

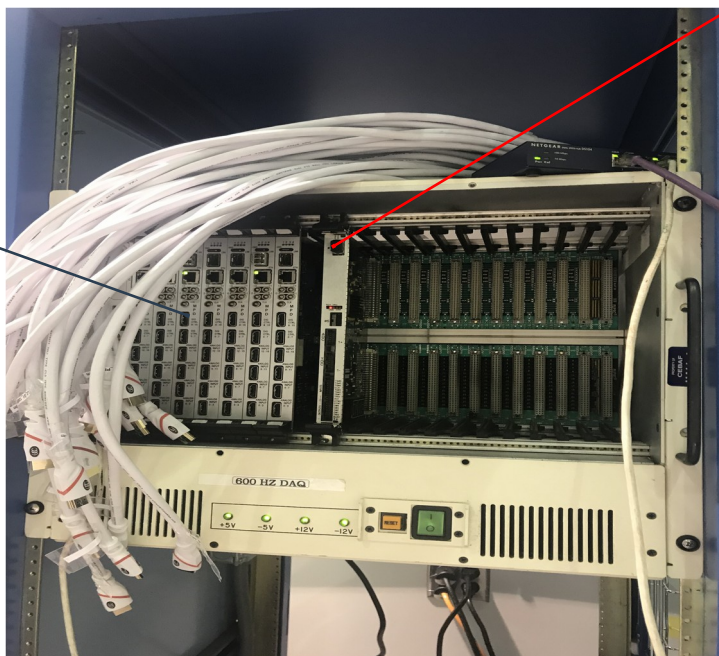
# DAQ setup

- Installed VME controller (its hostname is hallavme14pc)
- Installed 7 MPD's and the address switch set to the slot number
- TI address is set for slot 10

## Trigger interface

- Standard VME crate, where slot position has no role
- It reads whatever we set in MPD
- Each MPD module has 15 different address (1 to F in hex)
- We can add addresses up to 32 using a jumper (16 → 31)
- Two layers will be connected to a single crate

MPDs



**VME crate**

# DAQ setup

→ Programmed firmware of all MPDs before being attached to the crate

→ Copied programs and libraries we need to run CODA 3.10

This is a version of CODA that is in current development as opposed to the older version currently used in Hall A (CODA 2.6.2)

Detail information are posted in wiki:  
[SBS GEM EEL Cleanroom setup](#)

→ Checked the communication between APV and MPD

→ Configured CODA to read TI and tested

# DAQ setup

## New Run Control GUI

The screenshot displays the Run Control rcGui-41 interface. At the top, the system tray shows the date and time as Wed Aug 21, 4:22 PM. The main window title is 'Run Control rcGui-41'. Below the title bar is a menu bar with options: Control, Sessions, Configurations, Options, Expert, User, and Help. A toolbar contains icons for file operations and run control (start, stop, pause, etc.).

**Run Parameters:**

- Expid: SBS
- Session: GEM Cleanroom
- Configuration: Layer2\_Tlonly
- Output File: /home/coda/SBS-GEM-Cleanroom/data/gem\_cleanroom\_2.evio.0
- User RTV %(config): unset
- User RTV %(dir): unset

**Run Status:**

- Run Number: 2
- Run State: ended
- Event Limit: 0
- Watch Component: PEBcleanroom
- Data Limit: 0
- Total Events: 90,399
- Time Limit (min): 0

**Client Data Table:**

Name	State	EvtRate	DataRate	IntEvtRate	IntDataRa...
PEBcleanroom	downloaded	0.0	0.0	3013.2	265.2
ROClayer2	downloaded	0.0	0.0	3539.5	199.2

**Event Rate Graph:**

The graph shows the Event Rate in Hz over time. The y-axis ranges from 0 to 5,000 Hz. The rate starts at 0, rises to approximately 3,500 Hz, and remains stable until the end of the run.

**Message Log:**

Name	Message	Time	Severity
sms_Layer2_Tlonly	Download is started.	15:00:37 08/21	INFO
sms_Layer2_Tlonly	Download succeeded.	15:00:38 08/21	INFO
sms_Layer2_Tlonly	Prestart is started.	15:02:13 08/21	INFO
sms_Layer2_Tlonly	Prestart succeeded.	15:02:18 08/21	INFO
sms_Layer2_Tlonly	Go is started.	15:02:20 08/21	INFO
PEBcleanroom	Emu PEBcleanroom go: waiting for PRESTART event in module EbModule (client msg)	15:02:20 08/21	WARNING
sms_Layer2_Tlonly	Go succeeded.	15:02:22 08/21	INFO
sms_Layer2_Tlonly	End is started.	15:02:47 08/21	INFO
sms_Layer2_Tlonly	End succeeded.	15:02:53 08/21	INFO

# DAQ setup

→ Added two configuration

Layer2\_Tionly → Configure TI  
Layer2 → Configure MPDs

Applications Places System CODA HV ROC Replay Log Monitor Wed Aug 28, 10:26 AM

Run Control rcGui-71

Control Sessions Configurations Options Expert User Help

Start Time: 08/27/19 16:56:54 End Time: 0

Run Parameters: Expid: SBS Session: GEMCleanroom Configuration: Layer2

Run Status: Run Number: 11 Run State: booted Event Limit: 0

Output File: /home/coda/SBS-GEM-Cleanroom/data/gem-...-11-...-...

User RTV %(config): unset

User RTV %(dir): unset

Cool RunTypes Configuration: Layer2\_Tionly, Layer2

Name	State	EvtRat
PEBcleanroom	configured	0.0
ROCLayer2	booted	0.0

Event Rate: 0.00

Name	Message
PEBcleanroom	Emu PEBcleanroom: state set to ERROR (client msg)
sms_Layer2	End is started.
sms_Layer2	CodaRcEnd service failed.
sms_Layer2	End is started.
sms_Layer2	CodaRcEnd service failed.
rcGui-71	Reset issued.
sms_Layer2	reseted is started.
rcGui-71	Reset issued.
sms_Layer2	reseted is started.

# DAQ setup

- Found bug in TI firmware 3v9.2 (relates to using the front panel inputs for triggers). Downgraded both TI firmware and library to 3v8.1.
- Using gate generator as a slow pulser trigger (~few Hz) for debugging.
- I2C (MPD -> APVs config)
  - Debugging I2C. Will need to be less strict with i2c to get other MPDs to work.
  - Library development ongoing.
  - Splitting of configuration files from a couple files: config\_apv.txt and config\_apv\_default.txt
  - config\_apv.txt now reads multiple textiles prepared for the individual MPD slots

# DAQ setup

## **Next steps:**

- Full Readout of layer2 without SSP
- Debug decoding of CODA 3.10 data with Analyzer.
- Add more layers to readout (more crates, more ROCs, use SSP).
- Consider using VME Controller in MPD crates to configure the MPDs and then use SSP to read them out.