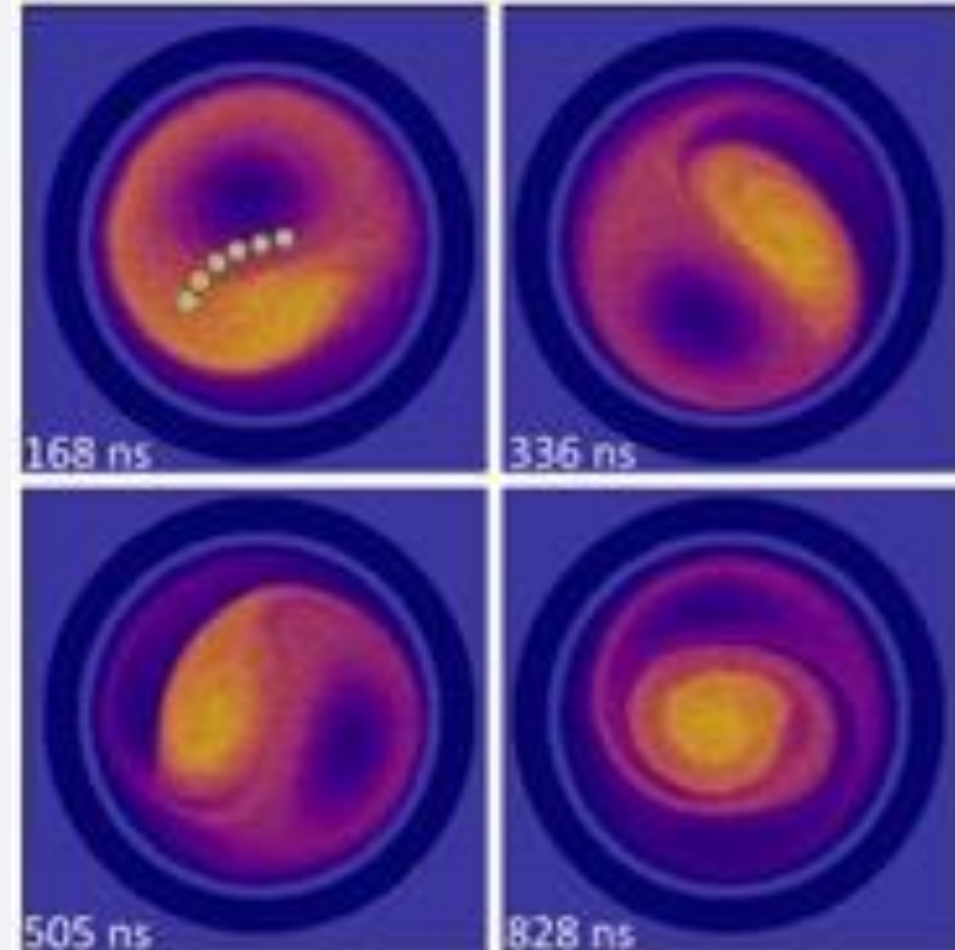# SCARF and Pearl

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Introduction

- SCARF is STFC's HPC cluster for primarily STFC staff and collaborators.
  - Main applications in use
    - CASTEP
    - EPOCH

- Pearl is our AI/ML cluster operated in collaboration with SCD's SCIML and the Alan Turing Institute

SCARF – Current Hardware – CPU/GPU

- A range of Intel and AMD hardware
    - AMD since 2020
    - Last 3 purchases, SCARF21-23, have been all from the same vendor and are part of the same IB fabric.
        - CPU (332 systems):
            - AMD 7502 single socket
            - 256GB RAM
            - 25GbE ethernet
            - 200GbE HDR infiniband (4:1 contention ratio)
        - GPU (10 systems):
            - AMD 7302 dual socket (otherwise as CPU)
            - NVIDIA A100 SXM4
        - Have an IB attached scratch storage

SCARF – Current Hardware – Storage

- 3PB of Panasas ActiveStor connected via ethernet – providing home, work and legacy scratch
- 3PB of GPFS 2x DSSG-221 – connected via IB to most recent CPU and GPU purchases, provides scratch space to those nodes

We prefer capacity level licensing rather than client level licensing, as it gives us more flexibility, and is easier to justify as a capital outlay rather than recurrent

Pearl – Current Hardware

- 2 DGX-2s
- Graphcore IPU system
- 2 A100-based systems
- NVMEoF based storage system (currently offline)

Future Procurements

This is all subject to change depending on available funding

SCARF will add CPU, possibly GPU this year, as part of its next cycle.
Probably will start a fresh low latency fabric, but likely not faster than HDR at
HCA level at least. Possibly new low latency fabric storage.
May go to further competition for initial hardware, but on subsequent
purchases attempt to make case that we need to use same supplier.

Pearl investigating a refresh of the DGX-2 nodes. This will very likely include
new low latency NVME storage solution

Thank you