

uB DAQ: status of 4 unrelated things

23-Oct-013

- **New Readout Work in DAQ context**
- **Laser and Flasher systems**

DAB Annex Test Stand work

- I'm working on reading each card's header then its data words. So: one card at a time, reading, changing the DMA size with each read. As opposed to constant DMA size. The idea being that this will translate to Huffman/compressed mode naturally. We have had a hard time with that mode.
- I've successfully run one card for 2-3 hours with a 1 Hz external trigger and 33 sample TPC drift windows.
- I successfully ran few min, 12 cards, 6 Hz too, 33 sample windows
- Common problem is that I fill the 1 GB circular buffer on the seb, and don't gracefully handle the wrapping. Am working on that now.
- I don't guarantee it's bullet proof to missing/corrupted end-of-evt, beginning-of-evt words. We are not immune to that problem in current readout modes either. I think I've seen it in my runs. Stay tuned

Laser and PMT Flasher

- 2 distinct things
- We spoke with Thomas and Herb, respectively. They know roughly what they must take on. The work is somewhat involved, less-involved, respectively.
- Laser: external, beam-like trigger
- Flasher: software trigger, just like calibration mode

Laser and Flasher, 2

- Thomas's DAQ coding work will be rather expansive. Requires opening sockets to 2 more machines (the laser servers) when we run in "laser" mode. They'll need to interface to run config dB, and then pulse the laser, which will drive DAQ readout of all crates. With each pulse, they'll push a C++ struct to the assembler. Necessary because power/position is different evt-by-evt.
 - No new DAQ States needed, we don't think, which is a relief.
 - Wes and I claim to know where to point him in the code to start
- Ben merely must interface with run config dB. Pick settings for his flasher on his USB/serial flasher box, just like we currently config the ASICs, then config the flashers, then just run the Calibration run. We'll split via NIM from charge injection pulser to Flasher, shutting off the pulser output via config. Vice-versa to return to charge-injection mode: shut off flasher, turn on pulser outputs. Thus, single EXT limo on Trigger board is sufficient.

Run Control

- Tuesday 2+ hr meeting, 2pm WH 7XO?, certainly ReadyTalk
- Goals established:
 - fire up Run Control Server, Run Control GUI, ... dds daemon, then Application Mgr will start sebApp reading binary files, and assemblerMain, start, pause, etc.
- Continuing for now to end-run around dB

ellipses reflect my ignorance. There's a component that populates a table of processes to manage. The table itself is loaded somewhere, etc

MRT-to-MRT+ transition

- Defer to Wes for cold cable MRT report
- Gennadiy has successfully config'd MRT to readout PMT crate (MRT+) at DAB.
 - Close to reading out.
 - Cables/fibers now run from HV cage to just-outside-tent position.
 - I'd like to roll that rack to that position.
 - Matt wants to readout from shaper with scope.
 - When cold cable tests are done we want to read out one PMT on scaffolding with that crate
 - Then, read both racks (MRT+) triggering from PMT rack
 - Then all 36 PMTs in cryostat.
 - Can start getting CSS talking to Lambda HV once rack is in position. Gennadiy/Geoff S