

03/11/2016

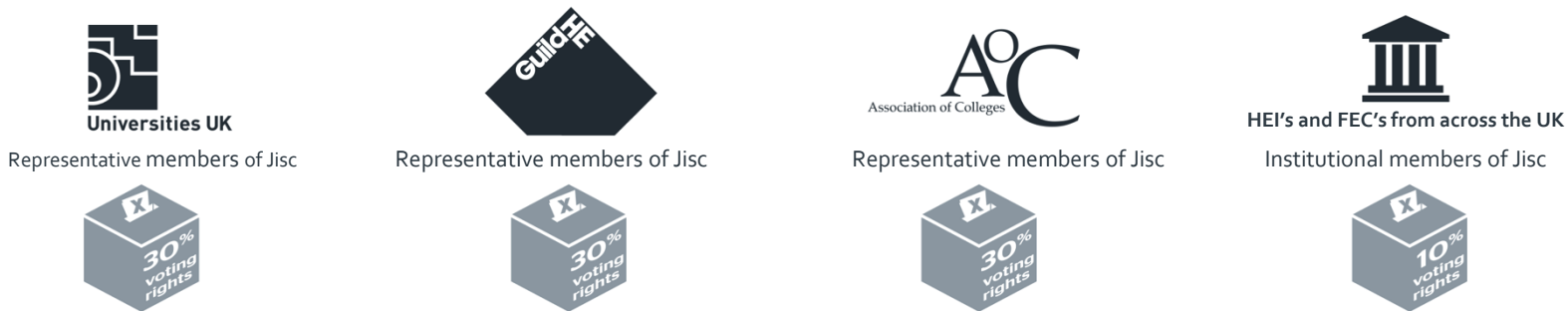
# Networking & Janet

## GridPP & SKA meeting – Manchester – 2-3 Nov 2016

David Salmon



- Janet – UK's National Research and Education Network – NREN
- 32 year of operation and growth – formed in 1984
- Now operated as part of Jisc Group
- Charitable entity owned and governed by Education and Research sector bodies and member institutions





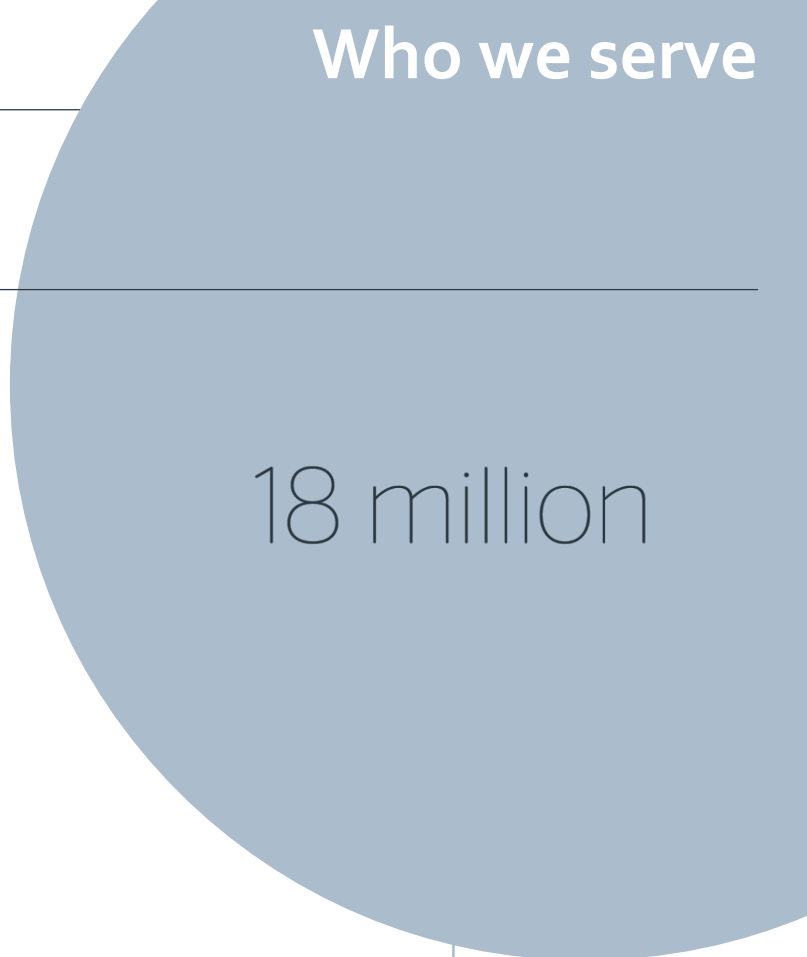
Colleges



Universities



Skills providers



Users

## Vision

To make the UK the most **digitally advanced education and research nation in the world**

Vision  
&  
Mission

Strategic platforms

Impact areas

Strategic enablers and values

## Mission

To enable people in **higher education, further education and skills** in the UK to perform at the **forefront of international practice** by exploiting fully the possibilities of **modern digital empowerment, content and connectivity**

Jisc

Does 4 things...



**Network & Technology**

Providing and developing a network infrastructure and related services that meet the needs of the UK research and education communities



**Digital Resources**

Supporting the procurement, management and discovery of resources for UK education and research.



**Advice & Engagement**

Our network of national and regional teams provide local engagement, advice and support to help you get the most out of our service offer



**Research & Development**

Our R&D work, paid for entirely by our major funders, identifies emerging technologies and develops them around your particular needs



## Network & Technology

Our work in this area includes:

- » Security
- » Connectivity
- » Access and identity management
- » Procurement
- » Cloud
- » Email
- » Internet and IP services
- » Telecoms
- » Videoconferencing

[jisc.ac.uk/network](http://jisc.ac.uk/network)



## Digital Resources

Our work in this area includes:

- » Journals
- » e-books
- » Maps and geospatial data
- » Learning and teaching resources
- » Resource discovery
- » Film and images
- » Repositories

[jisc.ac.uk/content](http://jisc.ac.uk/content)



## Advice & Engagement

In this area we provide:

- » A single point of contact through a dedicated account manager
- » Subject specialists
- » Communities of practice and peer networking
- » Local stakeholder for a
- » Training
- » A range of online and face to face events (e.g. Digifest, Networkshop)

[jisc.ac.uk/advice](http://jisc.ac.uk/advice)



## Research & Development

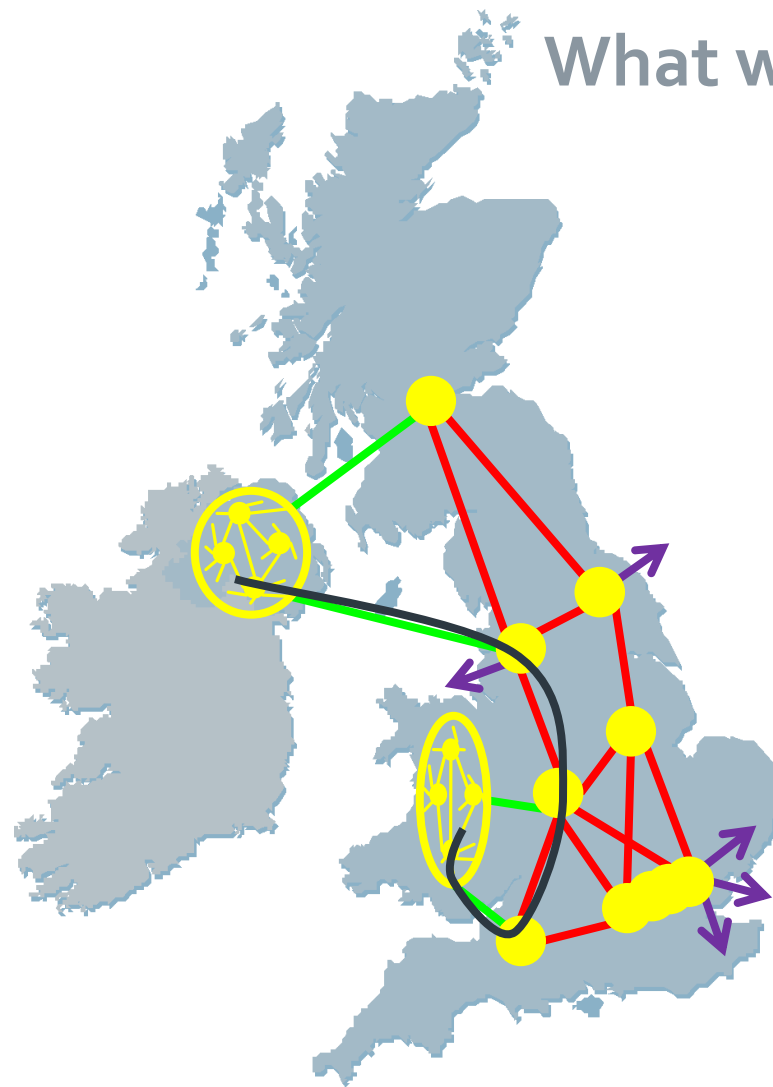
We are currently running 34 R&D projects including the following topic areas:

- » Collaboration
- » Curation and preservation
- » Data and analytics
- » Digital literacy
- » E-learning and VLEs
- » Libraries
- » Open access
- » Research and research data

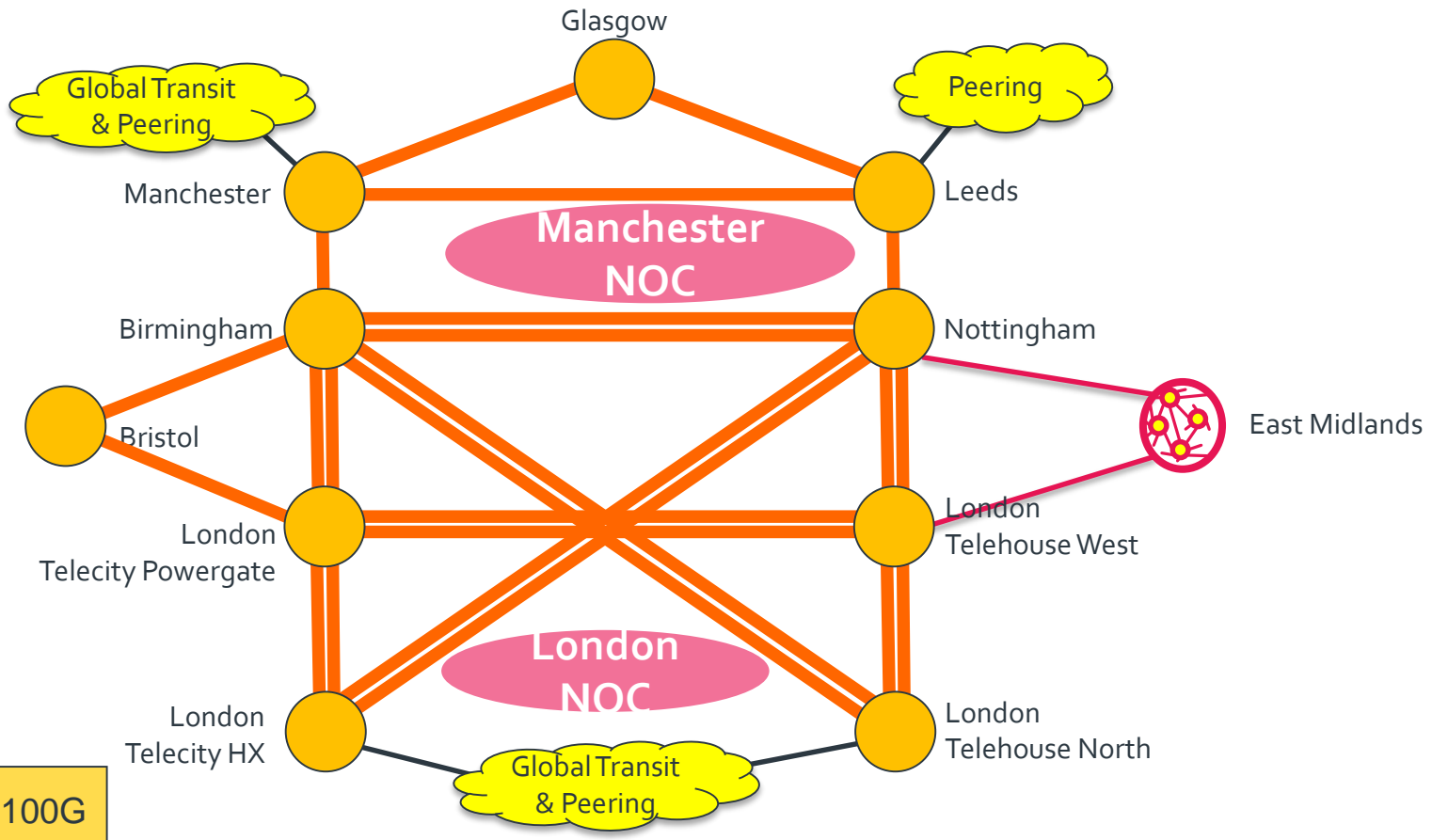
[jisc.ac.uk/rd](http://jisc.ac.uk/rd)

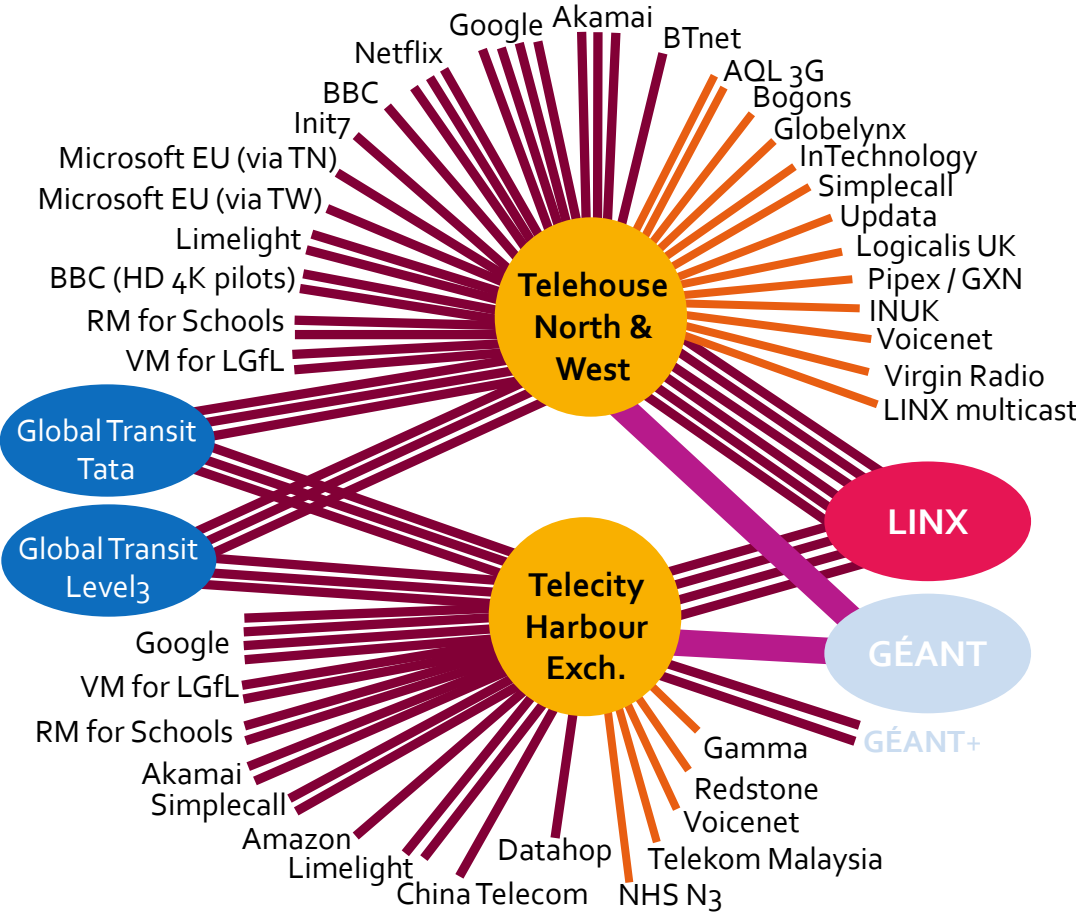
## What we do...

- » Ten core points of presence across the UK
- » A fibre core across the UK running at 400Gbit/s
- » 19 regional distribution areas
- » Multiple connections for resilience
- » ~900 organisations connected
- » IP (v4 & v6)
- » Point to point layer2 connections for research
- » Huge external connectivity

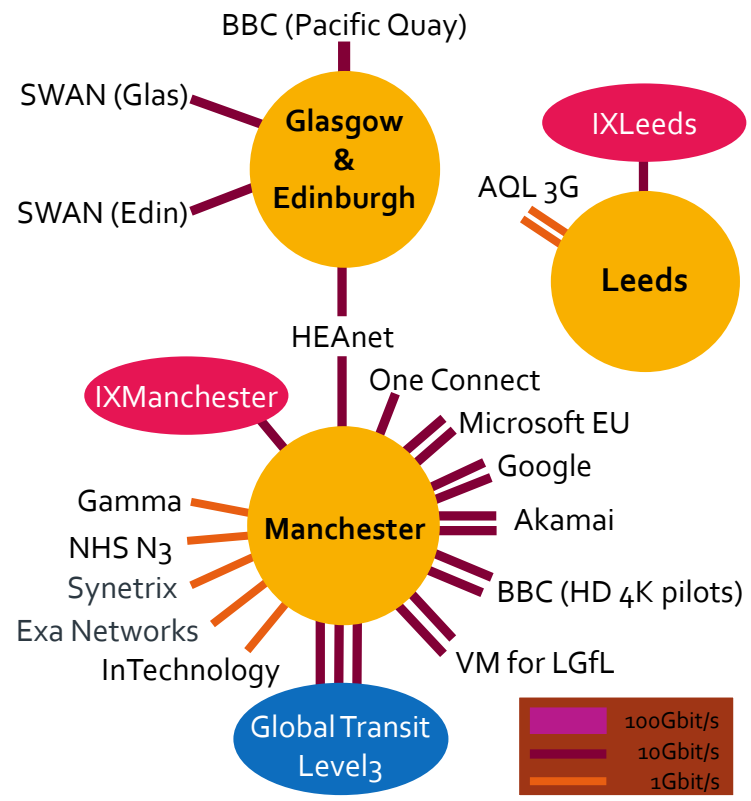








Total external connectivity > 1 Tbit/s



- Highly capable national infrastructure
    - Evolving – core 400->600G, & beyond
    - Contract structure 10+5 years from 2013
    - We operate the infrastructure at all levels – optical transmission up to IP later
    - 100G Transmission system waiting for commissioning @ Jodrell
  - Resilience to GEANT – 2<sup>nd</sup> connection being commissioned
    - 100G resilient, will evolve
  - Typical Janet latencies very low – e.g. London- Scotland RTT 10-12mS
  - High-throughput data transfer support
    - End-to-end initiative – support & advice on this
    - Tim Chown, Duncan Rand + 1
    - May be more news following Chancellor's Autumn Statement
  - Connections to outsourced compute – Cloud
    - IP and Layer2 ("Direct" connections to Amazon, Microsoft..)
    - Jisc datacentre facilities (housing) – South (Slough), North – coming...
  - Charging – 2017 & beyond
    - Jisc subscription model changing
    - Service charges – eg UK point-to-point 10G circuit – maybe £30kpa
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- Networking strands
    - Tracking & supporting UK community requirements for access to SKA data
    - Supporting AENEAS & relevant testing
    - Connectivity to SKA HQ & Jodrell Bank site
  - Tests – requirements for first steps ?
    - Locations/partner sites ?
    - Network capacities required ?
  - Forward look as things evolve ?
    - More partners ?
    - More capacity ?
  - Governance & Project-coordination
    - Who to talk to for authoritative information ?
    - E.g. GridPP
      - management group provide a networking forward look
      - co-ordinate UK position on responses to international networking initiatives (LHCOPN, LHCOne)
      - Represent UK community requirements – Tier2/3 sites
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