## **Software Status**

### Murrough Landon – 13 November 1999

#### **Overview**

- Progress with HD Software
- Work on DAQ Requirements
- TTC Software
- Prototype DAQ System
- Collaboration across level 1
- Plans...

## **Heidelberg Software**

## Final DAQ System

## Calibration

- Several small discussions about calibration requirements and procedures held over the summer.
- Calibration section of the Requirements document (http://www.hep.ph.qmw.ac.uk/ landon/l1soft/l1req/l1req.ps) has been updated.
- Numerical details still needed: what precision do we need, how many events are required for each procedure.

#### **DAQ Use Cases**

- Started work on OO lines: consider "use cases" for the (final) DAQ system.
- Events eye view through the system. What happens to it along its path.
- Document to be written by Norman...?

# **Prototype DAQ System (1)**

#### **DAQ -1 Software**

- Not much progress on getting "Dataflow" part of the DAQ -1 for a small scale environment (ie single processor, ROD crate).
- But most of the core "Back End" components (databases, error reporting, interprocess information service, run control, etc) have been tried successfully.
- Interactions with the Back End DAQ people have been helpful.

#### TTCvi Software

- Experience gained with TTC hardware.
- Started to think about TTC software. Ideas for TTCvi classes developed by Kithsiri and others.
- Draft document exists
- Next steps: initial implementation (within an existing framework for VME access, eg HDMC)
- But our expert (Kithsiri) will be leaving at the end of the year...

# **Prototype DAQ System (2)**

## ROOT

- Started playing with ROOT on NT and HP platforms. (ROOT is an OO histogramming package from Rene Brun).
- Aim to show that it can be used (as advertised) in a distributed environment. Fill, exchange and display histograms in multiple processes on several nodes.
- (Almost?) everything we wanted has been successfully demonstrated.

### Prototype DAQ System

- We would like to develop a prototype of the final DAQ system to accompany the forthcoming round of prototype modules.
- Partly to test ideas on configuration, calibration, monitoring, etc for the final system.
- Partly to provide an environment for testing the ROD and the prototype modules, on their own and as part of joint tests with other systems (eg CTP, level 2, DAQ).
- Many of the required components of a DAQ system are available and have been evaluated (at some level). Until the DAQ -1 "Dataflow" solution is extended to the ROD crate environment, we will have to develop that aspect of the system ourselves.

## **Future Workplan**

### **Collaboration across Level 1**

- Request from Ralf Spiwoks and Christoph Schwick.
- Define configuration database for the level 1 trigger. Including crates and modules, calibration data, trigger menus.
- How does (re)loading the trigger fit into DAQ run control states.
- Common software developments... test software, DAQ software.

## **Concurrent Projects**

- Continue HDMC development
- Thinking about (and documenting) final DAQ system
- Development of DAQ system for prototypes
- Joint work with L1 Muons and CTP