Australian Research Data Commons

Interoperable #6

FAIR Data 101 virtual course
Webinar 6

PRESENTED BY

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Welcome to Interoperable webinar #6

Goto webinar chat window for questions or tech issues today

Slack channels
#introductions find your equivalent at another institution; add some emoji reactions!
#general questions or comments for everyone

Twitter: #FAIR101 #ARDCtraining

tiny.cc/code-conduct

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Interoperable #6 overview

- Interoperability - what does it even mean?
- Community agreed formats, language, vocabularies
- Controlled vocabularies
- Linked data
- Interoperable: Q+A
- Activities, quiz and community discussions

Interoperability

I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2. (Meta)data use vocabularies that follow FAIR principles

I3. (Meta)data include qualified references to other (meta)data

Interoperability

- Data that is interpretable by a computer
- Community agreed formats, languages and vocabularies

Metadata

- Community agreed standards and FAIR vocabularies
- Links to related information using identifiers

Photo by Ilnur Kalimullin on Unsplash

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Community standards

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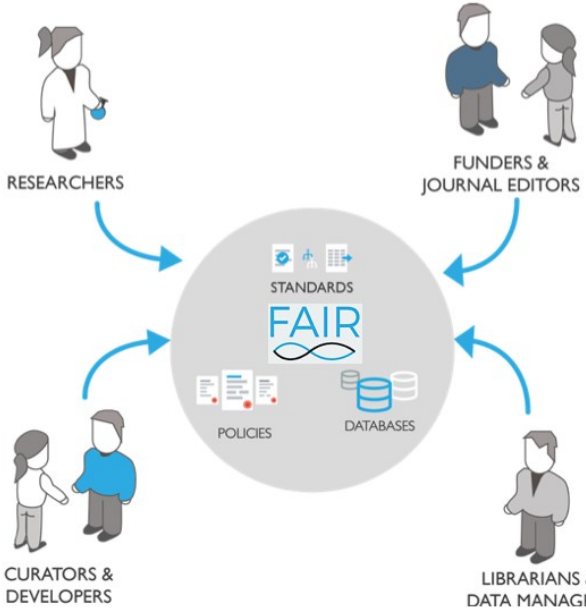
My funder's data policy recommends the use of established standards, but which are widely endorsed and applicable to my **crop** data?

Which are the **mature standards** and **standards-compliant databases** that we should recommend to our authors?



fairsharing.org

We need a standard for **sharing social science data**, what's out there and who should we talk to?

I have some old **rice genomic data** in format X, which is now **deprecated**; what format has replaced X?

Image source: https://fairsharing.org/educational/

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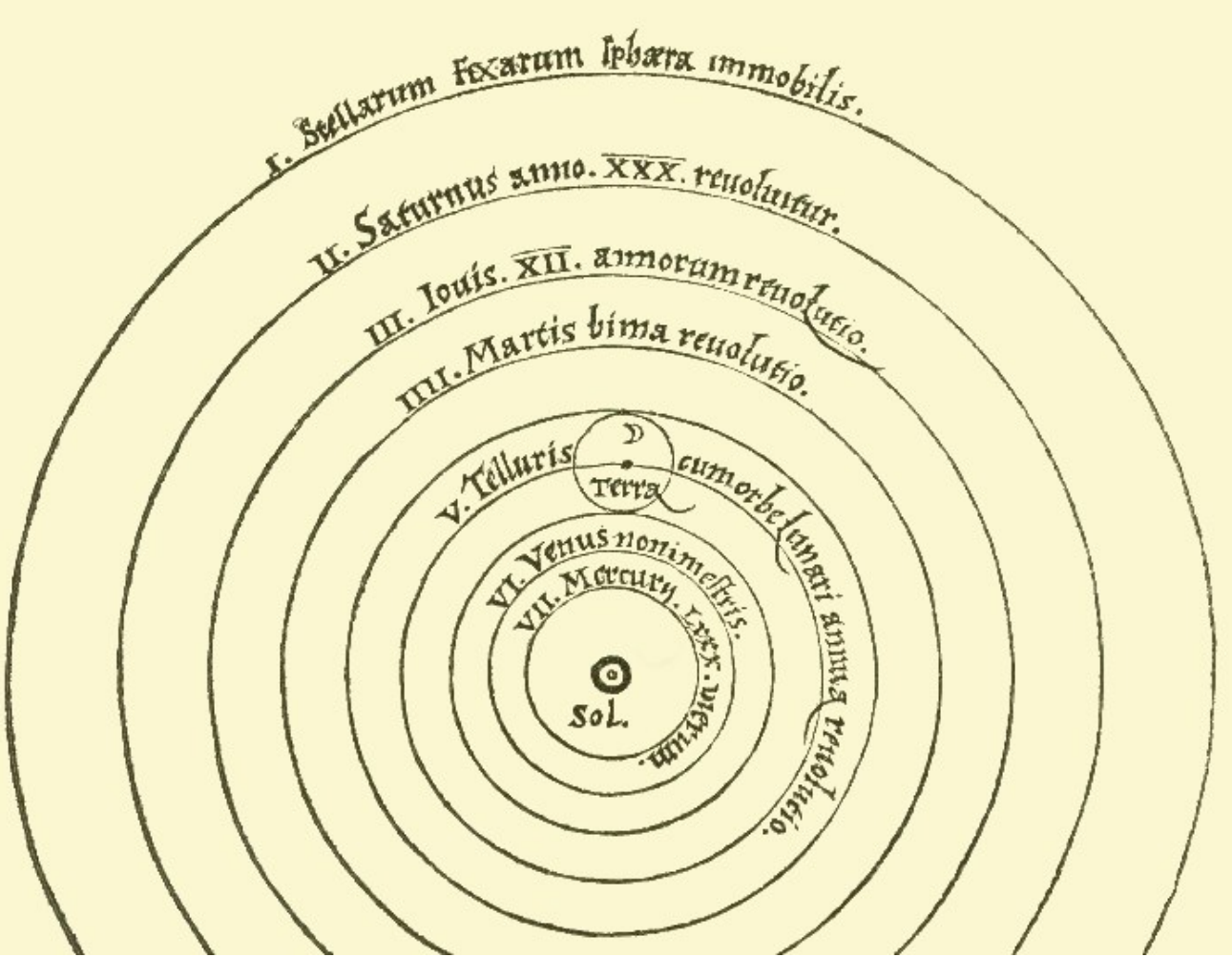

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Copernican_heliocentrism_diagram.jpg: Own work from Copernicus 1543 derivative work: Professor marginalia / Public domain

Vocabularies

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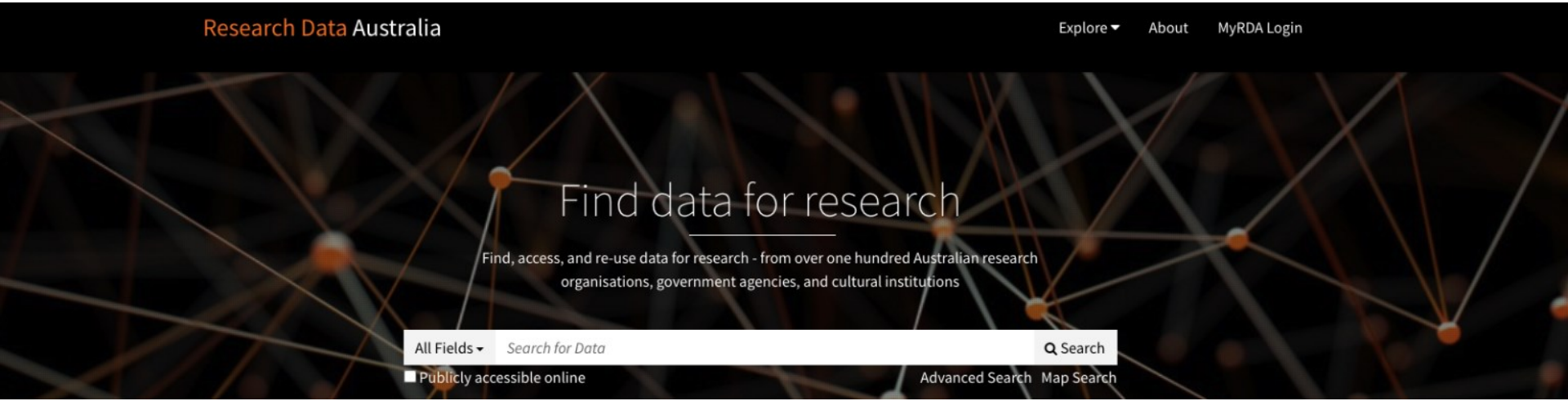
Vocabularies and metadata

- A vocabulary sets out the common language a discipline has agreed to use to refer to concepts of interest in that discipline.
- Researchers planning observation or surveys need to define their data items clearly.
- An agreed vocabulary (a standard) makes a good starting point for translating concepts into other vocabularies so that collaboration can occur.



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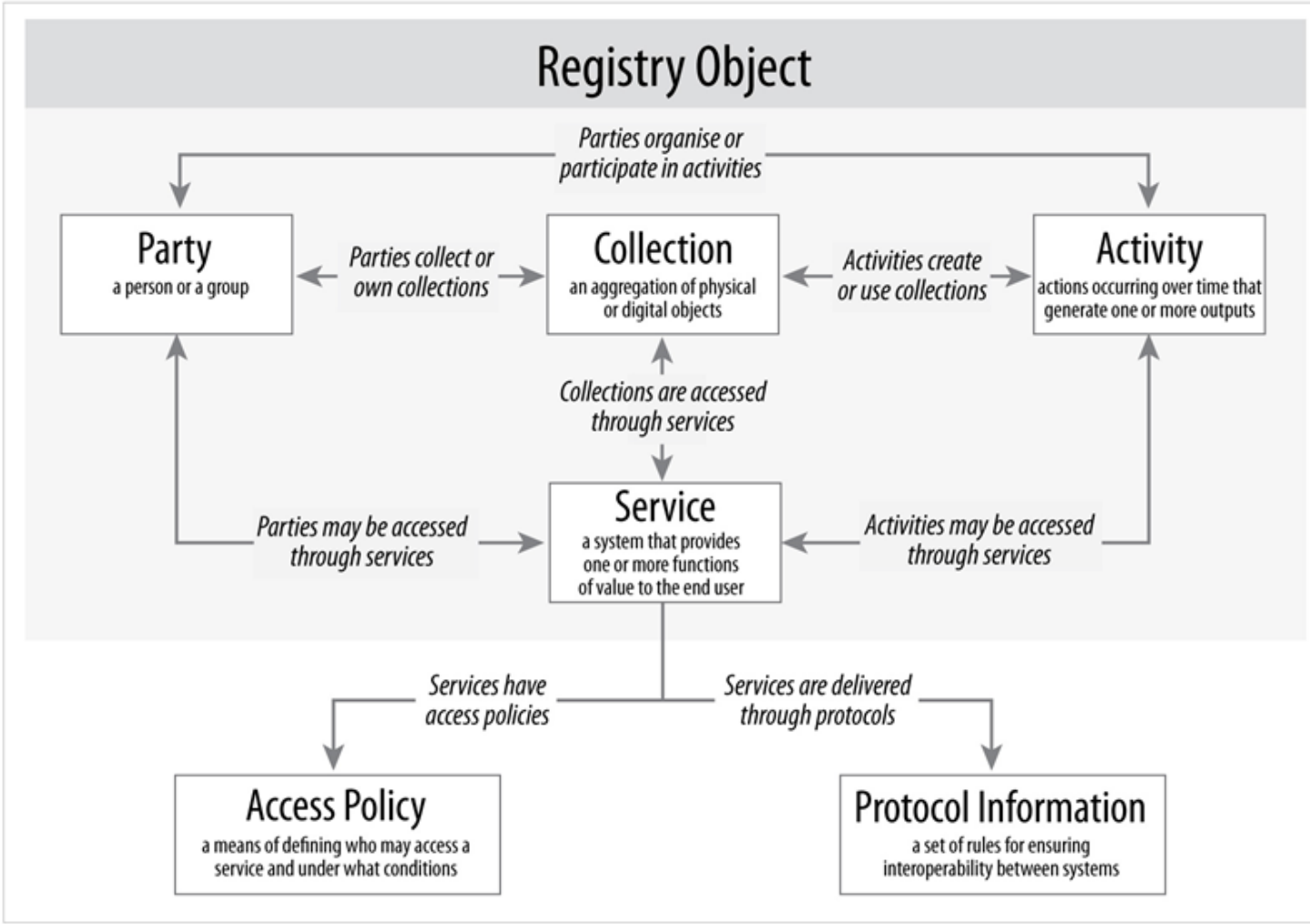
Registry Interchange Format - Collections and Services

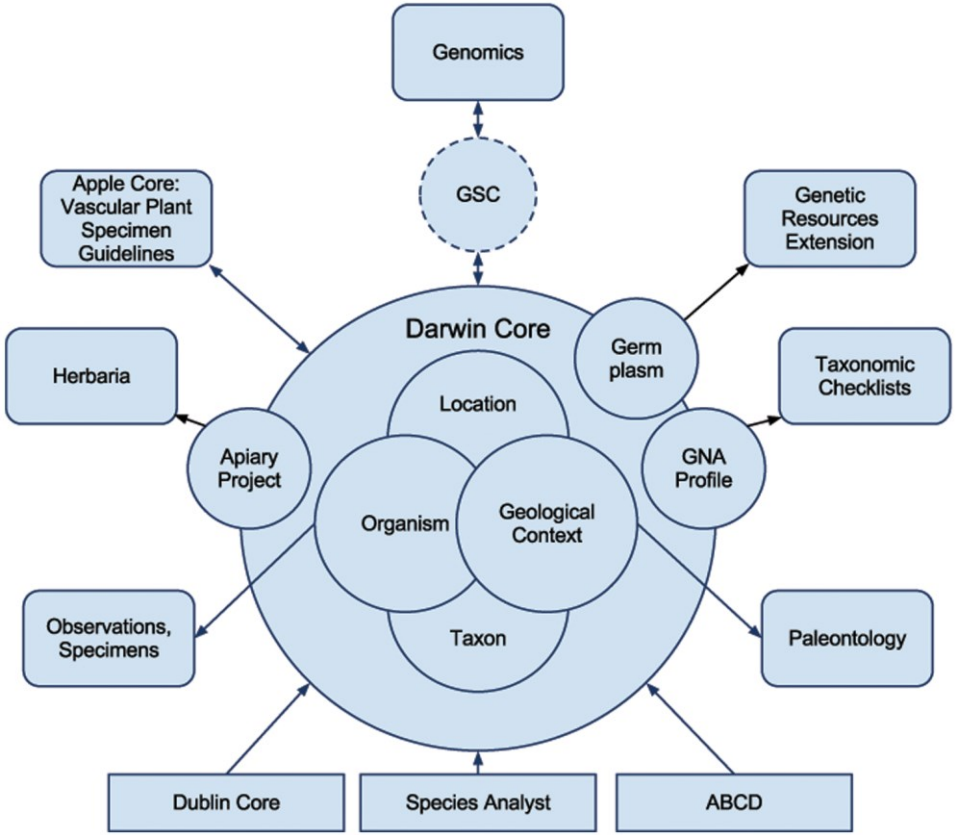
- RIF-CS
- Based on ISO 2146:2010 Information and documentation - Registry services for libraries and related organisations
- Aggregating Aust research data
- Relationships between objects (qualified references)
- Controlled vocabularies


Registry Object
Parties organise or participate in activities
Party
a person or a group
Parties collect or own collections
Collection
an aggregation of physical or digital objects
Activities create or use collections
Activity
actions occurring over time that generate one or more outputs
Collections are accessed through services
Parties may be accessed through services
Service
a system that provides one or more functions of value to the end user
Activities may be accessed through services
Services have access policies
Services are delivered through protocols
Access Policy
a means of defining who may access a service and under what conditions
Protocol Information
a set of rules for ensuring interoperability between systems

RIF-CS vocabularies

https://services.ands.org.au/documentation/rifcs/vocabs/vocabularies.html

remember magpies



https://doi.org/10.1371/journal.pone.0029715

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Linked open data

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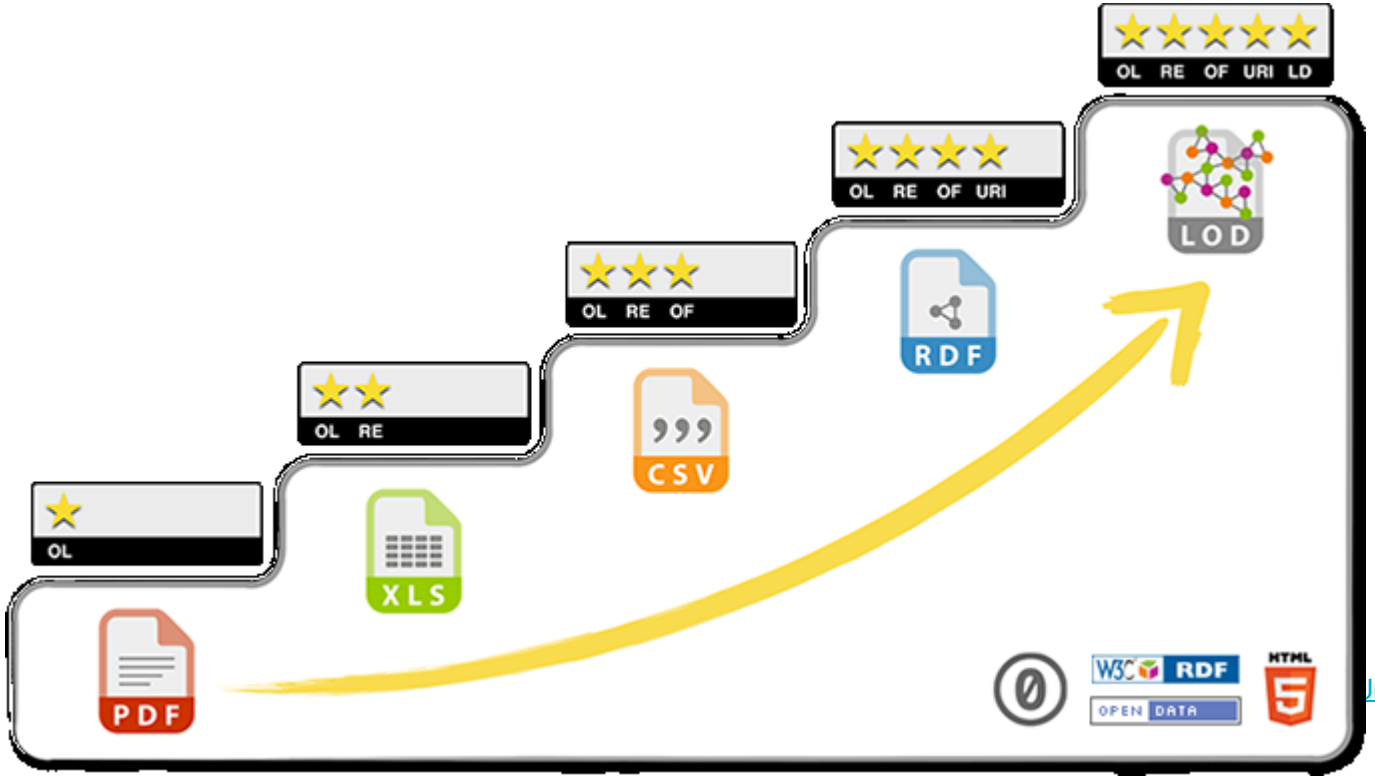

Unsplash

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Aust Govt - Digital Continuity 2020 Policy

"Agencies will have **interoperable information, systems and processes** that meet standards for short and long-term management, improve information quality and enable information to be **found, managed, shared and re-used** easily and efficiently."

https://www.naa.gov.au/information-management/information-management-policies/digital-continuity-2020-policy

Building interoperability

Scenarios (NAA)

- Streamlining business processes
- Migrating legacy data
- Data exchange with stakeholders
- Standards for data publication

Photo by Alina Grubnyak on Unsplash

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Ontologies support page

- Online tutorials
  - http://www.linkeddatatools.com/introducing-rdf
  - https://programminghistorian.org/en/lessons/intro-to-linked-data
  - http://euclid-project.eu/index.html
- A comics ontology based on a comic of Ada Lovelace and Charles Babbage

Research Vocabularies Australia

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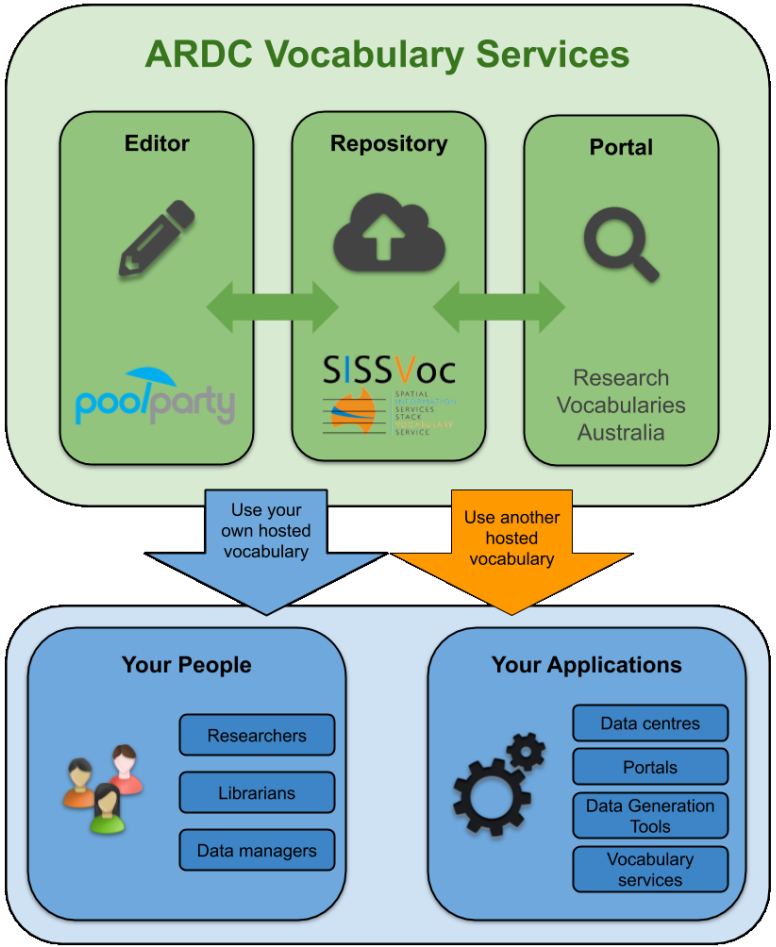
Vocabulary services

- Indexing vocabularies are used to tag items in library catalogues and search portals and to provide keywords for academic journal articles.
- A vocabulary service is a machine-to-machine service that can support activities such as creating, managing and querying vocabularies.

- Create and manage vocabularies
- Collaborative platform
- Browse concepts using built-in visualisation tool
- Link concepts to other vocabularies
- Query your vocab via built-in SPARQL endpoint



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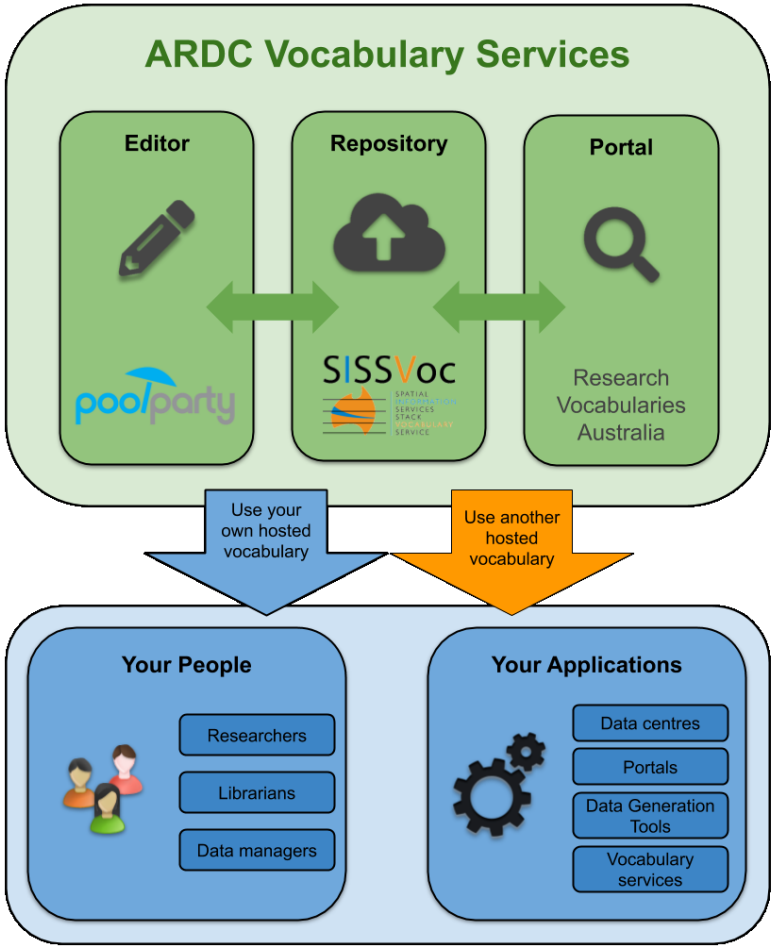

- Upload vocabulary files in a variety of formats
- Describe versions of your vocabulary, their statuses, and changes made between versions
- Provide contact, access and licencing information about your vocabulary
- Describe your vocabulary by subject and language
- Describe individuals who have contributed to the vocabulary's creation or management
- Use the PoolParty Integration tool to quickly publish vocabularies managed in the RVA editor

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Summary - to make data interoperable

- Data model for metadata is well defined and well structured
- Use controlled vocabs which are documented and resolvable using PIDs
- Metadata include cross-references which provide contextual meaning to the data.

Feedback

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CONTACT

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