A partnership in federated research data management infrastructure

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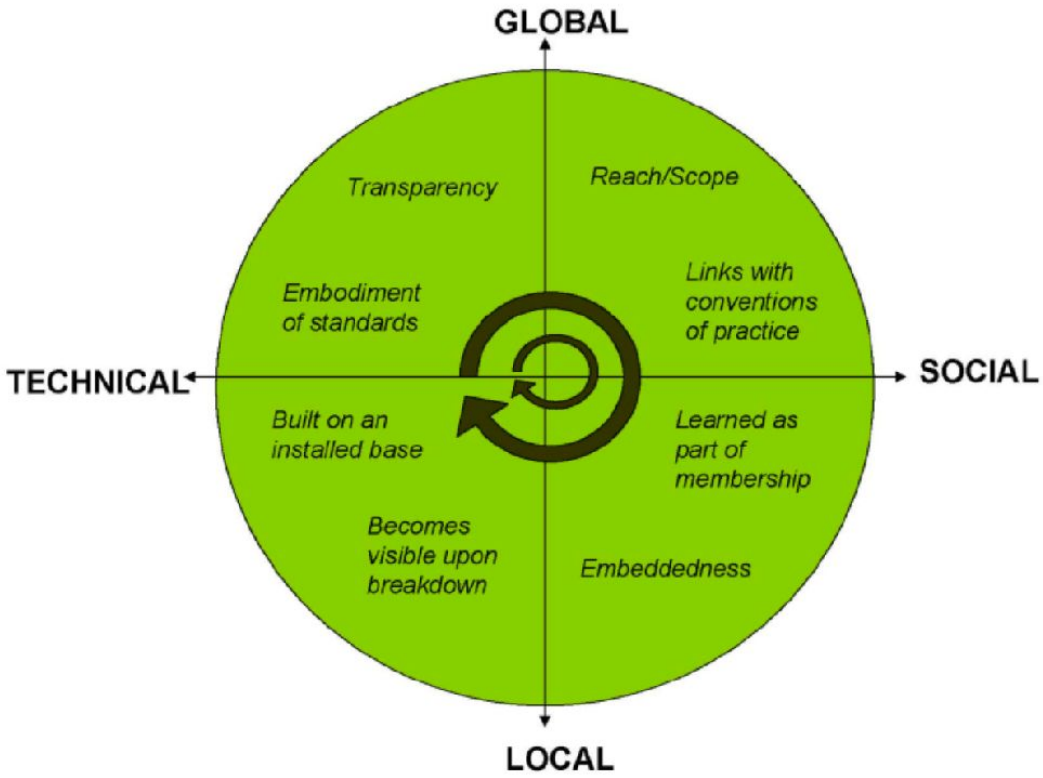
portage
SERVICES PARTAGÉS POUR LES DONNÉES DE RECHERCHE
SHARED STEWARDSHIP OF RESEARCH DATA

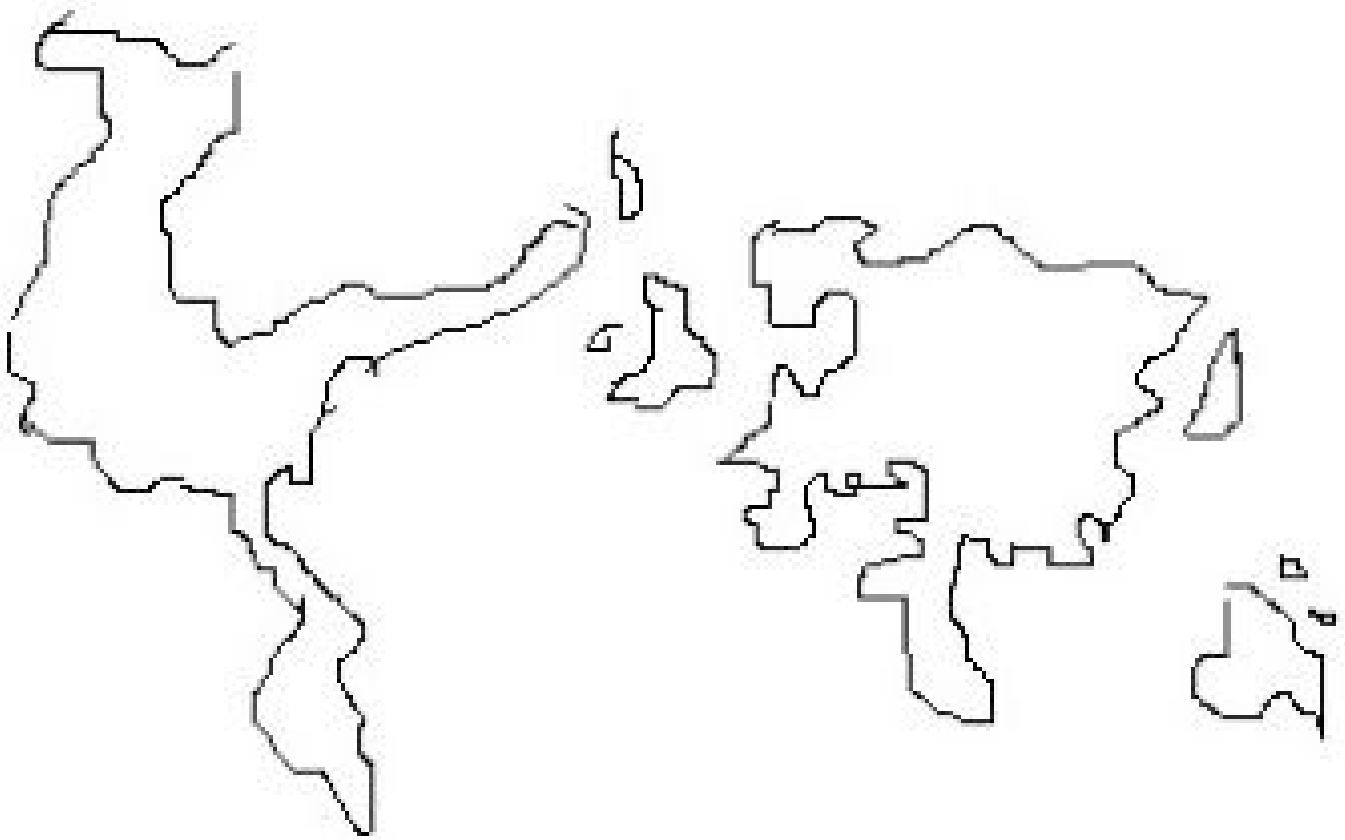
compute canada | calcul canada

Research Data Management Infrastructure

Technology + Expertise + Services supporting data across the research lifecycle, locally & globally



Adapted from **Understanding Infrastructure: Dynamics, Tensions, and Design.** P. Edwards, S. Jackson, G. Bowker, and C. Knobel, January 2007



"Creating the Data World Wide Web: Developments and Constraints," Kevin Schürer, ICPSR OR Meeting, Oct. 2007

Where is Canada?

Research Data Mgmt Infrastructure

2011 — National Data Summit

2011
2010 — CARL RDMI Proposal

Shift from a National Institution to National Infrastructure

2007
2006 — Canadian Digital Information Strategy

2005
2004 — National Consultation on Access to Scientific Research Data

2002
2001 — National Data Archive Consultation

Digital research infrastructure

Network + HPC + RDM

2014 Digital Infrastructure Summit II

Leadship Council for DI

2012 Digital Infrastructure Summit I

Convergence

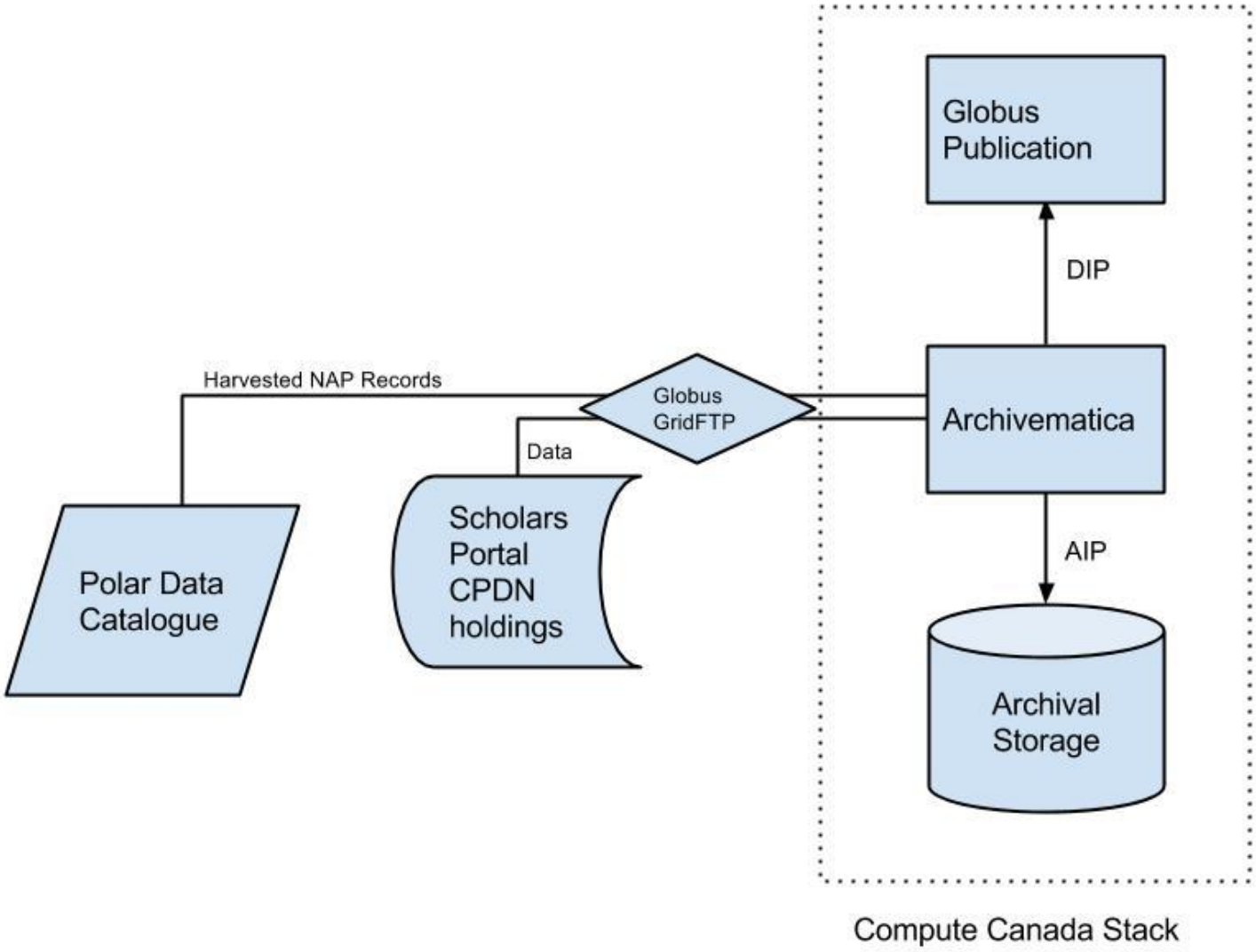
2016	Compute Canada - CARL MOU
2015	CARL Portage Network
2015 2014	RDC-CARL-CC Federated Pilots
2014	CARL ARC Project

First CARL-CC Collaboration

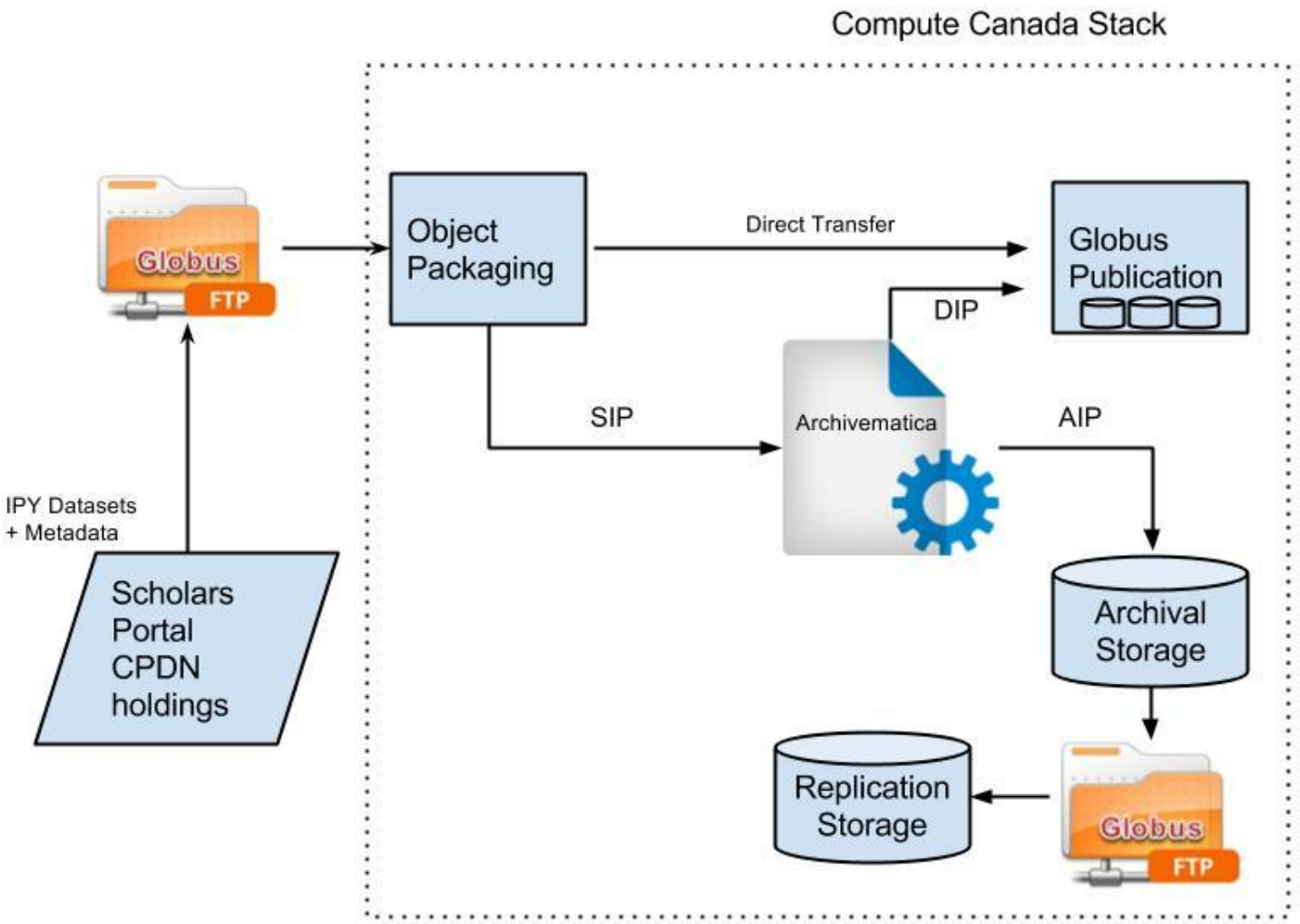
CARL(CPDN)-CC RDC Federated Pilot

- Started with the realization that CARL and CC were both tackling RDMI problems from different perspectives.
- Both organizations work on campuses across Canada serving researchers, but tended to work with researchers on different problems.
- While the desire to work together was strong - it took some time just to learn to speak the same language.
- Federated pilot (coordinated by RDC) gave us a way to work together. At the same time, something useful came out!

CPDN CC Federated Pilot Diagram 1



CPDN CC Federated Pilot Diagram 2



Complementary Roles

CARL-Portage and Compute Canada bring complementary skills and views to the partnership.

- Traditionally, CC has focused on data transfer and use (at scale), but very little on true data management and preservation.
- CARL has expertise in curation, preservation, stewardship, etc. that CC lacks.
- Combine the expertise of CARL and CC!

Collaborative Framework

- We started working from a single, high-level model but have allowed for the possibility of other partners joining to add to the overall functionality to this model.
- The framework is a modular design based on a few major functions divided into sub-functions.
- Each sub-function is implemented preferably as a microservice but could be a separate system.
- This allows for many contributors, some of whom may have their own microservices or systems for specific sub-functions.
- The partners will work together using agreed upon standards and protocols.

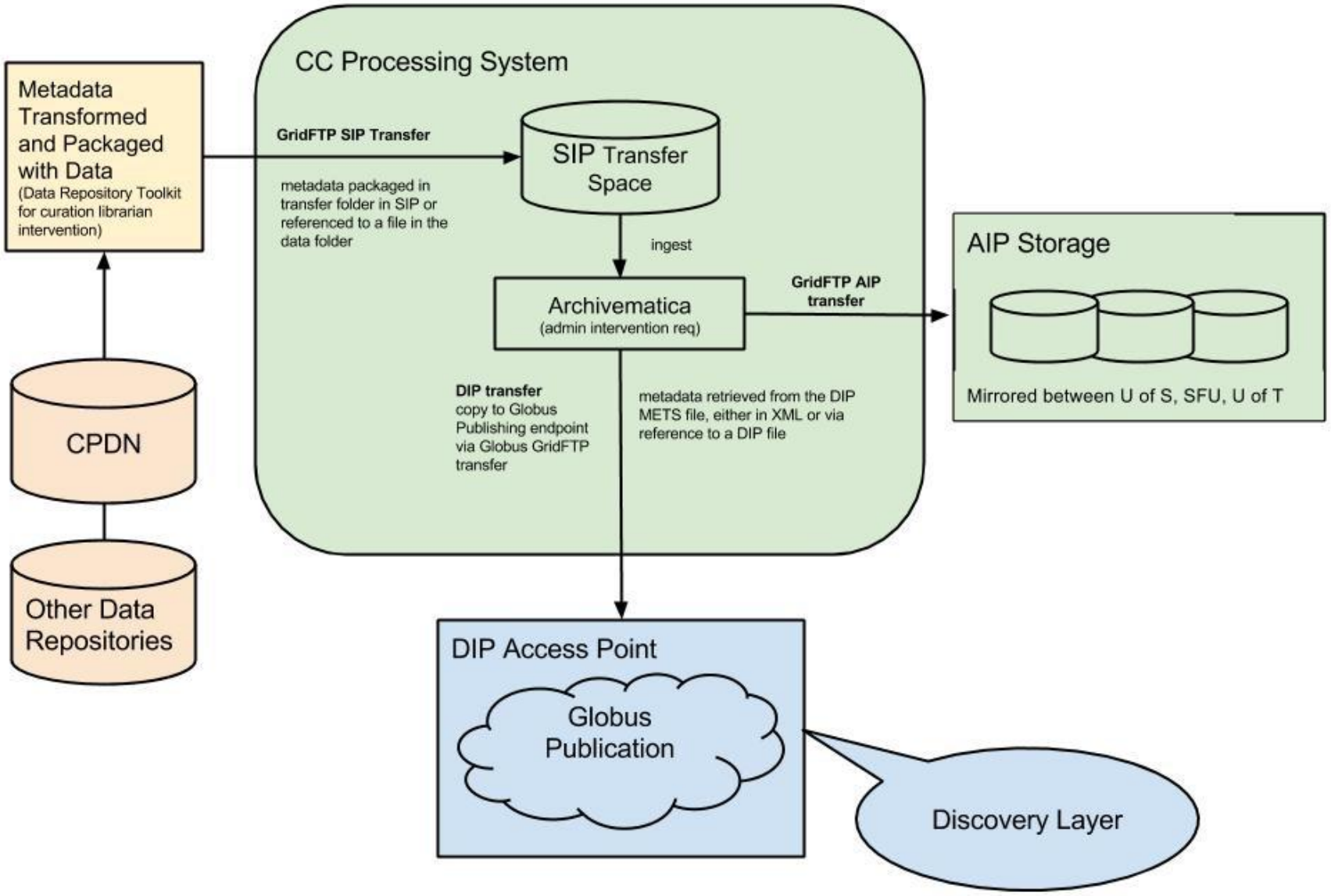
Operating principles

- Use existing tools & code when possible
  - Example: Globus Data Publication
- Don’t start from scratch if possible
  - Example: Archivematica
- If we borrow, we contribute back
  - Example: UBC Digital Collections User Interface

Important Features

- Federated storage model
- Scalable model
- Federated data discovery
- Preservation pipeline
- Geographic replication
- Bulk ingestion

Federated Research Data Repository

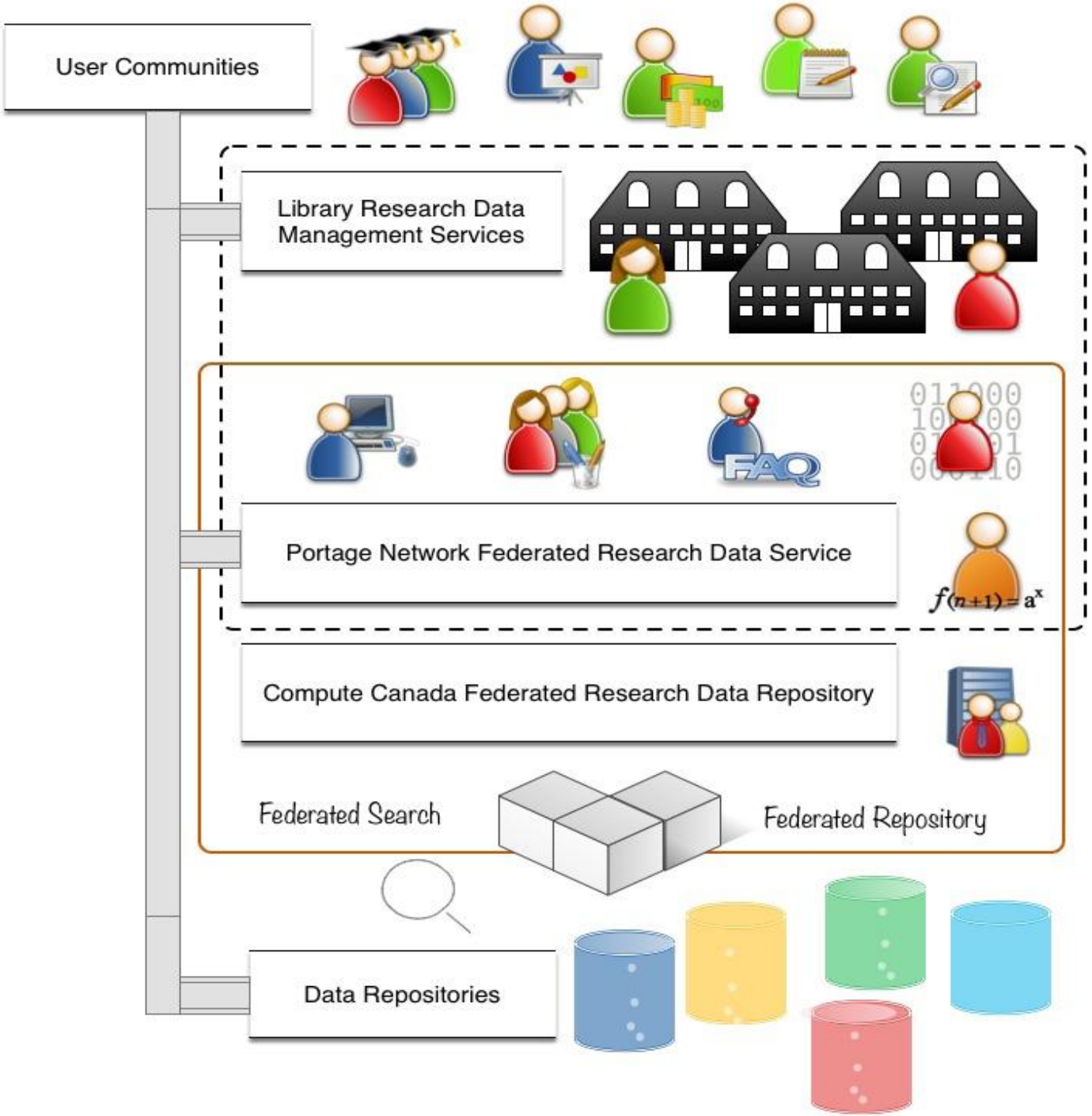


Collaboration Profile + Next Step

- Worked together on successful technology pilot (convened by Research Data Canada).
- Implementation tested with Canadian-funded International Polar Year research data (50-year archival commitment required).
- Signed 2-year MOA (2016 & 2017) to work on a platform for RDM for Canada.
- Tremendous progress towards a platform which is:
  - Federated storage
  - Federated service
  - Scaleable
  - Nationally integrated for data discovery
  - Capable of preservation
  - Suitable for a broad range of data types
- Development team in place, operations team is needed.

Federated Research Data Service

- Currently, no single organization has the mandate or funding to provide a comprehensive, open research data service in Canada.
- Portage and Compute Canada are working collaboratively to develop a platform to support a federated research data service in Canada.
- Requirements for a federated research data service:
  - RDM expert consultation on Data Management Plans (DMPs), curation, discovery, preservation
  - Data curation
  - Training on RDM services and platform
  - Privacy protection
  - Software licenses and their renewal
  - Evergreening servers and storage
  - Ongoing platform development, coordination, administration



Researchers, Policy Analysts, & the Canadian Public

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Data Management & Liaison Librarians in Canadian Post-Secondary Institutions

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Portage Secretariat (3) and Federated Research Data Service Staff (10)

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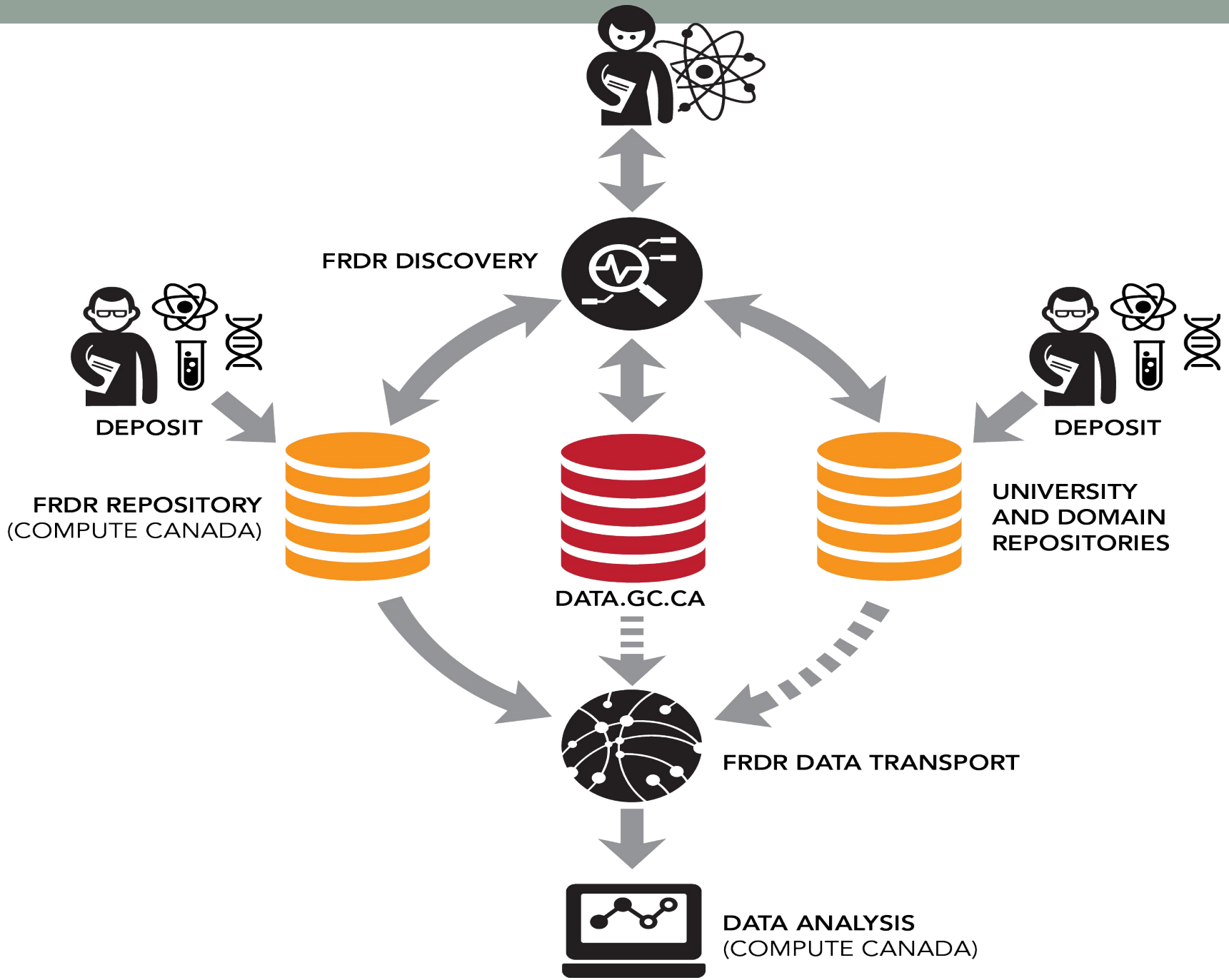
Contract infrastructure service provider (6)

A total of 19 FTEs are required for the Canadian Federated Research Data Service.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Thank you