Coordinate Detector Preparations for Readiness Review

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SBS Weekly Meeting

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Scope of Project

- Complete the commissioning of the detector in the testlab.
- Assemble the full detector in the testlab.
  - then deassemble for transfer to the hall
- Assist in the installation of the detector in the hall – assembly, cabling, etc.
- Provide software for CDet analysis to be included in SBS analyzer.
- CNU is NOT providing any of the requirement equipment or ancillary supplies (cables, connectors etc.)

Available Manpower

- Two undergraduate students during the academic year – upto 10 hours/week/person
- Two undergraduate students during the summer sesssion
- Two faculty members to contribute
  - Ed Brash contributing to software for both the DAQ and the analyzer

List of Items for Completion

- Commissioning in the testlab.
  - Cosmic data on every scintillator – charge equalization, threshold, crosstalk and efficiency
- Trial assembly in the testlab
  - Engineering support required
- Identify all equipment required for DAQ
  - TDC modules require testing
- HV system
  - CNU providing a new HV crate (not the cables or connectors)
- Low voltage for NINOs
  - need distribution boards/panel

Timeline of Completion

- Dec. 2018 : Complete commissioning of M2 and M3 in test lab.
- March 2019: Trial assembly of M1/M2/M3 on the frame in the test lab.
  - Determine all cabling, power supply logistics
- June 2019: Complete commissioning of M4, M5, M6 in test lab.
- DAQ and software considerations to move in tandem as needed.

Help requested from JLab

- All cables (signal and HV), connectors, HV boxes, patch panels and any other ancillary supplies or equipment.
- All DAQ modules and components.
- Require help to integrate CDet into DAQ.
- Require engineering and tech support for trial assembly in the test lab and transport to the hall and final assembly in the hall.

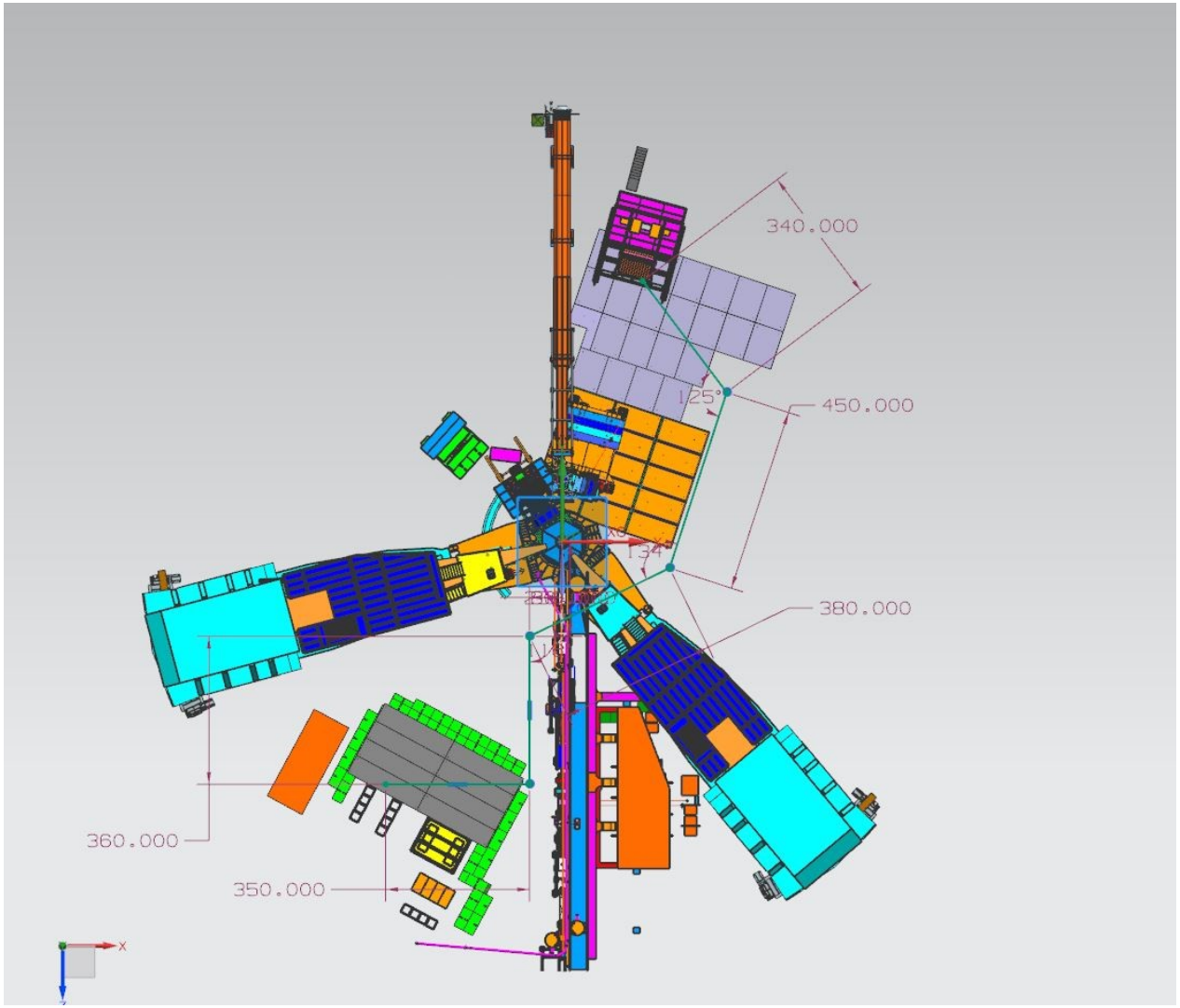
Data Acquisition System

- GMn will only use TDC signals from CDet
- DAQ will require 2688 channels (only 2352 used – 14 channels per PMT)
- Need **28** LeCroy 1877 TDC modules (+ spares)
- Trying to identify modules in hand
- Need **12** LVDS-to-ECL converter boards
- Need **168** (16-channel) ribbon cables
- Cables need to be ~ 50 m long

Power Supply Systems

- CNU purchased a new CAEN HV system
  - 4 pods, 64 channels per pod
- Need all connectors and cables for detector
- Need **12** HV distribution boxes
  - Mount on each module; 1 in use
- Need low voltage (6 V) high current power supplies for NINO cards
- Need **12** power distribution boards to take supply to individual NINO cards.

Hall Layout for GMn



- Green line is cable route
- Electronics in corner of hut
- Put signal converters in hall
- Doug has 100 ft ribbon cables

Summary

- Commissioning in progress
  - Module 2 awaiting NINO cards shipment.
- Considering requirements of experiments
- Identifying all components required.
- Determining what we have already and what needs purchased/made.