

SBS GEM trackers status

Ching Him Leung

1. Phase 1: (Heavy lifting setup)

1. Isolate and repair HV sectors in current Hall A GEMs (done)
2. Upgrade HV inputs for the BB XY layer (done)
3. Install GEMs in the front tracker (done)
4. Install GEMs in the back tracker (done*)

2. Phase 2: (Establish steady-state testing)

1. Reconnect and setup the DAQ, run HDMI between detectors and MPDs (In progress)
2. Run gas lines, LV, HV to detectors (in progress)
3. install scintillators for cosmics on front and back of either front or back tracker for testing readout
4. HV conditioning with nitrogen and cosmic testing with Ar/CO₂
5. Test upgraded firmware for zero suppression

3. Phase 3: (Final install for GEP)

1. Clean HDMI connectors and cables, strain relief of cables



Front tracker



Installation of GEMs into new frame

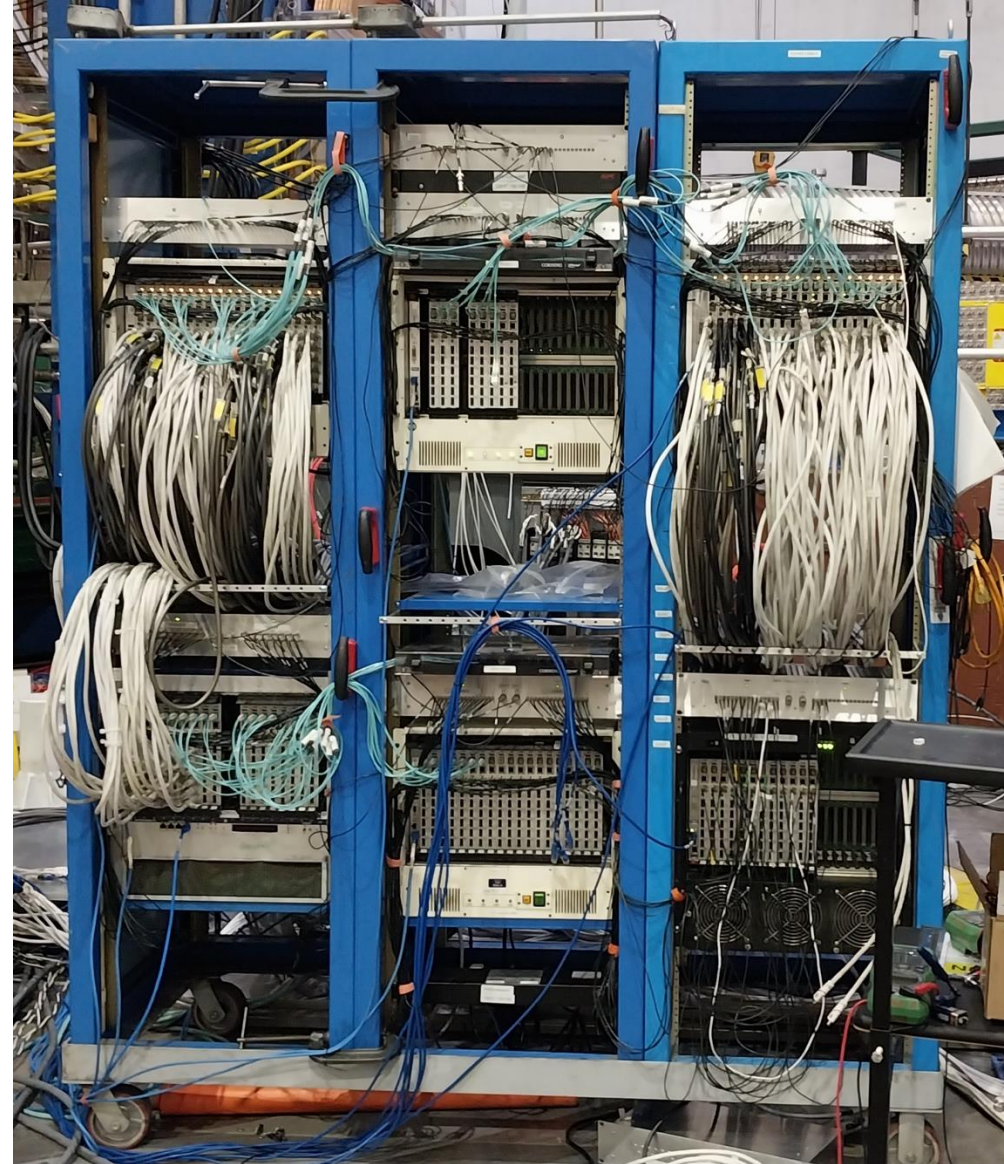
- 15 out of 16 layers have been installed
 - 8 in the front tracker
 - 7 in the back tracker
 - All GEMs have been tested with HV. We have isolated any shorts found
- The last XY layer is being prepared in EEL
 - All the GEMs can hold HV
 - Pending APVs, expect to get them soon

Back tracker



Readout electronics

- We are in the process of the conducting low-level test on MPDs and APVs
 - Currently working on the front tacker
 - We noticed some initialization issues which are were caused by poor connections between the low voltage and the detector.



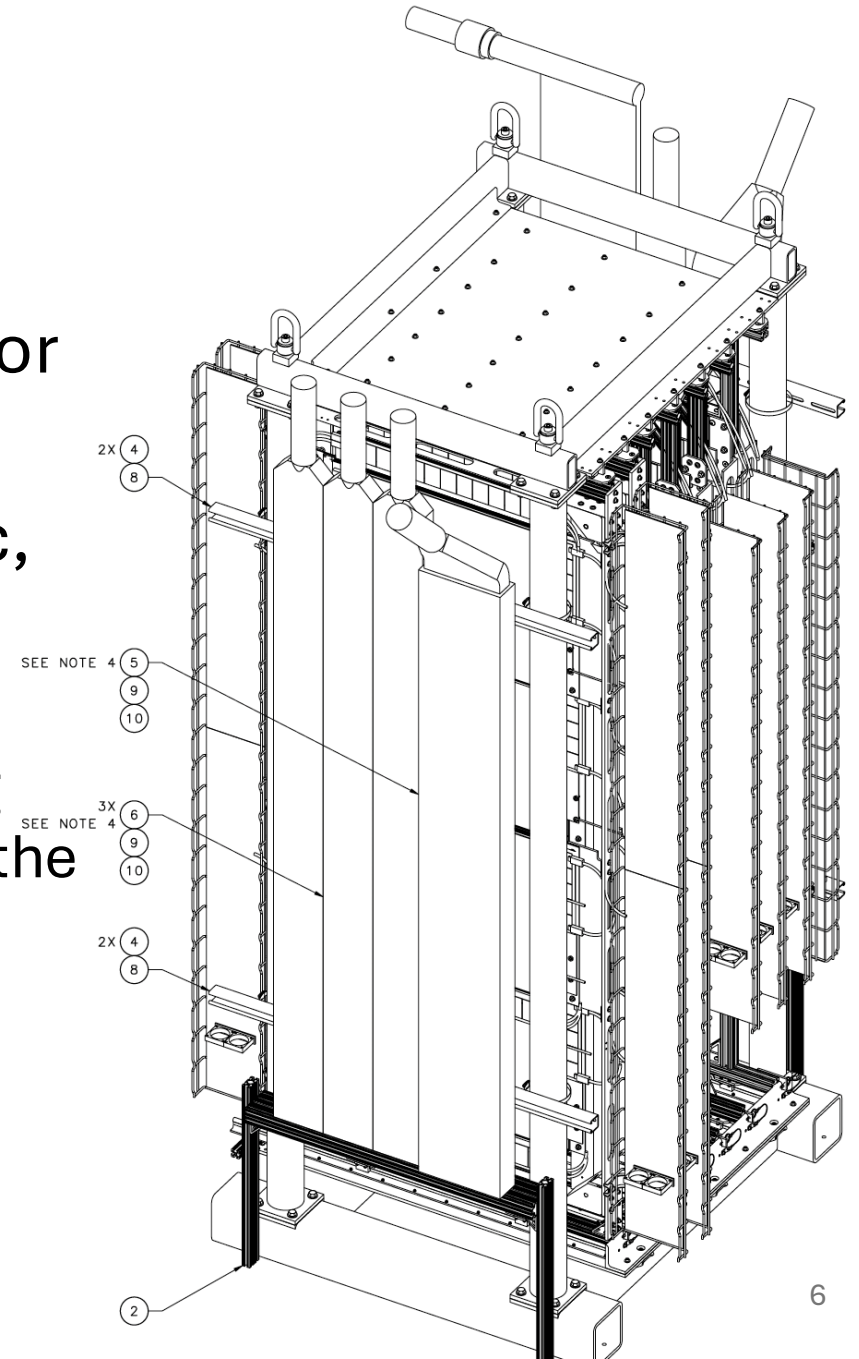
Gas, LV and HV

- All gas are now coming from the SBS GEM mixing unit, with inline high purity filters on each channels
- Joe and Lars are working on installing the additional LV breakouts from our current panel
- We have gotten the CAEN HV crates back from DSG. They were sent to DSG for troubleshooting due to issues with EPIC PV.



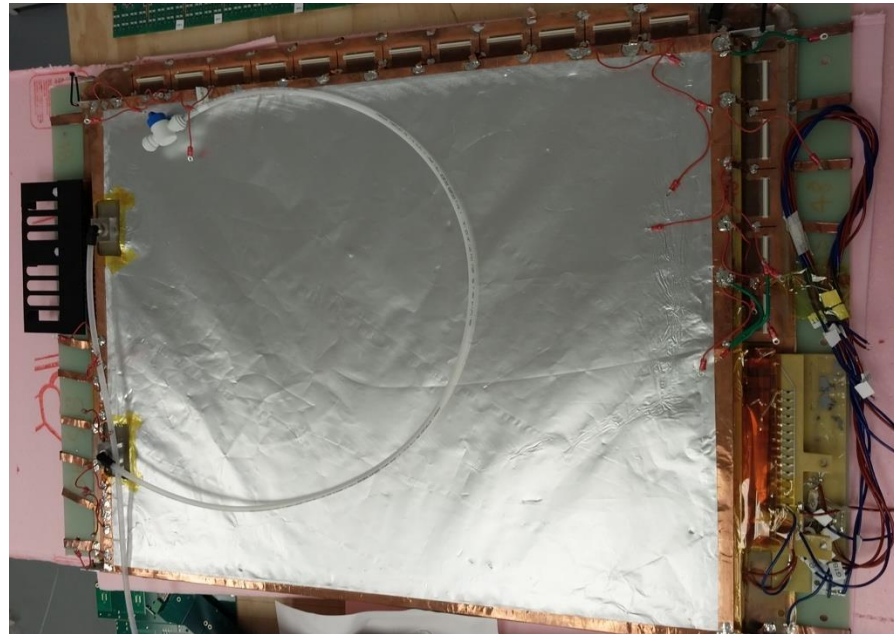
Plan for cosmic test

- We plan to setup some scintillator bars for cosmic trigger
- After checking out the readout electronic, we will begin HV conditioning on the GEMs.
 - We will also need the alarm handler running so the HV will be turned off automatically if the gas flow is out of spec.

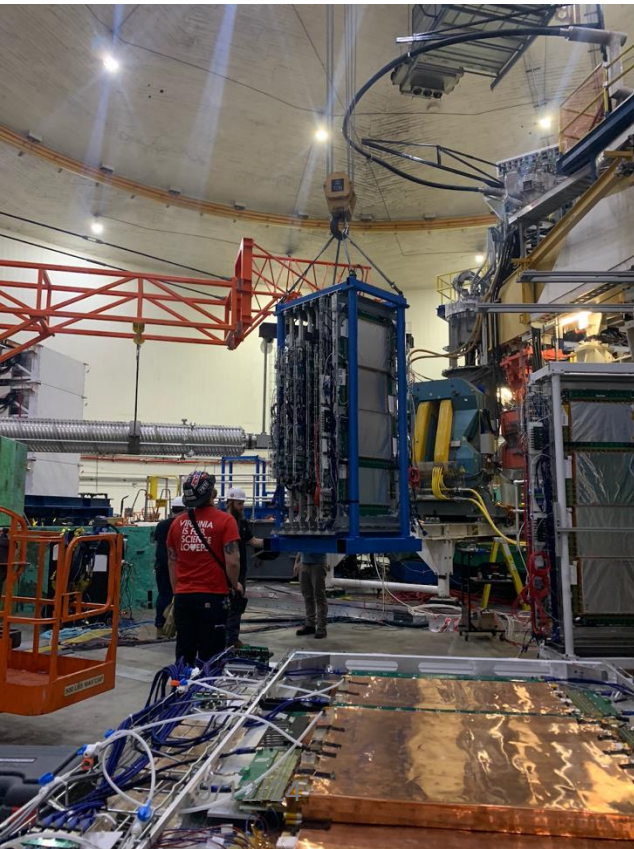


Spare GEM modules

- We have 5 spare XY GEM modules in testlab and EEL
 - 1 new modules, the others were removed from the hall.
 - We will test and document the condition of these modules (e.g. shorted sectors, efficiency) so they can be used as spare if needed.



People



On site team:
Ching Him, Asar, Jacob, Tommy, Ibrahim
(new engineer)

Continued support:
Vimukthi, Holly