

# Safe share and SAFE AAAI update

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## Background

- Substantial investment in medical and administrative data research to generate benefits to society from the appropriate analysis of data collected by Government and the NHS
- E.g. to further knowledge e.g. of disease and ill health to improve medical treatments

## Challenges

- Health data, and other routinely collected data on people's lives, are very personal and sensitive
- Significant numbers of ethical, consensual and practical hurdles to making appropriate use of the sensitive data for research

## Drivers

- Requirement for connectivity to move and access electronic health data securely
- Challenge to give public confidence that data is appropriately protected
- Provide economies of scale in secure connectivity

## The safe share project

- Jisc management and funding of £960k to pilot potential solutions with the aim of developing a service in 2016/17
- Project being run in two parts

## 1. Secure connectivity with a higher assurance network (HAN)

### *Use Cases:*

- Inter-Farr – initial trial between Farr facilities at Manchester and Leeds
- Intra-Farr – to support the ALSPAC project between Swansea and Bristol
- ADRC / Farr Pod to Data Centre – connectivity between accredited secure rooms that can be connected to ADRC data centres for remote working (led by University of Southampton)

## 2. Authentication, Authorisation and Accounting Infrastructure (AAAI)

### *Use Cases:*

- University of Oxford: to enable researchers to use home institution credentials for authentication to request access to datasets for studies e.g. into dementia
- HeRC, N8 HPC – access between facilities using home institution credentials
- eMedLab – partners will be able to use a common AAAI to access this new system (for analysis of for instance human genome data, medical images, clinical, psychological and social data)
- Swansea University Health Informatics Group – investigating Moonshot as an authentication mechanism to allow use of home institution credentials

## Partners

The Farr Institute

The MRC Medical Bioinformatics initiative

The Administrative Data Research Network

## Pilot institutions

University of Bristol

University of Leeds

University of Oxford

Swansea University

University of Edinburgh

UCL

University of St Andrews

Francis Crick Institute

University of Manchester

University of Southampton

## Benefits

- Reduction in duplication of effort as a solution is needed by everyone
- Avoidance of potential competing incompatible solutions in different centres
- Support for RCUK and Government strategies for research with sensitive data
- Co-ordinated partnership that can help support UK research into disease and public health
- Improved knowledge and a scalable solution providing benefits for other members of the community

## Achievements

- Built collaboration of interested parties that generated the proposal
- Proposal agreed and funded by Jisc (£960k)
- Project initiated with Project Board governance, pilot projects agreed
- Engaged with Cabinet Office on the approach used
- Project team in place
- Identified the security requirements of the different use cases in the pilots
- Technical architecture and approach agreed
- Equipment purchased
- Higher Assurance Network core and first pilot site implemented

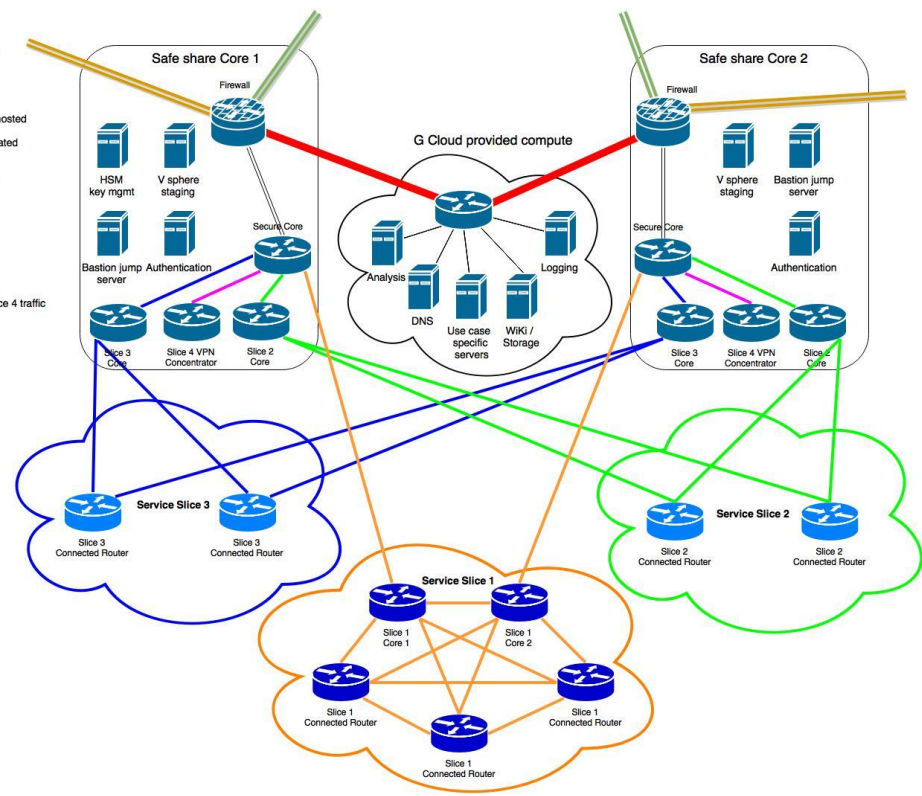


- The safe share service will allow the secure exchange of data between project sites, via an encrypted overlay over existing networking infrastructure for example over the Janet network or the internet. Two core nodes will be established in the Jisc shared data centre at Slough. The data centre is connected directly to the Janet core with diverse fibre routes currently at 100Gbit/s.
- The operation of the safe share service will be undertaken within certified ISO 27001 and ISO 9001 frameworks. The encrypted overlay will be constructed using IPsec tunnels in close alignment to CESG's PRIME framework and implemented on Juniper's SRX platform.
- The service will operate a number of overlay networks which will allow different Information governance domains, this will allow us to operate many different secure networks which have differing requirements.

# The safe share project: HAN design overview

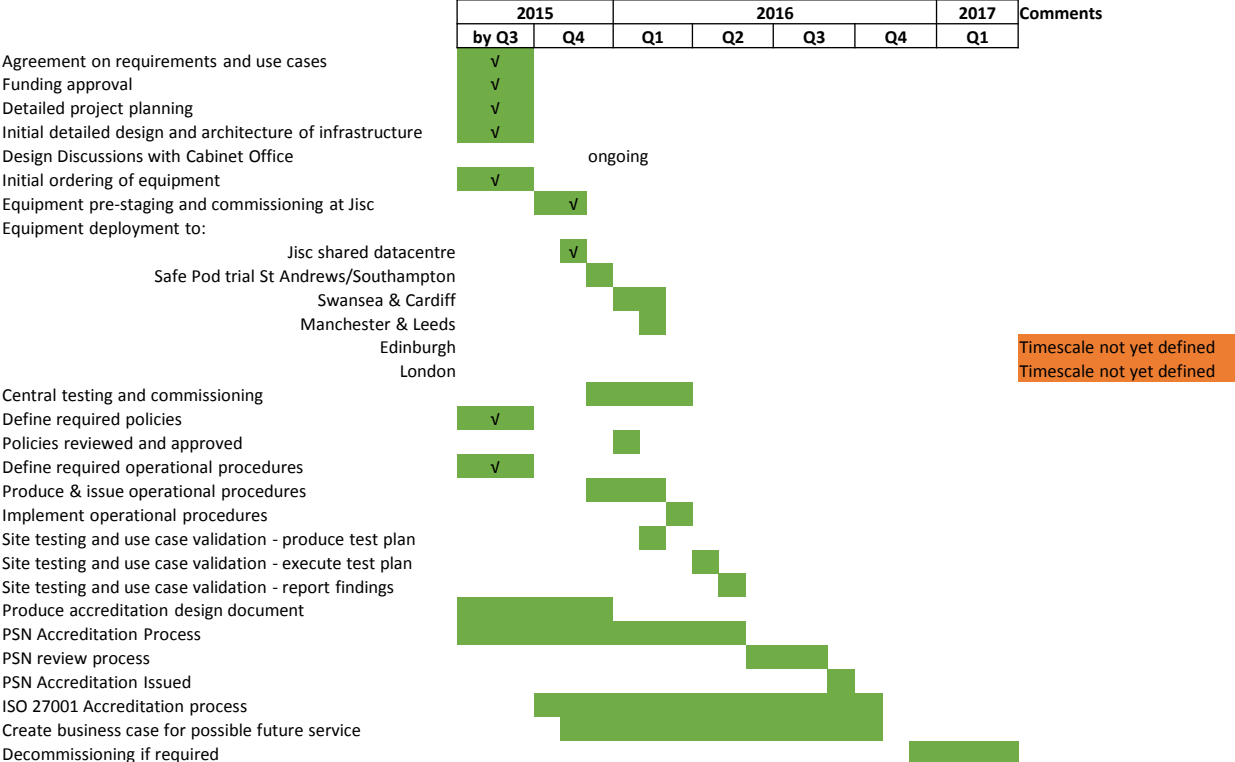
## Safe share design principles

- 10 Gbps connection to Janet
  - Other external connectivity
  - Services Tunnel to G Cloud hosted Virtual Infrastructure. A Separate tunnel will be created for each required network.
  - Separate copper connection to firewall per service slice
  - Service slice 1 traffic
  - Service slice 2 traffic
  - Service slice 3 traffic
  - VPN Concentrator service slice 4 traffic
- 1 Gbps IPsec capable router  
 100 Mbps IPsec capable router



**Overview of Project Plan for Higher Assurance Network (HAN) stream of the safe share project**

As at 30th November 2015 for Project Board meeting 09/12/15



Timescale not yet defined  
Timescale not yet defined

## HPC Pilot:

- Manchester and Leeds deploying the Moonshot infrastructure, almost ready to test.

## Swansea University:

- Changed to looking at the use of Assent as part of the Open Stack infrastructure for the Cloud Infrastructure for Microbial Genomics (CLIMB) project. About to engage in detail with the technical lead for CLIMB at Birmingham.

## eMedLab:

- Technical workshop in November to investigate requirements.
- eMedLab is working to get into a production-ready state early 2016; will look to pilot use of Assent shortly afterwards.

## University of Oxford:

- No updates as they are looking to learn from the other pilots first.

- OpenStack is increasingly important to e-infrastructure groups
- Looks like various components of OpenStack should/may work fine with Assent and the UK federation (thanks to the work from University of Kent)
- Jisc engaging with international crowd on moving AAI forwards in OpenStack, and the SafeShare AAAI pilots will be a good opportunity to test it out in the real world

- Jisc and Stephen Booth had a technical workshop in 2015 about AAI in SAFE
- Identified various integration points for the UK federation and Assent
- A proposal has been created by Jeremy Yates et al to take this work forward, seeking funding.
  - “Productionise” SAFE – better documentation, easier to deploy, etc
  - Integration with Assent
  - Pilot projects to test workflow, integration, deployment, etc