Discussion on shifts

Anne Stutz for the LPSC team

Objectives

- Switch to shift mode next week for training and completion of the procedures
- List all items to be monitored
- Make a list of experts
- Check that tools to control and monitor the entire detecting system are developed and deployed
- Prepare missing documentation

Normal operation shifts

- Every day, the shifter must control the safe state of the detector, the data taking and the data quality.
- The shifter must be reachable 24h/24h in case of alarm.
- Experts are on call in case of problem
- 1 shifter/day → 2 weeks/person/year (on the basis of 24 physicists)
- Proposition to have one week per lab ?

Shifter	Permanents	PHD/Postdoc	**Total**
CEA/Irfu	3	3	**6**
ILL	1	1	**2**
LAPP	2	1	**3**
LPSC	5	3	**8**
MPIK	1	4	**5**
Total	12	12	**24**

Commissioning shifts

- We will have very short time for commissioning if we want to use the next 2 reactor cycles before march for physics analysis
- Control the detector as in normal operation
- Perform first studies of the detector response and of the background to adjust the trigger conditions and understand the data
- All experts must be present at start-up operations
- **More than 1 shifter per day in the first 2 weeks ?**
- **We need to perform fast analysis to have quick feedback**
- **We need to organize an efficient commissioning and analysis task force**

Control the safe state of the detector

- Detector sensors: Pressure, Temperature, LS Level (Irfu-MPIK-LPSC)
  - ✔ All sensors are deployed and tested in lab
  - ✔ Readout and Alarms via NOMAD
  - ✔ Alarms are reported to the reactor staff (to be finalized – Y. Piret Saclay)
  - ✔ Values are stored in real time in DB and **controlled with the WebSite**
- Veto sensors: water level, temperature (LPSC)
  - ✔ Temperature same as for the detector
  - ✔ Water level data are not recorded → **need a periodical check on site**
- Gas system (MPIK)
  - ✔ **Visual control on site**
- Actions in normal operation
  - **N2 bottle replacement**, once a month ? …
- **We need to write documentation and Procedures in case of alarms**
  - HV Shutdown, emptying in case of LS leakage …

Control the data taking

- PMT HV (LPSC – JSR)
  - ✔ Configure, readout and alarms can be done with NOMAD
  - ✔ Script to fill values in the Database
  - ✔ Control status and values on the Stereo Monitoring Website
- Status of Electronics boards (FEs, Trigger and LED boards) (LPSC –OB)
  - ✔ Tested by NOMAD at beginning of run
  - ✔ Script to fill values in the Database
  - ✔ Control status on the Stereo Monitoring WebSite
- Status of the DAQ/NOMAD (ILL ?, LPSC)
  - ✔ to be developed / discussed with ILL
- Control that the DAQ parameters are correct (LPSC – VH)
  - ✔ Protect DAQParam files in normal operation (LPSC - JL)
- Documentation on NOMAD and DAQ parameters in progress
- Training courses on NOMAD at the end of the meeting

Control the Data taking

- Scalers (individual PMTs) (LPSC – JSR, VH)
  - ✔ Instantaneous values are displayed on the local PC
  - ✔ DB filling during Pre-processing at the end of the Run
  - ✔ Control the rates on the Website available after the end of the Run
- Trigger rates (LPSC – JSR, VH)
  - ✔ Instantaneous values on the local PC
  - ✔ Transfer to the DB to be developed in Pre-processing (LPSC - VH)
  - ✔ Control on the WebSite after the end of the Run in progress (LPSC - AS)
- Individual spectra (LPSC – JSR)
  - ✔ Online visualization for the current Run on the local PC

Control the Data taking

✔ Data transfer NOMAD PC → ILL data server Serdon (ILL-SCI)

✔ Backup on Serdon (ILL-S.Info)

- Data transfer Serdon → LPSC (ILL-S.Info)
  - ✔ Rsync (ILL-S.Info)
  - ✔ Control the status on the WebSite, TBD (LPSC -AS)
- Pre-processing at LPSC
  - ✔ Script to produce 'friendly' ROOT file and analyze PE Runs (LPSC – VH)
  - ✔ Control the status of the script on the WebSite, TBD (LPSC - AS)
- Data transfer LSPC → CCIN2P3
  - ✔ Script to transfer data via iRODS (LPSC - AS)
  - ✔ Control the status of the script on WebSite TBD (LPSC - AS)

Control the Data Quality

- PE runs (LPSC – VH)
  - ✔ Automatic analysis (PE fit) during Pre-processing
  - ✔ Control and validation of the fit on the WebSite
- Single LED runs
  - ✔ Automatic analysis during Pre-processing (LPSC - VH)
  - ✔ Control on the WebSite (LPSC - AS)
- Linearity runs
  - ✔ Analysis code exists, to be automatized (LPSC - TS)
- Calibration spectra with sources
  - ✔ Reference spectra to be developed (Analysis team)
- Reconstructed spectra
  - ✔ Reference spectra to be developed (Analysis team)
- Veto efficiency
  - ✔ To be developed (Analysis team)

Control the Data Quality

- Check that all external quantities are recorded (to be developed)
  - ✔ Magnetic field (Jacob)
  - ✔ Neutron background (Jacob)
  - ✔ IN20 and D19 configurations (ILL/Felix ?)
  - ✔ Reactor status (ILL/Felix ?)
  - ✔ Atmospheric pressure (Anne)

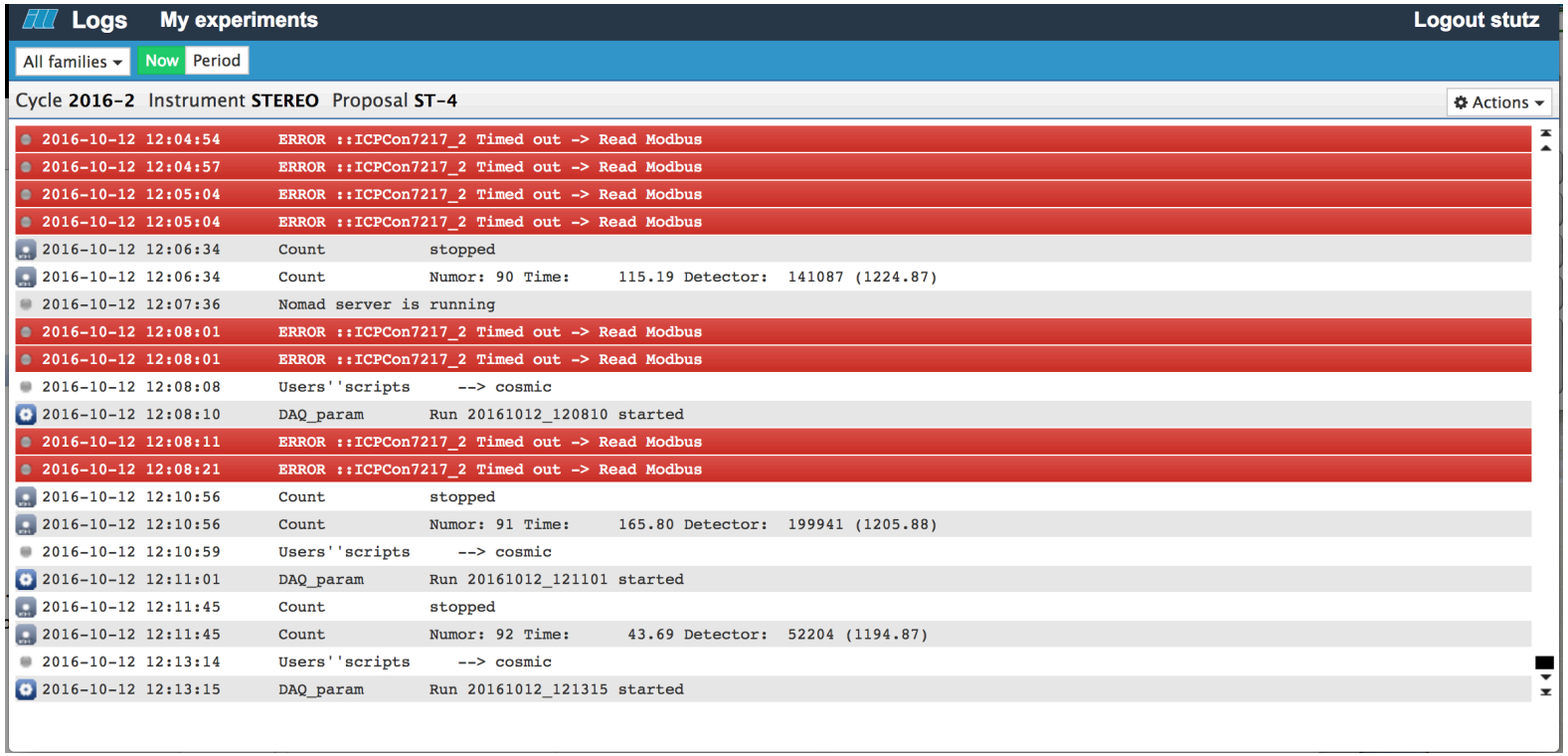
https://data.ill.fr/reactor/

Conclusion

- During the shift training phase
  - Finalize and test all tools required to control and monitor the detector
  - Write missing documentations and procedures
- STEREO Office, ILL1 room 52
- ILL Logbook (ILL visitor club user)
  https://logs.ill.fr
- Nomad status
  http://nomad.ill.fr/?stereo
- Reactor shutter status
  https://data.ill.fr/reactor/
- STEREO Monitoring WebSite
  http://lpsc.in2p3.fr/stereo/WebSite

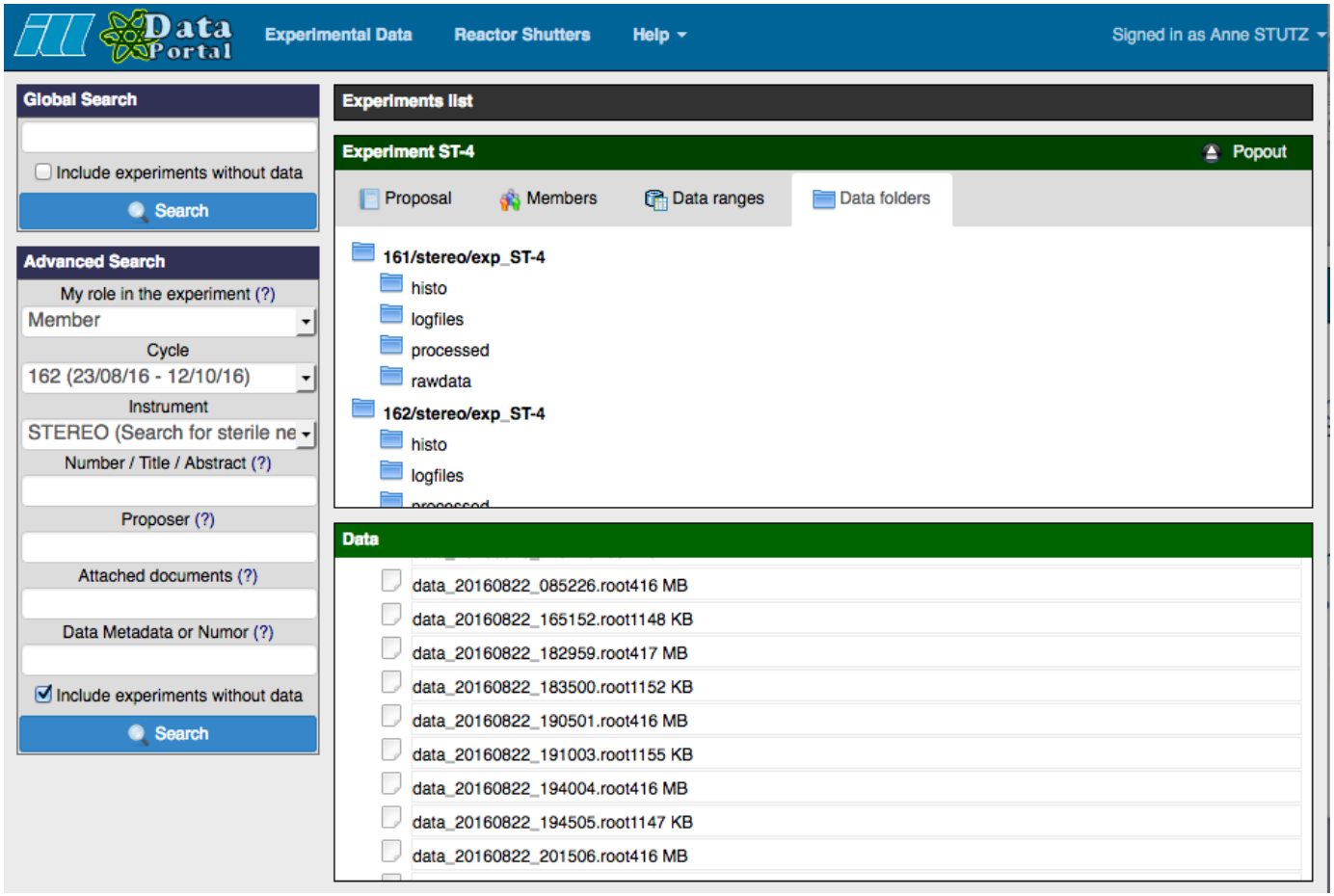
Nomad logbook

https://logs.ill.fr



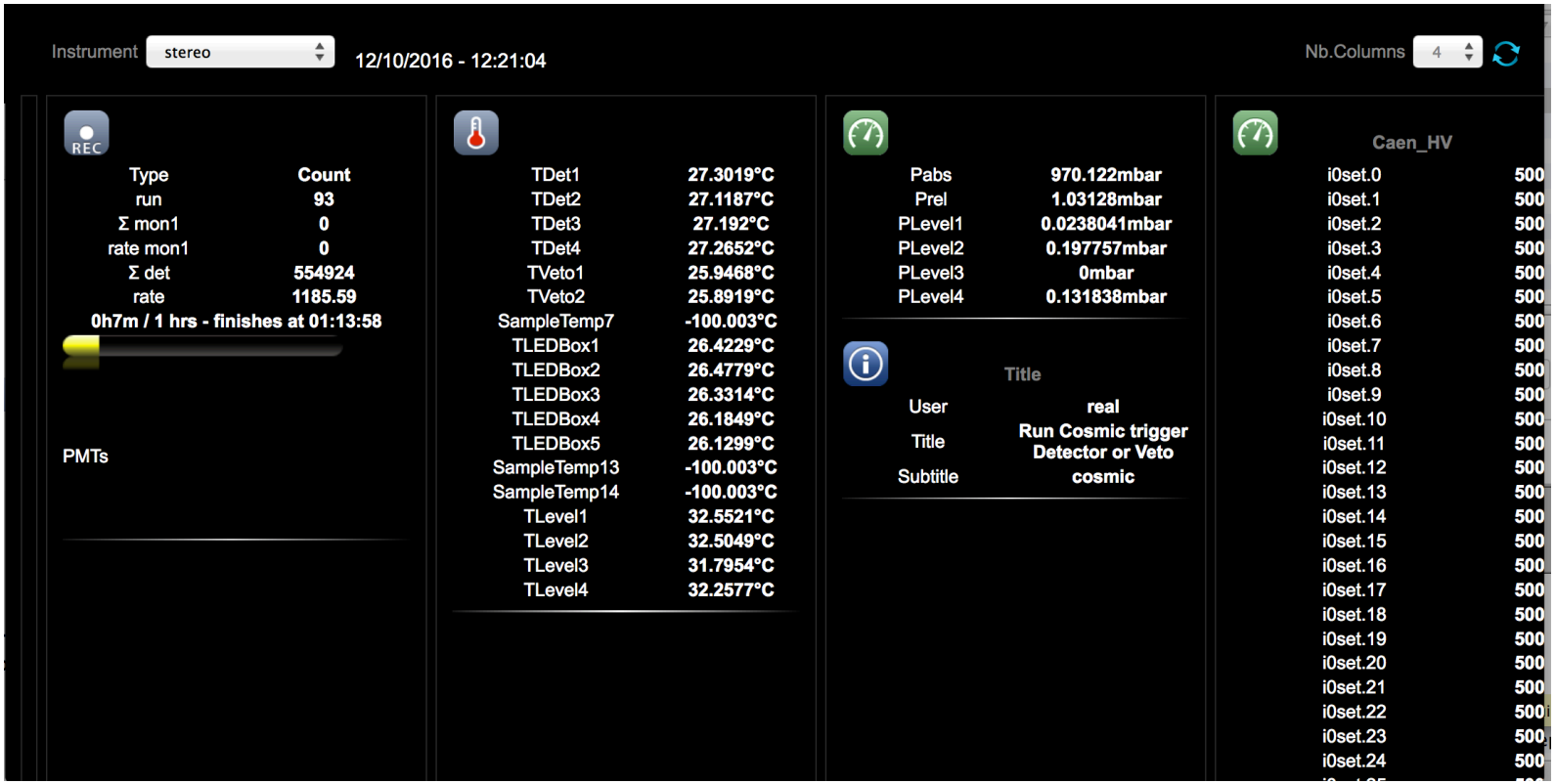
Access to data on Serdon

- https://data.ill.fr/proposal/



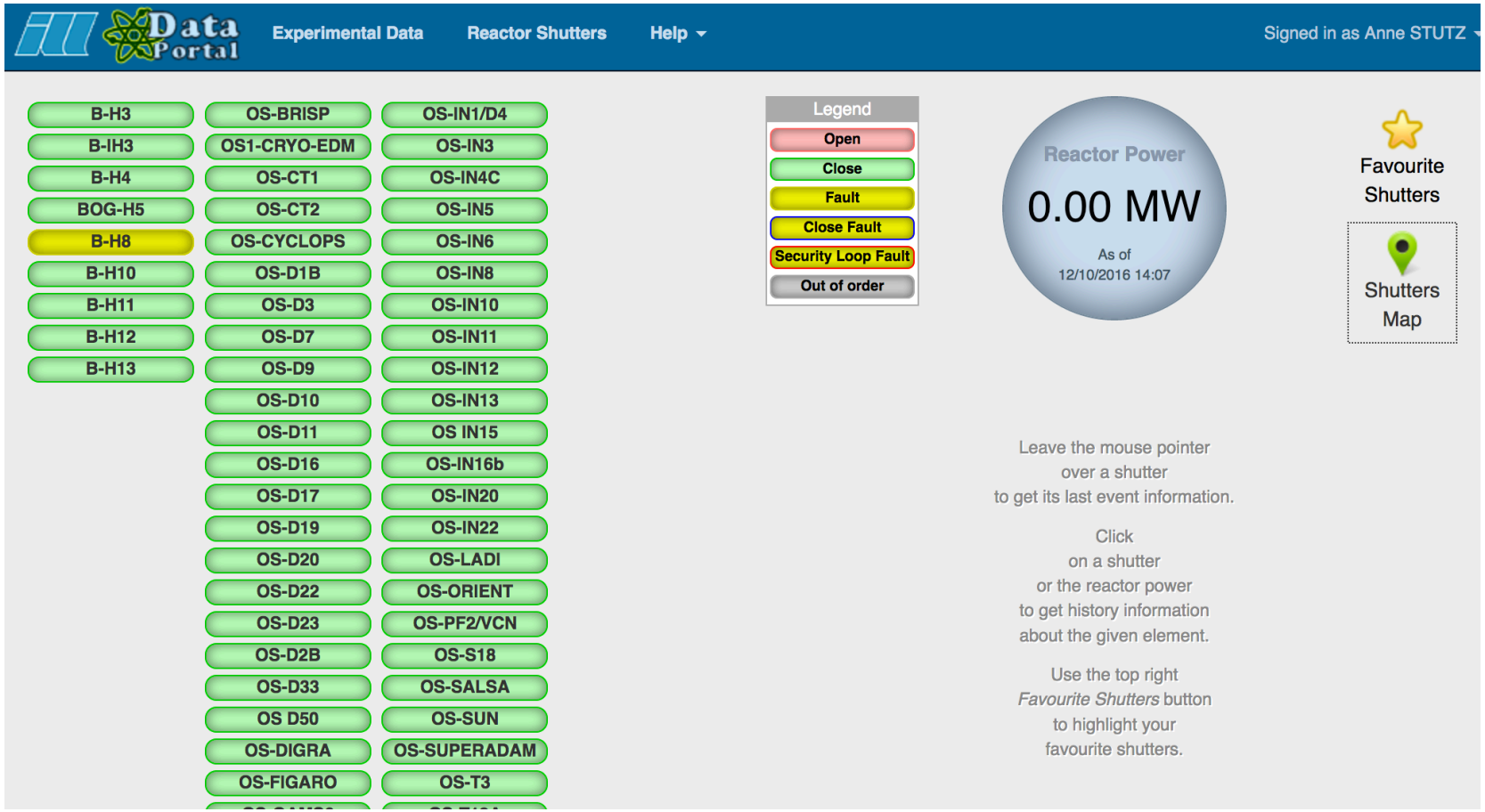
Nomad status

http://nomad.ill.fr/?stereo



Reactor shutter status

https://data.ill.fr/reactor/



STEREO Monitoring WebSite

http://lpsc.in2p3.fr/stereo/WebSite