

AIRRRPORT – A Single Pane of Glass for UK AI Research Resources (AIRR) Ecosystem

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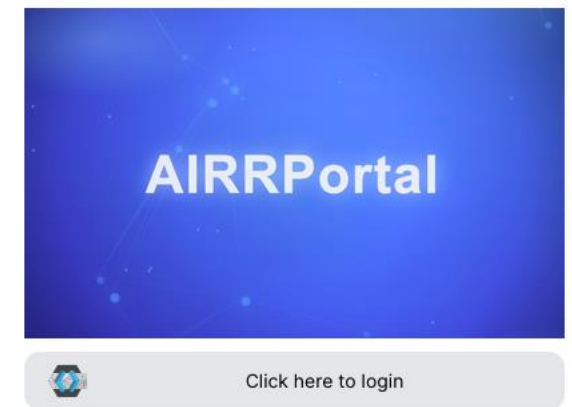
Bristol Centre for Supercomputing (BriCS)

- **BriCS** has been recently formed (Q3 2024) for managing Isambard Digital Research Infrastructure (DRI) projects within the Faculty of Engineering
 - Isambard-AI (~5,500 Nvidia Grace-Hopper GH200 superchip) in a Modular Data Centre (MDC)
 - Isambard 3 (~400 nodes Nvidia Grac-Grace superchip)
 - Software-defined HPC cluster called Digital Labs (OpenStack based) for University
 - **AIRREPORT**—Federated user and project management framework for AI and HPC services
- History: GW4 (Bath, Bristol, Cardiff and Exeter) **Isambard project** initially set out in 2016 to prove that a new **ARM-based** technology for supercomputing

AHUG
ARM HPC USER GROUP



Modular Data Centre



Jan 2024 – Break ground

Mar 2024 – Isambard-AI Phase 1 online

June 2025 – Isambard-AI Phase 2 online

Sept 2025 – Build complete, full service!

Isambard-AI UPS

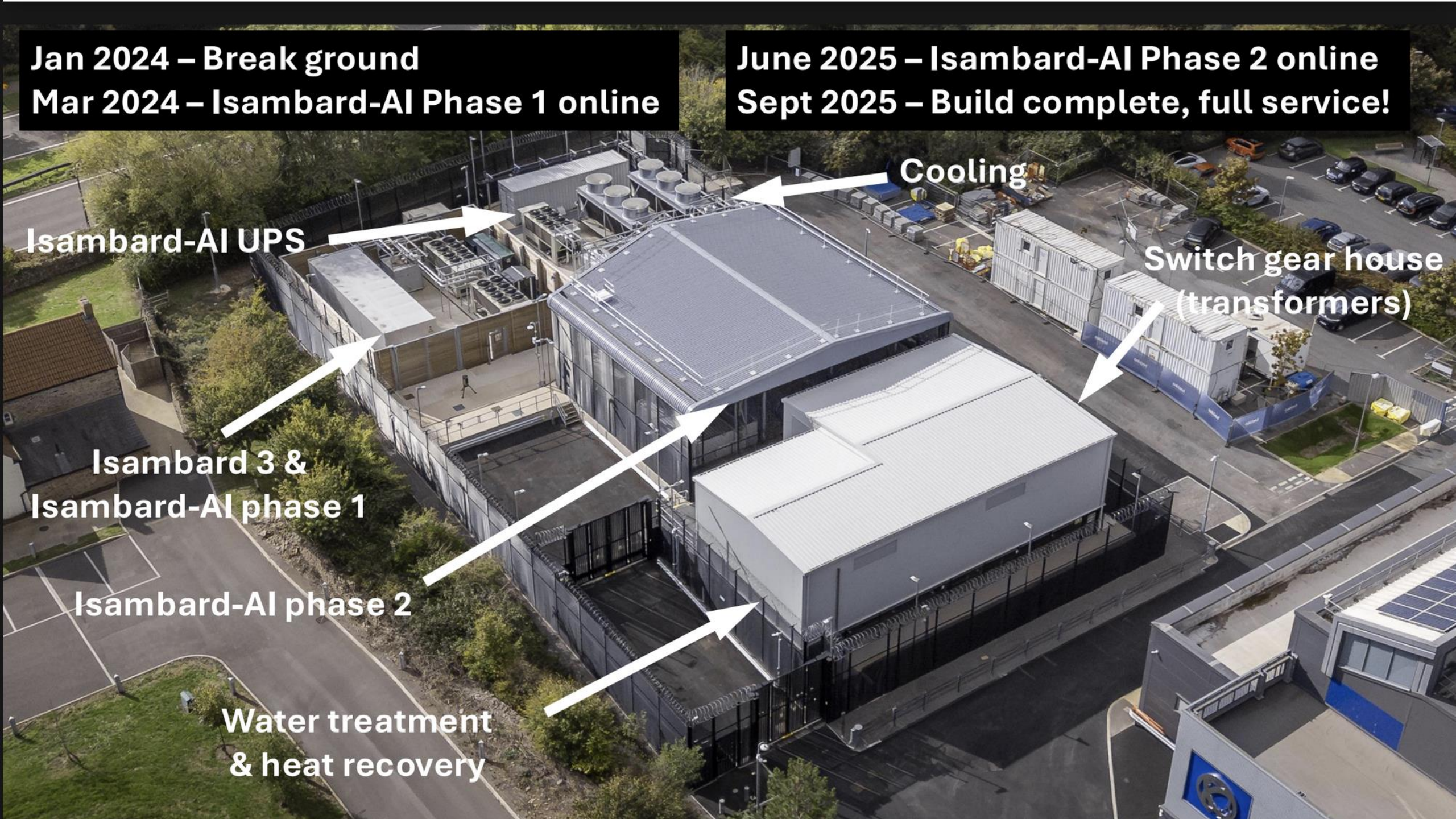
Cooling

**Switch gear house
(transformers)**

**Isambard 3 &
Isambard-AI phase 1**

Isambard-AI phase 2

**Water treatment
& heat recovery**



AI Research Resources (AIRR)

- Provides world-leading, AI-specialised computing capacity to:
 - public researchers
 - academia
 - small and medium size enterprises
- Aims to address the acute under-provision of public compute for AI users in the research and development (R&D) community. This is crucial for the acceleration of AI innovation and the **government's growth agenda**.
- Source: <https://www.gov.uk/government/publications/ai-research-resource/airr-advanced-supercomputers-for-the-uk>



AI curiosity—visit from HRH Prince of Wales, January 22, 2026

Policy paper

UK Compute Roadmap

Our plan to build a world-class compute ecosystem that provides a platform for innovation, growth and opportunity across the economy.

From: [Department for Science, Innovation and Technology](#) and [UK Research and Innovation](#)

Published 17 July 2025

Investment will scale up over this spending review period and is expected to reach over £300 million in 2029. To kickstart the next phase of delivery, we will:

- **Launch a programme to identify opportunities for Public-Private Partnerships** that could coordinate the delivery and operation of new AIRR supercomputing capacity, enabling build out at pace and with agility;
- **Commence procurement of cloud compute to complement our dedicated AI supercomputers** ensuring the AIRR offers both high-performance, purpose-built infrastructure and flexible, on-demand resources to meet the full range of user needs.
- **Deliver 'AIRRPORT'**, which will provide a single front door to the AIRR service. AIRRPORT will provide a seamless experience for users, enabling them to submit jobs, move workloads, access tools, and manage data across AIRR systems ensuring accessibility and interoperability

We are already taking action. With up to £2 billion of investment over the coming years, we are building momentum – from launching the AI Research Resource to revitalising communities across the UK through new AI Growth Zones. We will act with pace and purpose – but also with a clear commitment to security, sustainability, and public value.

Policy paper

AI for Science Strategy

This strategy sets out 15 actions government will take to cement the UK's position as a global leader in AI-enabled science breakthroughs.

From: [Department for Science, Innovation and Technology](#)

Published 20 November 2025

Delivery:

- Government will establish a new data repository to be co-located with Isambard-AI at the Bristol Centre for Supercomputing (BriCS) and will invest in additional storage capacity at the Edinburgh Parallel Computing Centre (EPCC) – the UK's first National Supercomputing Centre and site of the UK's next national supercomputing service. Both data storage facilities will have federated capabilities, ensuring robust compute access via AI Research Resource's (AIRR) 'AIRRport' platform.
- Government will seek to continually evolve the capabilities of this federation to ensure that it provides users with the best tools to conduct transformative research and innovate. This could include the development of secure agent-to-agent interactions that manage data access within federated systems.
- Finally, our new AIRR data capability will explore how to provide secure access to high-impact health datasets through the AI Research Resource under strong privacy safeguards, enabling UK scientists to undertake more ambitious AI research using this data. It will build on the work of the Federated Research Infrastructure by Data Governance Extension (FRIDGE) programme [\[footnote 10\]](#) and involve partners like UK Biobank, the world's most widely used collection of consented and de-identified human biological and health data, to define the governance and technical controls required to deploy trusted research environments (TREs) in high performance computing clusters.

<https://www.gov.uk/government/publications/ai-for-science-strategy/ai-for-science-strategy>

AIRRPortal—A Single Pane of Glass

- **Front door** for management of AIRR
- **Researchers** apply for time on AIRR Services
- **Allocators** review applications and make awards
- **Researchers** can manage their awards
- **Allocators** can track usage
- As much as possible is **automated and AI-enabled**
- On-demand **accounting, reporting and auditing** (AI-ready)



<https://portal-airr.isambard.ac.uk/login/>

Supercomputing in the Age of AI

From idea to access in days to weeks, not months or years

Design principles—agility & stakeholders' autonomy



AIRRPORT – A collaborative project

AIRR sites-University of Bristol, University of Cambridge

DSIT and UKRI (funders and stakeholders)

Waldur--OpenNode, Estonia & MyAccessID—GÉANT (European collaboration)

* initial funding from UKRI/EPSRC AIRRFED demonstrator project

Supercomputing in the Age of AI

Different models and options



Communities of users
(research, academia and
industry)



Capacity and demand
management



Computing and storage
capacities & services
providers

- Single stakeholder
 - Simpler or central decision making
- Multiple stakeholders (AIRR)
 - Coordination among stakeholders
 - Coordination across stakeholders
- Objective
 - Efficient, mission-oriented & transparent decision making

Supercomputing in the Age of AI (UK AIRR) Federation → Empowering all stakeholders



Communities of users
(research, academia and
industry)



Capacity and demand
management



Computing and storage
capacities and services
providers

- Communities
 - Research councils
 - Government
 - Industry
- Capacity & demand managers
 - UK government e.g. DSIT
 - UKRI (research councils)
- AI infrastructure and services
 - Bristol (Isambard-AI & AIDF)
 - Cambridge (Dawn)
 - AIRR Cloud (CSPs)
 - EPCC TBC (AIDF)

Benefits of Federation for all

- User communities



- Ease of access
- Autonomy to manage projects and usage (~900 projects and ~2000 users since July 2025 launch on AIRRPortal alone, more on service portal)

- DSIT and UKRI

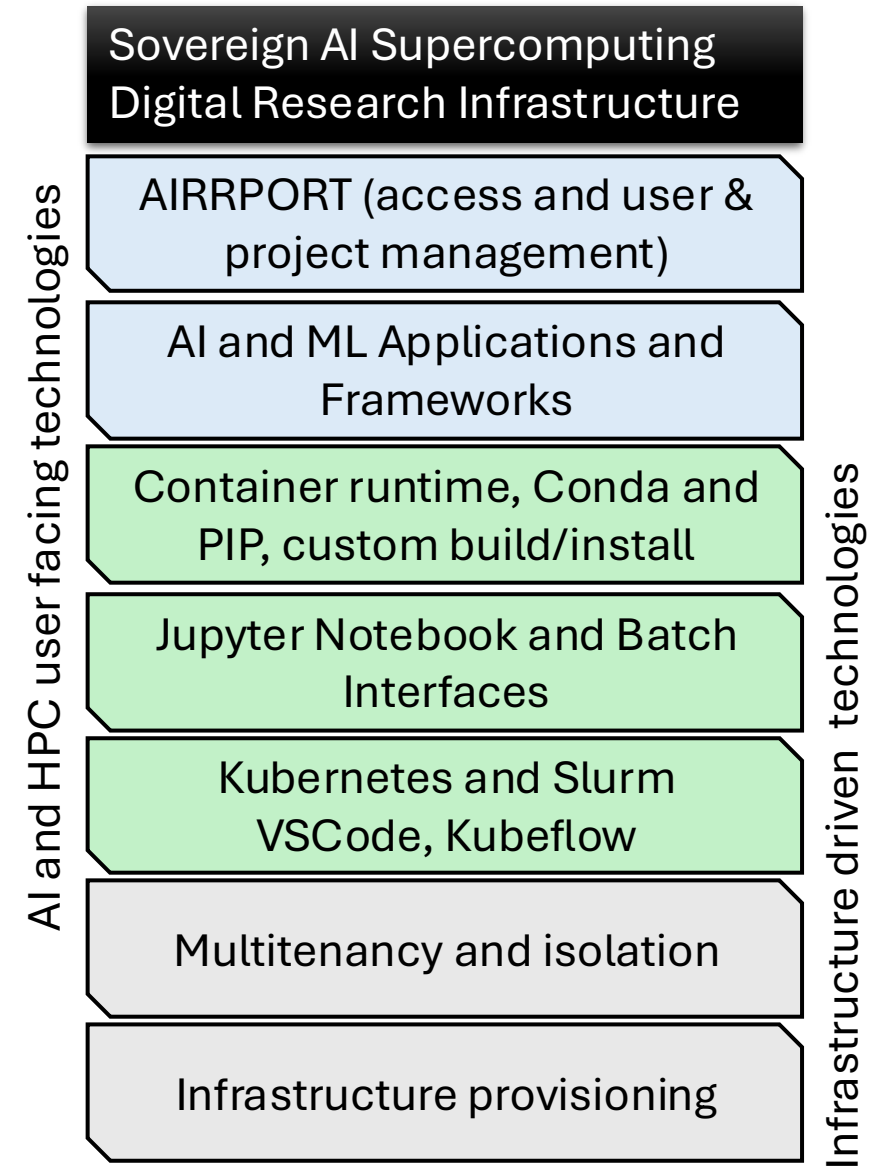


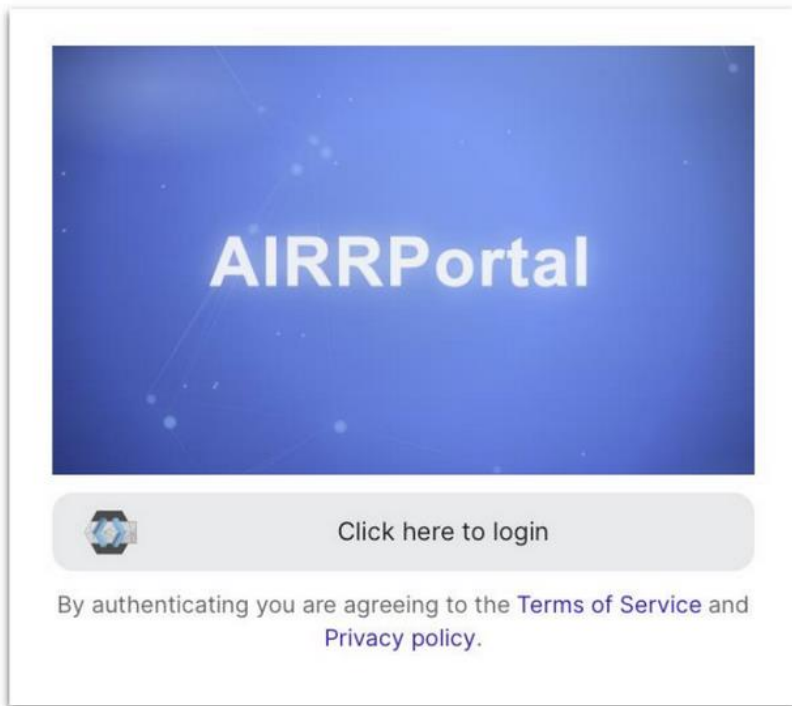
- Rapid delivery of services e.g. launched 5 access calls in ~6 months
- Autonomy to manage compute capacities across resources
- Compliance and regulatory workflow management

- Service providers



- Consistent security and compliance management
- Transparency and separation of concerns for auditing and reporting

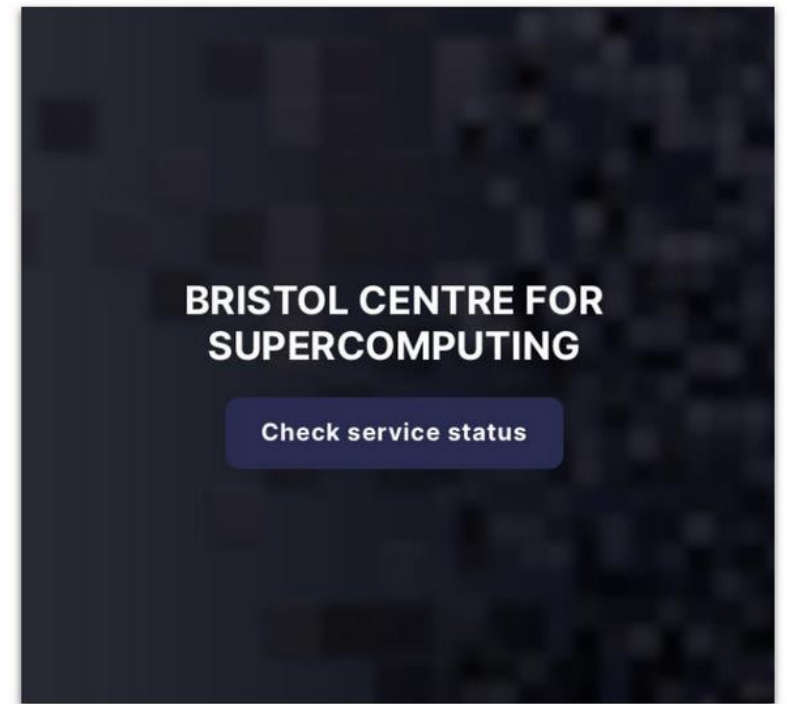




Communicate



Award details sent securely
to AIRR Site



Name: AIRR-GW 2025-07-17 – Advancing Patient-Centric Care: Trustworthy AI to Bridge Computer and Bedside for Disease Diagnosis and Prognosis

Description: Artificial intelligence holds great promise for enabling the early detecting of disease progression...

Resource: Isambard-AI

Start date: Dec 8 2025

End date: Mar 22 2026

Award: 10,000 GPU hours

Team:

Project Lead: email@university.ac.uk

Project Co-Lead: email@university.ac.uk

Project member: email@university.ac.uk

Christopher Woods presentation @ SCA/HPCAsia'26

workshop: <https://sites.google.com/view/supercompcloud>

A AIRR-GW - 2025-07-17 - Advancing Patient-Centric Care: Trustworthy AI to Bridge Computer and Bedside for Disease Diagnosis and Prognosis
UKRI (Isambard-AI)
ID: u5gp Start date: Dec 8, 2025 End date: Mar 22, 2026

Project dashboard Resources Team Audit logs

Accounting

- Balance at start of month: NHR 1,512.62
- Estimated spend this month: NHR 248.64
- Estimated balance at the end of this month: NHR 1,263.98

Team

5 members

Credit consumption (Current balance: NHR 1,512.62)

Credit used

Description Edit

Artificial intelligence holds great promise for enabling the early detection of disease progression by identifying features that may not be obvious to human clinicians. However, currently available AI tools often require vast amounts of data that are difficult to collect and typically need expert annotation. Moreover, many existing AI systems operate as "black boxes," making their decision-making processes opaque to the clinicians who rely on them. In addition, when these systems are developed within a single hospital, they frequently perform poorly on unseen data, creating a significant barrier to widespread adoption. The objective of this project is to develop a new type of AI-powered clinical decision support system that addresses these challenges by providing more generalisable, explainable, and reliable decision-making. Our goal is to enable healthcare providers to initiate treatment at the earliest possible stage for those who stand to benefit the most.



User Group: brics.u5gp

brics.u5gp members:

Users (4)	User Groups	Services	External	User ID ov
brics.u5gp is a member of:				
User Groups	Netgroups	Roles	HBAC Rules	Sudo Ru
<input type="checkbox"/>	User login	First name	Last name	Status
<input type="checkbox"/>	hai			✓ Enabled
<input type="checkbox"/>	jar			✓ Enabled
<input type="checkbox"/>	yjw			✓ Enabled
<input type="checkbox"/>	yyf			✓ Enabled

Create Unix Identities in FreeIPA

Filesystem



Project dashboard communicates securely with site services to automatically create user accounts, accounting info and storage locations / quotas

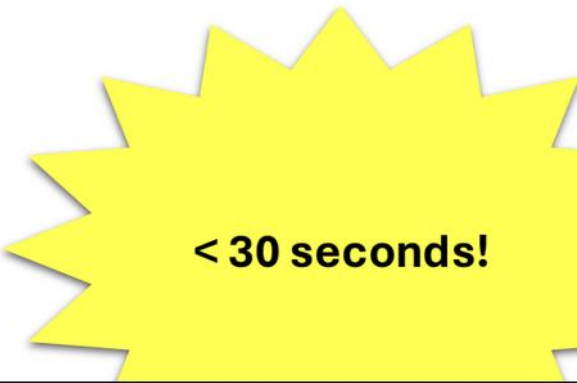


Account	User	GrpTRESMins
brics.u5gp		billing=78414220,cpu=26138073,gres/gpu=363028,mem=43563456G
brics.u5gp	hai	
brics.u5gp	jar	
brics.u5gp	yjw	
brics.u5gp	yyf	

Create Accounting Associations in Slurm

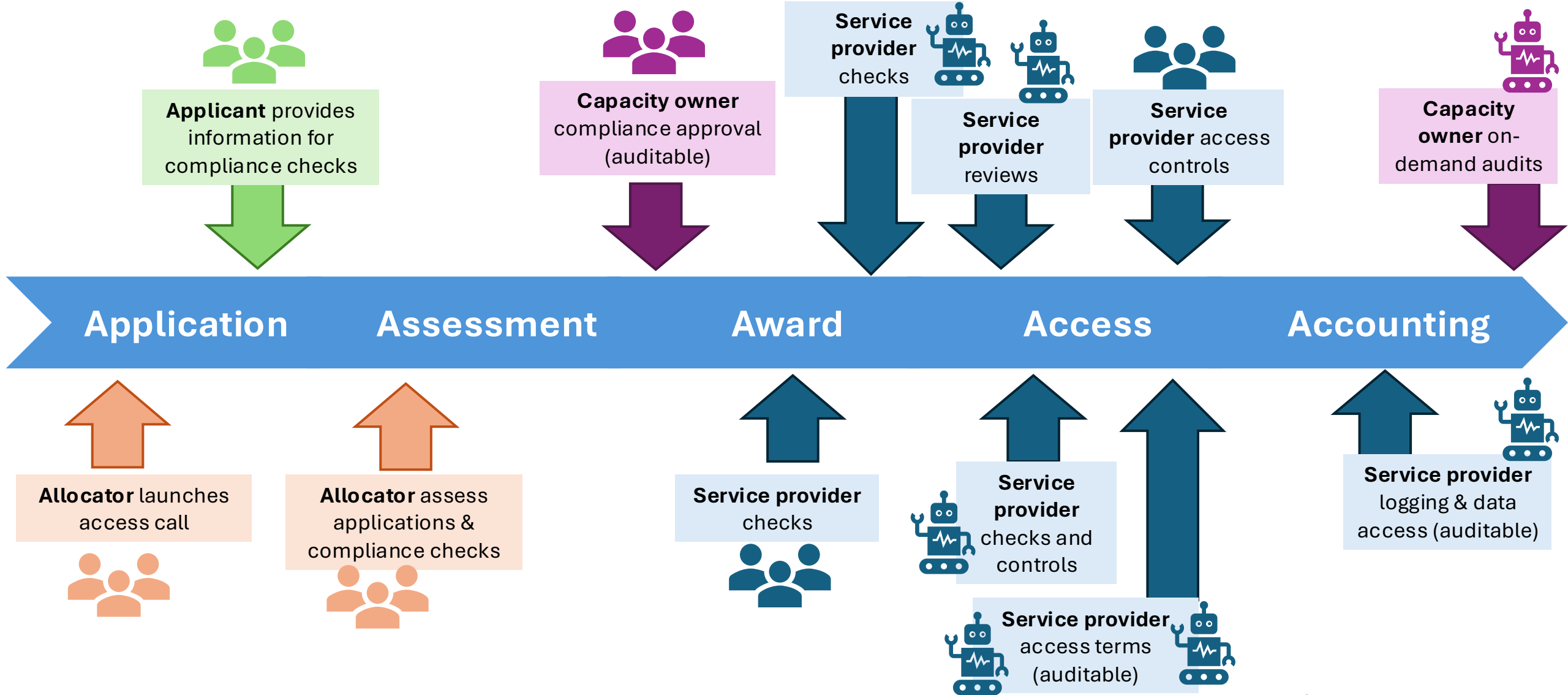
```
Disk quotas for prj 1483802726 (pid 1483802726):
Filesystem kbytes quota limit grace files quota limit grace
/projects 22646656348 0 214748364800 - 684258 0 0 -
```

Create user and project directories on shared Lustre and VAST filesystems
Set project- and user-level Lustre quotas



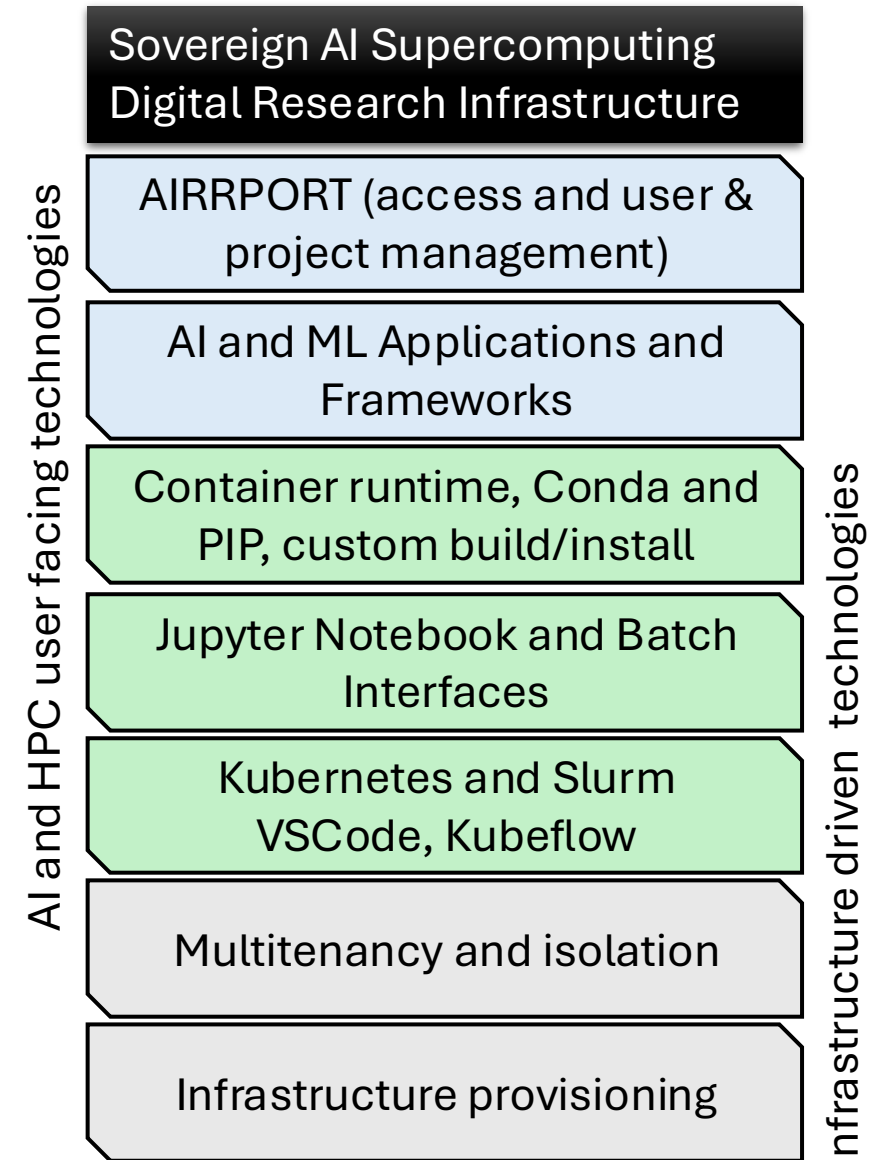
< 30 seconds!

AIRRRPORT Compute Allocation and Compliance Workflow

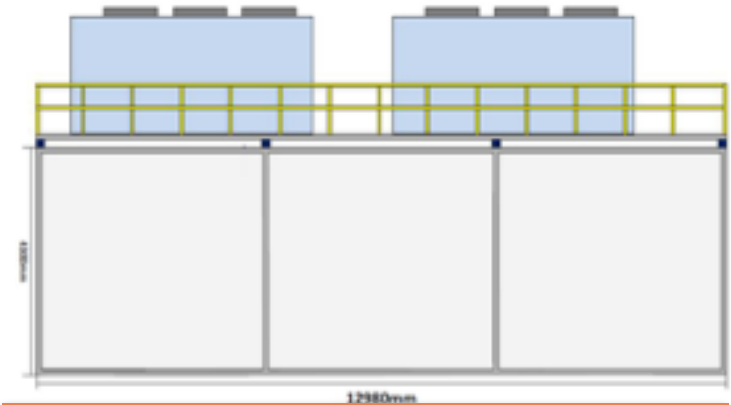
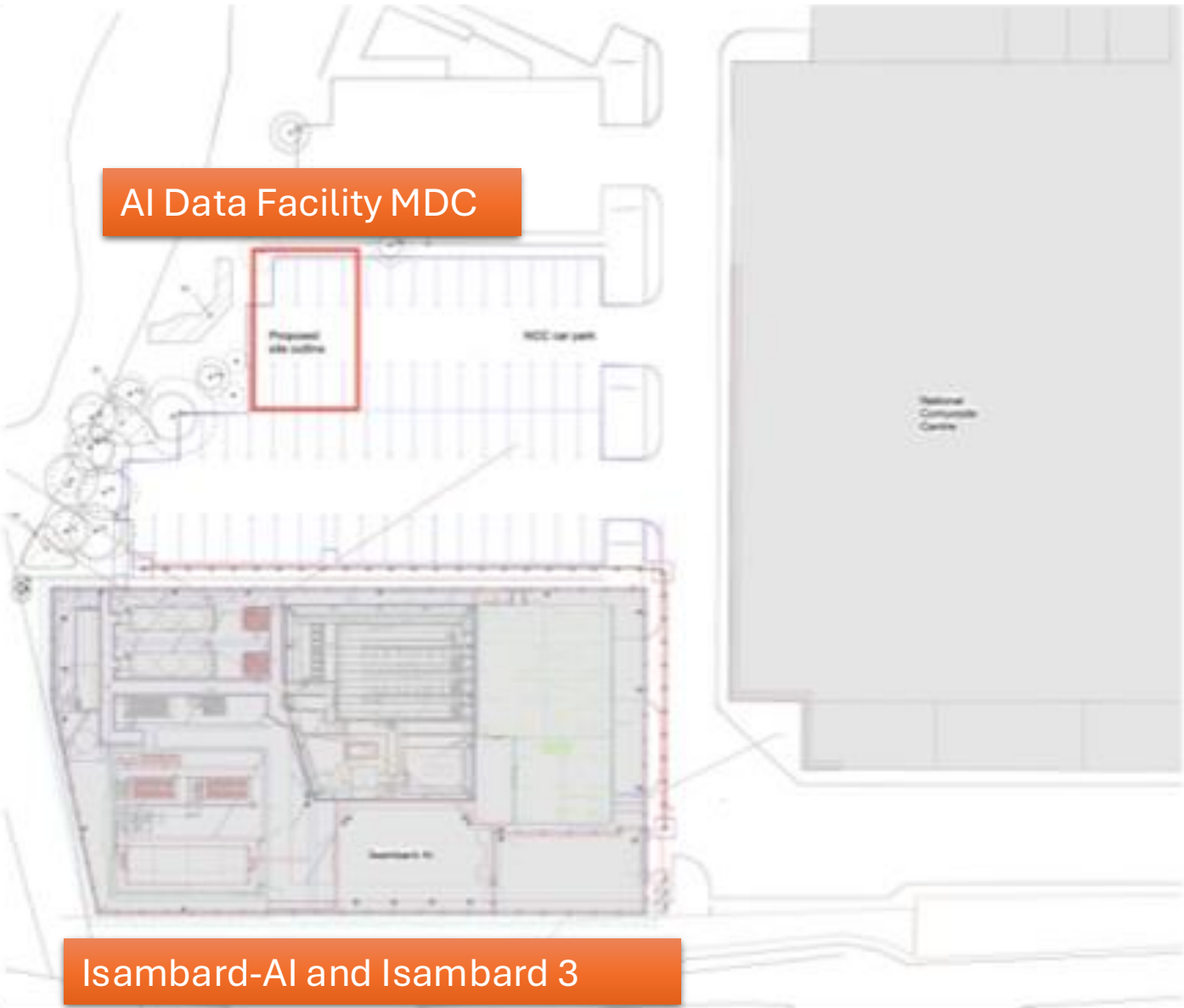


AIRRRPORT—Contributions to Sovereign AI Supercomputing Stack (Everything operational)

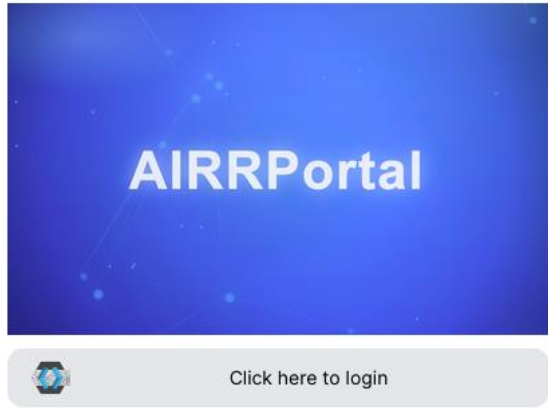
- ✓ Clifton—an SSH connection manager (Clifton is used to retrieve SSH certificates for accessing remote computers) <https://github.com/isambard-sc/clifton/>
- ✓ Conch—an SSH CA or Certificate Authority for use in AIRR sites <https://github.com/isambard-sc/conch>
- ✓ OpenPortal—protocol for communication between a user portal (e.g. Waldur) and digital research infrastructure (e.g. the Isambard supercomputers provided by BriSC) <https://github.com/isambard-sc/openportal>
- ✓ **Open source and open standards, part of Linux High Performance Software Foundation (HPSF) via OpenCHAMI**



New AI Data Facility Spring 2026

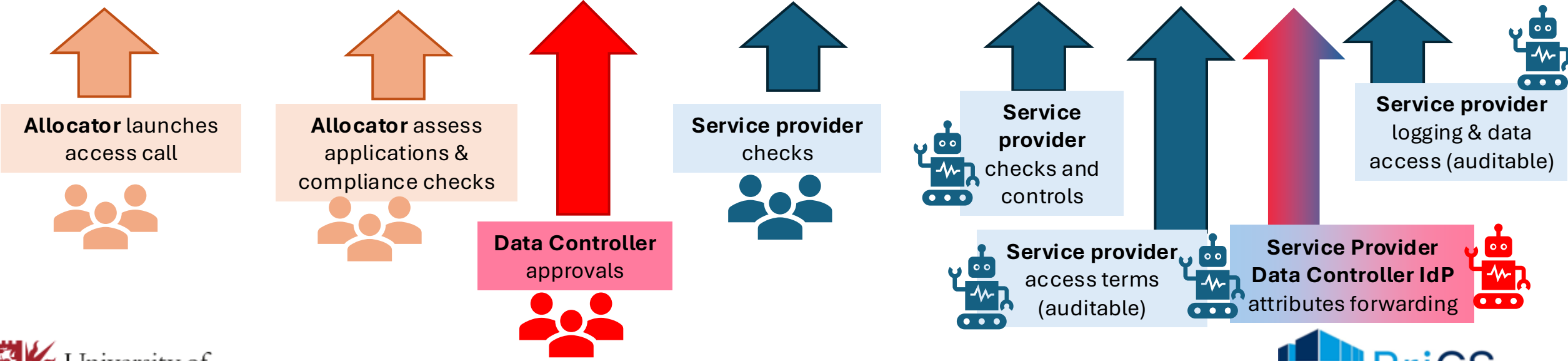
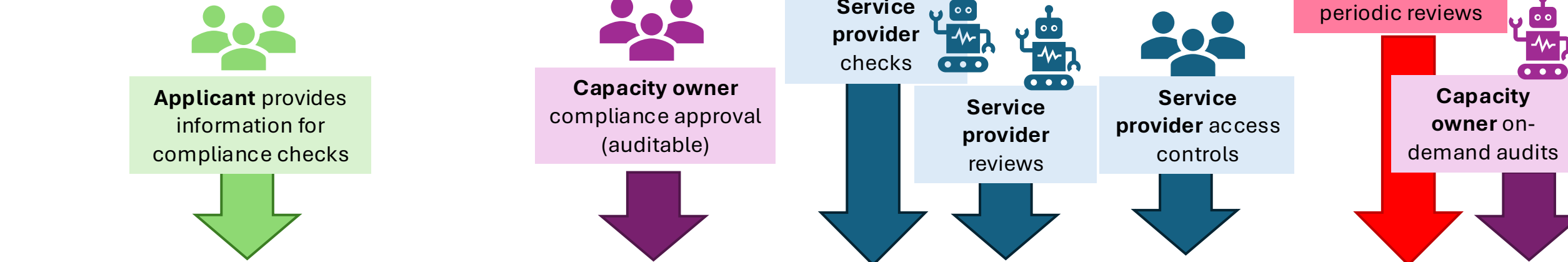


New Modular Data Centre (MDC)



AIRRRPORT Compliance Requirements for 3rd Party Sensitive Data

(red arrows)



AIRRRPORT Status

Towards Sovereign AI Supercomputing DRI

✓ In operation

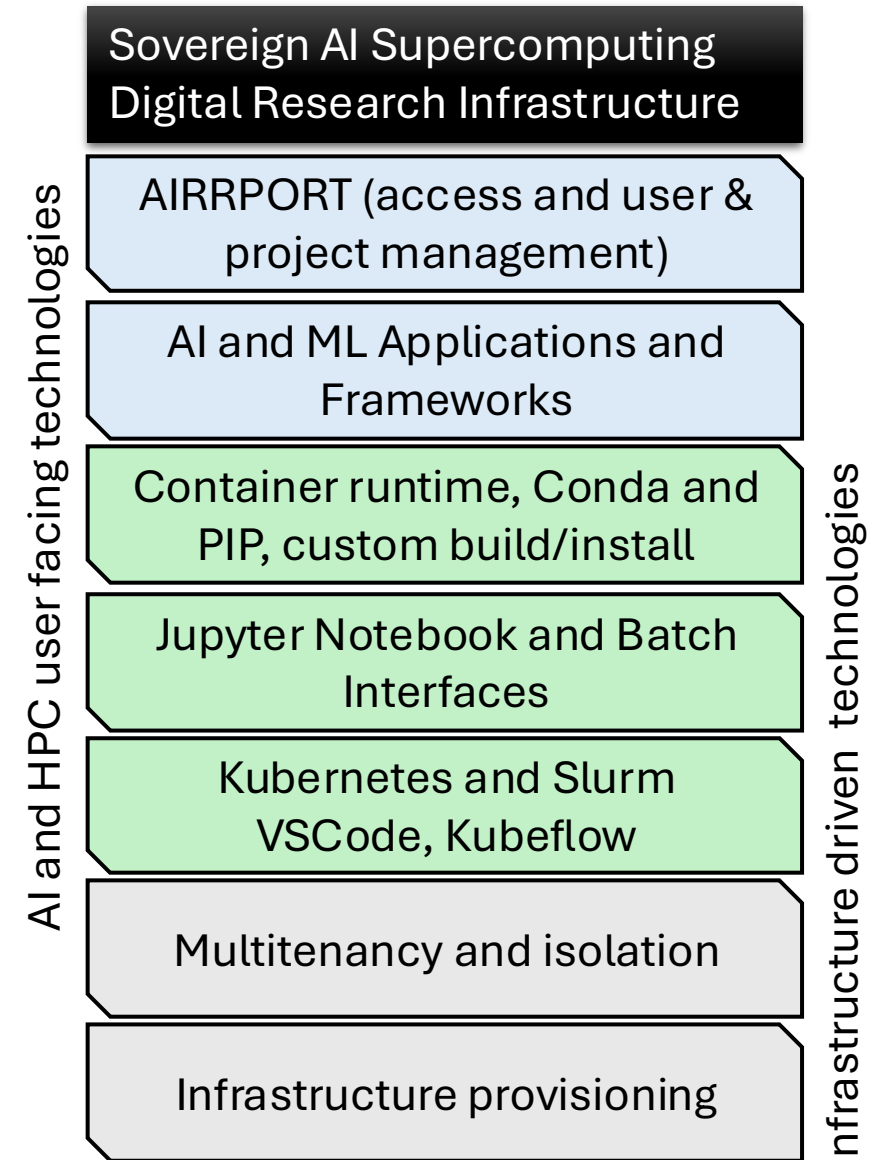
- ✓ Access calls (academia, research, govt. & industry)
- ✓ On-demand accounting and reporting for all stakeholders
- ✓ Compliance workflows & auditing (compute access)
- ✓ Federated Identity & Access Management (IAM)

❑ In progress

- ❑ AI Data Facilities and Services
- ❑ AIRRCloud services integration
- ❑ Compliance workflows (data and trusted/sensitive data platforms)

➤ Under development

- AIRRSupport federation
 - Service/helpdesk
 - Training and outreach
 - Startup/SMEs engagement
 - Specific platforms support like AIDF, AIRRCloud and TREs/SDEs



Upcoming events & we are hiring

- Isambard summit, March 24-25, Bristol



- <https://www.eventbrite.co.uk/e/isambard-summit-tickets-1975093827807?aff=oddtcreator>

- OpenCHAMI dev workshop, May 7-8, London

- Possibly May 6 in Cambridge

- <https://openchami.org/events/2026/openchami-developer-summit-@-ucl-2026/>

[Home](#) / [Events](#) / [Developer Summits](#) / [OpenCHAMI Developer Summit @ UCL 2026](#)

OpenCHAMI Developer Summit @ UCL 2026

University College London • London, UK • May 7th – 8th 2026

Thank you

- Contact: brics-enquiries@bristol.ac.uk
- <https://docs.isambard.ac.uk/>

