How to…

V.2 7.05.07 A.Vin.

run PHOS Module in B-167

For PHOS running one should make the steps:

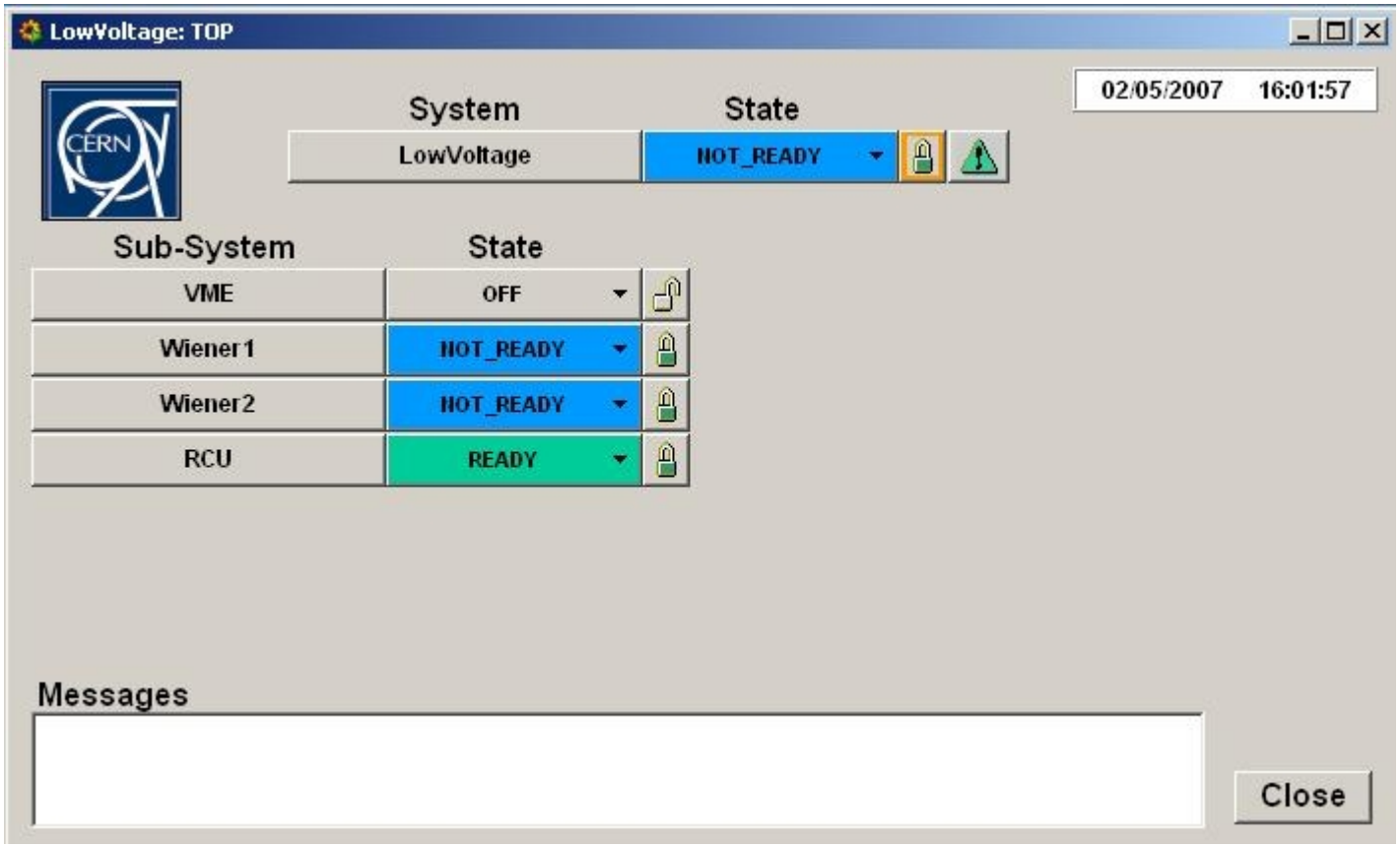
(1)- power up LV Wieners power supplies;
(2)- load APDGUI on DAQ PC and switch ON RCUs and FECs;
(3)- set RORC DDL connections;
(4)- set Readout Configuration area (Z,X) and Sample/Pre-Sample values;
(5)- load APD BIAS HV configuration set and apply it to according FEE/RCU/Module;
(6)- power up the ISEG HV power supply for all using RCU branches;
(7)- run DAQ;
(8)- run LED System, if need;
(9)- take PHOS data;
(10)- make data analysis and see histograms.

STEP BY STEP DESCRIPTION

(1) LV powering on PCVNIIEF-DCS PC (close to Wieners Power Supplies):

- open ‘LowVoltage:TOP’ window (see below);
- click to RCU ‘Not ready’ button, wait for RCU state will ‘Ready’(green);
- wait 1 min for RCUs will be loaded;
- click to LowVoltage ‘Not ready’ button, wait for all will ‘Ready’(green);

(more info see in A.Mamonov’s manual: How to control remotely Wiener Power supply devices)



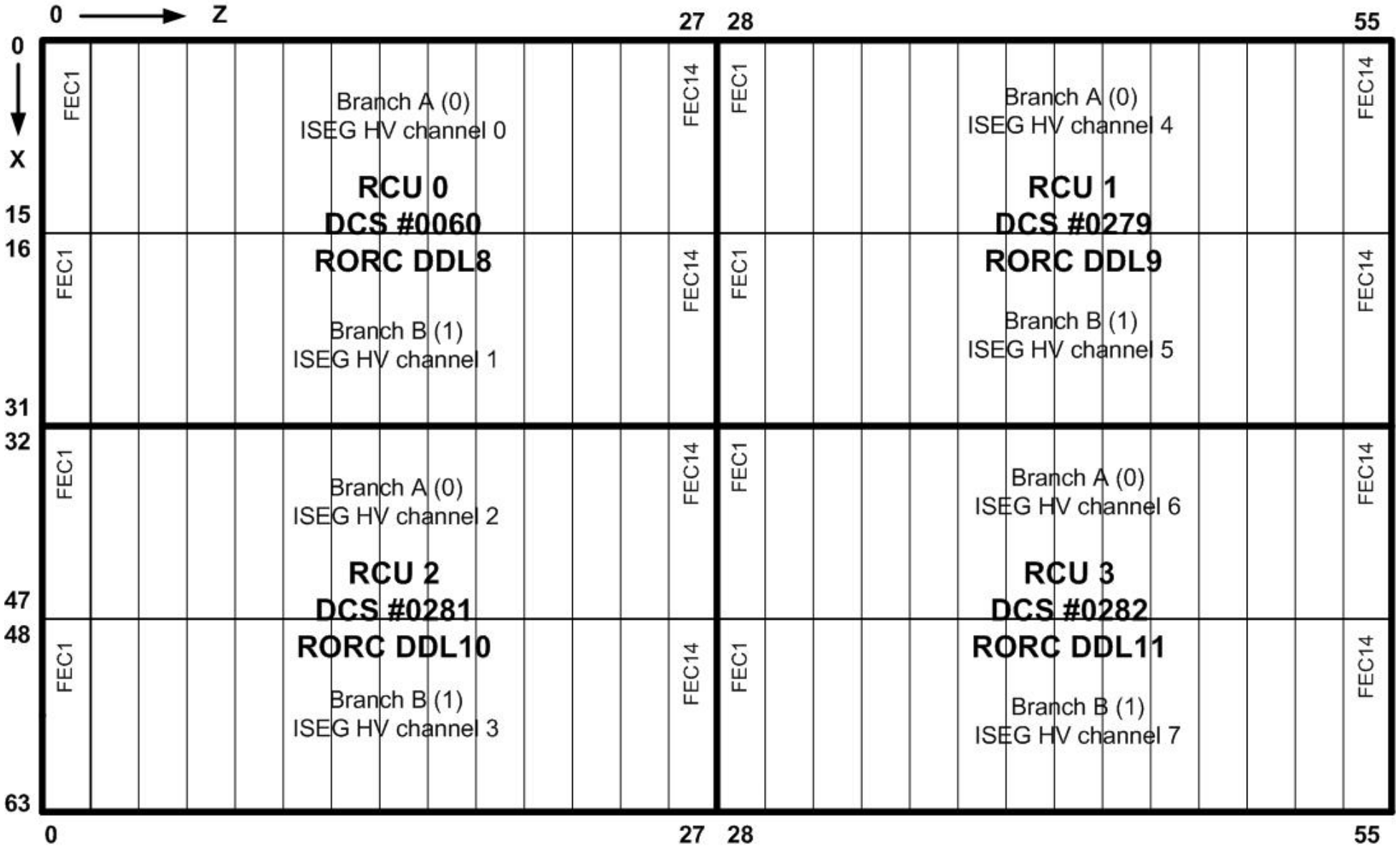
(2) Switching ON FECs alphspcdcs01 (B167-R-006):

- login to the PC as phos(password);
- cd to /home/phos/phos_dcs directory;
- run >apdgui (PHOS APD bias control window

appears);
- click to any of RCU button (alphsdcs****) for all FECs of the RCU status viewing;
- click to 'Turn ON Electronics' button, wait (all ON FEEs should become yellow for PCM v1.4 or green for PCM v2.02);

(3) Check/Set RORC DDL connection (data fibers):
- run /home/phos/editDB on alpdaqpc019 (DATE Configuration Database Editor window appears);
- click to Equipment;
- click to ACTIVE for according DDLs-8/9/10/11 (depend on which RCUs will work - see PHOS Module plan below);
- in case of any problems with DDL its can be reseted by commands(DIU+RORC and/or SIU):

>/date/rorc/Linux/rorc_reset -m 0 -c 0 -B
>/date/rorc/Linux/rorc_reset -m 0 -c 0 -S

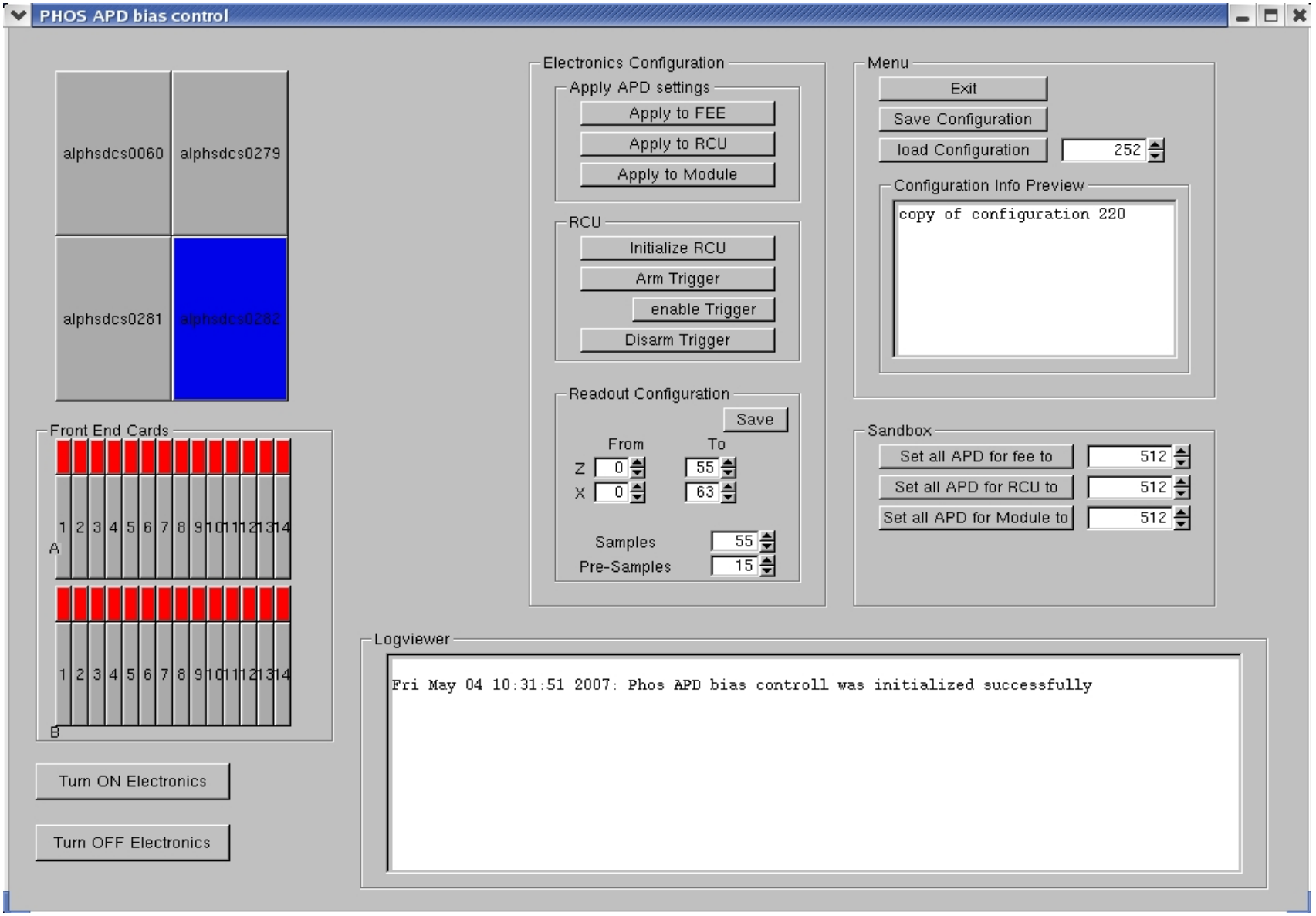

0
Z
27
28
55
0
X
15
16
31
32
47
48
63
FEC1
FEC14
Branch A (0)
ISEG HV channel 0
RCU 0
DCS #0060
RORC DDL8
Branch B (1)
ISEG HV channel 1
Branch A (0)
ISEG HV channel 4
RCU 1
DCS #0279
RORC DDL9
Branch B (1)
ISEG HV channel 5
Branch A (0)
ISEG HV channel 2
RCU 2
DCS #0281
RORC DDL10
Branch B (1)
ISEG HV channel 3
Branch A (0)
ISEG HV channel 6
RCU 3
DCS #0282
RORC DDL11
Branch B (1)
ISEG HV channel 7

(4) Set Readout Config and Sample/Pre-sample:
(more info see in Per Thomas Hille's manual 'Local Guide to the PHOS/EMCAL APD Bias Control (PABC) software')

- in APDGUI window (alphspcdcs01) set the coordinates of PHOS channels to be readout (Z=0:55, X=0:63);
- set Samples (55, for example) and Pre-Samples (15, for example);
- click Save button;

(5) Load APD BIAS HV config :

- in APDGUI window (alphspcdcs01) choose the load HV Configuration for APDs (220, for example, for room temperature);
- click to Apply button (for FEC, RCU of full Module (wait for finish).


PHOS APD bias control
alphsdcs0060
alphsdcs0279
alphsdcs0281
alphsdcs0282
Front End Cards
A
1 2 3 4 5 6 7 8 9 10 11 12 13 14
B
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Turn ON Electronics
Turn OFF Electronics
Electronics Configuration
Apply APD settings
Apply to FEE
Apply to RCU
Apply to Module
RCU
Initialize RCU
Arm Trigger
enable Trigger
Disarm Trigger
Readout Configuration
Save
From
To
Z 0 55
X 0 63
Samples 55
Pre-Samples 15
Menu
Exit
Save Configuration
load Configuration 252
Configuration Info Preview
copy of configuration 220
Sandbox
Set all APD for fee to 512
Set all APD for RCU to 512
Set all APD for Module to 512
Logviewer
Fri May 04 10:31:51 2007: Phos APD bias controll was initialized successfully

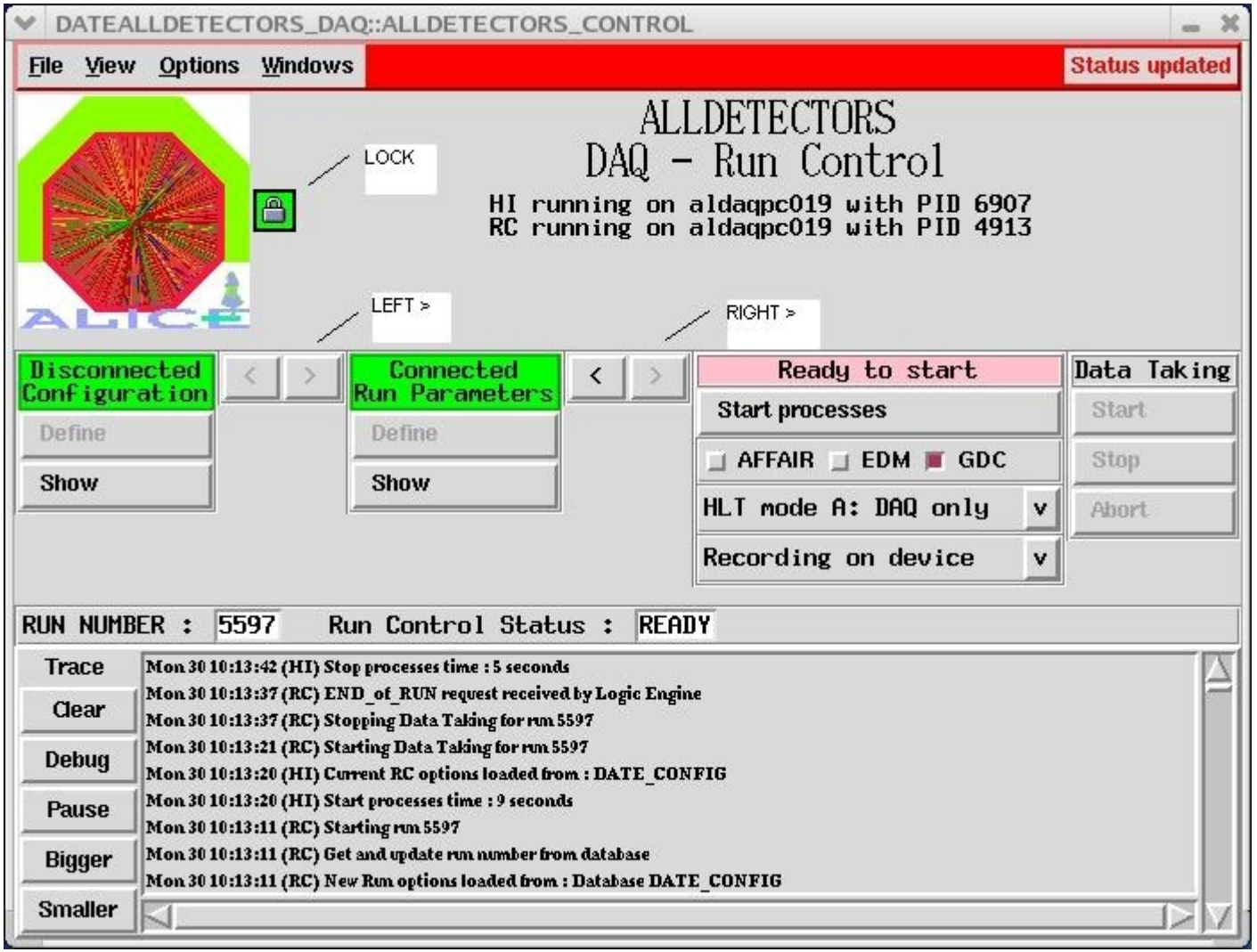
(6) HV Powering on PCVNIIEF-DCS PC:

- see in A.Mamonov's manual: How to control remotely ISEG power supply devices;

Note: order of HV channel see on PHOS plan.

(7) DAQ running on aldaqpc019 :

- in /home/phos directory type DAQCONTROL (DATEALLDETECTORS_DAQ window appears, see below);
- click to 'LOCK';
- click to 'LEFT >'(additional 2 windows appear);
- click to 'RIGHT >';
- click to GDC button (should be red);
- click to 'Recording on device', if need.


DATEALLDETECTORS_DAQ::ALLDETECTORS_CONTROL
File View Options Windows
Status updated
ALLDETECTORS
DAQ - Run Control
HI running on aldaqpc019 with PID 6907
RC running on aldaqpc019 with PID 4913
LOCK
LEFT >
RIGHT >
Disconnected Configuration
Define
Show
Connected Run Parameters
Define
Show
Ready to start
Start processes
AFFAIR EDM GDC
HLT mode A: DAQ only
Recording on device
Data Taking
Start
Stop
Abort
RUN NUMBER : 5597
Run Control Status : READY
Trace
Clear
Debug
Pause
Bigger
Smaller
Mon 30 10:13:42 (HI) Stop processes time : 5 seconds
Mon 30 10:13:37 (RC) END_of_RUN request received by Logic Engine
Mon 30 10:13:37 (RC) Stopping Data Taking for run 5597
Mon 30 10:13:21 (RC) Starting Data Taking for run 5597
Mon 30 10:13:20 (HI) Current RC options loaded from : DATE_CONFIG
Mon 30 10:13:20 (HI) Start processes time : 9 seconds
Mon 30 10:13:11 (RC) Starting run 5597
Mon 30 10:13:11 (RC) Get and update run number from database
Mon 30 10:13:11 (RC) New Run options loaded from : Database DATE_CONFIG

(8) LED System running (PC on shelf behind the PHOS Module):

- cd ~/led/2006_cern;
- cp led_max.conf led.conf;
- use MODE1 for all LEDs flashing:

>./daq
0 96 -1 -1
l (it is small letter L!)
1

(more info see M.Bogolyubsky manual 'README:HOW TO RUN THE PHOS LED-MONITOR').

(9) Data taking :

- on APDGUI window (alphspcdcs01)
1. Disarm Trigger (if it was not);
2. Arm Trigger;

- on DAQ window (aldaqpc019)


```
   -------------          3. Start processes;
   -------------          4. Start;
5. enable Trigger            -------------
   (wait);                (Number of events)
6. Disarm Trigger;           -------------
   -------------          7. Stop.
```

(10) Data analysis and monitoring:

(more info see in A.Kuryakin's 'CERN ALICE PHOS DAQ monitoring short manual')

- in aldaqpc019 /home/phos/phos_mp
  run root (or rootn.exe -1);
- make analysis last DAQ run number
  root[] .x mprun.C(RUN);
- see histograms by:
  root[] .x mpsee.C(RUN,"hPedXZ21")
  (2D Pedestals);

or root[] .x mpsee.C(RUN,"hAmpXZ21")

(2D LED Amplitudes);

or root[] .x mpsee.C(RUN,"hSamples012345")
(ALTRO samples for 18-th event by default, where
0 = PHOS Module ('2' at the moment);
1 = gain (0 = LG, 1 = HG);
23 = X (row number);
45 = Z (column number))

or root[] .x seeHistoByFee.C(RUN,"hAmp",Gain,Branch,FEC,Module,RCU)
(32 histograms for all channels of the FEE);

or root[] .x seeHistoOneChannelByFee.C(RUN,"hAmp",Gain,Branch,Channel,Module,RCU)
(14 histograms for one channel of each FEE of the RCU).

Note: If one need to see other event (not default 18-th), use
root[] .x mprun.C(RUN,event) command for analysis step.