Conditions Database

Murrough Landon
15 July 2010

- Current conditions folders
- Proposed new folders
- Possible new folders?
- Firmware versions

Reminder: COOL Database Folders

- Several subsets of COOL folders:
  - Calibration: validated calibrations downloaded at CONFIGURE
    - Also includes PpmDeadChannels
  - Results: results of calibration runs
  - Configuration: small number of global settings:
    - ReadoutConfiguration: readout pointers, numbers of slices, etc
    - TimingOffsets: calo partition by partition timing delays
    - PpmChanDefaults: default PPM settings (overridden by calibration)
  - RunParameters: setup for different run types
  - Conditions: values saved at prepare for run step
- Timestamps:
  - Conditions folders use run/lumiblock
  - All others use "wall clock" date/time stamp
- Currently all folders are "single version"

Current Conditions Folders

- RunParameters
  - State of the L1Calo RunPars IGUI panel
    - Run type, run parameters, readout/timing configuration choice, etc
- LastConfigTime
  - Records (by run/lumiblock) timestamp of last CONFIGURE
- DisabledTowers
  - Enabled/disabled status of every tower (bitmask)
    - Currently only includes towers masked because corresponding calo partition (eg LarFCAL1A) is out of the run
    - Towers killed by l1chuck are not included (only in PpmDeadChannels)
- ModuleIDs
  - Intended to save ModuleID of module in each slot
    - Not yet used

Proposed Conditions Folders

- DerivedRunPars
  - TimingRegime (Physics/Calib1/etc) derived by online SW from ATLAS run type, Lar/Tile settings etc
  - FilenameTag (this is probably available elsewhere)
  - What else?
- SoftwareVersion
  - Record l1calo-nn-nn-nn software version used for each run
    - Ideally also patches (not yet implemented)
- PackageVersions
  - Record tagged version of each package used for each run
    - Should also handle patched packages (not yet implemented)

Possible Conditions Folder(s)

- Better tracking of disabled towers?
  - Probably need both run/lumiblock organisation (unlike present PpmDeadChannels) and multiversion folder
    - Need to allow tower status to be changed after the event
  - Probably should have everything
    - Both masking due to excluded calo partitions
    - And noisy/killed channels
    - And temporarily unavailable towers
      - Eg trip during run, subsequently recovered
- Anything else?
  - Remember its now hard to change the schema
    - If we get it wrong we need to add new folders (and copy/reorganise any old data we want to keep)

Firmware Versions

- Partly described in OKS
  - PPM and CPM
    - expected firmware versions checked during CONFIGURE step
    - OKS DB is archived, so firmware versions are recorded per run
  - JEM, CMM, ROD
    - not yet described in the database
    - no record of which firmware was used per run
      - JEM makes hard coded check that FW versions == (or >= ?) to expected ones
- Extended OKS descriptions
  - Add JEM, CMM, ROD firmware description (ACE collections) to OKS description
  - Later, add suitable checks in module services code?
- Is it also worth putting into COOL?

Required Changes (4)

- Calibration
  - More calibration validation and trending tools
    - Integrate the work of Robins summer student
  - Implement noise run
    - Derive noise cuts per tower from measurement of the noise
      - At present we have some global cuts for all towers
      - Except for a few (occasional) hand set higher cuts on noisy towers
  - Set saturated BCID parameters per channel
    - The current defaults are known to be "non-optimal"
      - Though worked OK for occasional beam splash like incidents

Required Changes (5)

- Remote monitoring
  - Nice work from Gabriel (using toolkit from Reiner Hauser)
    - But still problems with access to point 1?
    - Security issues to be resolved
- Alternative: produce more web pages ourselves
  - Use WMI (or standalone programs)

Desirable Changes (2)

- Firmware description and binaries
  - Firmware for PPM and CPM described in the database
  - No longer really done for modules using ACE & flash cards
  - Would like to extend the present system to include them
    - Add container of possible configurations
  - Firmware binaries for PPM and CPM in the software CVS
  - If the firmware is to be saved properly in SVN, would like the binaries to be kept there too
    - Download binaries from SVN appropriate to a software release
- SVN repository for firmware
  - Anyone want to use it?