

# The HASS Test-stand GUI

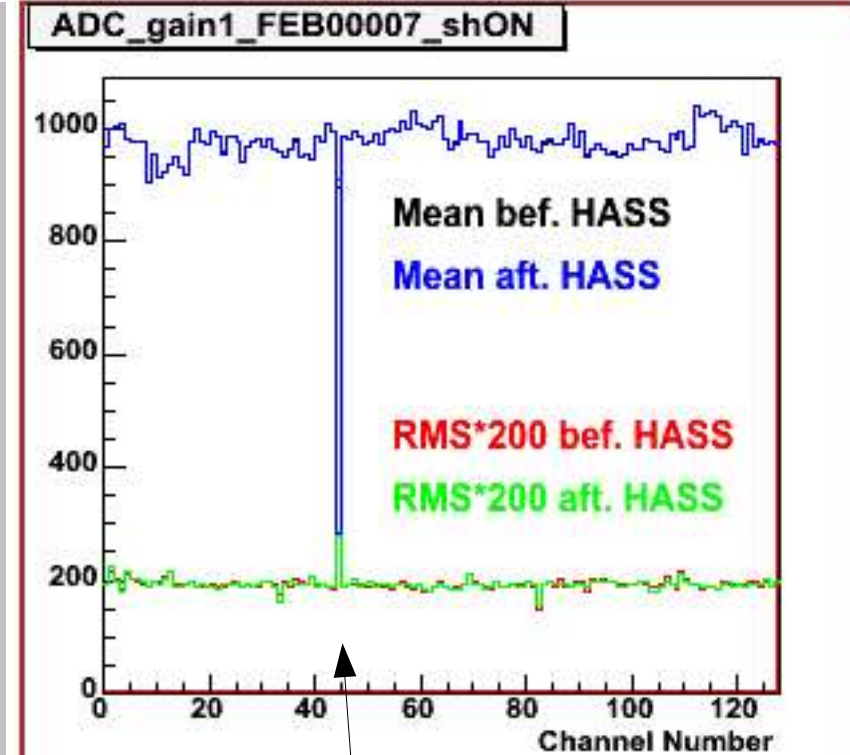
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# The HASS Test

- Put all boards through intense hardship to weed out the weak ones...
  - Highly Accelerated Stress Screening
- Temperature cycle of LArg FEB's
  - 0  $\leftrightarrow$  55 Celsius
  - 1 hours long
  - Repeated 8 times
- Noise data is taken from each board before and after the test
  - Look for bad channels, etc.
- DCU values (on-board temps and voltages) are recorded continuously
- Tests to be performed by technicians
  - Software must be easy to use, clearly display errors, etc.
- Data analyzed by physicists (us)



Bad channel

# The Online GUI

- Single ROD

- Boot:

- Low voltage on
    - Loads boards

- Configure:

- Configures
    - Starts DCU readout

- Run:

- Takes data
    - Pauses DCU

- Publishes IS monitoring

- Shows warning and errors using MRS

Online Software Graphical User Interface - Expert Control

File Commands Access Control Tools Settings Help

Partition train\_01 LONG SHORT ERROR TOOL MRS IS OBK DVS ED

Segment & Resource LargOnlinePanel RodPanel Infrastructure

Run Control Run Parameter MRS DAQ Supervisor PMG DataFlow Monitor

DAQ supervisor

DAQ SUPERVISOR STATE UP

Shutdown Boot

Run control

RUN CONTROL STATE CONFIGURED

Unload Configure

Stop Start

Pause Continue

Checkpoint

Run Parameters

Run type Physics

Run number 1222

Event number 0

Event rate 0

Recording Enable

Run Start Time 04/09/04 13:08:06

Run Stop Time 04/09/04 13:08:35

Integrated active run time 00:00:29

RootController CONFIGURED

RODCrate1 CONFIGURED

ROD

Controls

Status

Errors, warnings

CONTROLLER: RootController

APPLICATION STATUS RUNNING

RUN CONTROL STATE CONFIGURED

BUSY STATUS FREE

FAULT STATUS OK

COMMAND PUBLISH

ERROR

SENDER RootController

Membership Error recovery

IN  OUT

clear error

reset controller

kill controller

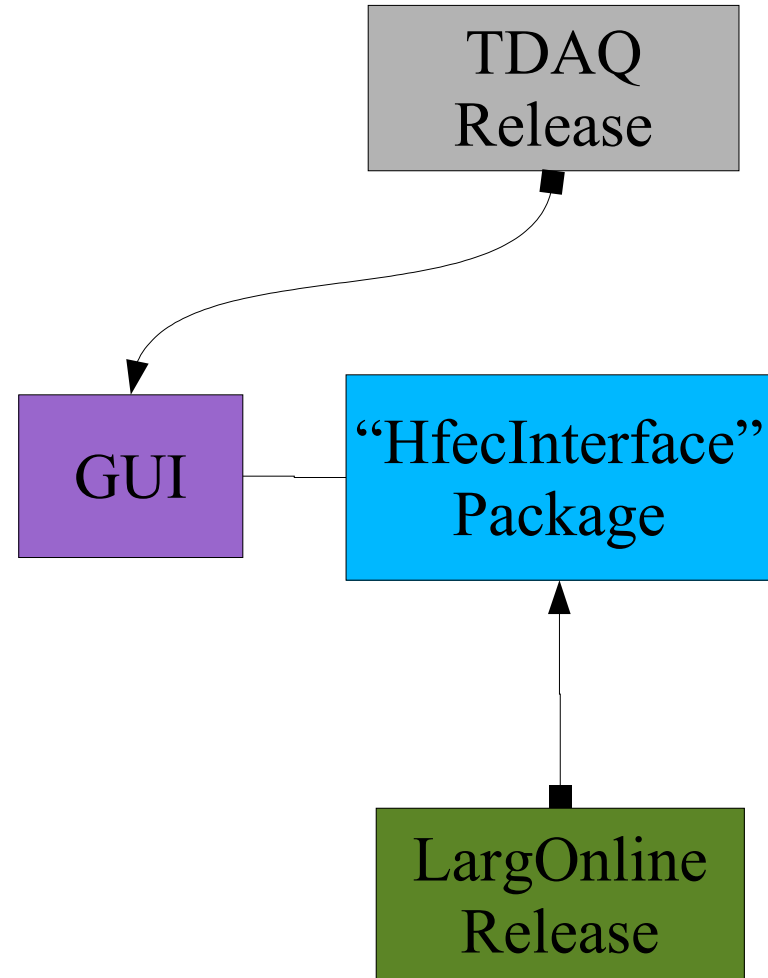
Status Informations Commands

12:32:59 INFORMATION INTERNAL Complete infrastructure is running. Connecting & starting IGUI.

12:32:58 INFORMATION INTERNAL Starting infrastructure please wait. IGUI will be started when complete infrastructure is running.

# Software and Setup

- TDAQ 00-21-02
  - gcc 3.3.2
  - linux-bit3-dbg build with CMT
  - linked from LArg-online interface package (HfecInterface)
- SPAC master, FEB and ROD classes based on LArgOnline release used in combined testbeam (as of June 04)
- Custom setup for controlling readout of up to 16 FEB's with 2 readout channels
  - Also continuous DCU readout inside GUI
  - Parallel-port control of power supply



# Parameters

- Can choose active slots, and set FEB serial numbers
- Can also choose which runs to take (low/high gain, shapers on/off) and other run parameters
- Set whether before or after HASS test
- Buttons for updating info once set, via the database and IS servers

The screenshot shows the ATLAS LARG Online Software Graphical User Interface - Expert Control. The interface is divided into several sections:

- DAQ supervisor:** Shows the DAQ SUPERVISOR STATE as 'UP' with buttons for Shutdown and Boot.
- Run control:** Shows the RUN CONTROL STATE as 'CONFIGURED' with buttons for Unload, Stop, Pause, Start, Continue, and Checkpoint.
- Run Parameters:** Shows Run type (Physics), Run number (1220), Event number (0), Event rate (0), Recording (Enable), Run Start Time, and Run Stop Time.
- CONFIG:** The central configuration panel includes:
  - FEC left and right:** Lists FEB numbers for slots 0-15.
  - Regulat.:** Options for 5VA and OTX.
  - Run sel.:** test status (after HASS), file output, and sh off/on (Low gain, Med. gain, High gain).
  - VME conf.:** SPAC master address (110000).

Red arrows point to 'Update dB', 'Update IS', and 'Update dB & IS' buttons. Blue arrows point to 'after HASS' and 'High gain' options.

# DCU Monitoring

- DCU values (voltages and temperatures) are read continuously during the test
- Monitored on a panel, and archived for later analysis
- The number of events taken during data taking is displayed through IS in the panel

The screenshot displays the 'Online Software Graphical User Interface - Expert Control' for the 'train\_01' partition. The interface is divided into several sections:

- DAQ supervisor:** Shows 'DAQ SUPERVISOR STATE' as 'RUNNING' (green button). Buttons for 'Shutdown' and 'Boot' are visible.
- Run control:** Shows 'RUN CONTROL STATE' as 'READY' (green button). Buttons for 'Unload', 'Stop', 'Pause', 'Configure', 'Start', and 'Continue' are visible.
- Run Parameters:** Shows 'Run type' as 'Physics', 'Run number' as 1221, 'Event number' as 0, 'Event rate' as 0, and 'Recording' as 'Enable'. Other fields include 'Run Start Time' (04/09/04 12:40:17), 'Run Stop Time', and 'Integrated active run time'.
- DCU Selection:** A list of DCU boards from DCU\_Board0\_0 to DCU\_Board9\_0. A dropdown menu is set to 'Temperature top PCB near G-link'. A red circle highlights the number '5' in the 'Monitor' tab, with an arrow pointing to it and the text 'Events taken'. A blue arrow points to the list of DCU boards with the text 'DCU Values'.

# Comments

- This is just a start
  - <2 month old project
- We are gaining experience with:
  - TDAQ online framework
  - CMT
  - MRS
  - IS
  - Java / Swing
- We hope to transfer our software and knowledge
  - Contribute to the LArg online monitoring effort