Testbeam Offline Software Status and Plans

Michel Lefebvre
Dugan O'Neil

University of Victoria
Victoria, B.C.

September 24, 1998

Current Status September 1998

Current Status

- `http://wwwhep.phys.uvic.ca/~uvatlas/hec_adc/hec_adc.html`
- note in progress on current state of HEC offline/online code

Online

- CERN central data recording used to successfully store 55Gb of data from August run. HEC note in preparation on our use of CDR.
- online monitoring used successfully at August 1998 test-beam. Difficulties:
  - need to upgrade DAQ operating system to ATLAS standard (HPUX 10.2)
  - memory on DAQ machine is insufficient for DAQ + monitoring + other users

Current Status September 1998

Offline

- hec_adc Version 3.5 - Prerelease is the latest version.
- Improvements since version 3.4
  - updated for August runperiod
  - new histogram package - clustering
  - new online package
  - patch to correct tdc values from early in April period (before run 7178)
- Why is 3.5 not a "full release"?
  - still need calibration constants for August (use April for now) - New constants received September 23
  - more tdc corrections needed?

Status and Plans July 1998

Status in July

- `http://wwwhep.phys.uvic.ca/~uvatlas/hec_adc/hec_adc.html`
- Version 3.4 is the latest release.
- Improvements since version 3.3
  - new digital filtering package
  - new maximum adc array treatment
  - updated manual

Future Plans

- have received first MC bank for testing.
  We will add a MC input stream to the code.
- analysis of the April 98 testbeam data has lead to improvements to standard ntuple content. More to come.
- patch will be added to take into account 6ns tdc shift at pole-zero adjustment in April (only affects early runs)
- modify code structure to treat slow control records (and any other record types)
- online mode will be basically unchanged from April version

Plans September 1998

Plans

- finalize standard NTUPLE output of hec_adc
- current Monte Carlo output is not appropriate for comparison with data - two alternatives:
  - MC produces output in raw data format (EPIO)
  - MC produces hec_adc standard ntuple

Plans September 1998

- Run ntuple:
  - run number
  - beam energy
  - number of events taken
  - particle type
  - cryostat position in x
  - table position in y
  - peak finding method used (1=cubic, 2=digital filter)
  - energy units of maximum (1=adc, 2=nA, 3=GeV)
  - number of cells used
  - run pedestal for each channel (array)
  - run pedestal rms for each channel (array)
- Event Ntuple:
  - event number
  - trigger flag array (1=phys, 2=electron, 3=pion, 4=muon, 5=random)
  - number of cells kept for this event
  - list of channel numbers for this event (array)
  - energy in each channel (units specified in run ntuple)
  - time of max for each channel
  - channel signal flag (1=signal, 0=no signal)
- Slow control Ntuple: not in use
- Size for 10k events:
  raw data $\approx$ 93Mb
  ntuple $\approx$ 24Mb
- version of hec_adc exists with this structure - see webpage