Online V2

Contents

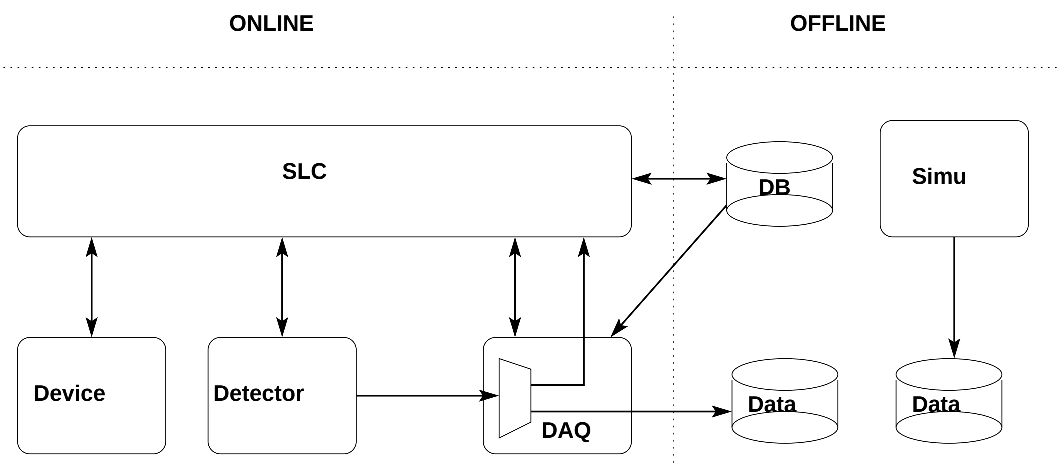
1 Introduction

Spécifications :

- GASOLine.odp
- Spécifications GASOLine.pdf
- IEEE_NARVAL.pdf

Divide and conquer: use the modular conception historically introduce by electronics.

- Physical detector
- Electronic DAQ
- Online server
- Slow control software
- DAQ software
- Database (included or not into the SLC module)



2 Electronic DAQ

- The electronic DAQ is the layer to interact with the detector composed by ASU cards.
- The electronic DAQ is composed by DIF, potentials DCC, LDA and CCC cards.
- The electronic DAQ is driven by a unique CCC card managing the global state machine.
- The electronic DAQ is accessible via an undefined number of LDA cards (about 3).
- The electronic LDA cards cannot be access by two different machine at a time.
- The electronic LDA cards offer only one ethernet physical port to software.
- The electronic LDA's software ports cannot be slitted into data and control IP ports by a switch.

3 Online server

The goal of this new version is to allows 2 programs (data acquisition and slow control) to run in the same time.

- The online server act as an IP switch providing both slow control and data acquisition output cables.
  Note: the reason to upgrade from a library to a server is to divide by 2 the memory and cpu resources of the PC that drives the LDA.
- The server will embed at less 2 thread, one for data acquisition and one for slow control.
- The server will duplicate internally all the electronic DAQ cards registers.
- The slow control API will evolve up to SOAP API.
- The data acquisition API will allows TCP pushing (one more thread) or shared memory buffer Pooling.
- The Online server will not anymore connect to the database to read the elctronic DAQ configuration, this information will be given by the slow control software or else by a local XML file.

Todo:

- Logger
- Pcap injector (to test using tcpdump)
- Callback-function that listeen (to test with the injector)
- SLC Thread drive by socket (to test with telnet)
- SLC queries for internal Tree configuration (to test with telnet)
- SLC query for detector configuration
- DAQ output

3.1 Syslog and Syslogd

Syslogd server

```
# apt-get install sysklogd
```

file */etc/sysklogd.conf* or */etc/default/syslogd*

```
SYSLOGD="-r -m0"
```

file */etc/syslog.conf* or */etc/rsyslog.conf.d/50-default.conf*

```
local4.debug        /var/log/GASOline.log
```

```
# /etc/init.d/sysklogd restart
```

Syslog client file */etc/syslog.conf* or */etc/rsyslog.conf.d/50-default.conf*

```
local4.debug        /var/log/gasoline.log
local4.debug        @polntnr
```

```
# /etc/init.d/rsyslog restart
or
# /etc/init.d/syslog restart

$ cd gazoline/log
$  ./utlog -f local4 -s debug
```

4 Slow control software

- By using dedicated ethernet cables for the slow control, we can imagine a unique slow control GUI running on another host and managing all the Elecronic DAQ.
- The main advantage of a dedicated SLC soft among XDAQ is a friendly approach to the database (a GUI).
- Indeed, the slow control program will evolve around a python tree-view imported from and exportable to the DB.
- The slow control program should also drive the DAQ software, we guess using SOAP too.

5 DAQ software

- The DAQ software is mainly an event builder that serialise all the events from electronic DAQ into a physical output format.
- The DAQ's output must be both store on hard-disc and send to a real-time monitoring software.
- We are wandering if or if not the DAQ software should have access or not to the database.
- We must define a policy for lost packets that will not penalise the electronic DAQ neither the software DAQ.

6 Data base

- Need to enter the ECAL detector parameters into the oracle DB.
- Is the DB for configuration and for run acquisition storage the same ?