

L1Calo DBs: Status and Plans

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- Overview of L1Calo databases
- Present status
- Plans



L1Calo Database Overview

(LAr TileCal Patch Panels	Calibration Data	Configuration Data
Analogue Cabling	Receivers Patch Panels	Analogue Gains	Connectivity
		DAC, pedestal	Trigger menu
	Preprocessor	Lookup tables (linearity)	Operational choices
ling	EM Cluster Jet/Energy	, in the second se	Trigger menu
II Cab	Processor Processor	Timing	Operational choices
Digita	Merging Merging	More timing	Trigger menu Connectivity Operational choices
	CTP		



• Present status

- At present much L1Calo information used online is in the OKS configuration database: HW configuration, cabling, calibration, trigger menu, run types, etc.
- Exception: Preprocessor configuration & calibration in XML
- Also some "flat" data files used by a few applications

Intentions

- Trigger menu will move to new CORAL based configuration
- Calibration data should move to COOL
 - Also Preprocessor configuration (integrated with calibration data)
- Consider moving other L1Calo configuration data from OKS
 - Or are new OKS configuration archiving tools enough?
- Description of connectivity? (See later)



- Not just USA15
 - Production test and maintenance sites use TDAQ software
 - Test/diagnosis of single module needs multiple crates
 - Want common software and database everywhere
 - Eg Oracle at CERN, SQLite/MySQL elsewhere
 - Tools need to work on small scale, not just ATLAS scale
 - Eg hand edited configurations as well as TC database extracts
 - Ideally minimise different sets of SW packages needed
 - Trigger configuration DB recently moved to "ATHENA" style DetCommon package needing separate installation :-(



- Digital timing
 - Standalone online runs, scan clock phases and delays, read parity errors from VME, store results (incl. Histograms)
- Analogue timing
 - Constant calibration pulses from calorimeters (joint runs), scan clock phases, process event data, store results
- Pulse shapes
 - As above, may want to look at several energies
- (Electronic) energy calibration
 - Calibration pulses at ranges of energies, process event data (also calorimeter readout), store results
- NB L1Calo calibration data is only used online
 - Although some processing may be offline (Athena)



• General proposal

- Use pure COOL for now (think about CORAL later)
- Results for all calibration runs stored in one set of folders
- Separate validation procedures copy data to another set of folders which are used to configure the system
- Separate folder for each type of component to be loaded
 - Eg different types of module, submodules, channels
- When storing calibration data, separate folders for each type of calibration procedure
 - Validation procedure may combine results of separate calibrations for components of the same type
- Channel IDs coded with crate, module, submodule, channel
 - HW identifier best for online to quickly select data from one crate
 - But might not be so natural for Athena based calibration SW?



- Present L1Calo status
 - Digital cabling presently described in OKS
 - Private L1Calo schema something similar to be in tdaq-01-07
 - Started description of analogue cabling including pin to pin patch panel interconnections in relational DB
 - Source is Excel spreadsheets used in cabling documentation
 - Not yet complete, nor yet used in online or offline code
- Issues with TC database
 - Common approach assumes TC databases as master from which data is extracted into more useful databases
 - Problem with limited access for updates
 - Friday afternoon recabling to work around a problem?
 - Full description, including patch panels, need extracts from both Cabling and MTF/Rack Wizard?



- Configuration DB archiving
 - Recently tried using oks2coral & oks2cool
 - For remote test sites want to use SQLite and/or MySQL
 - Some problems
 - SQL scripts to initialise oks2coral DB needed fixing for SQLite
 - TDAQ release doesn't fully support SQLite



Calibration Database

- Imminent "experts week" to make (long delayed) progress on getting calibration procedures working with COOL
 - Current COOL based prototype still lacks the Run Control link
- Need to update all calibration procedures
- Further work on tools, trends, validation etc
- Configuration
 - Look at PartitionMaker for generating L1Calo segments
 - But from what master source?
 - Aim to move "operational choices" from OKS?
- Connectivity
 - Generate digital cabling for new OKS schema
 - Need to consider strategy for analogue cabling DB