Murrough Landon – 17 December 2002

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

Overview

- Monitoring
- Error handling and fault tolerance
- Databases

Group Members

 Francois Touchard (EF), Sergei Kolos (Online), Hans Peter Beck (DataCollection), Beniamino di Girolamo (DIG), me (Level1)

Aims

- Study monitoring requirements
- Monitoring matrix: data volume between monitoring sources and destinations to plan the network
- Operational monitoring of the DAQ system
- Operational and physics monitoring of the trigger
- Produce monitoring chapter in the TDR

Plans

- Preliminary document already (level1 submission is late)
- Questions to TDAQ subsystems and detectors
- Monitoring workshop (around ATLAS week or database workshop?)

L1Calo specific

- Monitoring sources: PPMs, ROD crate controller, EF monitoring tasks (not ROS in final system?)
- Monitoring destinations: ROD crate workstations, EF tasks combining histograms from many EF nodes, operator workstations displaying results, conditions database for some histograms and other monitoring data
- Volume of traffic is not clear (to me)
- L1Calo monitoring document needs another look in this context

Group Members

 Doris Burkhardt (Online), Andre Bogaerts (Level2/DC), Reiner Hauser (Level2/DC), Beniamino di Girolamo (DIG), me (Level1)

Aims

- Study error handling and fault tolerance in the TDAQ system, including error prevention(!), reporting, recovery, etc
- Comment on (distributed) proposals coming from the Online group
- Common classification of errors
- Produce scenarios for handling errors
- Identify single points of failure
- Recommendations for producing a fault tolerant system

EH and FT (2)

L1Calo scenarios: prevention

• Avoiding system wide firmware update catastrophe!

L1Calo scenarios: robustness

- Parity on links, monitor errors. Do we have parity on links to CTP?
- Single points of failure: CTP! System CMMs and their CTP links? (Backup cabling to CTP from another crate?)

L1Calo scenarios: reporting/recovery

- Dead cells and bad links: report, disable, (typically) fairly small effect. For links can try resetting during run?
- Dead modules, crates: depending on severity, may only make sense to reset outside a run?
- Hot cells: may be in the trigger system or the calorimeter, may be detected by PPM crate controller (rate histograms) and/or by EF monitoring task. Crate controller can only disable the channel. EF task can diagnose calo cell problem, disable calo cell and enable PPM channel again? Potential problems with the same error being recovered in different ways at different places.

Activity

- Lots of general discussion in TDAQ and ATLAS weeks
- But not much activity of the working group itself...
- Proposal for an ATLAS wide databases workshop early next year
- Thorsten Wengler recently nominated as a new ATLAS wide role as database coordinator (not at a technical level)
- Suggestion that L1Calo give a talk as a "typical" TDAQ system