

## DAQ meeting of AGATA@GSI

June 8<sup>th</sup>, 2011

**Presents:** Y. Aubert, X. Grave, A. Korichi, E. Merchan, H. Schaffner, N. Kurz, S. Pietri and O. Stezowski

**Secretary:** A. Korichi and S. Pietri

**Apologies for absence:** N. Dosme, J. Grebosz, E. Legay, Ch. Theisen

First of all, the network was very unstable at GSI and many of you tried to attend the meeting with no success : deepest apologies for that.

The meeting had two topics/parts, the software side of the AGATA DAQ integration at GSI and the hardware/infrastructure side. The defined agenda is as follow :

### **Software (including data flow merge in, libraries etc...):**

The basic option for the implementation of NARVAL/MBS data flow coupling is the one agreed in previous meetings (see mbs note9-Dec 2010 form Nik- attached file).

Stephane reported on the DAQ discussion between Nik, Henning, Andres Gadea and himself 3 weeks ago : the idea was to have a GTS tree at GSI with some experts to help and train the local people for the integration things in Narval and frame/unframed data from MBS in Narval. Daniele Mengoni was proposed to be coming in June while the GTS could have been set in July.

**Action on Andres Gadea :** to clear up this

Narval is installed at GSI on a 32 bit Debian machine, the new version has to be installed and recompiled. We agreed that Xavier will do it in the coming weeks. The main idea is to have a show of principle of the data flow merging leaving all options open.

MBS data → Narval Receiver → Filter → Merger → .... → AGATA data logging  
→ Sender → MBS receiver

The data from MBS will be sent to a Narval receiver which should unpack just the AGAVA time stamp/event number and put it in an ADF frame. This is then send to a filter before being sent to the merger.

Additional informations that GSI people did not have were given :

1. there should be the possibility to send from MBS 2 different sets of data and in this case we can have 2 MBS system running : one for the FRS/PRESPEC and the other one for Miniball for example.
2. in the filter one can perform any amount of analysis needed on the MBS data, with calibration/channel mapping etc and produce an other ADF frame. Parameters (mapping calibration) can easily be passed to the filter through Narval parameters.

3. the actor filter can load libraries like analysis libraries and dependencies such as root libs etc... One needs to investigate if all the PRESPEC/FRS analysis can be performed in it or if only the velocity/position is needed.

For the tracking of AGATA, because of the size of the beam at GSI, the position of the source is required. For a non 1H2 target experiment it very simple to get the position of the interaction at the target (DSSD position).

4. any library loaded in an actor can be used in watchers so that we avoid work duplication.

5. libraries loaded in actors should be present on Narval nodes

**Action on Edana :** to investigate on what is needed in the libraries of analysis.

6. when data is send back to the MBS having two senders option, one sending only the AGATA data and one sending AGATA and MBS data is needed, the second one for debugging purpose only

Following a long discussion on the implementation of the filter it turns out that someone from AGATA with someone from GSI should work together for this task. Olivier Stezowski volunteered and a local physicist has to be defined by GSI.

Stephane Pietri remind us that he volunteered himself 3 years ago

Indeed this touches two complex points : the online analysis of the FRS-LYCCA during the experiment and the implementation in the Narval node.

Stephane Pietri suggest that a meeting between local physicist should happen.

Also it was suggested and agreed that the first step will be performed remotely in the coming weeks between Nik and Xavier.

Stephane suggests that local members of the group should be included as Nik is also busy with other duties.

**Action on GSI :** define the local physicist for the definition and implementation of the filter

### ***Hardware/infrastructure (crates, room, cooling, network access....):***

The DAQ will be installed on the roof and this is a good news since every thing will be packed together.

The control room will be situated down in S4 (messhute or main control room) in which 5 PC from the DAQ box will be installed (3 PC's for VISU1,2,3 and 2 for the data analysis)

It was agreed that the GSI will provide the necessary infrastructure such as the containers, racks and cooling system.

**Action on H. Schaffner :** Start of order in september for the necessary infrastructure

While in France we start the order of the servers and network systems

For the material, 25 pizzas boxes, switches and 1 KVM are mandatory in 2011 to start the installation as defined.

Concerning the gateway, this issue will be discussed later with the local responsible. The IP's class issue has also to be discussed with the host lab. For the LNL phase, this was given by Legnaro

The DAQ box connects to the rest of the world through a gateway machine

**Action on Y.Aubert** with the Orsay group and IT people from GSI  
Stephane Pietri will send the address of the contact persons

Concerning the data storage and data analysis, 4 Machines are needed with access to the disks. One of these is entirely handled by the SRN group at Legnaro.

3 PC's in the DAQ box having access to the disk and one with a leg in the DAQ box and one outside to be able to connect to the grid.

In all cases, a GPFS interface is needed (IBM proprietary protocol of distributed file system). An open source option could be available for AGATA@GSI.

**Action on Stephane Pietri : investigate the GRID possibilities for GSI.**

In summary, by September start to order and install the infrastructure together with a part of the machines in order to be ready by December. The idea is to have a running system by January to test detectors along the installation. For this the optical cables from digitizer to ATCA have to be ready by then

**Additional notes and general actions :**

Since the electronics will be installed in a separate place than the control room one would need to install a webcam to the control and monitoring of the pre-processing leds.

The VISU have to be installed in the main control room (messhute)

ATCA and DAQ can be in the same containers but we need to check the compatibility with the cooling system

We need to produce a document for the specifications of the DAQ installation (as done for Legnaro – Action on Yann)

The necessary material for the installation will be purchased in France from IN2P3 funds (this includes the pizzas boxes, switches, KVM)

4 machines have access to the disk. Three are in the DAQ box, one has a leg in the DAQ and one in the WAN (Wide Area Network) network. The fourth machine in Legnaro serves to the GRID access and we have to provide similar infrastructure at GSI.

Connexion between the GRID and DAQ box via GPFS