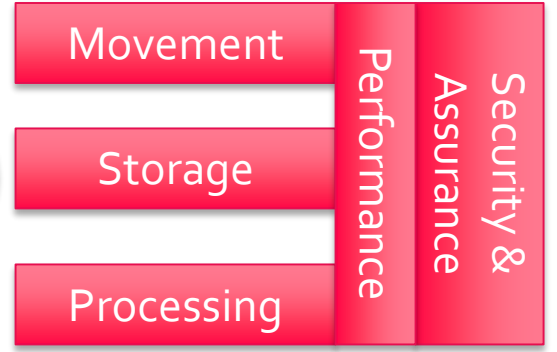
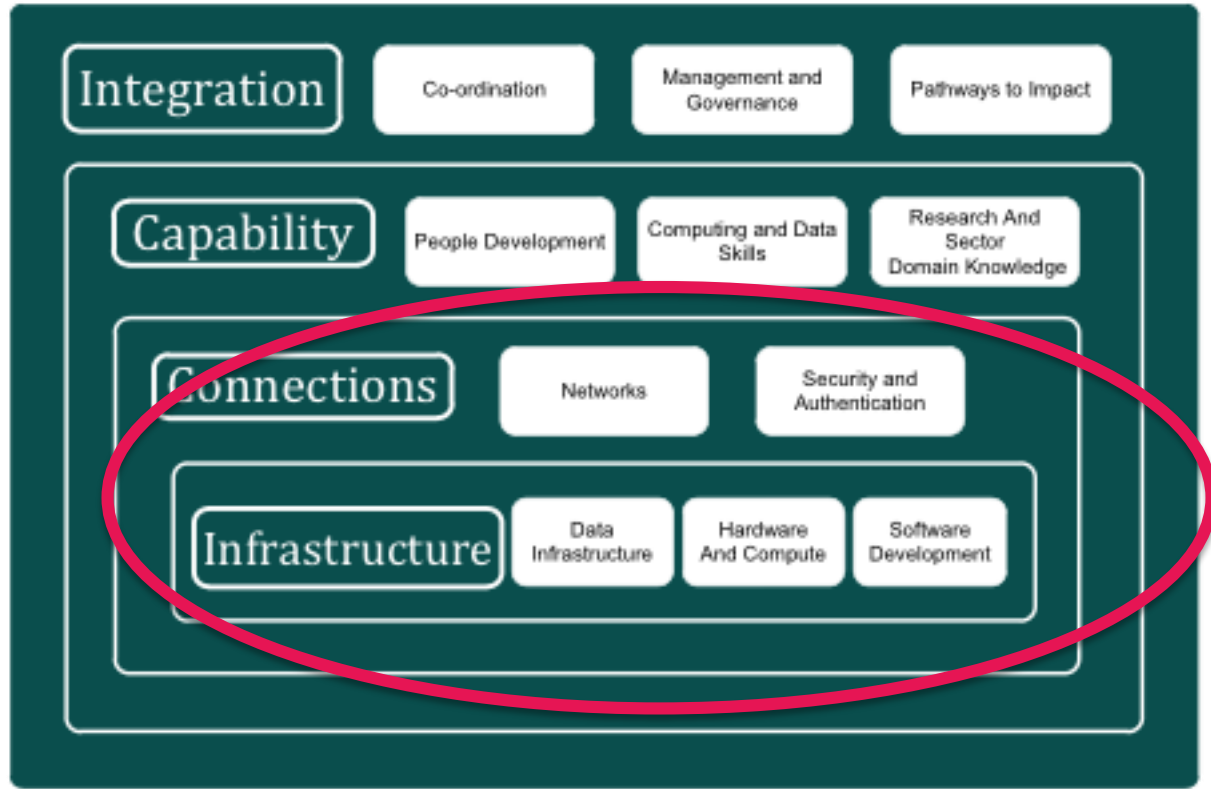
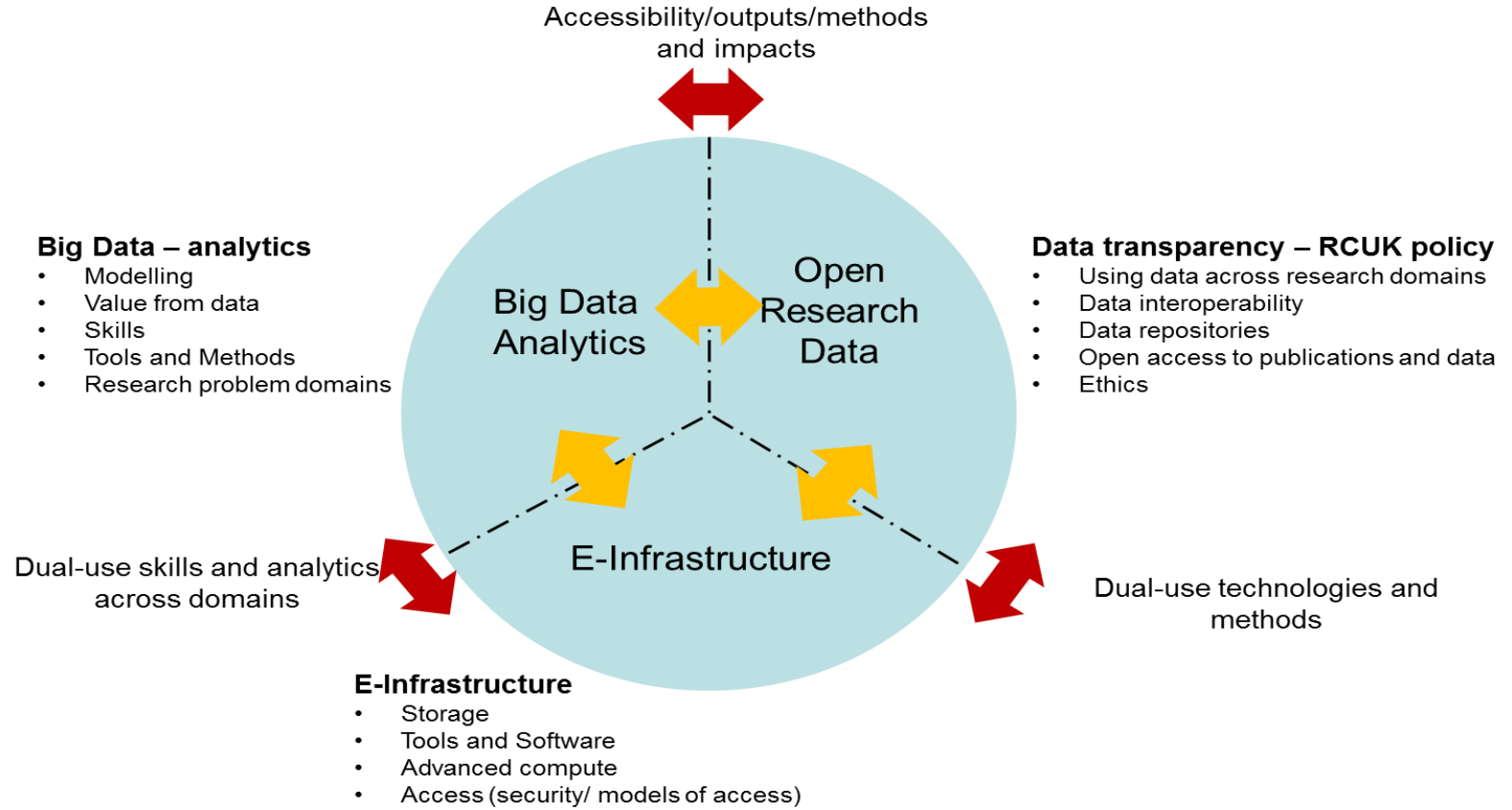


June  
2015

# NHS / HE Forum: A UK e-infrastructure

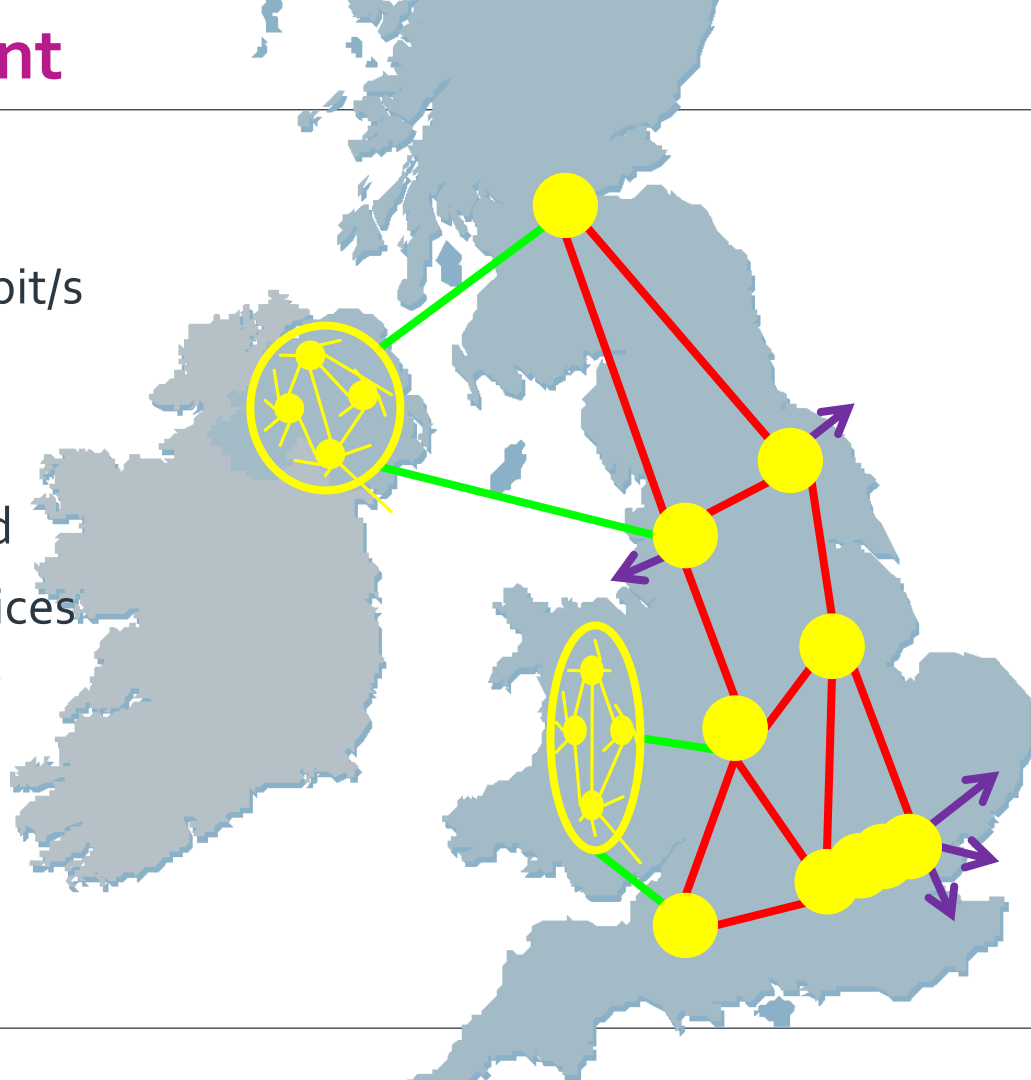
Jeremy Sharp, Jisc





## Janet Network:

- A core across the UK of 200Gbit/s
- 19 regional distribution areas.
- Resilient
- ~900 organisations connected
- IP and circuit connection services
- ~1Tbit/s external connectivity
- Overall availability: >99.9%



- Data movement – working patterns
    - How much – data volume ?
      - Beware Bytes vs. bits !
    - How quickly ?
    - How often ?
    - Where to ?
    - National & International
  - Network engineers & planners need bit-rates !
  - Working with research communities to understand emerging/evolving/strategic requirements
-

## Reach:

- › £4M funding from BIS to work towards a Janet which is "open and accessible" to industry
- › Provides industry access to university e-infrastructure facilities to facilitate further investment in science, engineering and technology with the active participation of business and industry
- › Modelled on Innovate UK competition process

Type of project	Project focus	Support level as a percentage of eligible project costs
Collaborative or single company R&D	Fundamental Research	75%
	Applied Research	50%
	Experimental Development	25%
SME only R&D	Fundamental Research	75%
	Applied Research	60%
	Experimental Development	35%

[www.jisc.ac.uk/janet-reach](http://www.jisc.ac.uk/janet-reach)

## File sync and share:

- » Dynamic purchasing system
  - » Offering file sharing products typified by vendors such as Dropbox
  - » Enhanced products available offering:
    - › EEA (European Economic Area) storage - for Data Protection compliance
    - › user managed encryption - encryption keys are managed by the customer
    - › integrated federated access - end users can access services using institutional issued credentials
  - » Box; Microsoft; Q Associates; Capito currently on the system
-

## Data archiving:

- » A single supplier framework with Arkivum
  - » secure, easy-to-use and cost-effective data archiving service for research and education
    - › 100% data integrity guarantee
    - › 2 UK stored data copies accessible online
    - › 1 UK stored copy held with 3rd party ESCROW data holding company.
    - › £5m - £100m professional indemnity insurance
    - › ISO 27001 compliance
    - › 10 year framework to December 2023
-



## A gap?

- » Many different research domain and institution approaches to storage provision
  - » Is there a requirement for national scale storage facilities and services?
  - » e.g A national large scale, on-net, 'on-line / near on-line', possibly complementing close-coupled on-site storage
  - » To complement the focus on data standards, interoperability and discoverability
-

## » Range of Compute solutions appropriate to the research question

Approach to provision

In/out source

Scale of deployment

Institution

Regional

National

International

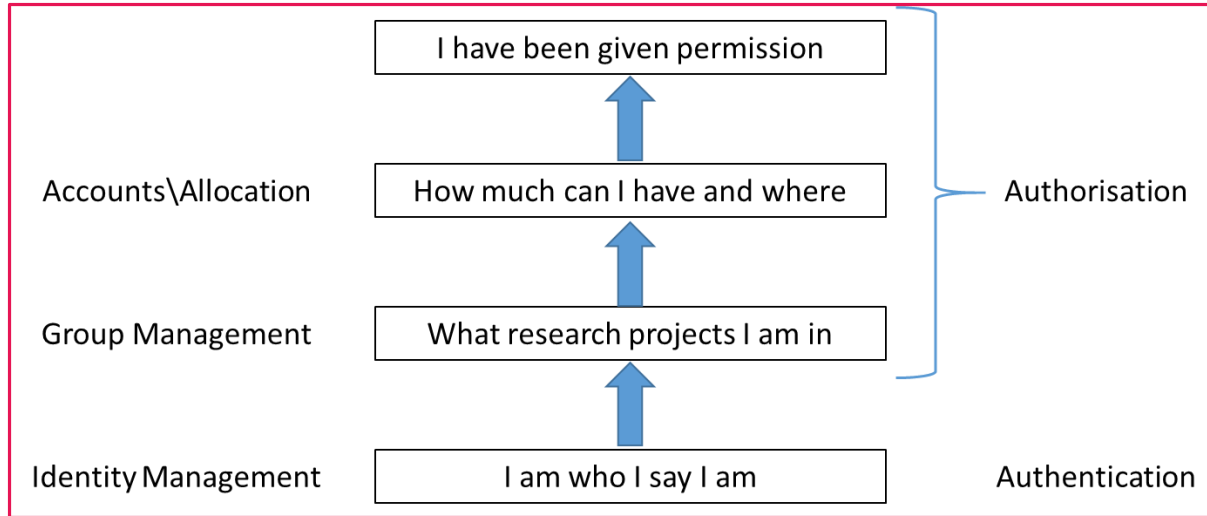
'Job' and Architecture

Tailored to  
HPC  
Or  
HTC

## Shared data centre:



- › £900K HEFCE investment
- › Anchor tenants: Crick, KCL, LSE, QMUL, Sanger, UCL
  - [www.jisc.ac.uk/shared-data-centre](http://www.jisc.ac.uk/shared-data-centre)
- › Requirements for a second data centre being gathered



## Based on Moonshot technology:

- › Single, unifying technology that enables you to effectively manage and control access to a wide range of web and non-web services and applications.
- › These include cloud infrastructures, High Performance Computing, Grid Computing and commonly deployed services such as email, file store, remote access and instant messaging



- » Development plan in place to:
  - › Extend the footprint of eduroam
  - › Improve the user experience
  - › Improve the manageability
  
- » Govroam pilot to start

- » Growing Government focus on cyber security
  - › Publication of the UK Cyber Security Strategy
  - › Formation of the Office for Cyber Security and Information Assurance
  - › Cyber Essentials
- » Shift towards Information Security and Assurance
  - › Growing use of standards based information security frameworks
  - › Growing value being seen in shared data sets
- » Attacks becoming more numerous and sophisticated
  - › Information Security, Information Governance & Risk Management policies now held with senior management

## Vision

- » Helping research and education institutions increase their capability to respond to online security concerns
- » Instilling confidence within government and industry of the sector's ability to protect assets and individuals from security risks and vulnerabilities online
- » Aiming to make the UK one of the safest places in the world to perform innovative network-based research and education
- » Helping the UK research and education sector develop and implement new approaches that reduce the risk from cybercrime

## Mission

- » To safeguard the current and future network and information security of the Janet network and those of our customers
  - » Contributing to computer and network security within research and education organisations
  - » Creating a secure environment for our customers and their users to conduct innovative online activities.
-



1. Help in providing advice and guidance for information security
2. Help in maintaining system and network uptime
3. Confidentiality of information during processing, at rest and in transit
4. The means to ensuring the integrity of information is protected
5. Ensuring availability of information by those authorised to access it
6. Help to identify, assess and manage information security risks
7. Help in determining whether an institution's security measures are proportionate to risk

- › Incident response
- › Proactive monitoring
- › Advice and expertise



- › Threat information
- › Denial of service mitigation
- › Improvements in detection and automation
- › The safe share project

## Safe share:

- › Encrypted VPN infrastructure between organisations
- › Providing enhanced confidentiality and integrity per ISO27001
- › Requirement to move electronic health data securely and support research collaboration
- › Working with biomedical researchers at Farr Institute, MRC Medical Bioinformatics initiative, ESRC Administrative Data Centres



- » A coherent strategy for a UK e-infrastructure and data infrastructure is key to the continued development of a globally competitive research base in the UK
  
  - » Some key components are in place but much work to be done
-

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