

# DAQ and EF&I

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## EF&I Activities

- Supported FCAL completion; installation of power supplies and FEM, cables, fibers, ARCNET, configuration files, high voltage control, smoke alarms, etc.
  - Both sides have what we set out to do
  - Slightly worrisome blown fuse on South fixed last week
  - Last second addition of LED pulser?
- Repair of 1471P's for MUID
  - We are now up to 1 spare for 84 modules
  - We've repaired some modules, broken others, sent other to UVC
  - Still under way
- Last minute cables (SMD, NTC, FCAL, mainly)
- TEC rack rewiring
- Alarms, documentation, action items from safety reviews
- Spares and repairs

## DAQ Status

Lots of work in the past month; Brian and Steve have been particularly hard at it, and have made a great deal of progress. Last month, there was basically no event builder hardware, and the new online software had never contacted the event builder nodes. This month, the work is mainly focused on integrating the EvB and taking data with BigPartition.

- Dell 1U ATP's moved, recabled, and reconfigured as SEB's
- Microway 1U servers added to complete the SEB's and as ATP's
- New JSEB's built to stock up on spares—thanks to Chi for procurement of parts and boards
- Jungo device driver now in use for reading data through JSEB
- Most granules have been read through the Event Builder (in ModeF, one granule at a time); some assembly still required

## Other DAQ Work

The main thrust may have been event building, but there was lots of other work, too:

- Ed Desmond did lots of CORBA configuration and hand-holding; changeover to new version of CORBA now complete
- Essentially all online software is now running on Linux; the CORBA services were the last to move; rc, gtm, arcnets\_client, PartitionServer, EvBServer, and more are all running in Linux now
- Chris and Martin have the newer buffer boxes ready to run the data logger
- Chris has led the effort to rationalize the online monitoring

## ...but there's more to do

- We don't have BigPartition humming along and writing out data just yet.
- The PC 5 event buffer has turned out being more complicated than just not working; in fact, it does work in some FEM's under some conditions. More measurements are needed, but Glenn has gained some really useful information by setting up some test FEM's at Oak Ridge.
- EMC short format is still not resolved; Edward's suggestion of using only low gain?
- The JSEB is operating in an entirely new regime (dual processor machines, interrupts enabled, Jungo driver, new firmware, multiple events per buffer, W2K) and we may find new problems somewhere in that space, and maybe some old problems will come back.
- Speed tests—we want it to go faster, but we don't really know how fast it goes now; BigPartition with zero suppression tuned up gives us the bottom line.
- Running with a real trigger mix.

## HV

- Martin has completed the first generation of the serial HV control for the LeCroy (UVC) mainframes and will report on the results of yesterday's "High Voltage Challenge" when he digests them.
- It looks like we are reasonably close to retiring the old EPICS system for the 1450 system (my point of view on the TOF EPICS system is that it wasn't broken, so we don't need to fix it).
- When we are a little further along, I would like to convene the HVFEST II to see if we need any further improvements, or if we can consolidate things any further to simplify operation for SA1 (not-so-secret long term goal: eliminate SA1, or combine his duties with SA2).

## Goals

- Read data from all granules through Event Builder
- Log data reliably from BigPartition
- Turn on zero suppression
- Take minimum bias trigger data as we can for detector monitoring, timing, trigger tuning, and practice
- Experiment with mods to Kerner PLL to see if we can eliminate clock fix
- Attempt to use selective triggers as luminosity warrants

## Good Housekeeping

It's easy to lose track of the basics during a period of frenetic activity like this, but we need to keep going on other things, too:

- We need a clean-up of 1008; the lab space needs cleaning, and we are adding cable trays so maybe we can keep it neat?
- I have had to cannibalize several test stands to get enough parts for the detector—I need to restore those before anyone notices.
- We have to keep moving on spares: HV, LV, PowerPC's; we need to build some more GTM's and associated boards.
- Interior decorating.