

SBS Meeting 19-December-2019

1. New meeting time
 - 1.1. Monday 11 AM? Thursday 10AM, Bogdan can't make it
 - 1.2. Choice is Monday 11 AM is the 'best' time and includes Bogdan
2. APS meeting
 - 2.1. Would like a SBS presence
 - 2.2. Who would be going? What do you plan to present?
 - 2.3. Contract Andrew
 - 2.4. Abstract due date: January 10, 2019
3. Kondo Gnanvo – Status of UVA GEM setup in EEL clean room
 - 3.1. Status of UVA GEM layers assembly in EEL 124
 - 3.1.1. 5 of 11 layers assembly completed; tested and validated
 - 3.1.2. 4 layers on the cosmic stand; HV tests completed; preliminary cosmic data
 - 3.1.3. Waiting to mount 5th layer in stand for jacking system
 - 3.1.4. Layers 3,4,5 are final equipped with HV and APV25 electronics, FE cards, final gas system
 - 3.1.5. Layers 1 and 2 to be removed for some modifications; mechanical support
 - 3.1.6. DAQ and R/O electronics, HV PS, trigger logics
 - 3.1.6.1. 2 VME crates for MPD
 - 3.1.6.2. 28 MPDs, 352 APV25 for cosmic test stand
 - 3.1.6.3. Trigger is JLab custom module
 - 3.1.6.4. Wiener HV PS for GEM 3 HV modules with 8 channels each for 5 layers
 - 3.1.6.5. MPD DAQ & Trigger Rack
 - 3.1.6.6. 1 standard VME crate for MPDs
 - 3.1.7. Cabling and gas system has been rearranged and mechanically supported
 - 3.1.8. Low voltage power regulation PCB for APV25 electronics
 - 3.2. Cosmic Ray Preliminary data
 - 3.2.1. Preliminary cosmic data collected; hits reconstructed; no tracks
 - 3.2.2. Limited to 2 layers at a time for DAQ reason
 - 3.2.3. Low gain modules need to run at higher voltages
 - 3.2.4. ~1.5 Million triggers over 1.5 days
 - 3.2.5. Still sorting out MPDs and configurations
 - 3.3. GEM Analysis Software Development
 - 3.3.1. No analysis software to do efficiency analysis
 - 3.3.2. Andrew working on analysis for INFN chambers
 - 3.3.3. Macros on the SBS work area on the JLab farm
 - 3.3.4. Working toward implementation into the analyzer soon
 - 3.3.5. Has shown 85% efficiency (cosmic data on INFN) in non-dead areas
 - 3.4. Summary of hardware
 - 3.4.1. Remaining 6 layers in 6 months if no changes in staffing
 - 3.4.2. Need to upgrade decode to decode more than one VME crates (CODA, Mark Jones help)
 - 3.4.3. Analysis of INFN chambers is good; tested 85% efficiency at 100 um spatial resolution
 - 3.4.4. Danning Di working on SSP testing of for hardware level data reduction; test phase AB
 - 3.5. Update on Front Trackers GEMs with U-V Strips Readout
 - 3.5.1. Design phase done; validated

- 3.5.2. One 150 by 40 cm² active area (no frame dead space)
- 3.5.3. Under construction GEM foils; first 6 delivery in Feb. 2020
- 3.5.4. U-V readout foil Feb. 2020 delivery
- 3.5.5. Cathode foils (CERN) and frames ; Feb. 2020 all sets
- 3.6. GEM Gas System in Hall A for the SBS Experiments
 - 3.6.1. 600 L/hour for GMn and GEN-RP
 - 3.6.2. ~600,000 STP liters of Argon and 150,000 STS liters of CO₂
 - 3.6.3. Gas shed is being build, enlarged
 - 3.6.4. Schematic of gas distribution system has been completed; off to validation
 - 3.6.5. Procurement to being as soon as validation complete
- 3.7. Overall Summary
 - 3.7.1. GEM assembly keeps chugging forward
 - 3.7.2. Mid-2020 all 11 layers should be done and test (hardware stand)
 - 3.7.3. Analysis is moving forward with Andrew's work
 - 3.7.4. INFN cosmic analysis results are positive but needs lots of work
 - 3.7.5. U-V GEM assembly to being in 2020; 2 layers ready by July 2020?
 - 3.7.6. Gas system scheme ready and in approval process; procurement coming soon
- 3.8. Questions
 - 3.8.1. Concern about how the GEM chambers to be installed into the SBS
 - 3.8.2. Design is controlled by engineering group but need update on the fit and finish
 - 3.8.3. Repositioning the GEM chambers to improve redundancy and better track for analyzers
 - 3.8.4. Front tracker rates? More planes, more data, more volume.
- 4. Adjourned

Recorded by Will Tireman