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FAIR Facilities and Instruments: Standardization and Adoption of Persistent Identifiers (PIDs) for Research Facilities and Instruments

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FAIR Facilities and Instruments: Standardization and Adoption of Persistent Identifiers (PIDs) for Research Facilities and Instruments



FLORIDA STATE UNIVERSITY



Center for Research Data & Digital Scholarship
UNIVERSITY OF COLORADO BOULDER



NATIONAL CENTER FOR
ATMOSPHERIC RESEARCH

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Abstract

Persistent Identifiers (PIDs) make data liquid and enable research components to get connected and flow. This flow of information makes it easy to find, cite, and reuse. PIDs promote FAIR practices. Federal funding agencies have now fully embraced use of PIDs as key to the broader efforts of enabling Open Science. In recent decades, as open science has taken on greater visibility within scholarly research institutions, the use of PIDs has expanded significantly to encompass many further purposes and resource types, including data sets, software, laboratory materials, physical samples, and people and organizations. This presentation focuses on a new NSF funded Research Coordination Network (RCN) that focuses on the assignment of PIDs to research facilities and instrumentation. Providing persistent identifiers for scientific instruments could increase transparency, reproducibility and enhance the discoverability of existing instruments, equipment, and data, in turn streamlining scientific research production and open science practices. Equitable access to research resources is premised on the ability of the community to seamlessly search, locate and access these resources. PIDs are key enablers of discoverability of existing research facilities and instrumentation. This project is facilitating community-wide discussion to encourage broad adoption of best practices in PID implementations knowing that there is no "one-size-fits-all".

FAIR PRINCIPLES and OPEN SCIENCE (FAIROS)

FAIR Principles represent the machine-readable technical layer that enables the construction of an appropriate digital ecosystem for research. FAIR principles are at the core of Open Science whose elements enable open access publishing, open data, and open source.

F	Findable	How do we enable people to find relevant facilities or instruments?
A	Accessible	How do we enable facilities and instruments to be accessible by wider audiences? How can we streamline the burden on researchers concerning PID use and adoption?
I	Interoperability	How do we consistently capture relationships between persistent identifiers? What are the relative advantages / disadvantages of the various identifier systems (RRID, DOI, ARK, ...) for facilities and instrumentation?
R	Reusability	How can we incorporate information about facilities and instruments into data set provenance metadata more consistently? What provenance metadata is most important to data users for these resources?

Methods

Phase 1. Gathering input and developing recommendations

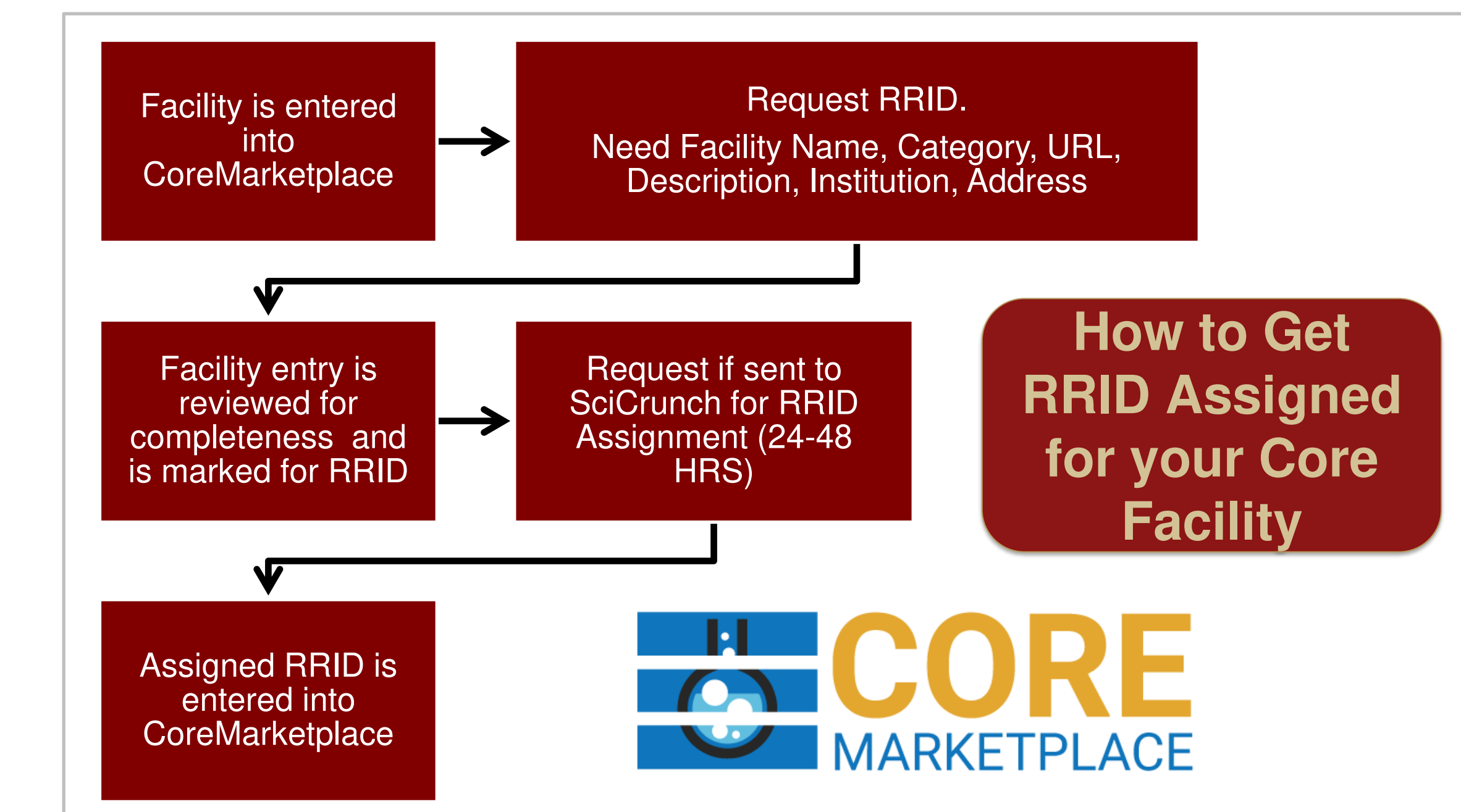
1. Gather use cases outlining the major goals that research facility and instrumentation providers have regarding PIDs.
 - a. Why have PIDs been assigned to facilities and instruments thus far?
2. Define the capabilities and limitations of current PIDs systems as they relate to facilities and instruments.
3. Evaluate current PID systems against the use cases

Phase 2. Recommendations dissemination and adoption

1. Test recommendations by promoting adoption among stakeholders
2. Host in-person workshops and leverage professional associations such as ABRF
3. Identify key adoption opportunities and barriers
4. Continue to gather input and engaging stakeholders

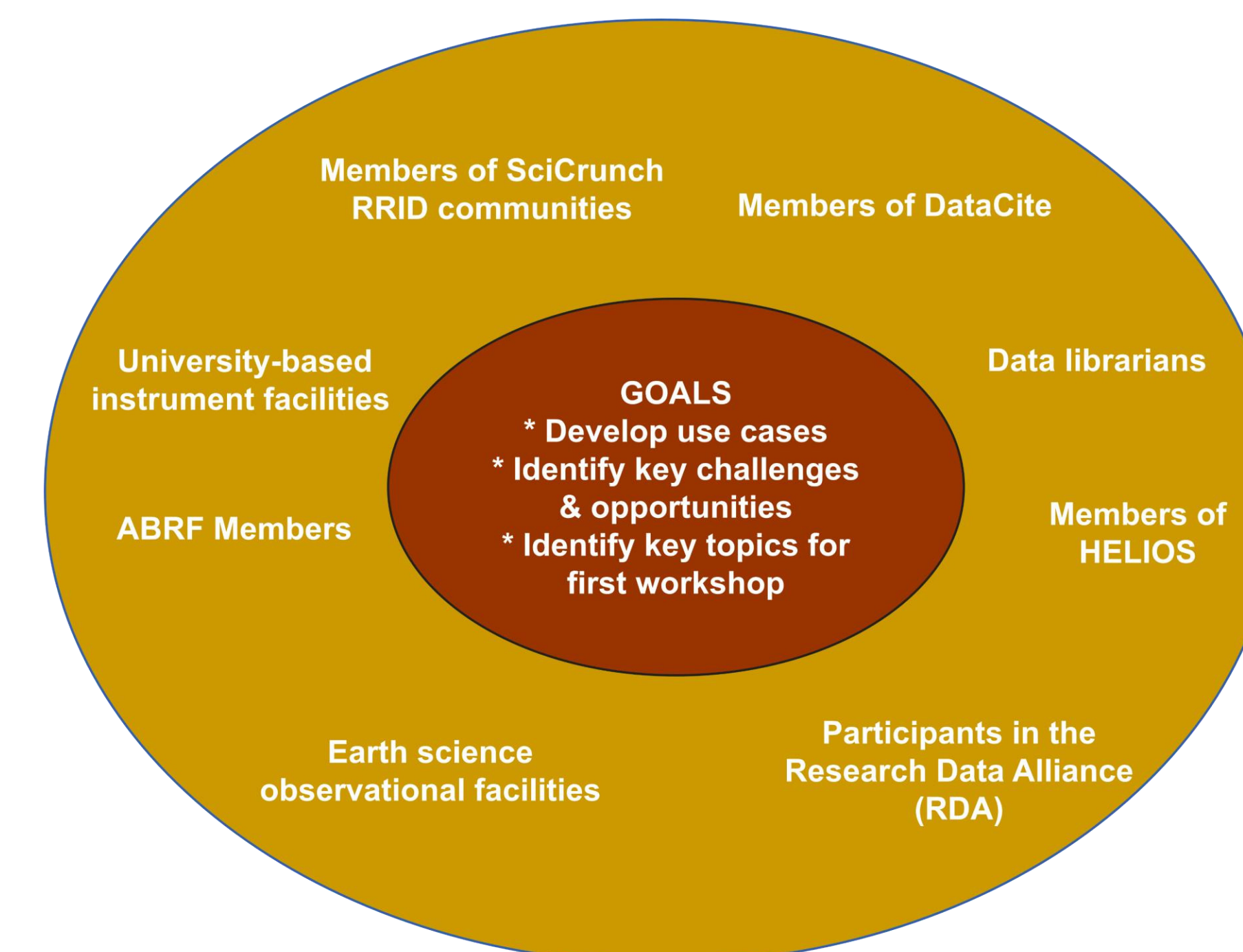
Phase 3. Report Findings

- Establish generalized recommendations
2. How should current information structures deal with different PIDs
 3. How should information infrastructure deal with same PIDs that are implemented in different ways?
 4. Continue to gather input and refine recommendations



PIDs Enable Networked Science

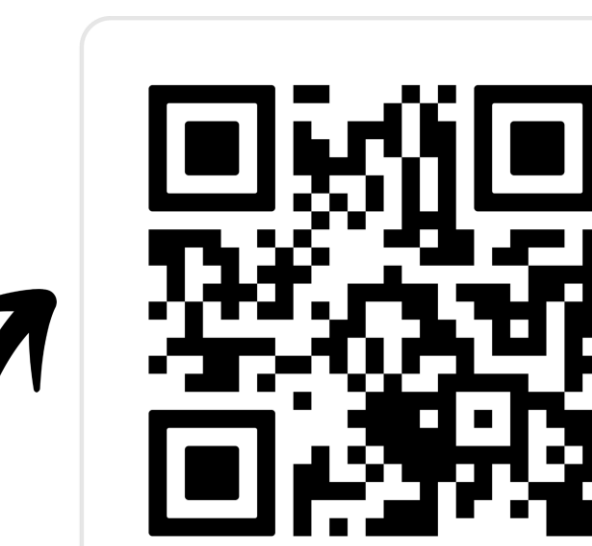
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ENGAGE WITH US



SCAN ME

Organizations

- <https://ror.org/>
- Universities
- Institutes



Facilities, Services Instruments

- <https://www.rids.org/>
- Core facilities
- Instruments
- Samples
- Antibodies
- Animal models
- Cell lines
- Tools

People

- <https://orcid.org/>
- Researchers, facilities users
- Contributors, staff scientists
- Co-authors

Publications, Data

- <https://www.crossref.org/>
- <https://datacite.org/>
- articles
- datasets
- protocols

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