



Detector Control Workshop - 13-15 Nov 1997

Online Databases

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Overview

- Online-specific databases
 - Not Event Store
 - Not Conditions Database
 - Plenary talk at next week's Collaboration Meeting
 - ▶ Also session at Reconstruction Workshop on 14th (tomorrow)
 - ▶ Also parallel session at Collaboration Meeting
- An attempt some time ago at enumerating them
 - Document dated 10th October 1996
 - Not much coherent progress since then
 - ▶ Although quite a lot going on within the online subsystems



Data must have a single source

- Conditions DB captures time history
 - Can go back in time and ask what the conditions (trigger, beam, voltages, etc.) were.
- Not necessarily the primary source
 - But could in some cases be used in this manner
- Primary source must have a mechanism for setting the values
 - Human interface
 - Automatic interrogation of hardware
- Mechanism for extracting information from primary source to insert into Conditions DB



Online Databases

- Partition
 - Universe of components that can participate in partitioning
 - Current partitioning, purposes & ownership
 - Status of Master/Slave consoles
 - Dynamic database loaded from a static description
- Electronics Hardware
 - Static description of hardware layout
 - Base for Partition database?
- Inventory
 - Module types & serial numbers, repair history etc.



Online Databases (2)

- Run Type
 - Possible run types (physics, cosmics, etc.)
 - Hardware trigger conditions, partition requirements & configuration parameters (event limit, automatically activated processes, etc.)
- Trigger
 - L1 & L3 configuration parameters as a function of run-type
 - ▶ Also as a function of luminosity, changing physics goals, etc.



Online Databases (3)

- Detector Controls Settings & Values
 - Desired set points & thresholds
 - Instantaneous values
- Boot (ROM & ROC)
 - Allow modules to be cold started into a default configuration
- Scripts
 - Repetitive operator actions
 - ▶ e.g. Booking complete experiment for physics run
 - ▶ e.g. Booking calorimeter & performing a calibration run.



Online Databases (2)

- Electronic Logbook
 - Everyone always talks about having one of these, but I don't think anyone's ever actually built one that works.
- Help
 - Expert system?
 - WWW?
- Intermediate databases
 - Interface between hardware & true database if necessary
- Code database
 - Which version of code was running?



Online Conditions Database

- Much of the information from the various databases needs to be written to the Conditions database at an appropriate time
 - Remember, Conditions Database has to be able to tell you everything that you need to know as a function of time
 - Extraction & insertion software needs to be written
- In some cases the Conditions database might be an appropriate technology for use as primary repository
 - It also might well not be the appropriate technology



Where are we?

- Stalled by lack of personnel until now
- Primary focus of database group has been event store & conditions database
 - Waiting for a “kick start” from Online
- George Zioulas at SLAC
 - University of California, Irvine
- Presently ramping up
 - Attending OOAD Course
 - Soon to attend Objectivity Course



What's his job?

- It's *not* to write extraction & insertion code for everyone
- Coordinate
- Help make technology choices
 - You'll have to do much of the work
 - He can help you avoid pitfalls
- Focus on one implementation area
 - Next slide
- Work with Jim Ohnemus
 - Conditions database implementer
- Bridge gap between online & database groups



Implementation Focus

- Not decided yet
- Several possibilities
- Common Infrastructure for *Configure* transition
 - How to use the *environment* number to extract required information
- Partition database



Coordination Activities

- Talk to all database users
- He's spoken so far to
 - David Brown (Calibration & DRC)
 - R. Martin (ODF & EMC)
 - Yuri Kolomenski (OEP)
- Next on his list are
 - Steve Lewis (Controls)
 - Usha Mallik (Trigger)
- Who else is there?



Summary

- Need to understand what databases are needed
- Prioritize them
- Make a technology choice
 - Not necessarily the same for all of them
- Need subsystem people to write extraction & insertion code
 - George & Jim coordinate & help
- Other sources of expertise?
 - Can we package up some of the work & farm it out?