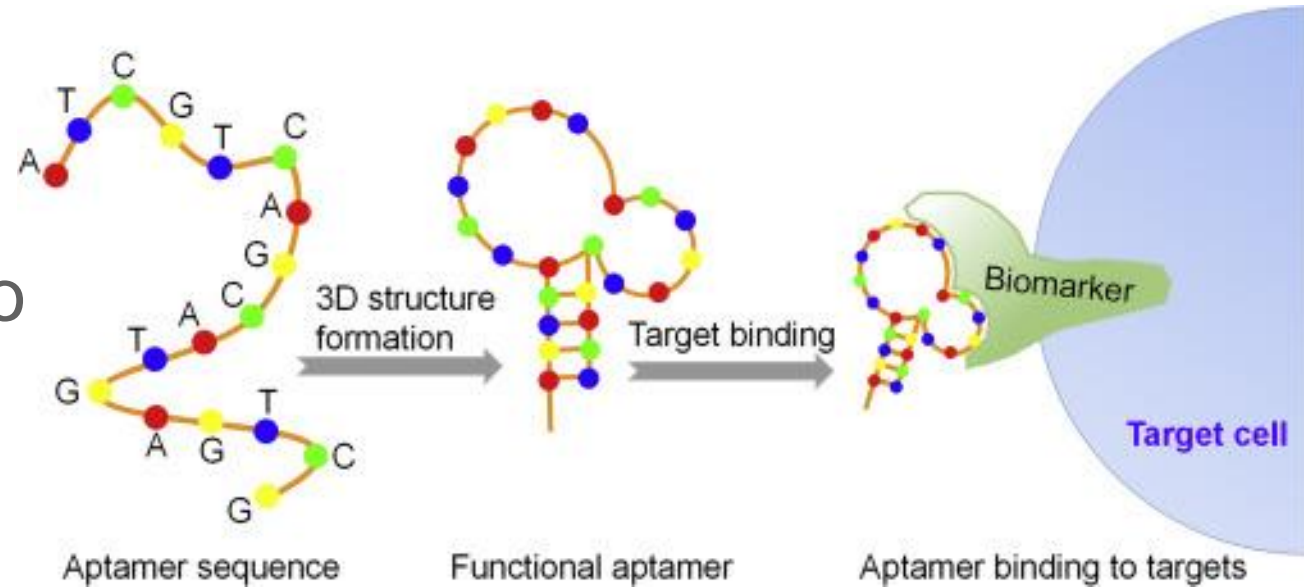# Multi-VO Rucio

Timothy Noble
(Multi-VO service owner)

Overview

- Introduction
- Rucio
- Objectives
- Progress
- Future
- Conclusion

Education Background

- PhD in Biomedical Science, specialising in Molecular and Cellular Biology.

- To discover proteins on the surface of cells that pointed to bone marrow stem cells.

Aptamer sequence → 3D structure formation → Functional aptamer → Target binding → Aptamer binding to targets

Biomarker

Target cell

Industrial Experience

- Worked within industry for 3 small biotechnology companies.

- The joy of small companies is that you are involved in everything all the time.

- While furloughed decided to learn coding and develop a small app.

Role within RAL

- PhD conversion course to take skills and further develop skills for the role.
  - Software Development
  - Project management
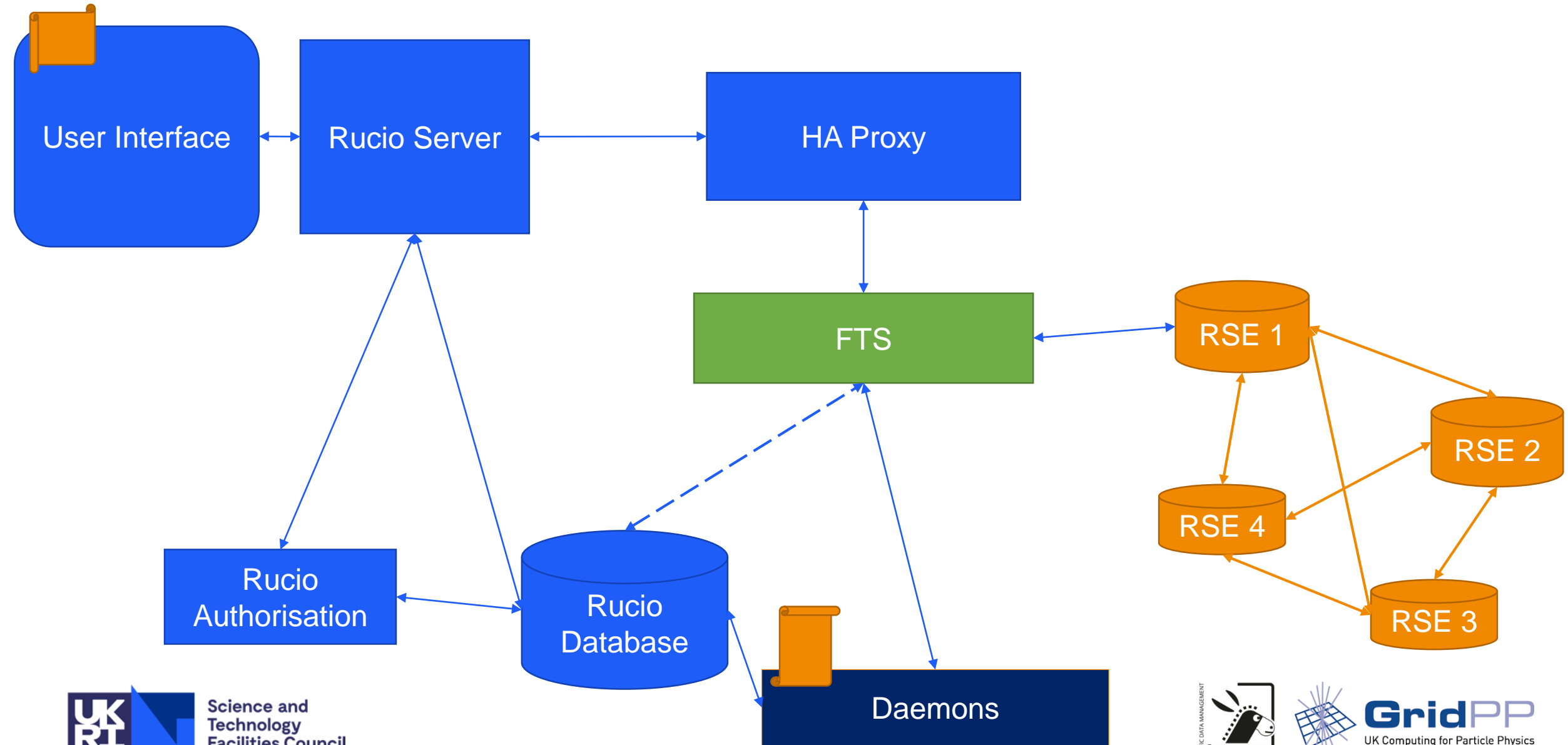 - Sys-admin
  - Service management

Rucio

- Data management tool
- Developed by ATLAS, now used by other communities
- Data agnostic
- Heterogeneous storage ready
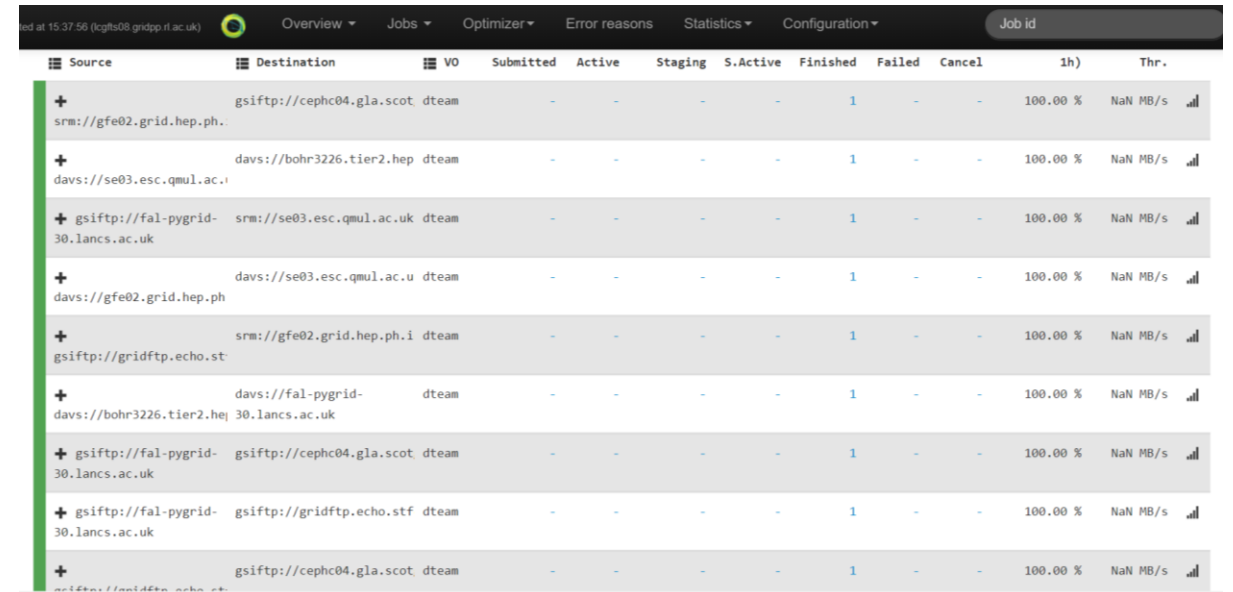- Open source

Rucio - How transfers work

Objectives

- UK based Data Lake
  - Configure at least 4 core sites
  - Configure additional sites with non-standard storage
  - Create metrics to compare prototype
- Work with developers to improve Rucio (including for Multi-VO)

- Integration of token authentication into Rucio to allow easier access.
- Increasing ease of access Rucio for smaller communities

Progress - UK data lake prototype

- Currently have 6 sites on the Multi-VO Rucio instance, with hourly transfers between these sites to test and monitor transfer success.

- Further monitoring to be incorporated.

- Will be incorporating other sites with non-standard storage (cloud, state-less, no storage)

Progress - Short term fix for Multi-VO Rucio

- Daemons can only select one certificate for authorisation currently

- A daemon server for each of the VOs
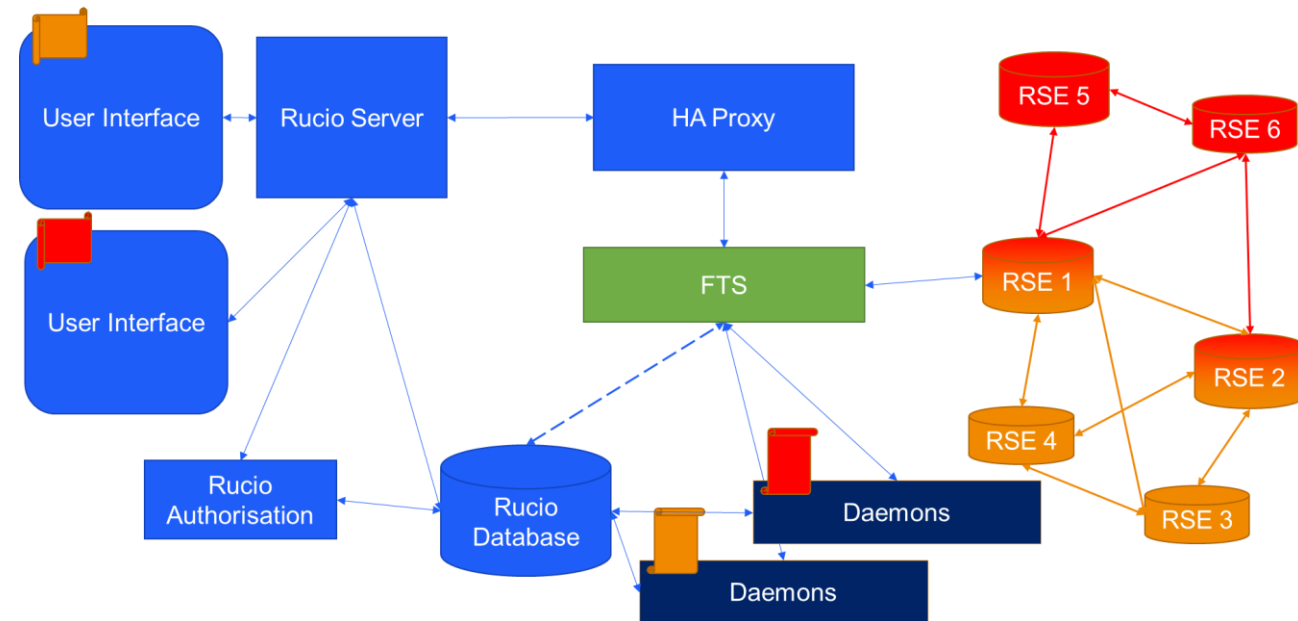
Progress - Developed Code for fix

- Building on top of previous Multi-VO developments

- Developing a selection of certificate based on the VO submitting the job, but also allow for bulk submissions for scale up of the Multi-VO use.

- Continue to work with Rucio developers to improve Rucio.
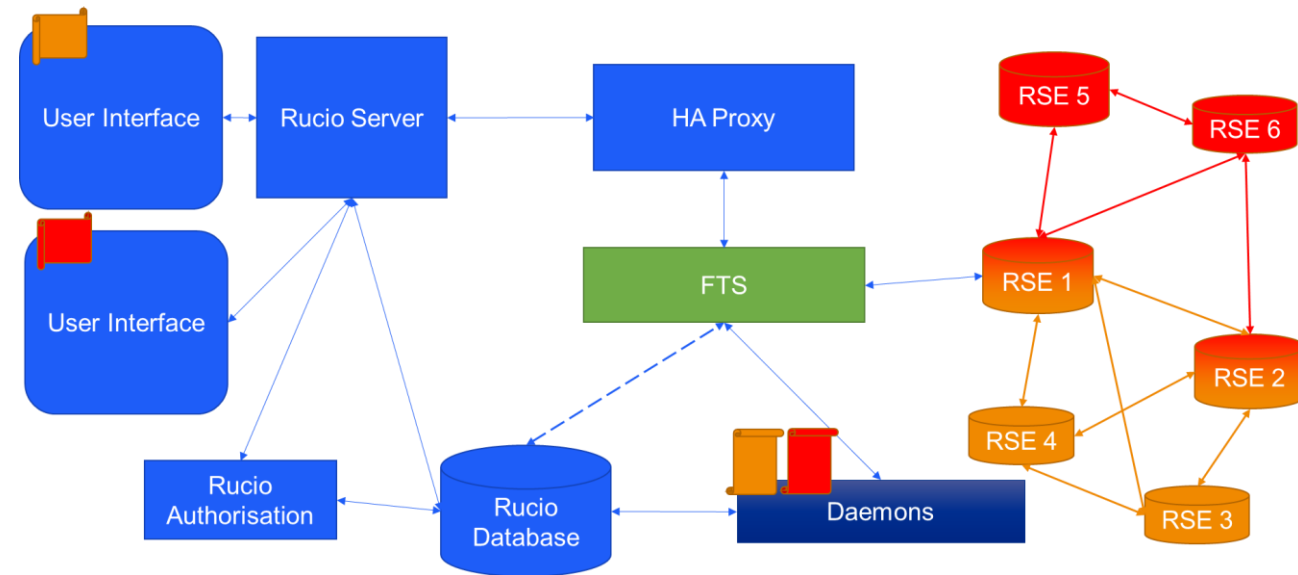
Progress – On-boarding of new communities

- On boarded two groups to Multi-VO Rucio

- Ran a tutorial and gave tutorial resources to a second community, with feedback to improve the resources.

- Running a webinar for EGI-ACE to promote Multi-VO Rucio to other communities October 6th 13:00 GMT

Future

- Integration with IAM

- Develop Multi-VO compatible fix for the Rucio Web-UI

- Quality of Service improvements
  - Concept of high performance storage
  - Concept of reliability of storage

Conclusion

- Multi-VO Rucio is being used to develop the UK data lake prototype

- Update of Rucio Instance to incorporate token authentication works developed already to allow for DIRAC integration

- Development works are improving Rucio constantly to communities needs

- Looking to improve ease of use to attract more communities

Questions?