

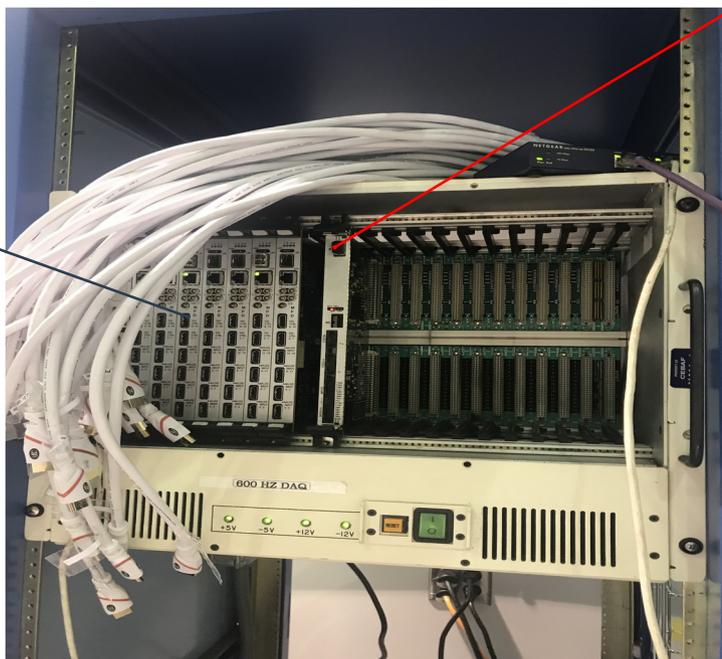
DAQ setup

- 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 which reads whatever address 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 window title is 'Run Control rcGui-41'. The interface includes a menu bar (Control, Sessions, Configurations, Options, Expert, User, Help) and a toolbar with various control buttons. The main area is divided into several sections:

- Run Parameters:** Includes fields for Expid (SBS), Session (GEM Cleanroom), Configuration (Layer2_Tlonly), Output File (/home/coda/SBS-GEM-Cleanroom/data/gem_cleanroom_2.evio.0), and User RTV settings.
- Run Status:** Shows Run Number (2), Run State (ended), Event Limit (0), Watch Component (PEBcleanroom), Data Limit (0), Total Events (90,399), and Time Limit (min) (0).
- Client Data Table:** A table with columns: Name, State, EvtRate, DataRate, IntEvtRate, IntDataRa...

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:** A line graph titled 'Event Rate' showing Hz on the y-axis (0 to 5,000) over time. The rate starts at 0, rises to approximately 3,500 Hz, and remains stable.
- Log Table:** A table with columns: Name, Message, Time, Severity.

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

Cool RunTypes Configuration: Layer2_Tionly, Layer2

Name	State	EvtRat
PEBcleanroom	configured	0.0
ROCLayer2	booted	0.0

Event Rate graph showing data rate over time.

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.