



**National Federated
Compute Services**
NetworkPlus

**Autumn Conference
22-23 September 2025**

Exploring the requirements and technologies for a data centre API for federated data movement

Dr Matt Williams



BriCS

Bristol Centre for Supercomputing



**The Rosalind
Franklin Institute**





Project team

Project Leads

Dr Matt Williams



Dr Laura Shemilt



Co-leads

Dr James Womack



Dr Wahab Kawafi



Project Team Members

Dr Piper Fowler-Wright



Dr Elaine Ho





Background

- In the AIRR projects, we made good progress on federating user identities and project allocation
- Within each system, users have internal identities
- Data movement is an area where a shared concept of identity (and access) will benefit



Challenges

- There are many different technologies for data movement
- Each site will need to be able to maintain technical sovereignty
- But we need *interoperability* between sites
- We need a way for sites to communicate in a common way, about common concepts (e.g. identities)
- Empower users on systems to integrate their own technology into a common protocol

**Shared protocols,
not shared technology**





Who are involved

- BriCS + RFI are leading this project
- Site operators
 - They will be the ones running (at least part of) the stack
- Data owners
 - They will care about access control and identity
- Researchers/RSEs
 - Moving data, or running data movement platforms behind the API



Project steps

- Survey
 - Software landscape review
 - User requirements gathering
- Evaluate
 - Test installation of FirecREST as an API
 - Test integration of movement technologies (Globus?, FTS3?)
- Communicate
 - Workshops and reports



Future work

- We expect that no one technology will fit all the requirements that we find.
- Work may then be needed to adapt, extend or replace them for future production use.



Roadmap contributions

- A landscape review of the current state of data movement technologies
- A reference architecture for a federated data movement component/API
- An understanding of the work needed to fund a full implementation of federated data movement for national DRI



**National Federated
Compute Services**
NetworkPlus

Thank you