

## Run 2 Online SW Status

Murrough Landon 8 February 2016

- •Recent Activity
  - TDAQ, DetCommon
  - •L1Calo, Receivers
  - •To Do List



# **TDAQ/External**

### •TDAQ

- New 64-bit only tdaq-06-01-00 to be used in M11
  But it seems new ROOT/LCG/eformat requires a rebuild -> tdaq-06-01-01
- •L1Calo SW tested with tdaq-06-01-00 in the CERN testrig
  - •Only one crate at a time, move one new VPE24 between crates
  - •Not yet tested the whole system, but hope it will be OK
  - •A few 64 bit bugs found and fixed in module services code
- •CERN and external test rigs will need new SBCs...

## DetCommon

- •New release 20.7.4 associated with latest TDAQ release
  - Unfortunately fixes for CP scale factor were forgotten (despite JIRA)
    Still hoping Joerg will find time for this before M11...



### •General module services

•Fixes for various 64 bit issues (also for PPM and JEM)

### •Preprocessor

Readout of pedestal corrections - but some timeout issues
CMX

- •Fixes for stability in case of general TDAQ IS problems
- •Fix reset sequence for GTX links to L1Topo

## •L1Topo

- •Fixes for muons and hardware IDs
- •Allow control of zeroing corrupted TOBs
- Update automated timing scripts
- Addition of new test vectors (muons)



## Recent Progress (2)

#### •Receivers: software

- Have now ported LAr code to L1Calo SVN
  - Tried to merge divergent copies of classes
  - Removed dependence on LargOnline framework
  - •Keep as independent project (RxGain): no dependence on L1Calo code
- Tested by comparing calibrations with old/new software: OK
  NB there is no ready make tool to read back previously loaded gains (though the software does a readback check when loading them)

### •Receivers: hardware

- •Old receiver SBCs are 32 bit need replacing for new TDAQ •Either two PCs (side A/C) or one new PP SBC per linked receiver crate
- •Problem: receiver USB uses really ancient protocol
  - •Modern USB interfaces will not talk to it: older PCs OK, new SBCs not?
  - •Sysadmins (many thanks to Chris Lee!) still investigating options...



# To Do List (1)

#### Preprocessor (Martin)

- Software support for upcoming firmware change (switch between PF and sat algo based on number of saturated slice): Needs this number of saturated samples which can be per tower. Annoyingly would/should be in database, I suppose. I haven't really thought about it yet, another workaround needed I suppose.

- Pedestal correction readout via VME, causing unconfigure to freeze: Problem understood, to be worked around, another annoying dependency on properly running BCRs

- Signal generator. Really need to get this started.

- PprChanDefaults. There was this issue with ZDC database creation because we have not all defaults in the database. I didn't fully understand your email. Need to talk with you about this eventually.

- LUT\_JEP. There is a functional form implemented by Veit for offline simulation. I suppose we should also implement this online. No idea if that really ever goes online, but might be interesting at least for a test eventually.

- plotCalib for ZDC. Should implement different pedestals in the plotting, but the plotting does not connect to the database. Have to think if worth it, or maybe store it in ROOT file in the analysis. Have to play a bit, if bored.



# To Do List (2)

## •CMX

- •Automation of timing scans (would be nice)
- •L1Topo
  - •Additional HW monitoring information to be published?
  - •Careful HW simulation comparison with data

## Simulation

- •Needs proper testing against HW
- Instabilities need to be found and fixed

## •Documentation!!