



UK Research
and Innovation

DARE UK

Driver Projects

TELEPORT

Federated data to support team science

Chris Orton
Programme Manager,
SeRP, Swansea



Professor Simon Thompson
Director, SeRP, Swansea

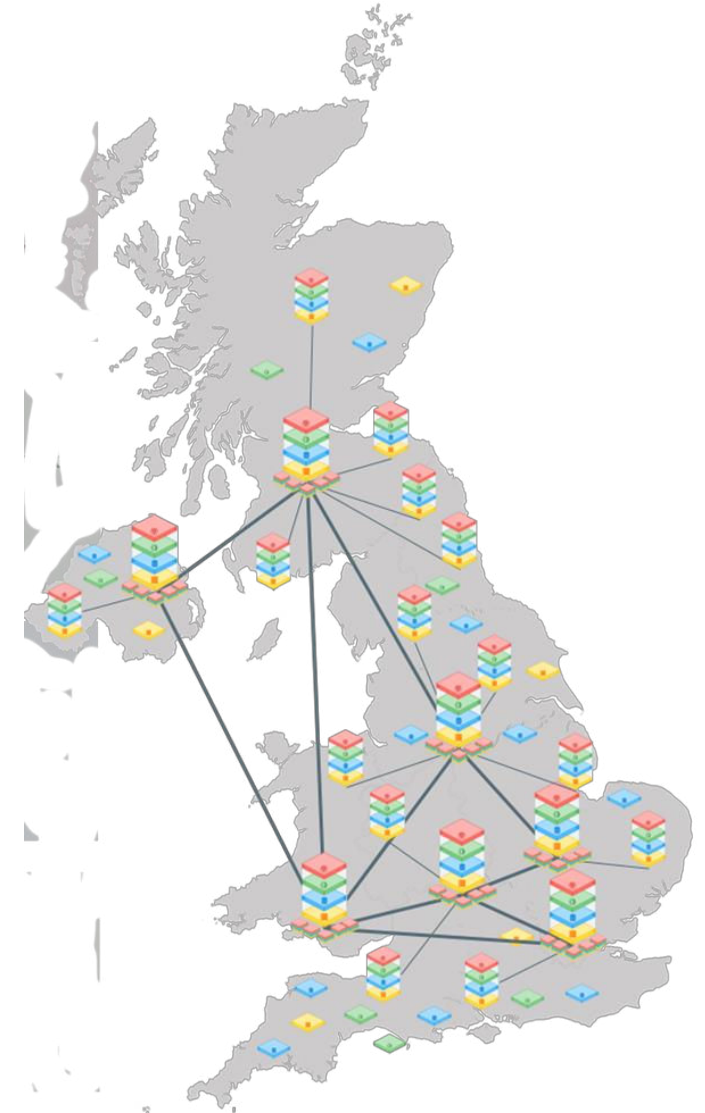
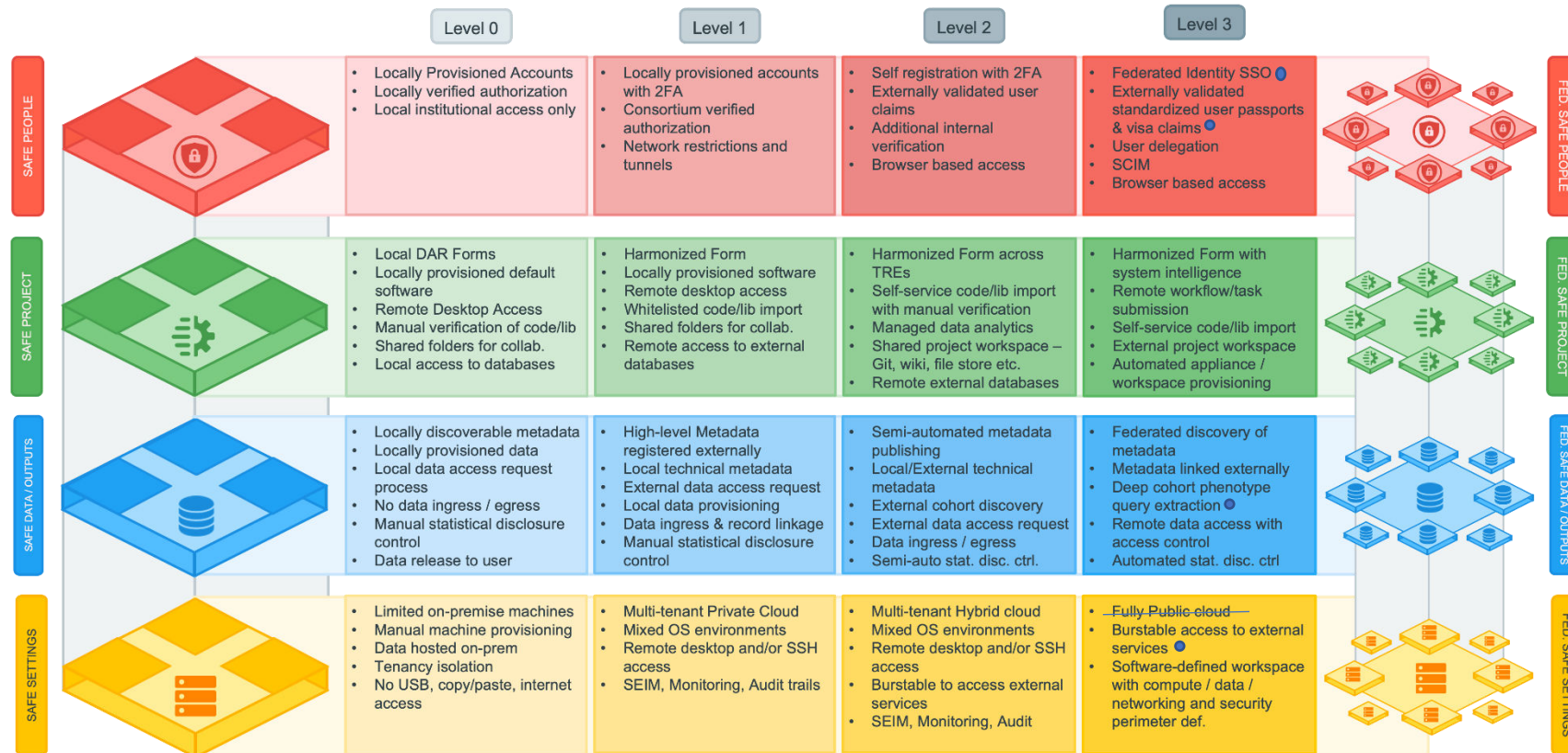


Increasing number of TREs

Risk of increased data siloes

Interoperability and federated access/analysis is the new target

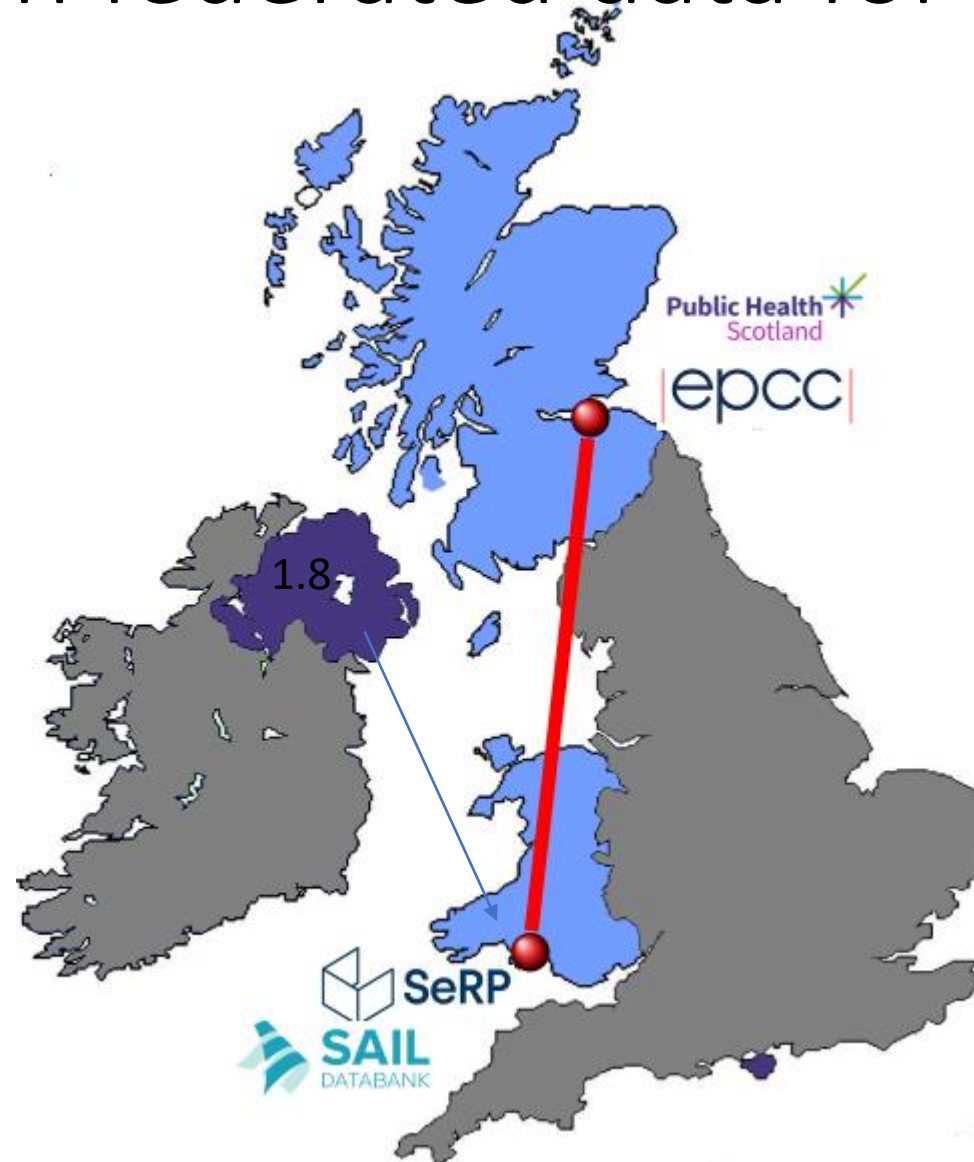
Federated Data Analytics Infrastructure - Capability Maturity Models



Connecting two major national TREs : Establish federated data for research

National Safe Haven
For Wales (3.2m)

National Safe Haven
For Scotland (5.4m)





Inter-TRE plumbing

To allow data to be visible to each other and enable interoperability

“POP-UP TRE”

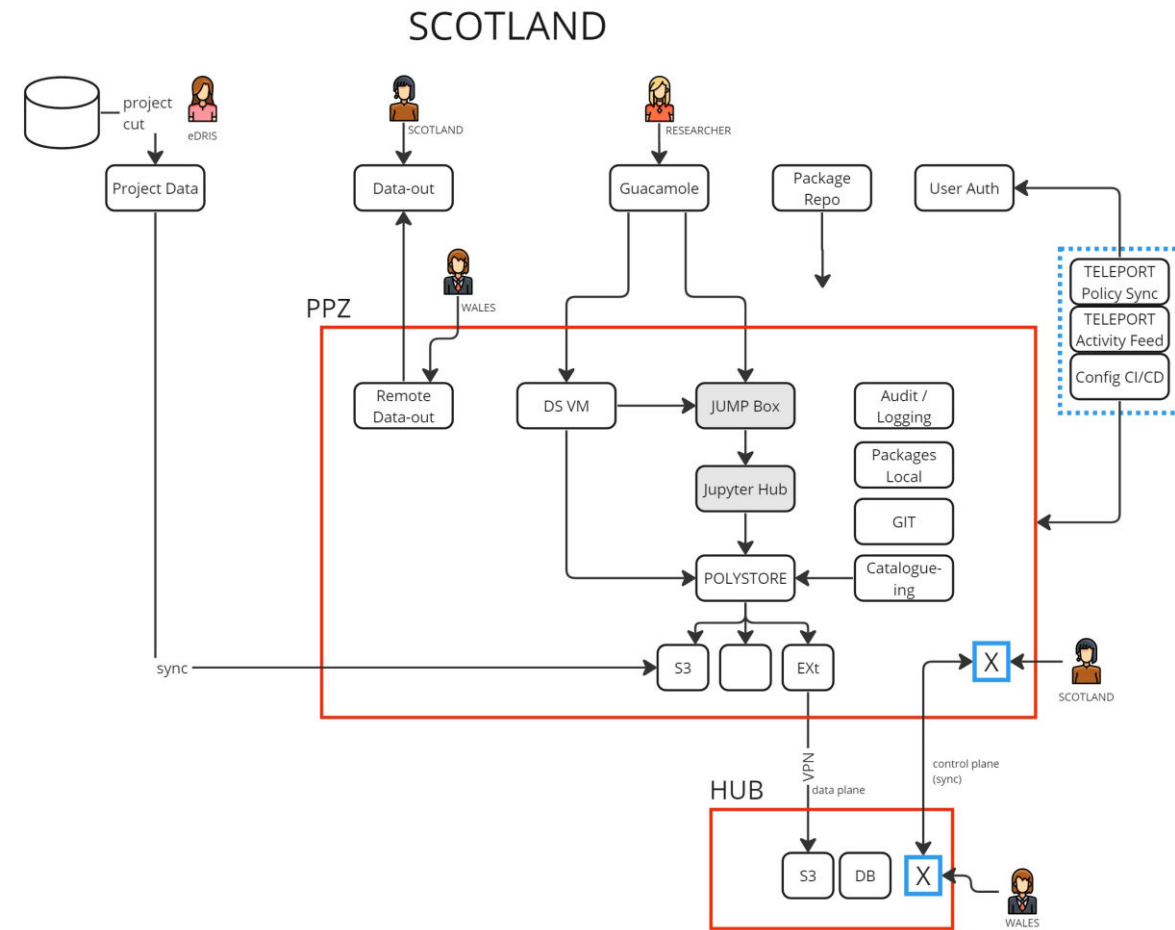
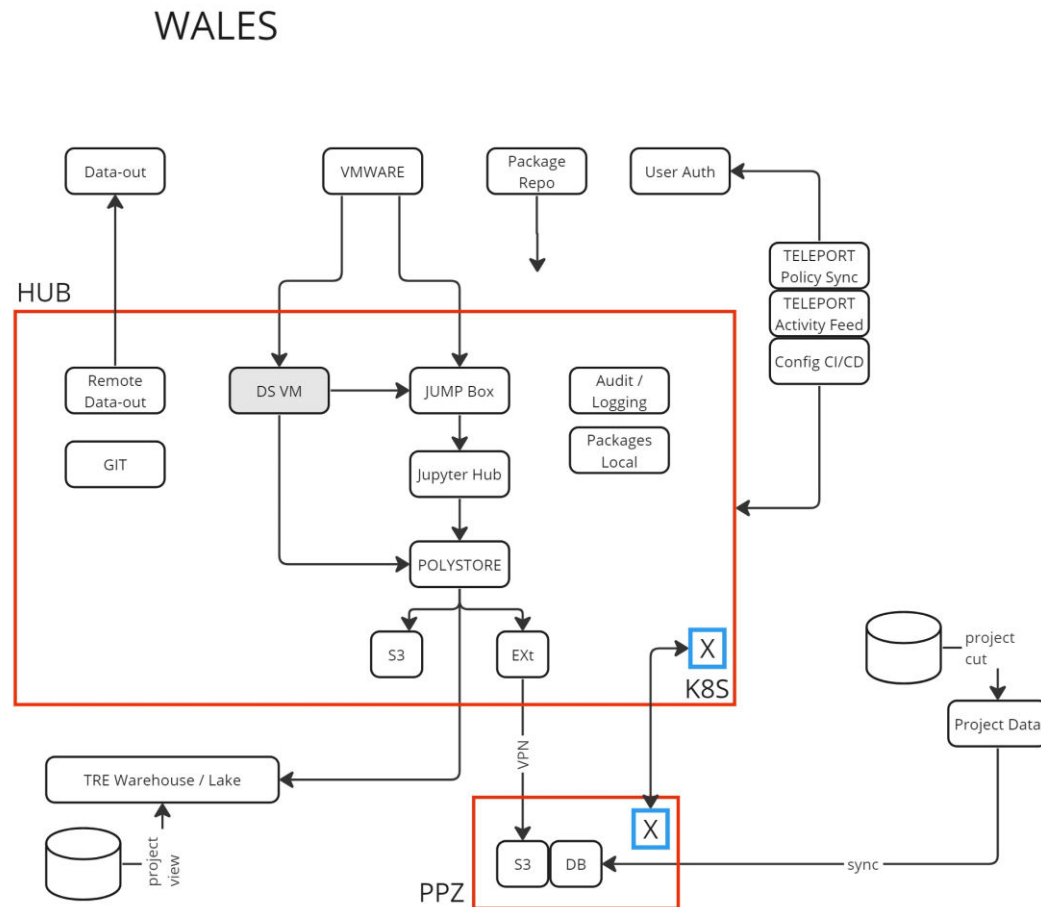
Ephemeral Project Specific TRE

Socialising the idea of “popping-up”
in either national TRE and being
able to access the data from either

- Consistent capability
 - Consistent governance
 - Consistent user experience
-
- Keeping existing TRE approaches
(no changes)

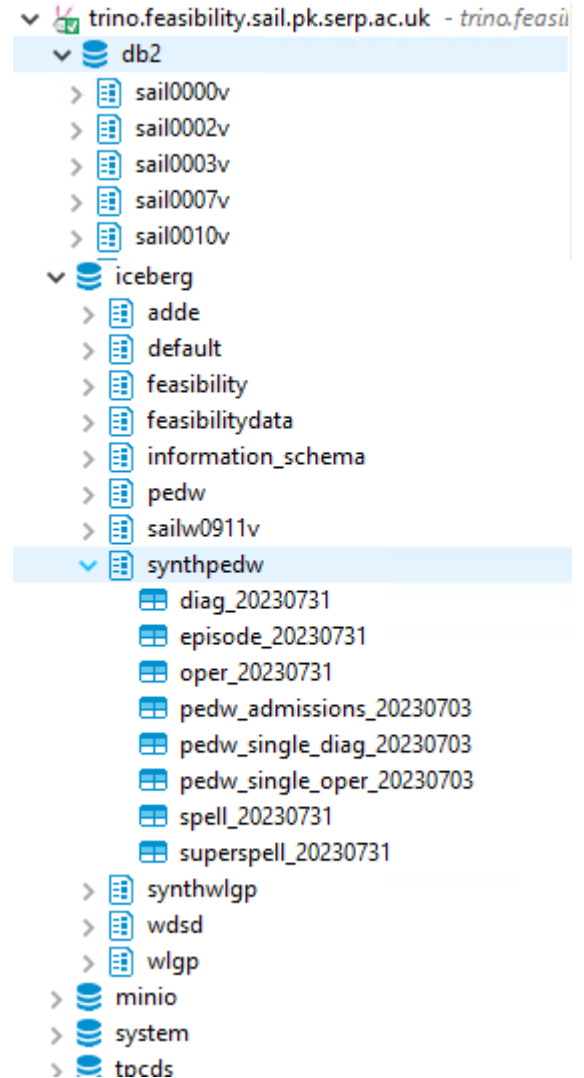
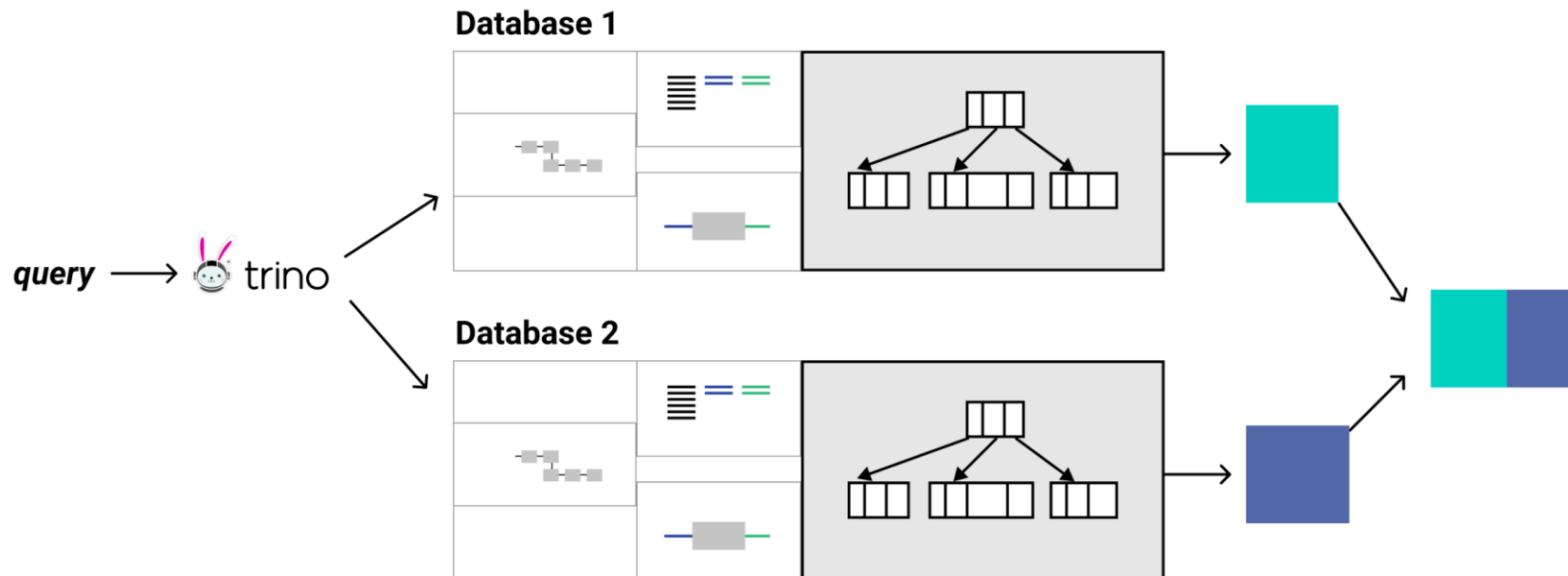


Respecting different approaches



Multi-TRE: Single Pane of Glass

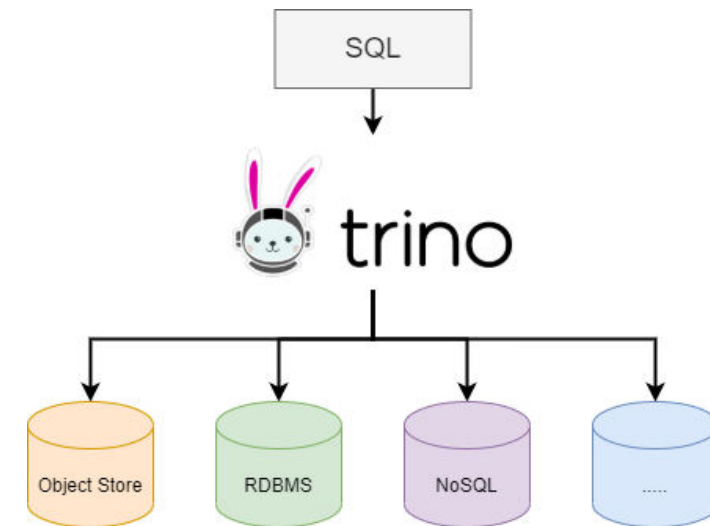
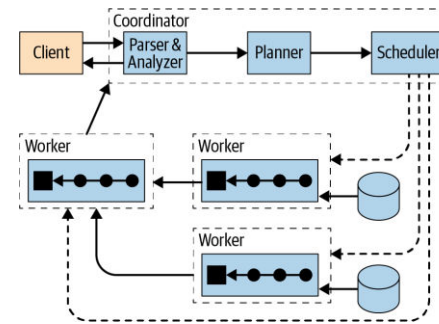
- Presented as Single database
- See each TRE as a database in the same system and be able to query both and across these systems





Multi-TRE: Single Pane of Glass

- Distributed SQL Query Engine
- POLYSTORE – consistent user experience, fully SQL compliant
- Connectors to backend database system – Postgres/ MS SQL / Db2, ..
- Connectors to backend storage subsystems – S3 Object storage, ...
- * SQL Pass Through – data processed in situ
- Horizontally scalable / auto scaling



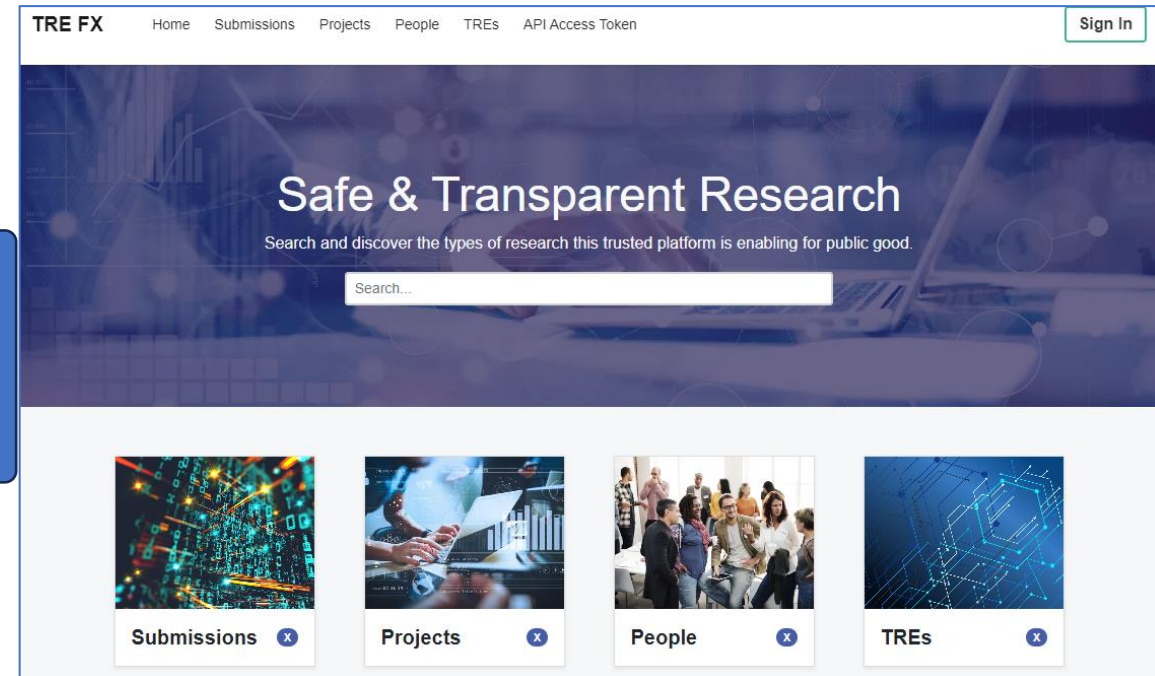
DAREUK Teleport Feature



Sync Project: Policy Bundles

REST API

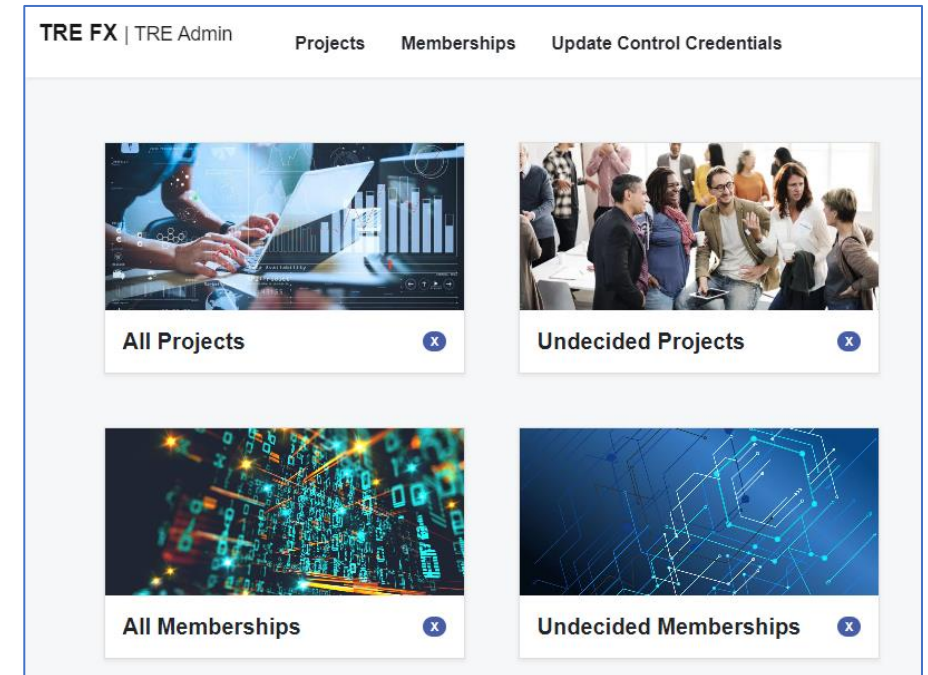
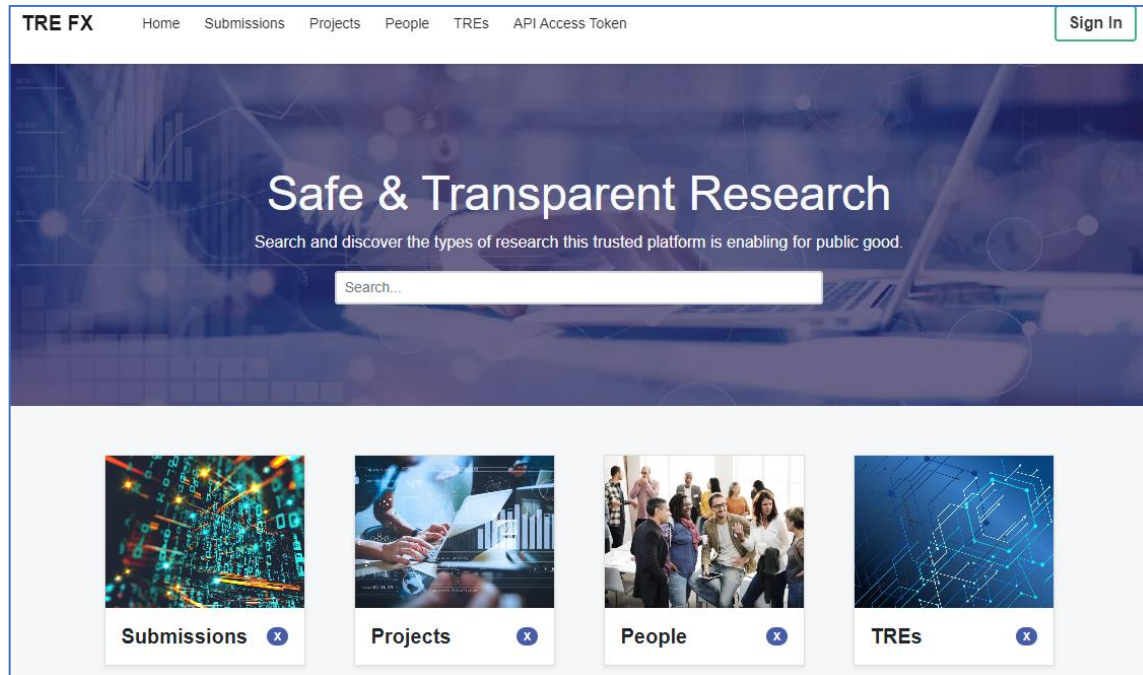
People on projects, authorised by TREs



As part of DAREUK TREFX

Projects, People and TREs are Registered
Projects use TREs and people are on Projects

A TRE syncs this information
Authorises this on behalf of their TRE [local]



Gives a list of all people on projects & TRE authorisation



Add a feature to store the TRE intent in submission layer



Governance

- As a technical development of existing infrastructure, we did not need governance approvals to create the Teleport solution
- However, we have engaged with the SAIL IGRP and PHS PBPP panels to gather opinion on the proposed technology – both through documentation and meetings
- Position for application to access data using the Teleport method is therefore clearer and can be introduced into current governance processes
- Vitally important that the data custodians/TRE operators understand that their roles should not be impacted by the technical advancements (same data provisioning, same application and access governance for users)
- SeRP/SAIL – EPCC/PHS relationships enable technological developments with an exemplar governance path for data access

Public Involvement and Engagement



PIE gradually increased as the project has developed – necessary because of the highly technical nature of early discussions, compared to the outputs and outcomes we can now discuss with wider groups



Production of lay description and governance briefing document, shared with lay reps and panels, and governance panels relevant to the Teleport institutions (IGRP, PBPP), which will also be pivoted to a wider published document



Appointed a lay lead, working alongside our coordinator in SAIL, and have also worked through PHS to gather direct feedback from public members who sit on the PBPP



Working directly with the SAIL consumer panel and Research Data Scotland to get feedback on the technical solution and its proposed benefits, and across the HDR UK driver programmes to scope opinion on priority research use cases for the Teleport solution



PIE on Teleport will not stop once the funding has finished – the legacy of the project is to continue PIE on the solution as we move closer to it being deployed in production for projects which ultimately will be publicly beneficial



Reflections



TELEPORT: key points

2 TREs involved agreed that

- Command and control + observability was the critical point
- Multiple layers reduced the remote risk (pop-up TRE in a *TRE*)
- Combining the data and ephemeral data movement was not an issue, enabling data egress to move to the end of the combined process
- Common components between TELEPORT and TREFX has been a massive positive outcome
- Governance and PPIE – perceived as a safe step forward in federation and analysis within the context of the TREs involved

Real World

- TELEPORT: Rolled out between SAIL Databank and Dementias Platform UK (DPUK)

Plans to roll out

- TELEPORT and TREFX to Australia to connect DPUK with DPAU

An aerial photograph of a long, multi-lane highway bridge spanning a body of water. The bridge has several lanes in each direction, with white lane markings. Several vehicles, including cars and trucks, are visible traveling across the bridge. The water is a deep teal color with visible ripples. The text "Thank You" is overlaid in the center of the image in a white, sans-serif font.

Thank You