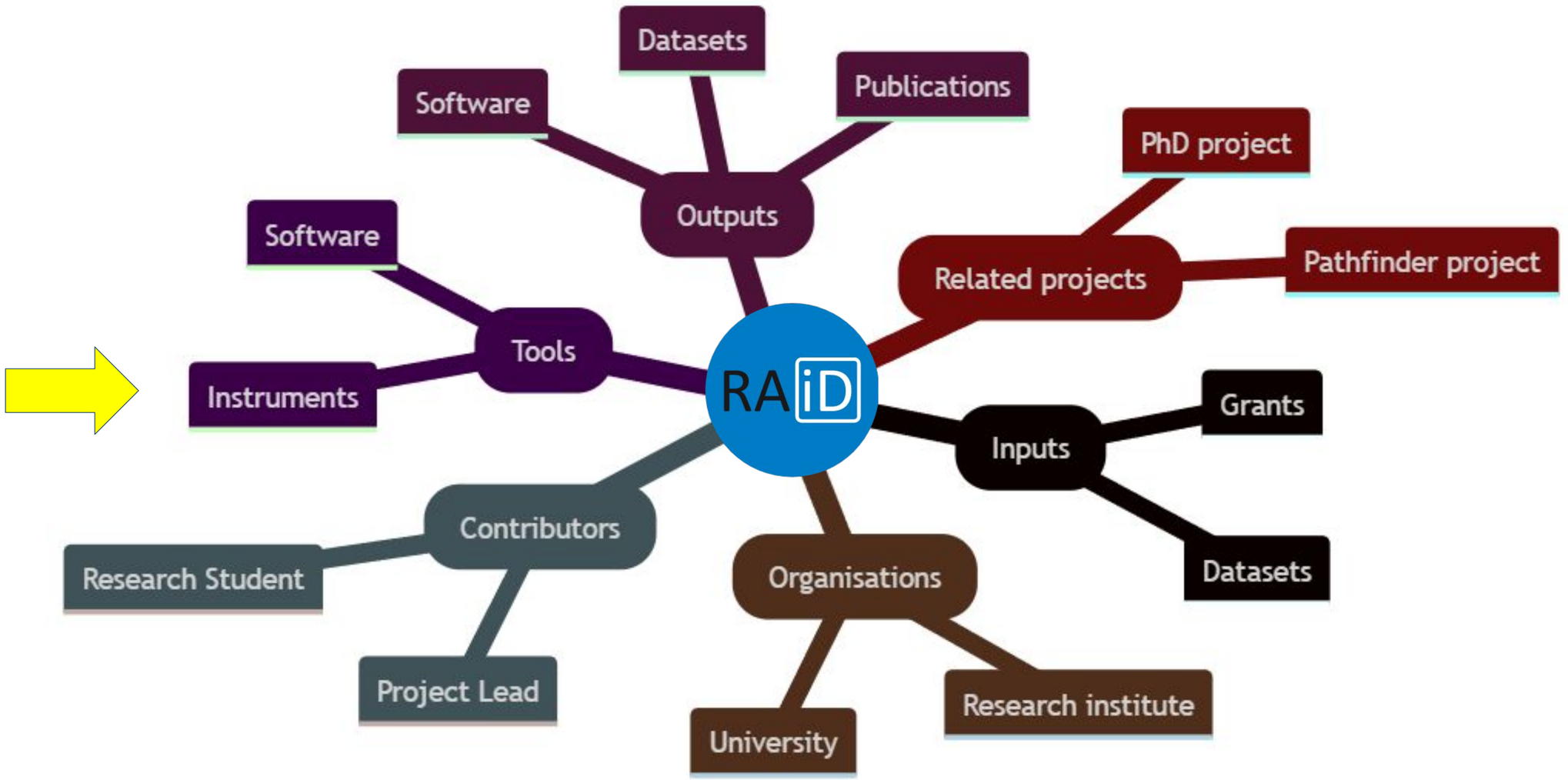
Lead organisation ror.org/00rqy9422
Partner organisation ror.org/03b94tp07

Grant https://doi.org/10.8948/908234D93EAF
Dataset https://doi.org/10.1594/PANGAEA.726855
Article https://doi.org/10.1038/nphys1170
Instrument https://doi.org/10.1337/jdlc-tima
Sample https://doi.org/10.60510/awfwi02135

Alternate Identifier 134323205 (Local CRIS ID)
Alternate URL https://osf.io/j4ck9/ (OSF Project)

Sub-project https://raid.org/10.3010/401XQPOI

What does a RAiD metadata record look like?



Benefits of RAiD

IMMEDIATE:

Unique Identification

Transparency

Interoperability

Supports Open Science

WITH USE:

Efficiency

Reporting

Consistency

Connected Ecosystem

Research infrastructure providers

Organisations that provide research infrastructure or services such as imaging, HPC, or specialised softare for researchers (and want to track outcomes from this usage)

Funders

Organisations that fund research or research infrastructure (and want to track the outcomes and impact of this funding)

Research organisations

Organisations wishing to identify and track project inputs and outputs (e.g. contributors, collaborators, data sets, samples, instruments, tools, grants, events, grey literature, journal publications, and all associated PIDs)

Researchers

Researchers and research teams wishing to track and share information about their projects

Other PID providers

Other PID providers that want to integrate project PIDs or leverage proect matadata to help build research graphs

How is RAiD different?

Project-specific metadata schema

Multi-party administration

Dynamic (versioned) metadata record

Auto-generated landing page

Extensible and customizable

Community development and support

What is RAiD's potential?

Average number of active research projects in any given year (estimate):

- United Kingdom = 50k projects
- Australia = 21k projects
- United States = 625k projects
- Organisation for Economic Co-operation and Development (OECD) = 1.5M projects

In Australia, elimination of double-entry of project metadata could save approximately:

- 2.9k person-days per year
- AUD $2.7M per year

- **If used in conjunction with PIDs for grants and publications, RAiD could save (estimate):**
  - 37.9k person-days per year
  - AUD $23.8M per year

Source: Brown, Josh, Jones, Phill, Meadows, Alice, & Murphy, Fiona. (2022). *Incentives to invest in identifiers: A cost-benefit analysis of persistent identifiers in Australian research systems*. Zenodo. https://doi.org/10.5281/zenodo.7100578

US RAiD Pilot Overview

US RAiD Implementation Timeline

Key activities and milestones for establishing the US RAiD ecosystem

Jan - June 25

- Launch website and communication channels
- Establish coordination mechanisms
- Create technical implementation plan
- Begin stakeholder consultations

March - October 25

- Establish pilot RAiD infrastructure
- Sign MOUs between partners
- Work with alpha pilot organizations

Sept 25 - June 26

- Implement RAiD minting workflow
- Create GUI for the RAiD API
- Develop support documentation

Sept - Dec 26

- Broader community outreach
- Draft community needs report
- Disseminate findings to stakeholders

Ongoing activities: Tracking metrics, documenting use cases, and building awareness through presentations and outreach

This work is supported through the NSF award #2226453.

Business Model Considerations

US PID Communities Supported by Lyrasis

ORCID US Community

- Launched 2018
- Tiered fee structure based on total annual operating budget
- All member orgs get access to 5 premium ORCID API keys

Lyrasis DataCite US

- Launched 2021
- Tiered fee structure based on number of DOIs registered annually
- All participating organizations get access to as many DOIs as they need

RAiD Use Cases Examples

Oak Ridge National Laboratory (ORNL)

- Actively engaged in large-scale research projects
- Already use ORCID iDs for researchers & DataCite DOIs for research outputs
- Interested in using RAiD to connect overarching projects with the resources and entities involved to gain a more structured, unified view of ORNL's diverse research portfolio
- Benefits of RAiD:

  Improve visibility for sponsors

  Align researcher skills with active projects

  Enhance resource management and reduce duplication

NSF National Center for Atmospheric Research (NCAR)

- Supports research with specialized assets (Radar systems, solar observatories, etc.)
- Assigns DataCite DOIs to datasets & outputs, using ORCID for researchers
- Benefits of RAiD:

  Bundle related research entities (grants, datasets, software, instruments)

  Track full projects and their evolving components

  Improve visibility of high-value but under-cited assets (e.g., aircraft, instruments)

Leveraging RAiD to Aggregate Research Ecosystems

Examples of what RAiD stakeholders can collect by implementing RAiD and leveraging other PIDs in use.

Researchers (ORCID)

Principal investigators and research teams

- Faculty members
- Graduate students
- External collaborators

Publications (DOI)

Research outputs with unified identification

- Journal articles
- Conference papers
- Preprints

Data Resources (DOI, RRID)

Interlinked datasets and repositories

- Raw data
- Processed datasets
- Repositories like Metabolomics Workbench

Analysis Clusters & Specialized Facilities (RRID)

Computational resources supporting research

- National supercomputing centers
- Electron Microscopes
- Cloud computing platforms

Organizations (ROR)

Institutions supporting the research ecosystem

- Universities
- Funding agencies
- Industry partners

RAiD identifiers connect all these elements, including instruments, transforming fragmented research artifacts into a cohesive, discoverable ecosystem.

Pilot Use Cases & Next Steps

Pilot Use Cases - Next Steps

1. Determine initial RAiD use cases:
   - Registering RAiDs for projects
   - Including RAiDs in your workflows

2. Share & Document your RAiD use cases

3. Test RAiD registration process & provide feedback

4. Provide feedback on documentation & business model

5. Share insights & experience

Lyrasis®

Learn More

US RAiD Pilot:

https://lyrasis.org/us-raid-pilot/

Pilot Interest Form:

https://forms.gle/yQNNPiMdav3G5L2D8

Contact Us:

projectpid@ucsd.edu