DAQ: Update, 8–December–2011

- Still meeting bi-weekly. Next meeting 21-December-2011. We'll hear from Igor Mandrichenko about beam data logging project.

- We discuss hardware/software work (Andrzej), DAQ coding and trigger details (Georgia, Chi, Eric, Leslie), monitoring (CET guys), test stands and hardware and interfaces (Linda), computer/network purchases and configuring (Gennadiy ... (SLF6!)), would-be CET deliverables, ...

- uboone Logbook! dbweb0.fnal.gov/ECL/uboone Single user, not experiment access. Ask me for access.

Test Stands

- We have 2 DAQ machines networked through 3 switches ala docdb 1781 (which I showed last meeting) in LCC108

- We would like to be at DAB by late Spring, 2012, when Nevis prototype 2 test is finished and they deliver a crate to us. We need space to stand around and plug in scopes and look over each others' shoulders to do a vertical slice test. Such an environment can't happen in LCC108. Linda/Kirby are arranging this. We will add 3rd machine, uboonedaq–seb–trig, for this work.

Spring, 2012 DAB test stand

- One crate to start. Maybe a second one in the summer.
- Will hold some (9?), not all 16 FEM boards, controller card, XMIT card, and trigger card
- We will exercise a calibration run.

Calibration Run

□ Assembler will start a run, tell uboonedaq-evb-0N to do its calibration set up, do the calibration. Then we take data, ship it to assembler, who builds it, writes it to disk.

□ Andrzej, with iterations with Georgia and Chen, has written code for configuring Calibration Service Boards over USB, and pulser over ethernet-to-GPIB from linux platform with some National Instruments libraries. We will use this code. (It will be imminently put into our git codebase.) No Windows platforms anywhere. Yet.

□ I have to carve out 6-12 wks and write/debug the readout code. Currently it's all broken.

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CET/CD (9th floor) Involvement

- I've had fruitful discussions with Kurt/Ron/ Gennadiy, identifying all (one hopes) the moving parts. There's a nice working document at docDB 1770.

- They're mulling their most useful would-be deliverables. Networking/system configuring of Gennadiy's is already billing the project, I think. Slow controls/monitoring bubbling to top, unless KSU says otherwise. They can leverage a lot of NOvA experience here. SAM (data management, aka Enstore), etc.

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Beam Data

- Conversations with Tom K, Zarko, Andrew Norman

- We need an accelerator BNB/MI signal into the trigger card and a scalar. Perhaps straight into dedicated PCIe card. Details remain murky.

- 53 MHz per-bucket info requires something like mBooNE's RWM and their kludgey data capture.

- In the end, mBooNE doesn't use this fine timing for K->nu background information.

- Discuss...

Beam data, packaging with detector data

- Logging (Andrew N, Igor, Marc M) project will work for us, but that's only cuz I don't know enough about it. Will know more soon.

- We will still need a mBooNE-like set of scripts to merge detector and beam (ACNET) data. Would be simpler perhaps with the IF tool.

Processes on the DAQ machines

uboondaq-seb-0N   slowMon.c

uboondaq-evb

assembler.c

seb.c (triggered)   seb.c (SN)

3 threads:
poller, getter, sender   poller, getter, writer

disk

uboondaq-seb-trigPmt   slowMon.c

seb.c (triggered)   seb.c (SN)

trigger.c