Online Software

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- External changes
- L1Calo status and developments (or lack of)
- To do list

External Dependencies

- **TDAQ**
  - New versions (latest 05-02-00) with new run control API
  - Linked with Athena 18.* releases, latest LCG, using gcc47
- **Athena**
  - Release 18.* now contains L1Topo simulation
    - But is still missing topo trigger menu library (still true for 18.1.0)
- **IPbus**
  - Still using uhal_2_0_2 (stable since May)

L1Calo Developments (1)

- **Database changes**
  - Finer granularity connections
    - Signals within connectors may have different destinations
    - Eg multifibre ribbons may be split in the CMX-L1Topo optical plant
  - SystemACE FW description
    - Never described SystemACE firmware setup for Run 1
      - Only the old style PPM/CPM flash RAM
    - Now have description of SystemACE collections
      - Expected versions of each bit file in each collection
    - Can use to enable/disable phase 0 features (before HW access)
- **Run control updates**
  - Support latest TDAQ changes
    - New API, fewer (renamed) state transitions

L1Calo Developments (2)

- **PPM**
  - Discussions on new register map: no code updates yet?
  - Changes to local ppmSim version: but not in main L1Calo SVN?
- **CPM**
  - Still need SW changes for new firmware...
- **JEM**
  - Started work to support new Jet firmware
    - Some new registers, expanded backplane spy memories
  - Nothing on Energy firmware yet?

L1Calo Developments (2)

- **CMX module services**
  - Still mainly in the state of the original clone of CMM services
    - Duc working on register map changes with MSU colleagues
  - Where CMX is identical to CMM existing code is OK
    - But new features all still to be added

- **CMX simulation**
  - Still mostly a clone of CMM simulation
  - Duc is now trained and can start work soon

- **CMX timing calibration**
  - Savanna and I created a skeleton cmxTests package
    - Empty timing calibration program (based on CPM example)
    - Still needs filling out (after discussion with FW experts?)
  - COOL database folders defined for the results

- **Summary: plenty of detail needed fairly soon!**

L1Calo Developments (3)

- L1Topo
  - Module Control package being implemented using IPbus
  - More details in talk by Christian
- L1Topo online simulation (topoSim package)
  - Added some test vector generators
  - Skeleton simulation model created in online framework
    - Defines real time inputs and outputs, readout, trigger menu configuration
    - Implementation still to be completed
    - In some cases this needs specifications - eg readout formats
  - Algorithm part is just a wrapper round offline simulation
    - Still waiting for topo menu code to be put into an official Athena release

Supporting Transitions...

- Need to support multiple versions simultaneously
  - OS versions: test rigs with SLC5 or SLC6
  - TDAQ versions: tdaq-04 vs tdaq-05
  - L1Calo versions: with/without phase 0 changes
  - ATCA support: with/without IPbus installation
  - All without recreating offline tag/build empire
- Simple minded approach
  - OS/TDAQ via global L1CaloPolicy and compiler #ifdefs
  - Global #ifdef L1CALO_PHASE0_UPGRADE
    - Not sure if recent developments use this in appropriate places
  - IPbus: needs come uncomment in requirements files
  - Defaults in SVN appropriate for CMX
    - Others need to make a few edits after checking out software

To Do List (1)

- Database
  - Energy calibration COOL folders: Pete (before March!!)
  - Changes for nMCM? Extra folders for CMX/L1Topo?
- Simulation
  - High speed backplane infrastructure
  - New nMCM features
  - CPM/JEM changes
  - New CMX functions (taken over from CPM/JEM)
  - L1Topo (wrapping offline simulation)
  - All readout formats

To Do List (2)

- ## Module Services
  - New register map for PPM, new features for nMCM
  - Start/continue CPM/JEM changes
  - Complete CMX implementation (features not in CMM)
  - Complete L1Topo
  - ROD: no changes? (Just new firmware?)
- ## Calibration
  - Implement backplane/intercrate timing calibration for CMX
  - Any timing calibration needed for L1Topo inputs?
- ## IPbus GUI (HDMC GUI replacement)
  - Get IPbus GUI working (needs other external packages)
    - Or develop something ourselves?
- ## Miscellaneous...
  - Support for rare running modes?