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General description of DAQ systems

Currently three PCs are responsible for data taking in 167 area: tofbaby and tofback in assembly area and pctoflab1 (for cosmics data taking).

Both the PCs have programs to access VME and other software (like MOOD) from a common and shared repository, hosted by NFS server "pctofdaq2".

To work properly this PC must be booted and operated with network connection on.

After boot of this PC check network setup is ok with the following command:

```
[pctofsm] /etc > df \ grep SOFT
```

```
pctofdaq2:/home/tof 37214592 111904 35212256 1% /SOFT
```

**DAQ Instructions to operate the TOF Cosmic Run**

First Version 1.0 / PA / July 2006

**Access to PC**

The PC taking care of DAQ and monitoring of cosmic run is pctoflab1. It is located in front of the rack housing the Alice Tof Crate (aka AliceBox).

User: tofcosm pwd: ask someone to know it

**Setup description**

We have currently 9 TRMs (TDC Readout Module) inserted in slots from 4 to 12, providing readout for 90 FEAs.

- Slot 1 is a CAEN V2718 card, a VME controller with optical link, connected to pctoflab1.
- Slot 2 is the LTM, responsible to set thresholds to FEAs
- Slot 3 is the CPDM, responsible to distribute clock to TRMs
- Slot 4-12 TRMs

The trigger is obtained from the Russian system of scintillators and passed from the NIM crate to the input of card in slot 1.

The system operates DATE as DAQ system and a DIM server can be operated to publish relevant slow control data (mainly temperatures).

**Run Control**

On the first screen of the console of pctoflab1 the DATE control windows should always be opened. To start DATE use the command:

```
[pctoflab1] daqControl
```

Once DATE is started, lock the console (click on the padlock icon). Then go through the various start phase. Before to enter the "Start processes" command be sure that: - the crate and all digital channels are on (see previous instructions) - the HV are on - the analog channels (powering FEAs) are on - triggers are coming
from the russian system (check a red light is flashing on test board in slot 4)

After clicking the "Start processes" button check initialisation phase. All TRM cards' led should be on (green) and you don't have error messages inside DATE console. If this phase fails check the error message inside the console and report this info to Pietro.

Then click the "Start" button. Once you started the run checks, events are coming. All TRM cards' leds should flash simultaneously and events should start to accumulate on the DATE counters window.

**DAQ Configuration information**

The map of TDC active channels inside TRMs is maintained in the file:  
/home/tofcosm/cosmics/configurationFiles/channel.setup with self-evident syntax inside.

The list of active TRMs is maintained in the file: /home/tofcosm/cosmics/configurationFiles/equipment.config

DO NOT MODIFY THE FIRST PART OF THIS FILE (whitin EQTYPES section) and look at LDCS description. All TRMs cards are listed. Here is an example of the current setup for TRM card # 5:

```
+ Trm\ 5 0x50000000 200 500 1000 0x50000000 0 2 0\n```

To include/exclude a TRM change + to -. In the example above TRM 4 is included, For each TRM you have to specify 7 parameters.

- the slot ID where it is inserted [DO NOT CHANGE]
- the optical link where to address the VME [DO NOT CHANGE]
- the VME address [DO NOT CHANGE] - the matching window length (in nanoseconds)
- the latency window length (in nanoseconds) - a polling VME address [DO NOT CHANGE]
- trigger subtraction flag (normally should be 1)
- edge detection (1=trailing only, 2=leading only, 3=both leading and trailing edge)
- a packing flag (0= hit packing disabled, 1=hit packing enabled)

**DAQ Instructions to operate the TOF Super Module Test Facility**

**Version 1.0 6/July/2007 PA**

**Access to PCs**

The PC taking care of testing Super Module electronics are tofbaby and tofback. They are located currently in the assembly area.

User: tof pwd: ask someone to know it

**Setup description**

Both the PCs have two optical PCI boards. The optical fiber is then connected to the VME controller card inside the crate (both V2718 or DRM). From this PC is thus possible to access all VME modules inside one crate. The purpose of thes PCs is to host a set of programs utility to check all the electronics chain within each crate.

*Pay attention to the optical fibre while working on the supermodule!*
The utilities currently installed are described in the SuperModule installation section of this Wiki.

-- Main.antoniol - 03 Jul 2007