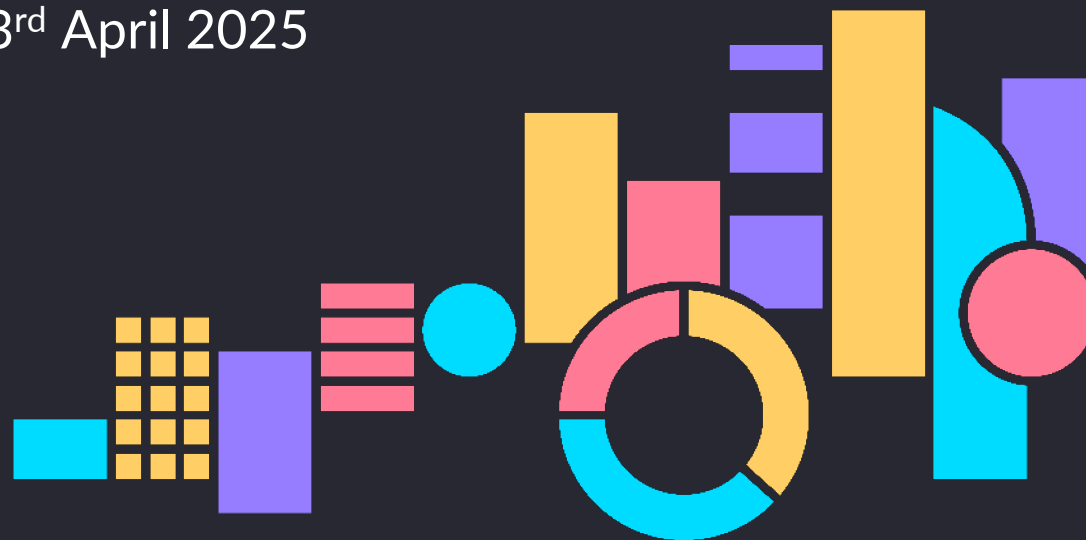




TREvolution and TRE Early Adopters Public Webinar

Wednesday 23rd April 2025



UK Research
and Innovation

HDRUK
Health Data Research UK



ADRU
Data-driven change

Agenda for today

Agenda Item	Details
Welcome and Housekeeping	
TREvolution presentation	15 min presentation + 5 mins for questions
TRE Early Adopters' presentations	10 mins for presentation + 5 mins for questions for each adopter Presentation order: • FRIDGE : Martin O'Reilly • FOCUS- 5: Dale Kirkwood (Becca Wilson to assist with Q&A) • SAFER - Ashley Akbari, Claire Newman • VISTA: Magali Ruffier • PANORAMA: Katherine O'Sullivan • SOAR - Brogan Taylor, Rebecca Lewton

Housekeeping

- Please remain **muted** at all times, unless invited to ask a question during the Q&A session
- To ask a question during the Q&A session: please use the '**raise hand**' **function** if you wish to ask a question out loud; or you can ask your question via the **Chat box** before and during the Q&A session
- During the discussion, please remain respectful, do not interrupt others and ensure any questions or comments remain on-topic
- Please keep your **video** off during presentations – you are encouraged to turn your video on during the Q&A/discussion session
- The webinar is being **recorded**



Phil Quinlan
Project Director





Introducing TRevolution

UK Research
and Innovation

HDRUK
Health Data Research UK



Our three challenges

Possible

Technology development is rapidly changing what is possible.

Industry and research organisations drive the art of the possible

Not everything that is possible is acceptable and/or useful

Acceptable

Opinions from the public are vital to include in the design of technology solutions.

Policy and governance usually follows public opinion.

Not everything that is acceptable is possible and/or useful

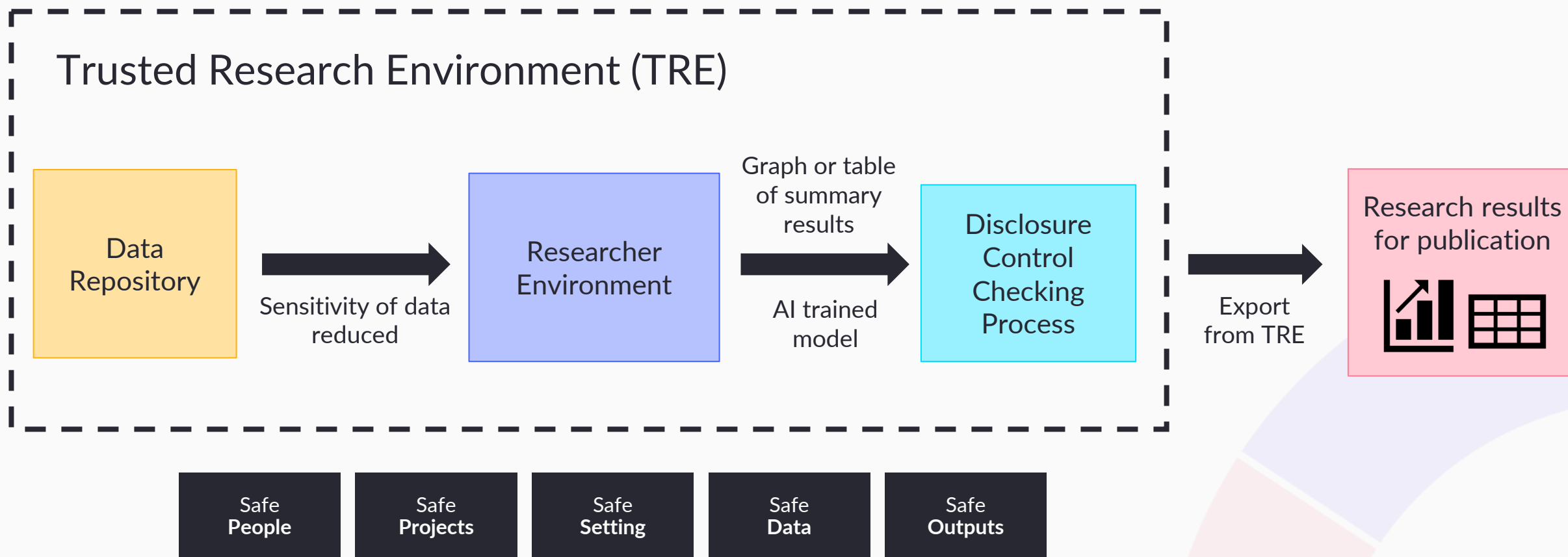
Useful

Researchers seek to undertake leading research programmes.

They adopt tools that are usable and help them in their research.

Not everything that is useful is acceptable and/or possible

What is a Trusted Research Environment?



What do we mean by federation?

A scenario where data exists in more than one environment.

Each environment has its own jurisdiction and decision-making capability for the use of that data

Therefore, federation is when data and decision making is not in one location.

What is the most useful approach?

The most useful approach would be to have all data required, in a single location, where the tools and resources exist to analyse the data.

Within the UK it is usually technically possible to have data all in a single location.

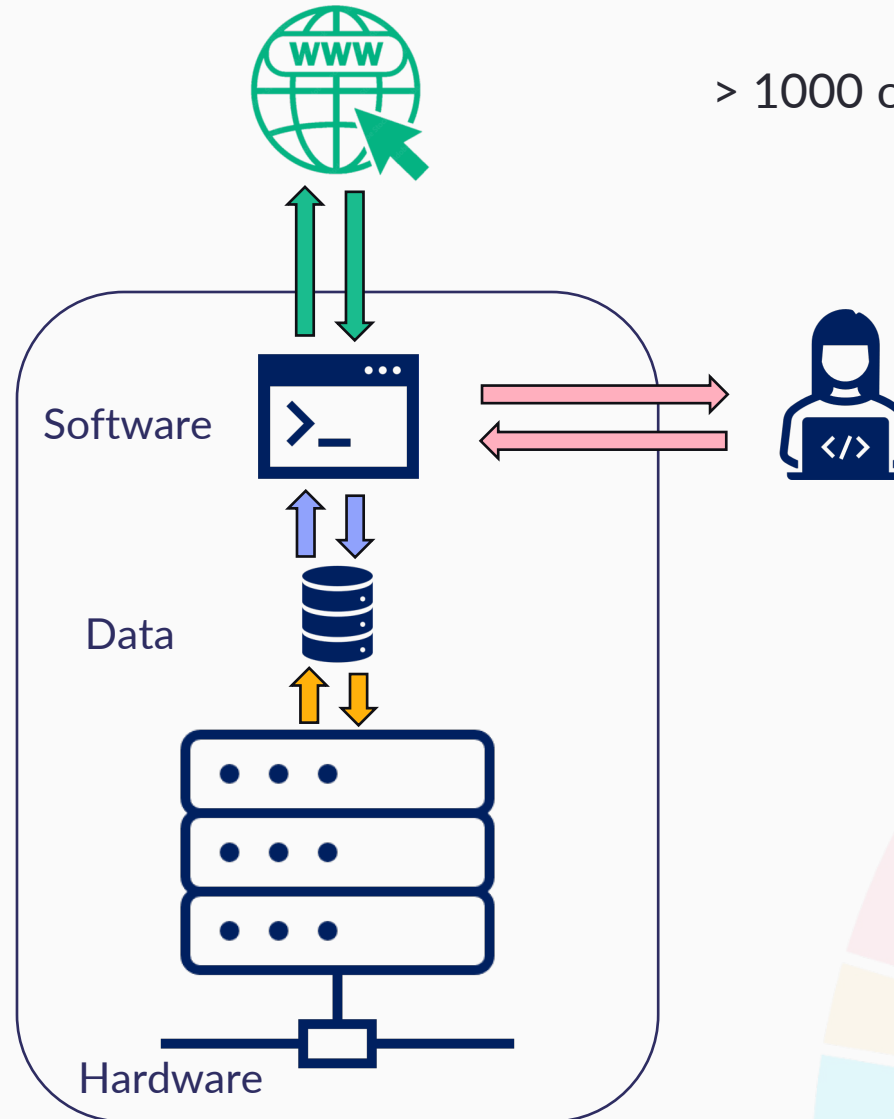
But we live and operate in a federated eco-system:

- Data is stored across the four nations
- Data is usually stored in domain-based environments
- Compute is not always where the data resides

Research Computing Environments for non-sensitive data

- Open access the internet
 - Import and export data
 - Access collaborative tools, pipelines, data
- Install software

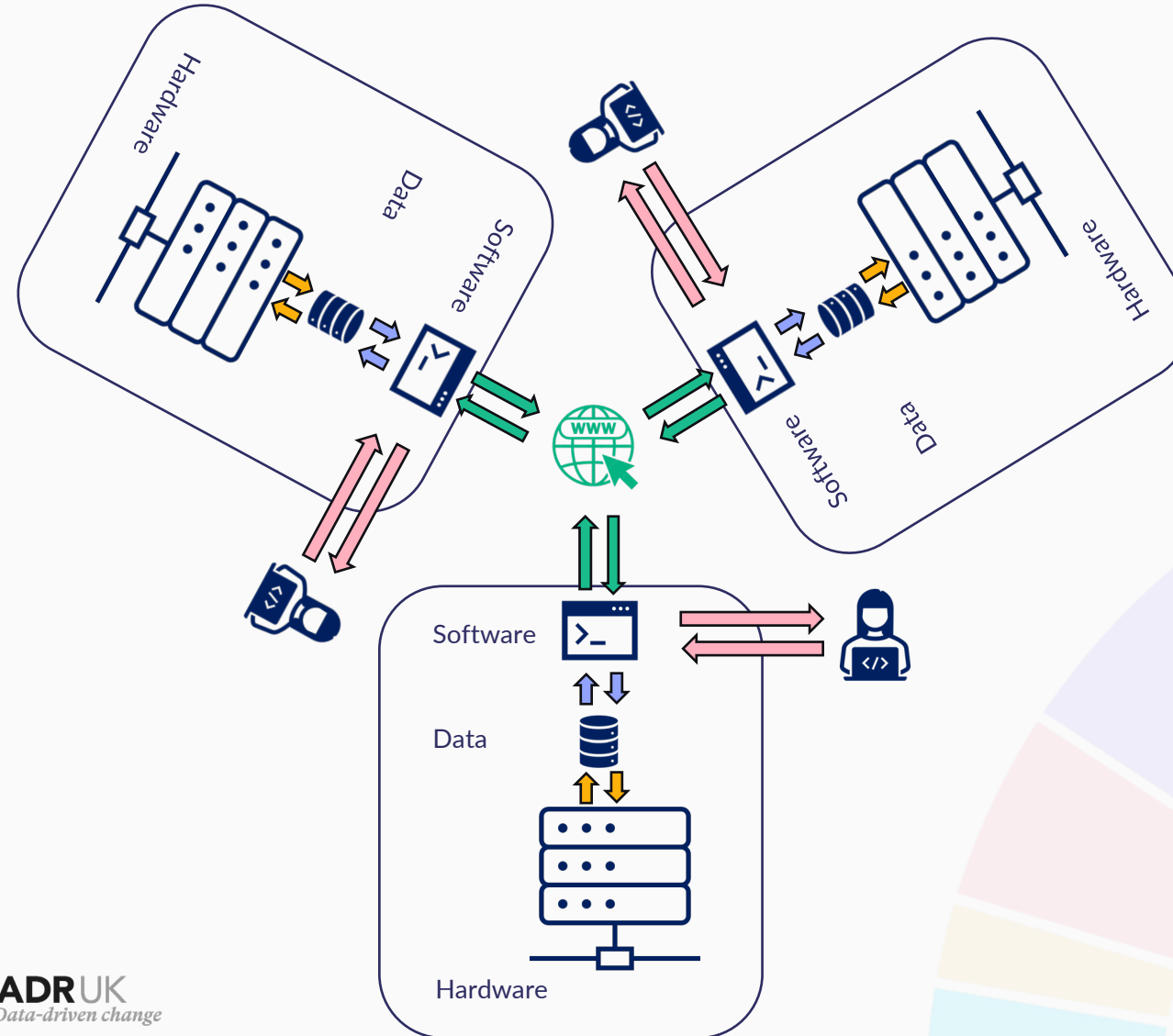
> 1000 of these across the UK



Research Computing Environments for non-sensitive data

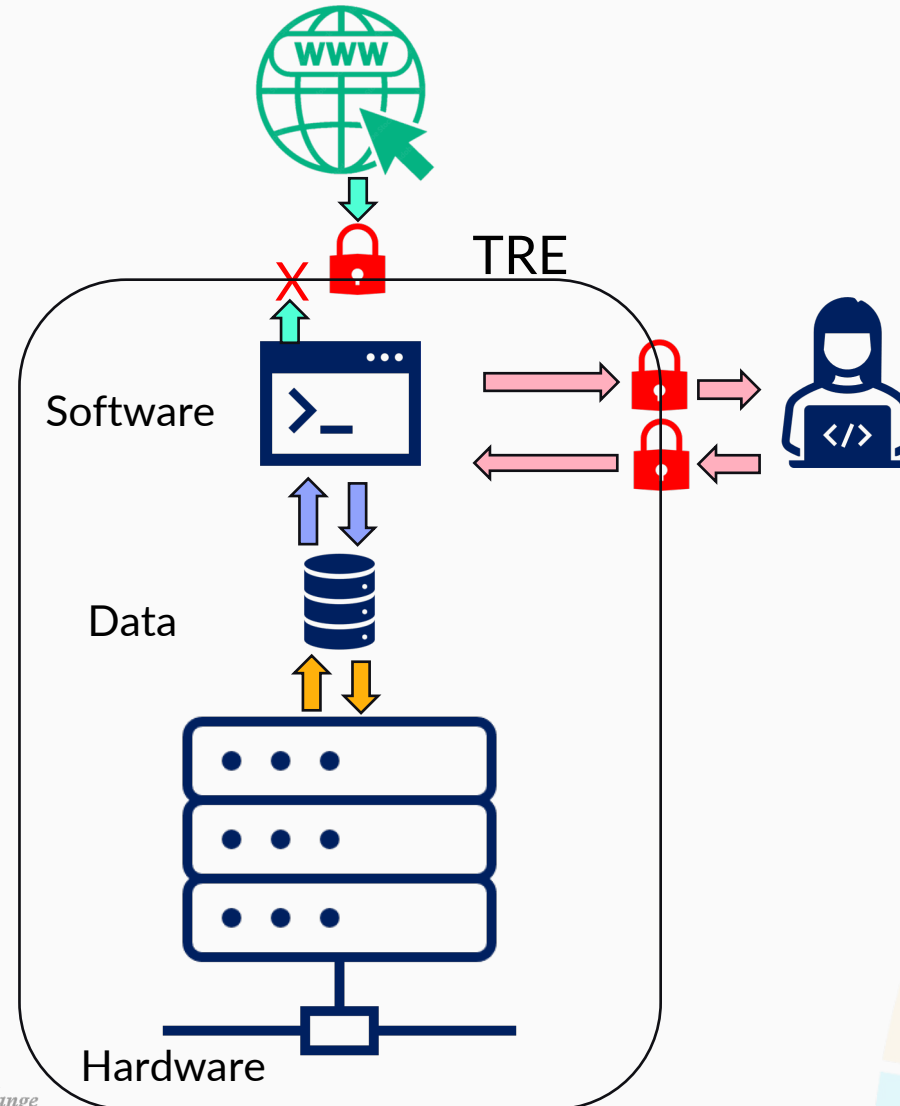
Relatively easy to:

- share data, tools, pipelines and analysis
- remotely access compute power/data from another organisation
- run federated projects



Trusted Research Environments – “Safe Setting and Safe Output”

- TREs stop open access to the internet and control anything that comes in or out using airlocks
- This can break some federated tools
- Innovative engineering is required



The pain in the system



In order to do analyses across multiple environments, Razia has to do the heavy lifting and understand all the major components.



In order to support researchers, Trish is being asked to install multiple tools and platforms that have different mechanisms for authentication, technologies and governance approaches



In order to support research in sensitive data, Harriet must act more like a TRE, considering security implications and tool requirements

Team TRevolution

- Co-led from the Universities of Dundee, Manchester, Nottingham, Swansea and West of England
- with:
 - NHS Scotland
 - Lancashire Teaching Hospital
 - Durham University
 - Lancaster University
 - Nottingham University Hospitals NHS Trust
 - University College London
 - University of Queensland
 - University of Basel
 - University of Cape Town

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Standards as a mechanism to provide acceptability

- Moving from single, isolated entities to a network of TREs
- Standards are required to ensure interoperability and provide the acceptability of an approach
- Until recent DARE investments there were no community and cross domain standards to define a TRE
- There are federated analysis systems and standards in the open data community
- There are meta data frameworks available in other domains
- The Five Safes provides a cross-domain governance framework

The parts that build TRevolution

Compliant tools / frameworks that can be deployed across the landscape

Useful

TRE-FX: Software to provide the mechanism to move analytics around

Possible

DIRECTOR: Providing the technical capability to connect TREs and tools

RO-Crate:
Providing a
meta-data
store for the
end-to-end
process

Acceptable

SATRE : Providing a
common set of
standards to define a
TRE

Acceptable

SACRO : Providing a
common and accelerated
disclosure control process

Acceptable

Five Safes : Providing
the decision-making
framework

Acceptable

The desired state

Razia is able to *select the analytics* to run, *select the data* required across TREs, and chose the *level of compute* to use from a tool or platform of her choice.

In order to achieve this goal, **digital transformation** is required that is sympathetic to current governance. Must allow Trish to **secure data** *and* utilise existing high **compute** so others don't replicate what Harriet already has available.

Thank you - Questions



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Health Data Research UK



The
Alan Turing
Institute

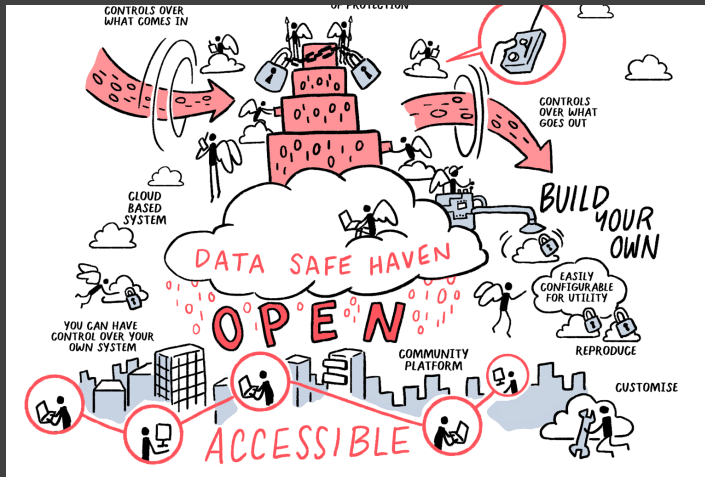


FRIDGE: Federated Research Infrastructure by Data Governance Extension

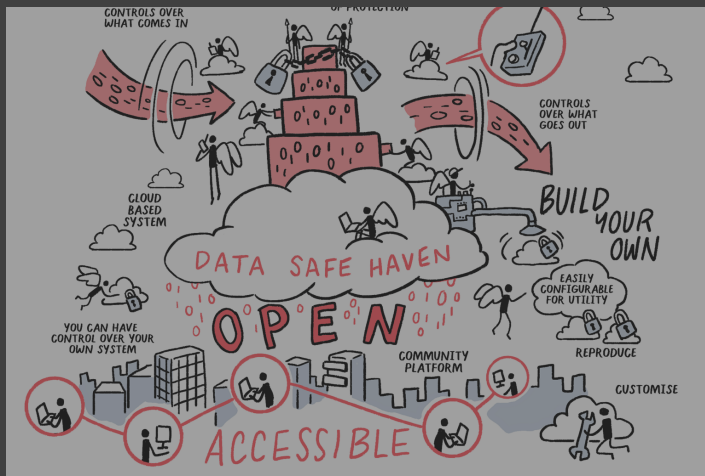


Martin O'Reilly | Director of Research Engineering, The Alan Turing Institute

23 April 2025 | DARE UK TREvolution and Early Adopter Public Webinar



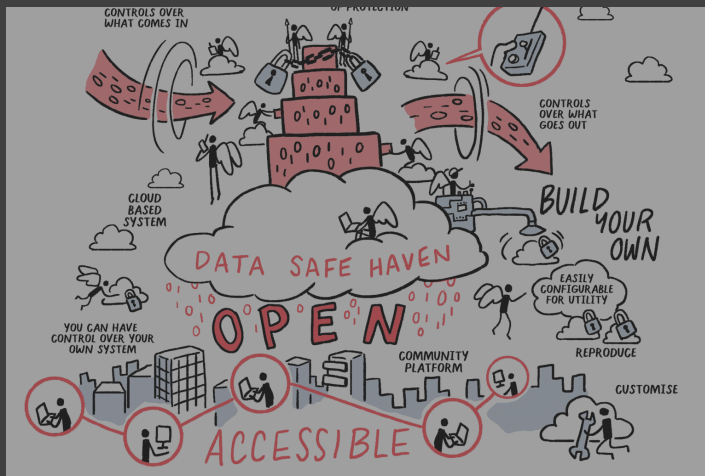
Turing Data Safe Haven



Turing Data Safe Haven



UK TRE Community



Turing Data Safe Haven



UK TRE Community



FRIDGE HPC TRE

FRIDGE team

**The
Alan Turing
Institute**



What is FRIDGE?

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- A Trusted Research Environment ...
- ... for really big shared computers ...

What is FRIDGE?

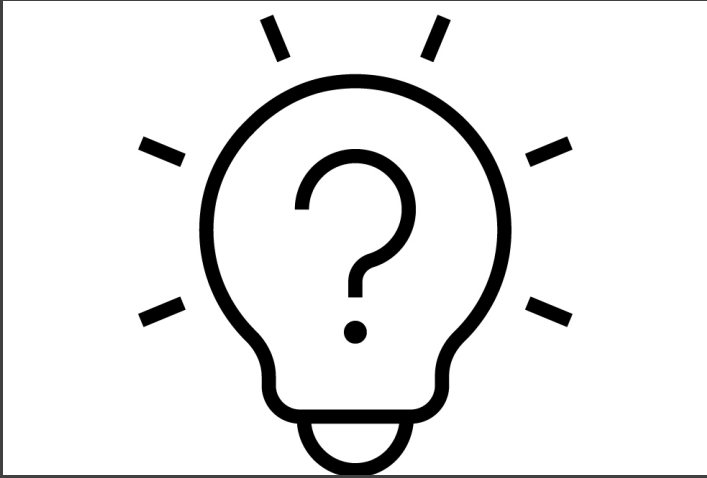
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What is FRIDGE?

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- ... run by other organisations

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Why we need FRIDGE



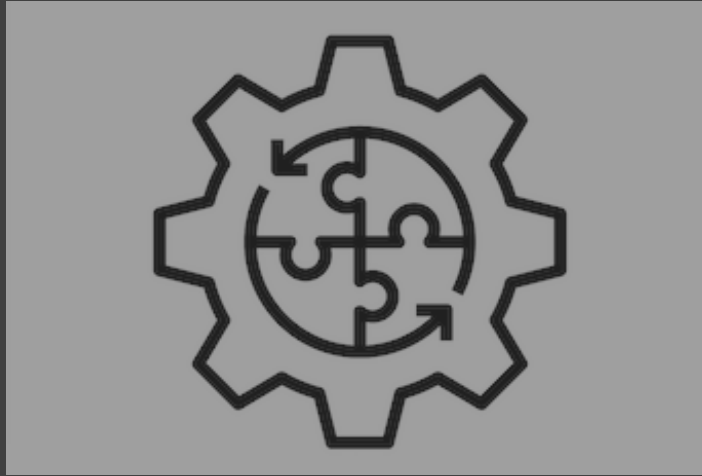
Why we need FRIDGE



What FRIDGE does



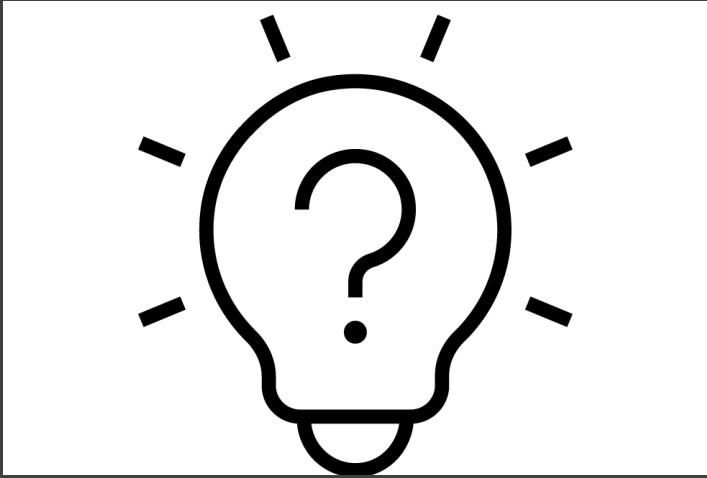
Why we need FRIDGE



What FRIDGE does



Working together



Why we need FRIDGE

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- Doing this requires the use of **supercomputers**

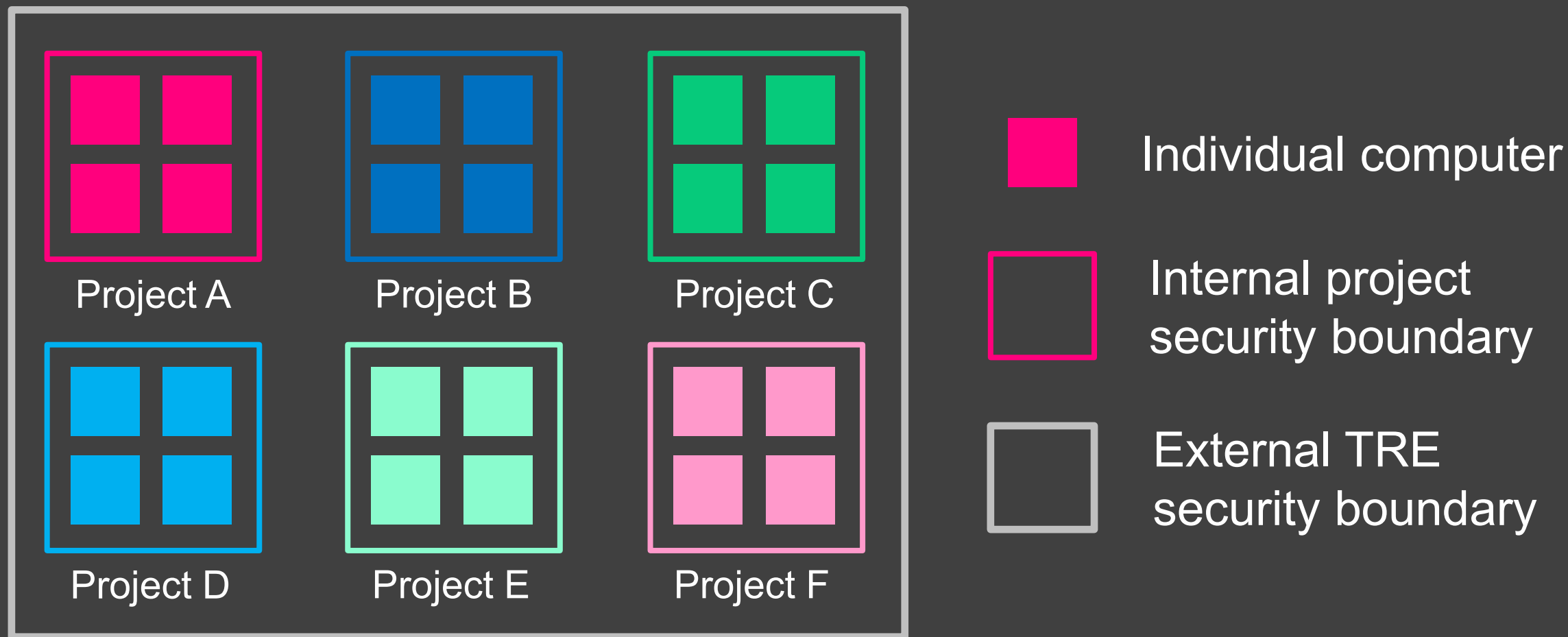
Why we need FRIDGE

- Impactful research often requires developing and applying complex methods on large datasets
- Doing this requires the use of supercomputers
- We can't use supercomputers for research with sensitive data

TREs aren't supercomputers

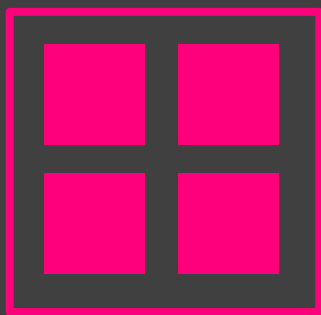
TREs aren't supercomputers

TREs provide a **small number** of **strongly isolated** computers per project



TREs aren't supercomputers

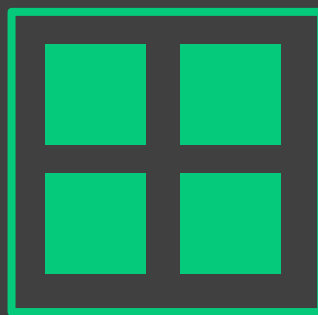
Technology controls



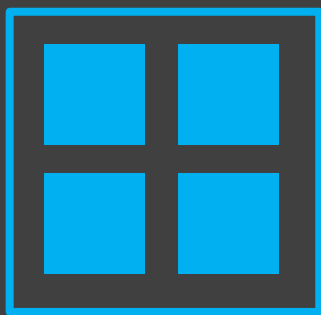
Project A



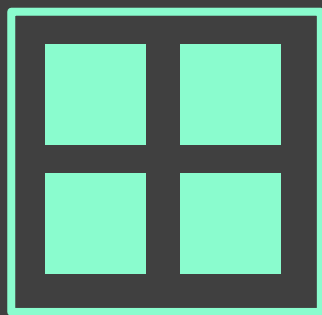
Project B



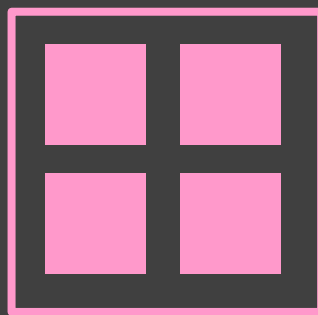
Project C



Project D



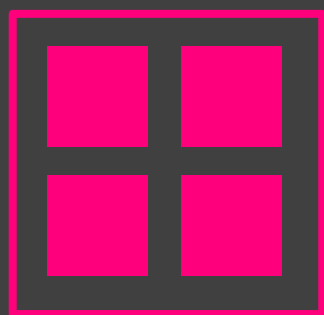
Project E



Project F

TREs aren't supercomputers

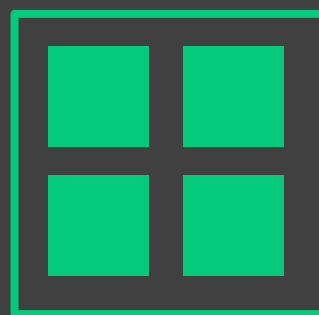
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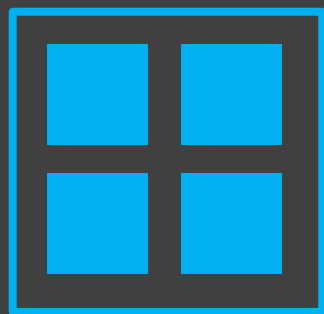
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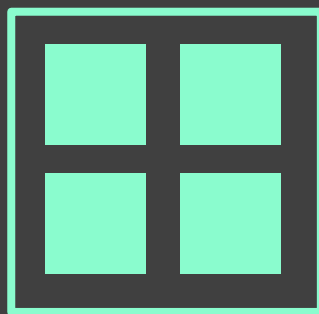
Project B



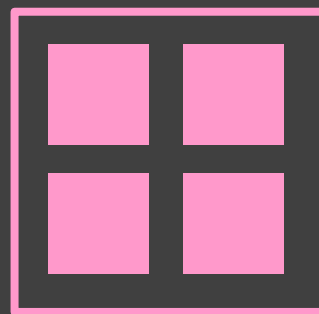
Project C



Project D



Project E



Project F

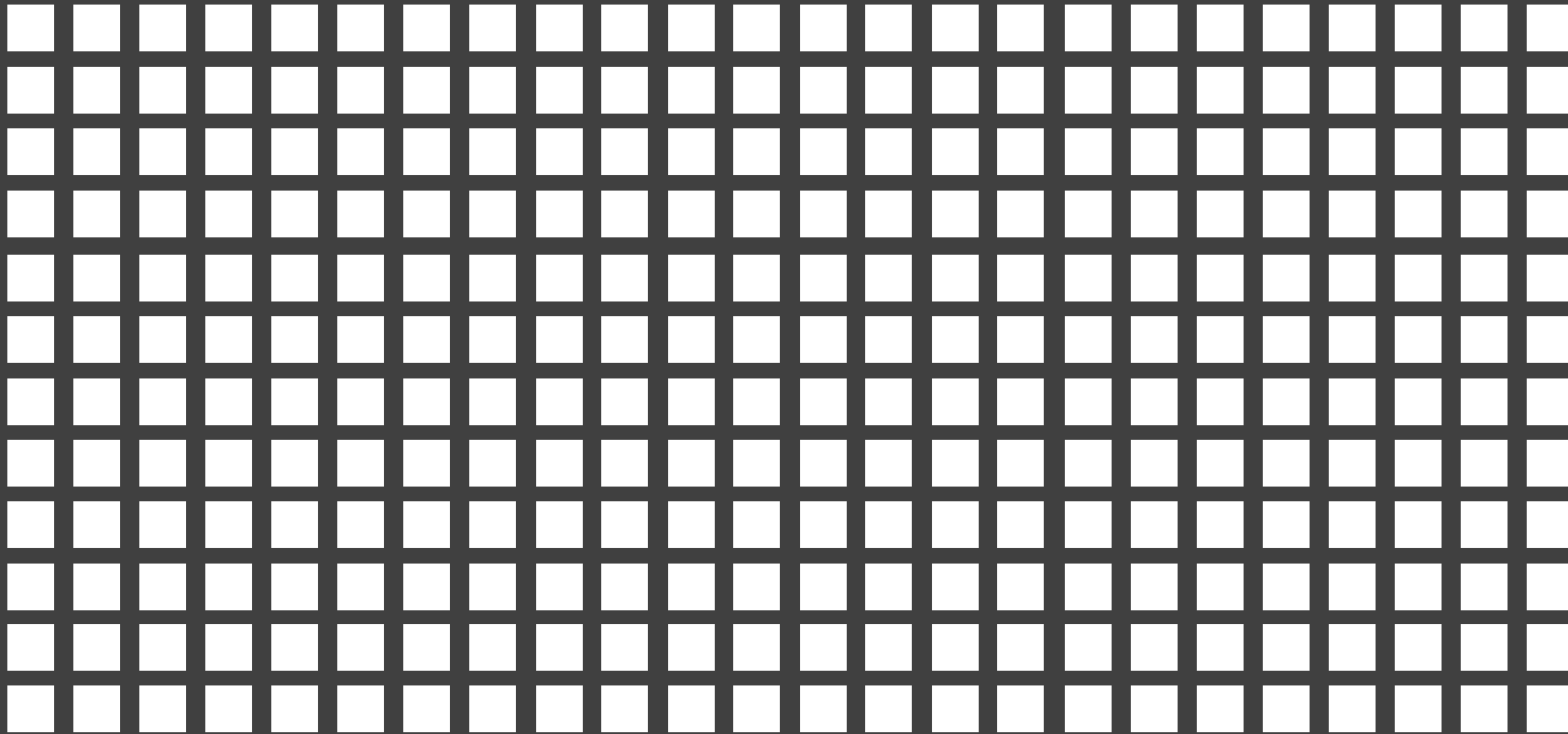
Governance controls

- Project approval
- Researcher training
- De-identified data
- No internet
- Isolated projects
- Approved software
- Review of outputs

Supercomputers aren't TREs

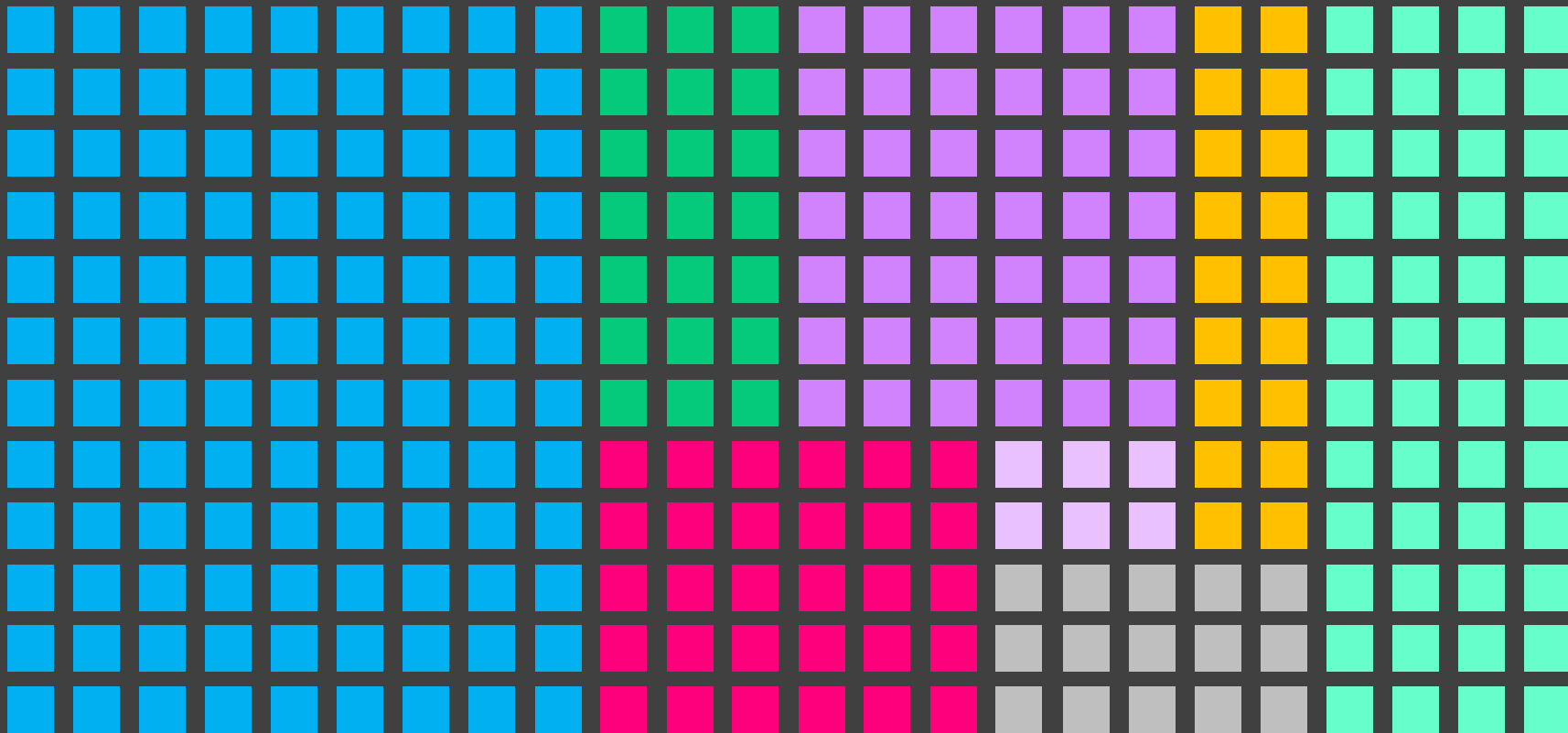
Supercomputers aren't TREs

Supercomputers are made up of 100s to 1000s of individual computers that can all talk to each other really quickly



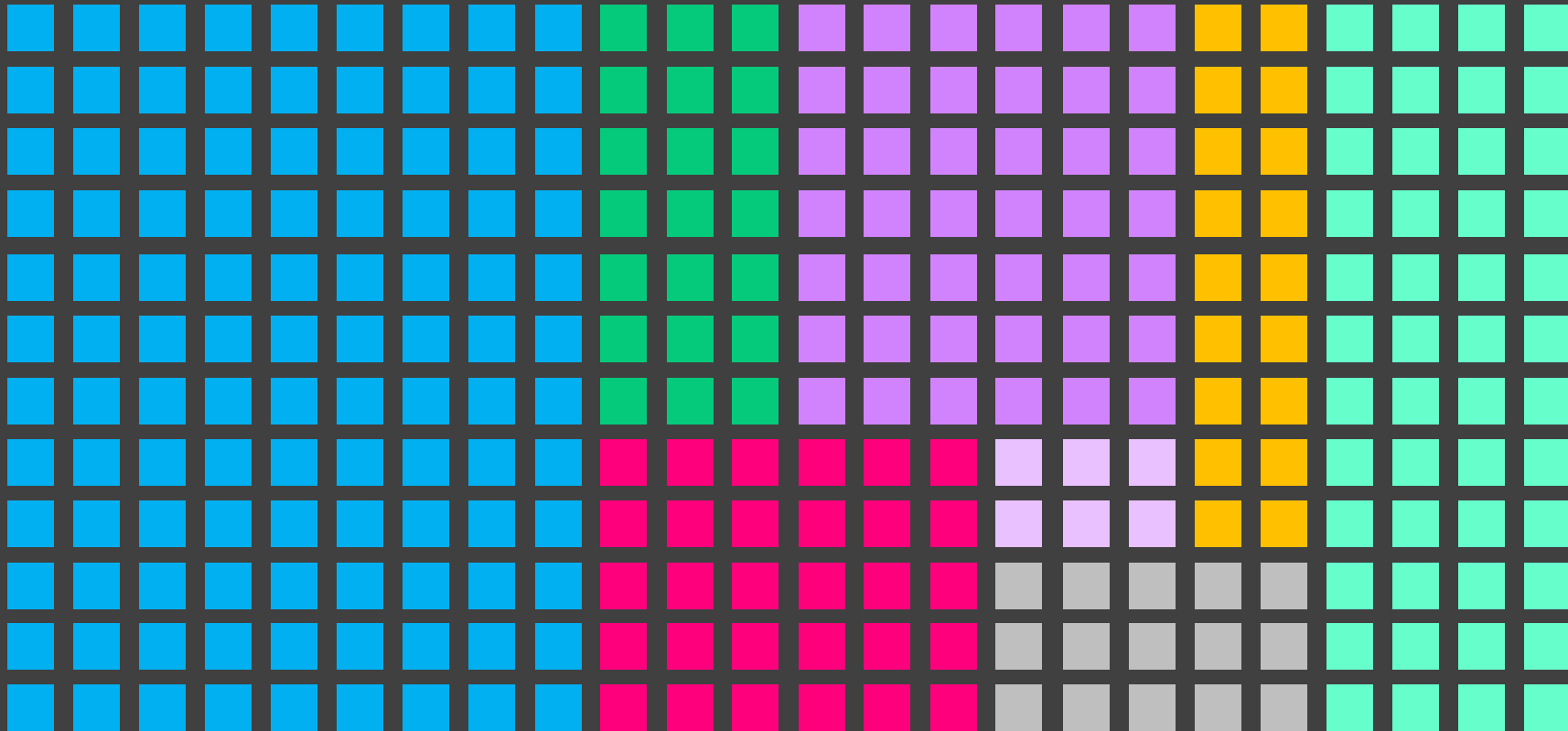
Supercomputers aren't TREs

Different researchers can use different groups of computers within the supercomputer for different things at the same time



Supercomputers aren't TREs

But these different groups of computers are **not strongly isolated from each other** in the same way as different projects are in a TRE





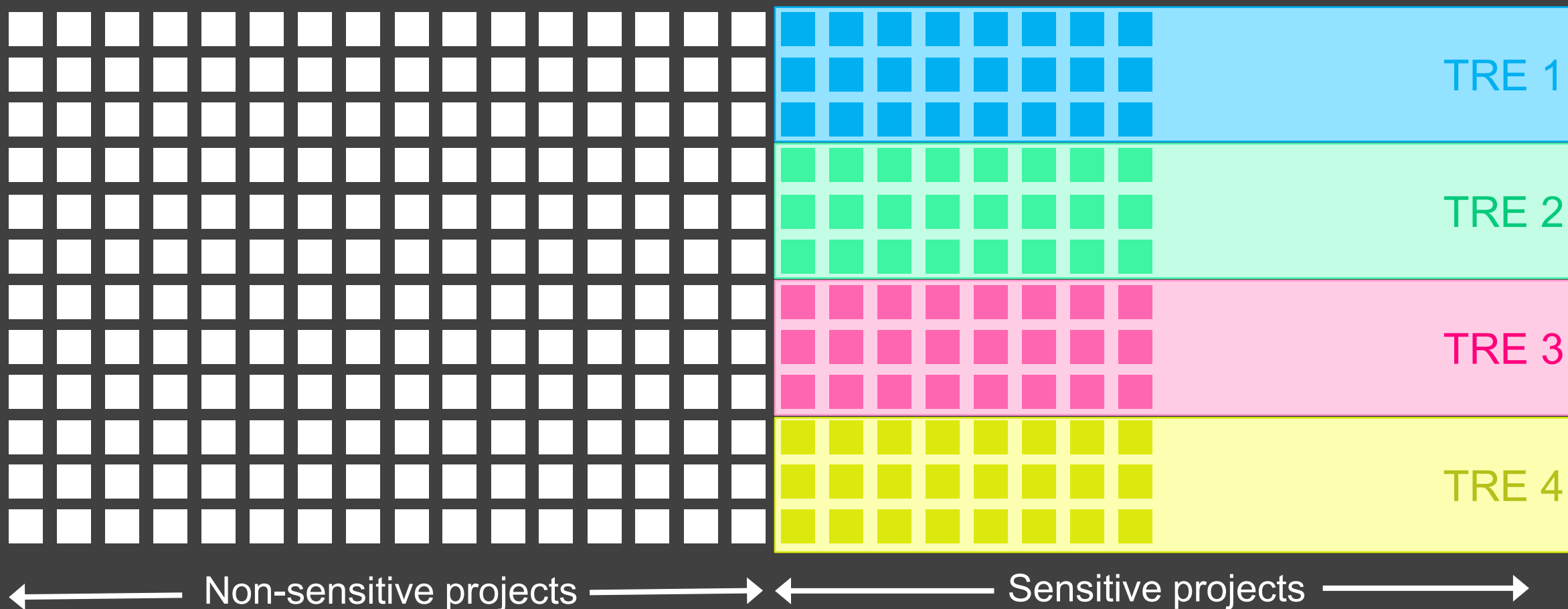
Why we need FRIDGE



What FRIDGE does

Hosting TREs on Supercomputers

FRIDGE will let **groups of computers** within a supercomputer be **strongly isolated** from each other in a way that complies with the governance rules for **different existing TREs**



How FRIDGE works

How FRIDGE works

- Provides technical methods to strongly isolate groups of computers within a supercomputer

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- Allows these isolated groups of computers to be controlled and configured by existing TRE owners

How FRIDGE works

- Provides technical methods to strongly isolate groups of computers within a supercomputer
- Allows these isolated groups of computers to be controlled and configured by existing TRE owners
- Defines what the supercomputer host organisation needs to do to ensure security

How FRIDGE works

Two options:

- Deploy a standalone TRE into the supercomputer

How FRIDGE works

Two options:

- Deploy a standalone TRE into the supercomputer, or
- Extend **an existing TRE** with a **satellite segment** deployed into the supercomputer

What is success for FRIDGE?

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- Deployment of real-world sensitive dataset to a national supercomputer for real-world research

What is success for FRIDGE?

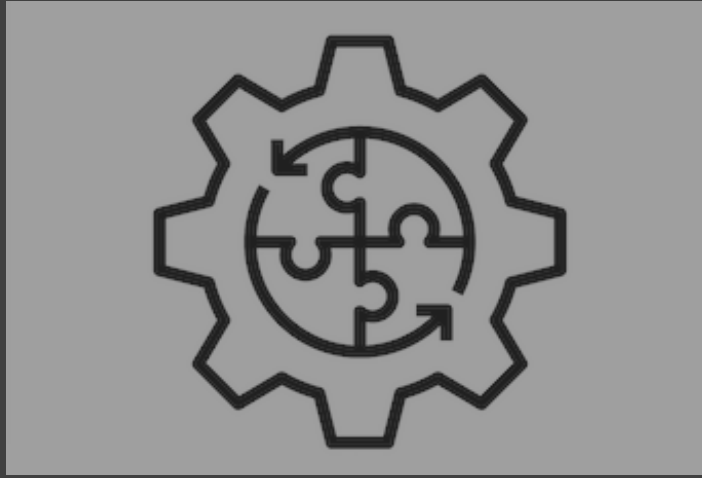
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- **Turing** project and researchers working on **Bristol** and **Cambridge** managed supercomputer under **Turing** information governance control

What is success for FRIDGE?

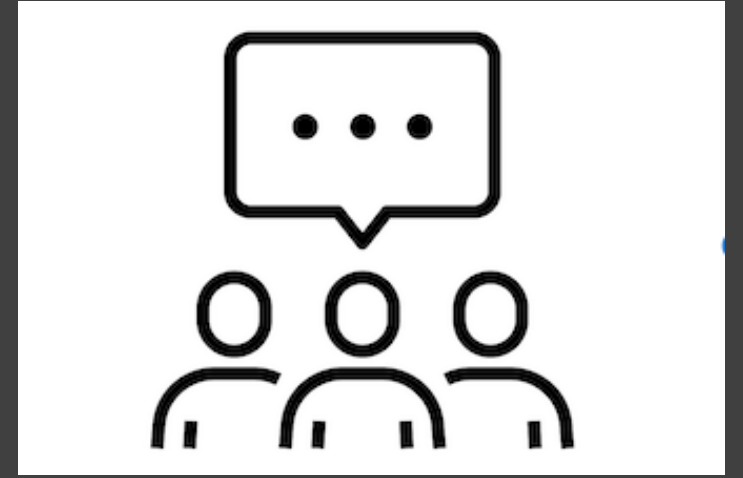
- Deployment of real-world sensitive dataset to a national supercomputer for real-world research
- Turing project and researchers working on Bristol and Cambridge managed supercomputer under Turing information governance control
- Providing **tools and processes** that are **easily adopted and adapted** by others to do the same



Why we need FRIDGE



What FRIDGE does



Working together

Working together

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- **Standards:** Will ensure our solution is SATRE compliant as the standard evolves

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- **Federation:** Will support TRevolution **federation model**

Working together

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- **Federation:** Will support TRevolution federation model
- **Safe outputs:** Use SACRO-AI disclosure control

Working together

Public Involvement and Engagement

Working together

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- Work with TRevolution engagement events

Working together

Public Involvement and Engagement

- Work with TREvolution engagement events
- Extending trust / control across organisations

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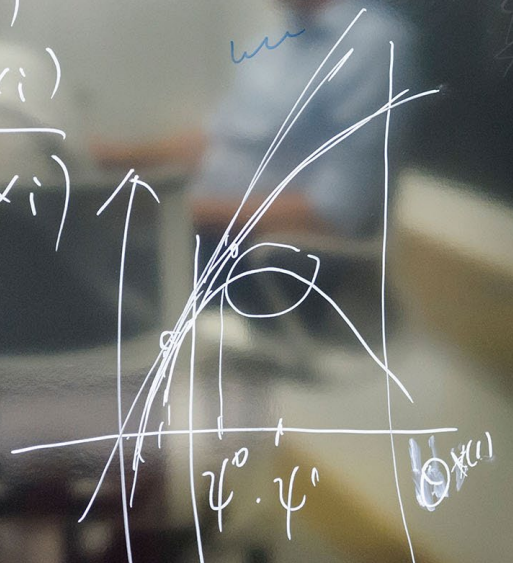
Public Involvement and Engagement

- Work with TRevolution engagement events
- Extending trust / control across organisations
- Research with AI/ML models
- Research at large scale

$$= \frac{1}{C_0} h_0(x)$$

$$\int \frac{h_0(x)}{h_\psi(x)} p_\psi(x) dx$$

$$- \frac{1}{h} \sum \frac{h_0(x_i)}{h_\psi(x_i)}$$



The graph shows a coordinate system with a curve labeled $h(x)$. Several straight lines are drawn tangent to the curve at different points, representing a piecewise linear approximation. The points of tangency are labeled ψ^0, ψ^1 . There is also a label ψ near the origin. The graph is drawn on a chalkboard with some other faint markings.

Questions?

Federating Operations and Collaborations Using the Five Safes



Dr Dale Kirkwood
Public Participation Lead
On behalf of the team
Dr Becca Wilson
Principal
investigator

Funding provided: £399,960.63

Improving the use of a **common language** to support researchers, data scientists and technologists to deliver upon the “**Five Safes**” principles with the NHS Secure Data Environment programme.

To enable **consistent** and **transparent** federated analysis across multiple datasets.

To deliver better research outcomes, **public benefits** and improved public trust in the use of their data.

What is



What is



further info
at
datashield.org

DataSHIELD is an infrastructure and software that enables



Remote
(federated
)



Non-
disclosive
(de-identified)



Analysis
(research
)



on Sensitive data
(our data!)

What do you mean by federated analysis?

What do you mean by federated analysis?

Federated analytics is a way to analyse health data securely without the data ever leaving its original location.

Instead of combining all the data in one central place, which we know the public dislikes for security concerns, researchers send their analysis to where the data is held.

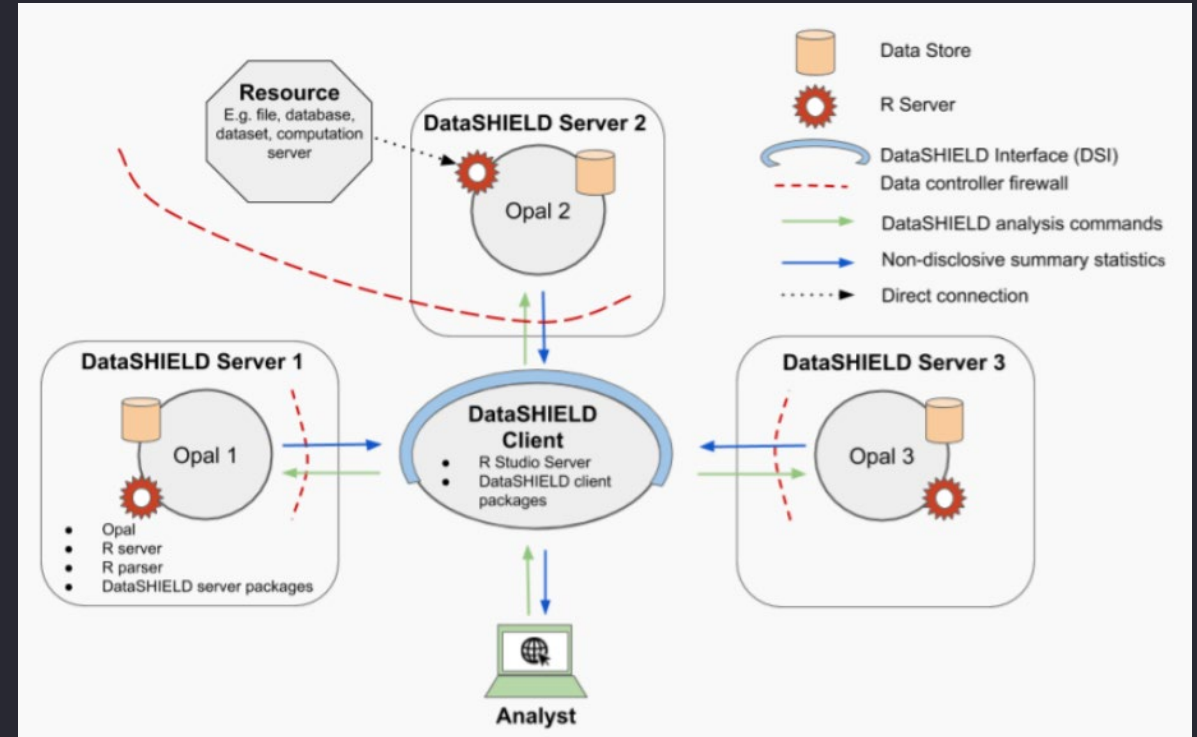
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What do you mean by federated analysis?

Even the definition amongst data scientists and data protection professionals can vary too... not great for **consistency**.

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 About this event In the inaugural webinar of the Federated Analysis: State of the Science Collective Learning Series, Dr. Kim McGrail, ...
YouTube · Health Data Research Network Canada · 11 Jan 2024

10 key moments in this video

www.youtube.com › watch

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 What is federated analysis Speaker: Yannis Ioannidis, University of Athens, Athena Research Center, Greece The Future of Medical Data ...
YouTube · HBP Education · 7 Oct 2022

10 key moments in this video

We would show a nice 2 minute video to explain but that is part of what **we are going to create** too.

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Some examples of what we need to improve the **communication** of and answer to support trust building

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- How does that protect my privacy?
- Does it involve “data sharing”?
- Are copies made?

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Data Use and **IMPACT!**

- How does it improve the use of data?
- How can it improve research?
- What benefits will it bring to the NHS?
- What benefits will it bring to my family, community and me?

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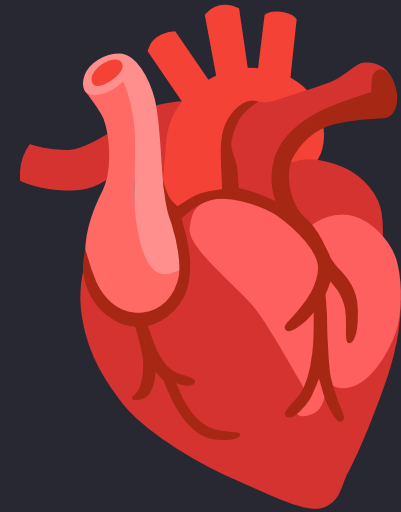
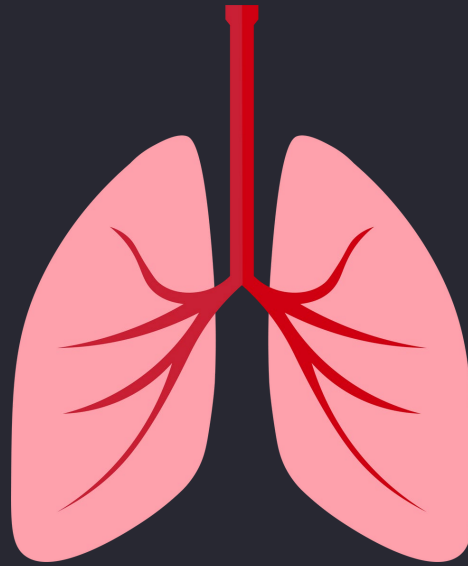
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Why is **common language** so important?

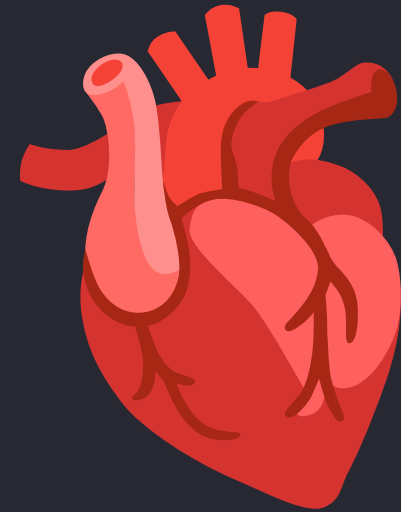
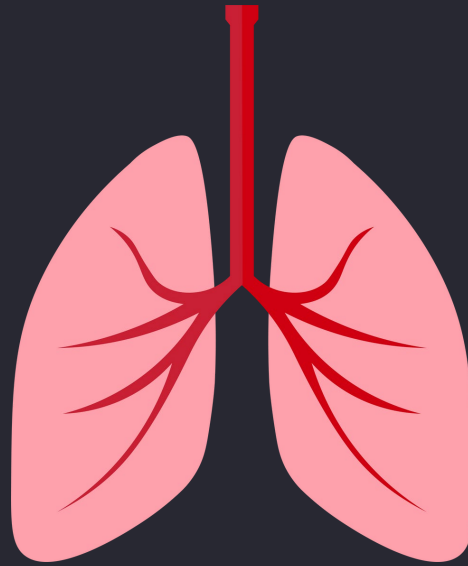


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Airway

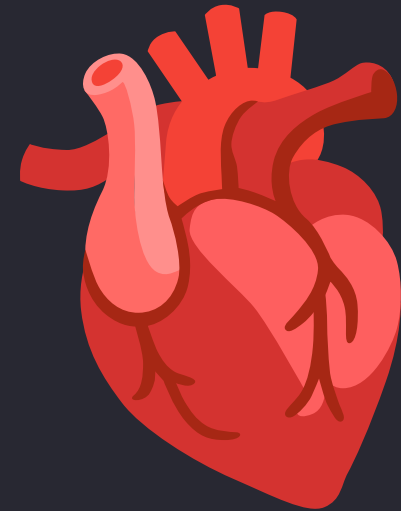
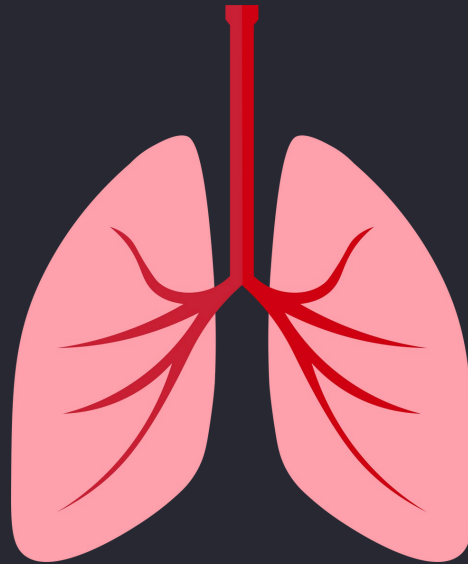


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Airway



Breathing

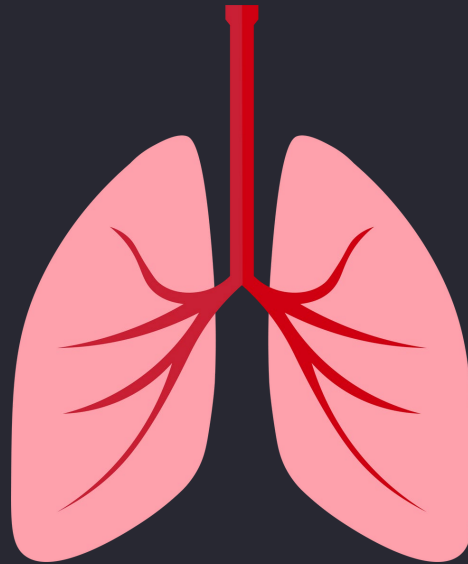


Why is **common language** so important?

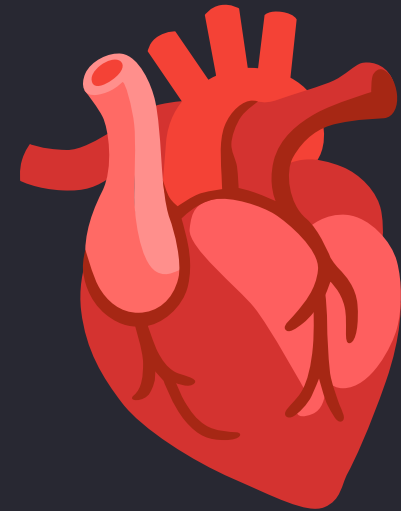
Airway



Breathing



Circulation

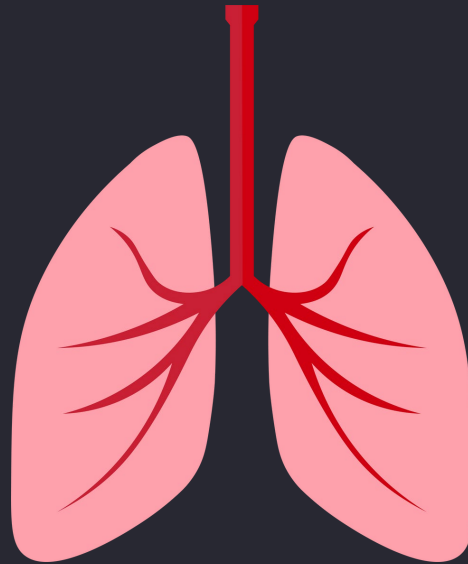


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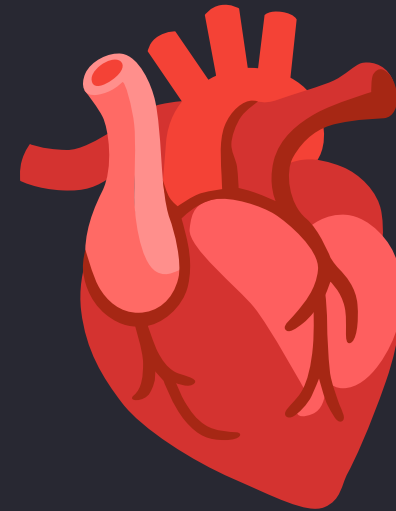
A



B



C



A **common language** enables teams to work better together. As well as helping us explain things to patients if we make efforts to reduce jargon and “say it like it is”.

We also use **RSVP** to handover information

We also use **RSVP** to handover information

RReason

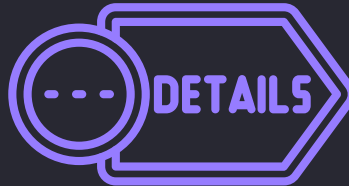
WHY?

We also use **RSVP** to handover information

Reason

Story

WHY?

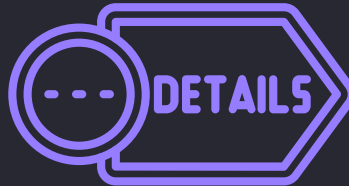


We also use **RSVP** to handover information

R Reason



S Story



V Vitals

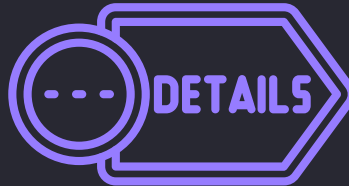


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R Reason



S Story



V Vitals



P Plan

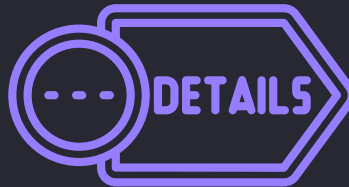


We also use **RSVP** to handover information

R Reason



S Story



V Vitals



P Plan



A **common language** enables professional to communicate more clearly to each other and to the public.

It supports **transparency, effectiveness and safety**.



FOCUS-5





The World Economic Forum estimates that
97% of hospital data goes unused.



The **World Economic Forum** estimates that **97% of hospital data goes unused.**

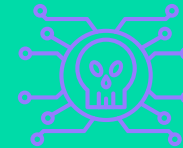
2024: Public attitudes to data in the NHS



2,265 people

Survey, focus groups and interviews
Established 6 population segments

82% worried
about cyber
attacks



50% worried about
the NHS selling their
data

48% of people are very comfortable that patient data was used for population health management and planning and improving services, and slightly less **(42%) for research.**

<https://digital.nhs.uk/data-and-information/keeping-data-safe-and-benefitting-the-public/public-attitudes-to-data-in-the-nhs-and-social-care>



The **World Economic Forum** estimates that **97% of hospital data goes unused.**

Two
problem
worth
solving

Improving health data
use for **public benefit**
through **research and**
innovation

Building public
trust by creating
systems that have
sound principles

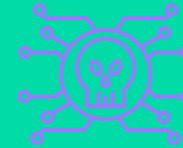
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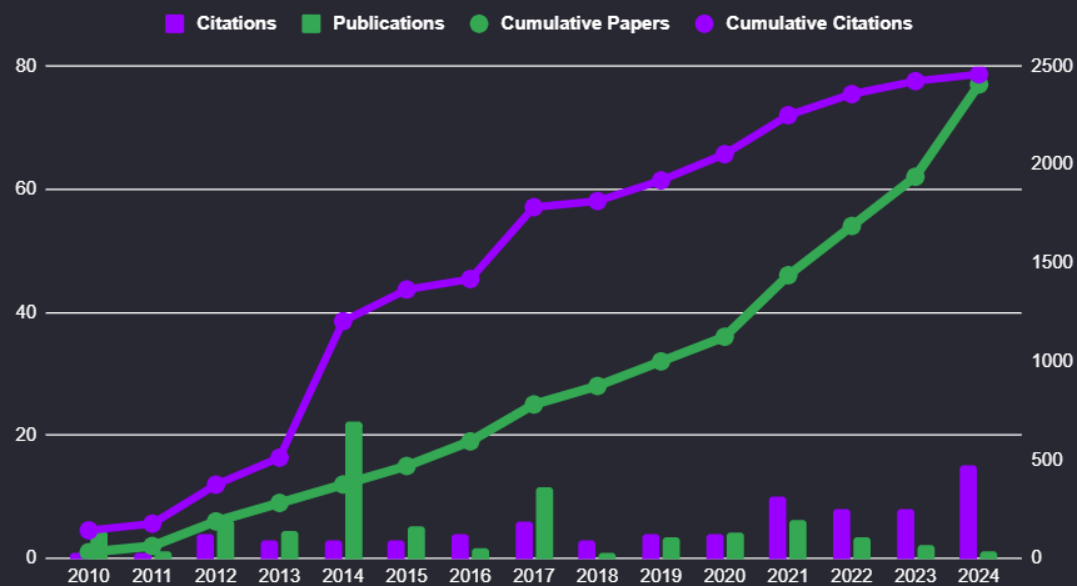
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Papers and citations over time



Collaborations and activity across the Globe



DataSHIELD has been used by researchers for over 10 years to safely conduct federated analysis'.



The Five Safes Framework



Ritchie et al developed a **common language** to support professions in building systems that promote the “**Safe Use**” of data.

It has public support when used to frame and explain our principles. It is something we need to build upon and deliver on.



The Five Safes Research Object Creates (5SROC)
were created by DARE UK TRE-FX programme

These improvements in consistency in the way we document and deliver data analysis across a large network.

These contain details such as:



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These contain details such as:

What data is held?
analysis?



How do you manage risks?



What data protection is in place?



How do you do an



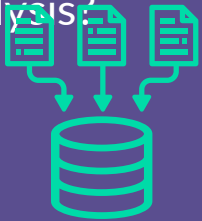


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These contain details such as:

What data is held?
analysis?



How do you manage risks?



What data protection is in place?



How do you do an



This bundle of information is called a “**Research Object**”. They create a blue print or map to guide others towards success.... knowledge... discovery.



There is a growing need to conduct data analysis across large populations.

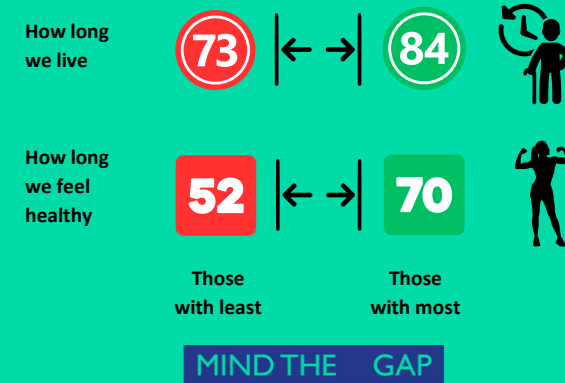
This requires doing research across multiple datasets.

Without sharing the data!

Which remains challenging and something the NHS Secure Data Environment programme and projects like ours are trying to fix.

If we are to improve health care, reduce inequalities and build public trust we need to use money wisely, such as our grant funding, to build systems that promote success, privacy, transparency and openness.

The price of health inequality





We aim to advance secure and effective healthcare data analysis by building upon the 5SROCs and embedding it with the NHS Secure Data Environment.

Research

Documentation

Developing the common language within the “Five Safes Research Object Creates”.

Standardising
Embedding

5SROC standards within the NHS SDE

Enables recording, checking and approval in the SDE of what and how patient data is used by researchers.

Federated Analysis

Create a blue print for DataSHIELD and TRE-FX standards to come together to ensure consistent and transparent federated analysis.

Integrating
Involving

the Public to
develop
resources and ideas.

To grow how we use data in a manner that builds trust and be resilient and responsive in the face of growing change.



97% of data goes unused impairing our ability to innovate. Frustrated more by governance than limits of technology. High standards of privacy and socially acceptable use of data are essential to unlock it's potential



Prior attempts to improve data use failed to meet these high standards. Since then, there has been improved public engagement, use of frameworks like Five Safes and efforts to become more transparent and open.



This growing need to conduct data analysis across large populations requires working across datasets without sharing the data!. To release new insights into health and wellbeing.

This will require both technological and cultural (goverance) innovations and adoption such as DataSHIELD and 5SROCs.



- We aim to support standardising the language and embedding it across the NHS by mapping out these “research objects” framed by the Five Safes principles.
- We will support the integration of federation and create a trusted blue print to increase adoption.
- We will improve public participation in that process and support improved resources to help bring them closer to the conversation and influence the future direction of this vital space.



TRE Adopters SAFER

SAFER

SAIL Advancing Federated Exploration
and Readiness

Apr 2025



The Team



Ashley Akbari

Professor Population Data Science Research
Head of SAIL UDSS team

SAIL Databank
Swansea University



Cynthia McNerney

Head of Data Acquisition
& Provisioning

SAIL Databank



Sharon Heys

Head of Legislation &
Due Diligence

SAIL Databank



Claire Newman

Public Engagement
Lead SAFER

SAIL Databank





What is SAIL Databank?

- The **Secure Anonymised Information Linkage** (SAIL) Databank.
- The national Trusted Research Environment (TRE) for Wales.
- SAIL has been in operation for over 15 years.
- Contains billions of individual-level (and residential-level) linkable records across health, administrative and wider data sources.
- Operating a mature governance and compliance model.
- Pioneering innovative technical solutions in partnership with the Secure eResearch Platform (SeRP).





What was the driver to getting involved?

- We view federation as exciting and innovative
- Making the role of the researcher easier - undertake work at scale
- SAIL has been involved in "manual federation" projects during COVID that contributed toward the 1st 65-million person analysis and output in relation to COVID vaccine uptake and safety
- Operating TREs/SDEs is complex, dynamic, and "ever-changing" environment whilst federation presents challenges - we believe the potential gains are huge and worth pursuing





- SAFER draws upon the skills of the professionals working with the SAIL Databank in Swansea University.
- SAFER will review the governance and compliance challenges of early adoption of federated analytics within the SAIL TRE.
- Seeks to explore TRE's governance processes and application process for federated analytics.
- How to create a seamless processes from the perspective of the researcher.
- How to ensure compliance and adherence to the law and to ensure the public and key stakeholders are engaged.





Which TRevolution capabilities is SAFER working with?

How the TRevolution technologies (TRE-FX and TELEPORT) will operate in association with existing / future governance models and application processes to produce a protocol for delivering federated analytics that can be applied in SAIL and across TREs/SDEs.

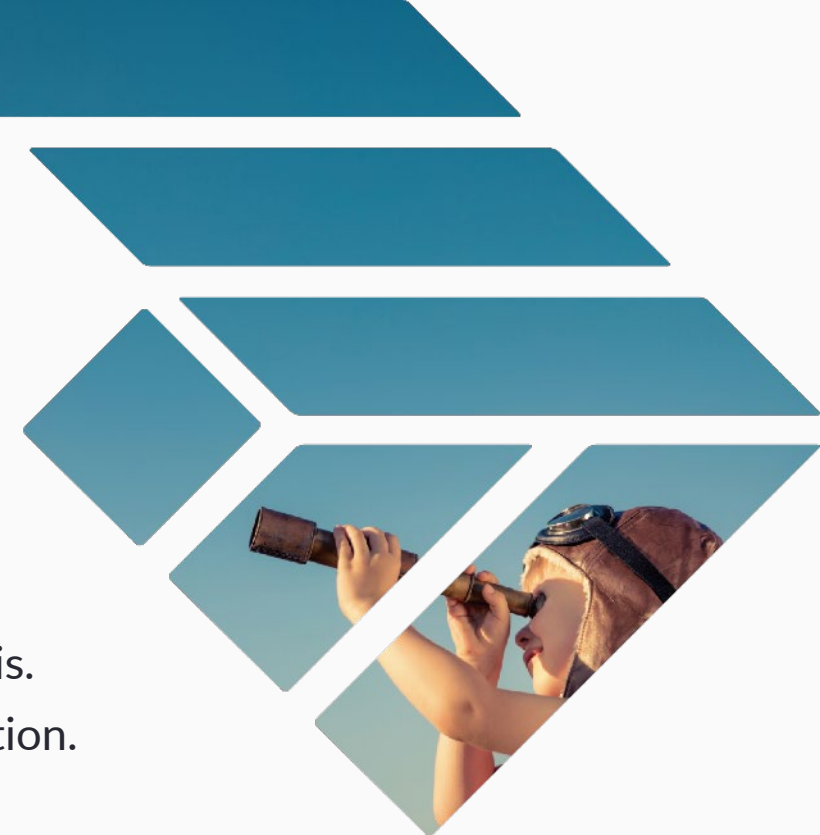
How TRevolution tools (SATRE and SACRO) will affect and improve existing governance and compliance models, policies and processes.





Scope of SAFER

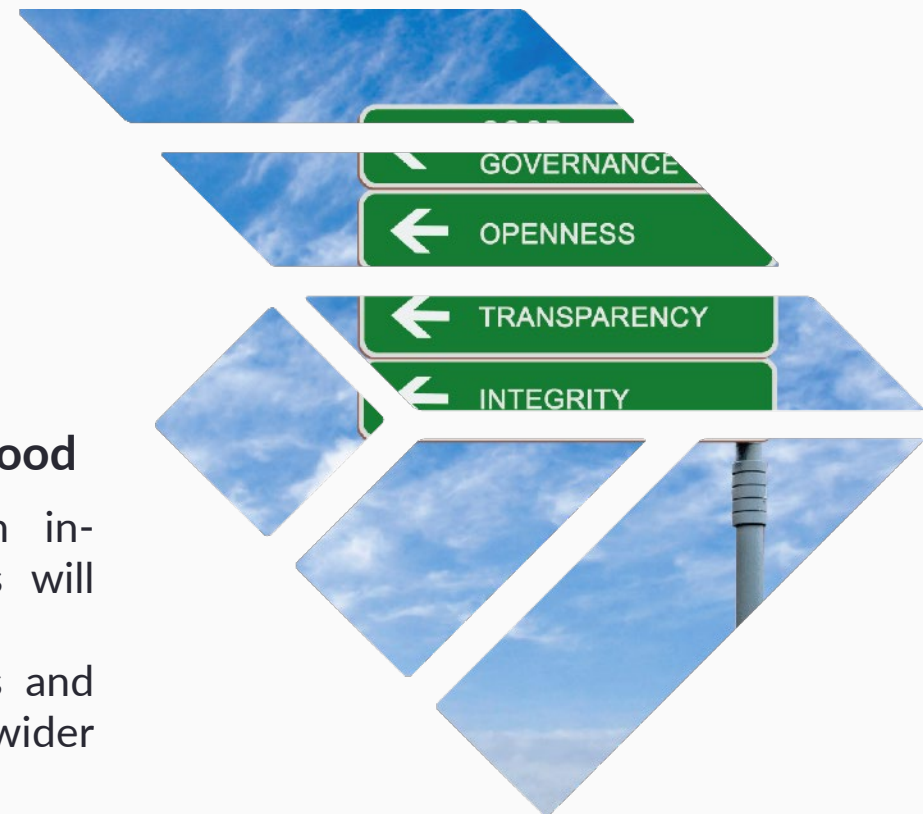
- How to operationalise federated analytics within a mature TRE.
- Development of a governance and compliance protocol for federated analysis.
- Ensuring public and stakeholder trust in federated analysis through consultation.
- Legislation review UK-wide and associated policies and processes.
- Creation of template documents, data sharing agreements and data access agreements specific to data federation.
- Full approvals and applications review to create seamless federation at an operational level, including opportunities for disclosure control improvement.
- Timetabling approvals where multiple data sources are required.
- Review of all certifications and security accreditations in light of federation.





PIE – Public Involvement & Engagement – Public Data for Public Good

- Series of **open consultations and engagement activities** through in-person/hybrid events and meetings, outcomes of these discussions will inform further engagement plans and outputs.
- **SAIL's public advisory panel, the Consumer Panel:** discuss proposals and planned consultations, seek views of acceptability and risks, feed into wider project deliverables and form part of the final report.
- **SAIL's information governance review panel (IGRP):** to introduce federation and discuss information and governance changes, challenges and benefits.
- Introduce 'Federated Data' to wider public members interest in data and TRE governance, where we plan to have lay participation and consultation to address views, opinions and concerns on the acceptability of model.





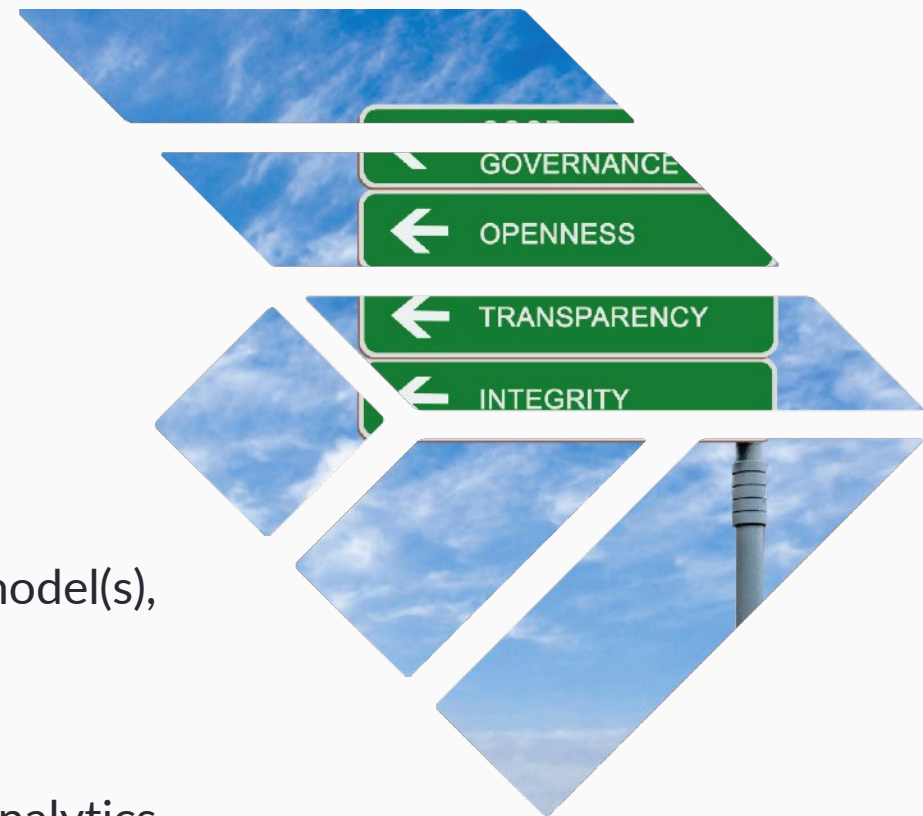
Data Providers Consultations

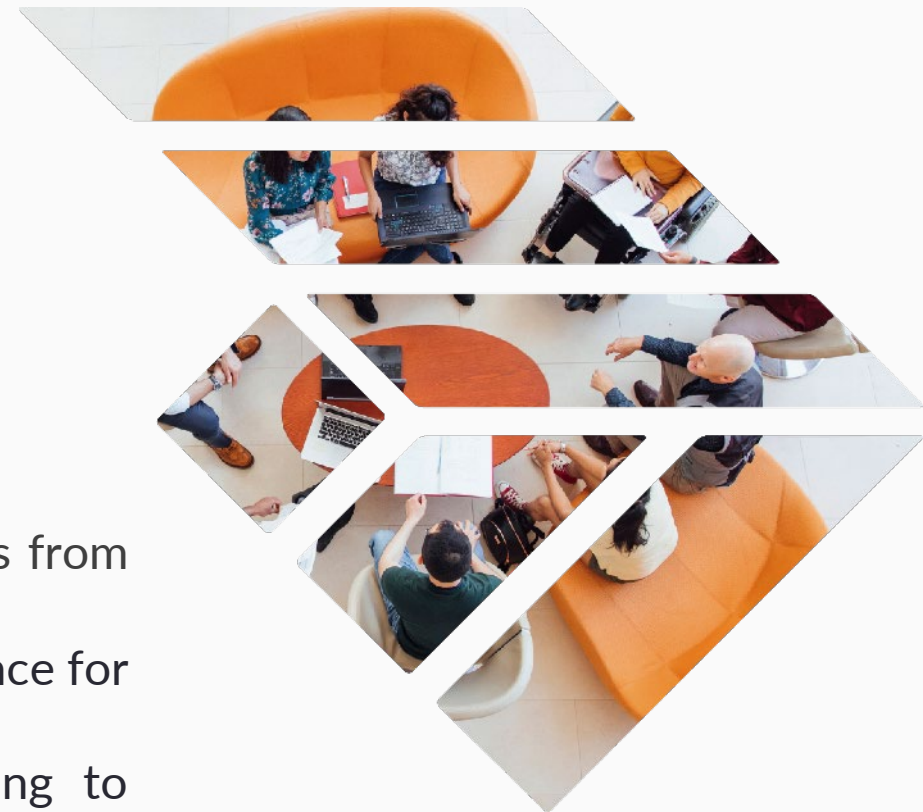
Acceptability and differences of federated analytics model(s), governance and legal compliance questions/challenges.

- **Welsh Government**
- **Public Health Wales**
- **Digital Health & Care Wales**, acceptability of federated analytics model(s), governance and legal compliance questions/challenges.

Leading to:

- **Researchers**, the
- **ICO/Polymakers** and
- **Wider National TREs and SDEs**





Engagement Activities

- **Acceptability of Federation Model** - what is it? and how it differs from the current model(s)?
- **Governance & Compliance** - include all major legislation and guidance for UK jurisdictions.
- **Security & Accreditation** - review of compliance issues relating to security certification and accreditations to assess whether federation poses any risk to existing, long standing certifications and whether any potential changes may be required to scope.
- **Legal Changes** - review the legal basis and direct and indirect impacts of federation, and changes to existing SAIL policies and processes that federation may/will require to operationalise.





Any Questions?



VISTA

ViabIe Implementation of SATRE, SACRO and Tools for AI

Driving innovation and scaling the NHS

- **An ageing population** – By 2030, 21.8% of the UK population will be aged 65 or over, increasing pressure on healthcare services. [Age UK](#)
- **From treatment to prevention** – The NHS must shift focus to stay sustainable.
- **Harnessing healthcare data for prevention** – Utilising the wealth of routinely collected health data can predict and prevent illnesses, improving patient outcomes.
- **Safe & efficient research** – We need secure, standardised environments that protect patient privacy while enabling groundbreaking discoveries.

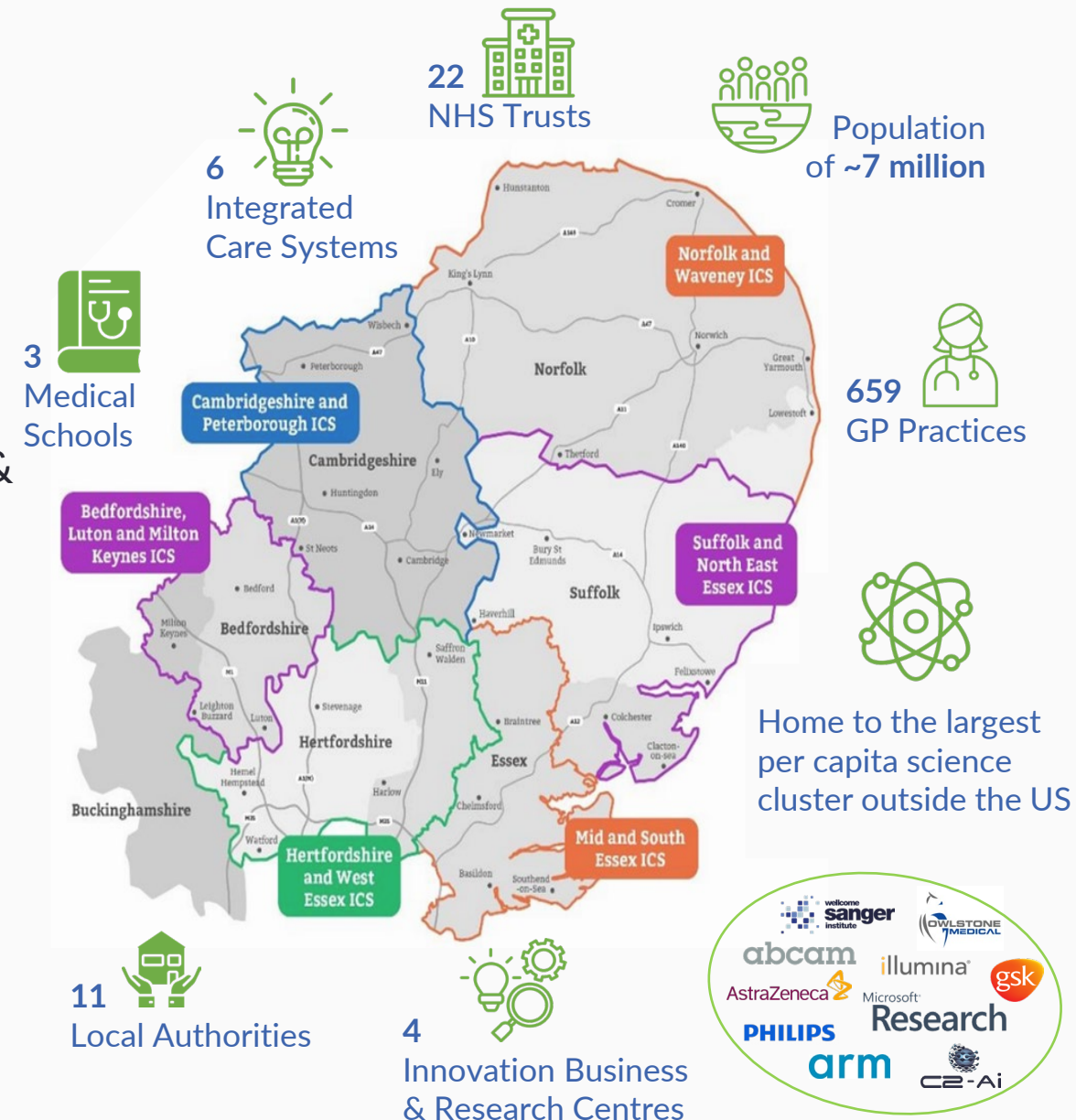
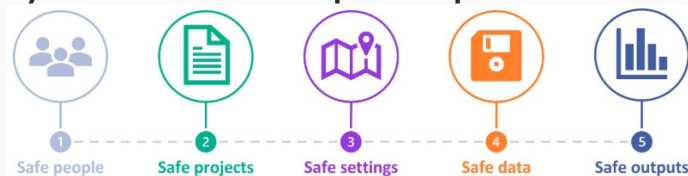


East of England Secure Data Environment



A regional data infrastructure asset

- Secure cloud platform (AWS)
- Tooling required for analysis
- Keep data safe whilst protecting people's privacy
- Enabling approved people to access de-identified health & care data for approved projects
- Maximise research opportunities for patients
- Hosted by Cambridge University Hospitals
- Underpinned by “Five Safes” principles

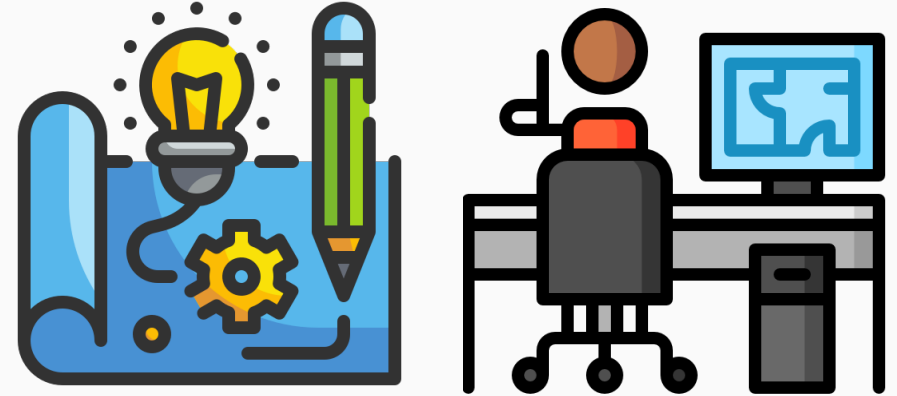


Standard architecture for trusted research environments - SATRE

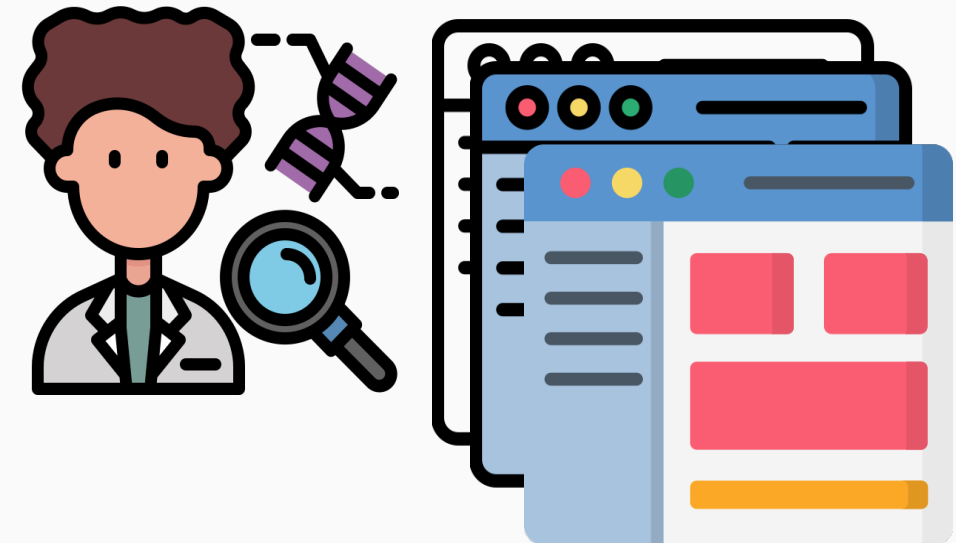


- **Bridging the Gaps in Research Environments** – TREs are inconsistent, forcing researchers to adapt to different systems.
- **SATRE as a Common Standard** – SATRE simplifies TRE development and use for both builders and researchers.
- **Setting a Gold Standard for SATRE** – Our SDE is built on SATRE, & we will deliver a benchmark for SATRE implementations.
- **Driving Innovation and Improvement** – We collaborate to enhance SATRE with automation, federation, and standardisation.

Standard Architecture



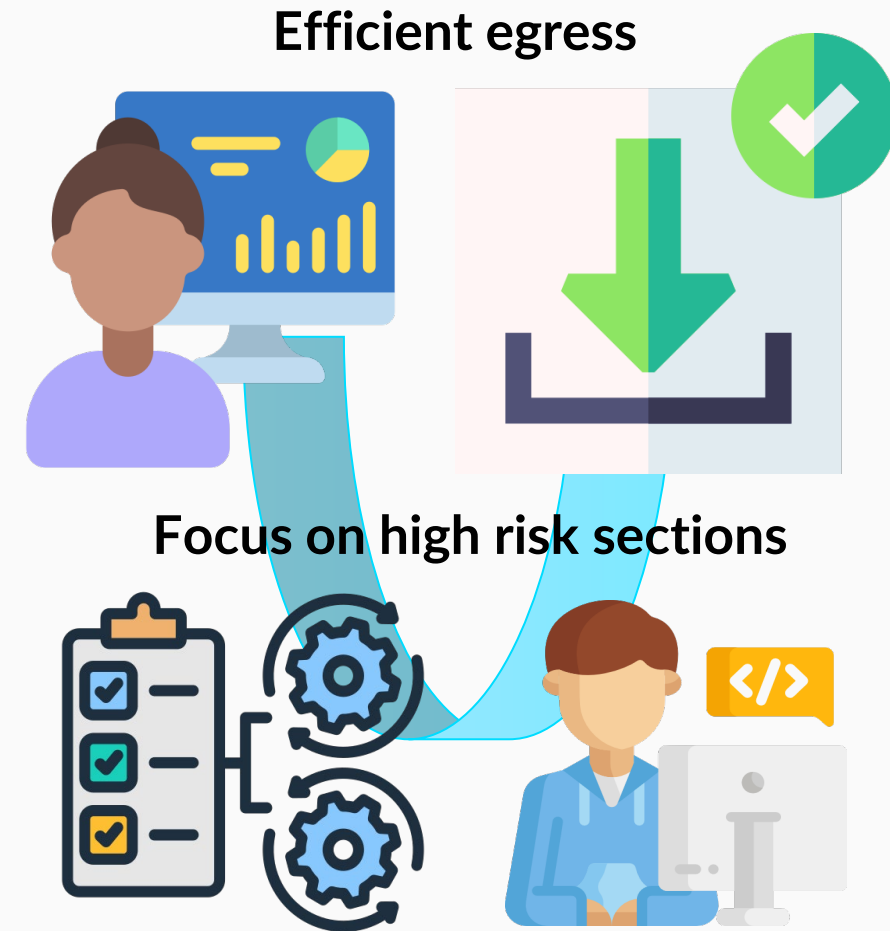
Common Interfaces



Protecting patient privacy while enabling groundbreaking discoveries



- **Enhancing Security in TREs** – Researchers access data within TREs rather than downloading it, reducing breach risks.
- **Balancing Innovation and Data Protection** – Researchers need to extract results safely while preventing sensitive data leaks.
- **SACRO: Smarter Disclosure Checking** – SACRO helps researchers annotate outputs, guiding data managers to high-risk areas for faster, safer reviews.
- **Operationalising and Improving SACRO** – We collaborate with the SACRO team, providing researcher feedback, develop training, and support adoption across the SDE network.

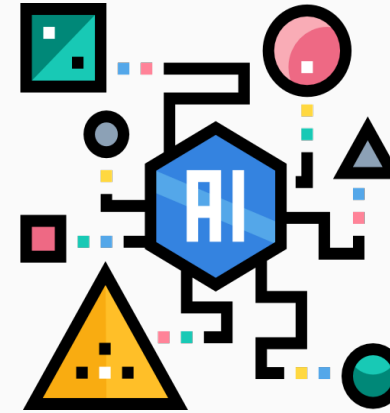


Enabling AI training inside TREs

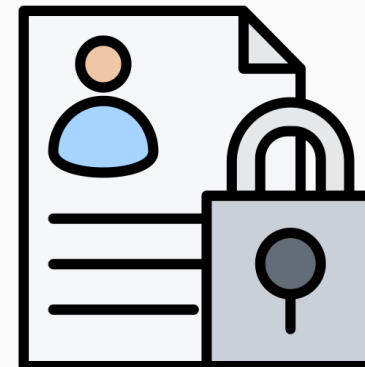
- **AI Model Training Risks in TREs** – Sensitive data can unknowingly be captured during AI training, posing extraction risks.
- **Developing Advanced Risk Assessment** – We need tools to assess AI methods and detect potential data leakage.
- **Enhancing Security with SACRO ML** – Partnering with SACRO ML to analyze and test models for embedded sensitive data.
- **Building a Secure AI-Ready TRE** – Updating TRE architecture and governance to support safe AI model training.



Risk Assessment



Model Testing



Public involvement

- **Embedding Public Engagement in the SDE Programme** – Public involvement is central to our work on secure data access.
- **Collaborating with the SDE Public Advisory Group** – Engaging with experts to shape our approach and address concerns.
- **Raising Awareness on Key Topics** – Supporting public understanding of AI model training and semi-automated output checks.
- **Aligning with SACRO Public Engagement Activities** – Expanding efforts to ensure transparency and trust.



The poster is titled "Research Using NHS Data: Your Choice". It features four circular images: a healthcare worker, a cityscape, an older man, and a woman holding a child. The poster is divided into sections with text and bullet points.

East of England Secure Data Environment
Part of the NHS Research Secure Data Environment Network
Norfolk and Norwich University Hospitals NHS Foundation Trust

Research Using NHS Data: Your Choice

The East of England Secure Data Environment
The East of England Secure Data Environment (SDE) allows approved researchers to securely access de-personalised patient records from people in the East of England to do research that improves public health.
It has been built in partnership with NHS organisations across the East of England, with state-of-the-art cybersecurity measures, controlled access and robust oversight of data usage.

Opting out
If you do not want to have your data used for research through the East of England SDE you can opt out via:
• **The East of England SDE opt out:** This will opt you out only from applicable research through the East of England SDE. For more information email: cuh.eoe.sde@nhs.net
• **The National Data Opt Out:** This will opt you out of all applicable research using your data. For more information, visit: digital.nhs.uk/services/national-data-opt-out

How will the SDE benefit patients?
Research is vital to improve the way that we prevent, predict, diagnose and treat health conditions. The East of England SDE will make research using NHS data safer and easier, while retaining control of that data in the NHS.

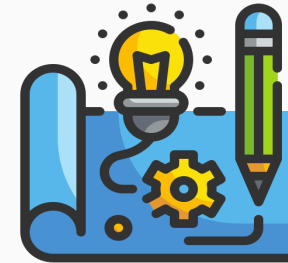
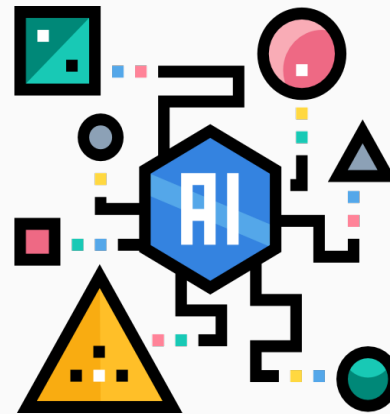
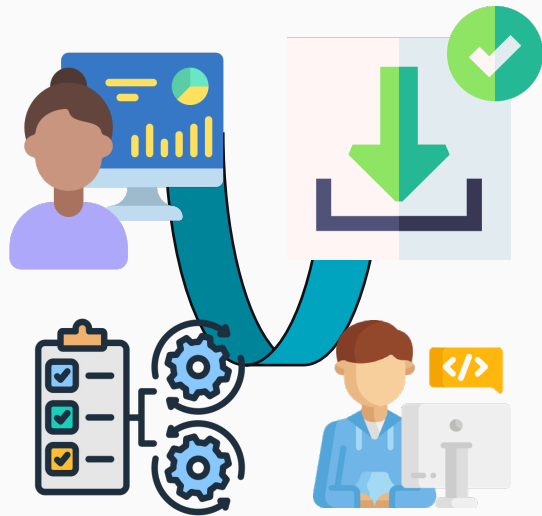
Data privacy at NNUH
For information on the Norfolk and Norwich University Hospital Trust's policies or to request copies of our Data Protection Impact Assessments, please contact the Data Protection Officer, Vimmi Lutchmeah-Beeharry, at info.gov@nnuh.nhs.uk.

Get in touch Questions or Comments? You can get involved or find out more at our website eoe-securedataenvironment.nhs.uk or tell us what you think by emailing cuh.eoe.sde@nhs.net

Follow Us

The East of England Secure Data Environment has been approved by the XXX Research Ethics Committee and the HRA Confidentiality Advisory Group (Reference number)

Questions





Pan-North Data Research Advancements for Multi-domain Access and Analysis

Katherine O'Sullivan, University of Sheffield and Yorkshire & Humber SDE

Phil Waywell, Yorkshire & Humber SDE

Alan Bagnall, Newcastle upon Tyne NHS Trust and NENC SDE

Helen Duckworth, Arden & GEM Commissioning Unit and NW SDE



UK Research
and Innovation



The Project and Partnership

- Collaboration between NHS and university SDEs covering more than 15 million people across diverse regions in the North of England:
 - Yorkshire & Humber NHS Secure Data Environment
 - University of Sheffield Secure Data Services
 - North East North Cumbria NHS Secure Data Environment
 - North West NHS Secure Data Environment
- Using TRevolution capabilities to create a cross-sector Northern Data Library, making federated research faster, safer, and more consistent within and across TREs and SDEs.



TREvolution Capability 1: SATRE

- Undertake SATRE (and SATRE-SDE) assessments of our independent environments
- Evaluate our equivalency to provide areas for improvement
- Improve the process, gaps and/or improvements to the framework leading to SATRE v2.0
- Equivalency exercise will lead to a shared pan-North Information Governance framework enabling federation across our environments

TREvolution Capability 2: TRE-FX

- Assess the feasibility of implementing federated querying across the infrastructure of the participating SDEs
- Work with regional and local IG specialists and PPPIE teams to identify key risks associated with federated querying and metadata management, testing risk mitigation solutions
- Pilot the implementation of federated querying across our pan-North Group with synthetic data in the first instance

TREvolution Capability 3: SACRO

- Pilot of a federated output checking solution across the infrastructure of the participating SDEs
- Test SACRO-ML and build capability of semi-automated output checking of AI/ML models
- Work with regional and local IG specialists and PPPIE on the potential use as a 'set of eyes' in the 'four eyes principle' of output checking
- Feasibility assessments on federated analysis and AI/ML model research output checking in SDEs, evaluating technical, governance, and operational aspects.
- Collate and provide a prioritisation mechanism to help the SACRO researchers develop solutions for unsupported output types to aid in developing the breadth and depth of the tool's coverage
- Contribute to the SDC-REBOOT community will be how organisations work together to establish the thresholds for 'safe data' release in a consistent manner, particularly in the context of federated querying and AI/ML model egress

Public, Patient and Professional Information and Engagement

- Engage with existing robust PPPIE groups across our pan-North region to test and evaluate our approaches to federation
- Citizens' Juries in March 2025 to test the public's acceptance of federation across the North
- Work with the TRevolution team to co-design, co-produce and co-deliver PPPIE across the North of England to ensure that public are involved in all aspects of our Transformational Programme as well as the core TRevolution Programme
- A report capturing insights from patient, public, and professional engagement activities, ensuring solutions meet public benefit criteria.



Questions?



Semi-automated Output Assessment and Review

Brogan Taylor and Rebecca Lewton
Research Services and Data Access
Office for National Statistics





An introduction to the SRS



Main figures - [From our time series explorer](#)

Employment

Employment rate

Aged 16 to 64 seasonally adjusted (Jul - Sep 2024)

74.8%

= 0.0pp on previous year

[Analysis](#) [Data](#)

Unemployment rate

Aged 16 to 64 seasonally adjusted (Jul - Sep 2024)

4.3%

↑ 0.2pp on previous year

[Analysis](#) [Data](#)

Inflation

CPIH 12-month rate Oct 2023 to Sep 2024

3.2%

↑ 0.6pp on previous month

[Analysis](#) [Data](#)

GDP

Quarter on Quarter Jul - Sep 2024

0.1%

↓ -0.4pp on previous quarter

[Analysis](#) [Data](#)

UK population

Mid-year estimate (2023)

68,265,200

Health

Physical and mental health are important parts of people's personal well-being. Measures in this topic area cover both **objective** and **subjective** measures of health. They also cover satisfaction with the healthcare system to capture how the nation's health is supported.

census2021

Results from Census 2021 are out now. Find data and analysis from Census 2021.

[Find out more about census](#)

Healthy life expectancy

Change not assessed

Healthy life expectancy at birth has decreased for both males and females in 2020 to 2022 compared with 2011 to 2013, when the time series began

In England, healthy life expectancy at birth was estimated at 62.4 years for males and 62.7 years for females in 2020 to 2022. This shows a long-term negative change since 2015 to 2017 for both males (63.4 years) and females (63.9 years). Short-term change is not assessed as estimates are based on overlapping three-year time periods.

Source: [Health State Life Expectancies from the Office for National Statistics](#)

Healthy life expectancy at birth by sex, 2011 to 2022, England

Updated: 09-May-24

Satisfaction with health

No change

Age: Sept to Oct 2023

Approximately two-thirds of adults in Great Britain are fairly or very satisfied with their health

Of adults in Great Britain, 67.1% said that they were fairly or very satisfied with their health in general, when asked in September 2024. This shows no short-term change (66.9% in September to October 2023). Long-term change is not assessed because data for these comparisons are not available.

Source: [Opinions and Lifestyle Survey from the Office for National Statistics](#)

People who are fairly or very satisfied with their health, September 2023 to September 2024, GB

Updated: 14-Nov-24

Physical health conditions

Positive change

Since: 2020

Fewer adults reported living with certain physical health conditions

In England, the Health Index score for people reporting having cancer, cardiovascular conditions, dementia, diabetes, kidney and liver disease, chronic musculoskeletal or

People reporting having cancer, cardiovascular conditions, dementia, diabetes, kidney and liver disease, chronic musculoskeletal or respiratory conditions, 2018 to 2021, England

110:

Time series related to earnings and working hours

AWE: Whole Economy Year on Year Three Month Average Growth (%) - Seasonally Adjusted Total Pay Excluding Arrears

5.6% 2024 NOV

Release date: 21 January 2025

Next release: 18 February 2025

Year on year 3 months average

AWE: Whole Economy Level (£) - Seasonally Adjusted Total Pay Excluding Arrears

£ 705 2024 NOV

Release date: 21 January 2025

Next release: 18 February 2025

AWE: Whole Economy Year on Year Three Month Average Growth (%) - Seasonally Adjusted Regular Pay Excluding Arrears

5.6% 2024 NOV

Release date: 21 January 2025

Next release: 18 February 2025

Year on year 3 months average

AWE: Whole Economy Level (£) - Seasonally Adjusted Regular Pay Excluding Arrears

£ 660 2024 NOV

Release date: 21 January 2025

Next release: 18 February 2025

Average actual weekly hours of work for full-time workers (seasonally adjusted)

36.6 hours 2024 SEP-NOV

Release date: 21 January 2025

Next release: 18 February 2025

nomis
official census and labour market statistics

KS101EW - Usual resident population [Show / Hide Tools](#)

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Table population: All usual residents

Variable by measures

Units: Persons

Date 2011

Geography England and Wales

	value
All usual residents	56,075,912
Males	27,573,376
Females	28,502,536
Lives in a household	55,074,113
Lives in a communal establishment	1,001,799
Schoolchild or full-time student aged 4 and over at their non term-time address	685,206
Area (Hectares)	15,101,353.83
Density (number of persons per hectare)	3.7

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest

Table 1: Number of crime incidents by main crime types, to year ending June 2024

Offence	Number of incidents or offences in YE June 2024	Percentage change compared to YE June 2023	Twenty year timeline to June 2024	Source
Crime Survey for England and Wales (incidents)				
Fraud	3,560,000	7% [NS] ▲		CSEW
Theft	2,791,000	6% [NS] ▲		CSEW
Violence with and without injury	1,125,000	26% [NS] ▲		CSEW
Computer misuse	952,000	12% [NS] ▲		CSEW
Criminal damage	668,000	2% [NS] ▲		CSEW
Police Recorded Crime (offences)				
Robbery	81,931	6% ▲		PRC
Knife and sharp instruments	50,973	4% ▲		PRC
Homicide	562	-3% ▼		PRC

[S] = significant
[NS] = not significant

= Comparable data unavailable

Total Trade (TT): WW: Balance: BOP: CP: SA

£ -4,869 m 2024 Q3

Release date: 23 December 2024

Next release: 28 March 2025

Total Trade (TT): WW: Imports: BOP: CP: SA

£ 213,915 m 2024 Q3

Release date: 23 December 2024

Next release: 28 March 2025

Total Trade (TT): WW: Exports: BOP: CP: SA

£ 209,046 m 2024 Q3

Release date: 23 December 2024

Next release: 28 March 2025

Trade in Goods (T): EU: Balance: BOP: CP: SA

-33,545 2024 Q3

Release date: 23 December 2024

Next release: 13 February 2025

Trade in Goods: EMU(19): Balance: BOP: CP: SA

£ -9,978 m 2024 NOV

Release date: 16 January 2025

Next release: 13 February 2025

ONS Survey Data



Collect survey data



Process data

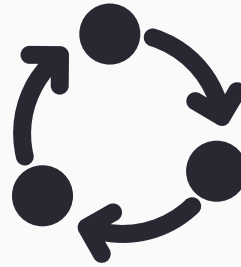


Publish statistics

ONS Survey Data



Collect survey data



Process data



Publish statistics



Offer **secure** access to
the microdata

The SRS in numbers

Provides accredited researchers with secure access to unpublished, de-identified data for research in the public good.



5,000
accredited
researchers



140
accessible
datasets

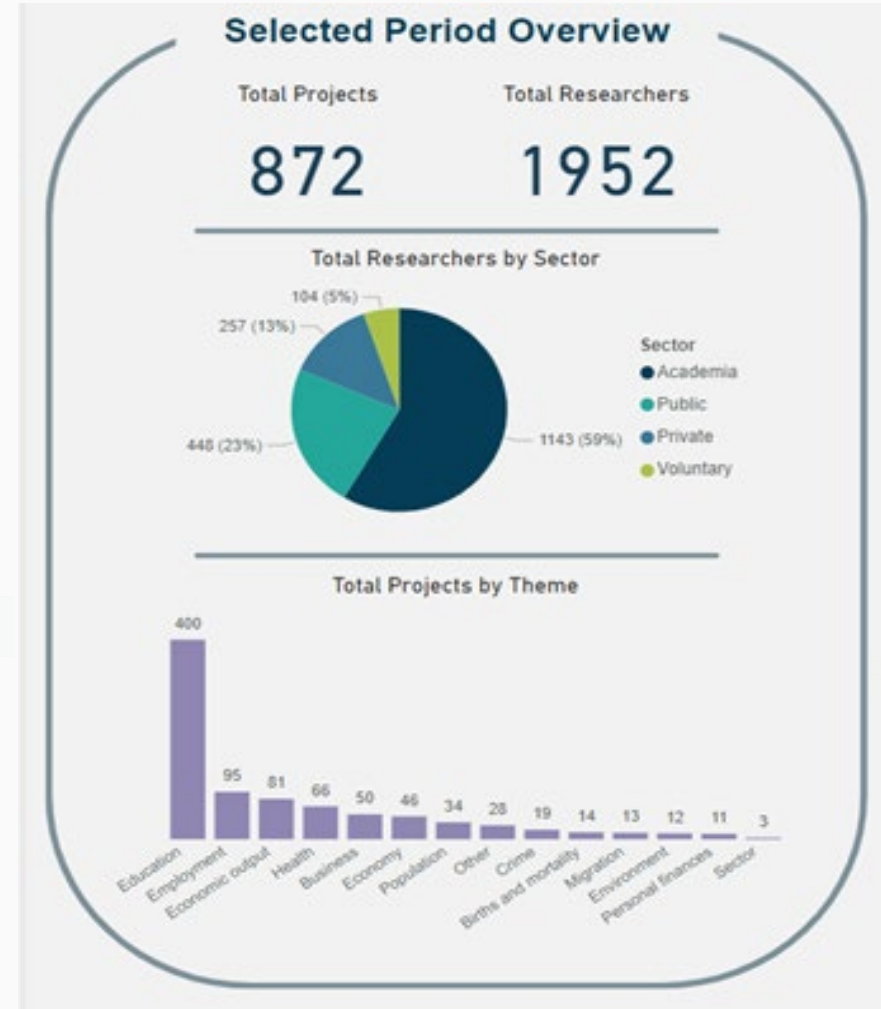


800
live
research projects



2,000
Outputs cleared
annually

The SRS in numbers



Five Safes Framework





Project Overview



UK Research
and Innovation

HDRUK
Health Data Research UK



ADRUK
Data-driven change



Project Overview

All outputs from the SRS are currently checked by two independent manual checkers

This can be time consuming, and costly.

The project will seek to ascertain whether one of these checkers can be removed, and a new model of output checking established.

To note: In order to maintain DEA accreditation, all outputs will be checked by two manual checkers and the automated tool for the duration of the project.

Feasibility Phase

Check tool complies with relevant policies

Assess operability of tool

Ensure sufficient support in place to help triage queries

Operational Integration Phase

Review processes and procedures that would need to change

Assess the quality of the tool in picking out statistical disclosure control (SDC) related issues on a range of topics

Seek researcher cohort to trial in live environment

Benefit realisation

More timely access to outputs

Potential reduction in operating costs

Training researchers in best practice



Collaborations



Collaborations

Integrated Data Service

Keen to strike up partnerships

Others can support our work by volunteering to be part of the researcher cohort who utilise the tool

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