LAr specific issues

2015

What can be monitored on DCS

Partitions monitored on DCS

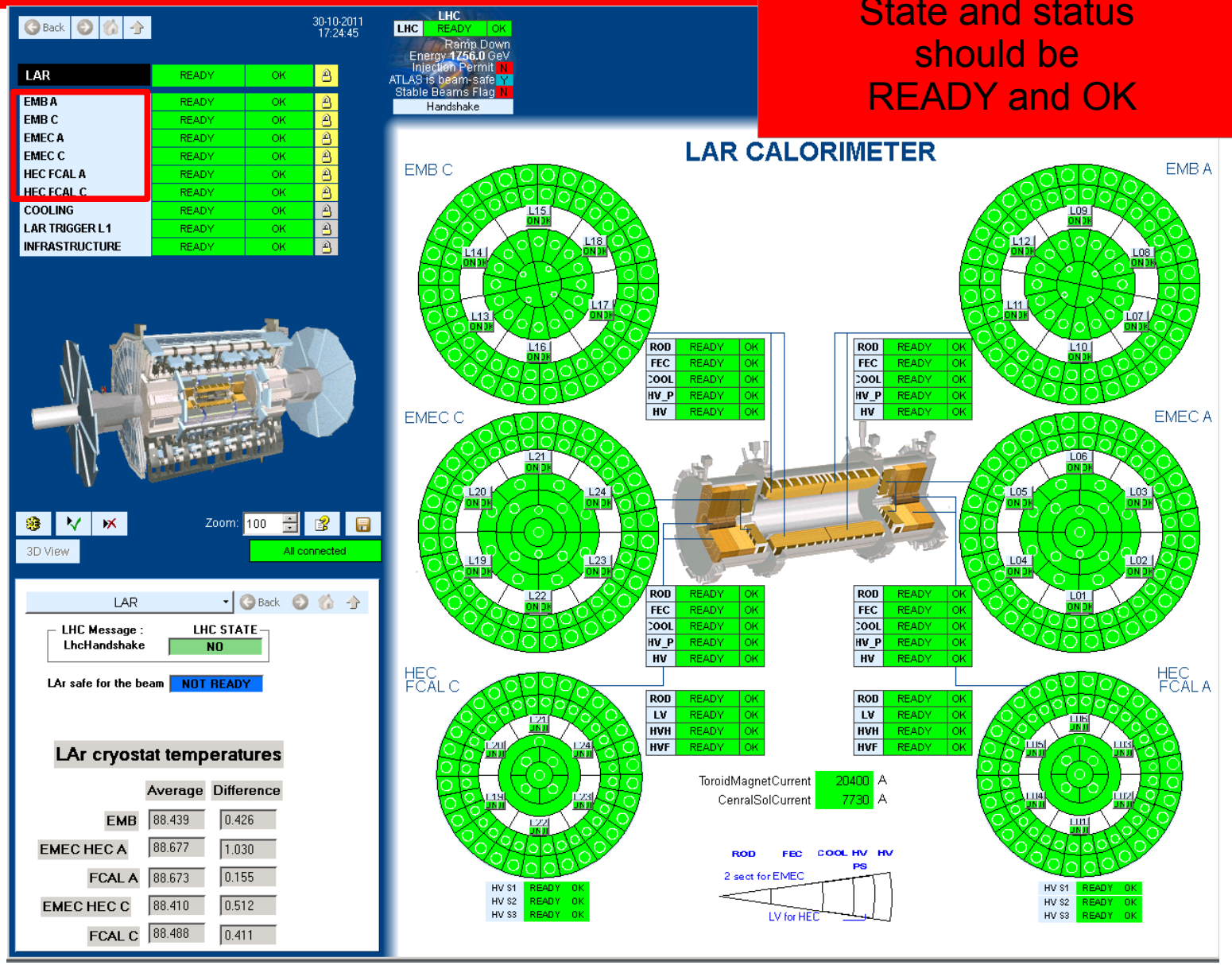
EMBA
EM:electromagnetic
B: barrel
A: side A

EMECC
EM:electromagnetic
EC: EndCaps
C: side C

HECA
H:hadronic
EC: EndCaps
A: side A

FCalC
FCal:Forward
C: side C

State and status should be READY and OK



What can be monitored on DCS

RODs
(ReadOut Drivers)

LV PS (FECs –
Front End Crates)

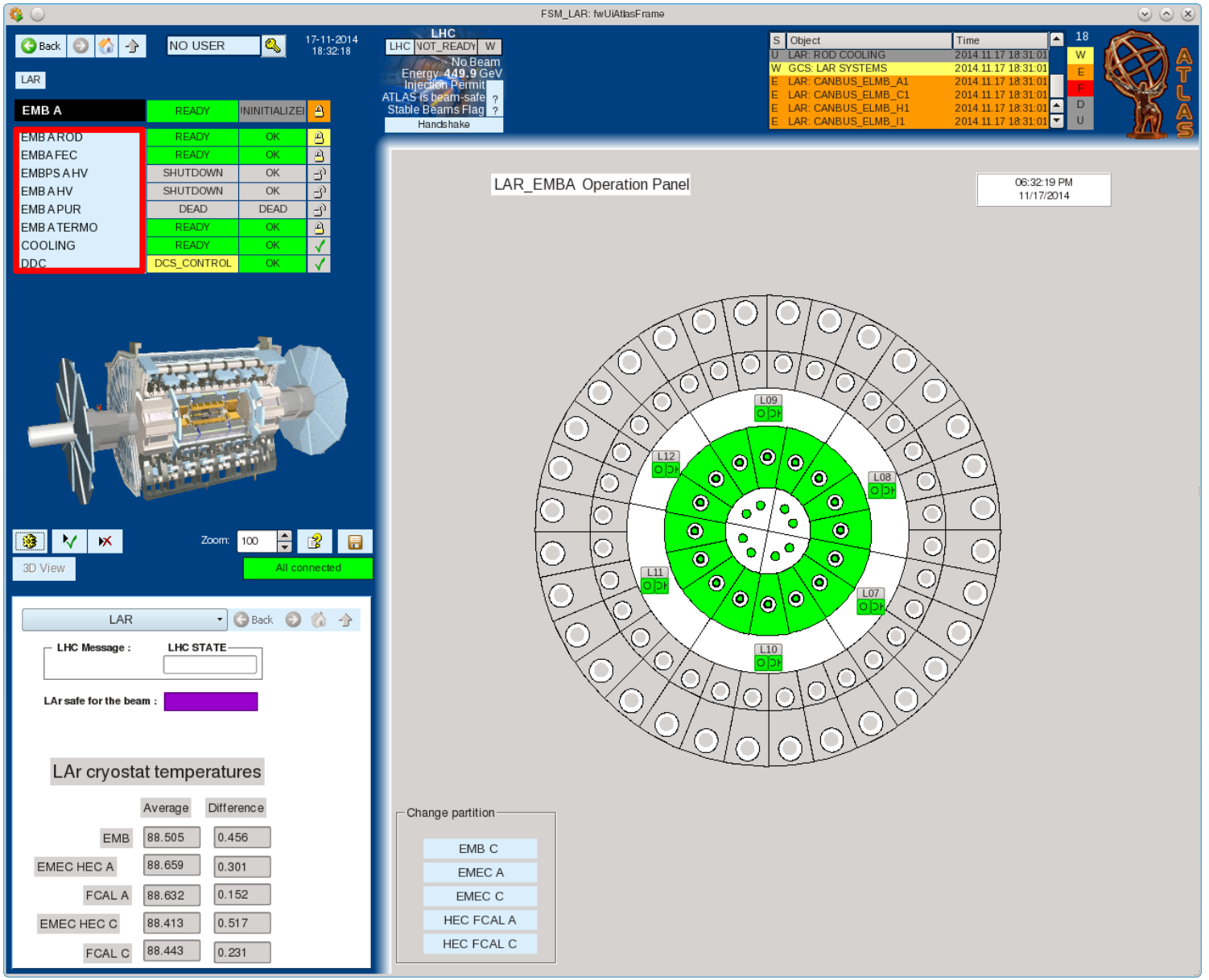
HV PS
(High Voltage
Power Supplies)
[PS(PreSampler)
& accordion]

Purity monitoring

Temperature
monitoring

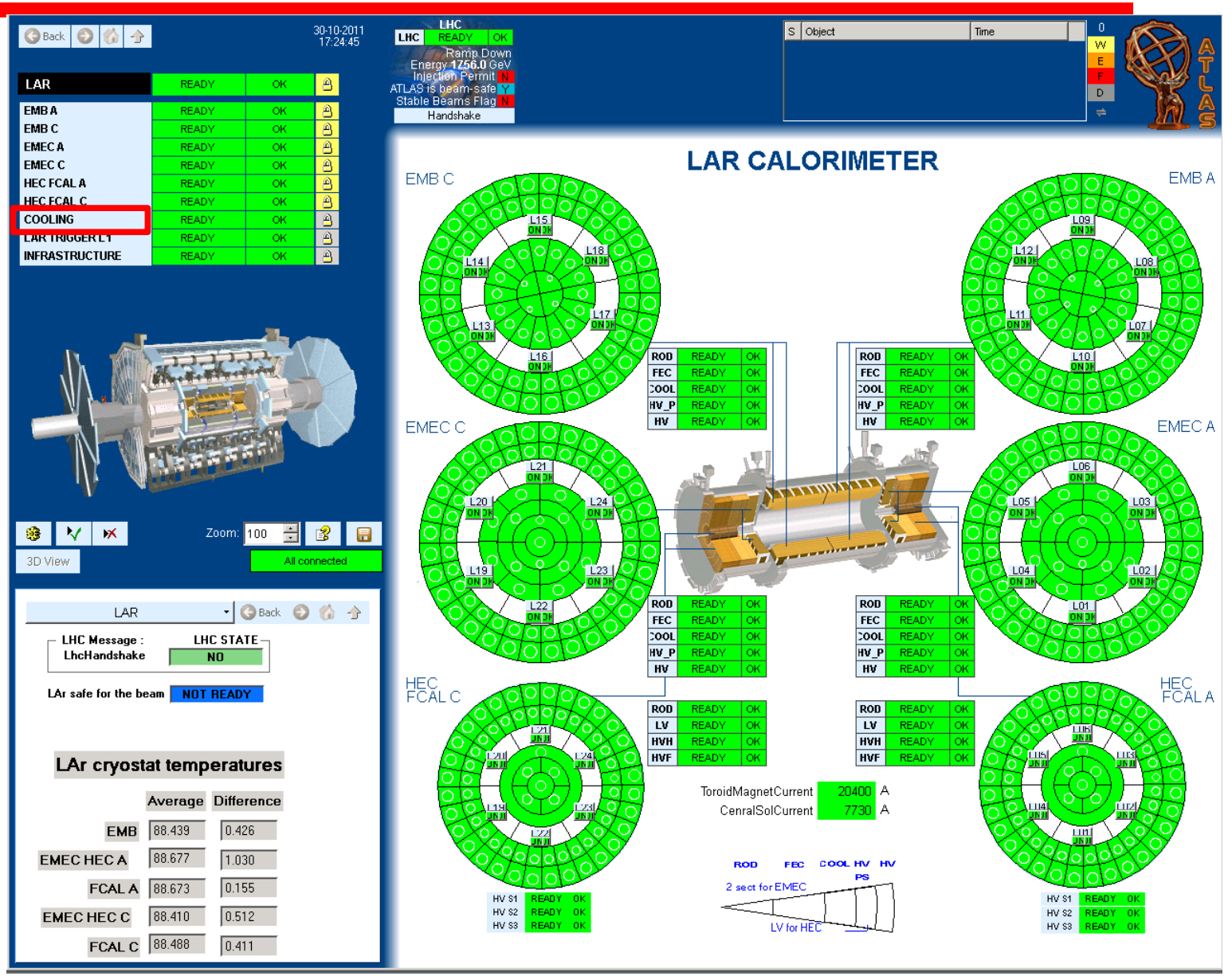
Cooling of FE

DAQ-DCS
Communication



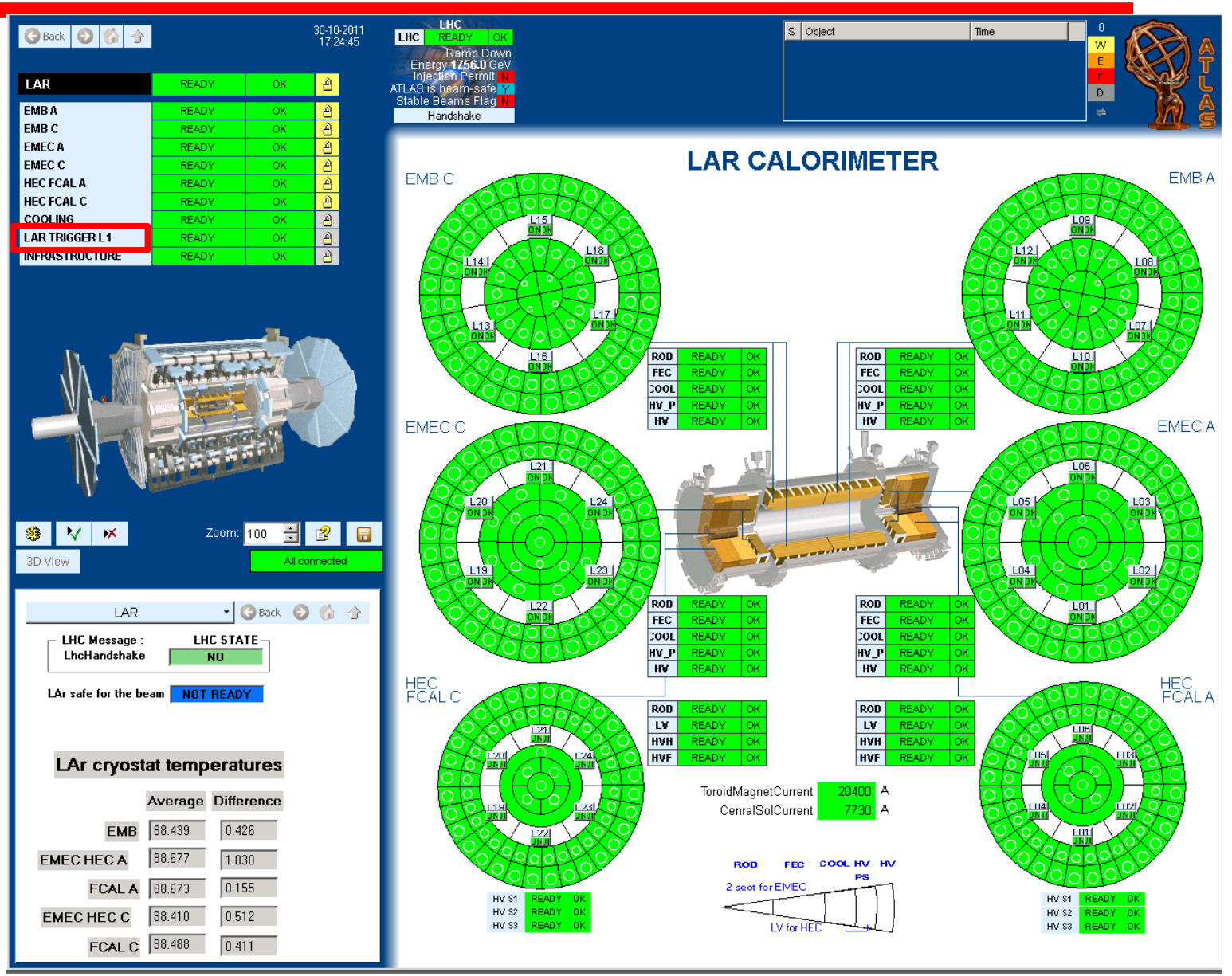
What can be monitored on DCS

Cooling plant for the Front End Crates



What can be monitored on DCS

TTC (Timing Trigger and Control) crates in USA15

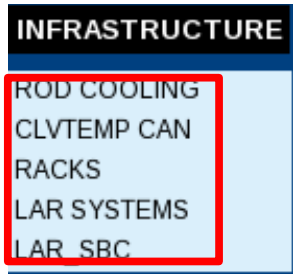


What can be monitored on DCS

ROD (ReadOut Drivers) cooling

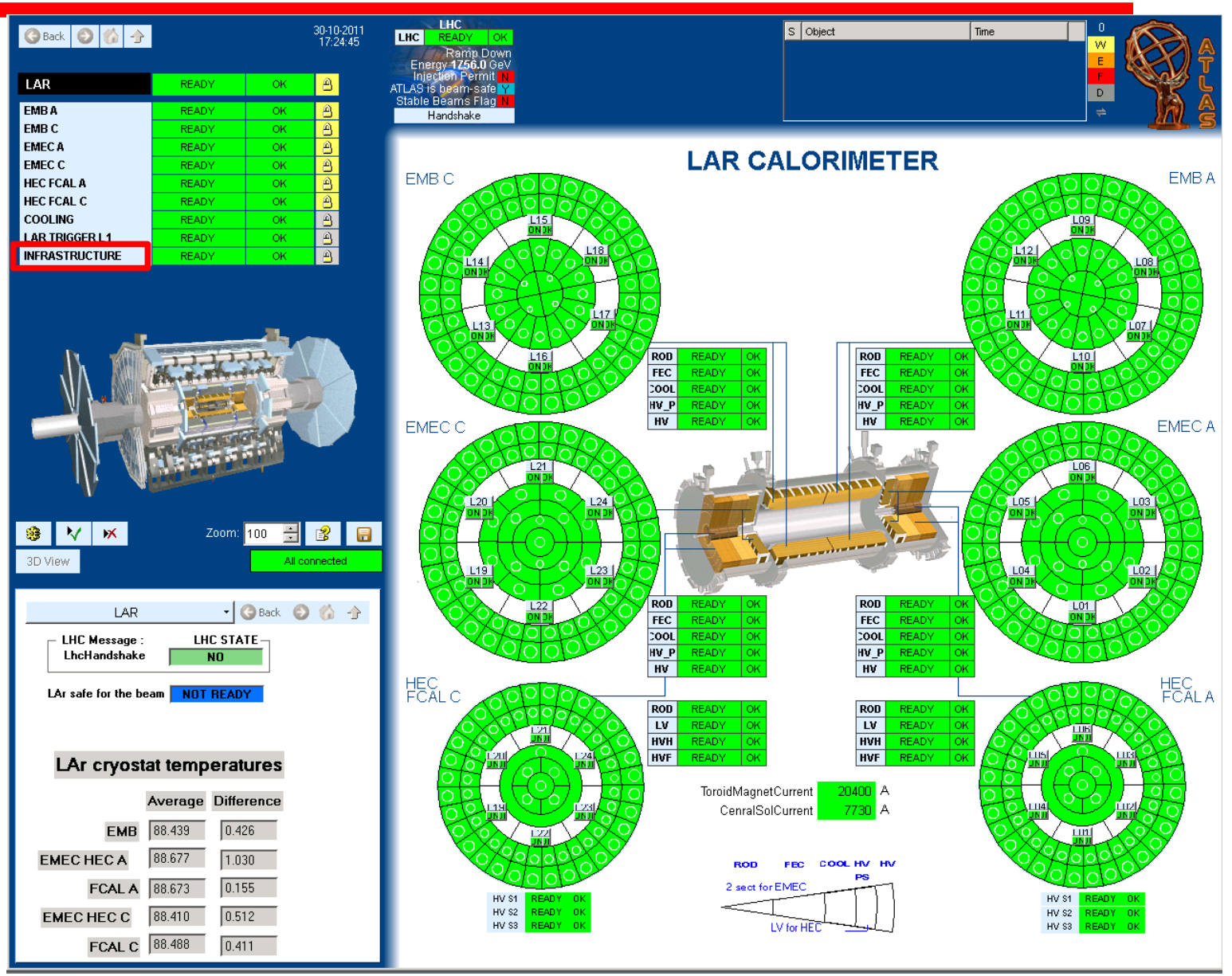
CAN (Controller Area Network) temperature monitoring

Racks



DCS machines

SBCs (Single Board Computers) in USA15 [TTC and ROD]



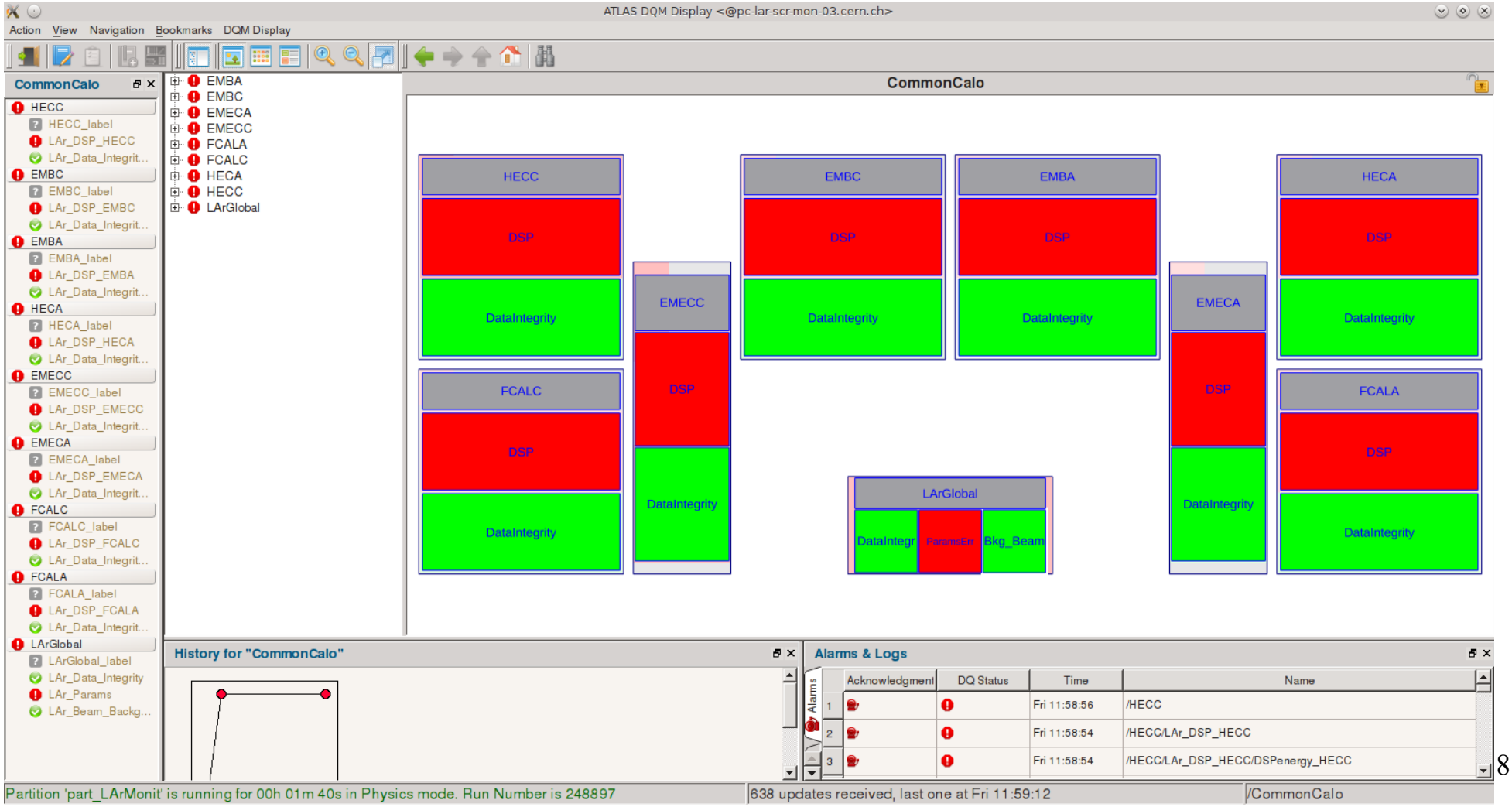
Online Histograms

- Many histograms to be monitored grouped different categories
  - FEB (Front End Boards) monitoring
    [errors of FEBs, thresholds on DSP, number of cells above thresholds (sweet cells), etc]
  - DSP (Digital Signal Processing) monitoring
    [comparison of online-offline calculations of energy, time, quality]
  - Calo monitoring
    [cluster-level variables]

- Applications are built to assist the shifter to spot issues [DQMD]
- Shifters should go through basic histograms [OHP] during stable beams [after some events are recorded]
- Please go through and let us know if any descriptions need further explanation

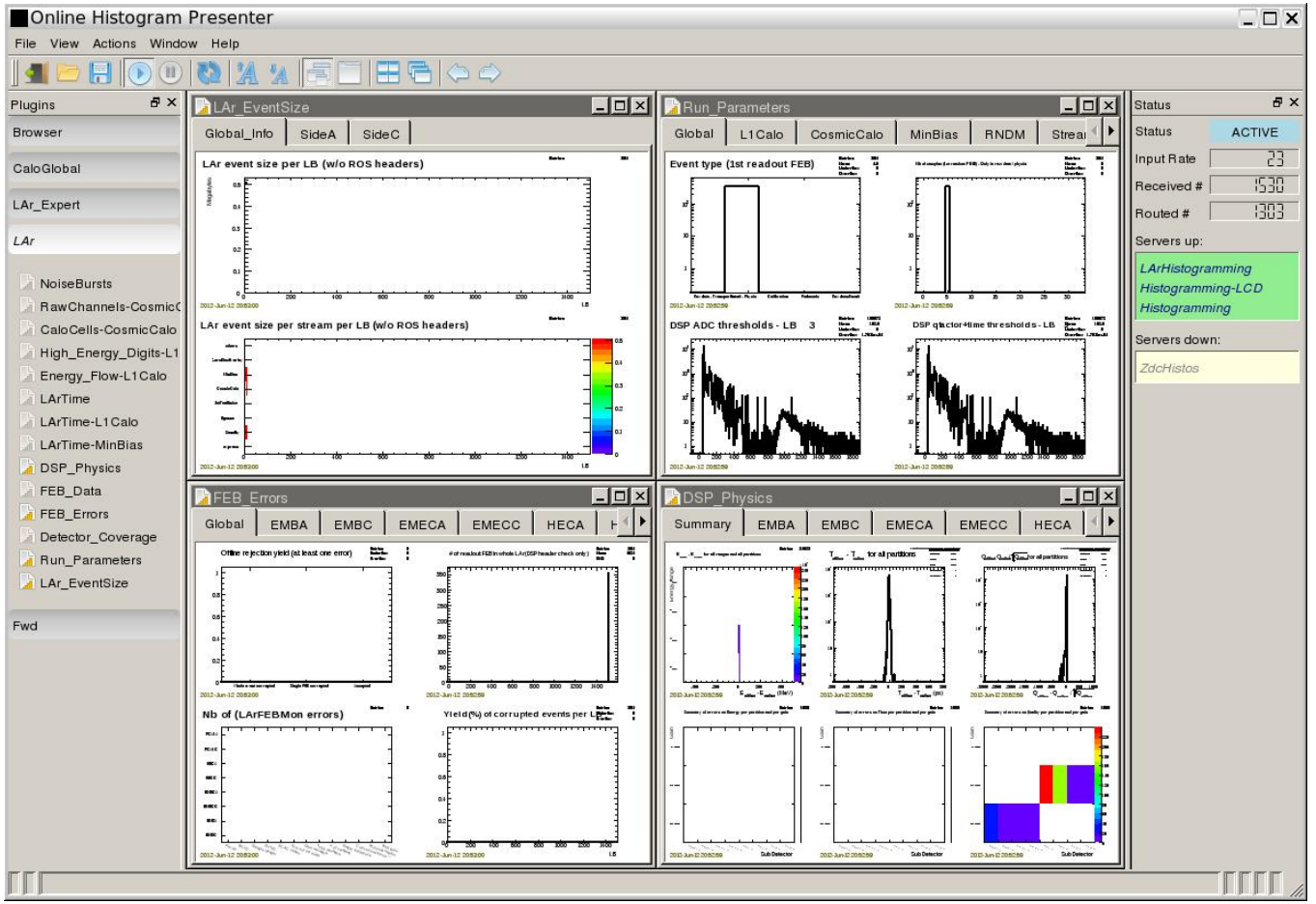
Data Quality Monitoring Display(DQMD)

- Only filled after run is started (suffers from low statistics early on)
- Application to spot quickly problems in Data Acquisition
- Color code to signalize the status of the different partitions



Online Histogram Presenter (OHP)

- This tool selects monitoring histograms and displays them for the shifter
- You can follow the “DQ online” checklist for help on how to monitor these plots



LAr HV Trips

- **Most** HV lines are equipped with an auto-recovery (except PS)

- When a trip occurs
  - Channel will generate two warnings (“V not Vop”, and “Autorecovery”)
  - After recovery succeeds, these warnings will go to “WENT” status
    - Recovery time can take between 5 sec and 20 min
  - FAILED RECOVERY?
    - ALARM will prompt you to phone LAr HW on-call (70137)
  - In both cases, submit a separate e-log promptly
    USE the templates in the whiteboard!!!

- If two trips occur within 10min, line will go down and stay at 0 volts

LAr Busy

- It is rare for LAr to have a non-zero busy percentage [~1-2%]
  - If we have some % busy, this should be noted in an e-log
- LAr 100% busies are also rare
  (usually stemming from a DAQ issue, not LAr)
  - Stopless removal: after ~1min, the RC shifter will be asked for the offending PU to be disabled (ERS messages will be generated)
  - Call the LAr Run Coordinator [70136]
  - DQ plots will start to show a hole for this PU's coverage

- Submit an e-log (with the name of the PU in question)

Extras

Super Shifters

- Super Shifters are expert LAr shifters
  - Help shifters with any difficulties encountered during shifts
  - Act as liaison between LAr Experts/RCs and shift crew
- While super shifters are experts only in LAr, they are familiar with all the tools you will be using

- Super Shifter will show up during shift change. **Ask them questions**! They are there to help!!