

ProtoDUNE SP (NP04) DAQ

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LBNC Review

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Progress since Last Review

- All DAQ HW in place at EHN1
 - Last missing bit are the optical fibers for the connection to the cryostat (being shipped)
- Storage servers qualified and put into production
 - File transfer to offline in place
- Network isolated from CERN's public network
 - Only selected connections/services open
 - Will be progressively closed further before data taking
- Run control automatically records the configuration and time of every run in the electronic logbook
 - Very useful to track data taking conditions during debugging
 - Run number database introduced to ensure uniqueness of runs

Progress since Last Review

- Taken data for all 3 APAs with photon detectors in cold-box
 - Continuous improvement of monitoring tools thanks to good collaboration with detector experts
- First data taken with cold electronics during APA#3 cool down
 - Using RCE readout
 - Low trigger rate, no data compression
 - Initial testing of monitoring tools (and cable mapping)
- Initial integration of trigger system with timing
- Final timing system deployment imminent
- Strategy to integrate CRT data into DAQ dataflow



E-log entry example APA #3

Jaroslav Zalesak

RE: Run 755 summary

On 2018-02-09 20:19, Run Control wrote: Run number: 755 Start time: Fri 09 Feb

2018-02-09 20:39

Info Edit Reply

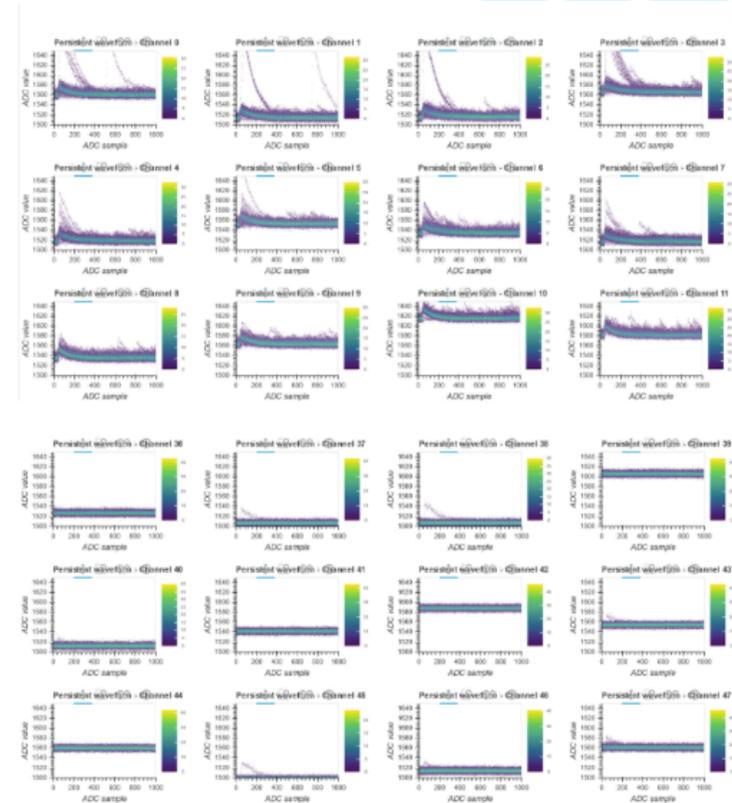
On 2018-02-09 20:19, Run Control wrote:

Run number: 755
Start time: Fri 09 Feb 2018 07:04:52 PM GMT
Configuration: Coldbox00046
DAQ directory: /nfs/sw/artdaq/
DAQ Interface directory: /nfs/sw/artdaq/DAQInterface/
Device: DataLogger1 enabled on np04-srv-001 port: 6265
Device: DataLogger2 enabled on np04-srv-001 port: 6266
Device: DataLogger3 enabled on np04-srv-001 port: 6267
Device: DataLogger4 enabled on np04-srv-001 port: 6268
Device: Dispatcher enabled on np04-srv-014 port: 6295
Device: EventBuilder1 enabled on np04-srv-014 port: 6235
Device: EventBuilder2 enabled on np04-srv-015 port: 6236
Device: ProcessManager enabled on localhost port: 6400
Device: ssp102 enabled on np04-srv-012 port: 7000
Device: ssp103 enabled on np04-srv-012 port: 7001
Device: ssp104 enabled on np04-srv-012 port: 7002
Device: ssp105 enabled on np04-srv-012 port: 7003
Device: timing enabled on np04-srv-012 port: 8000
Trigger: Start 3 Hz on: Fri 09 Feb 2018 07:05:22 PM GMT
Trigger: Clear on: Fri 09 Feb 2018 07:19:41 PM GMT
End time: Fri 09 Feb 2018 07:19:46 PM GMT
Run duration: 00 hours, 14 minutes and 54 seconds

Almost same conditions as the last run, the LED switched ON
Temperatures almost sam max +1K (bottom).

pulser LED ON
Trigger Rate: 3Hz
SSPs 102, 103, 104, Bias at 26.5V
Modified SSP 105, Bias at 26.0V -->52V

[20:39:53]



Ongoing now

- Speed up of visualization tools for monitoring histograms
- Stabilization of RCE readout to allow for higher rates (before compression)
- First tests with FELIX readout
 - WIB firmware not optimal yet, with high rate of duplicated timestamps in fragments
- Moving to artDAQ v3
 - Major release including many of the features required for ProtoDUNE
- Getting ready for receiving and laying out fibers on cryostat
- Aim at being able to do validation of APA#4 fully using DAQ
 - Standalone CE DAQ used for reference and comparison
- Continue weekly DAQ meetings to keep momentum and share information
 - Dedicated artDAQ workshop at FNAL in Jan very useful and productive
 - Live exchanges on dedicated slack channel

