What is New With Root @ BLAST

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Root 2001 Workshop
Fermilab
June 13, 2001

photo credit - Maurik Holtrop

Outline

- Introduction - What is MIT-Bates and BLAST
- Distributed Reconstruction
  - CPU farm
  - auxiliary connections
- Interfaces to Other System
  - Paradigm for Software Development
  - Epics and Scalars
    - The Compton Polarimeter
  - CODA and MyRC
    - Gain Matching & other student project
  - Interface to CAMAC / Trigger
    - BLAST Trigger Test Bed (BTTB)
- More Interlabortory Work?
- Comments on Root?

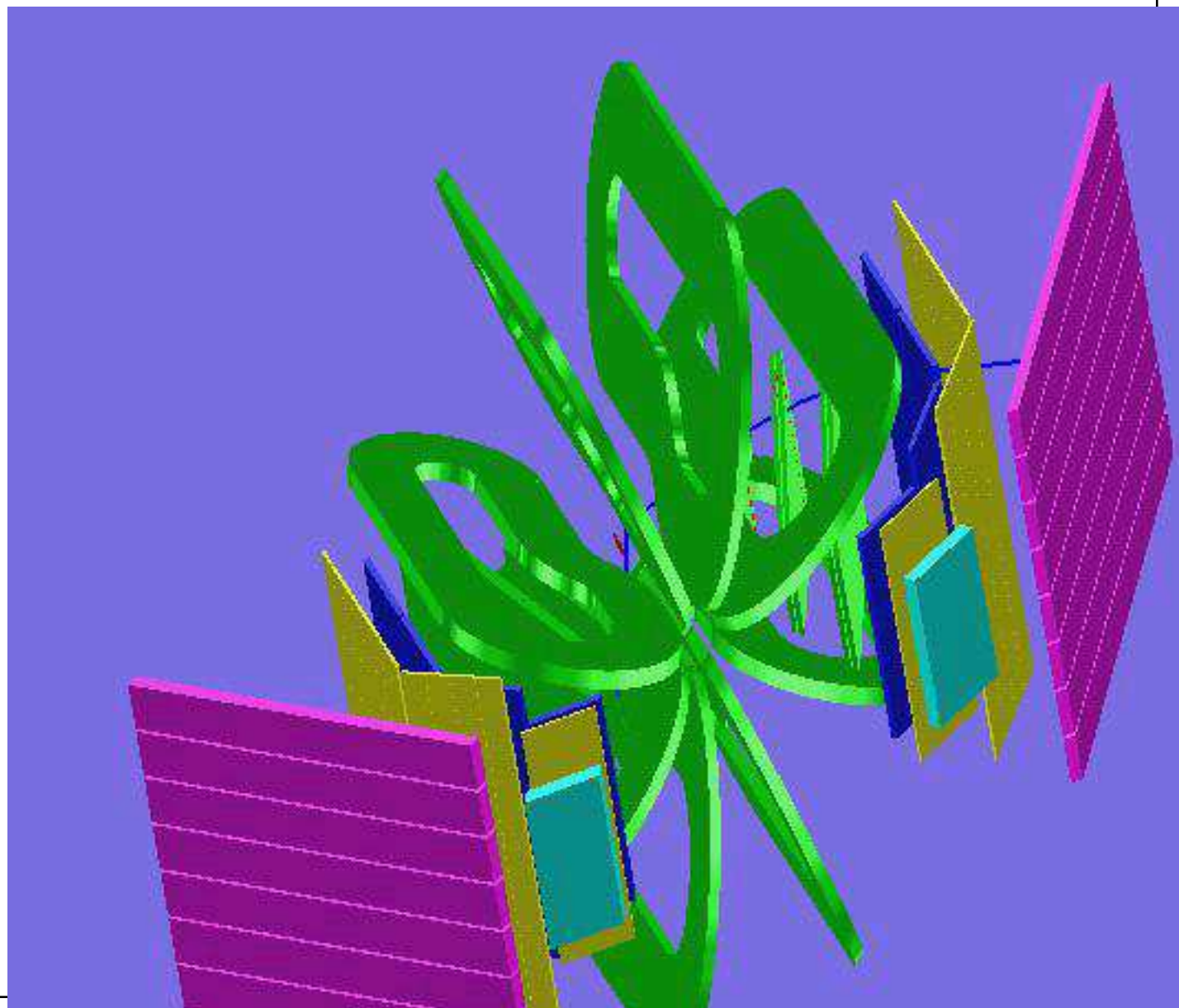
Introduction -What is MIT-Bates and BLAST

Bates is a 1 GeV electron accelerator, 20 miles north of Boston

BLAST is an internal polarized target experiment
in a polarized electron storage ring

BLAST - Bate Large Acceptance Spectrometer Toroid and the Neutron Electric Form Factor

Starts to take data in 2002

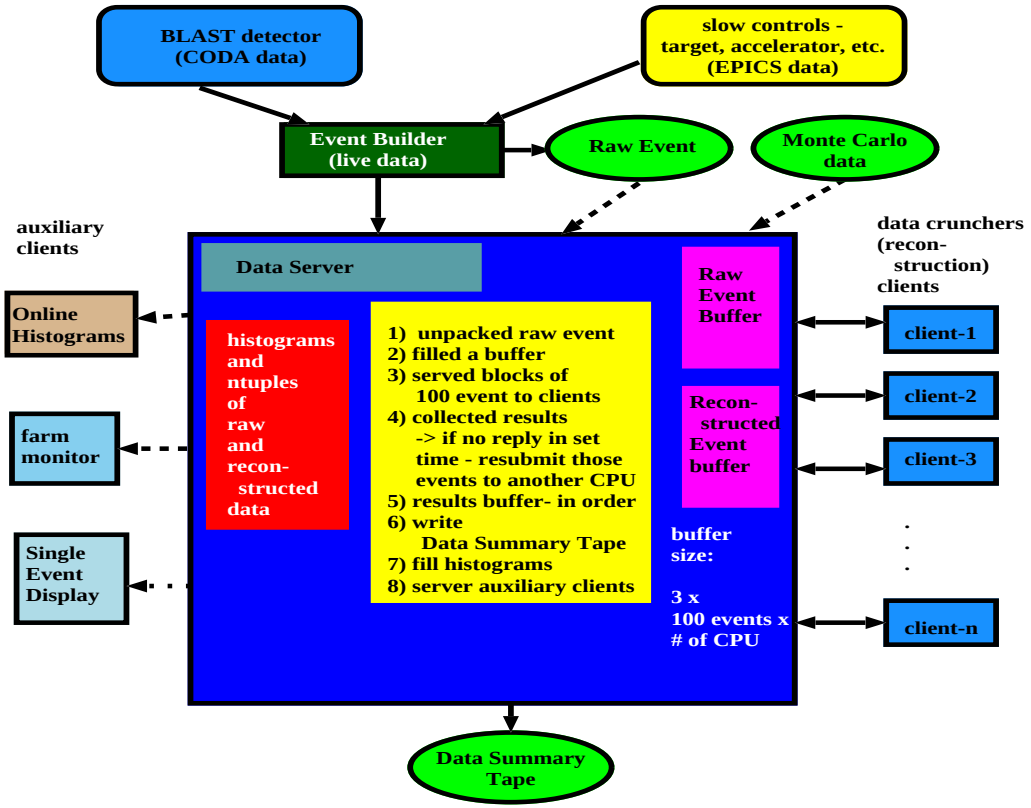


Distributed Reconstruction

- Simple Events (2 or 3 tracks / event)
- High Rate (500-1000 events / second)
- On-line 50% of the time in next 4-5 years
- Under pressure to analyze quickly

- On-line reconstruction - at least first pass

Distributed Reconstruction, cont. ...



Distributed Reconstruction - cont.

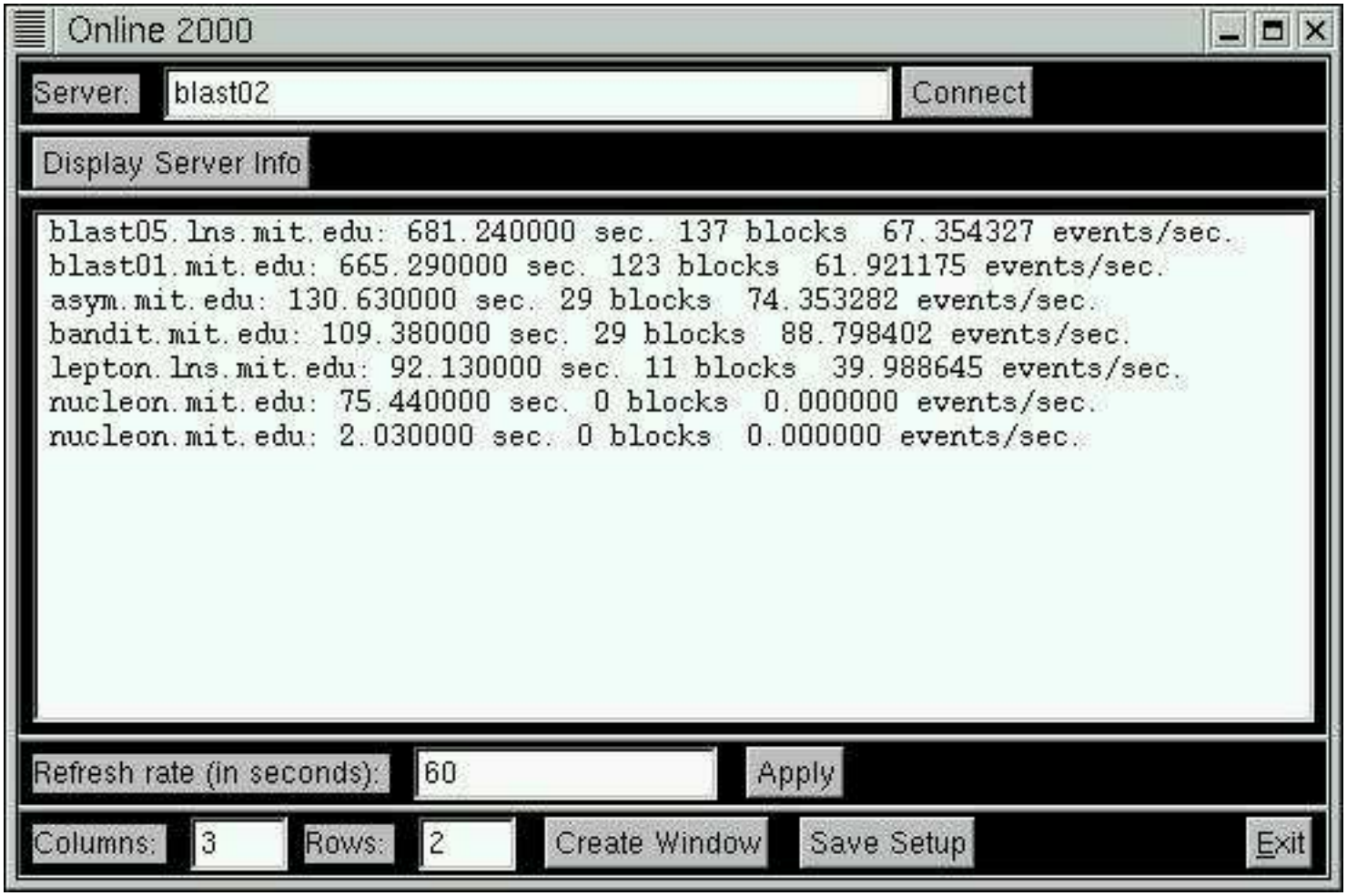
What is new

- The auxiliary programs
  - buffer monitor
  - live histograms
  - event display

- Better reconstruction
  - - farming out 500 events/second routinely

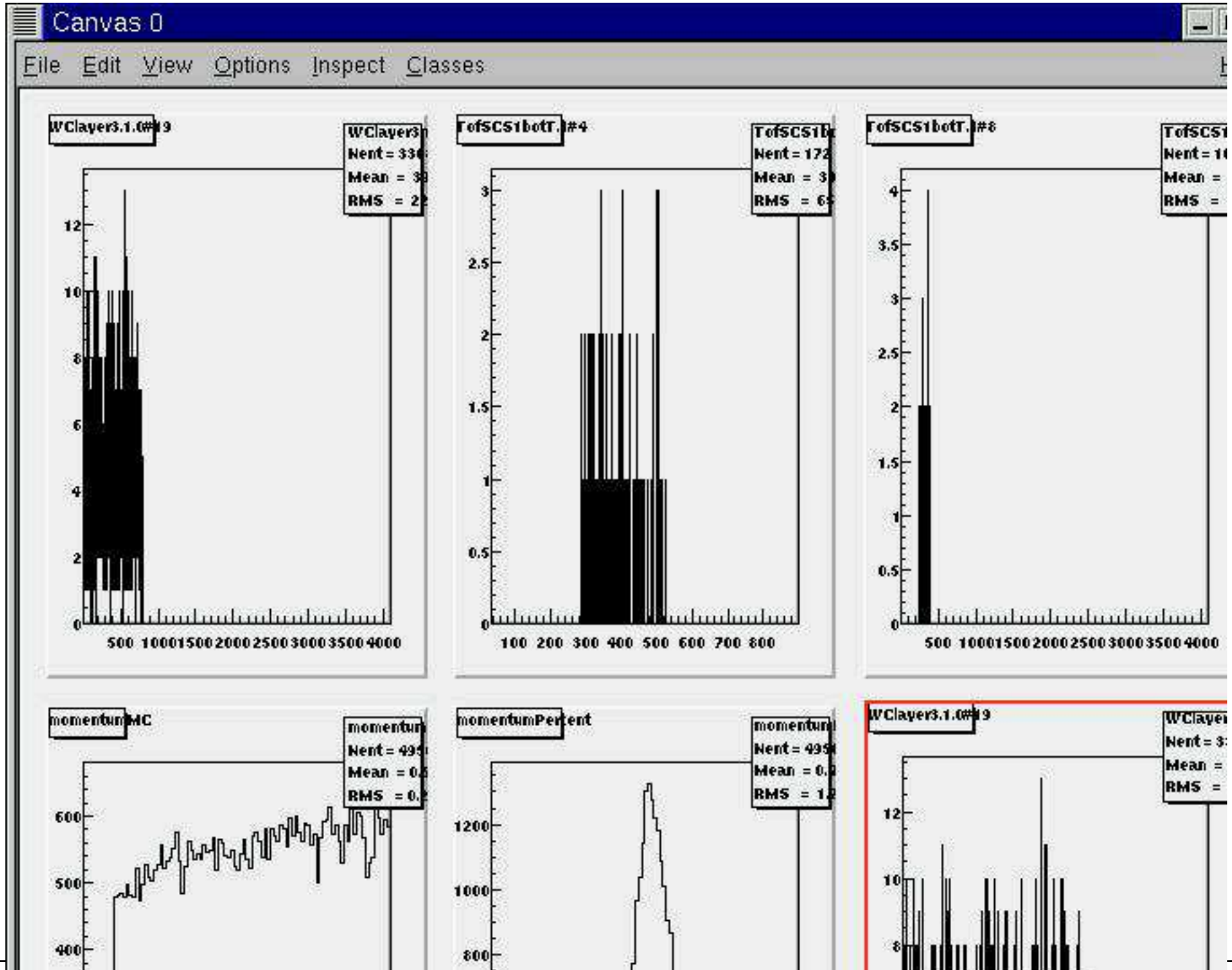
Monitors

Monitor Clients



Monitor Buffered Events

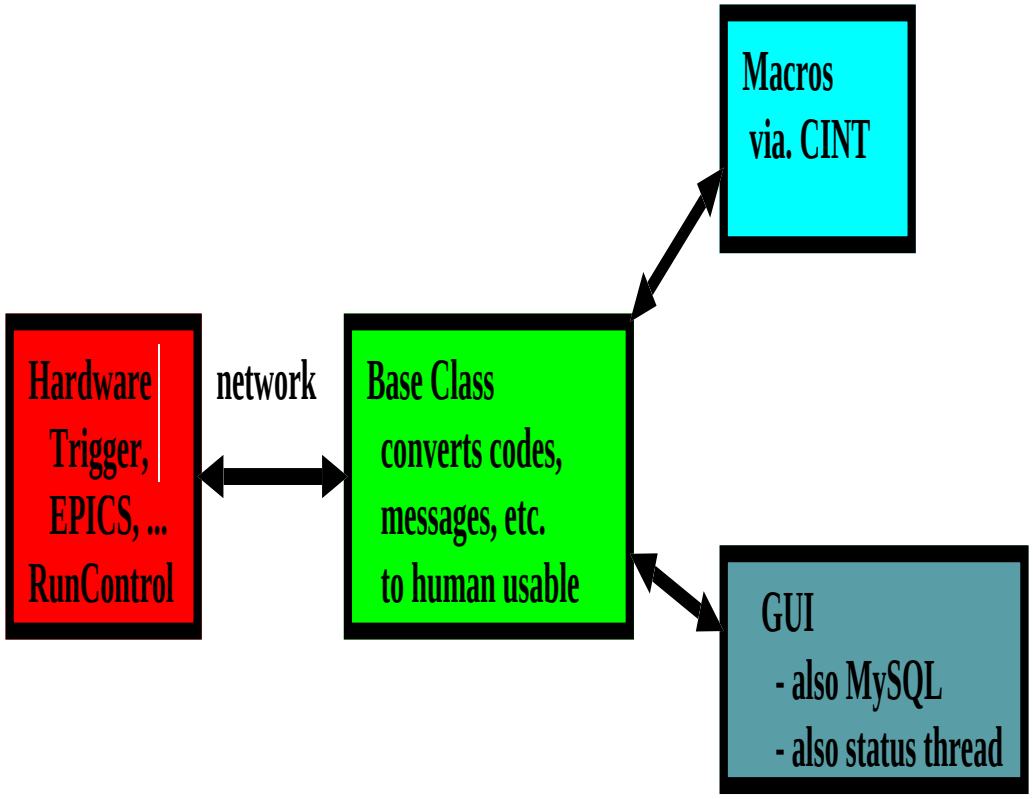
Live Histograms



Single Event Display

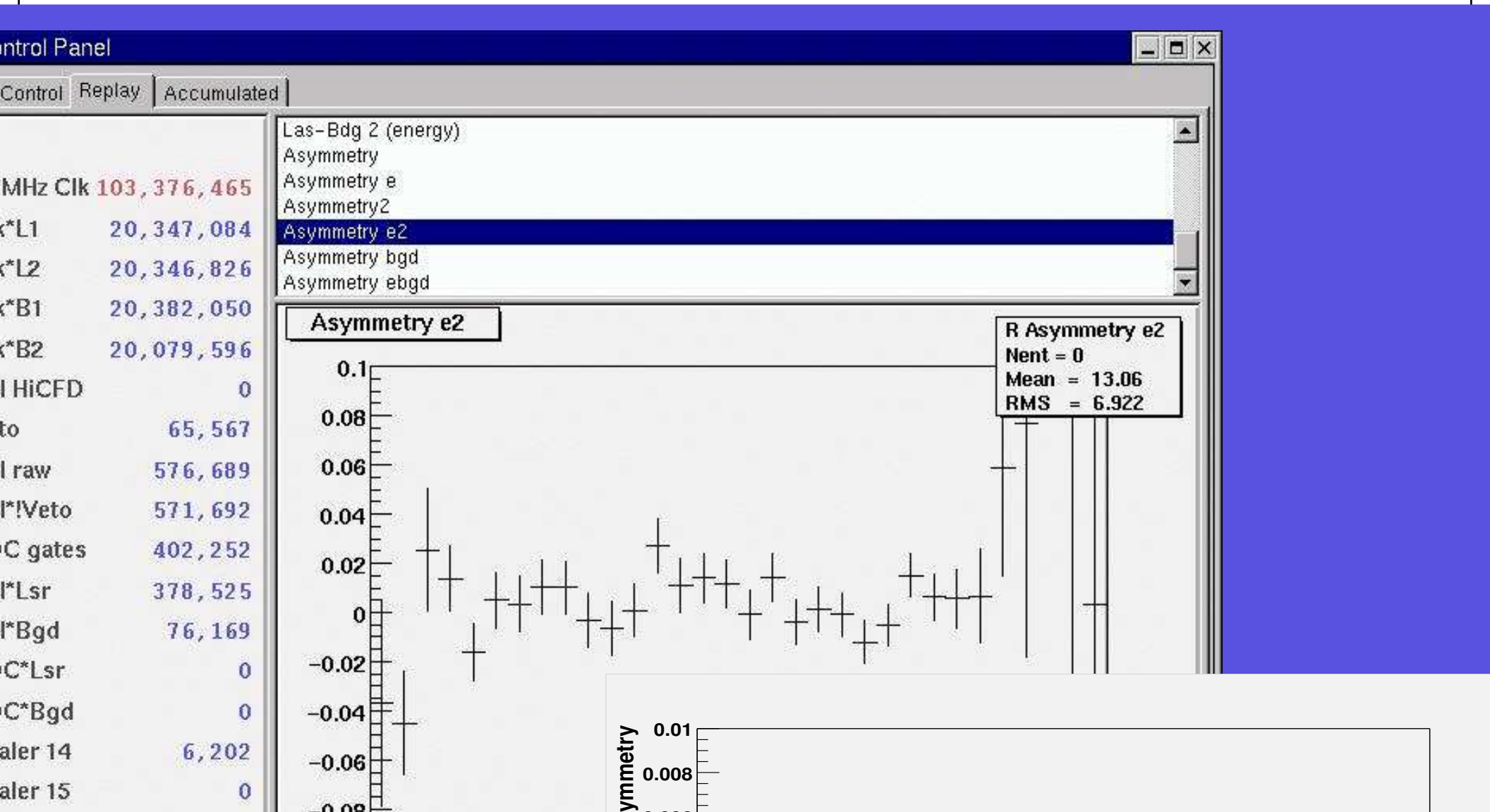
Interfaces to Other Systems

Paradigm for Software Development



Epics and Scalars

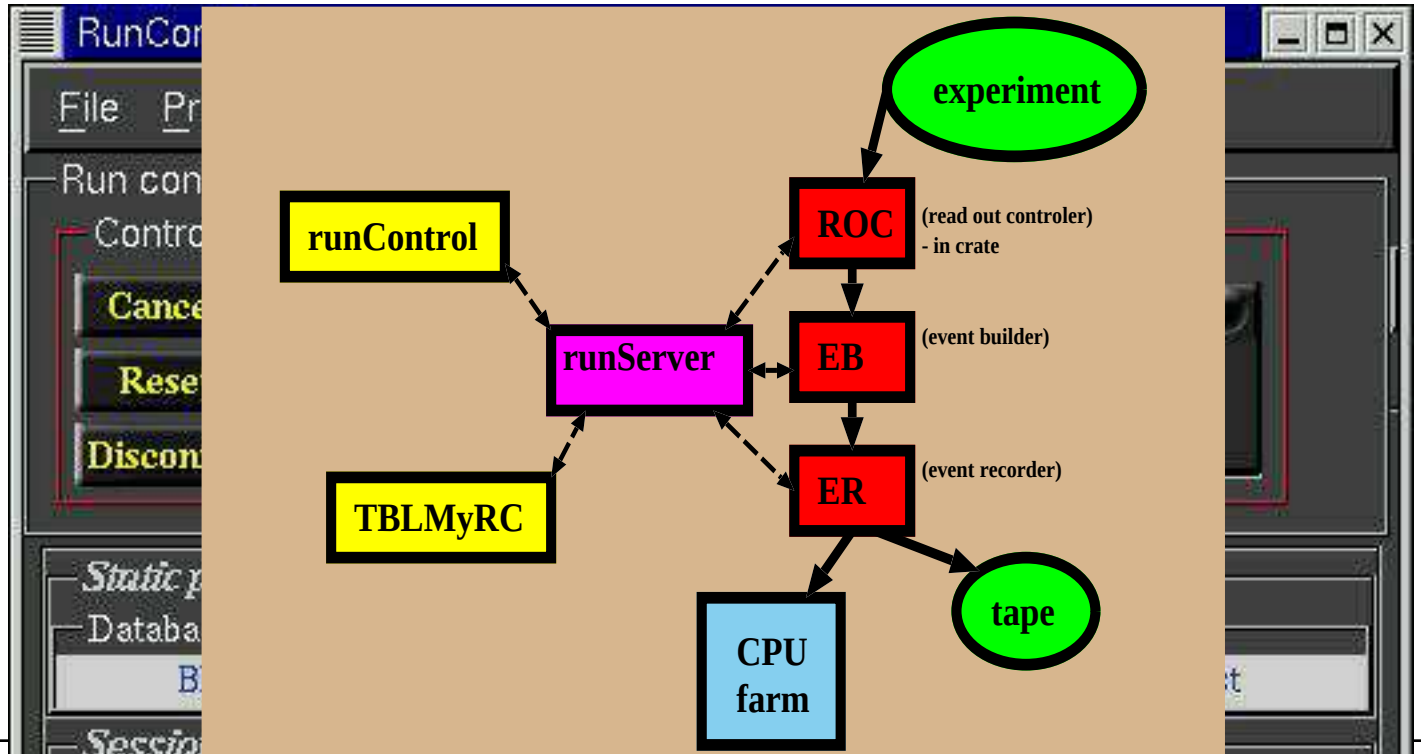
The Compton Polarimeter



RunControl - MyRC

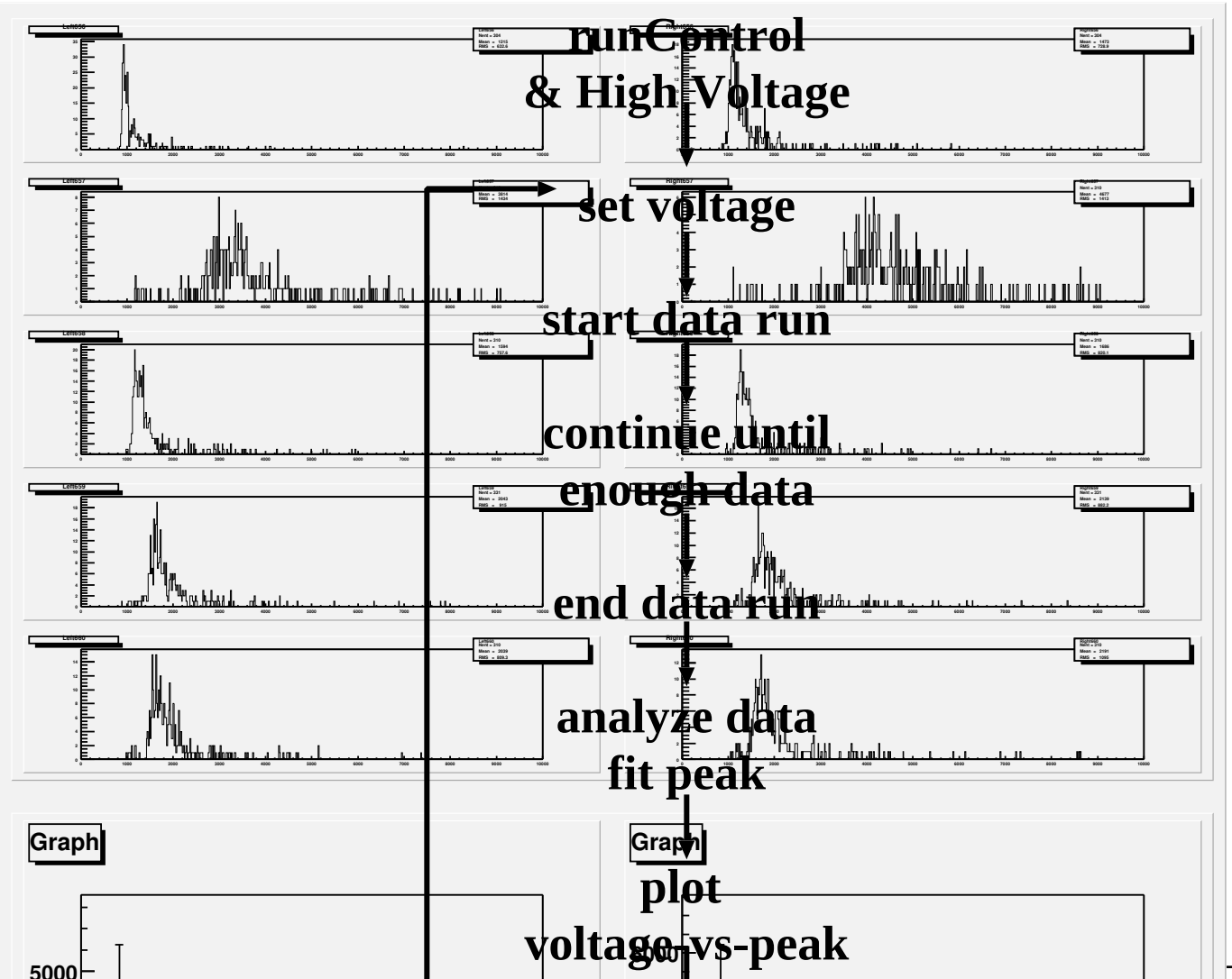
Starting with the Suite of DAQ programs from Jefferson Lab,

- CODA (CEBAF Online Data Acquisition)



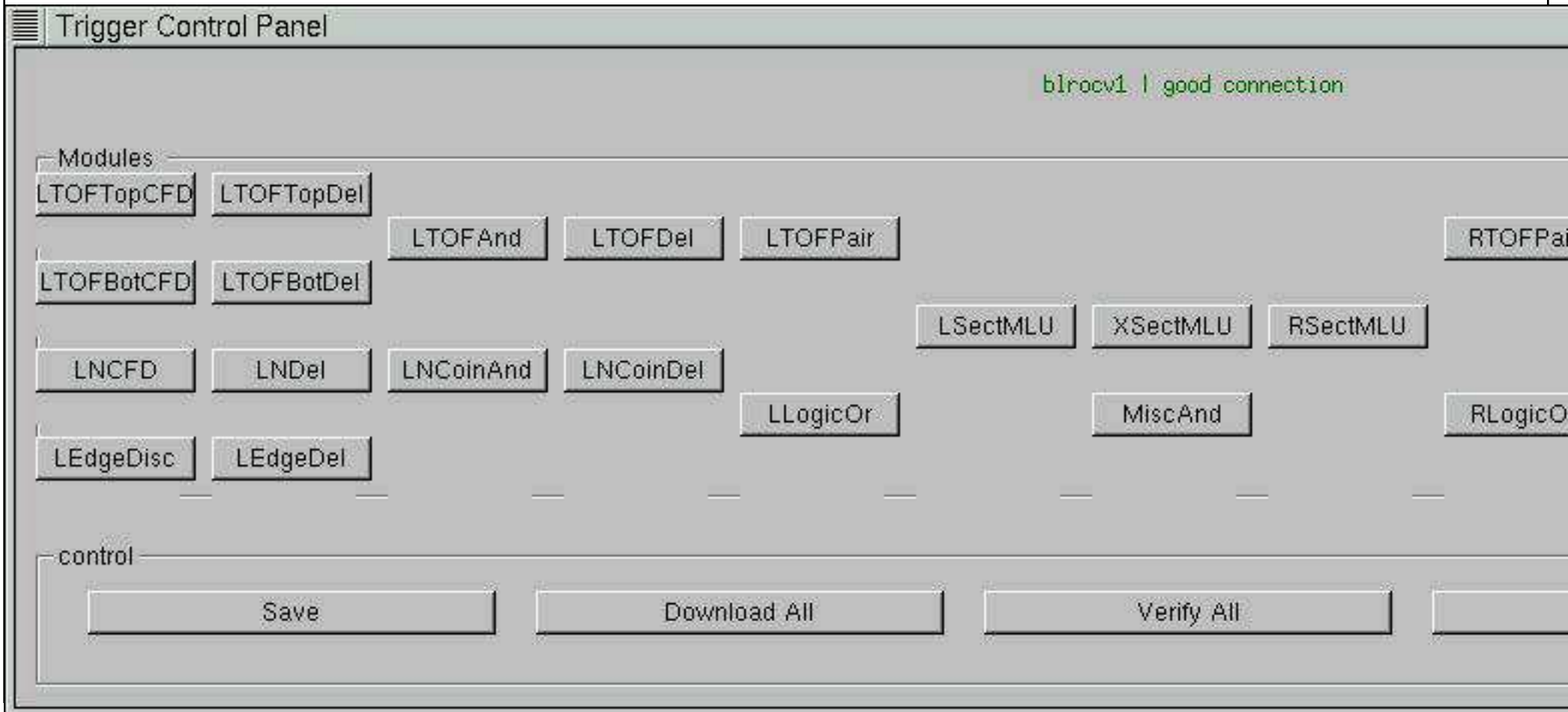
TBLMyRC & TBLHv

Gain Matching & Other Student Project



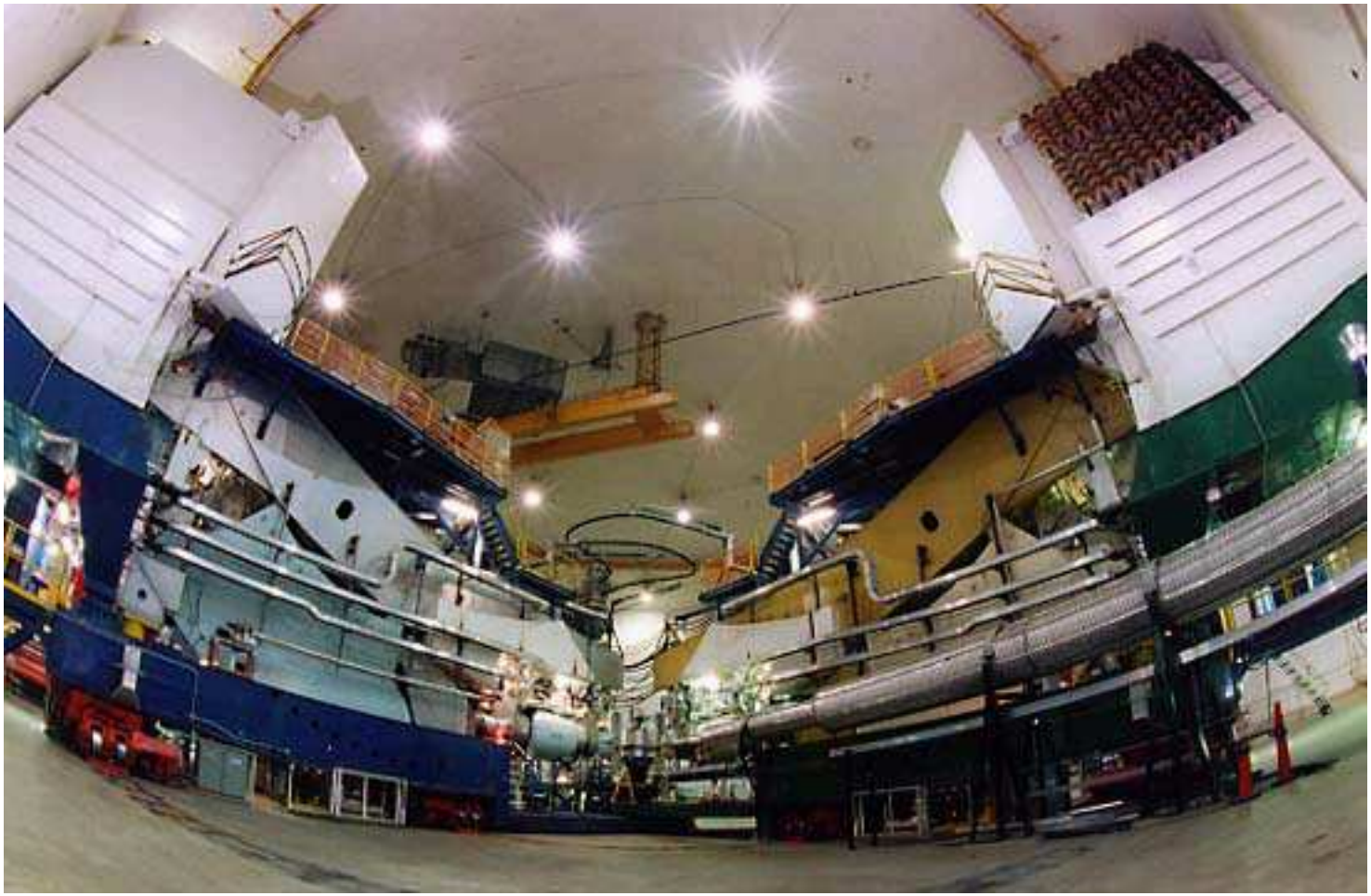
Interface to CAMAC / Trigger

supports everything from CNAF to setting MLUs from files/data bases



Trigger cont. - BLAST Trigger Test Bed

AKA - Hall A - Jefferson Lab



The trigger manager software is based on code written by Tim Smith and Jeff

My Comments on Root

To the Root Team

- Root home page should point to Fermilab's Education page.
  - http://root.cern.ch/ -> http://www-pat.fnal.gov/root/

To The Root Community

- We need to generate those "How to" pages for the Root Team.
- Think of it as a mini-publication - if done well.

My Comments on Root cont. ...

To The Root/Online/Slow Control Community

- Observation:
  - Root is ubiquitous in Analysis and Offline
  - It is a "good" example of OpenSource
  - Slow Controls and DAQ are fragmented, but they need not be.
- Therefore:
  - The online community may/will not have a common "platform", but they may (and can) graft themselves onto CINT/Root.
  - That will lead to more robust controls for everyone.