Report on operation

July 3rd 2024

Thomas Beisel

HLRS operation Team

Outline

H L R I S

- Status Hawk
- Installation schedule next generation system (Hunter)
- Status Certifications
- Migration to next generation system (Hunter)
- Overview next gen system (Christian Simmendinger)
- Porting applications onto Hunter (Björn Dick)

System Status Hawk

- System size reduced 5632 ➔ 4096 Nodes (44 Racks ➔ 32 Racks) to free installation area for Hunter
- System size reduction in Q4 2024 to 24 Racks (3072 Nodes)
- Final power down April 2025
- Filesystem
  - Ws10 default will be in service until end of October 2024!!! Users have to migrate to ws11
  - Lustre software update as preparation for Hunter WS installation (compatibility reason) (WS 11 only)

Status Hawk (cont.)

- Problems / open topics
  - DDN Lustre filesystems
    - WS 10 final shutdown end of October
    - Usage WS11 will become default WS
    - Lots of small files may impact performance (hang, slow downs, crashes and reboots of lustre subsystems which cause recovery procedure…)
  - Out Of Memory situations (OOM)
    - Node will be rebooted to guarantee a fully functional OS environment
    - Automatic node monitoring system will take affected nodes offline ➜ this will destroy scheduling-table of the batch system (topology aware scheduling)
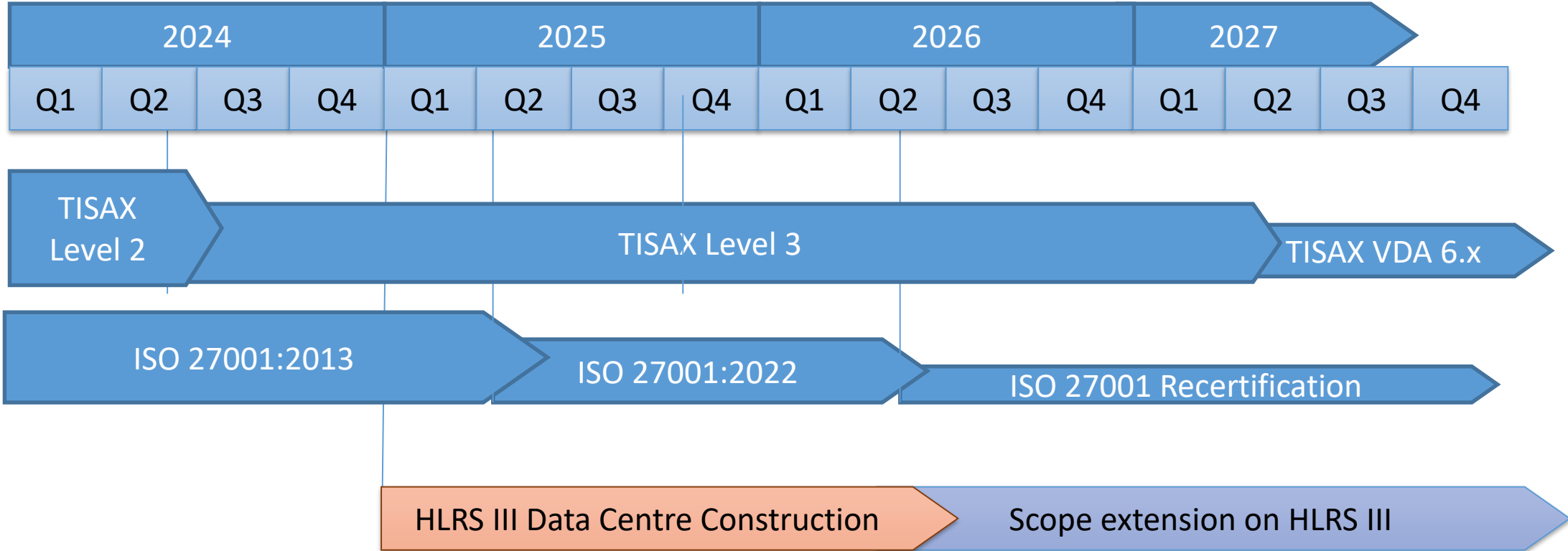   - User get an email notification…

  Please avoid OOM situations

Ongoing work

- Job scheduling:

  – Fair share scheduling

- To improve security, files located in some shared directories (e.g. /tmp) are not possible to execute

- Maintenance plan

  – Lustre software update (> November)
  – OS updates as needed for security reasons

- Power / performance monitoring / optimization / measurements
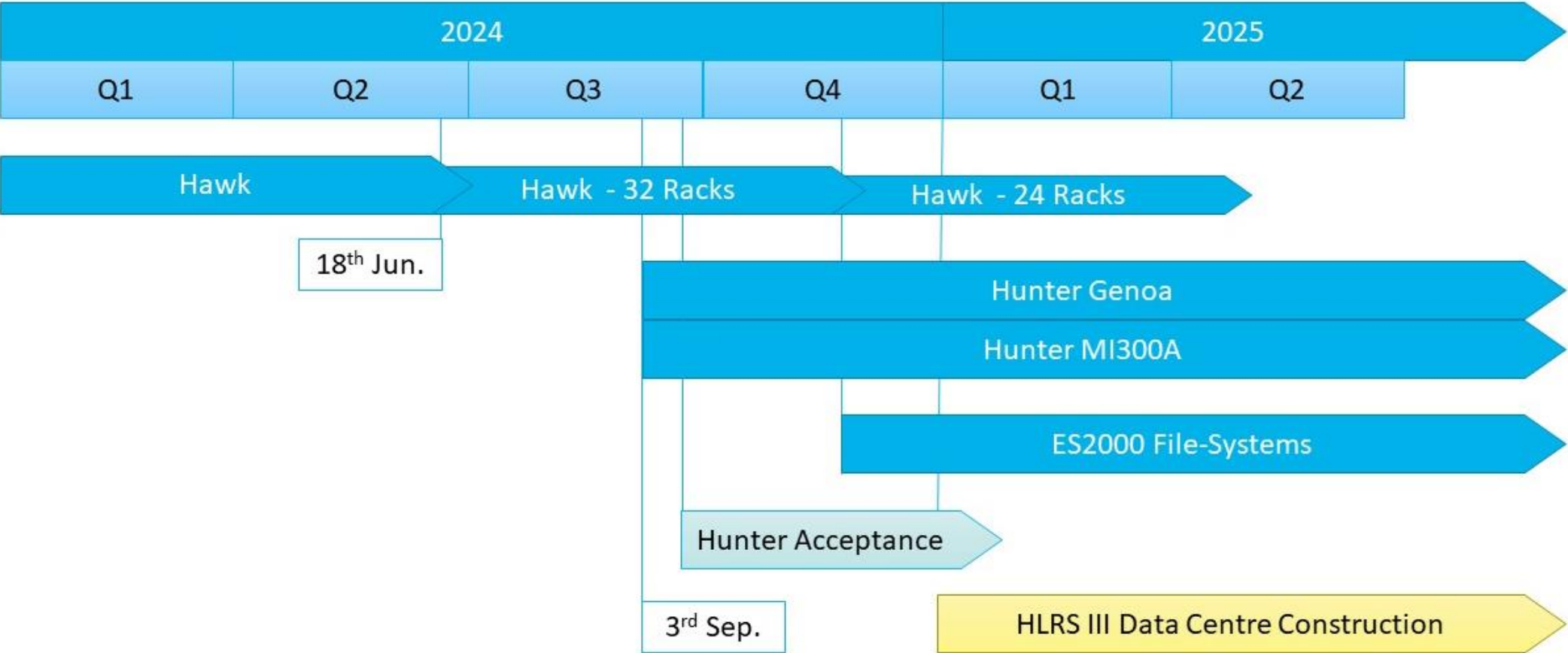
Status Certifications

HLRS

2024				2025				2026				2027			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

TISAX Level 2

TISAX Level 3

TISAX VDA 6.x

ISO 27001:2013

ISO 27001:2022

ISO 27001 Recertification

HLRS III Data Centre Construction

Scope extension on HLRS III

Hunter under construction

Timeline and Milestones Hawk ➜ Hunter migration

Migration to next generation system (Hunter)

H L R S

- Replace HOME – Fileserver
  - User HOME directories migrate onto new hardware
  - Software installation directories will be migrated (transparent)
- Migrate data from Hawk workspace onto Hunter workpsace (from ws11 onto ws[12|13]

- User support CPU-based ➔ GPU-utilization

Thanks for your attention

?