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Welcome

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Grid Tools @ RAL

An update on the services and activities underway

Authored by Tom Dack
GridPP 51, Sheffield, 27 March 2024

Topics

1 Team Management & Structure

An overview of the team, its members, and operational structure

2 Service Updates

Updates on the services under the GridTools umbrella

3 Looking Forward

A brief overview of current organisational plans

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Team Management & Structure

What is Grid Tools?

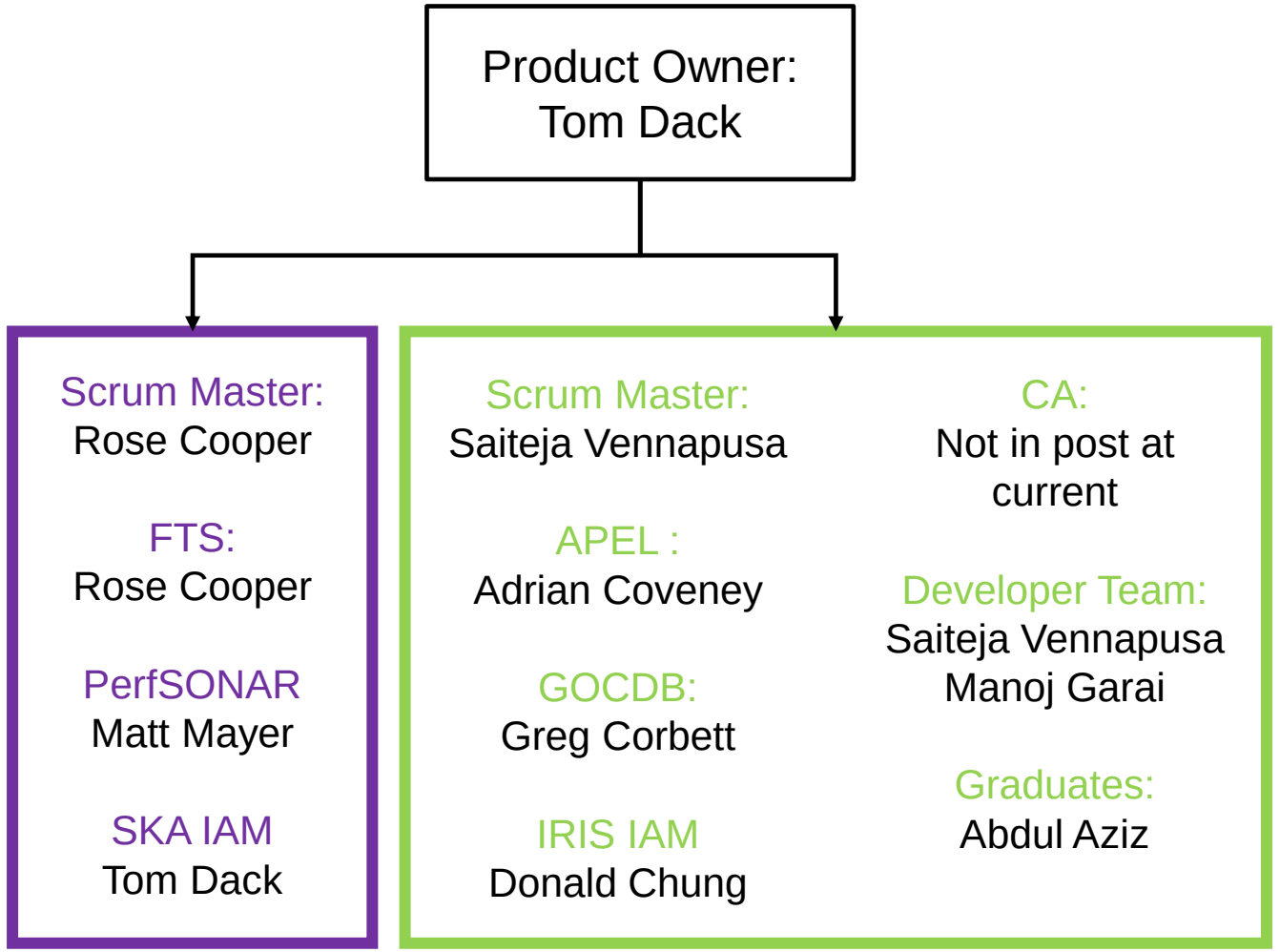
SCD Team Operating and Developing Federating Services

- Team coordinating the delivery of services to facilitate federating workflows at partner communities
- Shared operational and development effort across the services
- Team currently focussed primarily in two directions
  - Grid Federating Services
  - SKA Federating Services
- Overall team split into two Agile teams, in line with these areas.
- New Product Owner/Team Lead role intended to provide a consistent contact for stakeholder engagement, reporting, and requirement identification

Team Membership

- Tom Dack: Grid Tools team lead and Product Owner, SKA IAM lead
- Adrian Coveney: APEL service manager and lead developer
- Greg Corbett: GOCDB service manager and lead developer
- Rose Cooper: FTS service manager and SKA Scrum Master
- Donald Chung: IRIS IAM service manager
- Matt Mayer: perfSONAR service manager
- Saiteja Vennapusa: Grid Tools Software Developer & Grid Scrum Master
- Manoj Garai: Grid Tools Software Developer
- Abdul Aziz: STFC SCD Graduate Scheme, working on OpenSearch

Grid Tools Agile Teams



SKA Federating Services

+ other members of SRCNet Purple Team

Grid Federating Services

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Service Updates

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GOCDB

Slides by Greg Corbett

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GOCDB – work done in the last three years

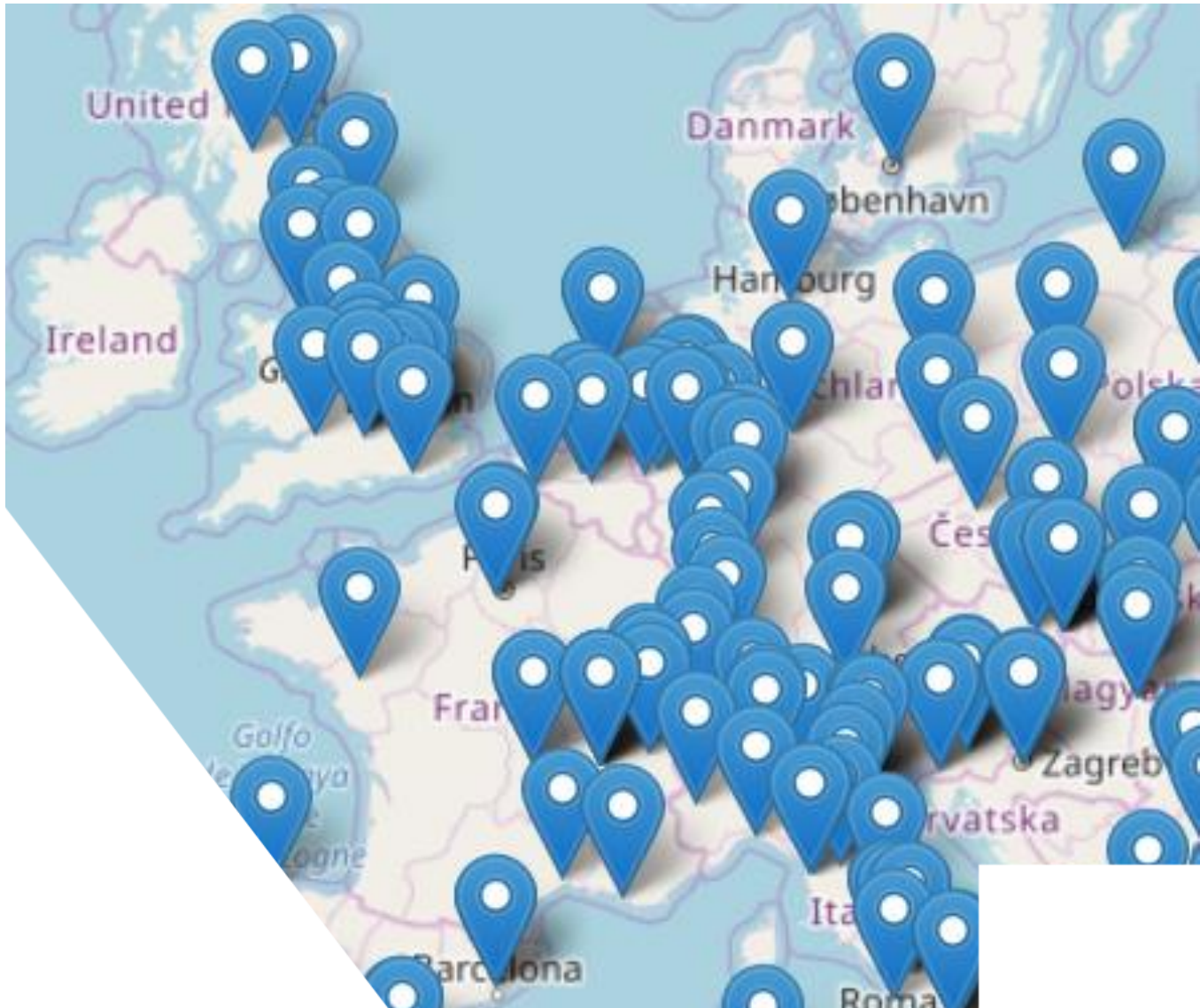
Work to better align exposure of personal data in GOCDB with requirements of the EU General Data Protection Regulation and UK GDPR

- Automatic deletion of inactive users
- Restricting access to personal information

Account Linking within GOCDB

- Reduces account and personal information duplication
- Will aid in the move away from user certificates

GOCDB's use case have extended to the EOSC Core and the IRIS community in the UK.



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GOCDB – plans for the next three years

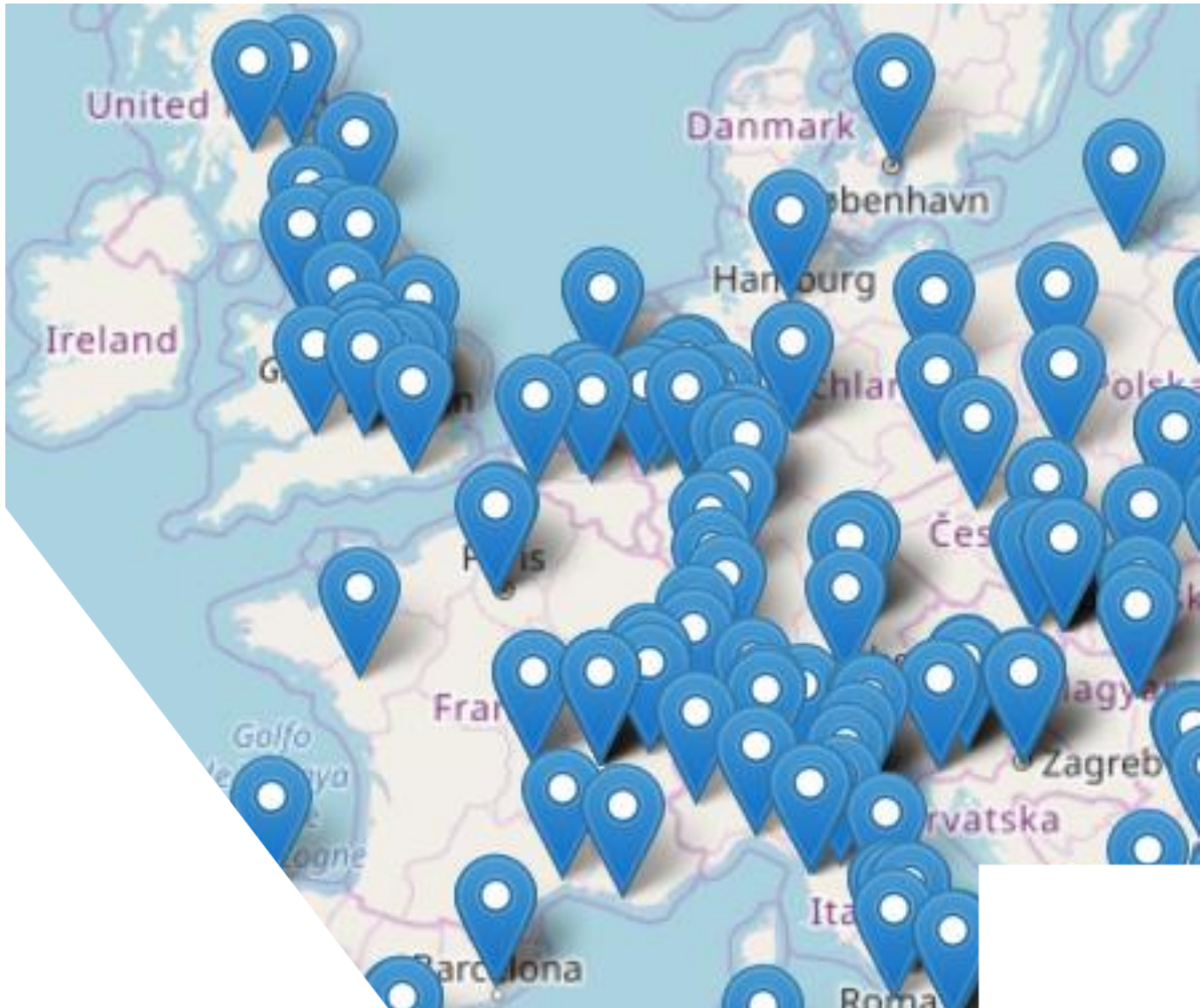
Allow access to the APIs via Check-in credentials

Deprecation and removal of user's direct certificate access to the portal

- X509 authentication for will be done via the IGTF Proxy IdP in EGI CheckIn

Evaluate improvements to the failover architecture and if feasible implement:

- New failover(s) at iris.ac.uk site(s) removing the dependency on the STFC network
- Read/Write "failover" using the IRIS supported geographically distributed GaleraDB



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APEL

Slides by Adrian Coveney

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APEL – EGI/WLCG

WLCG HEPscore Accounting group

- A group formed by Julia Andreeva of those working on HEPscore deployment for accounting
- Brings together APEL Accounting Repository, EGI Accounting Portal developers, EGI and WLCG Ops
- Supporting this additional benchmark involves significant schema and accounting pipeline changes
- Development complete but thorough testing of the deployment process required

SSM (messaging component)

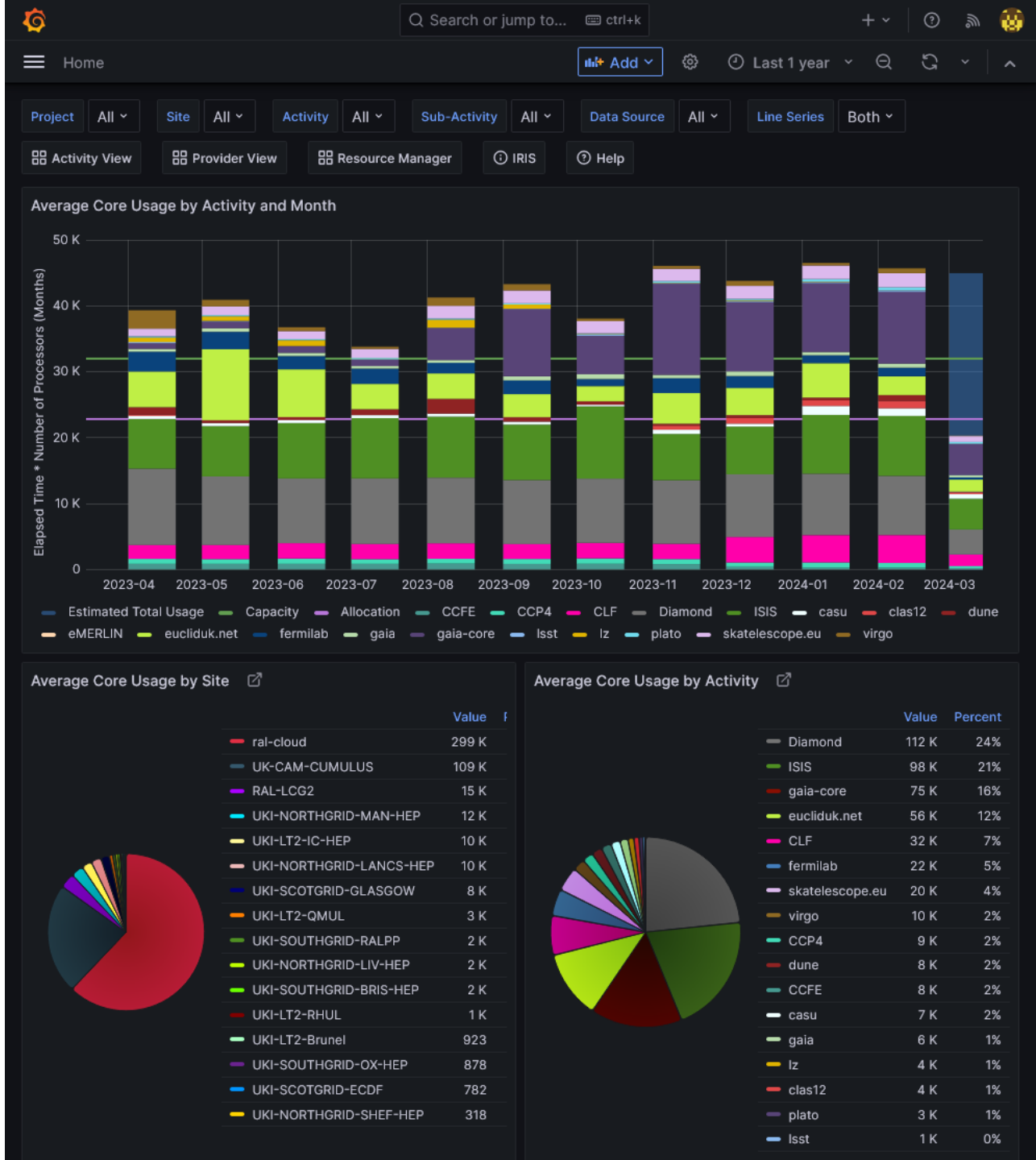
- Released a series of updates as we've gained experience with the Argo Messaging Service and AMS itself has developed
- Recently finished the changes needed for Python 3 compatibility and are getting some sites to test this packaged with EL 8+
- Learning from SSM migration being applied to the APEL server and client

APEL – IRIS

IRIS Accounting Dashboard

APEL is now an important part of IRIS with a number of improvements made to the interface

The Dashboard will be used as a test-bed for the recently prepared GPU accounting system (technical work done in interTwin and IRIS contexts) that will feed into the EGI/WLCG accounting



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APEL – Plans

Python 3 and EL 8+ migration

- Applying what we've learnt from SSM to the APEL server and client
- Preview release for testing with sites being finalised (hopefully available by this meeting!)
- Plans being developed for APEL database and server migration

Data validation

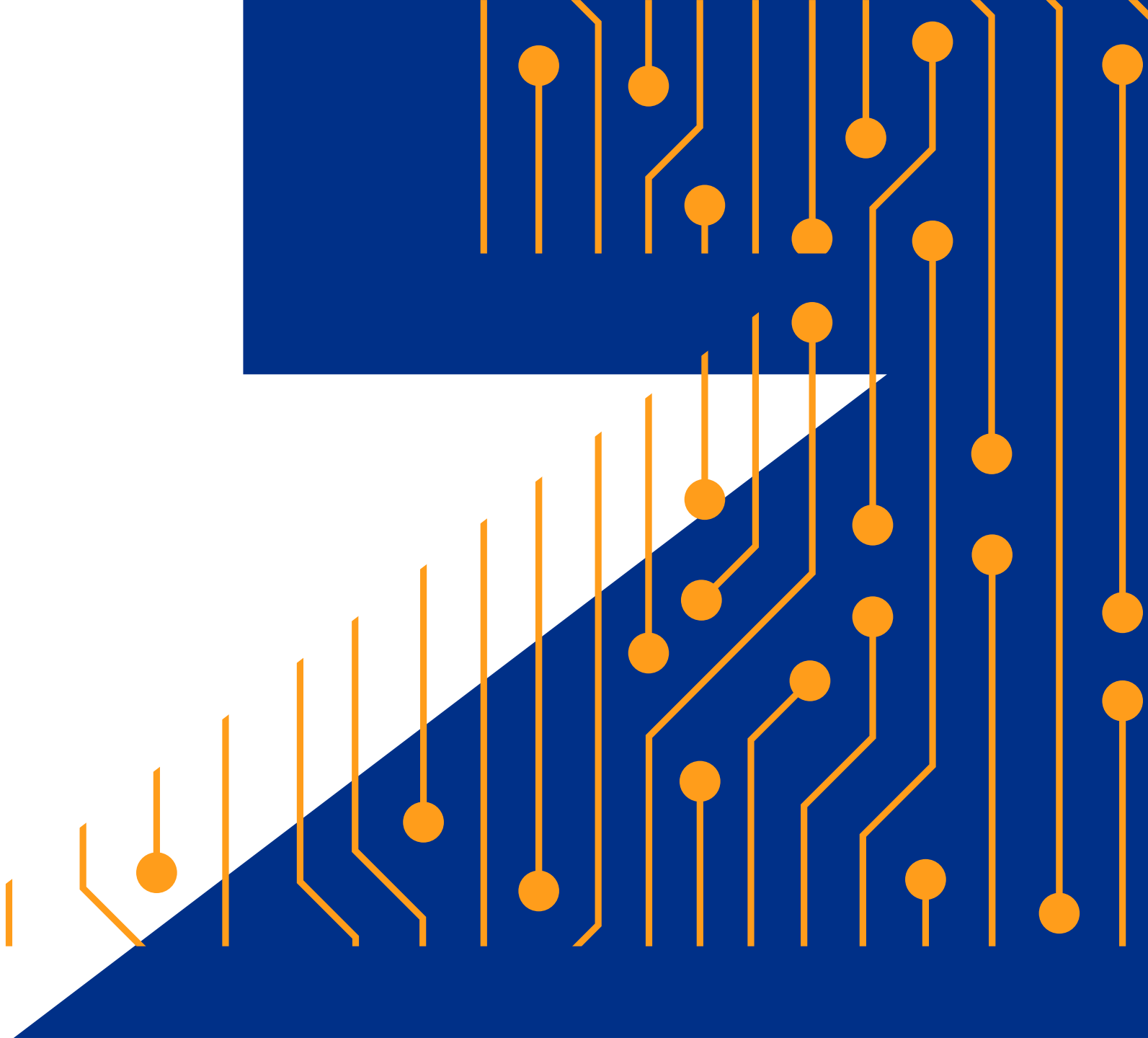
- Replacement for pub/sync system
- There is a technical debt hurdle from the old system to overcome, but underway

HEPscore benchmarking

- Most issues in the updated accounting flow have been ironed out through testing and work is now focussing on the deployment plan
- We are still looking for more sites to test with so that we can thoroughly verify this major change

Tokens support

- WLCG is still discussing how VO information should be shown in (or be discoverable from) the token – decisions needed here before anything can be planned or implemented in APEL



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IRIS IAM

Slides by Donald Chung

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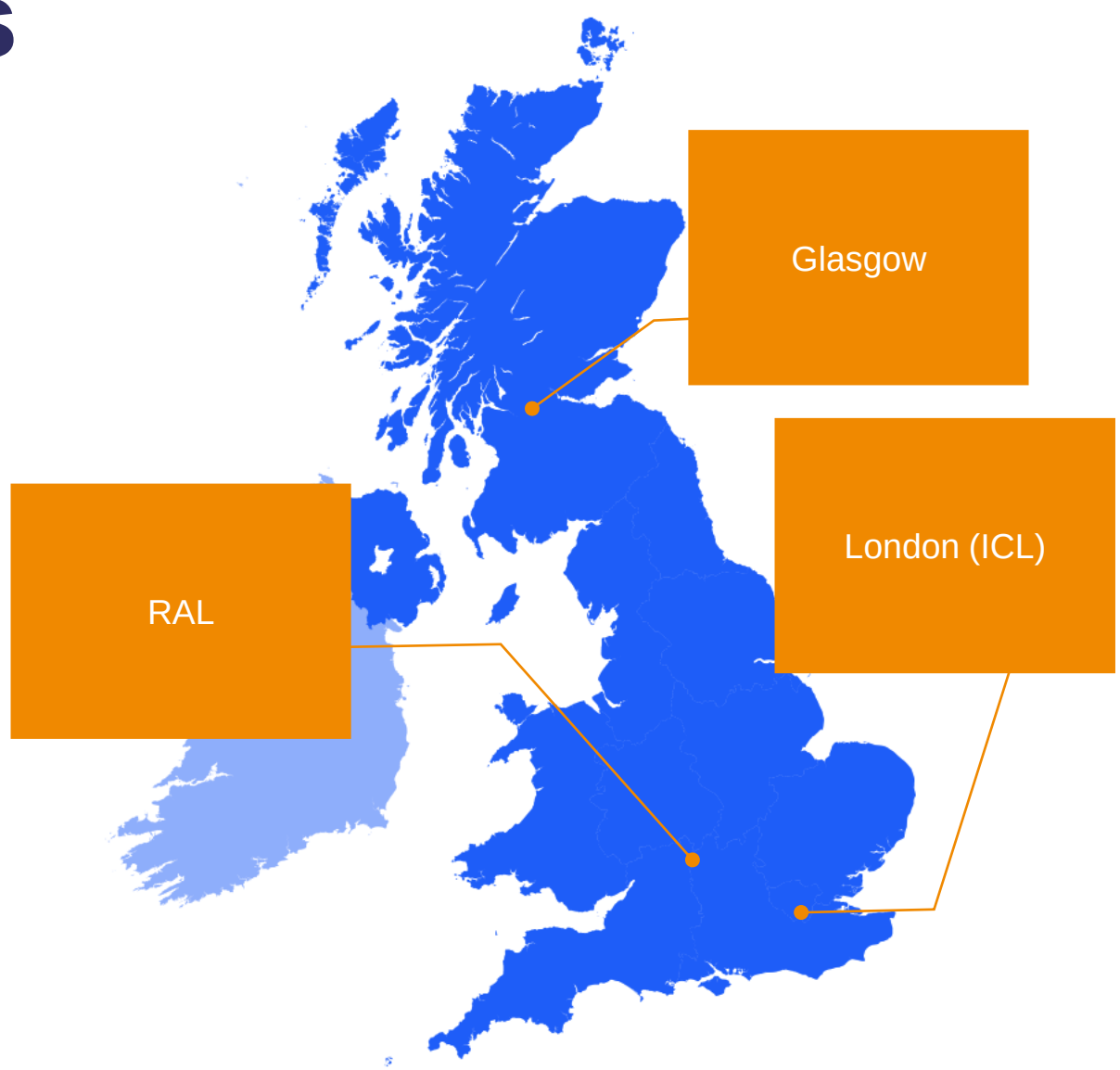
IAM: Current status

- Grid Tools runs two INDIGO IAM instances:
  - IRIS IAM – production service for IRIS
    - 672 users
    - 140 groups
    - 234 clients
  - SKA IAM – prototyping service for SKA SRCNet AAI design
    - 83 users
    - 55 groups
    - 210 clients
- Current work underway to:
  - Migrate IAM hosts to Rocky hosts, in a way to support future high-availability, geographically distributed, front-end
  - Migration to full HA Architecture, detailed in following slides

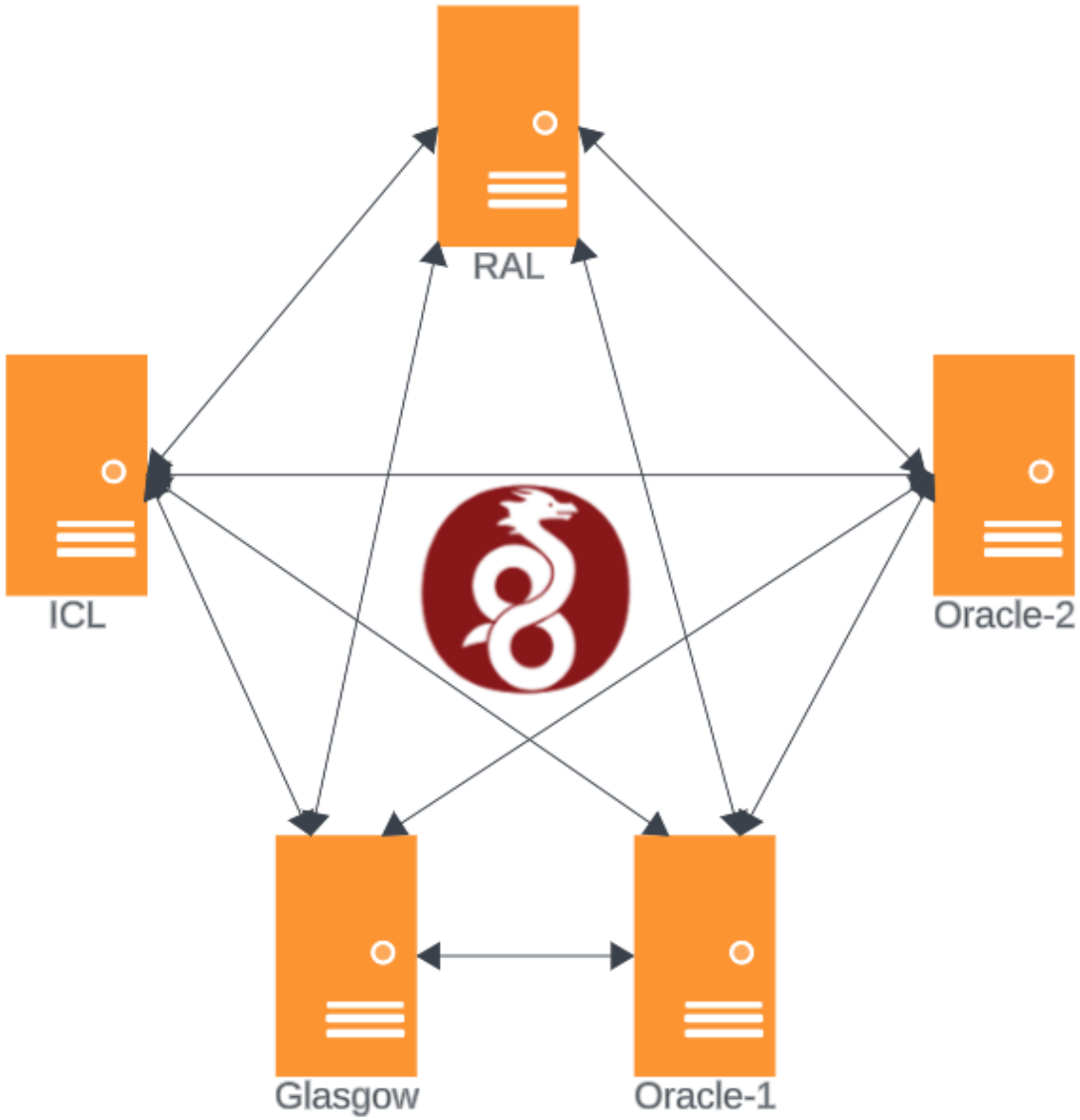
HA-IAM Current Status

- HA(High availability)-IRIS-IAM
- Deployed
  - Geographically distributed database (Backend)
    - RAL
    - Glasgow
    - London (Imperial)
- On-going
  - Frontend
    - Have demo services up and running with load balancer to divert traffic to heathy server



HA-IAM Plan

- Work with developer on INFN(indigoiam) to enhance HA setup performance
  - Backend database overhaul
- Planned Publication
  - HA-IRIS-IAM Setup (technical report)
    - Comparison of load balancing strategies
  - Discussion and comparison with RCauth setup
- Portable configuration management/deployment of IRIS-IAM
  - For non-Aquilon partners
- Monitoring and logging
  - Ichinga/opensearch
- Managing VPN access
  - Build more robust authentication layer on top of wireguard



FTS

Slides by Rose Cooper

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FTS: Current status

- Maintaining three FTS instances:
  - WLCG production instance (lcgft3)
  - Prototyping SKA instance (fts3-ska)
  - Test instance

- FTS usage has shifted to include communities in addition to the Tier-1
  - SKA – Component in the data movement prototyping
  - LSST – testing data transfers using the RAL FTS
  - Included in EGI up until June 2023

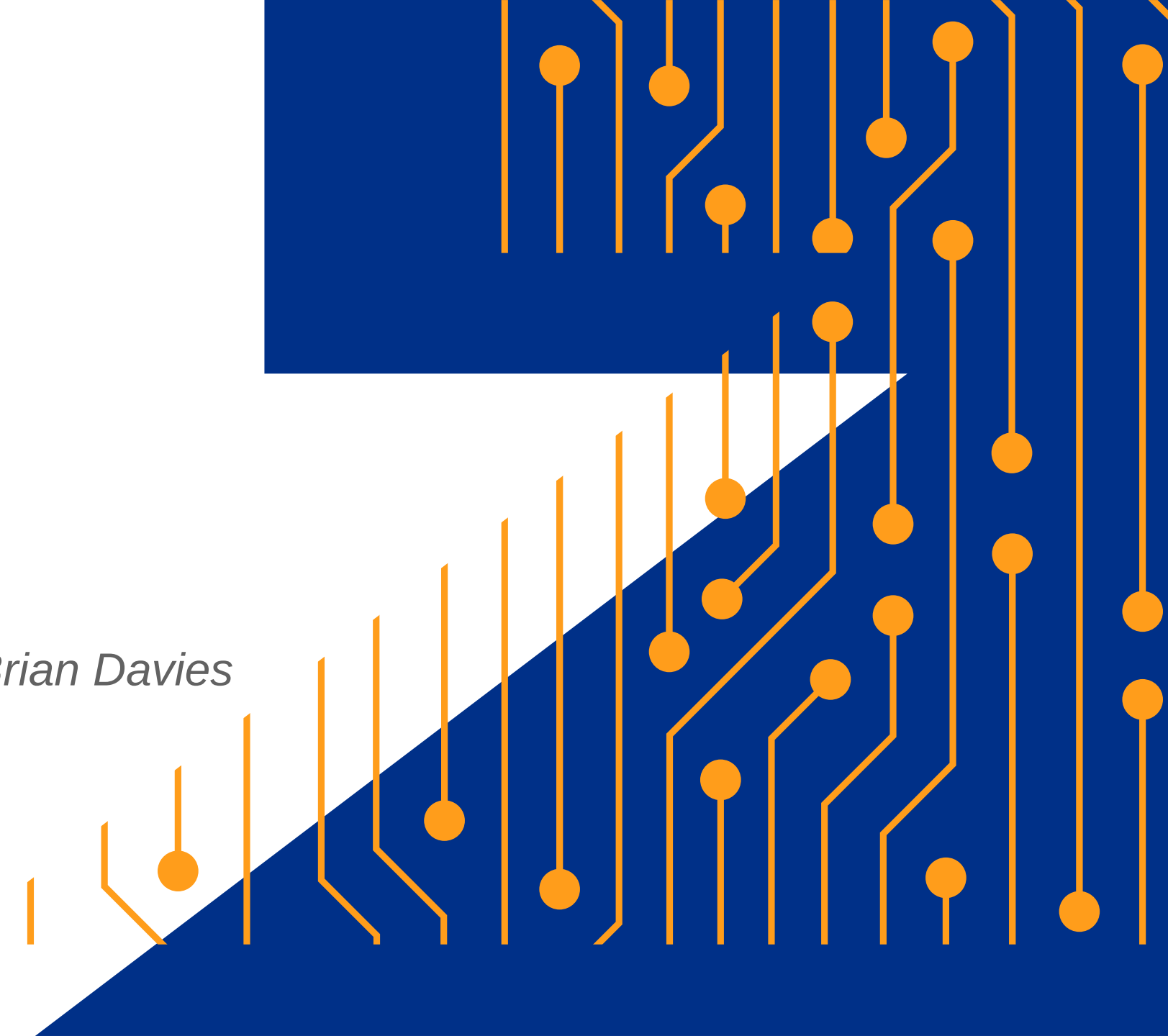
- Testing integration with token authentication:
  - Integrated SKA-FTS with SKA-IAM and Escape-IAM as part of the prototyping for SKA
  - Work to include token authentication on the WLCG production instance following the upcoming FTS major release

FTS: Future plans

- New FTS version 3.14 expected to be available in April
  - Will be compatible with Alma 9/Rocky 9, which is essential with SL7 will reaching end of life at the end of June this year.
  - Other major change in this release is a refactor of the token workflow within FTS
  - Expecting another follow up major release later this year to fix any issues with the operating system migration

- Continuing development of SKA-FTS instance at RAL
  - Focus on integration with SKA-IAM to meet the AAI requirements for SKA
  - Support use case for FTS as part of the data movement workflow alongside Rucio
  - Begin work to tune & refine links between SKA storage endpoints

- Scale back WLCG FTS instance
  - No longer used as the primary back FTS for any of the Major CERN experiments so doesn't need as many VMs supporting it
  - Won't impact availability of the service
  - Can be scaled back up if needed



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perfSONAR

Slides by Matt Mayer & Brian Davies

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perfSONAR for SKA

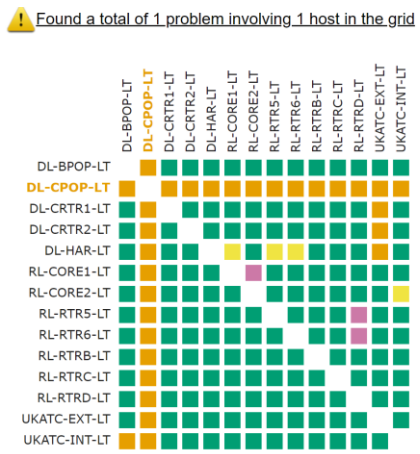
- Grid tools at RAL creating the perfSONAR mesh for the Square Kilometer Array (SKA) project
- This will support SKA for long distance connections (Australia/South Africa to SKA partners).

Status:
perfSONAR host setup at RAL/UK with dashboard
Using two external nodes for testing

To do:
Coordinate with external sites for other perfSONAR nodes
Organise scheduled tests into MESH
Tune hosts for high bandwidth connections (100GB)

perfSONAR for Tier 1

- Status
  - Deployed 100G T1 and CTA hosts into different parts of SCD network
  - Added to WLCG mesh.
  - Part of intra-RAL site mesh
    - https://psmaster.rl.ac.uk/maddash-webui/index.cgi?



- To Do
  - Routing changes
  - Enable IPv6 for CTA host
  - Upgrade to Rocky 8/9
  - Issues with logstash/archive service

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Looking Forward

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Next Steps for Grid Tools

Focus on improving the Team's ways of working, to offer a coherent platform of federating services

- The new Agile structure facilitates coherent and granular activity planning and delivery estimates
- Looking to shift towards value-focussed delivery, aiming to deliver new features when ready, instead of in larger releases.
- Ongoing recruitment for a new CA service manager
  - This role is intended to have some helpdesk/service support responsibility across the team
  - Support shared operational activities

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Questions?

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Thank you

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