



IMPERIAL

Information and Communication
Technologies (ICT)

Sustainability in Imperial's Research Computing Services

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Research Computing Solutions

(*in development)

Compute/
Analysis



HPC/HTC
(CX3, HEX) (HX1/HX2)



Interactive
(IX-Cloud, *HEX-AI (HX3)*)



TRE
(Sensitive/Secure (*HX4*))

Storage



RDF - HPC
(2PB/System)



RDF - Active
(10PB Dual site)



*RDF - ActiveSecure**

Research
Data Library
(Archive and
Publish)



RDF - FAIR
(SPIRAL) (*HELIX**)



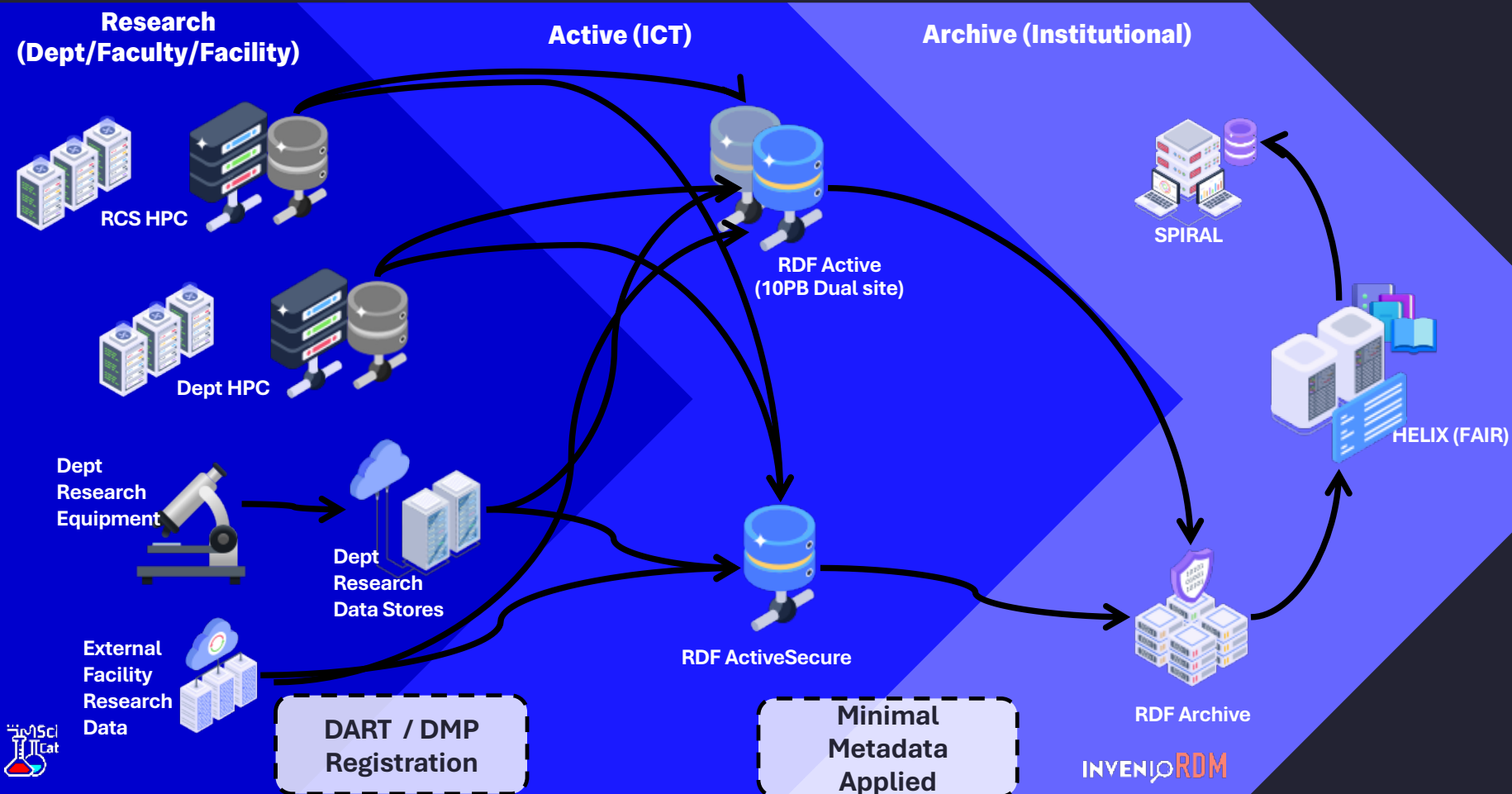
RDF - Archive



*RDF - Archive (Secure)**

Research Technical
Professionals

Imperial Data Facility



IMPERIAL / intel® / Lenovo

Imperial College London, Intel Corporation, Lenovo

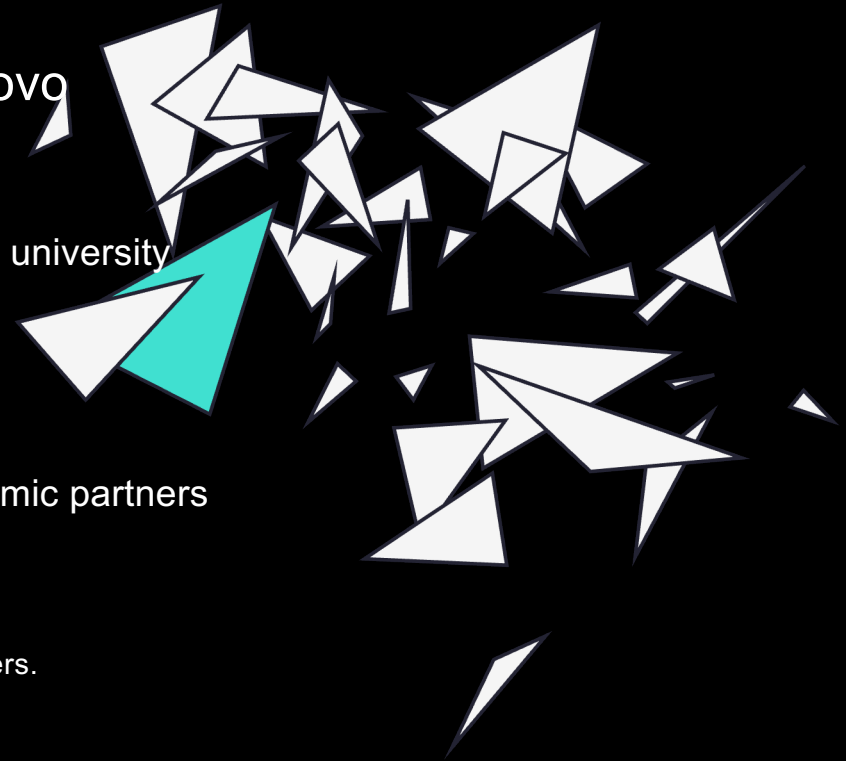
Technical partnership to:

- Provide next generation(s) of HPC & storage platforms for the university
- To support the sustainability journey through the adoption of direct water-cooled solutions
- To foster collaboration around research computing with academic partners

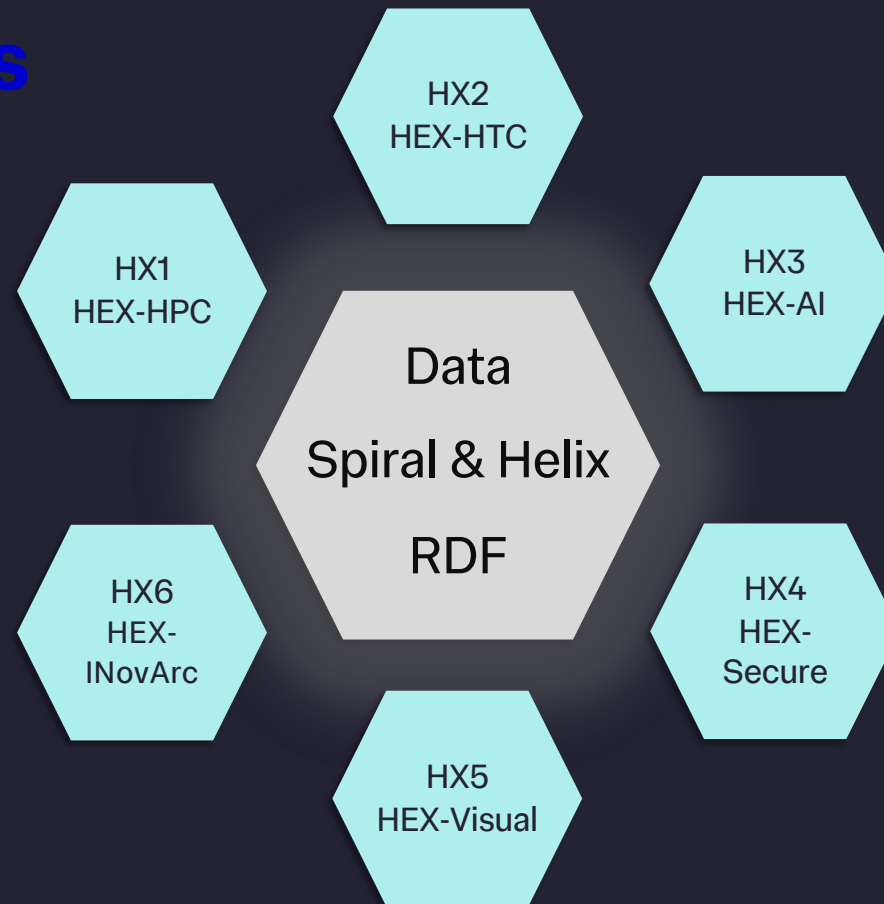
PhD Studentships

- Quantum Computing Algorithms.
 - Developing and optimising algorithms to use existing Quantum Computers.
 - Fast ML: Using accelerators for Machine Learning.
 - FPGAs and other accelerators.

RTP Experience Program Support.



HEX Platforms



HX1
HEX-HPC

HX1: High Performance/ Capability Computing Online: January 2024

- 288 Compute Nodes = **18,432 cores**
- 15 GPU Nodes = **60 Nvidia A100 GPUs**
- 2 PB of **storage**

HX4
HEX-Secure

HX4: Trusted Research Environment

Currently Beta testing

HX2
HEX-HTC

HX2: High Throughput Computing Due: Beta testing now

- 192 Compute Nodes = **27,648 cores**
- 24 GPU Nodes = **96 Nvidia H200 GPUs**
- 2 PB of **storage**

HX5
HEX-Visual

HX5: Visual Lab

Future plans

HX3
HEX-AI

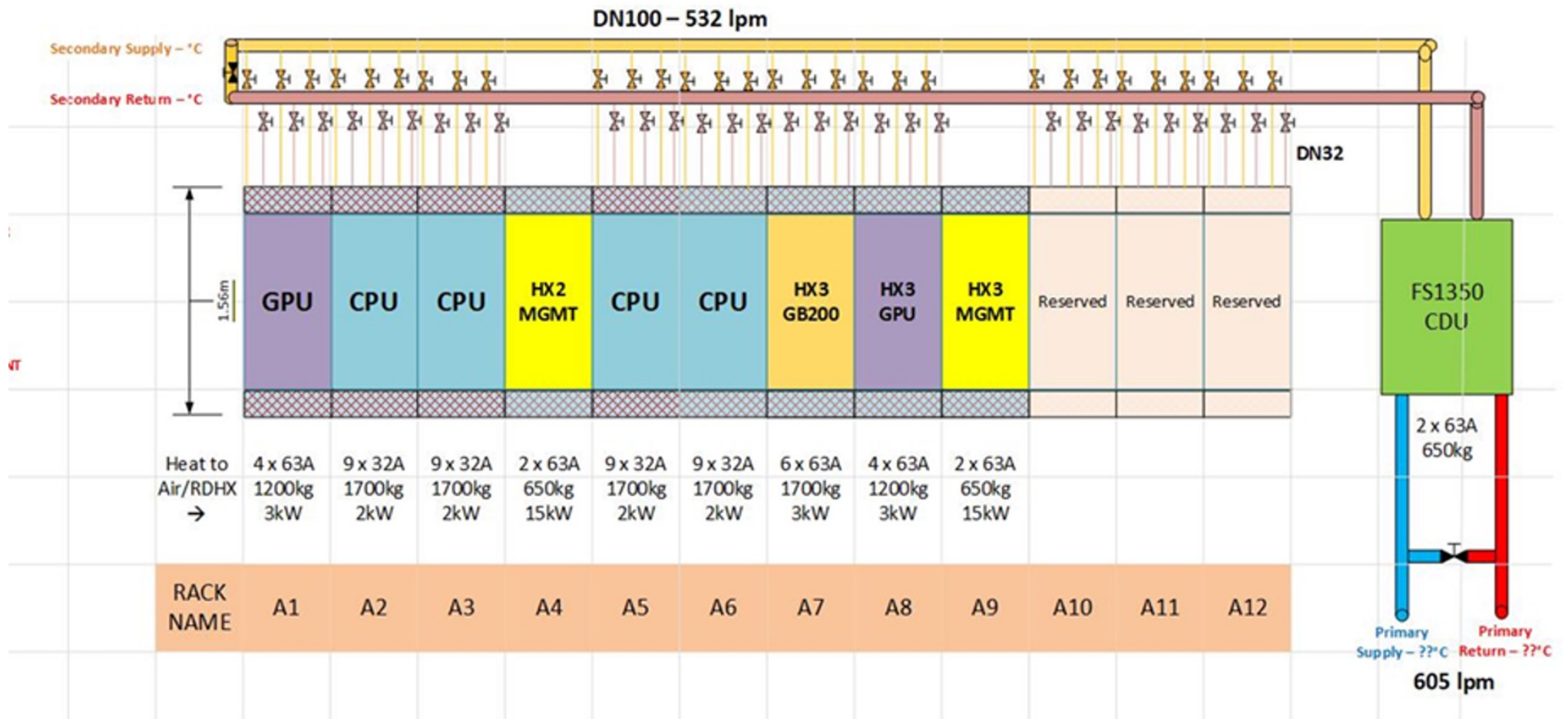
HX3: AI for teaching and research Due: Very soon

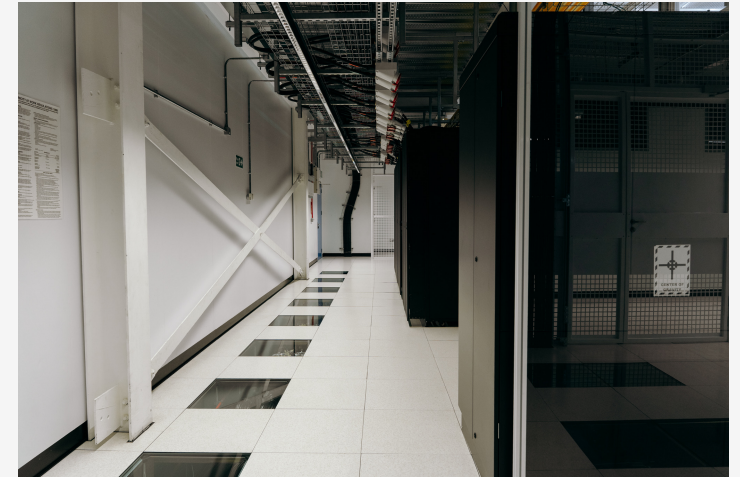
- 27 GPU Nodes = **96 Nvidia H200 GPUs + 12 Nvidia B200 GPUs**
- 774 TB of **storage**
- **Nvidia Run:ai** GPU orchestration

HX6
HEX-INovArc

HX6: Imperial Novel Architecture (INovArc)

Current: AMD MI300X







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Thank you

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