



# DAFNI

## Platform Development

*Dr Bethan Perkins*



Science and  
Technology  
Facilities Council



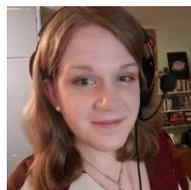
Engineering and  
Physical Sciences  
Research Council



**UKCRIC**



**Bethan Perkins**  
Team Lead



**Rose Dickinson**  
Tech Lead



**Jens Jensen**  
Security Architect



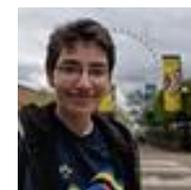
**Archit Mantry**  
Scrum Master



**Kyle Stevenson**



**Sarah Byrne**



**Caroline Haigh**



**Lewis Sampson**



**Esther Turner**



**Jack Haydock**



**Joel Davies**

## Workflows

- **Major UI overhaul:**
  - Drag and drop interface
  - Draw paths between steps
  - Deleting steps
  - Re-positioning and re-ordering steps
- Duplicate workflows
- Delete parameter sets
- Navigate to output Dataset/Visualisation from workflow
- Change version of model/data used in workflow
- **Workflow view mode**
- Faster Workflow viewing

## Data

- Major backend overhaul of data management.
- Catalogue pagination improvements
- **Bulk file download**
- **Upload files greater than 5GB**
- Option to manually define spatial extent via Geojson

## Visualisations

- Redesigned UI when creating visualisation

## Groups

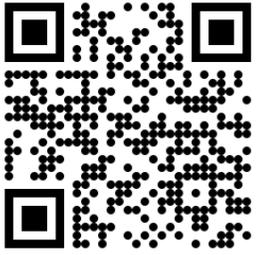
- Searching for group
- Searching for assets to add to group
- Change asset version before adding to group
- UI improvements

## Other

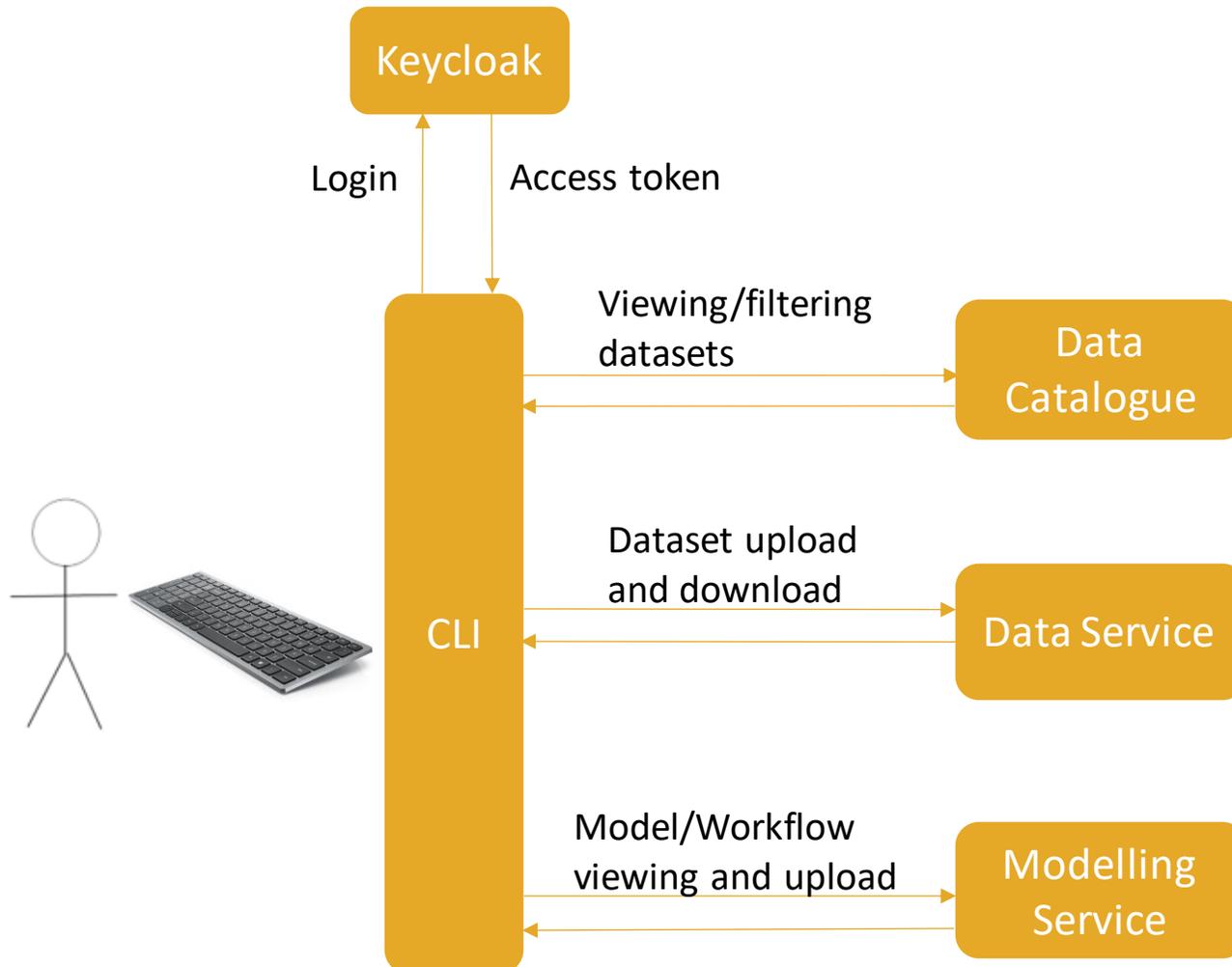
- Option to automatically re-share asset when creating new version



# Current Development

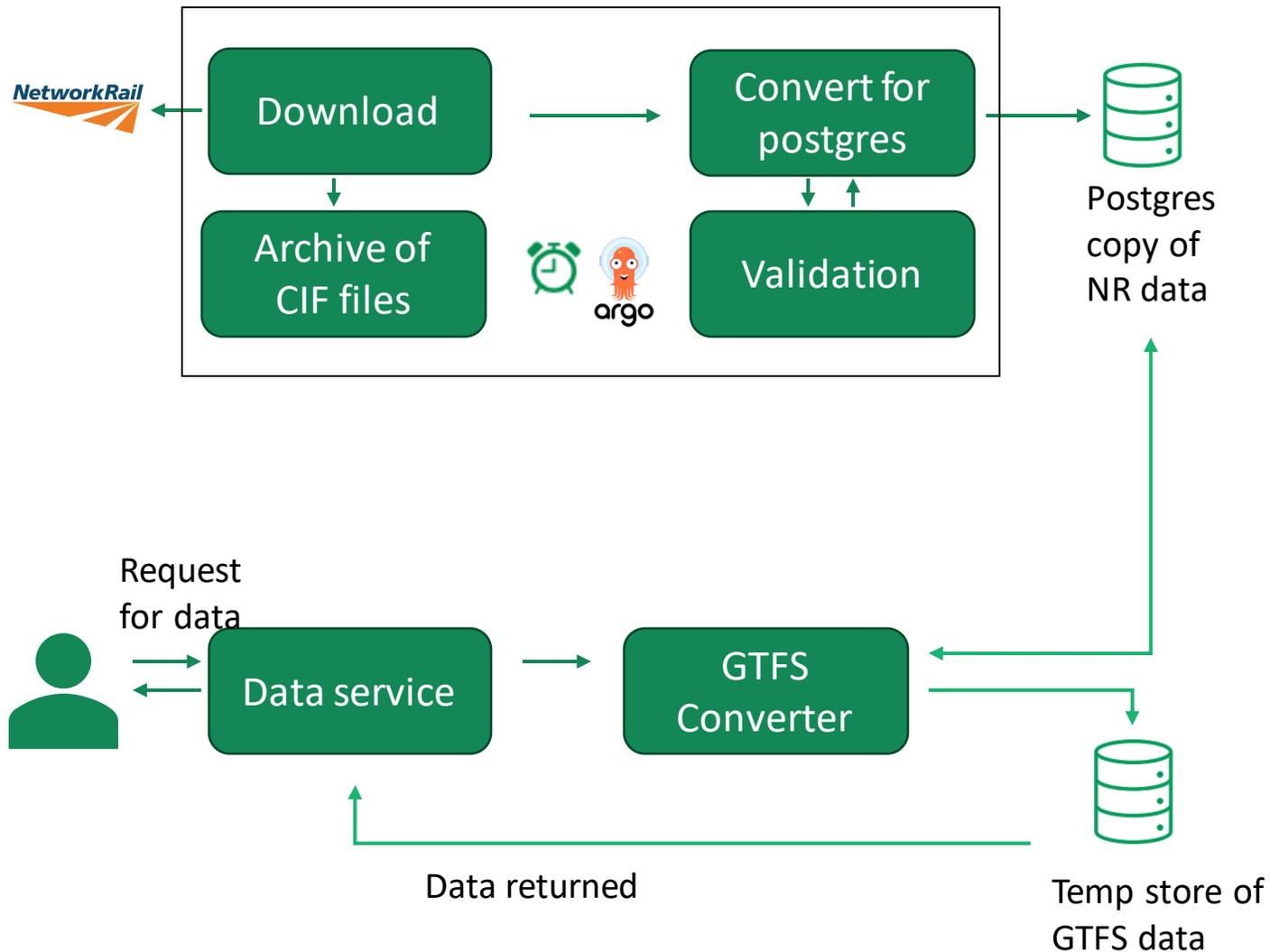


# Command Line Interface



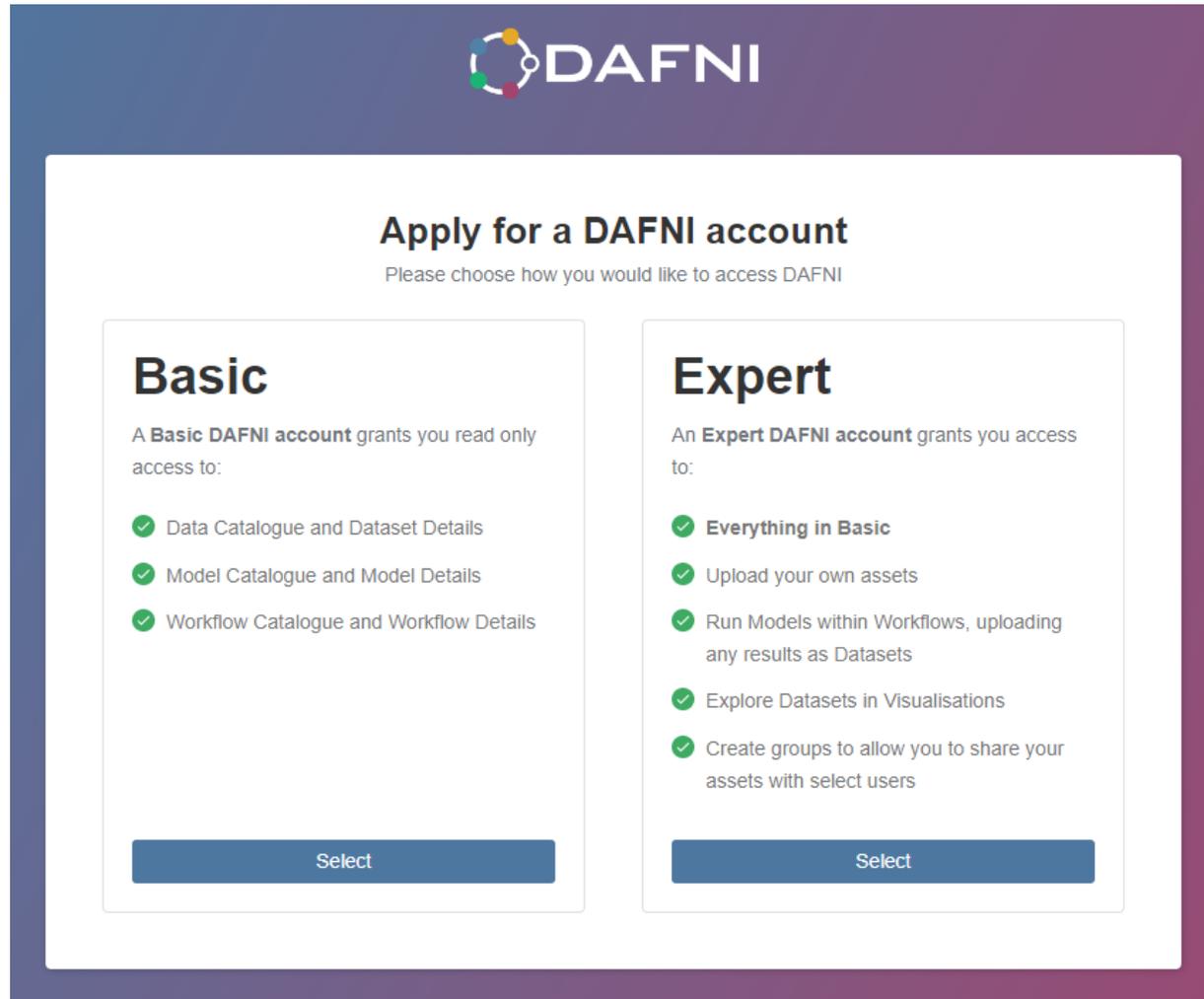
- Command line interface (CLI) can be used to view, upload, update and delete datasets, models and workflows.
- It will be available as a python pip package named **dafni-cli**. Due to release this week on Thursday 14<sup>th</sup> September.
- CLI source code is available from the DAFNI Github pages.

# Sensor Data Pilot



- Pilot project for bringing sensor data on to the DAFNI platform.
- Network rail data will be bought on to DAFNI and a historical record held on the platform in GTFS format.
- Part of a larger architecture to make external near real-time datasets available to workflows on DAFNI.

# Basic User Accounts



The screenshot shows the DAFNI logo at the top, followed by the heading "Apply for a DAFNI account" and the instruction "Please choose how you would like to access DAFNI". There are two main options: "Basic" and "Expert".

**Basic**  
A **Basic DAFNI account** grants you read only access to:

- ✓ Data Catalogue and Dataset Details
- ✓ Model Catalogue and Model Details
- ✓ Workflow Catalogue and Workflow Details

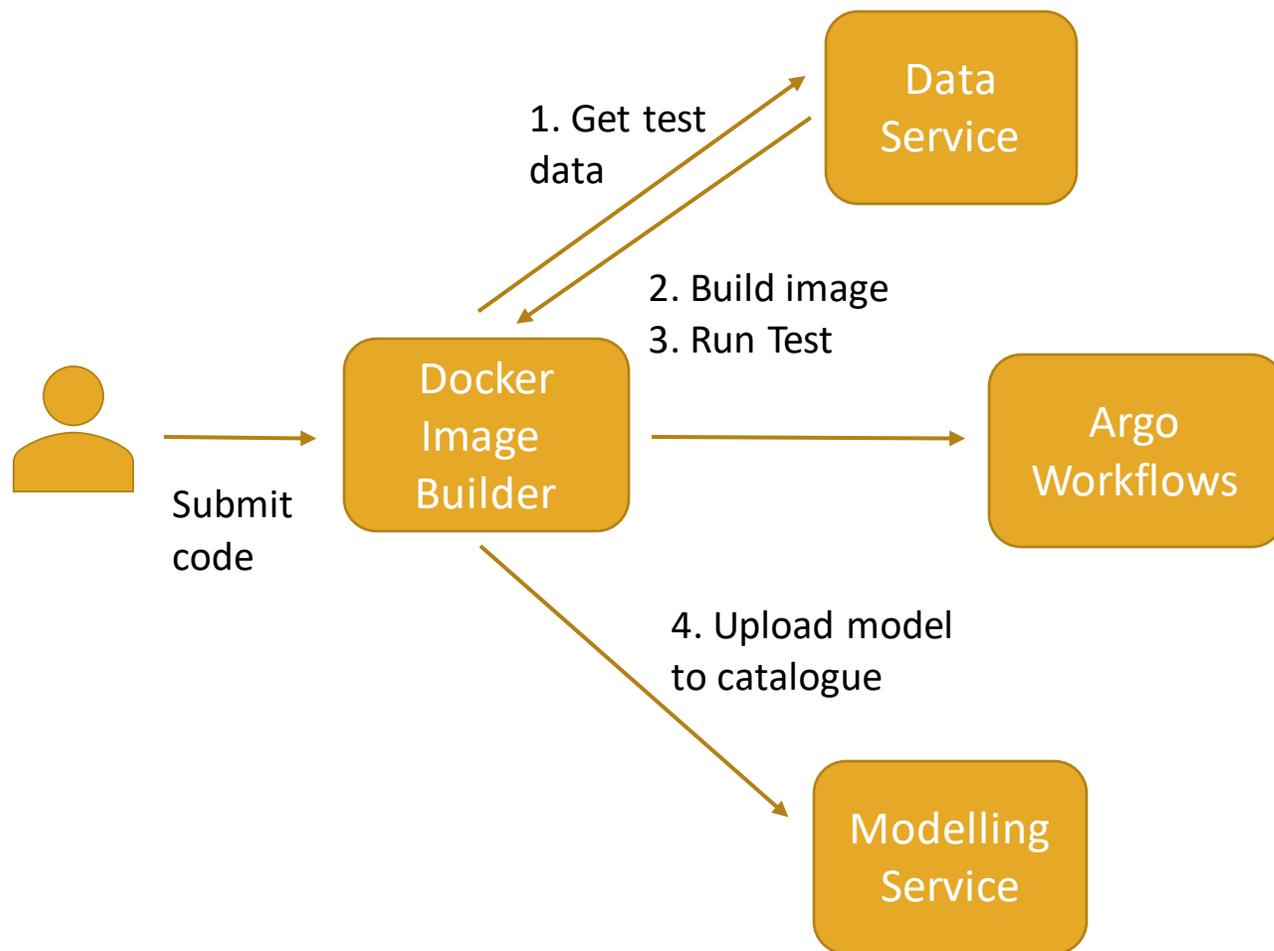
**Expert**  
An **Expert DAFNI account** grants you access to:

- ✓ Everything in Basic
- ✓ Upload your own assets
- ✓ Run Models within Workflows, uploading any results as Datasets
- ✓ Explore Datasets in Visualisations
- ✓ Create groups to allow you to share your assets with select users

Each option has a "Select" button at the bottom.

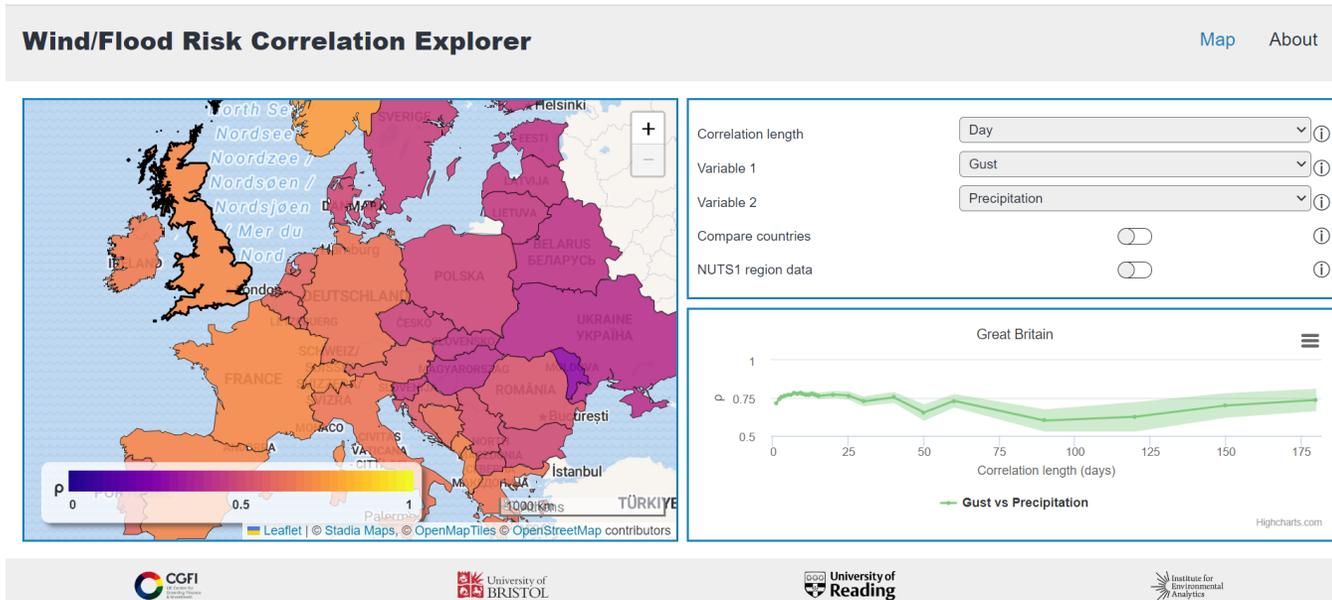
- Allow nonverified users view-only access of the platform.
- To share research results with stakeholders then publish results and send a link to your stakeholder to sign in with a simple account.
- Basic account holders will not be able to upload any assets to the DAFNI platform or see results which are not public.

# DAFNI Model Builder (“Auto-Docker”)



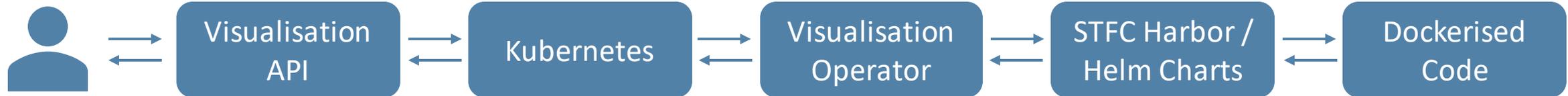
- Automatically create Docker Images for simpler models.
- Upload code or github repo URL.
- Language specific, will support a specific set of languages, including Python and probably CMake-based builds.
- Simple builds will be quick to run/debug. More complex builds will be scheduled as workflows
- Ability to quickly test a model by checking for expected outputs.

# Visualisation Dashboards Pilots

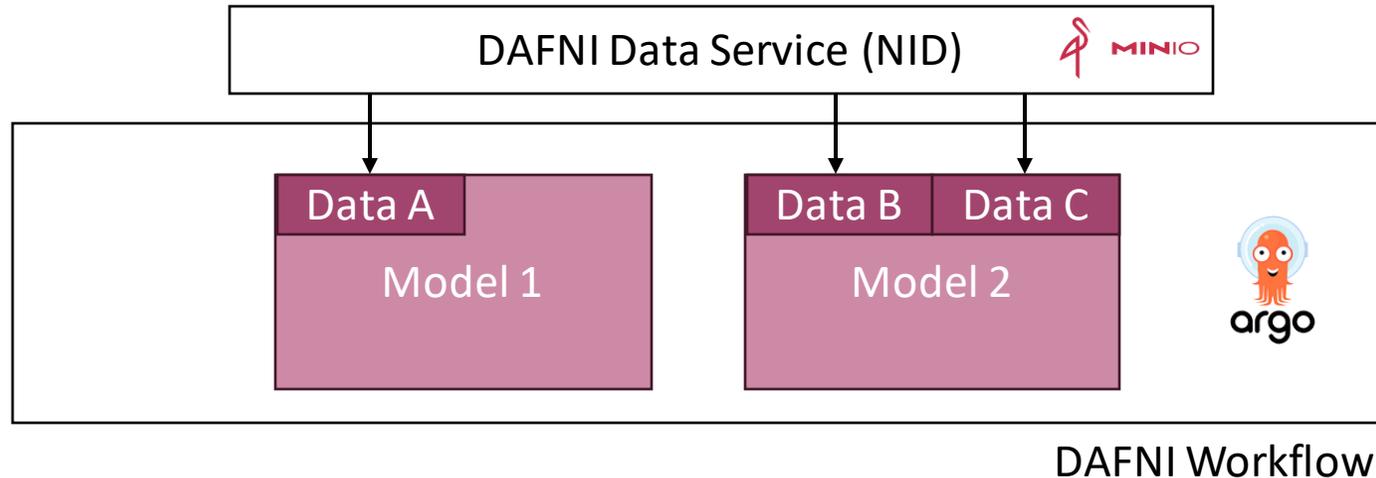


Interactive dashboard built by colleagues at the Institute for Environmental Analytics, showcasing the research of Bristol and Reading Universities.

- Allow users to bring dashboards to the DAFNI platform:
  - Interact with model outputs
  - Investigate and compare datasets
- Eventual service will be a model-style Docker Image upload service.
- This work is around a few bespoke dashboards to finalise architectural details and plan the final service.

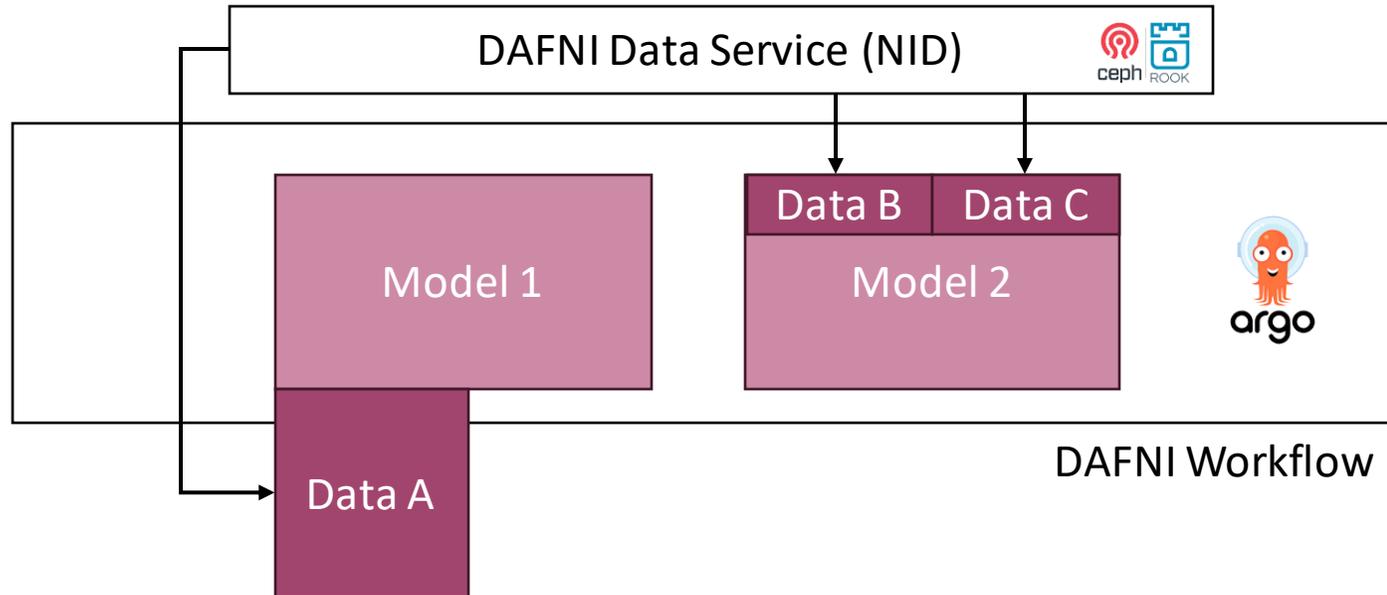


# Read-only data for Workflows



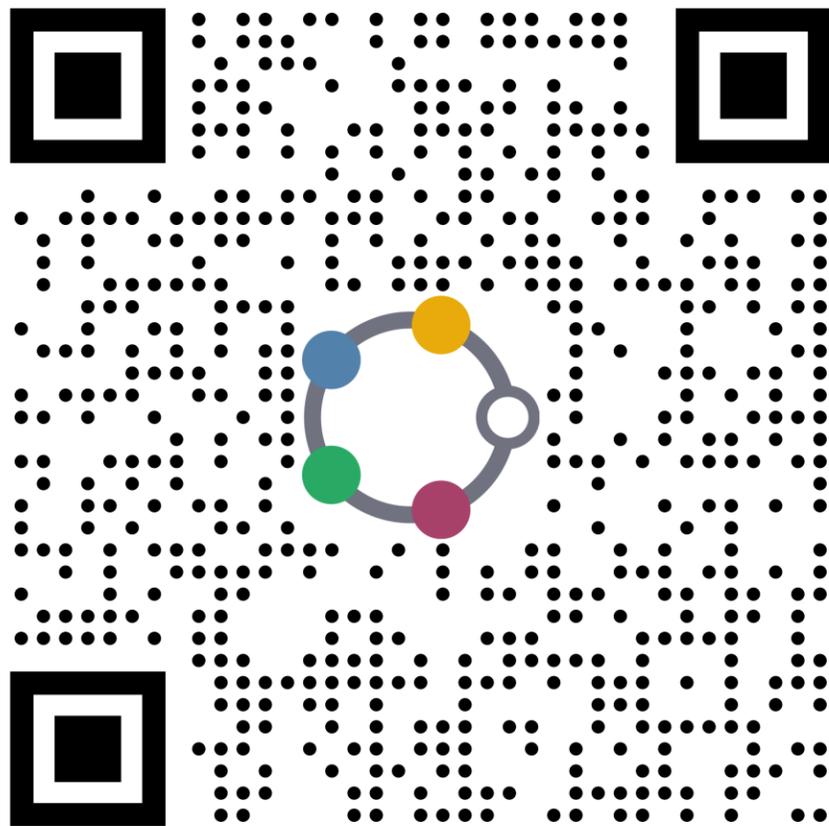
- Allow users to access larger read-only datasets as part of a model run.
- Create update to workflows back-end, allowing data volumes to be mounted to the running container, rather than copying in.
- Will use Rook/Ceph on the new cluster.

# Read-only data for Workflows



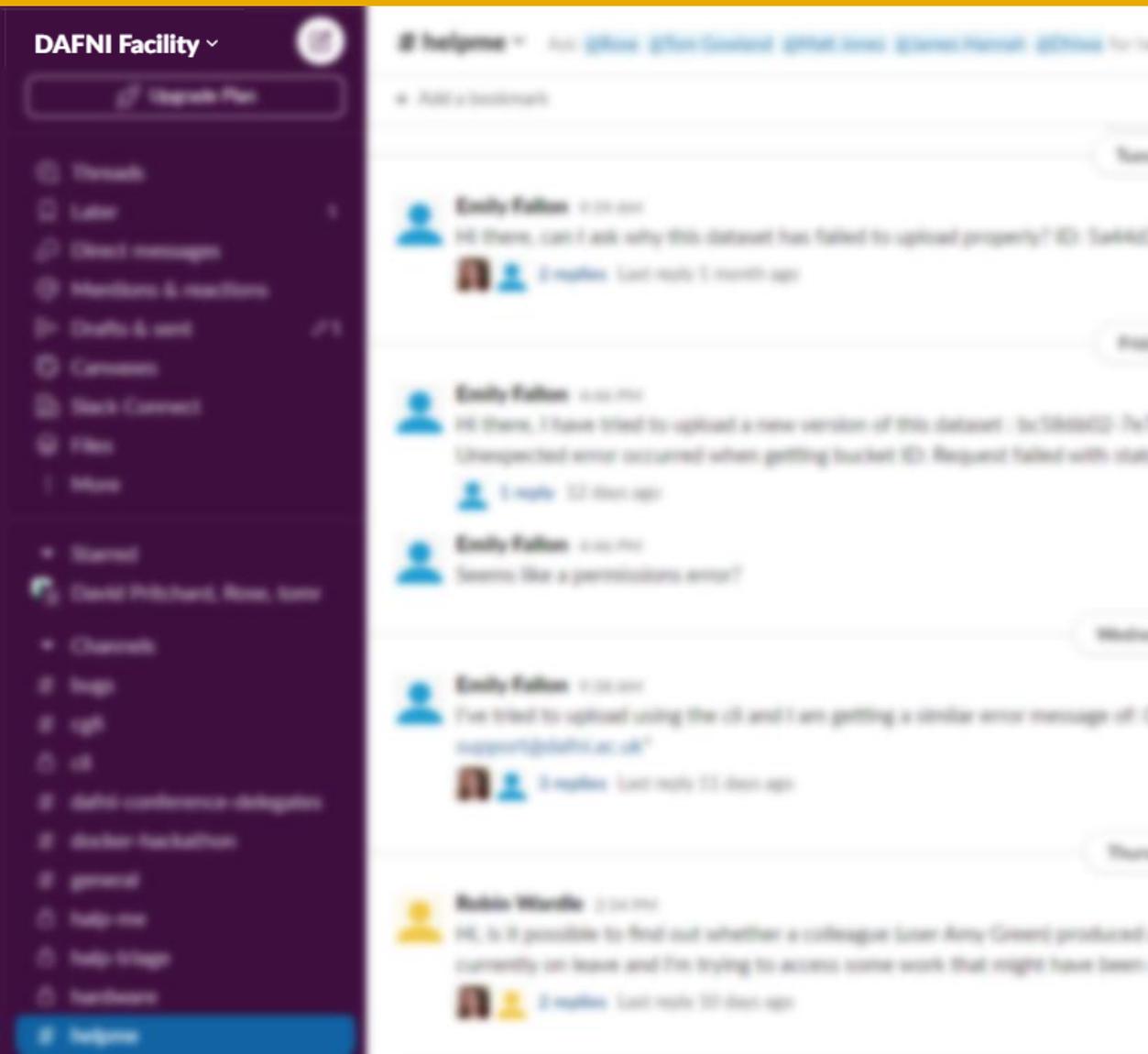
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# Community Feedback



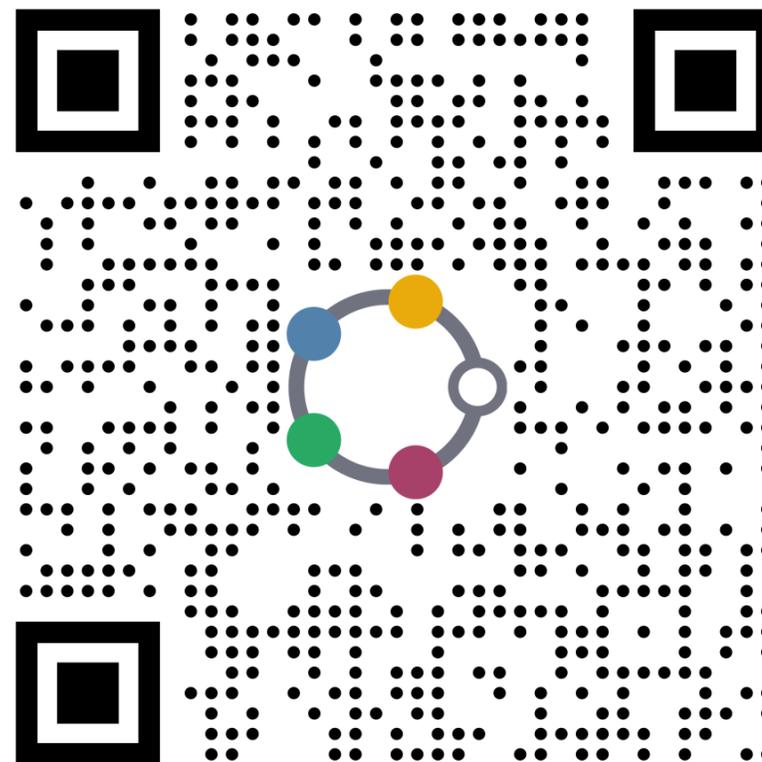
Sign up here

- New group to meet regularly and hear technical updates from the DAFNI development team
- Opportunity to give feedback on UI choices and contribute to prioritisation discussions.
- No requirement to attend all meetings, agendas circulated beforehand.



- We are retiring our DAFNI Facility Slack channels for everything but
  1. Log requests
  2. Networking
  3. Emergency support follow-ups
- To raise a ticket and talk to the dev team in future, please email [support@dafni.ac.uk](mailto:support@dafni.ac.uk)

**Thank you**



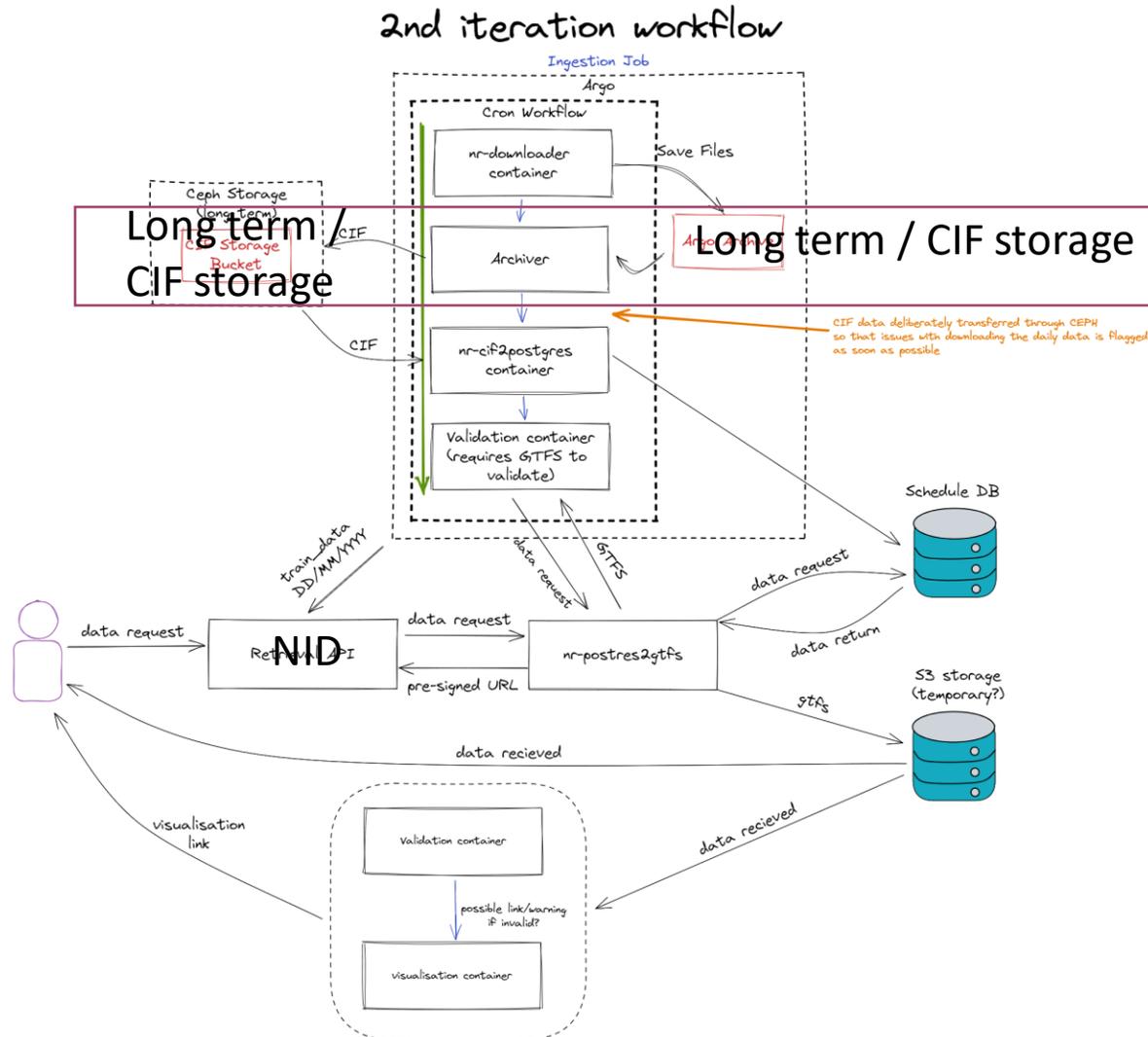
Technical User Group signup





- To support scientific modelers in their technical collaborations
- To foster new connections and collaborations in research
- To spearhead new levels of transparency and reproducibility in model-based research
- To facilitate communication of scientific results to non-technical decision makers

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