UKRI DRI Cybersecurity Workshop
Perspective: IRIS and GridPP

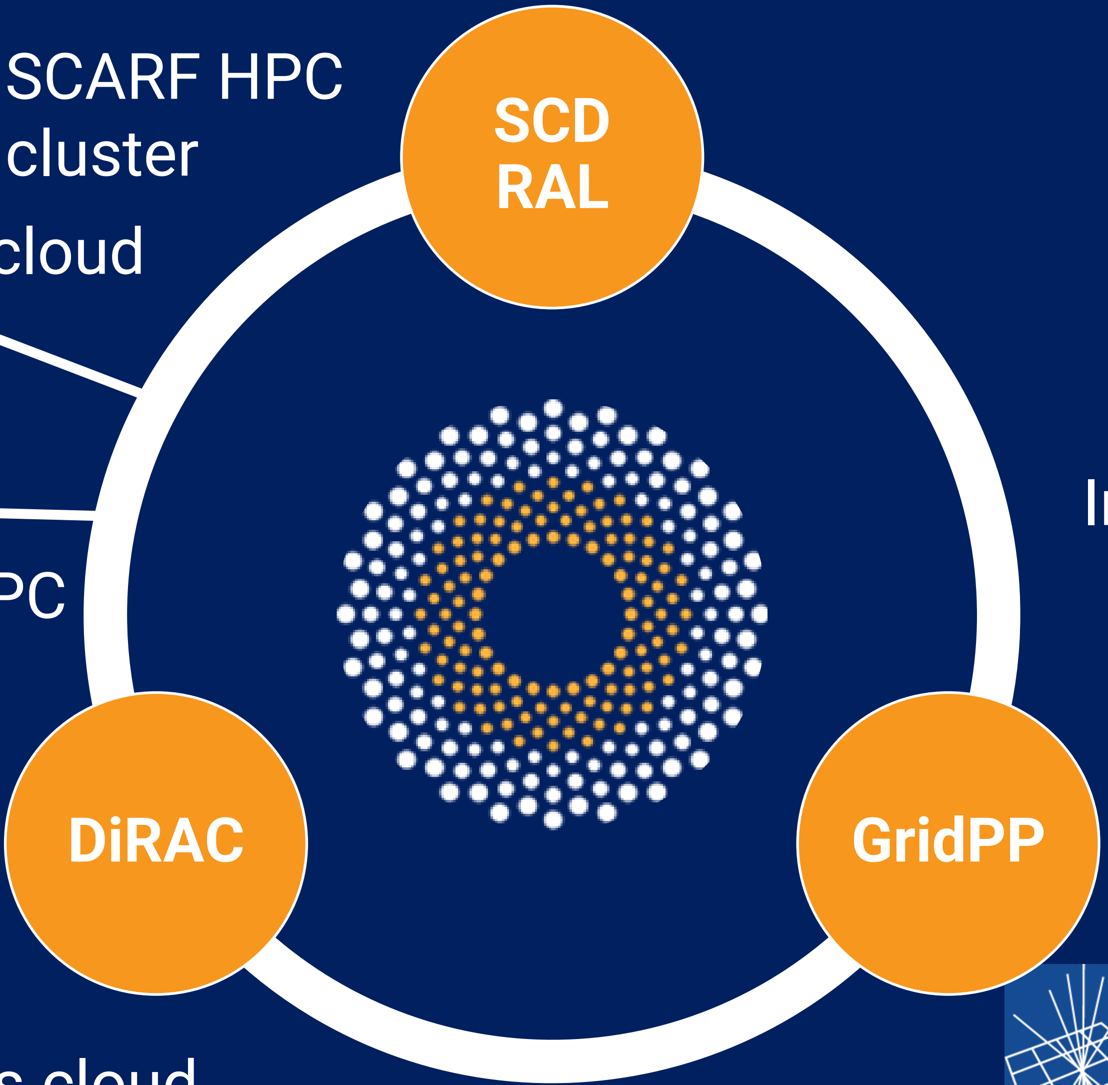
Prof. Jonathan Hays

particle physics, nuclear physics, astronomy, Astrophysics, astro-particle physics.

National flagship facilities: Diamond Light Source, ISIS Neutron and Muon Source, Central Laser Facility

IRIS is a cooperative community bringing together STFC computing interests

Queen Mary
University of London



SCD
RAL

DiRAC

GridPP

JODRELL BANK
CENTRE FOR ASTROPHYSICS

SCARF HPC cluster

RAL cloud

SOMERVILLE CLOUD

CSD3 HPC cluster

CSD^3
Cambridge Service for Data Driven Discovery
UNIVERSITY OF CAMBRIDGE

DiRAC
High Performance Computing Facility

Arcus cloud

Imperial Cloud

LondonGrid

GridPP

iris

Queen Mary University of London

Some of our supported activities...

SKAO

Euclid consortium

LSST

LSST:UK Consortium

casu

diamond

UKRI Science and Technology Facilities Council

ISIS Neutron and Muon Source

UKRI Science and Technology Facilities Council

Central Laser Facility

OCTOPUS

μBooNE

clas

CEBAF Large Acceptance Spectrometer

DUNE

JODRELL BANK

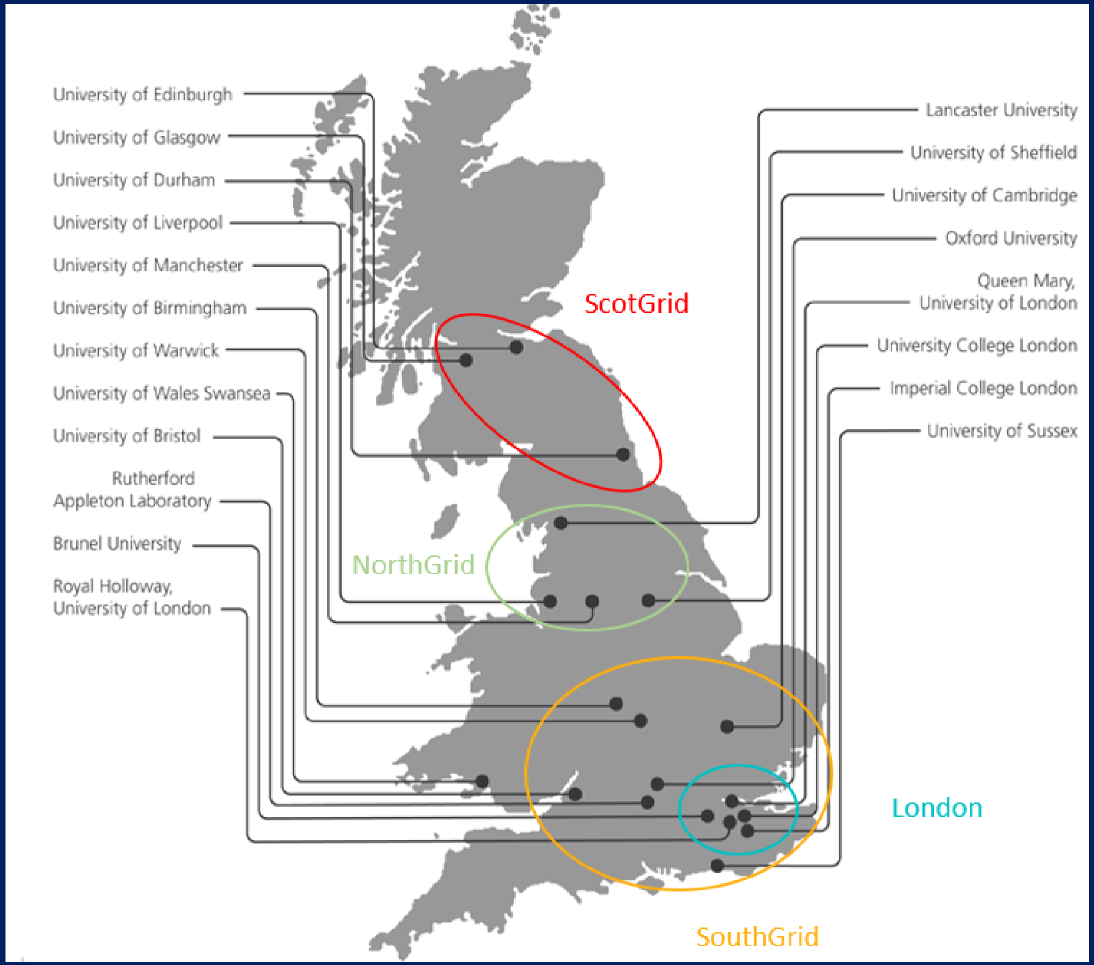
CENTRE FOR ASTROPHYSICS

SOMERVILLE CLOUD

CCFE

CULHAM CENTRE FOR FUSION ENERGY

GridPP – Distributed computing for data intensive research



GridPP provides large-scale computing for High Energy Particle Physics in the UK

Primary focus is on computing for the Large Hadron Collider

Also provides grid computing resources to smaller activities as a secondary goal (~10% of resources)

Tier 1 facility at RAL + 16 Tier 2 sites around the country

UK Component of the Worldwide LHC Computing Grid (WLCG)

Cybersecurity Workshop

Introduction to the environment and the landscape

Challenges this year

Challenges in long term

Environment and Landscape

Both IRIS and GridPP leverage distributed approach

(though at different scales)

Requires trust between sites, providers, users, etc

Larger attack surface due to distributed nature

Identity management and access controls more complex

Little to no “private” data to protect

Environment and Landscape

GridPP is a mature project and integrated into the WLCG

- Security is well managed with well-defined processes and policies
- Trust networks
- Distributed AAAI with delegated authorization capability
- Regular meetings, briefings, communications, monitoring
- Annual security challenges

Environment and Landscape

IRIS is a relatively new project

Core security policies exist – more in development

Regular security workshops

Reliant on leveraging existing policies and processes of its strategic partners

Challenges this Financial Year

GridPP:

- As a mature project things tend to just work!
- Challenges largely driven by:
  - Technical development changes – for example move from X.509 certificates to tokens
  - Policy changes – increasing cyberattacks on DRI lead to local policy decisions at individual sites that impact on performance
    - (impact of firewalls / IPS / IDS systems on large-scale data transfers for example)
  - Reactive changes – keeping ahead of vulnerabilities

Challenges this Financial Year

IRIS:

Key challenges this financial year largely driven by the need to “join-up” existing policy, processes and operations across partner sites

- Improved coordination
  - Better communications across sites
- Improved user management
  - Stronger policies around delegated user management
- Improved processes
  - Harmonised incident response planning across sites
- Improved operator and user training
  - Curating documentation and training and identifying gaps in provision

Longer term challenges

GridPP:

Continuing to respond to threat landscape

Maintaining the appropriate balance between security and performance

Maintaining the appropriate relationships with site security

IRIS:

Longer term challenges more focussed on reaching the level of maturity of projects like GridPP, WLCG etc

Completing work on harmonisation and policy and process development

Integration into UKRI DRI cybersecurity policies, processes,
and operations