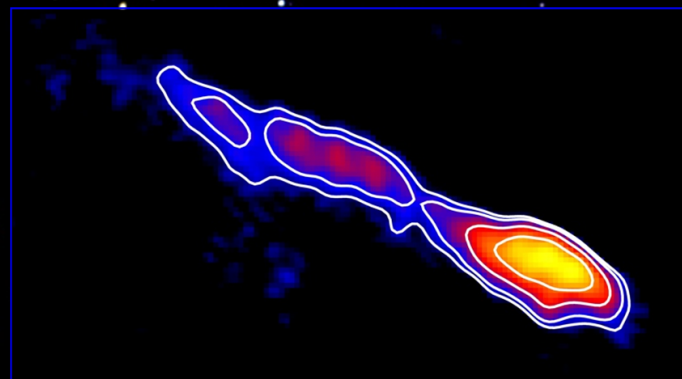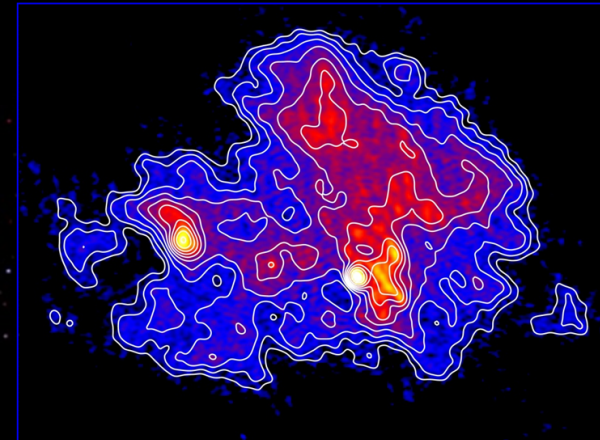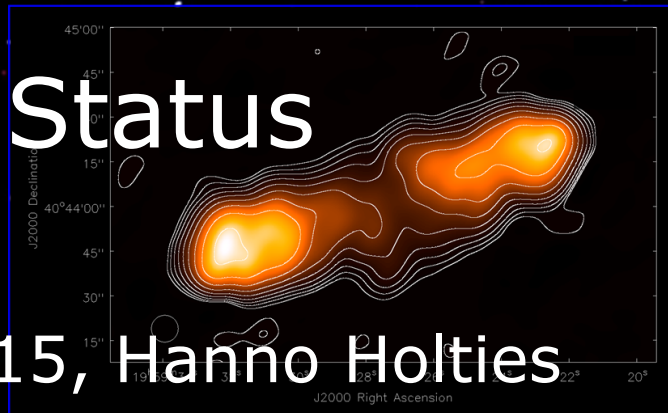# CEP4 Status

LSM
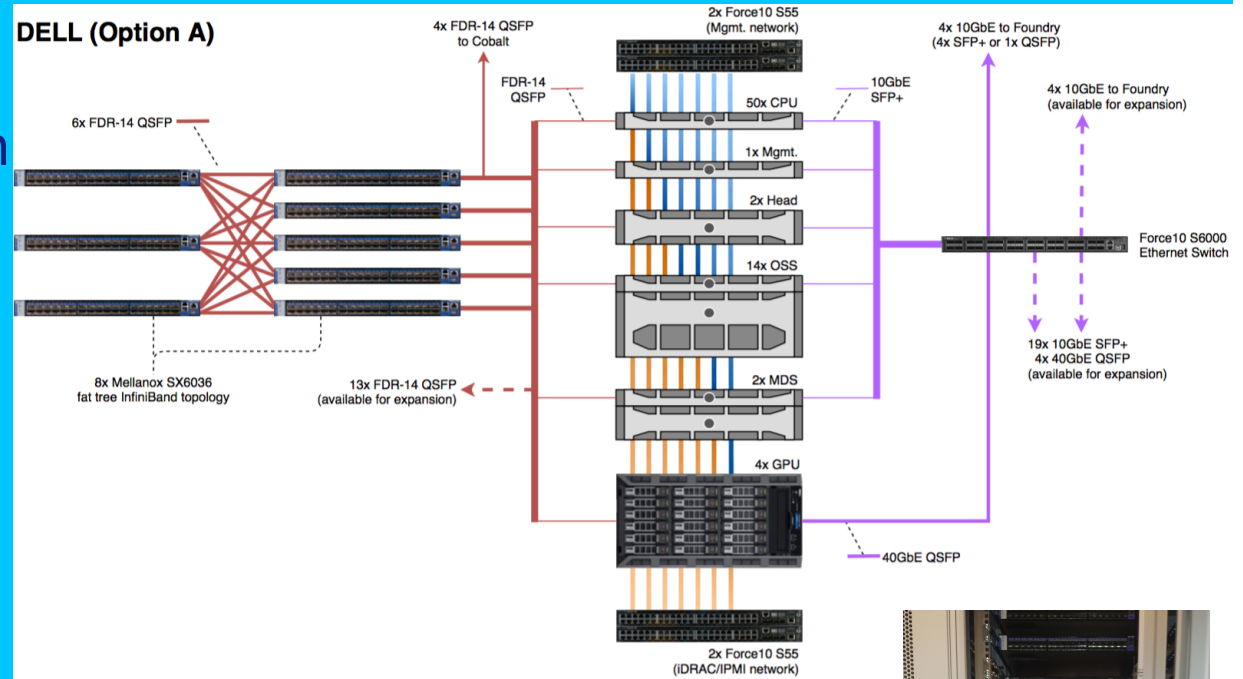## 9/12/2015, Hanno Holties

CEP4 Tender

- Tender concluded
- Selected DELL option
- Separate compute and storage
- 50 Compute nodes
- 4 GPU Nodes
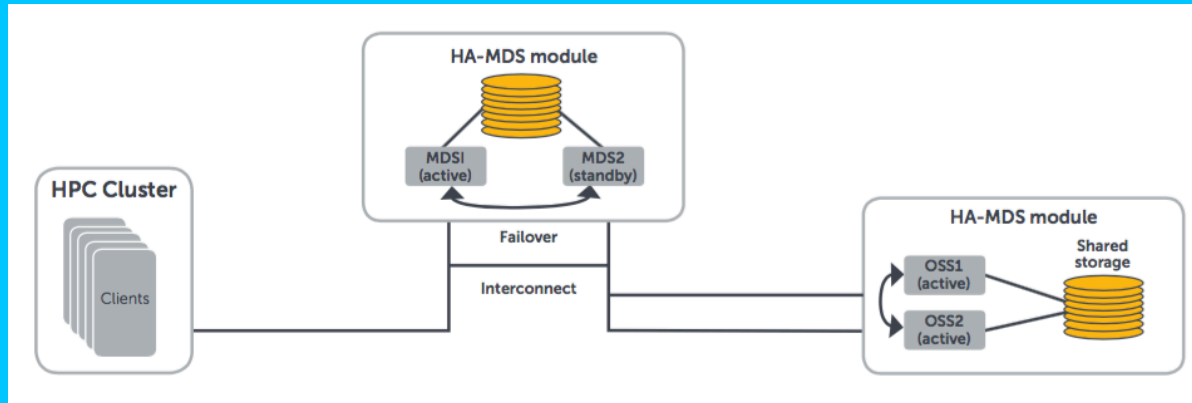- 2+ PB Lustre PDFS

Compute cluster

Compute nodes

- 50x DELL R630

- Dual Intel Xeon E5-2680v3 (per server 24 cores @ 2.5 GHz)

- 256 GB memory

- FDR 56 Gbps infiniband interconnect

GPU nodes

- 4x DELL T630

- Dual Intel Xeon E5-2603v3 (per server 12 cores @ 1.6 GHz)

- 320 GB memory

- 4x Tesla K40C GPU
  (per GPU 2880 cores, 4.29 Tflops SP, 1.43 Tflops DP)

- 2x 6TB internal storage

Lustre File System

http://i.dell.com/sites/content/business/solutions/hpcc/en/Documents/Lustre-HPC-Whitepaper-10082011.pdf

DELL Lustre HPC storage

- Architecture: white paper Cambridge/DELL

- 18x DELL R630 Storage server

- 18x DELL MD3460 Storage Array

- 60x 4TB disks each

- Total usable capacity up to 3PB

Impact on LOFAR

ASTRON

Lustre: Shared file system

- Improved scheduling efficiency

- Main challenge: Read/write IO throughput to many clients

    - Working with DELL to optimize for LOFAR

- Impact of filesystem failure

    - Lustre proven solution

    - No single point of failure

    - Looking into impact cache settings; relation performance

Slurm: Batch scheduling

- Improved scheduling efficiency

- First step: run pipelines as single job

- Implementing scheduler as a service

Planning

ASTRON

Current focus

- Functional cluster with most systems are in place

- Impact analysis proposed solution DELL underway

- Additional hardware for 80 GBps balanced read & write TBD

Next steps

- Installation new Lustre version by DELL

- Finish acceptance

- Handover December/early January

- Commissioning February/early March

  - Assuming no further issues from acceptance

Questions?