Data Acquisition Software -

Status March 2000

Module Definitions

- **We have long been seeking a way to use the same code in the Diagnostics and Daq.**
- **The problem is that HDMC (the Heidelberg Diagnostics) uses lists of independent registers and memories, but the Daq needs Modules.**
- **We at last have a solution:**
  - **Process the HDMC part description files to give a group of registers which can be built into a Module Object representing e.g. a DSS module.**
  - **This scheme can also generate a portable way of accessing the bit-fields within a single register.**
- **The module object will provide functions to initialise and read over VME, with the details hidden inside. This is not very different from the current daqprod style.**

Access to VME from the PC

- **Will use Ethernet to talk to a VME "daemon".**
- **We will use the HDMC daemon, which has been greatly simplified to compile under LynxOs. Tests are now underway.**

Timetable

- **Aim to have a working version within the next 2 months.**
- **Meanwhile, urgent DAQ tests (e.g. of DSS) can use the LynxOs Daq.**

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Main Elements of the new DAQ

Run Control(NG):

- **Will use the DAQ-1 style panels (start, stop, pause, continue).**

Parameters(NG):

- **Using the menus taken from the old daqctl program. We will eventually move to a proper parameter database and parameter editor.**

Producer(BB):

- **This program reads the VME and creates events.**
- **Based on daqprod, but with DSS support re-coded as a DSS Object which will fill an event object.**

Buffer Manager:

- **Continue to use the present buffer manager for now, but with an OO wrapper to handle the event objects.**
- **Eventually to be replaced by a daq-1 or own-written buffer manager, depending on requirements.**

Analyser(TS):

- **Rewritten to use event objects and ROOT histograms.**

Data Recording:

- **None in this version.**

Histogram presentation(TS):

- **Using ROOT. The presenter will be abandoned.**

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Evolution

- **First version with daq-1 for ROD**
  - **Evaluate version 1, propose outline architecture.**
  - **Use all daq-1 services**
  - **Add other hardware modules**
- **Prototype for UK and joint tests.**
  - **Evaluate prototype, look at user comments.**
  - **Propose full architecture.**
  - **Provide missing services**
  - **Add other hardware modules**
- **Good working version for ATLAS installation**
  - **Fix problems.**
- **Production version for ATLAS running.**