



AGATA AMB Phone conference 9<sup>th</sup> of June

**Sujet : AGATA AMB June 2023**

**Present:**

**ASC Report / ASC Matters**

Nothing to say

**ACC Report / ACC Matters**

EPJA in a very good shape

All contributions submitted

4 are on-line

Some in PROOF <https://epja.epj.org/component/toc/?task=topic&id=1878>

**ACTION → Add in the next AGATA week web Page the ACC announcement**

**ACC focus LNL campaign and open for the last years of GANIL.**

**Prepac – we have to call for a zoom meeting in ACC for 2026-2027 – possible extension.**

**LNL Status (J.J. Valiente-Dobon)**

- General humidity problem.
  - 2 digitizers failed.
  - Critical situation.
  - Continual data taking
  - 17<sup>th</sup> experiment on-going with the Fe66 data
  - Thorium target in the previous data taking; source ACC problem
  - Zn experiment failed also because of ACC problem
  - Two exp back in backlog
  - 15 proposals for TANDEM
  - 1 month of backlog
  - 33 detectors taking data.
  - End of the data taking 30<sup>th</sup> of June.
- Huge issue with condensation in the digitizer cards. Two have died.
- Currently doing the 17<sup>th</sup> experiment, last tow ones could not be performed due to accelerator issues [Nuclear structure in the vicinity of the Z=28 neutron rich isotopes with AGATA and PRISMA (R.M.PerezVidal/S.Bottoni/E.Sahin/A.Illana ) and Search for octupole structures in the light U Th and Pa isotopes via Multinucleon transfer reactions (A. Goasduff G. De Angelis)]
- To be discusses the maintenance AGATA list.

## **GSI Status (K. Wimmer)**

No report

## **REPORTS FROM THE WORKING GROUPS**

### **Detector Module (H. Hess)**

#### **Activities on Detector Capsules**

**A012:** FAT after repair (HV-problems) by IPHC Strasbourg & Saclay  
Delivered to Cologne on 25<sup>th</sup> May

**A501:** FAT by IPHC Strasbourg & Saclay  
Delivered to Cologne on 25<sup>th</sup> May

**A015:** tested in Saclay due to HV-sparks, diagnose could not be reproduced, will be transported  
to Cologne in week 25

**C002:** tested in Saclay due to HV-sparks, diagnose could not be reproduced, will be transported  
To Cologne in week 25

**C004:** will be transported to Saclay in week 25 for tests due to HV-problems

**C008:** will be transported to Saclay in week 25 for tests due to HV-problems

**A005:** mounted in the Salamanca test cryostat by IPHC for scanning, after the second cooling  
cycle leakage current over two segments

**B013:** will be delivered in week 24 to IPHC and the mounted in the IPHC test cryostat for  
scanning in Salamanca

**S001:** will be transported to Cologne after (temperature depending) scanning at IPHC

### **Cluster Assembly and Maintenance**

#### **Cologne:**

**ATC02:** assembly finished by CTT, will be delivered to Italy week 29

**ATC21:** assembly finished by CTT, will be delivered to Italy week 29

DEGAS TC: started with assemble of A501, B501 & C501

ATC22 (serial number 10092, owner INFN): hardware and electronics delivered to Cologne on the 30<sup>th</sup> May

ATC23 (serial number 10092, owner INFN): hardware and electronics delivered to Cologne on the 30<sup>th</sup> May

### **Legnaro:**

13 ATCs mounted in the frame

ATC06: Core det A jumping

ATC14: Core det C jumping

2 ATCs in the lab

ATC05: bad resolution on all signals, no oscillations, debugging ongoing

ATC13: oscillations induced by PT100, debugging ongoing

### **Infrastructure (B. Million)**

- LVPS change 48 V profibus module
- Modifications to the control LN2 program □ e.g. button confirmation ...
- PT100 of the valves
- Maintenance of the non-return valves
- Vacuum in the LN2 line
- Warming cloth in the external valve
- Installation of an extra conditioner
- Ground of the VAX hall to be removed and strengthen
- Two cables of LV to be checked.
- Installation of new LV? → > December
- To install mechanics ring with thermal insulation for I/O LN2 pipes close to the detectors
- Replace the PEEK pieces between the bayonet and the dewar on ATC (to be manufactured with new PEEK rod or modify the existing ones)

## Front End Electronics (A. Gadea)

Coordination: last Electronics W.G. VC on June 2<sup>nd</sup> 2023, next Electronics W.G. VC meeting on Friday July 7<sup>th</sup> 2023 at 10:00 CET, 9:00 U.K.

Status at LNL:

2 DIGIOPT12 Digitizers to be repaired

1 DIGIOPT12 Digitizers repaired and ready to be re-installed

DIGIOPT12 (A.Pullia, S.Capra):

Tendering for the batch of 42 Segment DigiOpt12 boards for IPHC completed, EOS has won the tendering.

PACE Status (J.Collado)

Status of the hardware:

PACE-CAP-v100-t56 under production. PCB ordered and to be delivered on 12<sup>th</sup> of June.

Procurement of few extra components for the full production completed.

Quotation for the mounting delivered and order to be placed as soon as possible.

Testing of PACE-CAP-v100-t54 (previous version) with the mechanics

Cooling problems when integrating PACE with the complete mechanics (see mechanics report section)

Firmware:

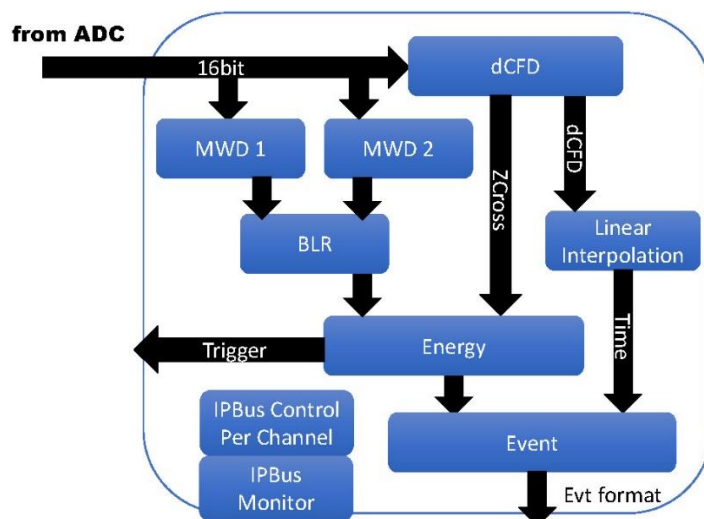
Implemented the IPHC MWD Firmware (IPHC Code by L Charles) and an alternative datapath.

Installed as MWD2 (Selectable) also included IPHC BaseLine Restorer (EWMA filter)

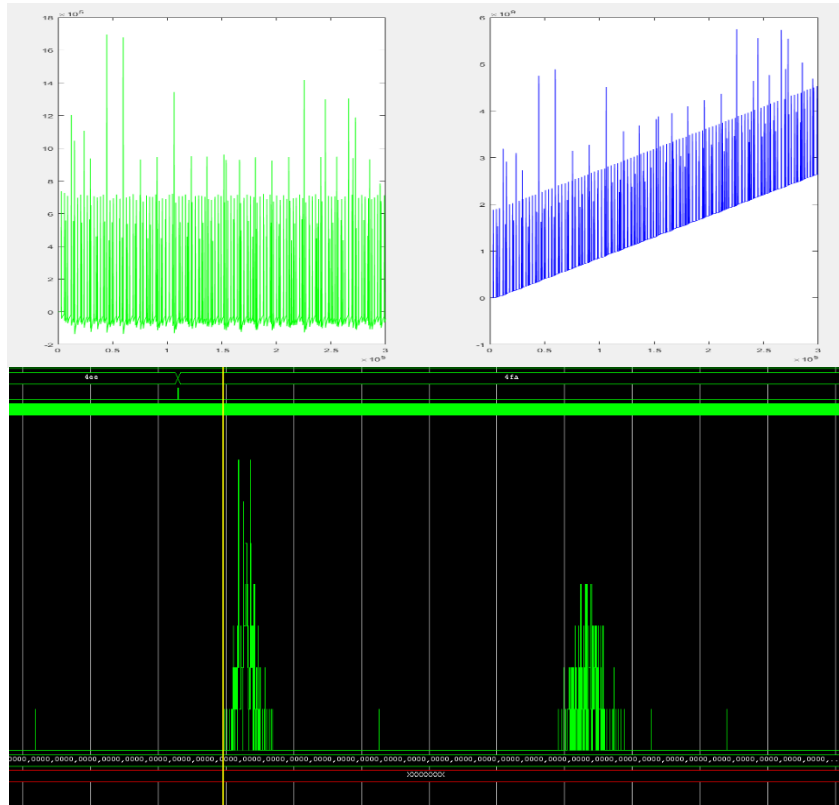
Resources used: MWD1 (100 CLB/4DSP), MWD2 (80 CLB /8DSP) and BRL(220 CLB/17DSP)

Total FPGA resources ~50% Full, DSP from 10% to 40% (1500)

MWD1 has now an updated 32bit output resolution. MWD2 also updated from 38 to 48bit output resolution.



MWD2 tested in simulation and hardware with simulated signal. BLR improves resolution. Test with detector to be done



Early test with (left) and without (right) Base Line Restoration

GTS connection and alignment:

Software update for the PACE Linux. Necessary to install EPICs.

Firmware for the PACE-Software register adaptor for the GTS hardware to be done.

Organizing J.Collado visit to GANIL early July. Still test with real GTS tree expected within summer.

STARE Status (N.Karkour, X.Lafay)

No problem with the new hardware. Long burning test ongoing with very low error rate.

Production planned but test with the new version of PACE required before going to production.

PSU and Mechanics: (V.Gonzalez, J.Collado)

Status of the Mechanics:

Parts produced:

12 PACE cooling blocks

20 STARE cooling blocks (+7)

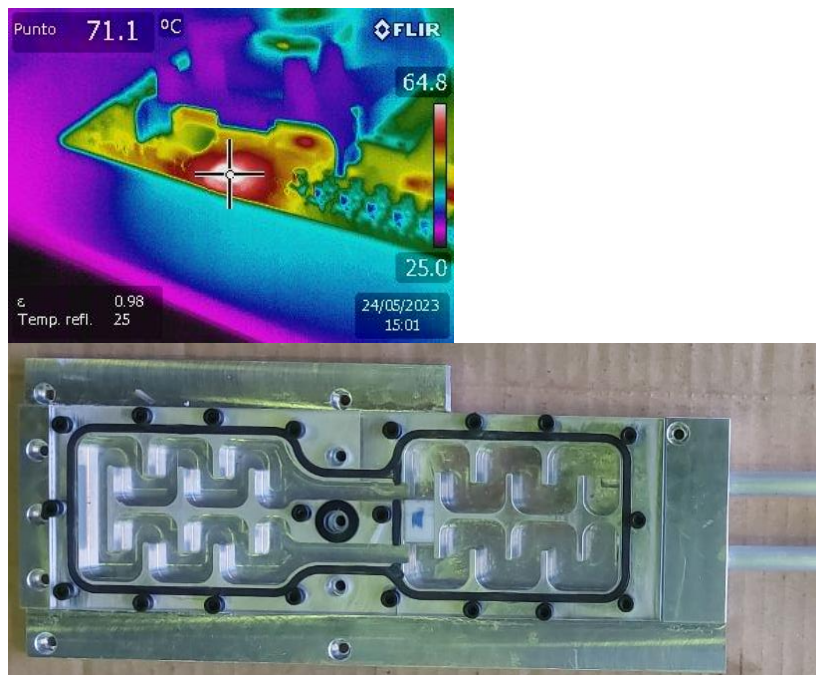
84 Digitopt12 cooling blocks

10 Heat exchanger

2 Frontal panels

1 Rear panel

Issues found with thermal dissipation in PACE small components. Work on-going to improve the heat exchanger and the dissipation.



PSU V2-11 PCB prototype produced, ready to be mounted.  
More thermal tests to be performed.

Software Readout and Control (N.Dosme)  
Ch. Bonnin has now access to a server in Orsay to test all the control software

Production of phase 2 electronics:

- STARE production expected in September, after test with PACE-CAP-v100-t56 pre-production board
  - PACE production of 70 boards expected to start around September
- Installation plan and integration test to be performed with the pre-production boards as soon as possible.

EPJA Paper  
Revision accepted for publication on May 26<sup>th</sup> 2023, Open Access arranged.

## Data Processing (O. Stézowski)

### Coordination:

Last regular meeting since Last AMB 07/06/2023

Dedicated meeting with PSA team for PSA Integration in DAQ box 07/06/2023

We have now a page dedicated to current actions [here](#)

EPJA paper 'Advancement in Software Developments' published, DAQ-box re-submitted

Link on the agata web site ?

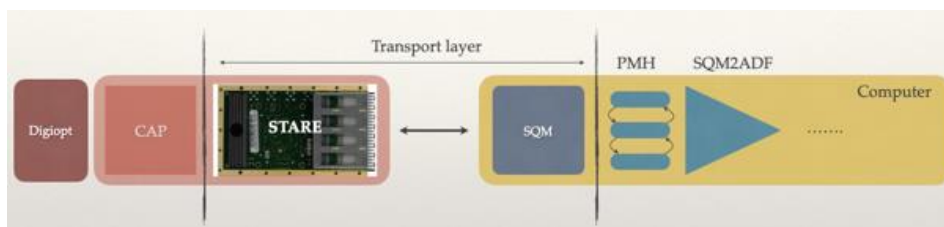
### Phase 1 and commands :

- Next data analysis school program almost done
- Switches and new machines (OC = replacement of phase 0 &1) commands under preparation
- 
- Next week we should know if one can buy up to 40 nodes in autumn 2023 in advanced
  - Should be in 2024 in the MoU

### Phase 2 developments :

- V2 electronic data pipeline

Objectives :



What has been checked since last AMB

- Tests with the STAREEmulator AND PSA
  - Fine monitoring of switches traffic in place ... to be used to understand precisely packet lost
  - 2 STARE to one machine with 2 Network Physical Interfaces [10Gb/s] ok
    - Same using two virtual interface is unstable
    - To be tested is to use a 40 Gbit/s Physical Interface ...
- V2 Slow control : installation of the software of Christian @ Orsay for tests
-

- Other Phase2 related developments

Nothing to report

### **PSA and Tracking R&D (A. Boston)**

1. We have asked Waely in the first instance to take over leadership of the PSA and tracking team. I will discuss this with her at the GRC next week. She can then make an informed decision.
2. C017 the AGATA capsule in Liverpool will shortly be transported back to IKP. Issues with VAT and customs are being negotiated by Mirion Technologies usual shipping company.
3. The latest status of the ORTEC prototype. A response was received from Trevor Hatt and it is as follows

“The status with the project is we have yet to create a functional fully segmented detector, the challenge has been the segmentation and the fact that when we have high leakage on a segment, we can only reprocess the crystal a few times before the crystal is too small to make proper contact to the PCBA. As you know Elaine was primarily working on the project and following Elaine leaving ORTEC there has been no further work carried out building the Prototype.

To fulfil the order, we will need to move another Detector Scientist onto the project, based on this and our available resources to build the detector our Director of Engineering estimates we are probably 12 months and perhaps even 18 months away from delivering the detector.”

### **Performance and Simulation (M. Labiche)**

EPJA accepted; Proof ongoing, payment done for open access. Simulation for GSI/FAIR discussion

### **Financial Reports (B. Million)**

See slides

### **Dissemination (J. Nyberg)**

No new technical paper

Update of the web-site

**AGATA Week** : Agenda to discuss

**AOB**

**No report**