



‘Virtual’ Trusted Research Environments - a new way of approaching secure, collaborative research

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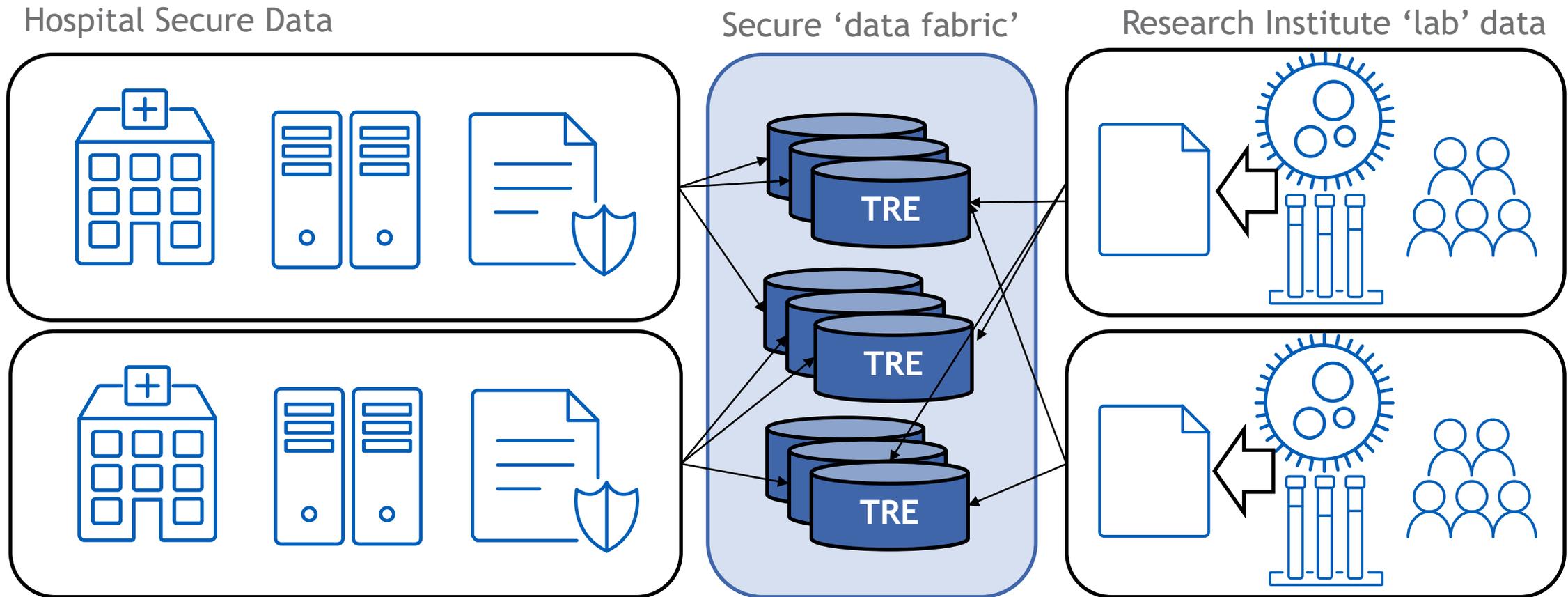
**UK Research
and Innovation**



Discovery Research is all about collaboration - between researchers, institutes, hospitals and industry Partners

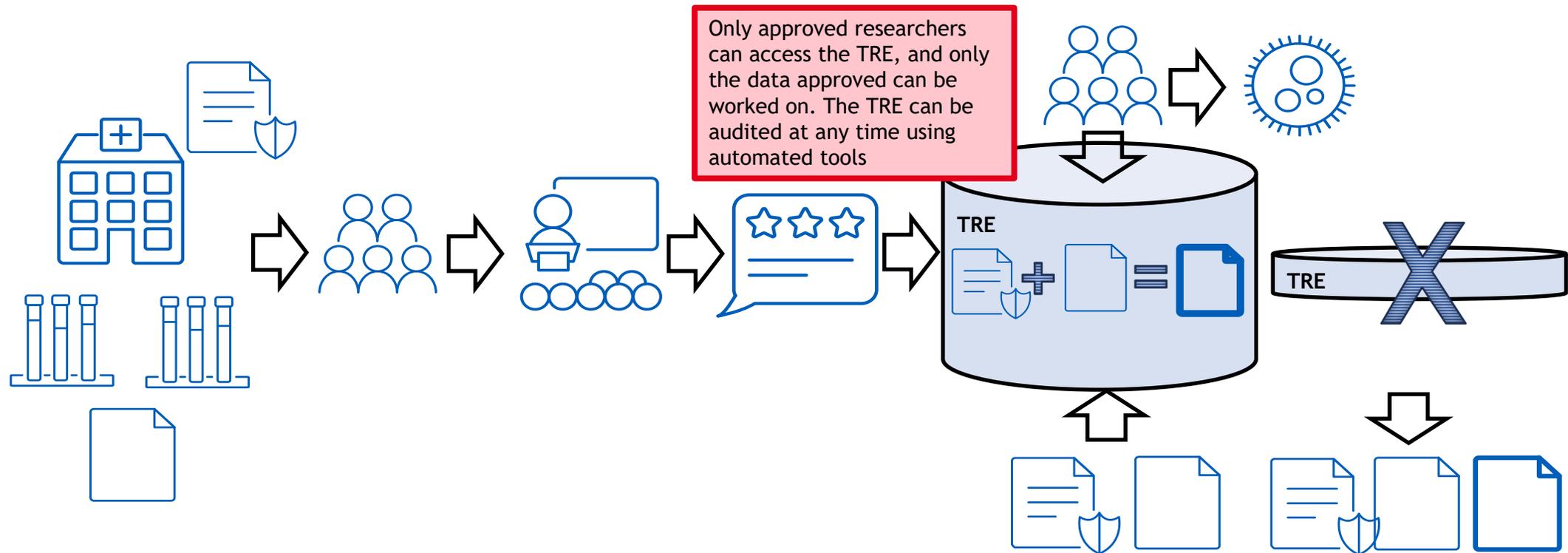
So, what are we planning to do?

Build a secure 'data fabric' to allow SAFE 'pop-up' research environments - quickly, cheaply and securely



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Our solution will be directly tied into existing research governance and ethics processes, and create a platform that will allow any institution to tie the technology to how they work



Data is held by different local institutions

Scientists at each institution identify opportunity to work together

Key research questions identified and documented

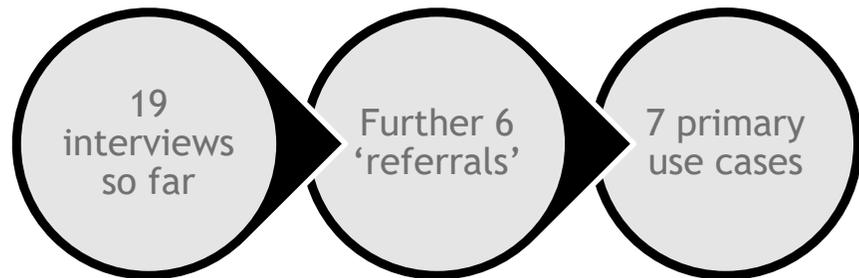
Application created and scrutinised by Research Ethics Committee

Custom research environment created on cloud platform. Data is loaded, and new research performed.

At the end of the project, data is removed, and archived back to its owning organisation. The TRE is deleted from the cloud.

Requirements gathering - What we've learned from our interviews so far

19 interviews have been conducted so far, with 6 more referrals from interviewees. Write up and analysis continues from the transcripts, but common themes are starting to emerge, some of which will be addressed by this project, but will also inform future phases of DARE UK



Repeatability

- Current solutions are always bespoke per project

Legal challenges

- Lack of legal resource
- Unbounded timelines due to lack of repeatability

Skills

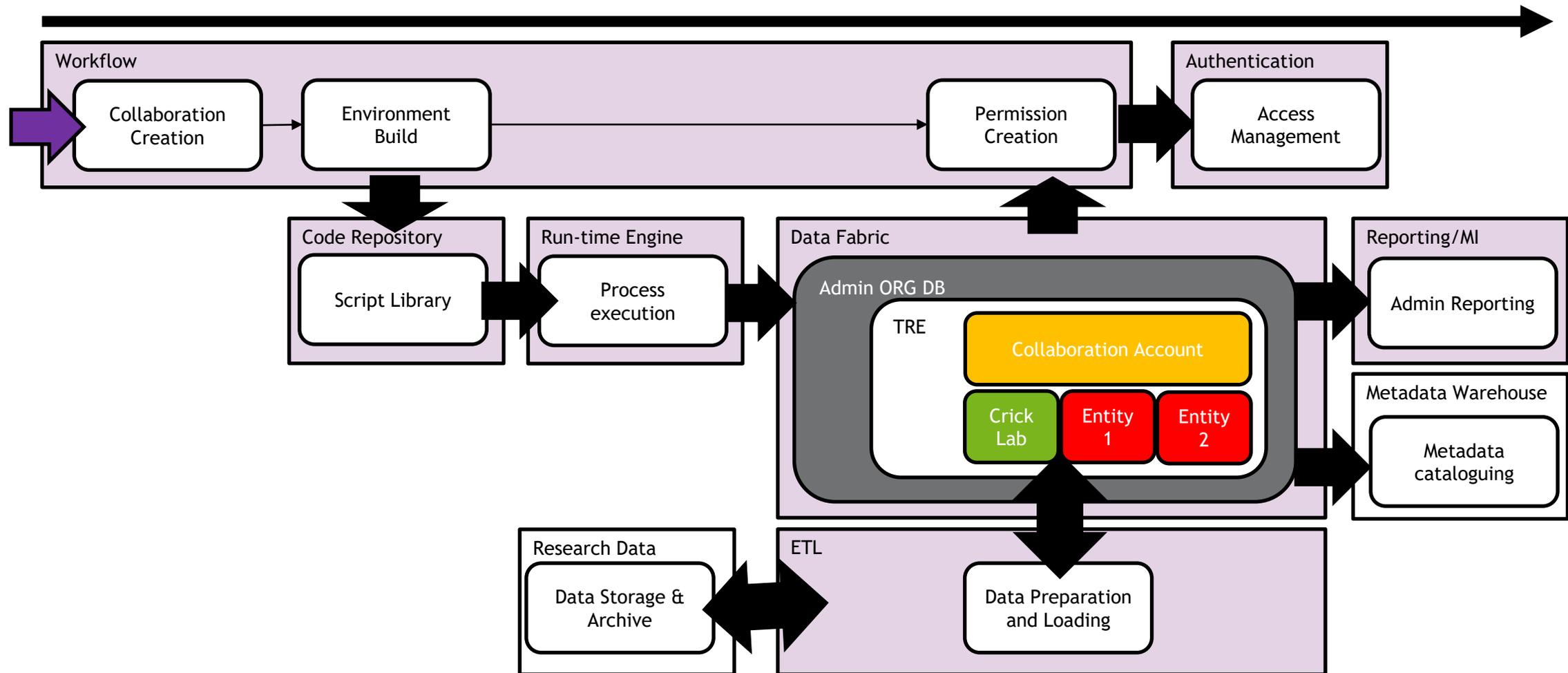
- Skills shortages commonplace across many different technology areas - data science, engineering, cloud platforms
- Too little attention paid to data structure, labelling etc

Administration

- Considerable admin overhead needed to manage ongoing projects within the boundaries of the agreements
- Basic functions like dividing cost is often very complex and onerous

The Platform so far...

The Platform Reference Architecture - items coloured purple constitute 'the platform' - primary process flow of Inception to Archive process is left to right



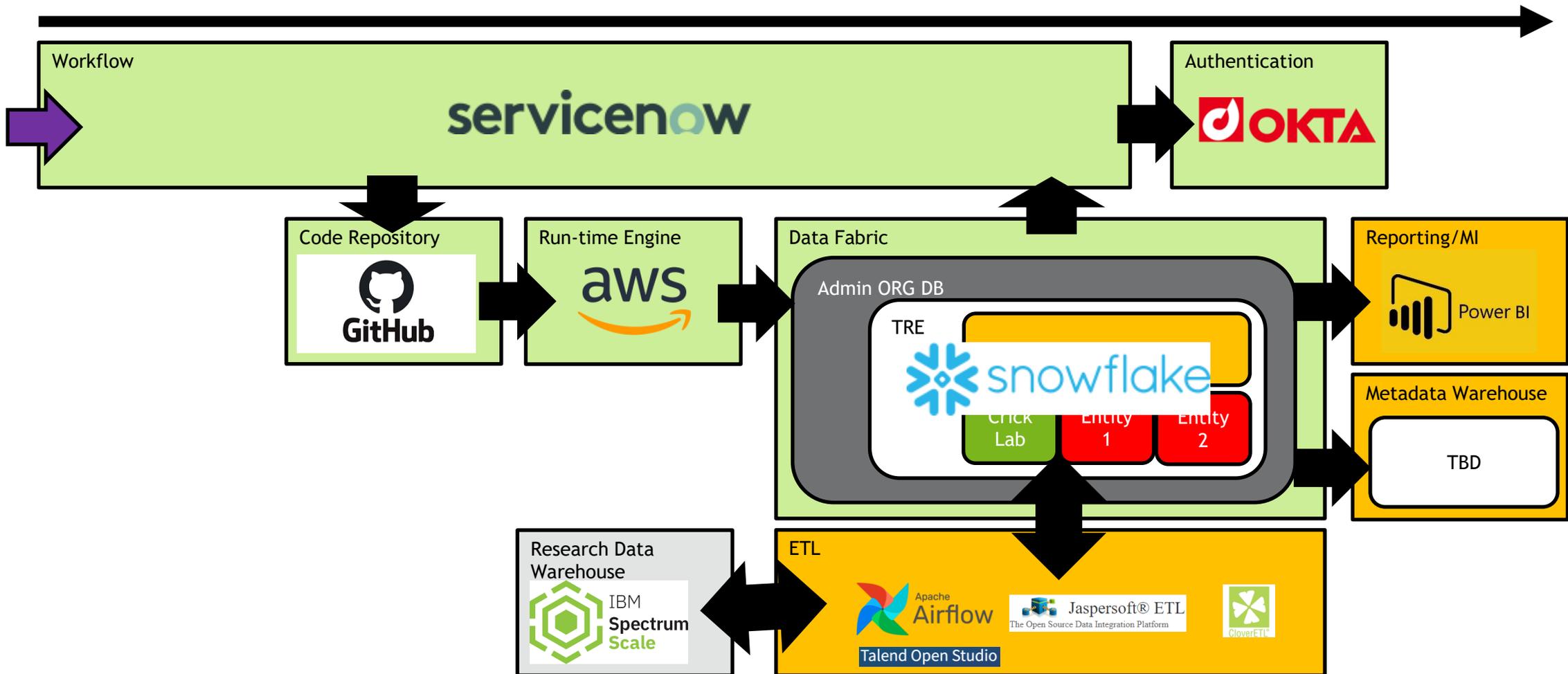
The Platform so far...

The Crick Platform instance - technology choices, and implementation maturity

GREEN denotes component deployed and working, albeit with considerable more development work needed

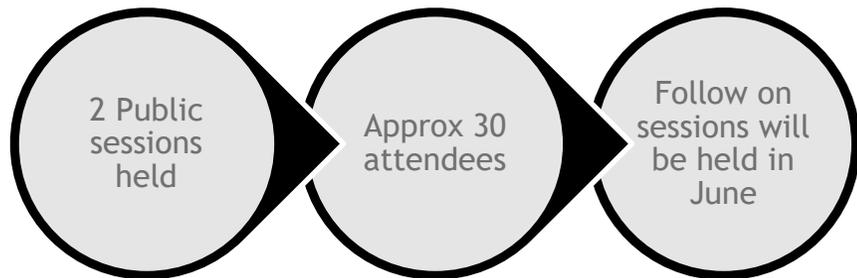
AMBER denotes still in design/evaluation phase

GREY denotes out of development scope



Patient and Public Engagement & areas for future work

Feedback has been excellent so far - very engaged groups, and very insightful questions. Sentiment is overall very positive, and there was much constructive debate around how common platforms could help transform patient visibility and ownership of their data usage



Accountability

- Need to explicitly articulate RACI around use of the platform

‘Constitutional’ protections

- How do you guarantee that controls won’t be relaxed and data exploited for commercial gain in the future?

Governance

- How can platform metadata be used to transform patient visibility of data usage?
- How can data usage be linked to beneficial outcomes?

Quality of science

- How could a common platform be used to drive better global standards in data input? Eg Bias checks on data ingest

