Software Status, Direction and Priorities

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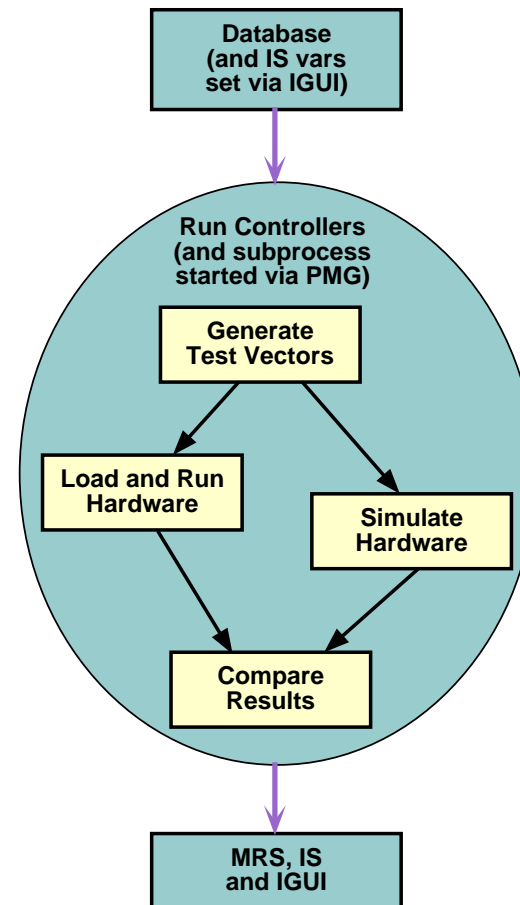
Overview

- Introduction

- Recent progress

- Whats missing

- Priorities and worries

- Summary

Reminder of the Aims (1)

Slice Test Procedure

- Choose a test to run and a hardware configuration

- Generate test vectors (if necessary)

- Load the hardware with test vectors

- Simulate expected output of the selected configuration

- Run the system, collect data, compare and report

Database
(and IS vars
set via IGUI)

Run Controllers
(and subprocess
started via PMG)

Generate
Test Vectors

Load and Run
Hardware

Simulate
Hardware

Compare
Results

MRS, IS
and IGUI

Reminder of the Aims (2)

Test beam requirements

- Run as part of a larger configuration

- No simulation, more monitoring required

- Calibration of calorimeter signals

- Timing setup with other detectors

- Record conditions in conditions database

- Offline (Event Filter) analysis/monitoring
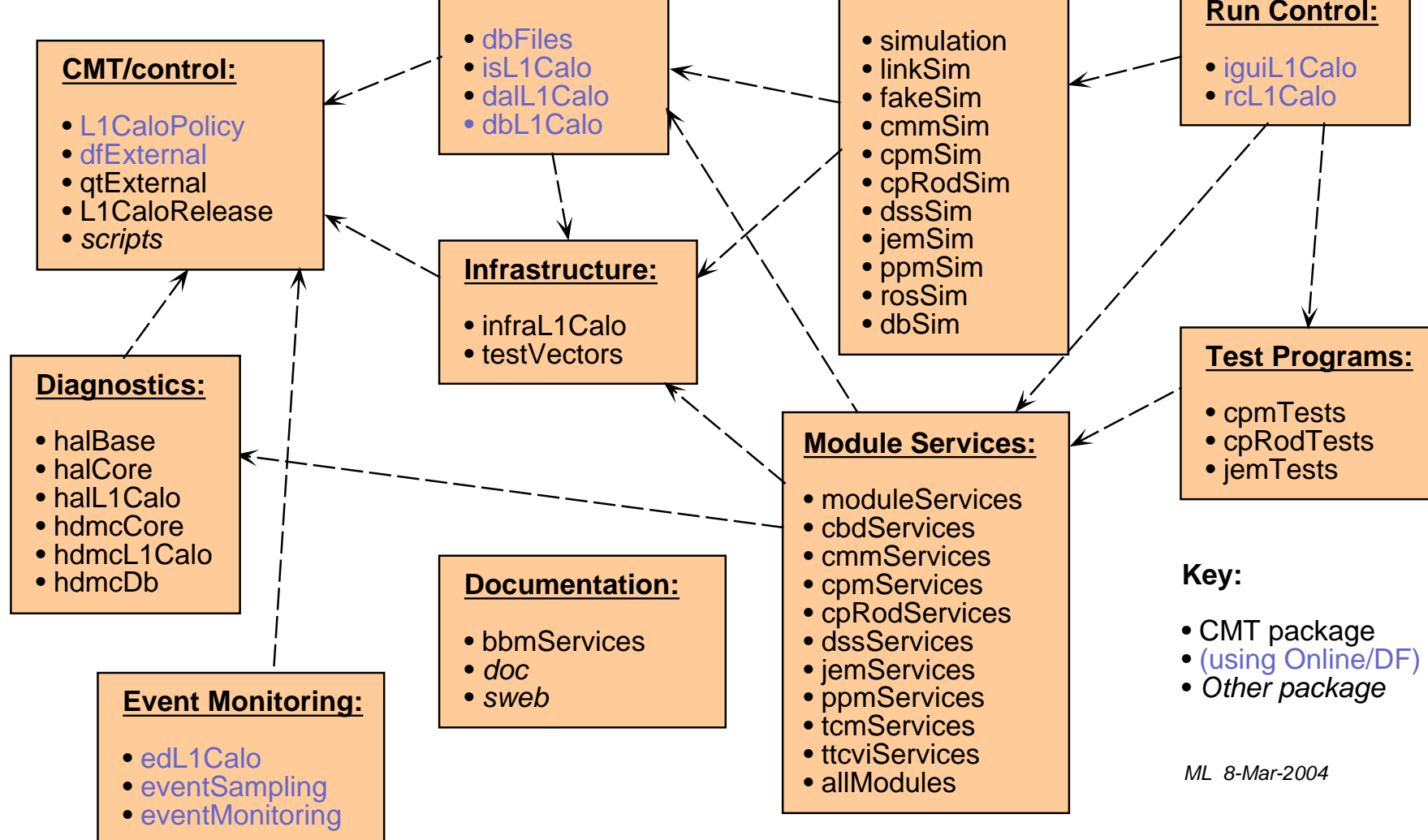
Recent Developments (1)

Summary since the RAL meeting

- Good progress on PPM module services

- PPM simulation (one MCM?) added to CVS/CMT environment

- JEM module services changes for JEM1 style firmware

- Further developments of JEM and CMM simulation and generators
  (first tests of jet firmware done)

- First try with online histogramming

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

Recent Developments (2)

Move to new Online software (release 21)

- New online software release (or minor update) will be used at the testbeam:

    – Major changes to configuration database schema

    – Database access library is now automatically generated

    – New run control state model

    – Many other changes more or less visible to the user/developer

- Adopting this required changes to our use of the configuration database (two new packages in place of the old one)

- Also required updates to our run controllers and IGUI panels

- Still to do: use new run state model in module services

L1Calo Components and Packages

L1Calo Packages

Database:
- dbFiles
- isL1Calo
- dalL1Calo
- dbL1Calo

Simulation:
- simulation
- linkSim
- fakeSim
- cmmSim
- cpmSim
- cpRodSim
- dssSim
- jemSim
- ppmSim
- rosSim
- dbSim

Run Control:
- iguiL1Calo
- rcL1Calo

CMT/control:
- L1CaloPolicy
- dfExternal
- qtExternal
- L1CaloRelease
- *scripts*

Infrastructure:
- infraL1Calo
- testVectors

Test Programs:
- cpmTests
- cpRodTests
- jemTests

Diagnostics:
- halBase
- halCore
- halL1Calo
- hdmcCore
- hdmcL1Calo
- hdmcDb

Module Services:
- moduleServices
- cbdServices
- cmmServices
- cpmServices
- cpRodServices
- dssServices
- jemServices
- ppmServices
- tcmServices
- ttcviServices
- allModules

Documentation:
- bbmServices
- *doc*
- *sweb*

Key:
- CMT package
- (using Online/DF)
- *Other package*

Event Monitoring:
- edL1Calo
- eventSampling
- eventMonitoring

ML 8-Mar-2004

Missing/Incomplete Software (1)

Module specific

- PreProcessor:

    - VME issues (homebrew driver, A32 access)

    - Database integration for PPM

    - Module services developments with a real module

    - Complete the PPM simulation

    - Test programs?

- JEM: more debugging jet component of module services and simulation?

- CMM: more debugging of jet and energy variants, readout of all variants

- 6U ROD: simulations for new/updated data formats (given firmware)

- 9U ROD: reimplement module services and simulation

- ROS: fast monitoring/comparison with simulation

- New CERN module types: LTP, BUSY

Missing/Incomplete Software (2)

System related software

- Offline: using ATHENA for analysis/monitoring/calibration

- Physics test vector input

- Generating test vectors (for some modules)

- Event dump: new/modified formats

- Multistep runs for calibration:

  - Stepping infrastructure largely untested

  - Run numbers, run steps and checkpoints?

- Calibration:

  - Control: pulsing, setting parameters, LTP

  - Analysis, conditions DB?

- Histogramming (of monitored events, calibrations)

- DCS

Priorities and Worries (1)

- ROS:

  - Update to latest dataflow release

  - Monitoring tools to compare with simulation

- PreProcessor:

  - VME issues, database, simulation

  - Test integration with CPM/JEM (eg timing setup)

- Monitoring:

  - Better hardware monitoring

  - Some online monitoring (slice test)

  - Offline analysis (test beam)

Priorities and Worries (2)

- Databases:

    - Conditions database (eg calibrations)

    - Offline access to configuration (eg cabling)

- Multistep runs:

    - Use in existing setups (started)

    - Use in integrated calibration

- Complete migration to new online/dataflow software:

    - New run state model

    - ROD crate DAQ

Summary

Progress

- Good progress... but still going slowly

- Many critical areas still missing