

PRESENTER

version presenter-v2.2

The presenter is written in root. It can display histograms created online by the monitoring task in a shared memory or histograms in a root file. The presenter is written in ROOT. Figure PRES-1 shows the protocol between the presenter and the monitor task. The readout writes an event into the physical shared memory on the DAQ computer and if logging is enabled also to a data file. The monitoring task requests an event from the monitor thread on the DAQ computer, which can either read it from the shared memory or a data file. A data file can also be directly read by the monitoring task. The monitoring task is described in more detail in the monitoring document. The histograms are kept in a shared memory (mmap), which is accessed by the presenter. They are also stored in a histogram file which later can be displayed with the presenter. The protocol between the presenter and monitoring task is:

- *GETEVT – fill histograms which are single event histograms, e.g. time spectra, hits, pulse heights for an individual event.

- *CLR – clear all histograms

- *STORE – store the content of the shared memory in a root file (name is always online.root)

- *MONFEC – select the Front End Card to monitor, i.e. only the channels in one FEC can be histogrammed at a time.

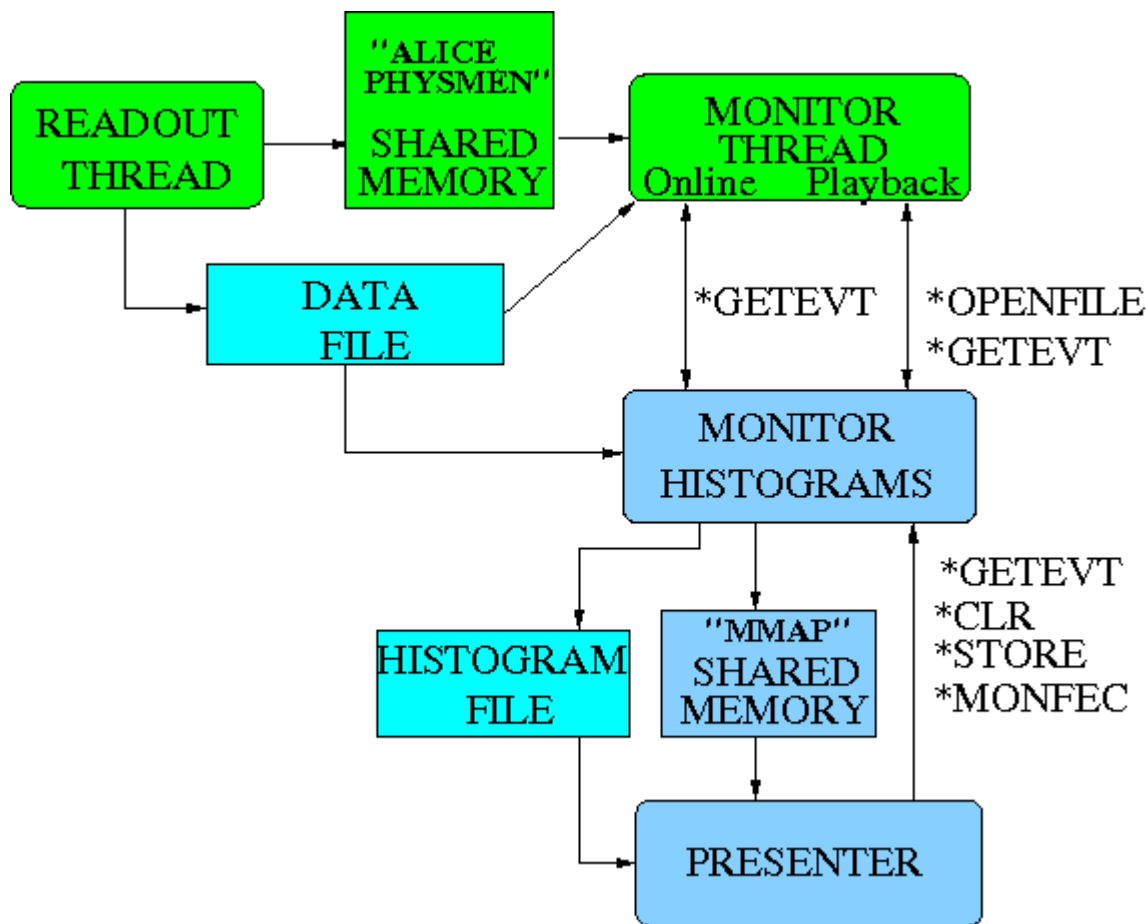


Figure PRES-1: the command and data flow in the monitoring system

The port used to communicate with the monitoring task is fixed to 9090. The user interface of the presenter is shown in figure PRES-2. The buttons are:

Save as PS - save current display as postscript file.monlog

Exit - Exit program

FEC to monitor - Send the selected Front End Card to monitor to the monitor task

RCU - select the RCU to monitor

FEC - select the Front End Card to monitor in the selected RCU

File - read histograms from file

Online - connect to online monitor task

Clear - Clear all histograms

Store - Request the monitor task to store histograms in the shared memory in the file online.root

Getevt - ask the monitoring task to clear and fill the single event histograms with a new event

Limits X - change X scale of histograms, min and max (not valid for all

histograms)

Limits Y - change Y scale of histograms, min and max (not valid for all histograms)

Altro to show - for the time and pulse height distributions can one ALTRO (16 channels) be displayed

Time histograms - show the 16 single event time histograms for the ALTRO selected

Pulse height histograms - show the 16 histograms for the ALTRO selected

Summed charged histograms - plot the 16 charge histograms for the ALTRO selected

Store histograms - the presenter stores the histograms in a file selected in a file dialog

Store statistics - for the pulse height histograms are the mean and rms stored in a file selected in a file dialog

FILES

monview.cxx, monview.h	ROOT source code
monLinkDef.h	Some declarations
compile-presenter	compile the stuff
monview.sh	script to start the presenter

The memory map (mmap) file and all local data files used are relative the path ROOT_DIR, which is defined in monview.h.

The ROOT package (<http://root.cern.ch/>) must be installed for the presenter to be compiled and executed.

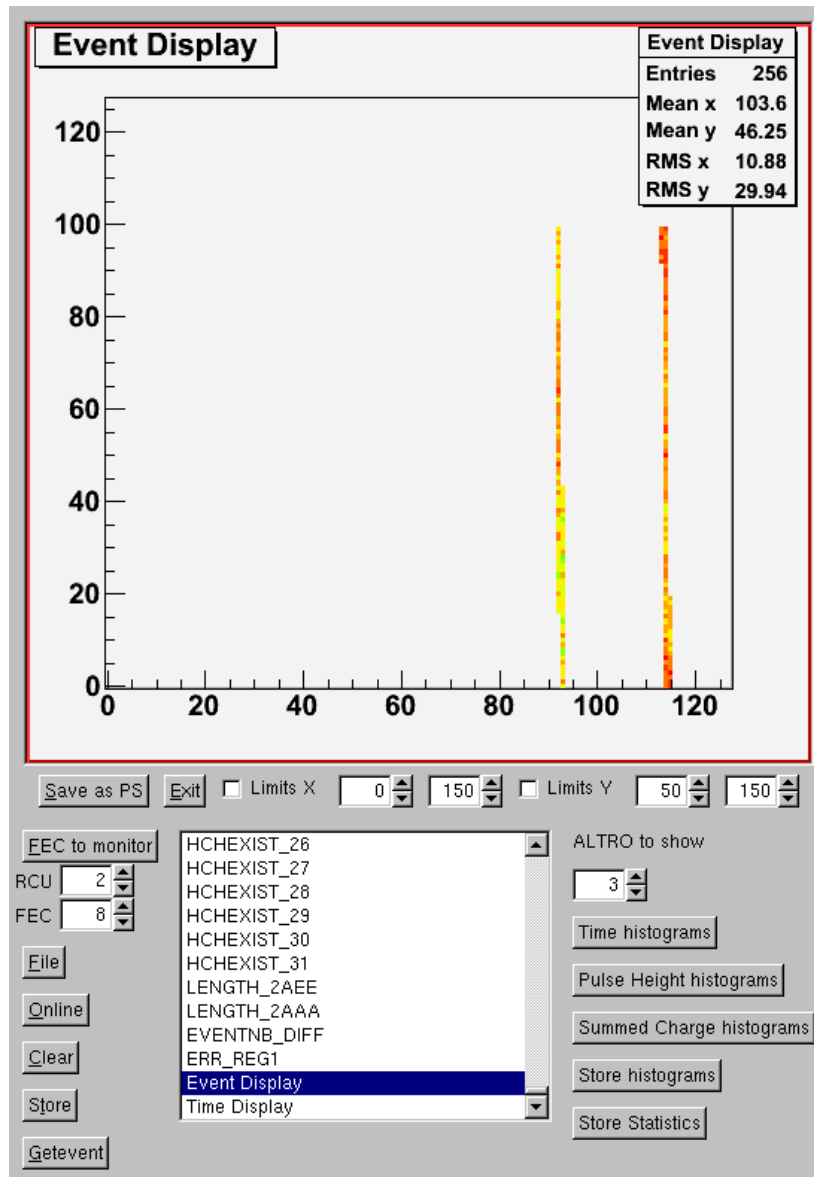


Figure PRES-1: The presenter user interface, here with a dummy event display