



**National Federated
Compute Services**
NetworkPlus

**NFCS Conference
Bristol 2026**

Inclusive Futures of National Federated DRIs

Allison Littlejohn

Francisco Duran del Fierro





Project team



Lead Partner

Prof Allison Littlejohn (UCL)

Dr Francisco Duran del Fierro (UCL)

Prof Eileen Kennedy (UCL)



Hartree Centre

Community Inclusion

Evguenia Alexandrova (Hartree Centre)

Wendy Winnard (Hartree Centre)

Stella Alexandrova (Hartree Centre)

Simon Goodchild (Hartree Centre)



THE UNIVERSITY *of* EDINBURGH
Edinburgh Futures Institute

Speculative Workshops

Steve Earl (Edinburgh Futures Institute)

Pushpi Bagchi (Edinburgh Futures Institute)

Kyle Morrison (Edinburgh Futures Institute)

Kam Chan (Edinburgh Futures Institute)

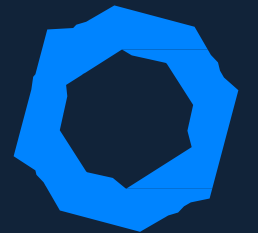


Why is the Federation of DRIs important for users?

- *It enables access to resources and diverse digital infrastructures that no single organisation could support on its own.*
- *It provides more opportunities to spark innovation, creativity, collaboration and impact.*



**However, a critical
challenge lies in bringing
together communities
with *distinctive epistemic
cultures***



***The federation of
people = mixing
epistemic cultures***





Epistemic cultures *are the unique, localised practices, tools, social structures, and ways of reasoning and communicating within different research fields that shape how they produce, validate, and understand knowledge (Knorr-cetina, 1999)*

Objectives, methods and outputs

Mode of intervention:

- *Making cultural challenges visible*
- *Enhancing reflexive-critical engagement among users*



Objective 1: identify cultural challenges that hinder collaboration within federated DRIs.

- **Method:** Interviews and survey
- **Outputs:** Themes and User Cultural Narratives

Objective 2: Explore inclusive futures and collaboratively develop pathways for community building.

- **Method:** Speculative Transformation Workshops
- **Outputs:** Future Scenarios / Practical Strategies

Objective 3: Shape Policy and Practice.

- **Method:** Stakeholder roundtable
- **Outputs:** Policy Brief with recommendation for NFCS Roadmaps

What are the social, cultural, epistemic and institutional conditions that enable an inclusive federation of DRIs in the UK?



Who determines who gets access to Federated DRIs?

Who gets to thrive?

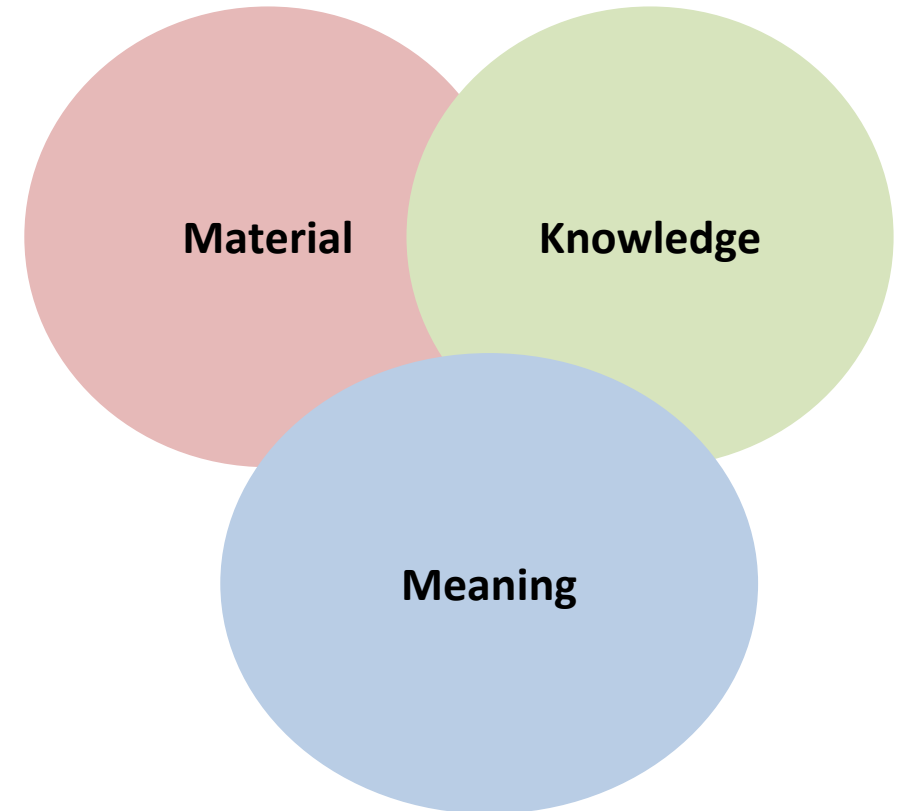
Who is excluded? What ways of reasoning and practices are not valued?





A SOCIOLOGICAL- CULTURAL APPROACH TO CULTURE

- DRI as a site of epistemic transformation – **power relations**.
- Federation as a “**Cultural Practice**”: 1) **material** (data and infrastructures), 2) **knowledge** (how to use HPC or deposit data - standards); and 3) **meaning** (how federation is valued/framed).



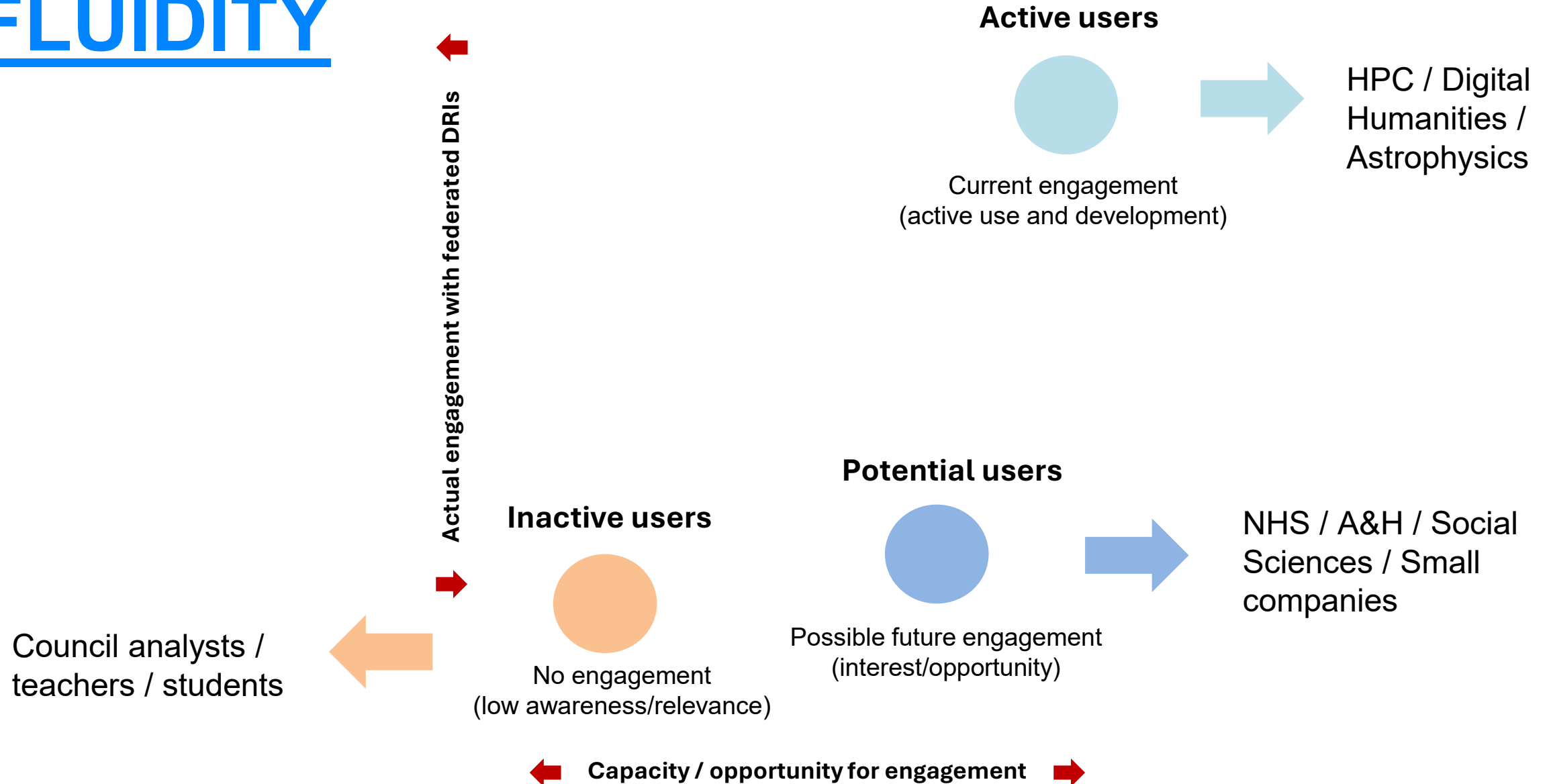


METHODS – What we have done so far

- **Scoping Review**: 44 documents reviewed and thematically analysed, including journal articles and book chapters. Review was conducted with the help of AI tools. Published in Zenodo.
- **Survey**: 50 responses across sectors and disciplines.
- **Interviews**: 31 semi-structured online interviews with different **users** (active, potential and inactive) across **sectors** (academia, industry and public sector). Interviews were analysed thematically, without the use of AI tools.
- **Speculative workshops**: 2 workshops to co-create preferred future scenarios for inclusive federated DRIs.

User groups in relation to federated DRIs:

FLUIDITY





31 interviews

Area:

- 11 academia (Digital Humanities and HPC)
- 13 Public sector (NHS, Cultural Heritage, Councils)
- 7 Industry (Small-medium companies)

Gender:

- 8 female
- 23 male



CULTURAL CHALLENGES TO DRI FEDERATION

KEY EXAMPLES

Challenge 1:
**Openness versus
privacy**

HPC community and
sensitive data

Challenge 2:
**Governing trust across
epistemic cultures**

Can one *Certificate
Authority* meet all trust
needs?

Challenge 3: Two
**types of analysis in
digital humanities**

Automated versus
regular user input

Challenge 4:
**Different DRI
maturity**

New versus
established DRIs
(size, mission, etc.)

Challenge 5: Cultures of
data sharing

Lack of a common
practice and shared view
of the public good created
(Heritage science)

Challenge 6: DRI
**mission and
university structures**

Risks: logistical burden,
service disruption and
user distrust.



THEMES

**The picture is not uniform, but there are
many common themes**

Six tensions along two dimensions



POWER DIMENSION

1. CENTRALIZATION VERSUS
DECENTRALIZATION

2. INVISIBILITY VERSUS
VISIBILITY

3. PRIVACY VERSUS
SURVEILLANCE /
PRIVATISATION

EPISTEMIC DIMENSION

4. EMPOWERMENT VERSUS
DISEMPOWERMENT

5. UNCERTAINTY VERSUS
CERTAINTY

6. UNITY VERSUS DISUNITY

How do we keep power with the user while making interoperability real?

What future do we need to build to make this a reality?





Next steps

- **Future scenarios:** preferred futures for national federation of DRI in 2040 (we have run two out of three workshops)
- **User cultural narratives:** opportunities and challenges emerging from these scenarios in relation to each type of user
- **Roundtable:** policy recommendations for the roadmap

Contact us:

allison.littlejohn@ucl.ac.uk

f.durandelfierro@ucl.ac.uk