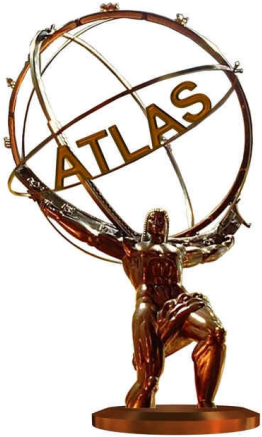


Test-rigs outside CERN



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Joint Meeting Heidelberg 2010

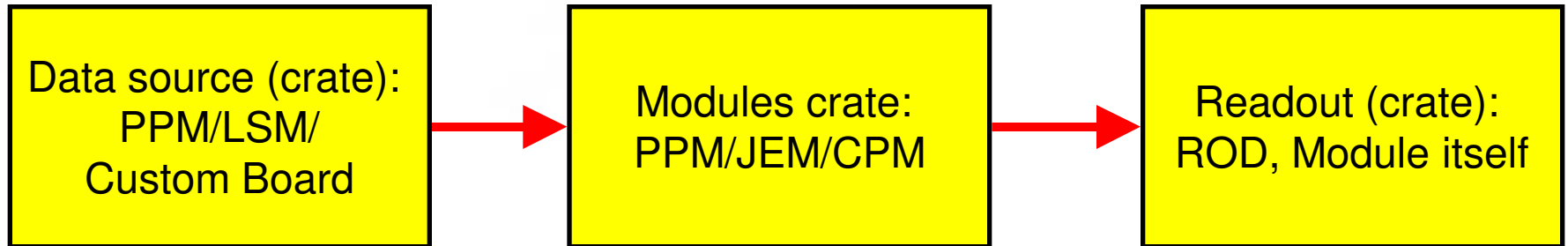
Content:

- Introduction to test-rigs
- Status of test-rigs
- Discussion of some issues

Test-rigs and what they are used for

- Roughly: institutes that have developed and support modules (JEM,CPM,PPM) maintain a test-rig
- Used to
 - Test modules themselves
 - Test and develop/improve module firmware
 - Test and develop/improve module software
 - Adapt module software due to L1Calo/TDAQ framework changes (also Murrough does a great job here)
 - Develop and test “upgrade modules” (“new MCM” design, GOLD module, CPM hit merging FW etc.)

Typical configuration



- Each crate has a diskless SBC* (also called “crate CPU”)
 - connects software via VME-bus-driver to hardware
- Each test-rig needs a local installation of the
 - TDAQ software
 - L1Calo software

*Single Board Computer

Characteristics of the Birmingham test-rig

Hardware	
(Major) Modules:	LSM, CPM, ROD
Software	
SLC	4 (Kernel 2.6.9-89)
TDAQ	02-00-02
Status	VME drivers from old kernel (2.6.9-67) used Everything besides ROS/ROD working

Characteristics of the Mainz test-rig

Hardware	
(Major) Modules:	LSM, JEM
Software	
SLC	4 (Kernel 2.6.9-89)
TDAQ	02-00-02
Status	Would be ready if VME drivers were working, need to compile them (to be done)

Characteristics of the Heidelberg test-rig

Hardware	
(Major) Modules:	PPM
Software	
SLC	4 (Kernel 2.6.9-89)
TDAQ	02-00-03
Status	VME drivers compiled by Andrei TDAQ 02-00-02 to 02-00-03 update took 2 weeks, but now everything works

TDAQ upgrade/installation

- Usually a hard job involving lots of mails to other people (e.g. Murrough) and consuming large amount of time
- Some examples:
 - TDAQ 02-00-02: needed to build both variants (opt and dbg) to prevent software from crashing, took time to figure out
 - TDAQ 02-00-02: ignore options dropped, needed to disable logger in TDAQ files
 - TDAQ 02-00-03: way of distribution changed, problems with new TDAQ installation scripts, tried to confirm but scripts were removed from pcatwww machine and not yet moved to atlasop.cern.ch

SLC4 vs SLC5

- No guide how to run in compatibility mode
- Not yet native SLC5 software support
- L1Calo software at CERN still compiled at native SLC4 machine
- Plans and attempts of the test-rig maintainers
 - There have been tries but no success
 - Feeling is to stick to SLC4 until SLC5 migration is necessary (e.g. when our software runs natively)

Hardware problems in Mainz

- Last week additional problems occurred:
 - Harddisk used to boot crate CPU while setting up SLC4 wasn't detected by BIOS any more
 - Couldn't enter BIOS any more to switch back to network boot
 - Unknown reasons...hope no 2010 bug ;)
 - Are there any settings that need to be made in the BIOS e.g. after resetting it via battery removal?

Summary

- Test-rigs still necessary to maintain modules
- Test-rigs are being used and planned to use for upgrade developments
- Need to keep pace with new TDAQ releases to have same environment
- Difficult and time consuming since new TDAQ version usually comes along with changes that need non obvious work(arounds)
- Feeling that we are going to stick to SLC4 as long as there is no urgent need or better documentation