Online SW Activities

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- News
- Task list (nMCM, CMX, L1Topo)
- Effort etc

Online Software News

- **TDAQ**
  - Next release (tdaq-05-00-00) is now being built
    - (Originally promised for January!)
    - Linked to the very latest LCG release and using gcc 4.7
    - Need to check if this is really compatible with IPbus...

Online Software Tasks (1)

- Trigger menu
  - Update L1Calo API to trigger menu for phase 0 changes
    - 16 EM, 16 Tau, 25 Jet thresholds [DONE]
      - Only on L1Calo side: nothing in DetCommon yet?
    - Two variants of Energy thresholds (standard & weighted/restricted eta)?
    - Add topological triggers
  - Propagate changes to other packages
    - Needed in CPM/JEM module services and simulation
    - How to handle backwards compatibility?

Online Software Tasks (2)

- Database
  - New calibration data for CMX
    - Backplane/cable delays [DONE]
    - Optics setup
  - New calibration data for L1Topo
    - Optics setup
    - Anything else?
  - Changes for PPM?
    - Tweak folders for calibration data
  - New folder scheme for energy calibration results
    - Being done by Pete

Online Software Tasks (3)

- New MCM (slide copied from February!)
  - Currently working on using ppmSim with standalone tools
  - Short term plans:
    - Real time path is identical, so only a few features to be added
  - Longer term plans:
    - Add new versions of BCID algorithms
    - Separate LUTs for CP and JEP data
  - Module control
    - "One slide would not be sufficient to describe all the planned changes"

Online Software Tasks (4)

- **CMX: Module Services**
  - Update HDMC register map
    - New EM/Tau/Jet thresholds handled by CMX [DONE]
    - Doubling of energy thresholds?
    - Larger playback/spy memories for higher speeds [DONE]
    - Configuration of optics
    - Configuration of system ACE (change from present scheme?)
  - Changes for different FPGA setup (base/topo)
    - Reset, loading, version handling?
  - Updates for different setup of the module
    - Usually needs to be developed along with hardware tests
  - Anything for the Topo FPGA...

Online Software Tasks (5)

- **CMX: Simulation**
  - Change interpretation of backplane signals to new format
  - Use extended trigger menu API
  - Implement thresholding of EM/Tau/Jet objects
    - Port or adapt code from CPM/JEM simulation?
  - Adapt current multiplicity counting
  - Expand playback/spy memories to new sizes
  - Update test vectors to match new functionality
    - Add new test vector patterns as required
  - Implement outputs to L1Topo

- **CMX: Calibration & Tests**
  - Develop calibration program for backplane/cable delays
  - Any other standalone test programs?

Online Software Tasks (6)

- **L1Topo: Module Services**
  - Implement register model
    - Partly done in HDMC for VME style
    - Not really started (in L1Calo SW) with IPbus/ATCA
  - Implement all the methods to configure & monitor L1Topo
    - Part of hardware/firmware testing process
  - Standalone test programs?

- **L1Topo: calibration and tests**
  - Any need for calibration program for optics setup?

Online Software Tasks (7)

- L1Topo: Simulation
  - Core code being developed by offline (DetCommon)
  - Needs wrapping in L1Calo online framework
    - Interfaces to trigger menu API
    - Interface to configuration database (active links, etc)
    - Implementation of playback/spy memories
  - Development of test vectors for L1Topo standalone tests?

- CPM and JEM
  - Module services updates for new menu
    - No EM/Tau/Jet thresholds but new isolation criteria definitions
  - Increase playback/spy memories for higher backplane speeds
  - Corresponding changes in simulation packages and test vectors

Online Software Tasks (9)

- Miscellaneous (mostly copied from slide in February)
  - Better support for rare running modes?
    - ALFA runs: adjust readout pointer
    - Beam splashes: adjust trigger masking
    - Select predefined noise cut regimes for pp or heavy ions
    - Other?
  - Many other things Ive forgotten (again since February)
    - But which you can now remind me about… (again)

Who, When and Where?

- **Effort**
  - CMX: Seth has now left: need new developer
  - CPM: Birmingham - timescale?
  - JEM: Jan S. for module services, what about simulation?
  - L1Topo: Jan S. plus others at Mainz?
    - Core simulation by Wade et al
  - PPM nMCM: ?
  - Database etc: Murrough

- **Working sessions?**
  - Seth & I spent a useful week working together at CERN
  - We should arrange further SW development weeks (at CERN?) during the rest of the year...