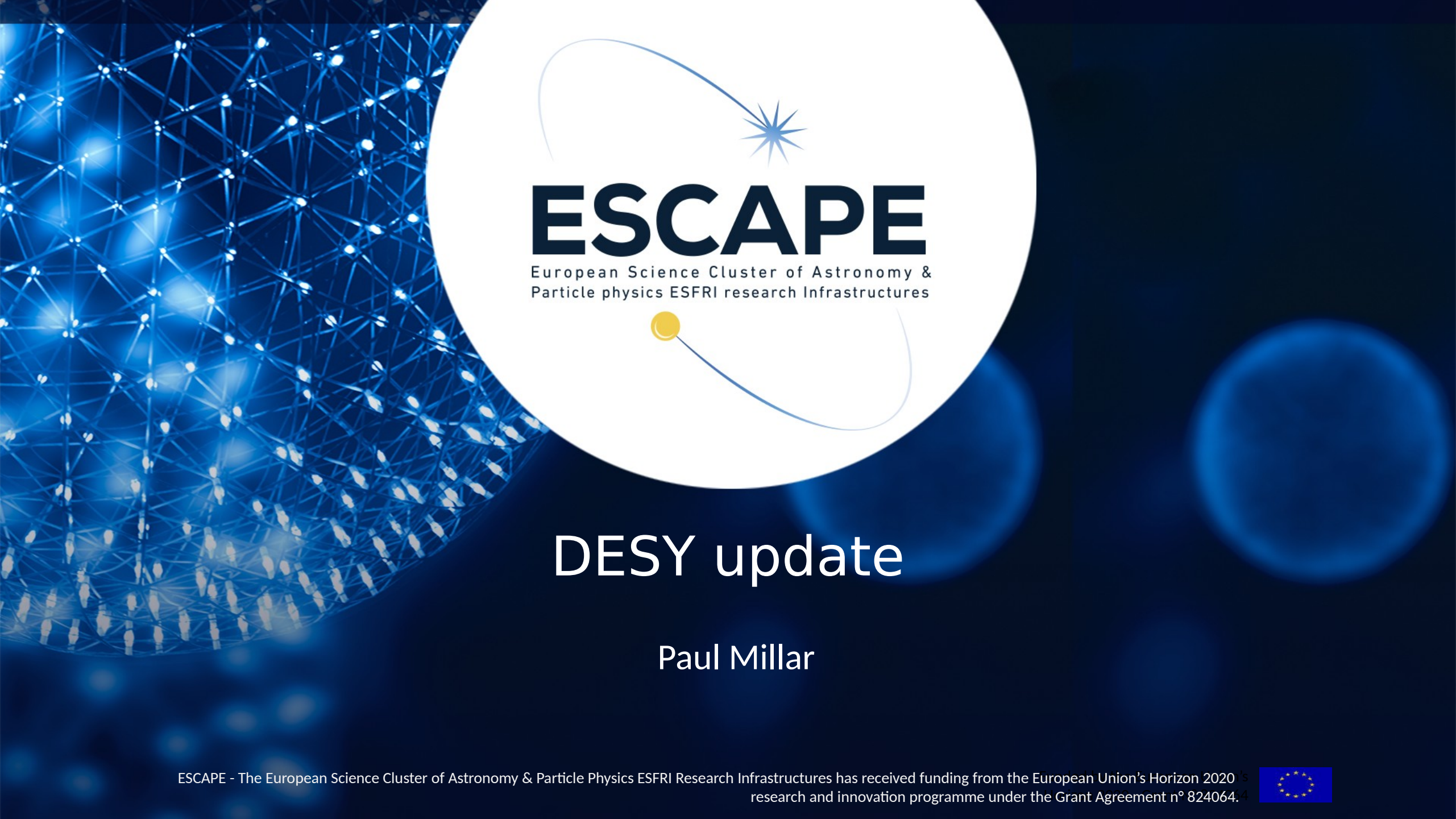

DESY update

Paul Millar

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.

Current status

- DESY is contributing **storage** capacity to the ESCAPE project.

  DESY is strongly involved with LHC and CTA, but both are represented by other sites.

- Storage provided by our modest "**dcache-demo**" instance.
  - Old, out-of-warranty hardware
- Hardware has proved **surprisingly reliable**.
  - Never-the-less, using dCache's built-in support for high-availability to avoid problems.
- Data stored with a **2-replica policy** (so, halving capacity)
  - 114 TB "gross" total capacity → 57 TB "net" total capacity.
- Current **⅓ full** (of 57 TB total, 19 TB is in use, 38 TB free).
- ESCAPE isn't the only user of this instance: but **~90% usage**.

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Plans for 2021: upgrade hardware

- Pool (storage) nodes replaced with **new hardware**.
- Budget constraints are still being investigate
  - Hopefully obtaining around 1 PiB capacity
- **Drop** the 2-copy replication policy
- **Upgrade** door and core nodes by either:
  - Ideally moving them into DESY OpenStack instance
  - Buying new hardware if OpenStack not ready in time.
- Upgrade unlikely before **summer 2021**:
  - Dell have stopped delivering!
  - Huge back-log of urgently required, production hardware

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Plans for 2021: improving configuration

- Explore **token-based access**.
  - Already enabled, “just” needs testing
- **Simplify** configuration / operations:
  - Simplify group-account configuration
  - Potentially adding support for auto-create individual accounts
- Explore hosting **multiple Storage QoS classes**.
- Extend High-Available (HA) to cover doors
  - To support **zero-downtime** “rolling” upgrades.

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Plans for 2021: federated storage

- dCache-demo is already using storage in **multiple locations**:
  - Federated storage located in Hamburg and Zeuthen (near Berlin), earlier also in Moscow.
  - Nothing new: federated dCache instances have existed for decades
  - Exploring this option to simplify operations for existing sites (e.g., Wuppertal).
- Are **ESCAPE sites** interested in contributing?
- Relatively **modest requirements**: one or more machines:

  some mounted storage capacity; an X.509 credential; the IGTF trust anchors; the ability to run Java.
- Ideally, these nodes would be “near” some **computing resources**.

  Could explore novel access options, such as NFS-mounting dCache.

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Thanks for listening

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