Minutes

Present : N. Usher, B. Lynch, F. Druillole, R. Raabe, E. Pollacco, B. Raine, G. Wittwer, R. Lemmon, P. Coleman-Smith, T. Murakami, J. Pibernat, JL Pedroza.

Preamble: Some problem with the connection parameters and access codes, they were changed between publication on the Wiki and date of meeting…hope this is the first and last time.

Agenda:
- Caen GET workshop debriefing.
  - Global & funding
  - Physics
  - Technical
  - Reviewers opinions
- Organisation
  - First proposed schedule for 2009-begining of 2010.
  - Improving communication

I. Caen GET workshop debriefing
Very good meeting and picture on GET but some points need clarification.
1) Global
To clarify or add on the workpackage
- Pulser : presentation to synthetize
- 12 or 14 bits for ADC ?
- Transfer rate from hit channels to CoBo
- AGET for 2p radioactivity type, usage of the ring buffer: size, consequences on the number of channel by chip.
- BEM and absolute time stamp: could be used or no on BEM? See meeting at GSI and look how to introduce the better at GANIL, that is including or no an external system or using the GET internal system (price, complexity etc.)
- InBo is now a pure software subsystem which needs to develop a point to point communication protocol. The switcher solution is a new task (a task group must be defined).
- Some task must be redefined with a redistribution :
  - CoBo (retasking)
  - Software (retasking)
  - Separate subsystems from slow control for "vital" monitoring (environment control, temperature, supplies..)
- 5 news task appear :
  - Gaz amplification

> ➢ Electro mechanics
> ➢ Calibration
> ➢ Monitoring
> ➢ Switch system

Need to ad people to manage these 5 tasks

2) Funding: ANR request seems to be on the good trajectory

Relations with institutions:
MSU and RIKEN must have the MoU to continue. The MoU required an annex which describes the different hardware, Software, Test, quality, documentation. Need to discuss again with RIKEN for possible contribution.

3) Physics
In others words, what appends near the detectors:
- Electromagnetic fields: we know the value and consequences for the frontend
- High voltage: no information at this time, needs an external protection? ZAP…

4) Technical

AGET: readout of the hit channel address
The readout of hit channels uses the slow control lines and this solution is limited in frequency. P. Baron suggests a faster solution (must be validated, look at the wiki)

Documentation: all documents must have the same standard, approved by all laboratories. A template is proposed in the wiki (F.druillole)

Questions on the data flow and the dead time: minimize the number of channel per ASIC? Increase the compression and reduction of the data? how? P. Coleman-Smith suggests a document written by Simon Letts.
Connections and communication between CoBo and PC farm: The data rate provided is too low, a discussion should be continued between hardware and software designers, especially:
- 1 or 2 ethernet links from CoBo to the PC farm
- DSP implementation on CoBo

N. Usher will propose a list of items from CoBo to discuss between designers.
Master MUTANT and some slave MUTANT (G. Wittwer): this solution is more compact and easy to implement, but requires a large number of communication channels and cables.

Sofware:B. Raine and S. Anvar should discuss to improve the distribution of software tasks.

5) Reviewers opinions (P. Coleman-Smith)
The system as presented is very complex and a lot of thought has gone into the generation of the drafts. Some thought concerning the system test and calibration including the trigger setup would be useful.
The System document from Saclay doesn't match up with the CoBo and MuTanT when discussing the trigger mechanism, communications and the system calibration. I expect this will be addressed in the full versions of the documents. There is a lack of clarity about the event rates needed in the different experiments and the effect these have on the rate the equipment operates. The system document discusses the trigger methods and needs some clarification. A graphical representation of the interplay

between the % of active ASIC channels, the clustering of channels within an ASIC, the readout of specific channels and the compression needed to move the data off the CoBo would be a help. Regarding the CoBo requiring two Ethernet ports and hence two processors. If the use of these two communications routes is considered isn't it the case that slow control to alter the setup generally means that data from the experiment is not really important. So this would usefully be shared Transfer of data between two FPGAs within the board increases the complexity. Two Ethernet ports also doubles the number of network switches required.

II Organisation

1) First proposed schedule for 2009-begining of 2010. (F. Druillole)
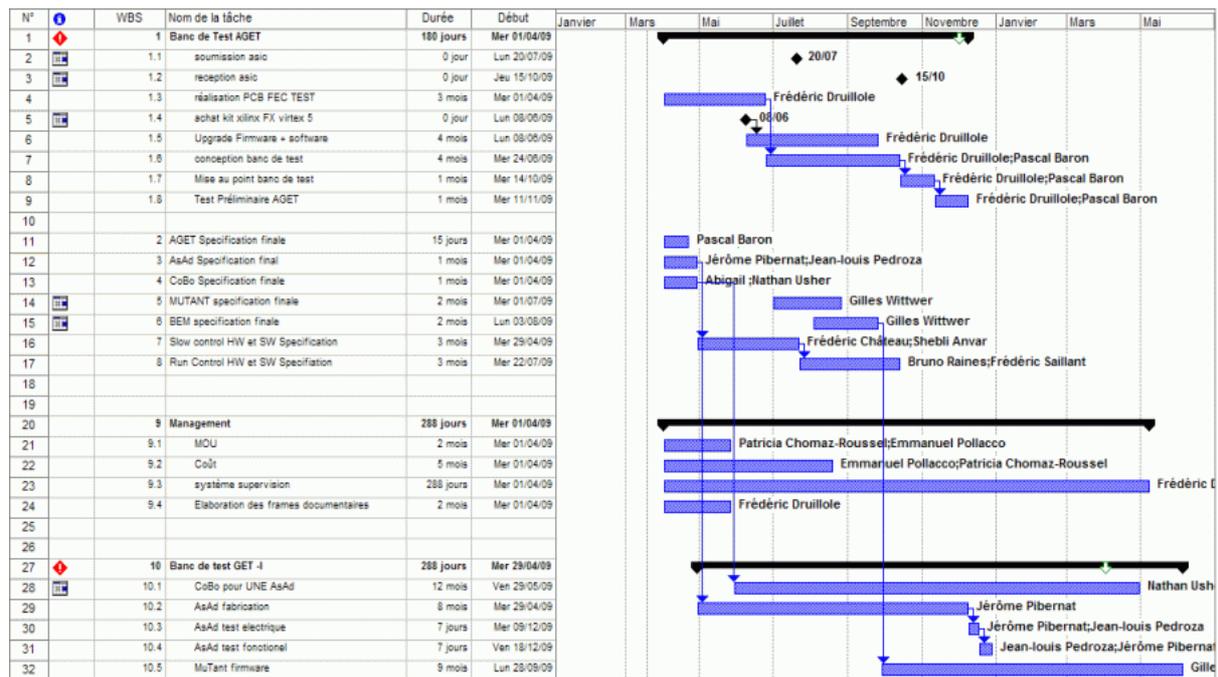
GANIL must ask for CDD as soon as possible and must organize meetings with Saclay for the software tasks.

2) Improving communication (E. Pollacco)

It seems now necessary that the participants in the different tasks take the initiative to start working together through the phone & e-mail. They also should have mini-telephone conferences. Once the issues are settled then the VC conferences should include larger audience. It would be more efficient & direct.
2 Contact Working Groups can be considered:
- CoBo AsAd interface & communication (MSU, CEA, GANIL)
- Acquisition CoBo and SWIM (SWIM is SWItch Module)

Moreover, Riken will clarify its participation soon.