Software Status

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

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Recent developments

Overview

- Work started on PPM module services

- PPM simulation (one MCM?) added to CVS

- JEM module services changes for JEM1 style firmware

- Developments of JEM and CMM simulation and generators

- Configuration database changes to support new Online software versions

- Many other developments, improvements and optmimisations coming from the active subslice test programme

Forthcoming developments (1)

Configuration database

- L1Calo has many extensions of the Online software configuration database (cables, runtypes, firmware, trigger menu, calibration)

- Two successive changes have been made to the configuration database

- The database access library (DAL) is now generated automatically (before it was hand written)

- The database schema has been changed

- Both of these changes (especially the first) require extensive changes to our database code and to other packages which use it

- Changes to the database code are already prepared and a script to make most of the changes to other packages is also available

- Some more testing is needed and then we could migrate

- NB various database additions for the PPM are required

Forthcoming developments (2)

Run control state model

- For the test beam a new run control state model is proposed

- The aim is to speed up transitions by flattening the run controller hierarchy and removing synchronisation between controllers

- The minimal required synchronisation will now be provided by adding several more states, especially at run start and stop

- The checkpoint transition is also added

- For us to be able to use the new states, we will need to update our module services interface – with corresponding changes to all module services packages

- We will almost certainly need to rejig what we do at each transition

- Hopefully all this will enable us to get back to square 1!

Forthcoming developments (3)

ROD crate DAQ

- The much requested and long awaited ROD crate DAQ became available last year in a preminary version by Ralf Spiwoks

- An updated version (by Enrico Pasqualucci) is being proposed for use by all detectors at the test beam this year

- We probably need to use this in connection with the new run state model (though we may perhaps be able just to migrate our existing run controllers)

Things we still need (1)

Monitoring

- We need to provide better monitoring of both hardware and events as we proceed with the slice tests and certainly for the test beam

- Some discussion took place last year – then lapsed during subslice tests

- We have recently had three discussions at a software meeting and two dedicated monitoring meetings

- However we do not yet have a clear strategy

- In particular, should we develop purely online monitoring of L1Calo event fragments, or should we use only ATHENA based monitoring at the Event Filter and later?

- We will certainly need the latter at the test beam, but it may be too much for the slice tests at RAL

- There are conflicting pressures to have something quickly but also to get it right

Things we still need (2)

Monitoring (continued)

- Whether we do one (just ATHENA) or both (ATHENA and online), we need to think about the design of our "raw data objects"

- Interested parties (in particular Adrian, Dimitri and Stefan) are encouraged to propose "use cases" for what we want to do – this will inform the design

Conditions Database

- We have so far done nothing about the conditions database

- At present we take trigger menu and calibrations from our extension of the online configuration database

- Offline analysis and monitoring will need to know what configuration was used for a given run including which trigger menu and calibration settings were loaded

To Do List (1)

The list last November...with comments

- As the RAL slice (and other test setups) grow, the need for automated timing calibration and setup procedures becomes more urgent

  ...though in many cases, eg CPM, the correct timing regime is already known

- Related to this, we want multistep runs to iterate over parameters settings and sets of test vector files

  ...multistep soak tests using successive random test vectors tried by Cano

- With five working RODs and setups involving data sent from CPM/JEM to CMM, we need combined readout via the ROS

  ...now works – with new Online/Dataflow software

- Also more analysis and monitoring of data (apart from comparison with simulation), presentation of analysis etc will be desirable

  ...discussions about monitoring restarted recently

To Do List (2)

Online software migration

- ROS/FILAR/HOLA setup requires migration to new Online/Dataflow software

- We are presently using Online v19 and Dataflow v05. We could move to existing v20/v06, but Online v21 is coming very soon. We prefer to make only one migration - assuming we can use Dataflow v06 with Online v21 (to be checked).

- The migration involves:

  - Database changes (largely done?)

  - Mdule services changes (for new run states)

  - Corresponding run controller changes (maybe ROD crate DAQ?)

- Provisional plan: try to migrate the week after the JEM tests (ie 16-20 February) - though perhaps this is optmistic.

- We should make a release of the existing software before this move.