



TRE Early Adopter: Summary of Ask

Dec 2024



Phase 2 - Transformational Programme

- New capabilities to production-readiness
- TREs test, configure and adopt
- Research using the new TRE capabilities



SO WHAT?!

- Enables faster, fit-for-purpose federated analysis of cross-domain data by researchers
- Automation for faster, cheaper research
- New research - AI models in TREs
- Less effort for researchers to move from one TRE to another
- Reduction in cost of TREs – more funds for research

Phase 2 - Transformational Programme

TREvolution: closed call,
building on previous driver
– one integrated
programme (submitted)

THIS call:
working with
TREvolution

Last year of
DARE Phase 2
(26/27)

- New capabilities to production-readiness
- TREs test, configure and adopt
- Research using the new TRE capabilities



TREvolution Vision

A standardised, inter-connected, federation-ready, TRE network
Streamlines multi-TRE analysis, and can access HPC

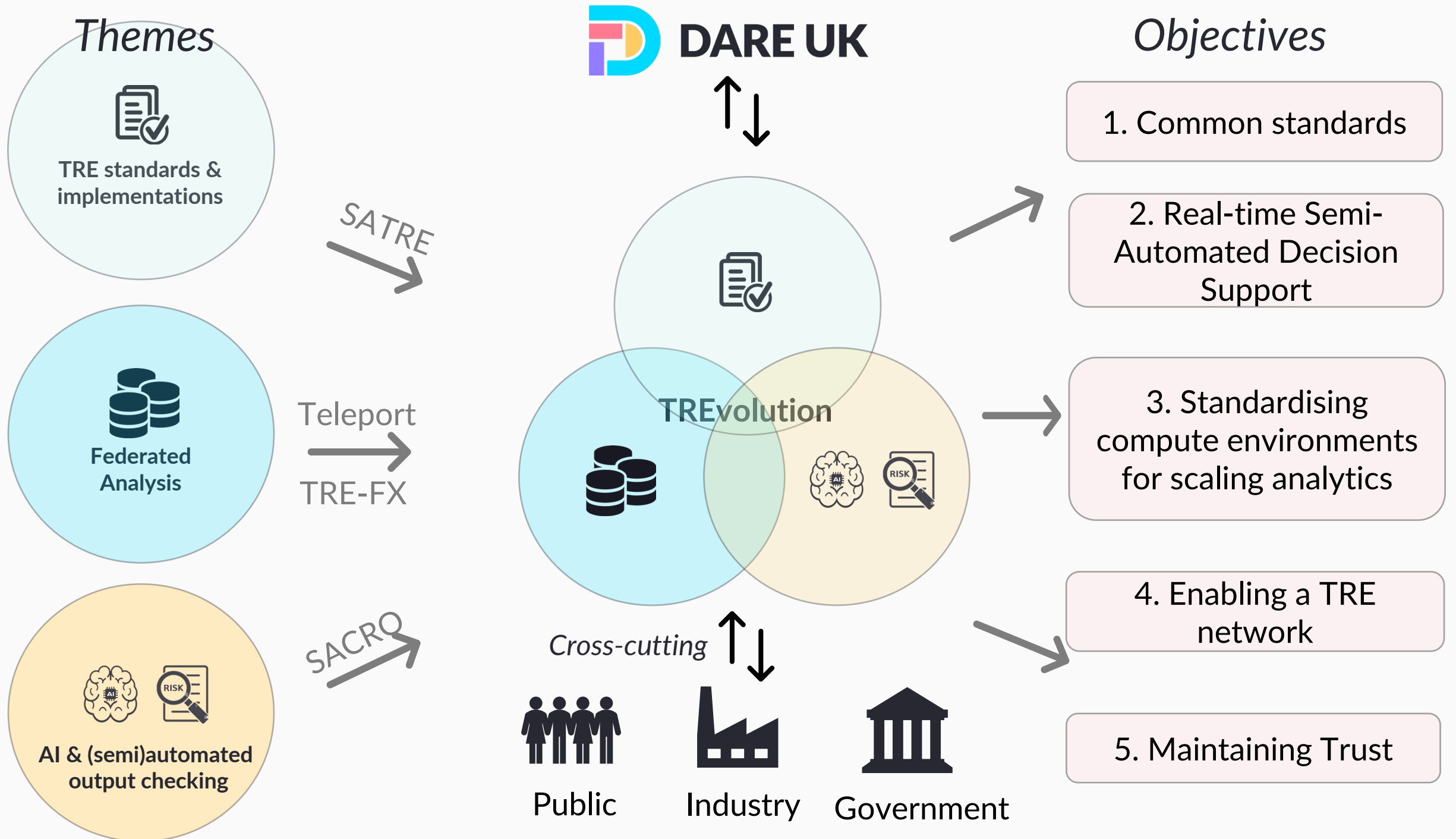
Researchers
interact with data

- using familiar tools and workflows
- **as if it were all in one place**

The network will be:

- **based on** platform independent common standards,
- **enabled by** reference implementations,
- **supported by** computational auto-assisted processes that maintain human oversight and public trust.

Careful introduction of technology to enable change ->
Building on the foundations of TREs without undermining them



TREvolution Practicality

"**T**ransition **M**inimum **V**iable **P**roduct capabilities to production-ready reference implementations; Ready for **t**esting in adoption in real-world research settings"

Timeframes and resource practicalities on all sides

Not about building a full-fledged production system for real use data. It's about standard, approaches and pilots; and that includes building your own implementation.

One Programme - Joint leadership, Shared Responsibility



- **Swansea (Thompson)** - Leads development of the technical components linked to the federated tooling.
- **Manchester (Soiland-Reyes)** - Leads the design of all metadata and the introduction of those to the infrastructure.
- **West England (Smith)** - Leads the disclosure control processes and (data) governance view.
- **Dundee (Cole)** - Leads the TRevolution Profile and integration with the SATRE specification plus infrastructure-as-code implementation.
- **Nottingham (Quinlan)** - Leads the cross programme work and the connection to other federated platforms and international partnerships.

One Programme – Three time periods

March 2025: Rapid design and co-design period. Your early work before March 25 can help inform the crucial design phase

April 25-March 26: Rapid joint builds, focus on 'deployability', governance, PIE and compatibility with existing approaches

April 26 – March 27: Real world deployment of the reference implementation as a single, integrated, operational stack to demonstrate readiness

What we are looking for

- A portfolio of projects across TRevolution
- Co-design, why will it work, why won't it work – what have we missed?
- Try deployments, try your own implementations of standards, give feedback.
- Bring governance perspectives, so compliance is baked into the design
- Bring existing approaches, tools, programmes, engagement to the programme to avoid “not invented here” – we need to learn from each other

Pre March 2025 – potential activities

- Attend online (DARE UK) meetings on TREvolution initial groundwork
- SATRE specification
 - Assess against the current specification, feedback on process, needs, gaps and share your results!
- TELEPORT, TRE-FX, SACRO and SATRE
 - Read previous DARE driver/sprint project reports to familiarise yourselves (current plans have been adapted in TREvolution)
- GRAIMATTER
 - See recommendations for how to support ML/AI projects
 - Investigate potential for *your* TRE to support ML/AI
- SACRO/SACRO-ML
 - Test and install the current versions and feedback areas for development. Incl. researchers (important!)
 - Identify ML projects which might be suitable exemplar projects
- Identify suitable testing datasets (e.g. synthetic) and initiate approvals process for synthetic data exemplars

March 2025 – TRevolution Initiation

- Co-design workshop – come and join the development of the single unified specification
- PIE engagement workshop – do you have existing PIE activities to connect and collaborate
- Governance understanding – this programme will evolve the interpretation of the Five Safes. We need your insight.

April 25 – March 26

- Involvement in the design, build and testing of the core components. Adapting the federation tools from previous DARE phases.
- Developing networking mechanisms to interlink TREs for a given project – considering how to create a Safe Setting between multiple TREs.
- Enhancements and deployments of SACRO, understand risk appetites and boundaries
- Governance checks and re-assessments as the build phases continue
- Continuous public engagement, and connecting to existing efforts
- Understanding the safe deployment and use of AI across TREs.

All Engagement is Useful

- Please engage even if certain components may be challenging
 - we need to know why it is hard
 - inform on good/bad of core activities
- Engaging does not mean an open-ended commitment to deploy



Five Safe Steps to TRERevolution

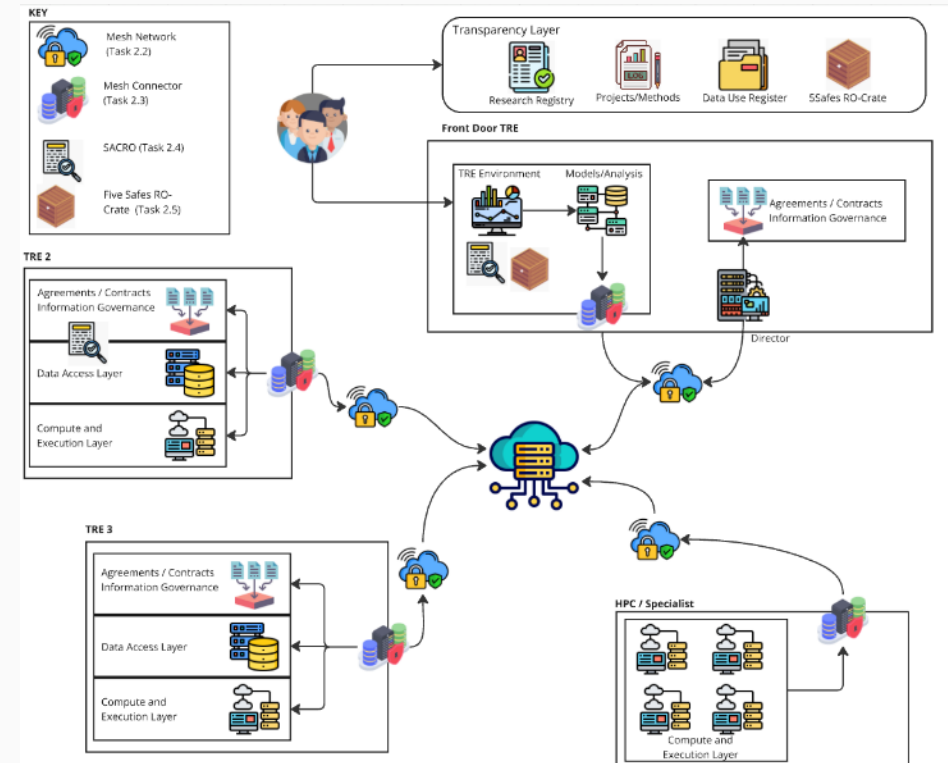
*Each TRE participating in a project captures capabilities, decision approval processes and risk appetite for a project in a **TRE profile***

*TREs, SDEs and HPCs connect to project's **Secure Mesh Network***

Front Door Director
requests computational jobs and data access, checked against agreements formalised from SATRE governance evaluations

Automatic risk assessment at TRE and federation levels
Semi-automated Disclosure Control

*All data/query/information and Transparency metadata is via **Five Safe RO-Crates***



The Ask: Federation

Aim: TREs are comfortable supporting **exemplar projects** using real data in 2026-27, DARE to understand where the **gaps** are for them to address the challenges.

- Input re Information Governance acceptance of new model.
 - Work with information governance teams to address any concerns they may have.
 - Collaborate with the TRevolution team on developing understandable documentation on how federated projects can be supported whilst maintaining the 5 safes principles. **Starting Mar 2025**
- Installation and testing of reference implementations – including YOUR OWN TRE implementation
 - Synthetic data
 - Utilise international standards (GA4GH TES and WES, RO-Crate) **Our ref Impl: Partial from Sep 2025
Full from Jan 2026**
- Potentially, collaborate with a federated analytical solution provider funding them to enhance their software to utilise the international standards adopted by TRevolution
- Potentially, work with TRE local PIE groups to assess the acceptance of the new model **Starting mid 2025**

The Ask: Disclosure Control and support for ML

Aim: TREs are comfortable supporting exemplar projects using real data in 2026-27, or for the programme to understand where the gaps are for them to address the challenges.

- Installation and testing of SACRO on classical stats projects and feeding back on functionality
 - for output checkers
 - for researchers
 - Incorporation of SACRO into operational processes
- Starting NOW**
- Input re formal, transparent statements of risks, mitigations & appetites
- Starting March 25**
- Input re Information Governance acceptance of ML export from a TRE.
 - Work with information governance teams to address any concerns they may have.
 - Development of ML risk assessment within Data Access Request review
 - Development of any additional legal clauses for safe export of an ML from a TRE
 - Installation and testing of SACRO-ML on ML projects within your TRE (ideally ones already in flight)
- Starting April 2025**

All current tools at <https://github.com/AI-SDC>

The Ask: Reference Implementation, Standards and Interoperability

Aim: Engage with TRevolution team: updating **SATRE** with *Federation*, semi-automated *Disclosure Control* (incl. ML), & *metadata* management. Contribute skills/experience of building infrastructure-as-code within a secure data context.

Standards

Starting March 25

- Looking for partners to evaluate against SATRE v1 and are willing to share results
 - Provide input to improve SATRE and its evaluation mechanism
- What do TREs want out of SATRE v2.0?

Implementation

- Do you already have an (open source) infrastructure-as-code TRE implementation? Are you willing to share your experience and contribute to a community solution?
- What technical barriers are there in including federation and/or SACRO tools?

Starting
April 2025

Early adopter TREs SHAPE TREvolution

- Shape development of concepts, standards and tooling
- Help prioritise implementation of:
 - Features, Training, Governance resources
- A dedicated ‘on-boarding support’ team
 - IG/ Process support, Federation technical aspects, ML Risk Assessment
- Process support
- Enhanced capabilities for your TRE to enable research for the public good