

Status update

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# Overview

## Current Status

- Infrastructure
- Hardware
- Software
  - Readout
  - Runcontrol
  - Rundatabase
  - Onlinemonitor

## Todo

- Test Experiment
- Midterm schedule

# Infrastructure

- Control: 4 tables in the DORIS control-room
- 2 Workstations installed
- Fibre uplink to electronics hut
- Workstations integrated into DAQ network



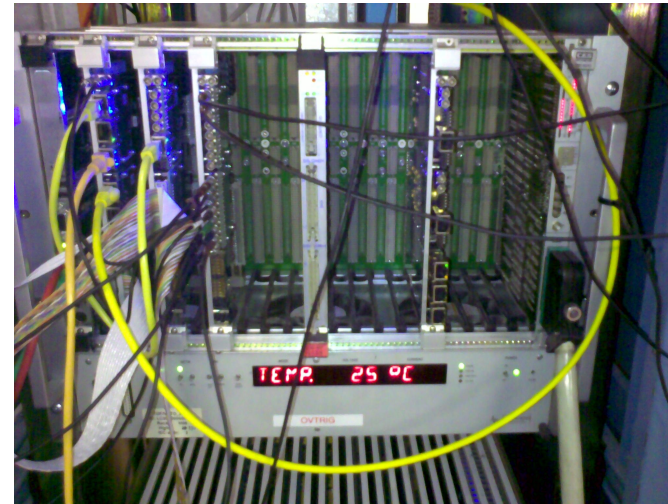
# Hardware

- 3 VME CPUs with associated sync logic operational (1 spare CPU)
- Setup dedicated control and data Gbit network in the electronics hut
- Fileserver with 5.4 TB of storage setup for data taking



# Readout

- Implemented 3 levbs (Blast2, Trigger/GEM and MWPC)
- Tested readout of Fastbust TDC and ADCs
- MWPC readout ready (untested)
- APV readout in preparation



- Implemented 8 different event types
- Interface to external systems (DORIS t<sub>1</sub>ne) prepared

# Runcontrol

- Qt based interfaces:
  - Displays status of all active levbs
  - Allows selection of runtype and parameters
  - Integrated shiftlog
  - Integrated connection to runddatabase
  - Allows restart of all critical components



# Runcontrol interface

Views

Start

Stop

☐ Autopilot

☐ dump data (/dev/null)

☐ Low Rate Warning

☐ Stop run on LEVB failure

Time

21:59:05

Started

21:58:33

Runtime

00:00:32

Current Run #

58

Beam Energy [GeV]

0.000

Events

814710

100%

Tagger Or [kHz]

0

Readout Rate [Hz]

25907.5

MBytes on Disk

663

32%

Trigger Rate [Hz]

28546

Data Rate [kByte/s]

2377

Configuration

Radiator Selection

previous

Current Radiator

Run Type Selection

daqtest2

Current Run Type

daqtest2

Output Filename

run\_58\_clock\_100mhz.zebra

Current Output Filename

run\_58\_clock\_100mhz.zebra

Output Path

/mnt/storage/tests/

Current Output Path

/mnt/storage/tests/

Trigger

Saver

Explorad

Blast1

Blast2

MWPC

Moller

Lumi

DAQd

Troubleshoot

[21:58:17]:Preparing to start Run in Testmode (no run #) - Runtype daqtest2 - Triggerfile clock\_100mhz.xml.

[21:58:17]:Test mode active! Will throw away all data (output forced to /dev/null)!!!

[21:58:17]:

[21:58:17]:Configuring

[21:58:17]:Activating

[21:58:17]:Please wait at least 20 seconds until DAQ is running

[21:58:19]:DAQ running

[21:58:19]:Succeeded to start run.

[21:58:26]:Succeeded to stop run.

[21:58:32]:Runnumber not set, proceeding with start of run

[21:58:32]:Preparing to start Run # 58 - Runtype daqtest2 - Triggerfile clock\_100mhz.xml.

[21:58:32]:Writing to /mnt/storage/tests/run\_58\_clock\_100mhz.zebra

[21:58:32]:

[21:58:32]:Configuring

[21:58:32]:Activating

[21:58:32]:Please wait at least 20 seconds until DAQ is running

[21:58:33]:DAQ running

[21:58:33]:Succeeded to start run.

Log

tail -f

...

Delete

Comments

Category

Choose a category

Runnumber

☒ current

0

Clear Comment

Your Name

Commit

Add file...

Delete Selected

# Runcontrol interface

The screenshot displays the Runcontrol interface with several key sections:

- Views:** Includes a green status indicator, Start/Stop buttons, and checkboxes for Autopilot, dump data, Low Rate Warning, and Stop run on LEVB failure.
- Configuration:** Features Radiator Selection (previous) and Current Radiator.
- Run Information:** A central panel showing real-time data:
  - Time: 21:59:05
  - Current Run #: 58
  - Beam Energy [GeV]: 0.000
  - Events: 814710
  - Tagger Or [kHz]: 0
  - Readout Rate [Hz]: 25907.5
  - Trigger Rate [Hz]: 28546
  - Data Rate [kByte/s]: 2377
  - Events progress: 100%
  - MBytes on Disk: 663
  - Data Rate progress: 32%
- Run Type Selection:** Output Filename (run\_58\_clock\_100mhz.zebra) and Output Path (/mnt/storage/tests/).
- Log:** A text area showing system messages, including "Test mode active! Will throw away all data (output forced to /dev/null)!!!" and "Succeeded to start run."
- Comments:** A section for user input with a Category dropdown, Runnumber (0), and a text area.

Annotations on the image include:

- A red box highlighting the Views, Configuration, and Run Type Selection sections.
- A red arrow pointing from the Log section to the Run Information panel, labeled "run information (rates, filename etc)."
- A red arrow pointing from the Comments section to the Log section, labeled "LEVB and run status".



# Runcontrol interface

The Runcontrol interface is divided into several sections:

- Views:** Contains a green status indicator, Start/Stop buttons, and checkboxes for Autopilot, dump data, Low Rate Warning, and Stop run on LEVB failure.
- Time:** Displays Time (21:59:05), Started (21:58:33), and Runtime (00:00:32).
- Current Run #:** 58
- Beam Energy [GeV]:** 0.000
- Events:** 814710 (100% progress bar)
- Tagger Or [kHz]:** 0
- Readout Rate [Hz]:** 25907.5
- MBytes on Disk:** 663
- Trigger Rate [Hz]:** 28546
- Data Rate [kByte/s]:** 2377 (32% progress bar)
- Configuration:** Includes Radiator Selection (previous), Run Type Selection (daqtest2), Output Filename (run\_58\_clock\_100mhz.zebra), and Output Path (/mnt/storage/tests/).
- Log:** A large text area showing system messages, including "Preparing to start Run in Testmode", "Test mode active!", and "DAQ running".
- Comments:** A section for user comments with a category dropdown, a text area, and buttons for Clear Comment, Commit, Add file..., and Delete Selected.

Annotations:

- A red arrow points from the text "DAQ status messages" to the Log window.
- A red arrow points from the text "Shiftlog" to the Comments section.

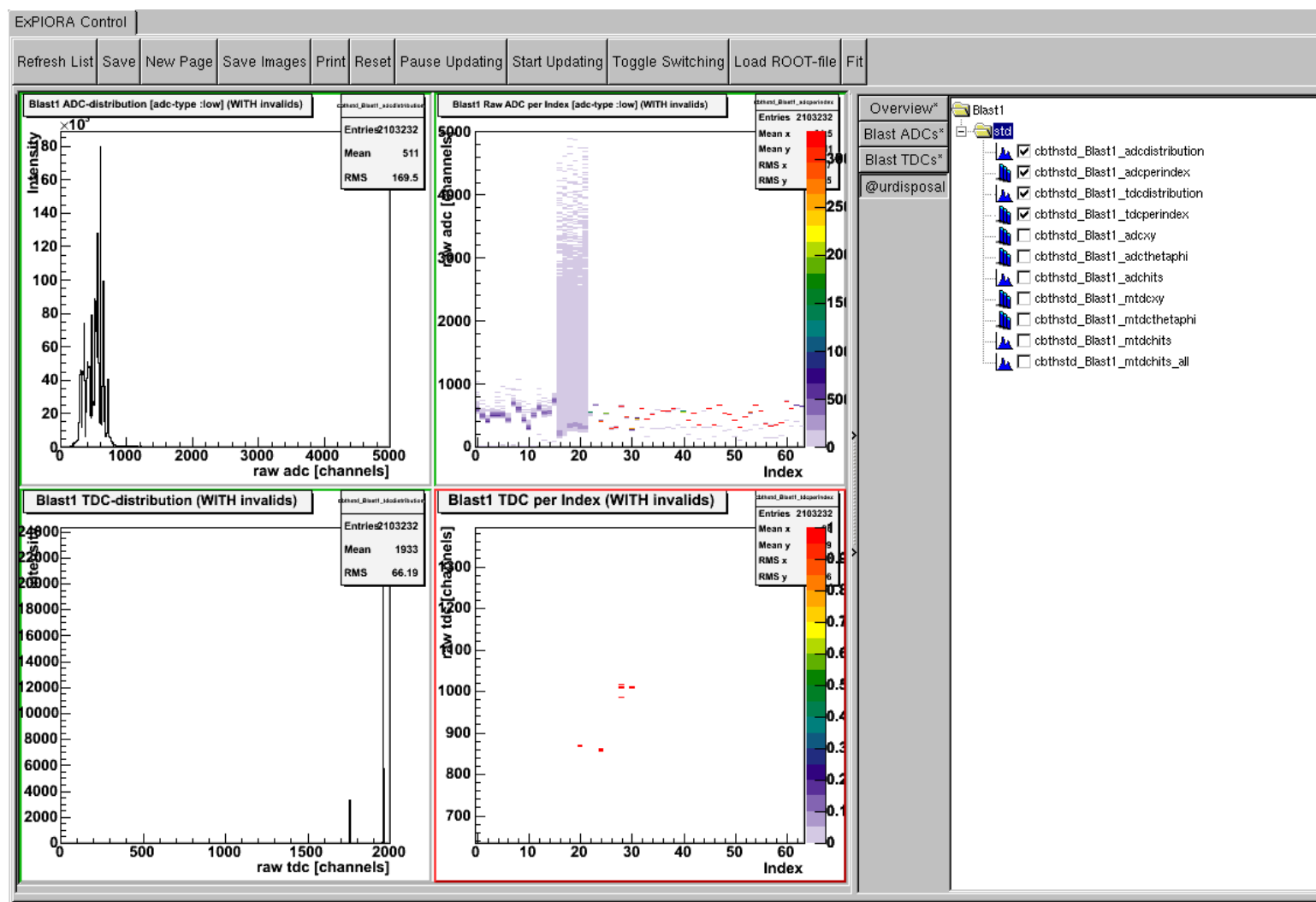
# Rundatabase

- Postgresql database stores:
  - All runinfo ( start/stop times, used detectors, detector configs, beam species, magnetic field direction)
  - All shiftlog comments
- All shiftlog comments are associated with a run and a category
- Webfrontend to easily query the database  
<<http://ocontrol.desy.de/rundb>>
- Atm. only reachable from inside Desy

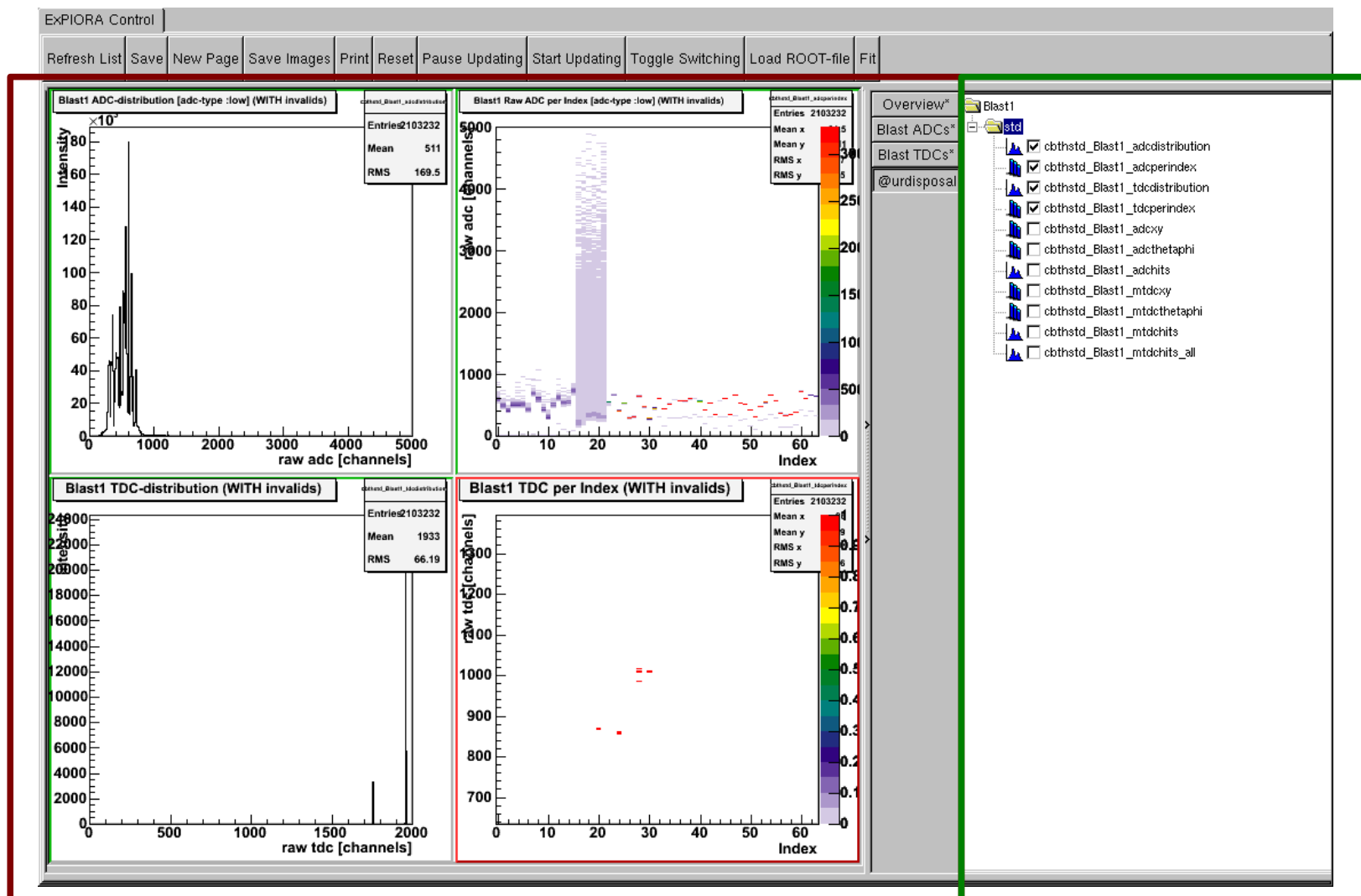
# Onlinemonitor

- Histograms for Fastbus ADCs und TDCs implemented
- Viability of MWPC and GEM online spectra for the testexperiment has to be discussed (is it really worth it?)
- Todo: establish standard procedure to start onlinemonitor (more tests with actual triggers and data needed)

# Onlinemonitor interface



# Onlinemonitor interface



Display section

File overview

# TODO

- For the testexperiment:
  - Write dataconverter Zebra->Root for analysis (see Experts' meeting on tuesday morning)
  - (Re-)Check all aspects of the DAQ chain when the actual detectors are setup
- For OLYMPUS:
  - start on PCOS/4 and Hampton GEM integration
  - learn as much as we can from the testexperiment