Software Status

Murrough Landon – 27 April 2004

http://www.hep.ph.qmul.ac.uk/∼landon/talks

Contents

- Recent developments
- Conditions Database
- Hardware Monitoring
- Event Monitoring
- What we still need to do

Recent developments

Done

- Move to online 21-01 and DF 07-00 complete
- Multistep runs resurrected after these changes
  should really be possible to use this now...
- Changes to “kicker” architecture
- Use of ROS and comparison of ROS events with simulation
- Nearly correct simulation of JEM and CMM(energy) readout

Ongoing

- PPM module services and database
- JEM module services changes for JEM1 style firmware:
  more programming model changes, changed input FGPA structure,
  HDMC panel updates (and IGUI status) still to be done

Conditions Database

Start using this for the PPM and other modules?

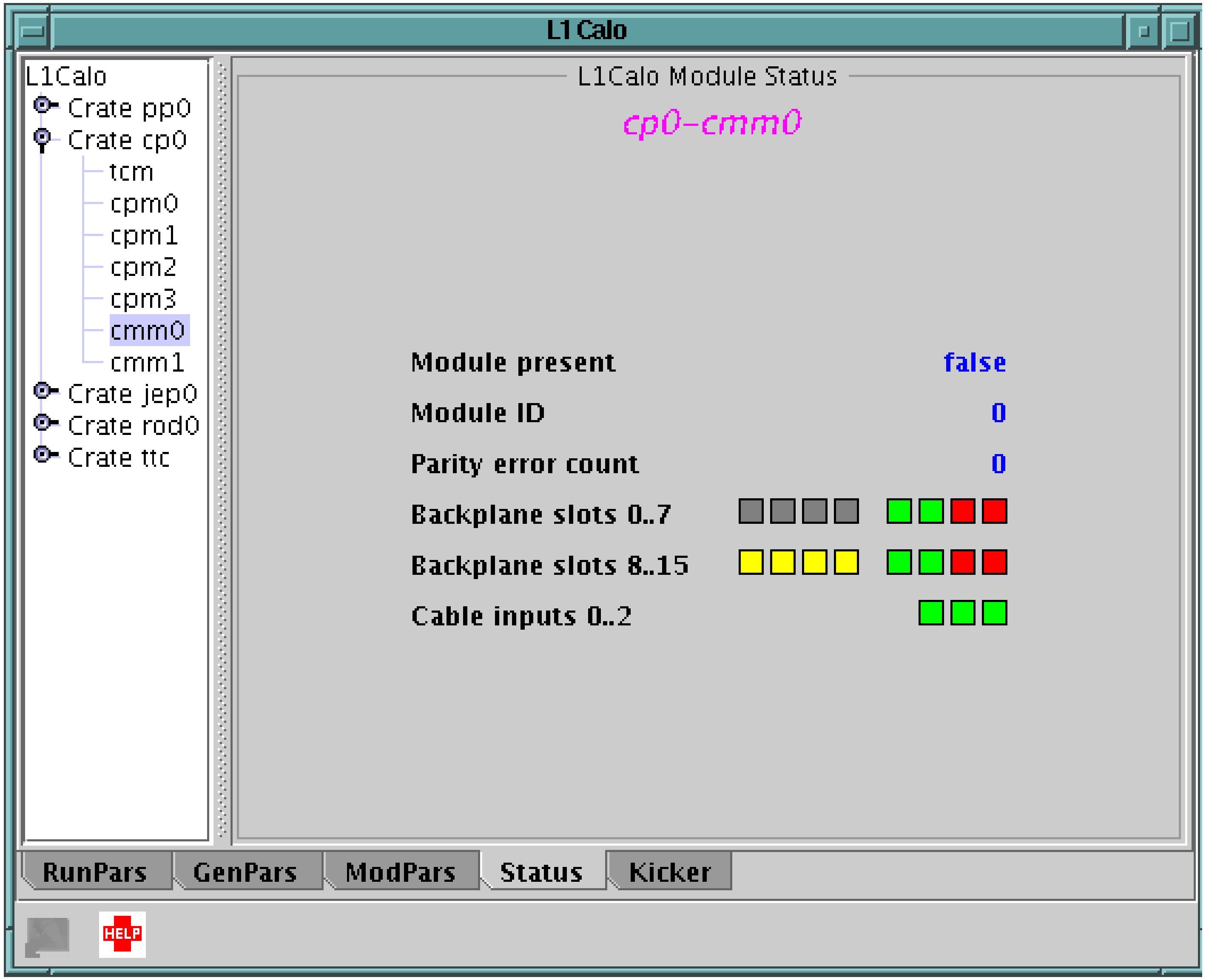
- At the moment our calibration data is stored in OKS files kept locally and sometimes stored to CVS
- Better to use the ATLAS Conditions Database? Its simplest and most convenient is the “Lisbon API” which is based on MySQL and stores relational database tables
- At the test beam there will be a dedicated server machine, behind a firewall, with public copy for use by offline (integrated into ATHENA)
- Problem: for local test setups (RAL, Bham, Mainz, Heidelberg) would need local MySQL server. Not hard to set up, but its still something extra
- Advantage: more automated and standard way of doing things with recorded “interval of validity” for sets of data
- Need to decide schema and organisation of database tables and then start migrating existing calibration data...

Hardware Monitoring

Improved IGUI module status panels

- Updated CMM status panel in the IGUI (inspired by JEM link status panel in HDMC)
- Show status of backplane/cable inputs and error status (all colour coded in a single LED per input)
- NB this still needs CMM modules services code to fill it
- If people like this, it could be extended to CPM and JEM –
  Stefan R is interested in doing this for the JEM (might be a student project in May)
- Are there other suggestions for simple improvements in status displays?
  (Hopefully quick to implement)

CMM Status Panel



Event Monitoring (1)

Sudden buzz of activity

- Adrian has been working on a framework for online monitoring of events and histogram display
- Stefan Tapprogge plus CERN summer student (and possible PhD student) are also interested and will liaise with Adrian
- There have been private discussions mainly between Sten, Alan and myself about ATHENA byte stream converters, what kind of “raw data objects” (RDOs) to create and how to group them
- Further discussions should take place on the at1soft list (for now)

Event Monitoring (2)

Muon example

- During TDAQ week I had some discussions also with Tadashi Maeno to get an idea of how the TGC/MuCTPI did monitoring (they use ATHENA both at EF and - it seems - for other online monitoring)
- If we provide bytestream converters, Tadashi offered to add our data (eg all towers, jet elements, hits etc) to the combined test beam Ntuple which then allows easy comparison with LAr either in the same monitoring process or (I presume) at a later date

Still To Do List

Some familiar long standing items

- More automated timing calibration and setup procedures (eg for readout offsets)
- Use multistep runs to iterate over parameter settings and for soak tests with sets of test vector files
- More analysis and monitoring of data...
- Single module verification tests? (Eg in online test system)

Further software migrations

- Move to final test beam software releases: online-00-21-02 and DF-00-09-00:
  should be only fairly minor changes
  could be scheduled fairly soon?
- Look at migration to ROD crate DAQ style run controllers
  (some issues discussed with Enrico Pasqualucci during TDAQ week)

Miscellaneous

- Combined developers phone meeting tomorrow (28 April) at 15:00 BST
  `http://agenda.cern.ch/fullAgenda.php?ida=a041472`
  with discussions on error handling and on TDAQ-wide common classes

- Software training for the testbeam: mid May? Roughly a repeat of training day (for TDAQ support teams) on 1 April:
  `http://agenda.cern.ch/fullAgenda.php?ida=a041371`