ROOT as a Replacement for NOVA

DRAGON data Analysis

Why ROOT?
Analysis strategy
First steps

Long-term Situation

- Dragon data analysis has been done both with NOVA and with MIDAS analyzer.
- NOVA's perceived advantage is interactive creation of histograms and cuts. This is possible also in analyzer using ntupls but is presently broken.
- TRIUMF DAQ group will no longer support NOVA after Peter Green's retirement.
- DAQ group will provide technical support for ROOT, and it has been adopted by other ISAC groups.

Strengths and Advantages

- ROOT is a physics display and analysis tool.
- Scripting language is interactive C++, much more powerful than the PAW language.
- It is easy to produce a PAW++ like point and click environment for histogram and ntupl display.
- Analysis can be done with very limited knowledge of C++ (FORTRAN with semi-colons).

Implementation Strategy

- Program converting .mid files to root trees (ROOTspeak for ntupls.)
- Calibration info will be passed to analysis outside of MIDAS ODB. This allows efficient use of fast CPU clusters like Westgrid.
- Root script to produce appropriate histo-grams from the tree.
- Program has functionality of analyzer.c, ad-ccalib.c hicalib.c. Script functionality of his-togram.c.

Next Steps of Action

- Konstantin has written the .mid to .root code. He will add the required unpacking code.
- Art and Konstantin will work on histogram-ing script and compare results to online analysis.
- Marcello will work on the incorporation of the calibration data. These will initially come from ODB information.

Next Steps II

- Online facility with live display (DAQ group).
- Direct production of the tree from mlogger.
- Direct production of calibration procedure information to ROOT file format.
- Analysis scripts appropriate to different end detector configurations.
-