PulsarMon

Overview, status and plans

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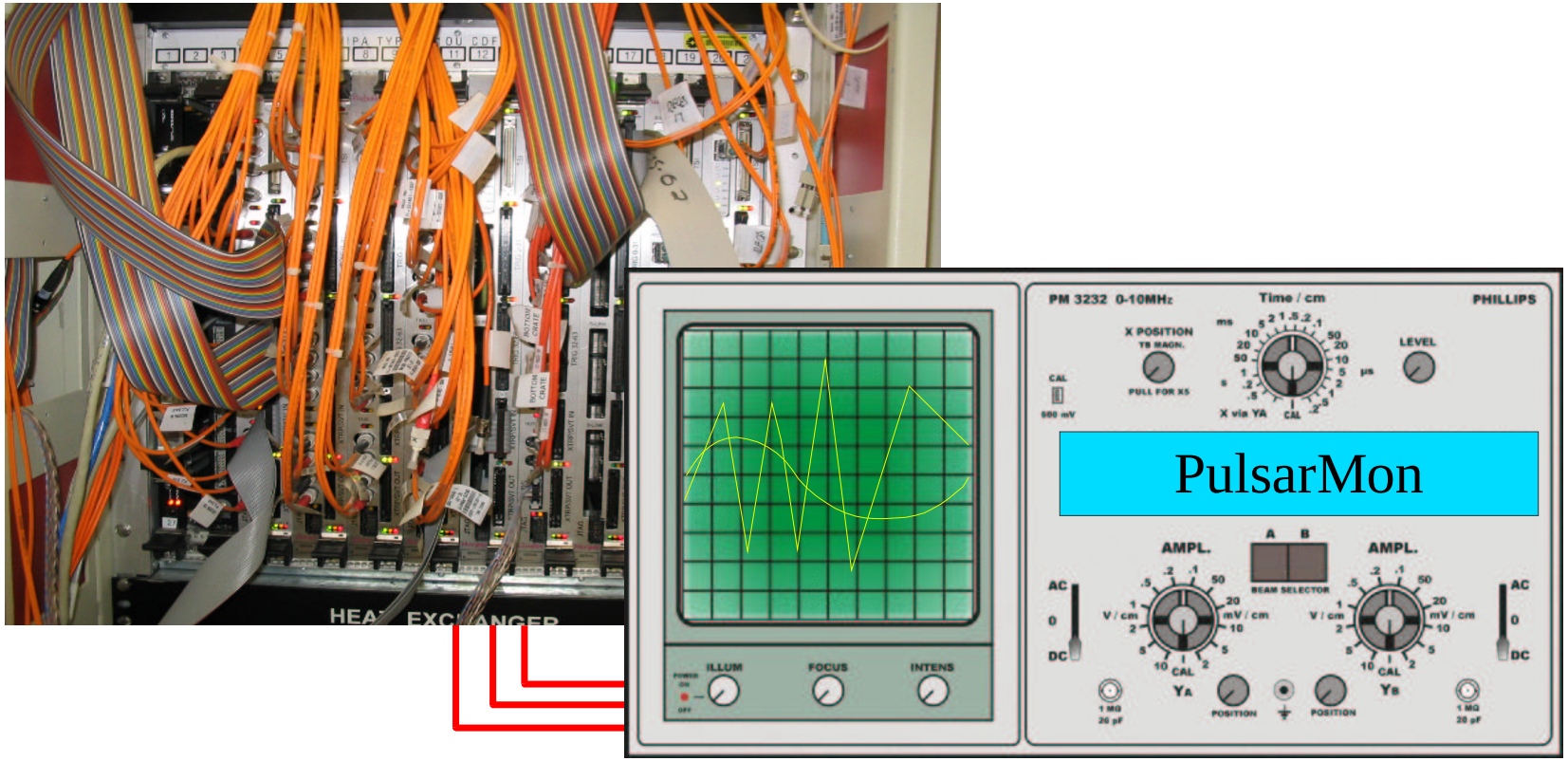
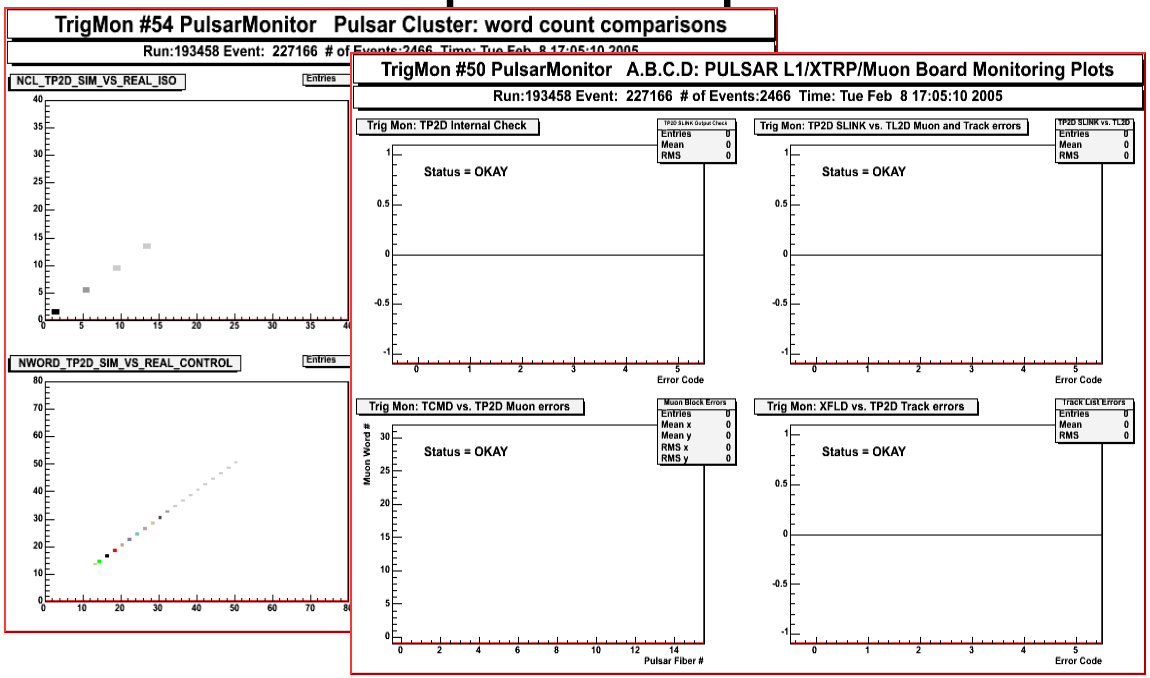


PulsarMon

- PulsarMon has been a success:
  - We built an essential commissioning tool
  - CO version running in the control room since December demonstrates our ability to integrate into the monitoring framework as a regular monitoring tool
  - There are still items to be completed, but we are in good position to attack these

- The Monitors produce plots for COs and experts

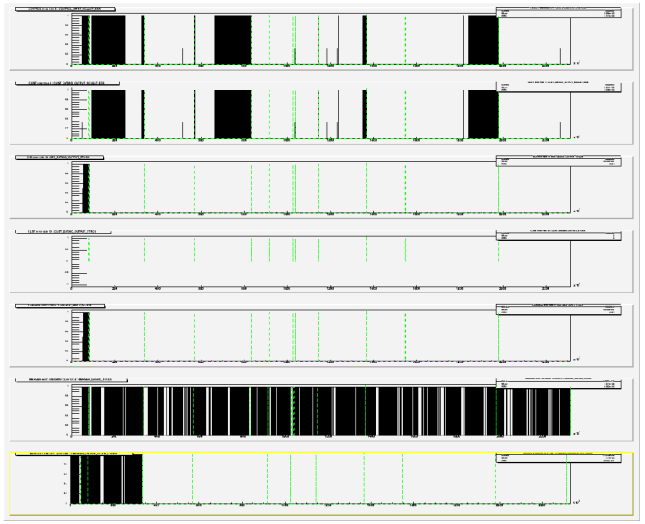


- For experts the most useful are the Errorlogs with error classification and unified output format

```
=========================================
Trigger 1
CES_DATAIO_INPUT_CH4_ERR
CES_DATAIO_INPUT_CH5_ERR
CES_DATAIO_INPUT_CH6_ERR
CES_DATAIO_INPUT_CH7_ERR
CES_DATAIO_INPUT_CH8_ERR
CES_DATAIO_INPUT_CH9_ERR
CONTROL_NWORD_ERROR
          REAL TP2D:          SIM TP2D:      XOR Diff:
*********************************************
   2f044000          abbababe          84befabe
   b0f00000          b0f00000                 0
    1700000           1700000                 0
    5e0059                 0           5e0059
     30003                 0            30003
     30003             1eeee             2eeed
     30003          e0f00000          e0f30003
     30003
     30003
     30003
```

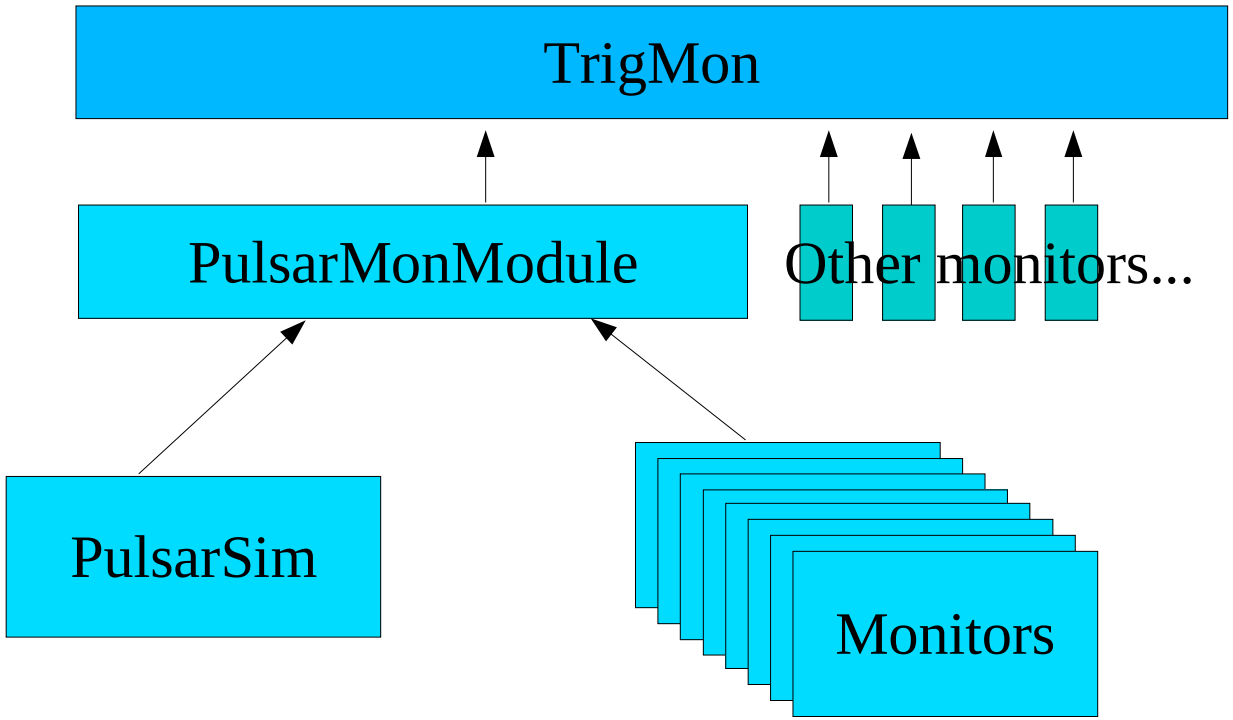
PulsarMon usefulness in commissioning

- PulsarMon has been extensively used during commissioning
  - Originally to track down problems in the hardware



  - More recently to test the decision node (checking the trigger bits against Alpha)

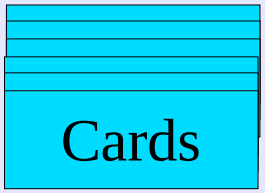
PulsarMon Design



Models the physical system; creates TP2D and TL2D banks based on upstream information

Compare the Simulated TP2D/TL2D to the data read out; Categorize and correlate errors. Create plots and expert errorlogs extremely useful during comissioning and later detailed debugging

PulsarSim



PulsarSim has a vector of cards:

- Card is a model of physical board
- Configuration of the card is done based on:
  - DB (online status, read out sizes TP2D location)
  - Tcl: card connections and data sources

TL2DSim

TL2DSim models behavior of the decision node;
Connects to the MergerCard and SVTCard models;
Decision not simulated yet;

On each event:
- iterate through the cards and ask for data on each component
- Create TP2D structure and fill in the data
- Use TL2DSim to make a TL2D bank

Status of components and work needed

- TL2DMon:
  - Verify correctness:
    - No fake error flagging and catching all errors; Masking off unused bits
  - CO Plots and graphical Error flagging.
  - Implement filesize limit
  - Tcl control for selecting data sources
- TL2DSim
  - Needs more testing
  - Simulate L2 decision
  - Needs tcl control for choosing data source

Color code:
-ESSENTIAL
Complete ASAP; will be ready by end of next week (02/19)
-Important but not crucial (02/26)
-Wishlist

- Other simulation objects issues:
  - MergerCard needs more testing (simulation based on upstream simulation)
- Other Monitors issues:
  - Several Monitors need CO canvases improved
  - Two Monitors need filesize limit implemented
  - Implement correlation monitoring of errors acros the system