Persistent Identifiers for Facilities and Instrumentation

£ Greg Stossmeister, £Matthew Mayernik, ¥Renaine Julian, *Claudius Mundoma, §Andrew Johnson, §Aditya Ranganath, *Zach Chandler

*£ National Center for Atmospheric Research, Boulder CO; ¥Florida State University, Tallahassee, FL; *Stanford University, Stanford CA; §University of Colorado, Boulder CO.*

NCAR | NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

FLORIDA STATE UNIVERSITY

Center for Research Data & Digital Scholarship
UNIVERSITY OF COLORADO BOULDER

Stanford University

Website:
https://ncar.github.io/FAIR-Facilities-Instruments/

Goals:

For open science to thrive, data and associated scientific resources must be Findable, Accessible, Interoperable, and Reusable (Wilkinson et al., 2016).

By incorporating persistent identifiers for scientific instruments, we can further enhance scientific reproducibility and transparency, facilitating the discoverability of existing instruments, equipment, and data, thus improving research practices in open science.

- Develop a interdisciplinary Research Coordination Network (RCN) focused on the assignment of Persistent Identifiers (PIDs) to research facilities and instrumentation
- Compile use cases for why and how PIDs might be assigned to facilities and instruments
- Facilitate the generation of expertise and guidance on the key topics of interest

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	**Interoperable**	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	**Reusable**	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?

Process:

Phase 1. Gathering input and developing recommendations

1. Gather use cases related to instruments and facilities

2. Define the capabilities and limitations of current PID systems

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

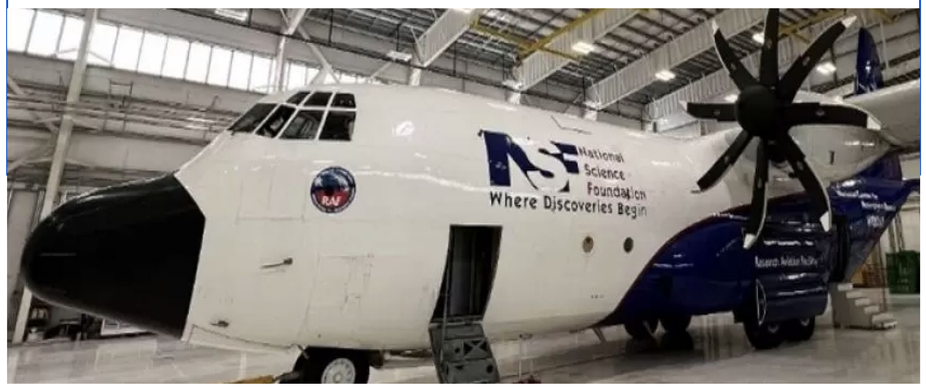
Phase 3. Report Findings

1. Establish generalized recommendations

2. How should current information structures deal with different PIDs

3. How should information infrastructure deal with some PIDs that are implemented in different ways?

4. Continue to gather input and refine recommendations



Input Gathering:

3 Focus Groups (4 – 8 People): Geoscientists, Geoscience Data Providers, FSU Mag Lab Physicists

Major Themes:

- **How to handle instrument development, evolution, configuration, versioning?**
- **The right level of granularity is important to minimize the burden on the researcher having to cite too many things.**
- How to ensure first use papers are also cited?
- Metadata related to the PID needs to be flexible to account for diversity of instrument metadata across the community of users
- How to best advertise instrument PIDs and encourage citation usage?

September Workshop:

University of Colorado, Boulder
September 13 – 15, 2023
Researchers, Instrument Operators, Data Archivists

Major Themes:

- **What best practices should be developed for handling instrument/facility evolution?**
- **What are the advantages and disadvantages of the different PID systems?**
- **What other use cases exist for Instrument and Facility PID usage?**
- **Can PIDs be used to support better discovery/request processes?**

For more information go to our website: