



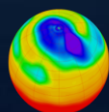
**National Federated
Compute Services**
NetworkPlus

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UNITED

(User Needs Informed Technologies for Environmental Data):
a Framework for Federated Computing Roadmap

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Data Analysis**
SCIENCE AND TECHNOLOGY FACILITIES COUNCIL
NATURAL ENVIRONMENT RESEARCH COUNCIL



**British
Geological
Survey**



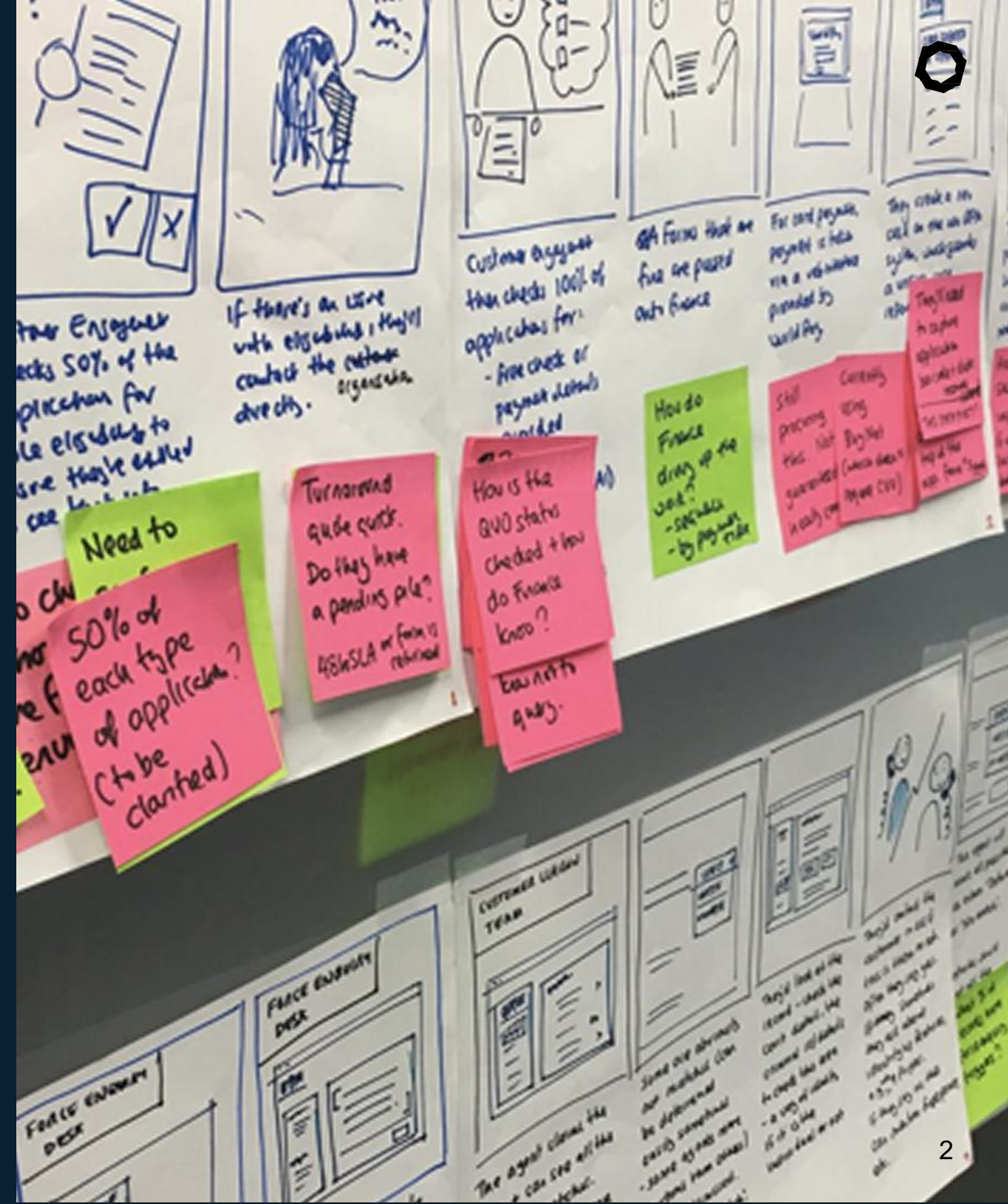
**NERC
Environmental
Data Service**



What is UNITED?

Performing UX research to inform the future direction of federated computing.

- **Using the environmental data as a key case study and proxy**
- **Building a community of experts**
- **Establishing methods of user engagement and community building**
- **Make our findings and experiences open source**





The Team

A range of roles from across the UK Environmental Data Service (EDS)

Project Leads

Monica Hanley (Marine Data Steward)

Poppy Townsend (Atmospheric Data Steward)

Project Team Members

Jennifer Bulpett (Project Manager)

Louise Darroch (Marine Data Steward)

Matt McCormack (Software Engineer)

Maura Halstead (Digital Solutions Hub)

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Richard Kingston (Digital Solutions Hub)

Ola Podgorska (UX Research & Product Design)

Paulius Tvaranavicius (UX Software Developer)

Carl Watson (Geoinformatics)



Why focus on environmental science?

- We are experts in environmental data – we work closely with the domain scientists
- Environmental science is multi-disciplinary, so often requires federation and community building
- Large diversity of stakeholders so it's a great pilot for lessons learned
- Use this community as a proxy for other communities



How can we build a community across so many different federated services?

Across the UK, everyone within the scientific community has different experiences, behaviours, and needs. They carry out their day to day tasks trying to cross-collaborate using inconsistent and siloed data and platforms...

How can we foster a community without first understanding these challenges?

- We aim to understand their perspectives, requirements, needs, and pain points
- This will enable a two way flow of knowledge sharing (while we research we evangelise the platform), and tap into the communities which will be the future end-users
- During this process, the findings will help us create roadmaps for the future (needs = delivery requirements)





Building on past work

- Digital Solutions Hub work can be used as a platform to expand on
- EDS has a range of datasets (e.g., Landcover map, sea level, air quality, geological maps) that can be integrated to inform decision making that enables the planning and provision of built infrastructure (e.g. houses, parks, access to beaches) that supports a mentally and physically healthy society
- This work has resulted in the EDS Toolkit which makes our findings and ways of working open source
- If it can work for environmental science, maybe it could work for

Who: users and key stakeholders

- Use existing work as a starting point (e.g.: Digital Solutions Hub report)
- This project will expand on this in an iterative way - we will review and expand new material
- Broaden out beyond environmental science
- Stakeholder mapping part of the project to identify new findings (and adapt our work plan to suit)
- *"Talk data to me"* Measurement metrics will be introduced so outcomes are quantifiable

Summary of User Archetypes

- Analysts Monitoring the Environment**
I need to use data to demonstrate the condition of the environment in a consistent format that will allow the health of the environment, and the performance of environmental policy, to be scrutinised over time.
- Authors of Monitoring Frameworks**
need to identify measures of environmental health to use for scrutinising and evaluating policy, and informing future decisions.
- Analysts Answering Questions with Data**
I need to find and analyse data to identify correlations, report findings and make predictions about the likely impact of actions.
- GIS Specialists**
I need to create data products that allow my intended audience to readily comprehend and explore information that is relevant to their needs, using map-based formats.
- Data Support**
I need to support others to more readily explore data and obtain useful insights.
To do this I find and combine relevant data, analyse it to identify significant trends and relationships, and create data products that allow others to readily explore information relevant to their needs.
- Data Leaders**
I need to make sure my organisation is working effectively with data.
- Data Stewards**
I need to ensure that datasets I have responsibility for meet appropriate standards, and are appropriately stored, shared, and kept up to date. I do this so that they can be readily discovered and used by those who might need them.

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Key Outcomes

1. Map user communities and relevant archetypes within identified groups
2. Research and gather user stories for federated services using environmental data as a pilot
3. Understand how federated roadmaps link together
4. Establish and formalise a network of expert staff to provide and communicate recommendations



Potential Next Steps

Do you have....

- ... relevant user stories that we could look at?
- ... a good example of a roadmap?
- ... experience of applying user research to roadmaps?
- ... examples of sharing expertise across federated teams?

Collaborate with us!

- ... share your experiences
- ... provide feedback
- ... test out our processes with your projects/domains
- ... tell us your challenges/pain points
- ... connect this work to the other pillars?



Thank you!

Contact Monica Hanley for collaboration at monhan@noc.ac.uk