Preparation 2019b

PXD workshop at DESY 23./24.09.2019

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System check

- Power supplies are fully functional ✓
- Slow Control functional ✓
  - Problem during verification of Switcher GM sequence during start
- High Speed links are established to all 80 DHPs (2 bad modules, 72 DHPs) ✓
- Triggers are received by DHH from FTSW (still under investigation)
- Data is transmitted from the modules to DHH ✓
- IT infrastructure
  - Epics server, calibration server (pxdbonndaq3)
- Data is recorded by LocalDAQ (bonndaq) for calibration ✓
- ONSEN (see talk of Simon Reiter)
  - ROI selection ✓
  - slow control ✓, load balancing ✓ (with DHH in full chain)
- Calibration scripts work
  - Some improvements required (see talks of Felix J. Müller, Hua Ye and Simon Reiter)

Module check

- Measurements
  - Check of power consumption ✓
  - Modules send reasonable data ✓
  - Pedestals are within the dynamic range ✓
  - Recalibration of offset => optimize modules ✓
- Comparison of state before and after shutdown
  - Power consumption (e.g. DEPFET source currents) ✓ https://elog.belle2.org/elog/PXD-Commissioning-KEK/5457
  - Pedestal distribution ✓
- Gated Mode
  - Check firmware and FTSW communication ✓
  - Learn from DESY tests (see talks of Felix J. Müller and Robert Karl)
    - Verify module & trigger settings
    - …

Check by each shifter

- Check access to KEK (VPN/ssh etc.) ✓?
- Latest OPIs ✓?
- Configured CSS correctly (use latest version ✓?)
  - https://confluence.desy.de/display/BI/Operation+Manual+for+PXD+shift
  - Feedback – run control part is missing?

Spare parts in case of failure

- LMU PS (46 in data base)
- Components for LMU PS (Fan unit, primary PS, raspberry crate controller)
- DHH (available, see Dmytro Levit's talk)
- Backup servers (pxdbonndaq3, …?)
- Raspberry temperature readout of dock boxes ✓

To do – during the run

- Voltage sweeps of the modules
  - Need hitmaps to make the “efficiency visible”
  - Need beam (cosmic rate is much too low)
  - Analyze, optimize ring structure (“by eye” / Philipp W. Oct 2018 / DESY team)