

## BigBite Working Group Bi-Weekly Meeting Minutes

4.7.2021

### Agenda:

- Crane issues and plan moving forward - Bogdan/Arun
- BBCAL debugging noisy channels - Provakar/Arun (13L, 14L triple peaks in pedestals, 15L, 17L double peaks, 25L and 26L wide pedestals, 1L, 16, and 18L pedestals double peak but not so distinct)
- Attaching the trigger monitor (F1TDC setup) - Provakar/Sebastian/Arun
- Connecting FADC cables - Arun/Bhesha
- Libraries for remote power supply - Juan Carlos
- Threshold tweaking module studies - Sebastian/Provakar
- Connecting FADC signal cables to patch panels - Provakar/Arun
- Cosmic counter preparation - Bogdan/Arun
- Synchronizing software efforts for FADC upgrade - Mark/Juan Carlos/Eric
- Updates from FADC data taken - Mark

### Attendance:

1. Sebastian Seeds
2. Arun Tadepelli
3. Bogdan Wojtsekhowski
4. Bhesha
5. Eric Fuchey
6. Juan Carlos Carnejo
7. Scott Barcus

### Actual:

- Crane issues.
  - Jessie: Not possible to move the whole BB weldment with the modules together with crane. Preparing to label and disconnect all modules
  - Will need labeling (cables and patch panels), no group of cables greater than 8, and site map created for experimental hall
  - Need another meeting with Jessie to investigate any opportunities to reduce manpower
    - Arun and Scott
  - HCAL
    - Need to remove all components from racks because they will pass into final location horizontally
    - Short cables can remain in racks, all crates need removed
  - No crates can stay in the racks for the move. This will add needed manpower or lead time to installation.

- Hopefully by September, installation will be complete. No firm figures exist..
- Debugging noisy channels
  - Triple peaks
    - No evidence of noise from PMT
    - Still under investigation
      - Using trigger monitor
- Attaching the trigger monitor
  - Fully connected and installed in weldment
  - Will need to check the signal and timing to verify connections are correct and working
  - Mark Jones: F1TDC pending Brian Moffet
- Connecting fADC cables
  - Preshower: connected, labeled, and installed
    - Each cable has a bundle number and cable number on each end
  - Shower in progress
- Libraries for remote control threshold module
  - Juan Carlos: Libraries written. Pending testing. GUI is in need of creation.
    - REM-x can be tied to a GUI
  - Control module patch panel fabrication pending fast electronics group: in progress
  - VME control module has NOT been tested, modified discriminator has been tested.
  - Attenuation on cables will need to be evaluated for each PS706 module
  - Need two voltage filters created
  - Modified PS706
    - 4 additional modules need to be tested up to 1 V
    - Attenuation not significant for DC power at low current over cables. Attenuation from Low Pass Filter is significant.
- Relative energy deposition from shower to preshower needs evaluation
  - Electronics chain from preshower and shower are different
- Cosmic counter preparation
  - Sean is a resource
  - No issues, in progress
- Synchronizing the software efforts
  - Connecting channels and will be ready to run tests and take data
  - Eric, Mark, Juan Carlos working on it.
    - Juan Carlos will send slides
    - Mode information from fADCs on the data are missing
      - Waveform or mode-7 can be determined
      - Call from configuration handler to get mode, will take some work
      - Will add flag to force mode-7 in meantime
    - Current build works for HCAL – on github
    - Status of BBCal is on track
    - Mode-7 is the integral of the pulse – will not get the timing information
      - Just like fastbus with multiple pulses
      - Will have the time, integral, and amplitude
    - Thresholds may be set too low for timing in order to obtain integral

- The two goals tradeoff against each other. Best option under investigation by Mark Jones and Bogdan Wojtsekhowski
- Worst case, can read out the whole sample and compare cosmics
- Threshold relative to energy trying to measure relative to 2-3 MeV or it begins to affect resolution
- Will need different calibration constants for shower and preshower – do corrections in the software.
  - One channel has different MeV conversion between detectors.
  - Mark Jones to talk to Chris Cuevas on this