

The DARE UK Federated Architecture

Background

Sensitive data is confidential information about individuals, households, firms, locations, and much more, including demographic and health records. Increasingly, sensitive data sets are held in secure computer systems called trusted research environments (TREs).

TREs are often disjointed and isolated. Linking TREs requires duplication of essential, but time-consuming processes, causing delays in the research life cycle. DARE UK is on a mission to solve this problem by designing a research architecture that will link current and future TREs securely and efficiently.

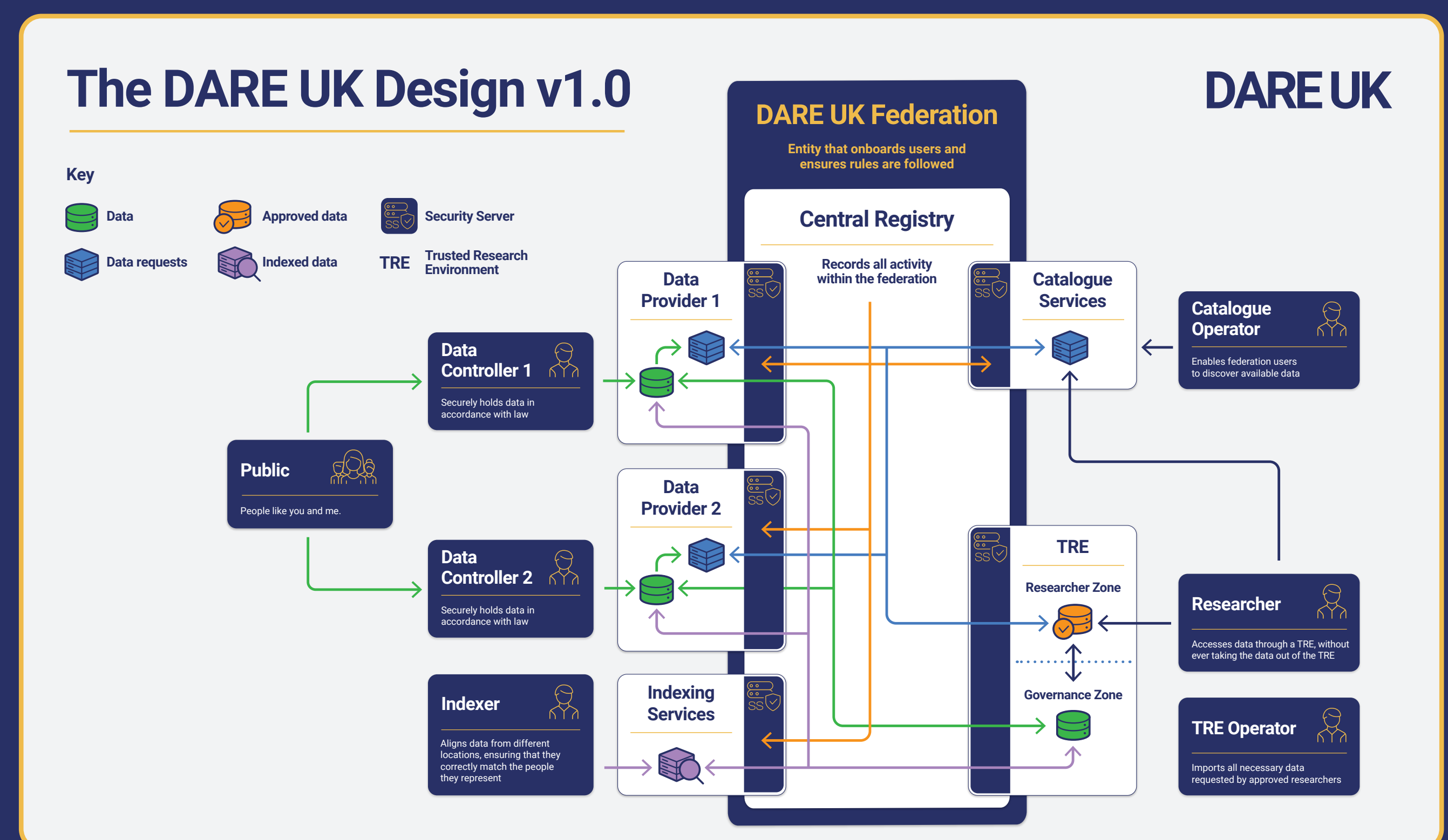


Diagram illustrating the DARE UK Federated Architecture



Objectives

- Create a secure network of TREs within a common best practice framework to facilitate efficient access to sensitive data
- Enable data linkage, connecting data across health, education, the environment and more
- Support researchers to find solutions to key societal problems, like healthier aging, better local service provision and improved support for vulnerable groups



Methodology

Phase 1 of DARE UK, Design and dialogue highlighted a need for a standardised approach to connecting the UK's TREs and sensitive data providers into a secure network to support approved research.

To design this standardised architecture we have:

- Funded 14 pathfinder projects
- Surveyed the UK sensitive data research landscape
- Conducted workshops and interviews with key stakeholders
- Held two rounds of public consultation
- Drawn from national and international best practice



Results

We recommend the creation of a managed federation of service providers connected by a secure, standardised data exchange network, with strong safeguards for confidentiality, integrity, availability and auditability.

The federation will comprise a foundation layer and a core service layer.

Foundation layer: Security features required of a high- assurance network.

Core services layer: Broad classes of service-to-service interaction-for data requests, data movement, linkage and alignment of cross-domain data sets.

On top of these layers will sit a diverse network of TREs, data and other service providers. A managed federation ensures that rules and regulations are universally adhered to, promoting internal and external trust.



Conclusion

The DARE UK federated infrastructure offers a good balance between maintaining the high levels of public trust, necessary for research using sensitive data, and providing infrastructure for a rich analytical ecosystem.

It will increase research accessibility by enabling relevant stake holders to see how specific data sets are being used, and by whom.

It is designed to support cross-domain research, remove barriers to timely research and help address the key societal challenges of our age.

DARE UK

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