AGATA AMB Phone conference 7th May 2026

Sujet : AGATA AMB May 2026 –

Apologies: Kathrin, Istvan

LNL Status (A. Goasduff)
The Ge experiment aborted due to TANDEM issues; 2 plunger distances collected. Some difficulties in the next experiment preparation due to PIAVE. The 2nd arm in PRISMA in progress. The June-July beam time will not be affected by SPES activities. The next Pré-PAC is scheduled on 8th-10th of July for the full 0° campaign.
In April, CEM activity completed with the visit of Nabil. Very nice and complete report to be distributed. Nabil will retire soon and the next responsible is to be identified.
Push of the data to GRID has a new software delivered by Jérémie. To be tested.

ASC Report / ASC Matters (M. Gorska)
The last meeting was reported; The CORE list author policy was discussed; Still collecting the inputs from the countries. UK pending, France delivered, Italy minor revision. The issue with the countries not contributing to the financial effort was discussed.

!!!!!!!! It was announced that Slovakia is joining the collaboration with the observer status !!!!!!!!!!!!
The objective is to fund a full equipped ATC (~1M€)

Andy Boston agreed to become the next vice chair of the ASC.

It was discussed the difficult relation between ARRB and ASC and in particular the respective task definition; John is searching the original text exchange with Fanny back at the time of the Phase evaluation.
Silvia Leoni propose that AGATA apply for the "Recognized CERN experiment" status. Process to start in February 2027.

ACC Report / ACC Matters (J.J. Valiente Dobon)
•AGATA web page: we had on the 13th of April the presentation by the company of the first version of the web page. Backpage →new quote

•From the answers to the questions of the questionnaire → DMP presentation by Olivier.

ACTION: update ongoing of the core author list after the approved criteria in the last ASC 23-24 April
ACTION: update ongoing of the technicians
ACTION: mail sent Campaign Spokesperson for AGATA@GANIL →deadline 15th of June. Elections if more than one candidate after summer.

GSI Status (K. Wimmer)
No report

GANIL Status (C. Ciampi)
The GANIL team visited LNL for multiple infrastructure details on mechanics, cables etc … The CAD design was updated accordingly. Modification on the manifolds for LN2 included; The CEM task started with 3 main points identified.
Preliminary budget prepared ~450k€
Recent discussion on the AF system
Richard delivered the deformation calculation after the move of 2 detectors forward to accommodate the cryogenic targets.
It is discussed the development of a specific tracking device at the entrance of VAMOS for the 0° run's. Specific simulation for resolution, design to be done between GANIL and IJClab. Position with respect to the entrance of the Q-pole to be decided.
The construction of the intrance beam pipre is launched. Delivery un August. Within tow weeks the DAQ room implementation will be decided.

REPORTS FROM THE WORKING GROUPS

Detector Module (H. Hess)

6 new detectors to be transported to MIRION for Annealing. Confirmed that a new order for 12 capsules can be prepared for 2026.
A-101 shows good performances but a reduced efficiency (<70%)
ATC24 and ATC25 ready for shipment.
ADC→ATC quotation received and call for tender opened. GANIL OC.
The Ge metal received for the 2 new GANIL 2026 capsules at MIRION.

- ➔ A MIRION quotation should arrived soon for a cryostat. To be distributed to the detector WG ASAP.

Infrastructure (B. Million)

Preparation to the GANIL campaign. Extra cost on the DSS racks identified. ~76k€.
New batch of patch box and LN2 cards to be prepared.
ASC discussion to fund all these items for CORE; no news so far from UK and German (UNI) grants. GSI to be confirmed.

ASC decision : be pragmatic with the OC funds. If OC are available for small items at GANIL, can fund “core” items.
The production of the 2nd shaft has a funding problem. In the hand of the UK grant. 2027 at the earliest. Nobody should create “noise” on that before the UK grant is submitted and deliberated. Discussion postponed to end of this year.

Front End Electronics (A. Gadea)

Coordination: last Electronics W.G. VC was on April 28th , 2026, next electronics W.G. meeting is on Wednesday June 3rd 2026,

Status at LNL (A.Goasduff)
Still 28 Phase 1 electronics channels working on the setup.

DIGIOPT12 (A.Pullia):
A new set of DIGIOPT12 3.7.1 cards (13 segment cards, 5 core) has been built with 1 full set to be delivered to Poland and the rest is own by GSI. 4 Core and 10 Segments are validated in test bench, sent and received in Valencia (received at IFIC).

The 3.7.1 cards are not yet tested in the V2 system. Valencia group has worked on updated digitiser settings for new ADC and Javier Collado will incorporate this in the Slow Control libraries. Need to add the assignment of ADC number to channel for v2 electronics- there have been many failures, probably due to cables- it takes 2 or 3 attempts to get correct ADC order (in groups of 4) for the DIGIOPT12 V3.6 .

PACE (J.Collado, A. Goasduff, A.Gadea, V.Gonzalez, J.M. Deltoro)
PACE Production
Received 10 more PACE boards produced for GANIL in Valencia. From the total of 90 we got presently
9 (from 15) IFIC order, 20 (from 20) ETSE order and 28 (from 55) GANIL order.
We have issues with the GTS setup in Valencia, somehow the communication does not work, thus the CAT test are presently stopped till this is solved next week.

Teydisa has received the order of INFN for 50 PACE boards.
Action: to clear up how to produce INFN 50 PACE PCB
PACE Firmware
From the Zeptonova new contract The tasks were:

1. Maintenance of AGATA Ph2 PACE GTS to Trigger processor communication for Ph2 Firmware.
2. Maintenance and verification of the GTS fine delay measurement.
3. Maintenance and verification of the External Trigger signal for PACE Board and global time synchronization.

We have succeeded to do the tasks 1 and 2, recently with success in the fine alignment.
Testing the external trigger, we have found a severe issue in the propagation of the GTS clock. Usually we tested the data at LNL with a setup not using the GTS and thus using the internal 100 MHz clock. The GTS has been tested for long time in standalone systems without DIGIOPT12. Recently, following the failure of the GTS setup at LNL, we are doing combined tests. In the last two weeks we have been analysing noise generated by the DIGIOPT12 due possibly to the quality of the GTS recovered clock sent by PACE.
Javier has performed the full Jitter analysis and we are also checking other sources that might be damaging the clock, as noise, in particular coming from the HDMI cables, because they are an alternative route for the clock distribution and the 0 Ohm resistors that activate the option have been wrongly included in the present BOM.
We are checking all possible sources of issues with the clock quality.
Alain Goasduff, Javier Collado and the local Valencia team will be in Valencia to work on the test setup and clock issues and next week.

PSU and Mechanics: (V.Gonzalez)
The digiopt12 systems are being assembled (75 boards in lab; 22 core and 23 segments completely mounted including the read out COA, 12 core and 5 segment have been partially assembled but without heat exchanger.)
Crates assembled. New front panel prototype shown below with larger SMA hole and flat cable connector. Also reduced front panel width

Last front panel prototype

PSU for next batch production

Trigger board

New PSU has new PCB colour to enable them to be easily identified. New capacitors are fitted to replace obsolete parts but the rest of the design is unaltered.

Collaborators in Valencia are crimping LEDS, switches and auxiliary elements to assemble the box.
250 external trigger interface boards have been received.

PACE testing- no solution yet for the heat problem.

Have also tested new HDMI cables with better physical connection (old ones could come loose), new ones are less flexible so they stay in place better.

Received 60 AGATA_PH2_SIGBPLv2.5 signal backplanes and 70 AGATA PH2-PWRBCKPLN2 power backplanes order by GANIL at IFIC.

STARE Topology Manager and slow control and DCODE status (N. Karkour, X. Lafay)
STARE validated within an AGATA data acquisition system during 2 days of tests by a team comprising the Orsay hardware and software teams, people from Lyon, also Christian Bonnin from Strasbourg. There were 5 tests of STARE with slow control, run control, PSA and DCOD. A STARE bay located in building 104 contains 4x STARE and also 2 crates of pizza boxes to emulate STARE (STARE Software Emulator). A 100Gb link was connected to a DAQ box with multiple (15-20) AGATA servers.

Test 1 was for 18 links at typical AGATA rates (12 from STARE bay plus 6 from simulator). 5KHz rate from each link, sending known AGATA event (cycling the same data) with PSA behind the server and with optional data recording. 45 minutes test time showed 1 software Anode problem due to PSA slowness which couldn't keep up with 5KHz rate so was asserting back pressure. PSA problem was specific to one node which was configured with an insufficient buffer size. This was reconfigured before test 2.

Test 2 with 18 STARE links, 6 software emulated links (extra STAREs were from test bench and old prototype). Together this models 24 crystals. After 2 hours no problems noted. Monitor for backpressure was tested to see what % memory filling was happening. No problems noted with 5KHz rate, 2 STARE per pizza box.

Test 3 with 24 links- no PSA (cf "drain" mode in phase 0). The aim here was to test data for lost packets. Test run started at 20KHz/crystal for 10 minutes then increased to 50Kz and then finally running all 24 links at 73KHz without packet loss over the 100Gbit ethernet at 95Gbits/sec aggregate rate with more than 15 server nodes. Note that 73kHz is 50% above AGATA maximum count rate. Left 24 links overnight at 50kHz. Saw some (but very small) losses. 80Gbits/sec measured on network.

Test 4 Next day connected one STARE to monitoring- reconfigured in topology manager to switch one link to monitoring mode
Up to 36 signals can be viewed in monitoring mode.

Next step is to install PACE cards in front of STARE

A conclusion of the high rate test is that RUDP is not needed based on observed data loss rates.

Trigger Processor and SMART (Abder)

Alain is planning to test the setup for NEDA (54channels) plus AGATA which is too large for current trigger processor- the new one must be used with the new firmware.
Apologies sent by Abder so nothing else to report.

Summary of Procurement and Delivery Schedule

Status now as discussed and agreed in this meeting:
STARE 129 boards (hardware) are ready (Also 10 pre-production)
SOM integration complete. still 2 or 3 STAREs have problems to be investigated

PACE 90 in production and 50 ordered by INFN.
57 in Valencia; 3 with issues requiring repair; total 54 waiting for completion of CAT before shipping to GANIL. Some problems under discussion.

All SOMs (135 plus spare) have arrived in Valencia.

PACE firmware: Mostly completed.
Data format is now working and monitoring as well.
GTS integration is working including fine alignment (2ns steps) See earlier comments on need for PLL re-configuration after reset

Trigger matching is Ok and tested (External trigger test not yet completed) Data collected and has been checked for correctness.
Data collected with GTS has noise (see earlier discussion about removal of HDMI clock to DIGIOP12)
Necessary to explore how the implemented MWD algorithms work at high rates including new MK algorithm.

50 **PSU exist.**
New PSU PCB received, all components sent to company; 2 prototypes exist, not yet tested.
2 orders for 30 units plus 5 units produced in Valencia (parts exist for the Valencia units)
Front/back panels now in hand. Front panel revised after feedback from LNL. Production has not yet progressed- waiting for external company.
250 trigger PCBs exist for external trigger.

59 **heat exchangers** ready now. Continuing through the year (material exists to make these and the cooling blocks- just waiting for manufacturing quotes). 84 more have been ordered.
90 units for PACE cooling blocks to be received this month
20 **complete sets** exist now (with PACE redesigned cooling blocks). Most of the mechanics is ready.
LNL LVPS for all modules exist in LNL for 32 ATCs. 15 servers for V2 from Orsay are installed and are connected to network. 30 crystals of V2 can be supported in LNL now. (servers and switches delivered). 4 links 100GB.

STARE firmware: PLL qualification OK. NB this is UDP. Full tested UDP firmware has been released (tests reported at AGATA week). RUDP comes later if needed (March 2026 tests suggest not needed). New release with counters was sent to LNL for data transmission integrity tests (and is integrated in the new test bench). LNL and Orsay are now running the same release. System test with 24 crystals and simulated data completed successfully over 100Gbit links at 95Gbits aggregate rate. This shows that RUDP is not needed.
Idle frame simulation has been implemented in the latest firmware (this is not yet sent to LNL).

Slow control Python 3 upgrade is complete and all working. Register changes from STARE and PACE have been incorporated into slow control. Christian is keeping his version aligned to the development version. (Javier moved to IN2P3 GIT for software).
STARE python 3 updates made to support latest version (in part flashing firmware).
XL is working on cleaning the slow control python code.
For a fully V2 system we need to instrument 39 capsules, plus 18 = 57 so **aim at 60 channels.**

Data Processing (O. Stézowski)

Coordination:
Working days end of March for DAQ 2.0 tests

NEWS:

Preparation of a vote to be submitted to the ACC to define our future DMP
Visio me and Javier last Friday
Summary documentation here
Meta data related
Q: The proposal of the experiment should be part of the metadata ? if yes, What is to be attached and how ?
Online Data related
Q: For how long should we preserve the data for each Processing Stage ?
Q: What should be the retention periods for the experimental collaboration, the AGATA collaboration, the world and what should be fully open ?
Offline Data related
Q: One may consider all this produced data should come back to the AGATA collaboration ?
Q: What procedure should we set to ensure it ?
Q: What policy is to be applied on this data set ?

Google spreadsheet under preparation … sent to ACC members in the coming week
Analysis of the answers
See analysis on grist
Some questions not well understood, main directions drawn
Proposal as part of Meta Data
Add full proposal ok - possibly ask spokesperson to hide 'sensible' part
List a name as referent for this data set as exhaustive as possible ... also add specific roles. Ex : data manager, data curator
Proposal as part of Meta Data: Policy
Retention period for the experimental collaboration + **weak opening** ...
→ proposition to set only a very light as public
Ex: beam, energy, experimental time, setup ...
→ Procedure to be explicited, coordination with IR
Online data policy
Basically the same as current situation : 5 years for experimental collab.
+ additional 2 years - up to 7 - for AGATA
→ Proposition possibility to reduce periods by the collaboration itself !?

Retention start at exp.

NOTE : data erasure (when/how) not well understood, to be treated again
Offline data
Idea to get back data to the collaboration accepted !
Required for paper publication or regular upload - synchronized with ACC ?
Data policy on it to be defined in next steps
→ Work to be done by the Data Processing Group to allow this !

Next step is a proposition of a new DMP, including revision of data policy from the answers
→ hopefully before summer …

First important step by Jérémie on our new data management
https://agata-data-catalog-899dc7.pages.in2p3.fr
agentic ai driven work!
'New'/"better" version of our script to push online data to CC & Bologna ☑
Strongly reduce the tree depth and number of small files
delivered to LNL team for tests
run under container and is prepared to handle meta data and catalogue
Same toolkit for pushing and getting data from the grid!
Next steps are
to valid it for online and offline data management
to fully use indigo-iam for fine permissions handling
elaboration of a data catalogue with a web site for users'
we a new IT @ IP2I Yoann to help for that!

DAQ Box 2.0, test @ Orsay still ongoing
Network configured
Software configuration being
Cards ←→ Topology Manager
Next step is running DAQ up to PSA
Team is working to stabilize both configurations, about 20 channels emulated
with STARE boards up to 5 kHz with PSA
STARE boards, no PSA, up to 50 kHz
Oscilloscope of Slow Control up to 10 cards
→ network is fully set, more stable, ARP tables issues seem under control, losses almost completely reduced or understood

Test Elec. V2 @ LNL

PSA and Tracking R&D (A. Boston)

(1) The next AGATA detector characterisation meeting is in the process of being scheduled for the end of May. The key topics will be
a. Review of recent PSCS data
b. Validation of ADL/AGATAGeFEM (performance evaluation)
(2) The next AI/ML meeting, organised by Joa is taking place on 15th June
(3) The next PSA Team meeting will be scheduled by Fraser in early June. This will include an update on the performance of the novel PSA code development.
(4) Input from Team members (Fraser and Jérémie) into the new IMAGe INFRATECH proposal.

Performance and Simulation (M. Labiche)

High energy gamma run still under analysis.
Nice results on the high fold run analysed by Conor.

Financial Reports (B. Million)

No specific report.

Dissemination (I. Kuti)
No specific report

AOB

Next AGATA week : https://indico.in2p3.fr/event/37746/overview