**BRIKEN Commissioning November 2016**
**Running Gasific-7.0 acquisition program**
(07/11/2016)


**Computer: IFICdaq.riken.jp (IP: 10.32.6.166)**
**User: dacq**
**Pasword: BRIKEN2016**
**Working directory: /data/1611Commissioning/161107Parasitic/**
**Configuration file: 161107Conf_BrikenFull.xlsx**


## 1) Start Gasific-7.0

- Make sure that you are on **Desktop 1**
- You should see four terminals labeled *AcqRead, GUI, RootDisplay,* and *ConfClock.* <mark>NEVER KILL THESE TERMINALS.</mark>
- Check that you are in the right working directory on the 4 terminals
- In the *ConfClock* window type **ConfClock_external** and press enter to start the common clock for synchronization with AIDA and BigRIPS. The window becomes <mark>GREEN</mark>. Unless the VME crates are reset there is no need to repeat the command even if you stop Gasific-7.0. If the *ConfClock* terminal is yellow you will not be able to synchronize.
- Type in the corresponding terminal the commands **AcqRead, GUI_DAQ,** and **RootDisplay,** and press enter in order to launch the Gasific-7.0 processes. The **MainWindow** panel and the **ROOT canvas** will open.
- To stop Gasific-7.0 processes: ctrl+C in all of the three terminals *AcqRead, GUI,* and *RootDisplay.* If the data acquisition stacks or you don't have control on the *GUI* or *ROOT display* you will need to do that.

## 2) Load the proper configuration file

In the **MainWindow** panel:
- Click on **Config Module** tab
- Click on **Load Config** button
- A menu with possible configuration files will appear. Select the right configuration file (**\*.xlsx**), and click the **Open** button
- Wait until the file is read (monitor the progress in the *GUI* terminal) and click the **Send to Hard** button. **Be patient** it takes about 1 minute to load all parameters in the digitizers (monitor the progress in the *AcqRead* terminal, wait until the line "List of controllers defined" followed by 4 additional lines appear)

## 3) Start the synchronization with AIDA/BigRIPS
Needed in principle only once. Needed if any of the three DACQs crashes (start at point 1). Not needed for running standalone.

In the **DAQ Control** tab:
- Click **Start DAQ**
- Click the **Start BRIKEN Sync** button. Enter in **Server host** the address **10.32.0.12** and click **OK**

- Click **Send Sync pulse** to reset all timestamps to 0.
- Click **Stop DAQ**

## 4) Start/stop acquisition

In the **DAQ Control** tab
- You may want to click the **Reset** button to clear the *DAQ Statistics* counters

**Without list-mode data:**
**Start:**
- Click on **Start Online** button
- Click on **Start DAQ** button
At this point you should see that the *DAQ Statistics* counters are being updated.
**Stop:**
- Click on **Stop DAQ** button
- Click on **Stop Online** button

**With list-mode data:**
**Start:**
- Click on the **Start File** button. You are prompted for a **File name**. Use the format **YYMMDD_HHMM_\*** (the extension **.dlt** will be added by the system). ==DO NOT ENTER A RUN NUMBER==. The *Run number* is automatically incremented by the system. Instead check that the *Run number* has been effectively incremented respect to the last written file (if this is not the case then provide a run number higher than the last one). Click the **OK** button.
- Click on the **Start Online** button
- Click on the **Start DAQ** button
**Stop:**
- Click on the **Stop File** button in order to close the current **dlt** file
- Click on **Stop DAQ** button
- Click on **Stop Online** button

## 4) Visualize online spectra

In the **Online** tab:
- Click on **Raw, Calibrated, Correlated,** or **Groups** sub-tabs to see the list of corresponding types of spectra to display
- **Click on the name** of the spectra that you want to visualize. It will be displayed in the *RootDisplay* window (*Canvas*)
- On the *Canvas* you can select **Auto Update**, **Log Scale** or **Overlay**. You can also use the usual interactive ROOT commands (zoom, change line color, fit, …).

## 5) Save and clear online spectra

In the **Online** tab:
- Click on the **General** sub-tab
- Click on **Save online histograms** to save all online spectra into a root file. You are prompted for a file name. Enter it using the format **YYMMDD_HHMM_\*.root** and click **Save.** ==DO==

Please **verify** that the file has been effectively written on disk.

- Click on **Clear online histograms** to delete all online spectra. You are asked to confirm the operation. THINK BEFORE YOU ERASE THE HISTOGRAMS.

**Troubleshooting: Call an expert!** (Jorge, Alvaro, Jose)

## LIST OF HISTOGRAMS:

**Raw:** V1A1C1, …, V1A7C16, V2A1C1, …, V2A7C8

**Groups:** GV1A1, …, GV1A7, GV2A1, …, GV2A7

**Calibrated:**
He001, …, He140, D4Black, D4Red, D4Green, D4Blue,G7Black, G7Red, G7Green, G7Blue, F11_PL_R, F11_PL_L, Si_T, Si_B, V_PL_T, V_PL_B, AIDA_PL, V_NaI_T, V_NaI_B, V_NaI_R, V_NaI_L, Pulser

**Correlated:**
BRIKEN, Ring1, …, Ring7, D4, G7, Clovers
RateBRIKEN, RateR1, …, RateR7, RateD4, RateG7, RateG7Black, RateG7Green, RateClovers
RateF11R, RateVPLT, RateVPLB, RateAIDAPL, RateSiT, RateSiB
Corr_Br_BR, Corr_R1_R2, Corr_BR_D4, Corr_BR_G7, Corr_BR_Clovers, Corr_D4_G7,
CorrG7BlackGreen, Corr_BR_F11R, Corr_BR_VPLT, Corr_BR_VPLB, Corr_BR_AIDAPL,
Corr_BR_SiT, Corr_BR_SiB, Corr_F11R_Clovers, Corr_F11R_VPLT, Corr_F11_VPLB

# RUN PROTOCOL:

1) Start a new measurement:
   a. **Start File** (enter dlt filename: **YYMMDD_HHMM_\***)
   b. **Start Online**
   c. **Start DAQ**
   d. Reset DAQ statics counters
2) Check that the DAQ statistics counters are counting. Check that the BRIKEN spectrum is incrementing. Check that the new *.dlt file has been opened and is incrementing.
3) Make the corresponding entry in the ELOG: Start time, BRIKEN DLT filename, BRIKEN run number, AIDA filename, AIDA run number, Run info (Beam, BigRIPS setting, …)
4) Fill the run-sheet
5) Check the important histograms: BRIKEN, Clovers, F11_PL_R, Si_T, V_PL_T, AIDA_PL, .... Check the Rate* histograms. Check the Corr* histograms.
6) Stop the measurement:
   a. **Stop File**
   b. **Stop Online**
   c. **Stop DAQ**
   d. **Save online histograms** (enter ROOT filename: **YYMMDD_HHMM_\*.root**)
7) Check that the *.root file has been written.
8) Fill the information in the ELOG (Stop time, BRIKEN run number, AIDA run number, Rates, additional info)
9) Complete the run-sheet info
10) **Clear online histograms**