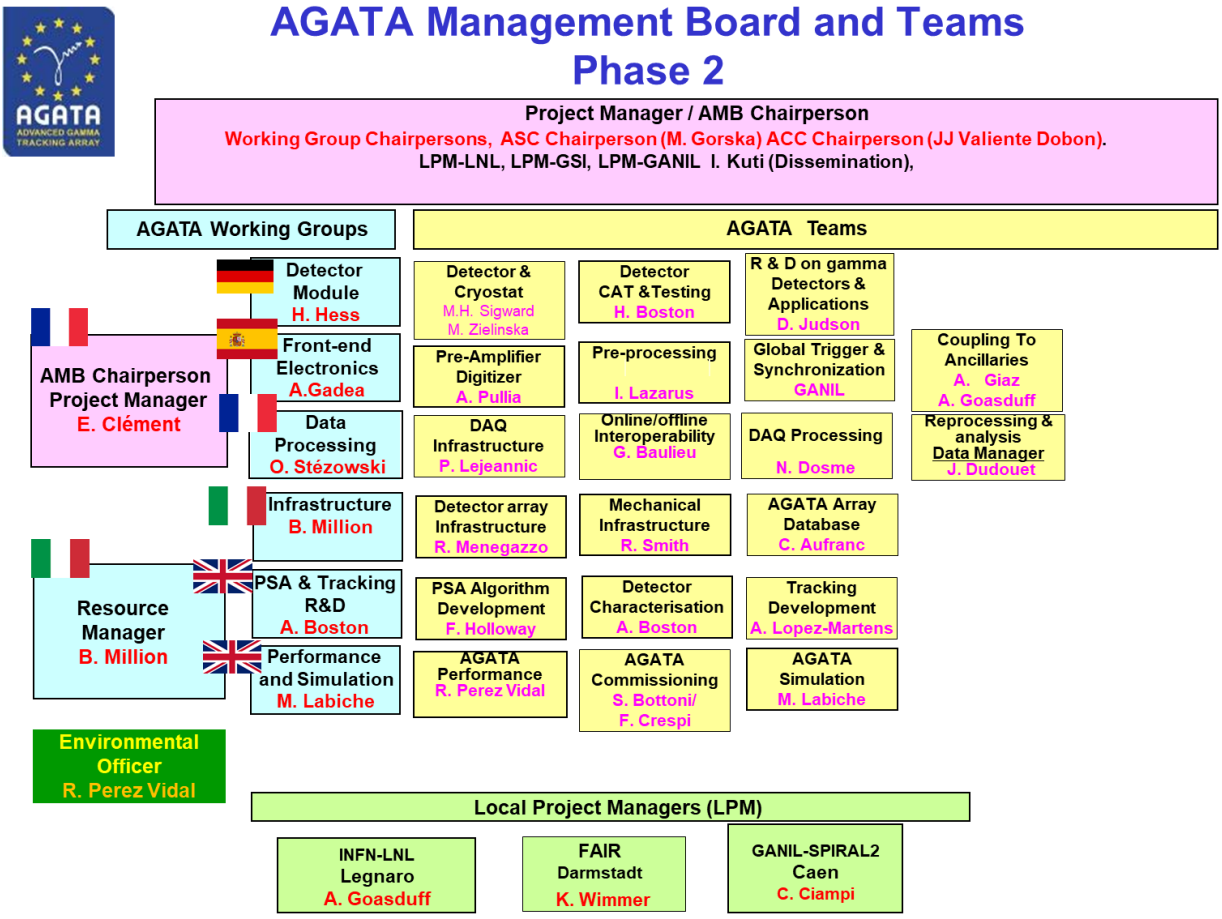
AGATA AMB report for the 23rd of April 2026 ASC meeting

E. Clément on behalf of the AMB

Executive Summary

The AMB met on the 10th of December 2025, 27th of January 2026, 18th of February, and 30-31st of March in presence in Paris.

The present AGATA Management Board structure is presented below. Nicolas Dosme (IJCLab – Orsay) is now the team leader of the DAQ processing, replacing Eric Legay. Caterina Ciampi is now the Local Project Manager for the next GANIL campaign.

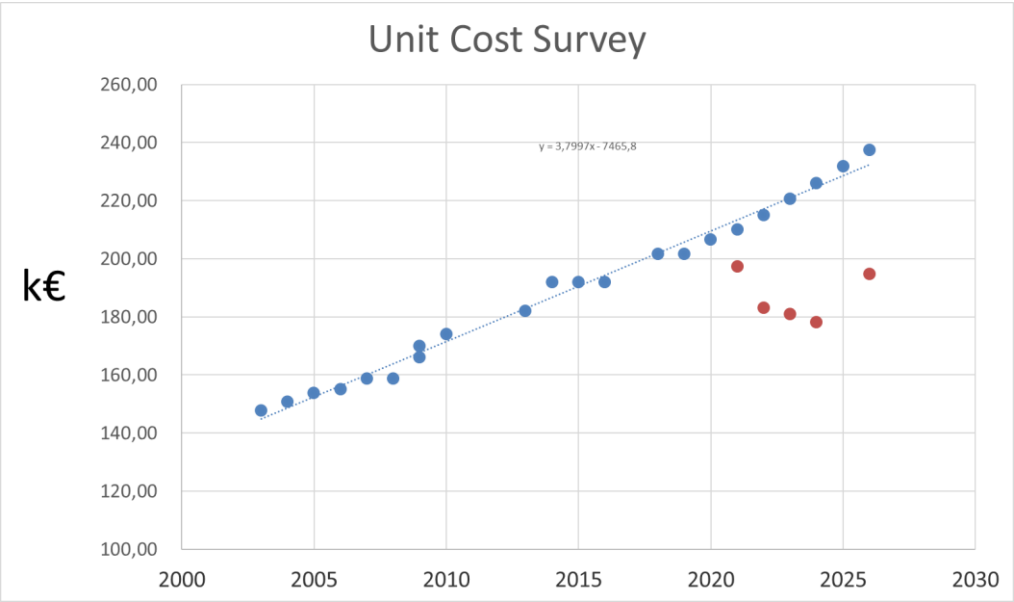


The main milestones of the past months are :

• The annual meeting with Mirion took place on 22nd January. The production status is as follows: The AGATA collaboration owns 76 asymmetric capsules and 25 cryostats. An additional capsule from INFN is in production and will be delivered in May 2026. The DEGAS detector (Sweden) is available. The AMB has started refurbishing the TU-Darmstadt cluster following the last ASC decision. One capsule has already been returned and two are being processed. The order for the cryostat upgrade at CTT is ongoing. At the MIRION meeting, the following orders were announced: two from GANIL (already placed), one from IN2P3, one from CEA, two from INFN and one from Spain, totaling seven new capsules. The collaboration has secured **90 capsules (2π)** which will be available in the near future. Four new cryostats will be ordered from CTT in 2026. The effective cost of one capsule in 2026 will be €194,719.

The policy for discount in the annealing and repair over the 2026-2027 period was clarified. Discount on annealing are applied on the total number of orders in the same quotation as the repairs will be digressive repairs after repairs. GANIL will emit for 2026 an open order for 12 annealing to maximize the discount and cover the needs. Annealing is proceeding efficiently with 15 annealing performed in 2025 and 3 repairs.

We have been informed by MIRION that they are close to an agreement with CTT for the transfer of technology. Also, MIRION warned us that the cost of Ge metal is increasing very fast. A complete re-evaluation of an ATC cost will be done after summer when both the HPGe metal cost and MIRION cryostats cost will be evaluated.



- The development of the Phase 2 FEBEE (DIGOPT12-PACE-STARE-DCOD) chain remains the most challenging aspect of the Phase 2 project and our main bottleneck. Over the past few months, however, steady progress has been made thanks to the exceptional dedication of the laboratories involved (IFIC, LNL, IP2i, IJClab and GANIL). Several test benches are operational at IFIC, LNL and Orsay. Data integrity has now been resolved and verified with detector connected. A critical component is the GTS implementation. The GTS alignment is now operational, as is communication with the trigger processor including VAL/REJ mechanics. This is a major milestone. Few tasks remain on the ZEPTONOVA contract:

- Monitoring of the external and internal triggers to set the coincidence.
- Complete SMART integration
- GTS fine gain alignment procedure
- Ethernet on Petalinux
- Support for final firmware integration with Phase 1.
- Cleaning and securing the deployment firmware version.

  In parallel, the WG is working with the Resource Manager on mass production. Numerous orders involving several companies over Europe have to be placed for all subcomponents of the system. End of 2025, the AMB have secured all SoMs (FPGAs) for the 3π array and they have been delivered. The mass production of the STARE mezzanine is about to be completed. The DIGOPT12 mass production will follow the availability of funds from the different partners. Few corrections are being applied. Few mass production issues were identified during customer acceptance testing on the PACE board, but these are being resolved step by step. Some connectors have long procurement delays of around 36 weeks and will be delivered after the 2026 summer, according to the provider. The delivery timescales for both the hardware and the firmware are now aligned. Progress is slow for many reasons, but the collaboration is progressing.

  A major test occurred in Orsay end of March with a realistic data flow transfer between the STARE test bench located in building #104 and the mini DAQ box, Phase 2 demonstrator, located in building #206 via an optical link and using realistic switches configurations. The detail of the test is reported the working group report. The test allowed to verify the full functionalities at the nominal rate of the Project Definition.

- The 25th AGATA week was organized by the AMB in GSI between the 17th and 19th of September. All presentations can be found in the indico. https://indico.in2p3.fr/event/35264/ The next AGATA (2026) is attributed to Poland. It will be organized in Warsaw, Poland at the Heavy Ion Laboratory, just after the Zakopane Conference, ie 7-11 of September 2026. The event is posted on the Nuppecc web site. https://indico.in2p3.fr/event/37746/

ACC

•AGATA web page: we had a meeting on 3/3 at 11,00 via zoom to discuss the very first draft that the company produced. On the 13° of April we will have the presentation by the company of the first version of the web page.

We are slowly receiving the answers to the questions for pre-data policy final document.

•We are also slowly receiving the funding codes and technicians acknowledgements to be included in future AGATA papers.

•Soon we need to start discussing the future AGATA@GANIL scientific coordinator.

LNL Status (A. Goasduf)

The LNL campaign is proceeding with success. At the beginning of 2026, the first experiments using the EXOTIC beam line have been performed. The next milestones are the high-Z campaign using the uranium beam from the linac before summer. After summer, the local team and the AGATA collaboration will start the change of configuration to the 0° campaign. The U beam will be tested mid-June for 2 weeks before starting the campaign. The next PAC should be organized on the first week of December. It must be mentioned that the SPES commissioning might impact this planning. A new detector test bench for a complete crystal, including trace readout, has been commissioned using CAEN digitizer. An action is on-going regarding the data archive on CNAF with too much subdirectories.

Regarding the 0° campaign implementation. The mechanics is ready. NEDA and PARIS support table will be produced by IJClab. NEDA will transferred from HIL on summer 2026. The internal Si array will be tested on April. 10 PARIS clusters are expected.

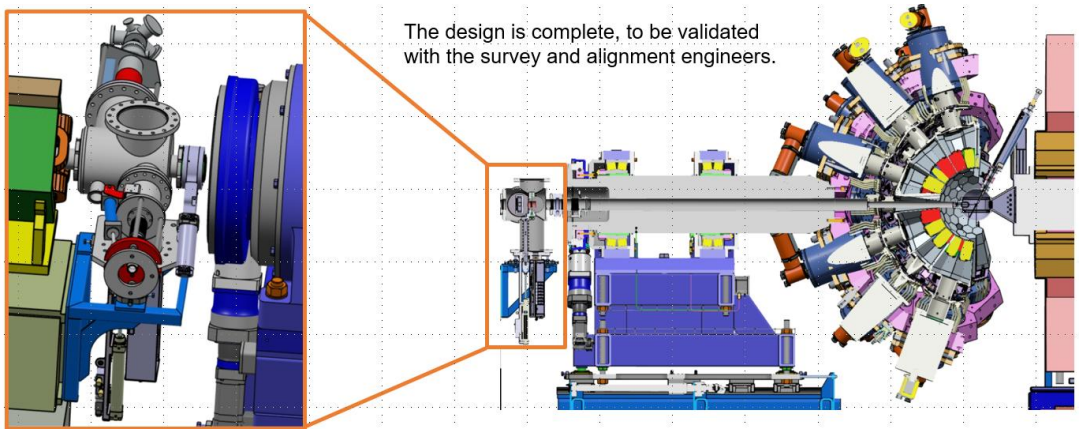
GSI Status (K. Wimmer)

The GSI situation is of course impacted by the recent incident. However, a good collaboration has started since the last AGATA week between the SFRS team and the local team on the design of zero degree spectrometer at the LEB cave.

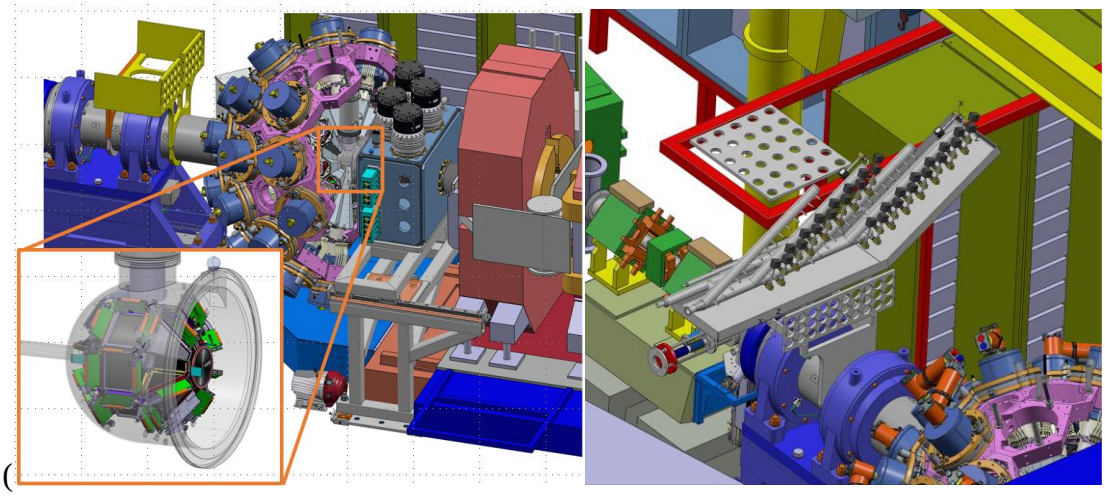
GANIL Status (C. Ciampi)

The primary objective of this campaign is the mechanical and infrastructural integration of the AGATA detector within the G1 hall, aiming for a series of experiments at 0° that also involve the GRIT and VAMOS systems.

The mechanical integration of AGATA into the G1 hall presents a significant challenge due to the extremely limited available space. Several solutions have been proposed to address these constraints. A newly designed diagnostic box, tailored to fit within tight geometric constraints of approximately 375 mm, incorporates profilers, Faraday cups, a turbo pump, and an additional flange for a tracking detector. A 2.58-meter beam pipe runs through the AGATA support for the 0° configuration, and a new clamping mechanism has been developed to ensure optimal vacuum sealing.



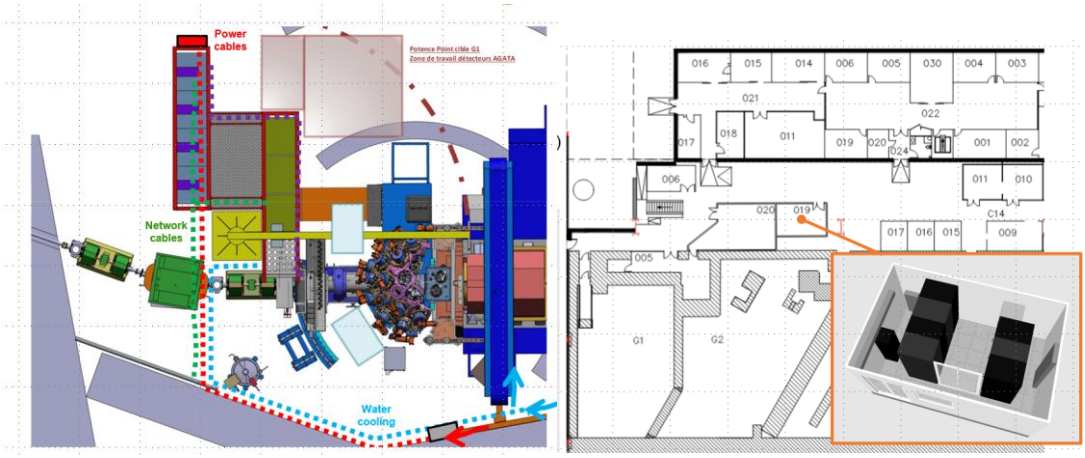
The vacuum chamber, designed in collaboration with the GRIT team, integrates a cryogenic ^{3}He target and allows access from the top of the main chamber. To access the target area, it is necessary to retract VAMOS by approximately 1100 mm and the GRIT chamber by about 650 mm. AGATA can also be rotated from 0° to 28° to facilitate access to the target chamber.



On the infrastructural front, the electronic racks have been rearranged to accommodate digitizers, LVPS modules, and the liquid nitrogen autofill system. These racks are placed on a fixed platform, elevated about 30 cm above the ground, to facilitate cable

routing. Cable management, including water cooling, network, and power cables, has been meticulously organized to optimize space and ensure safety.

The water cooling system, reused from the first campaign, operates under conditions of 10-20°C and at a pressure of approximately 4.5 bar. A cryogenic configuration has been proposed, utilizing a 200-liter Dewar as a phase separator, complemented by a gas heating and exhaust system designed by GANIL. Room 019 has been configured to host the HTC farm and storage, with a cold aisle layout and two air conditioning units, each with a capacity of 15kW. Rooms 015-016 are dedicated to detector preparation, while room 006 serves as a storage area.



A draft host agreement has been prepared to define the allocation of funds for AGATA and GRIT, as well as operational costs. The planned beam time is two weeks for in-beam commissioning and 50% of the CYCLO beam time, approximately 100 time units per year, subject to approval by the Program Advisory Committee (PAC). A common data management plan has also been established, emphasizing the reproducibility of analyses and simulations, with well-documented open-source software.

A joint Master's research project between GANIL and the University of Surrey aims to implement an AGATA simulation class within the nptool v4 framework, complementing the existing AGATA simulation package. The goal is to compare the performance of GRIT+AGATA with that of MUGAST+AGATA(1π) and assess overall improvements.

The timeline foresees the validation of mechanical designs by the end of the first half of 2026, the manufacturing of all mechanical components by the end of 2027, the final experiments in the G1 hall in the spring of 2028, and the delivery and installation of Autofill and LVPS racks in May-June 2028. Commissioning is scheduled for the end of 2028 or the beginning of 2029.

	2026				2027				2028				2029				…
	1 trim.	2 trim.	3 trim.	4 trim.	1 trim.	2 trim.	3 trim.	4 trim.	1 trim.	2 trim.	3 trim.	4 trim.	1 trim.	2 trim.	3 trim.	4 trim.	
Design																	
Preparation																	
Installation																	
Exploitation																	

IMATRA-3

The IMATRA and IMATRA2 project submitted to the EU INFRATECH call have been unfortunately not successful. The AMB is part of a third attempts. The project will be more focused on HPGe technology and lead by GSI. The AMB is involved in the proposed WP2 at the heart of the proposal. WP1 is management, WP3 related to dissemination. The proposal is not yet ready and the main guidance and presented below:

Work Package 2: Redefining the Frontiers of Position-Sensitive HPGe Detector Technologies

Scientific Coordination: A. Gadea (IFIC) , E. Clément(GANIL – ESFRI)

Context and Vision

At the intersection of nuclear physics, materials science, and cutting-edge instrumentation, Work Package 2 (WP2) stands as a bold initiative to push the high-purity germanium (HPGe) detector technologies**.** These detectors, at the heart of radiation measurement and spectroscopy, are being reimagined to achieve unprecedented levels of positional sensitivity, temporal resolution, operational reliability, and environmental sustainability. WP2 aspires to set new benchmarks for detector performance, addressing the most demanding challenges of modern experimental science.

Axis 1: Technological Breakthroughs in HPGe Detector Development

The primary objective of this axis is to advance HPGe detector technologies across four critical dimensions: reliability, sustainability, positional sensitivity, and timing resolution. This ambitious endeavor is structured into three key subtasks, each driven by a consortium of leading research institutions and industrial partners.

1.1. Innovations in PLM Contact Technologies

The development of Point-Like Metal (PLM) contact HPGe detectors represents a paradigm shift in detector design. By refining electrode configurations and interface technologies, we aim to enhance positional resolution while ensuring long-term operational stability. This collaborative effort, involving **UNIPD, INFN, CNRS, GANIL, and MIRION Technologies**, is spearheaded by Davide De Salvador (Univ Padova)

Key Contact: Davide De Salvador (davide.desalvador@unipd.it)

1.2. Electro-Cooling Cryostats: A Sustainable Revolution

The advent of electro-cooling cryostats marks a departure from conventional cooling systems (LN2), offering a compact, energy-efficient alternative that aligns with the

principles of sustainable research. Developed in partnership with the **University of Cologne (UOC) and CTT**, these cryostats promise to **reduce resource consumption** without compromising performance.
Key Contacts: Peter Reiter (preiter@ikp.uni-koeln.de), Herbert Hess (hess@ikp.uni-koeln.de)

1.3. Advanced Segmentation and Prototype Characterization

Through cutting-edge simulations and testing, this subtask focuses on optimizing segmentation patterns for p-type HPGe prototypes. The goal is to maximize positional sensitivity while validating the robustness of next-generation detectors. Led by Gilbert Duchene (CNRS), this effort brings together expertise from **CNRS, GSI, ILL, GANIL, and MIRION Technologies**.
Key Contact: Gilbert Duchene (gilbert.duchene@iphc.cnrs.fr)

Axis 2: Next-Generation Digital Pre-Amplifier Systems
Redefining Signal Processing for Scientific Excellence

The second axis of WP2 is dedicated to the development **of** high-performance digital pre-amplifier systems, essential for unlocking the full potential of HPGe detectors. This axis is organized into three subtasks, each addressing a critical component of signal acquisition and processing.

2.1. Cryogenic and Refrigerated ASIC Pre-Amplifiers

The design of high-bandwidth ASIC pre-amplifiers, capable of operating in cryogenic and refrigerated environments, is a cornerstone of this initiative. These pre-amplifiers are engineered to deliver unparalleled positional and temporal resolution**,** enabling breakthroughs in data acquisition. This project is a collaboration between **UNIMI, CNRS, CEA, GANIL, and EUROPRACTICE**, with leadership from Stefano Capra and Alberto Pullia (INFN Milan).

Key Contacts: Stefano Capra (stefano.capra@mi.infn.it), Alberto Pullia (alberto.pullia@mi.infn.it), Philippe Vallerand (philippe.vallerand@ijclab.in2p3.fr)

2.2. Seamless Interconnection of Pre-Amplifiers and Digitizers

Ensuring flawless signal transmission between cryogenic pre-amplifiers and warm digitizers is a technical challenge of paramount importance. This subtask, led by Nabil Karkour (CNRS), focuses on developing optimized interconnection solutions in collaboration with **UOC and CTT**.

Key Contact: Nabil Karkour (karkour@ijclab.in2p3.fr)

2.3. Low-Power, Low-Noise ADC Systems

The development of low-power, ultra-low-noise Analog-to-Digital Converter (ADC) systems, coupled with advanced pre-processing electronics, is critical for achieving exceptional data acquisition quality. This effort, coordinated by Vicente González Millán (University of Valencia), leverages expertise from **UVEG, UNIMI, and CSIC**.
Key Contact: Vicente González Millán (vicente.gonzalez@uv.es)

Summary of the expected gains :

This project aims to significantly enhance the positional sensitivity of HPGe detectors, enabling finer spatial resolution for more precise radiation mapping and particle tracking. It will improve timing resolution, allowing for more accurate event reconstruction and reduced uncertainty in experimental measurements. By advancing ***electro-cooling cryostat technology***, the initiative seeks to increase operational efficiency and sustainability, reducing both energy consumption and reliance on traditional cryogens. The development of low-noise, high-bandwidth ASIC pre-amplifiers and ADC systems will optimize signal processing, ensuring higher data quality and more reliable detection performance. Finally, innovations in detector segmentation and PLM contact technologie**s** will boost overall reliability and durability, extending the lifespan and versatility of HPGe detectors in cutting-edge scientific applications.

REPORTS FROM THE WORKING GROUPS

Detector Capsules: Status Deliveries and Acceptance (H. Hess)

Over the past months, the working group has carried out continuous maintenance on the AGATA spectrometer at Legnaro. This includes efforts toward the regular three-year refurbishment cycle of the triple cryostats, as well as the annealing or repair of AGATA detectors, all with the aim of maintaining optimal spectrometer performance.

However, this schedule cannot be uniformly applied to all systems. Instead, each case must be evaluated individually, considering factors such as the level of neutron damage of the crystals, the vacuum properties of the cryostats, and any additional technical issues affecting the cryostats and capsules

In parallel, the procurement of new detectors and cryostats is ongoing. Newly produced, repaired, and annealed detectors, as well as cryostats, are tested and commissioned by the detector group before being delivered to the AGATA collaboration. Additionally, a limited number of detectors mounted in test cryostats are used for detailed scanning and characterization studies.

By the end of March, the total number of delivered asymmetric AGATA capsules reached 76, with four further detectors currently on order.

Additionally, within the AGATA community, three DEGAS detectors mounted in the DEGAS Triple Cryostats are available, as well as the DAGATA Triple Cryostat and its three associated detectors from TU Darmstadt. The cryostat, now more than 15 years old, requires an upgrade to meet the AGATA standard, and the three detectors need to be repaired.

The AGATA OC will fund both the cryostat upgrade and the repair of the three detectors. In agreement with TU Darmstadt, the cryostat will retain the designation *DAGATA*, and the detector labels will be changed from:

A0049 (74064) to A101 & TUD B (74266) to B101 & TUD C (74236) to C101.

Activities on Detector Capsules

Recent deliveries

A026: owner (INFN), FAT performed by IPHC Strasbourg Team, delivered to Cologne on 27th November 2025

B024: owner (INFN), FAT performed by IPHC Strasbourg Team, delivered to Cologne on
14th January

C025: owner (INFN), during the final pre-FAT measurement, the detector showed signs of leakage current and therefore had to be reprocessed. Following the reprocessing and FAT carried out by the IPHC Strasbourg team, the detector was delivered to Cologne on 22th December 2025

B101: (DAGATA) delivered to Mirion on 27th February for repair, FAT performed by IPHC Strasbourg group, delivered to Cologne on 17th March. An average resolution at low energy (122keV) of 0.98 keV was measured, at high energy (1.3 keV) an average resolution of 2.08 keV was obtained with the highest value for a segment of 2.28 keV. A relative efficiency of 70% was measured (efficiency of 75% was measured by Mirion

Open Orders:

The AGATA community currently has one active order with Mirion. The company is processing detector C026 (INFN), with delivery expected in May. Two additional detectors for GANIL—likely A027 & B026 - are close to being finalized.

Repairs and annealing of AGATA detectors:

A014: delivered to Mirion on 12th May 2025 for annealing. After annealing the detector showed leakage current on a rear segment. This is the second detector with this outcome after annealing.
After reprocess of the crystal an FAT was performed by the Saclay group and the detector was delivered to Cologne on the 17th March.

C003: delivered to Mirion on 26th July for annealing. After annealing, the detector exhibited significant leakage current and therefore requires reprocessing. This is the third detector to show this behaviour after annealing. The crystal is currently undergoing reprocessing.

A007: delivered to Mirion on 26th July for annealing, delivered to Cologne in December

B010: delivered to Mirion on 12th May for annealing, delivered to IPHC in November

B014: delivered to Mirion on 26th July for annealing, delivered to IPHC in November

C016: delivered to Mirion on 12th May for annealing, delivered to IPHC in November

A101: (DAGATA) delivered to Mirion on 27th February for repair

C101: (DAGATA) delivered to Mirion on 27th February for repair

Capsule allocation within the AGATA collaboration:

MIRION:
2+2 (DAGATA) detectors
A101 (DAGATA) repair
C003, C101 repair
C026 manufacturing

Liverpool:
0 detectors

Saclay:
1 detector
C002: mounted in TC04, used for optimization of the test facility

IPHC Strasbourg:
11 detectors
A005 mounted in Salamanca TC, ready for shipment to GSI for scanning
A011 scanned at IPHC, scanning finished
B014: mounted in TC08, used for scanning, scanning ongoing
B010, C016 delivered by Mirion in November after annealing
A003, A016, B016, B017, C013, C015 detectors transported by Walter Raniero on 15th March to IPHC, they will be transported them to Mirion for annealing

GSI:
0 detectors

IKP Cologne:
23 + 3 (DEGAS) + 3 (symmetric) +1 (DAGATA) detectors
A023, B023, C023 mounted in ATC24, ready for shipment
A021, B025, C017 mounted in ATC25, ready for shipment
A007, A013, A014, A015, A024, A025, A026
B005, B011, B013, B015, B024
C004, C008, C011, C024, C025
S001, S002, S003
A501, B501, C501 mounted in DEGAS TC
B101

INFN Legnaro:
39 detectors
A010, B006, C009 mounted in ATC01
A019, B019, C020 mounted in ATC02
A004, B009, C010 mounted in ATC03
A002, B007, C007 mounted in ATC06
A001, B001, C006 mounted in ATC09
A008, B004, C012 mounted in ATC12
A006, B002, C001 mounted in ATC14
A017, B018, C018 mounted in ATC18
A018, B012, C019 mounted in ATC19
A009, B020, C005 mounted in ATC20

A020, B021, C021 mounted in ATC21
A022, B022, C014 mounted in ATC22
A012, B008, C022 mounted in ATC23

Cluster Assembly and Maintenance

Cologne:

In Cologne, two triple cryostats are ready for shipment. The first is ATC24, owned by GSI and equipped with detector A023, B023, C023. The second is ATC25, equipped with A021, B025, C017, and the third one isthe DEGAS triple cryostat, assembled with detectors A501, B501 & C501. For the DEGAS cryostat, the formal transfer of ownership from Sweden to FAIR still needs to be completed.

The procurement of the hardware required to convert the last ADC into a triple cryostat, as well as for upgrading the DAGATA triple cryostat, is currently underway and is expected to take approximately 18 months. To accelerate both the double-to-triple cryostat conversion and the DAGATA upgrade, we will temporarily use available spare components—such as endcaps, Dewars, and feedthroughs—from the detector pool. These items will be replaced with the newly ordered parts as soon as they are delivered by the manufacturers.

Legnaro:

At present, ten ATCs are installed in the array: **ATC01, ATC02, ATC09, ATC14**, **ATC18 - 23** An additional six empty **ATCs - ATC07, ATC10, ATC13, ATC15** and **ATC17** - are in the laboratory. All except **ATC13** have already been annealed.

Several of the systems have been operating continuously for more than four years and now require urgent refurbishment due to deteriorating vacuum performance. In addition, some detectors must be annealed to recover from neutron damage.
Apart from two failed FETs or warm preamplifiers, all detector signals are currently available. However, gain shifts have been observed on some core signals, presumably caused by faulty connectors between the warm preamplifier and the MDR cable.

ATC12: The cryostat was dismounted due to vacuum issues caused by a saturated getter. Its capsules A006, B002, C001 were installed in the refurbished triple cryostat **ATC14**, which was then integrated into the AGATA array to replace an ATC currently housing neutron-damaged detectors.

Afterward, the original cryostat was annealed and re-equipped with capsules A008, B004, C012. Initial tests, however, again revealed vacuum problems, likely originating from a leak in the Dewar. Further testing is ongoing.
ATC03: The cryostat was annealed and equipped with the capsules A004, B009, C010 and tests are presently in progress.

ATC06: The cryostat was annealed and equipped with the capsules A002, B007, C007 and tested, ready to be mounted in the frame.

All of this work was carried out at Legnaro by the IKP and IPHC Strasbourg teams, in close collaboration with and support from the local staff. These combined efforts ensure that the AGATA spectrometer operates at its highest possible efficiency and performance.
The AGATA array is currently equipped with the maximum number of detectors, and two additional ATCs are available in the laboratory as potential spares, pending the completion of final tests. Moreover, the next six neutron-damaged detectors have been prepared for shipment to Mirion for annealing.

	ATC		End cap (1 or 2 parts)	Getter on cold finger	Core card (New/Old)	Installation ATC on array		Integrated Capsules			On the array	status in the lab	Annealed	On the structure		During or Since
Name	s/n number	Owner	Old/New	Yes/No	A/B/C	PatchBox n°	Ring n°	A	B	C				Since	To	years
ATC01	10034		O	Y	N/N/N	PB1	17	A010	B006	C009	On the Array			nov-25		0,4
ATC02	10052		O	Y		PB15	6	A019	B019	C020	On the Array			sept-23		2,5
ATC03	10046		O	N	N/N/N	PB26	7	A004	B009	C010		on test	2025	mars-22	mars-25	3,0
ATC04												IKP				
ATC05												IKP				
ATC06	10050		N	N	N/N/N	PB23	1	A002	B007	C007		on test	2024	sept-22	déc-23	1,2
ATC07	10055		N	N	O/O/N	PB17	5					empty	2025	sept-22	mai-25	2,7
ATC08			N	N								CTT				
ATC09	10058		N	N	N/N/N	PB31	8	A001	B001	C006	On the Array			mai-22		3,9
ATC10			N	Y	N/N/N	PB32	15					empty	2024	févr-22	juil-24	2,4
ATC11			N	Y	N/O/N	PB30	11					empty	2024	sept-22	juil-24	1,8
ATC12			N	N	O/O/O	PB21	19	A008	B004	C012		vac pb	2025	nov-25	déc-25	0,0
ATC13	10063		N	Y	N/O/O	PB30	24					empty		avr-24	févr-26	1,8
ATC14	10076	IPHC	O	Y	O/O/O	PB20	12	A006	B002	C001	On the Array		2025	sept-25		0,5
ATC15	10051		N	Y	N/N/N	PB27	18					empty	2025	mars-22	août-24	2,4
ATC16												IKP				
ATC17	10079		N	Y	N/N/N	PB24	13					empty	2026	févr-22	06/11/2025	3,8
ATC18	10080		N	Y	N/N/N	PB22	16	A017	B018	C018	On the Array			mars-22		4,0
ATC19			N	Y	N/N/N	PB28	9	A018	B012	C019	On the Array			sept-22		3,5
ATC20	10088		N	Y	N/N/N	PB14	14	A009	B020	C005	On the Array			janv-23		3,2
ATC21	10091		N	Y	N/N/N	PB19	10	A020	B021	C021	On the Array			févr-25		1,1
ATC22	10092		N	Y	N/N/N	PB26	28	A022	B022	C014	On the Array			mars-25		1,0
ATC23	10093		N	Y	N/N/N	PB3	23	A012	B008	C022	On the Array			oct-24		1,5
ATC24	10095	GSI						A023	B023	C023		IKP				
ATC25	10094	GANIL						A021	B025	C017		IKP				
ATC26																

A001	73952	France (GANIL)	132250	OPERATION		-	Old
A002	74030	Italy/Germany (Munich)	134034	OPERATION		Aug-25	Old
A003	74009	UK (Liverpool)	131705	OPERATION		-	New (reusable)
A004	74095	Turkey (Ankara)	139339	OPERATION		-	Old
A005	73949	Sweden	140236	OPERATION		Aug-25	New (reusable)
A006	74096	Italy (INFN)	140526	OPERATION		oct-20	Old
A007	74216	Italy (INFN)	146057	OPERATION		-	Old
A008	74108	Germany (IKP)	149843	OPERATION	no order yet	apr-24	Old -> New
A009	74209	UK (Liverpool)	151694	OPERATION		mar-21	Old
A010	74369	Italy (INFN Milano)	173487	OPERATION		-	Old
A011	74556	France (IN2P3)	176935	OPERATION		-	Old
A012	74503	France (CEA Saclay)	182075	OPERATION		-	Old
A013	74674	Germany (TU Darmstadt)	181762	OPERATION		-	Old
A014	74602	Germany (IKP)	182693	OPERATION		feb-26	New (reusable)
A015	74658	France (IPHC)	186049	OPERATION		-	New (reusable)
A016	74693	Finland	193132	OPERATION		-	New (reusable)
A017	74848	Hungary	200514	OPERATION		-	New (reusable)
A018	74913	UK (UWS)	202414	OPERATION		-	New (reusable)
A019	75109	France (GANIL)	206666	OPERATION		-	New (reusable)
A020	75118	France (IPHC)	207171	OPERATION		nov-22	New (reusable)
A021	75199	UK (Liverpool)	208096	OPERATION		jan-24	New (reusable)
A022	75216	Spain	208028	OPERATION		apr-24	New (reusable)
A023	75219	GSI	211001	OPERATION		Jul-24	New (reusable)
A024	75225	UK (Liverpool)	209279	OPERATION		Jun-24	New (reusable)
A025	75289	France (GANIL)	210707	OPERATION		May-25	New (reusable)
A026	75316	Italy (INFN)	210076	OPERATION		nov-25	New (reusable)
A027						-	
A028						-	
A029						-	
A030						-	

A501 (DEGAS)	74571	Sweden	184432	OPERATION		mars-23	New (reusable)
A101 (TUD)	74064	Germany (TU Darmstadt)		MANUFACTURING		mars-23	New (reusable)

B001	74034	Italy (INFN Padova)	129986	OPERATION		-	Old
B002	73979	France (GANIL)	132250	OPERATION		mar-21	Old
B003	74026	UK (Liverpool)	131705	OPERATION		aug-21	Old
B004	74010	Turkey (Ankara)	139339	OPERATION		dec-24 aug-21	Old
B005	74065	Sweden	140236	OPERATION		mars-20	Old -> New
B006	74076	Italy (INFN)	140526	OPERATION		aug-21	Old
B007	74208	Germany (IKP)	149843	OPERATION		-	Old
B008	74212	Germany (IKP)	149843	OPERATION		nov-23	New (reusable)
B009	74207	UK (Liverpool)	151694	OPERATION		apr-23	Old
B010	74202	Italy (INFN Milano)	154902	OPERATION		-	New (reusable)
B011	74203	Italy (INFN Legnaro)	156819	OPERATION		-	Old
B012	74217	France (IN2P3)	154132	OPERATION		-	Old
B013	74265	France (CEA Saclay nb 1)	157438	OPERATION		oct-20	Old
B014	74532	Italy (INFN)	178645	OPERATION		-	Old
B015	74659	Germany (TU Darmstadt)	181762	OPERATION		-	New (reusable)
B016	74575	Germany (IKP)	182693	OPERATION		-	New (reusable)
B017	74675	UK (York Univeristy)	199183	OPERATION		-	New (reusable)
B018	74957	Hungary	200514	OPERATION		-	New (reusable)
B019	74971	UK (UWS)	202414	OPERATION		-	New (reusable)
B020	75117	France (GANIL)	206666	OPERATION		-	New (reusable)
B021	75127	Italy (INFN)	207299	OPERATION		-	New (reusable)
B022	75134	UK (Liverpool)	208096	OPERATION		jun-23	New (reusable)
B023	75244	Germany (GSI)	211001	OPERATION		-	New (reusable)
B024	75321	Italy (INFN)	212323	OPERATION		Dec 25	New (reusable)
B025	75271	France (CEA Saclay)	210145	OPERATION		-	New (reusable)
B026						-	
B027						-	
B028						-	
B029						-	
B030						-	

B501 (DEGAS)	74601	Sweden	184432	OPERATION		nov-21	
B101 (TUD)	74266	Germany (TU Darmstadt)				feb-26	New (reusable)

C001	73899	Italy (INFN Padova)	129986	OPERATION		-	New (reusable)
C002	73951	France (GANIL)	132250	OPERATION		-	Old
C003	74013	UK (Liverpool)	131705	REPAIR NEEDED		-	Old
C004	74036	Turkey (Ankara)	139339	OPERATION		-	Old
C005	74033	Sweden	140236	OPERATION		aug-21	Old
C006	74115	Italy (INFN Legnaro)	146057	OPERATION		oct.-20	Old
C007	74164	Germany (IKP)	149843	OPERATION		sept.-25	Old
C008	74211	UK (Liverpool)	151694	OPERATION		mar-20	Old
C009	74220	France (DEA Saclay nb 2)	157438	OPERATION		mar-21	Old
C010	74222	Spain (IFIC)	158575	OPERATION		dec-24 aug-21	Old
C011	74424	France (IN2P3)	168432	OPERATION		-	Old
C012	74439	France (IN2P3)	168432	OPERATION		dec-24 aug-21	Old
C013	74422	Spain (IFIC)	169330	OPERATION		-	New (reusable)
C014	74487	Italy (INFN Milano)	173374	OPERATION		apr-24	Old
C015	74692	Germany (TU Darmstadt)	182692	OPERATION		-	New (reusable)
C016	74624	Germany (IKP)	182695	OPERATION		aug-21	New (reusable)
C017	74586	UK(York Univeristy)	199183	OPERATION		mar 25	New (reusable)
C018	74960	Hungary	200514	OPERATION		-	New (reusable)
C019	74970	UK (UWS)	202414	OPERATION		-	New (reusable)
C020	74994	France (IPHC)	206752	OPERATION		-	New (reusable)
C021	75128	Italy (INFN)	207299	OPERATION		-	New (reusable)
C022	75148	France (GANIL)	208400	OPERATION		aug-23	New (reusable)
C023	75267	Germany (GSI)	211001	OPERATION		nov.-24	New (reusable)
C024	75284	France (GANIL)	210707	OPERATION		sept.-25	New (reusable)
C025	75315	Italy (INFN)	210076	OPERATION		dec-25	New (reusable)
C026	75333	Italy (INFN)	212323	MANUFACTURING		-	New (reusable)
C027						-	
C028						-	
C029						-	
C030						-	

C501 (DEGAS)	74661	Sweden	184432	OPERATION		-	Old

Infrastructure and Mechanics (B . Million)

Discussion on the upgrade of the AF system for the GANIL campaign on-going. A detailed listing from Saclay will be delivered to see how to distribute the CORE investment. 2 LVPS bought covering now fully 3pi. A new batch of patch box in preparation. The GANIL team will visit LNL for infrastructure discussion.
Mechanics : all on-going. Meeting with the GANIL team for the latest configuration and GRIT interfaces. 2 detectors will moved from the top to allow the cryogenic targets. Richard to check the equilibrium of the array → no problem; calculations done and report to be distributed.
Data base : meeting with Olivier, new LVPS to be added during the 0° move
Detector location to be updated to.

Front End Electronics (A. Gadea)

Status at LNL (A.Goasduff)
28 Phase 1 systems operational, limited by the number of detectors working in the setup (1 FET broken) and excluding 1 detector for the test of the Phase 2 Electronics.

DIGIOPT12 (A.Pullia):
All available 261 DIGIOPT12 segment boards (all but the 9 in test setups), updated, to add the chip to enable/disable fast reset from slow control, are have been delivered to IFIC Valencia by mid February.
The issue for the DigiOpt12 units, when installing the 'COA SEGM V2.0' has been taken care of, procuring isolating and smaller diameter (to avoid mechanical issues) separators.
A.Pullia was informed of the long lead time for the delivery of the MEG-array connectors (36 weeks). He will contact EOS to check the inventory of the connectors).
Discussed the possibility to produce 25 spare DIGIOPT12 boards on O.C. during 2026, using the ADC's already purchased. A.Pullia agreed to proceed with this production, the cost saved by board should be around 210 € per Segment board and only 70 € per Core Board.
Discussion on how to proceed with the OR patch panel with decoupling components. The DIGIOPT12 3.7 has power supply of 3.3V incorporated in the discriminator output connector, while for the 3.6 versión we need to add the power supply

PACE (J.Collado, A. Goasduff, A.Gadea, V.Gonzalez, J.M. Deltoro)
PACE Production
Teydisa order amount to a total of 90 PACE boards IFIC order 15 boards, ETSE order 20 boards and GANIL 55 boards. In 2024 were delivered 15 from the IFIC order and 1 from the ETSE order, 6 with issues with he voltage regulators.
On the 13th of March delivered the remaining 19 boards from the ETSE order and 10 boards from the GANIL order.
Last week the IFIC and ETSE teams discussed the CAT test to perform, that will be starting this week. The PACE boards will be connected to a complete set of DIGIOPT12

boards. We will use the test mode of the DIGIOPT12 ADCs, and the full datapath from the DIGIOPT12 to the readout server with SQM will be tested. We have at Valencia a GTS test setup provided by A.Goasduff and the test of the GTS alignment will be tested as well. Presently we are not able to test the Ethernet communication, we can only test the physical interface.
Other 2 PCE boards with failures are still in Valencia.
The 50 TE0808-05-BBE81-E ordered by GANIL and the 40 TE0790-03 (AMD compatible) have been delivered to IFIC and ETSE Valencia. The procurement of all Trenz SoMs and JTAG interfaces is now complete.

The INFN tendering for 50 PACE boards was opened and Teydisa sent the documentation.

The INFN 50 PACE PCB order failed and we need to find funds to order them. Nevertheless, during the last discussion with Teydisa at the end of February, it was found that one of the most relevant causes of the delivery delay is the fragility of the PACE PCB.

Type	Base thickness	Nominal final Cu	Manufacturer	Manufacturer ref.	Batch num.
HTE Copper	17µ	42µ	CO-TECH	LH408	2018223184
Prepreg 4450F RO4350B	2x0,10mm=0,20mm		ROGERS	RO 4450 F	A2474023
Core RO4003C	0,20mm-35/35µ	35/35µ	ROGERS	RO 4003 C	00408719
Prepreg 4450F RO4350B	2x0,10mm=0,20mm		ROGERS	RO 4450 F	A2474026
Core FR4>170Tg	0,10mm-35/35µ	35/35µ	ISOLA DUEREN	PCL-FR-370HR	19411074
Prepreg 1080 FR4>170Tg	2x0,07mm=0,13mm		ISOLA DUEREN	PCL-FRP-370HR 1080-66	19323168
Core FR4>170Tg	0,10mm-35/35µ	35/35µ	ISOLA DUEREN	PCL-FR-370HR	19411074
Prepreg 1080 FR4>170Tg	2x0,07mm=0,13mm		ISOLA DUEREN	PCL-FRP-370HR 1080-66	19323168
Core FR4>170Tg	0,10mm-35/35µ	35/35µ	ISOLA DUEREN	PCL-FR-370HR	19411074
Prepreg 4450F RO4350B	2x0,10mm=0,20mm		ROGERS	RO 4450 F	A2474026
Core RO4003C	0,20mm-35/35µ	35/35µ	ROGERS	RO 4003 C	00408719
Prepreg 4450F RO4350B	2x0,10mm=0,20mm		ROGERS	RO 4450 F	A2474023
HTE Copper	17µ	42µ	CO-TECH	LH408	2018223184

The company has use CO-TECH LH408 copper layer, that in principle is ok in the factory specifications, but the peel-off resistance is 10 times smaller than the recommended product by ROGERS. This issue will be discussed with the factory and if necessary we will change PCB provider.

PACE Firmware

Presently only 1 debugging setup at LNL build by A. Goasduff, in the experimental hall 1, connected to an AGATA capsule in the array and to a GTS tree is available, for data taking and to debug the GTS firmware.

The first Zeptonova 2025 contract completed and deliverable report sent to GANIL. We will attached the report to the minutes.

Documentation available now at:

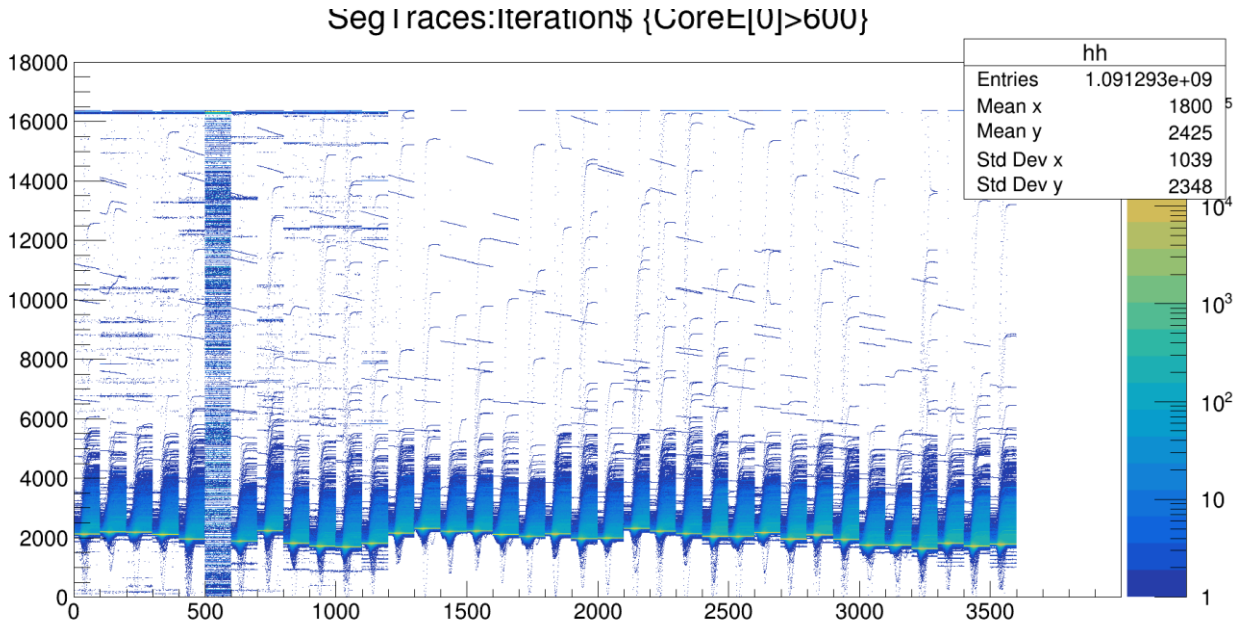
https://pacedocumentation-6e73de.pages.in2p3.fr/.
and the different version of the firmware developed are stored at:

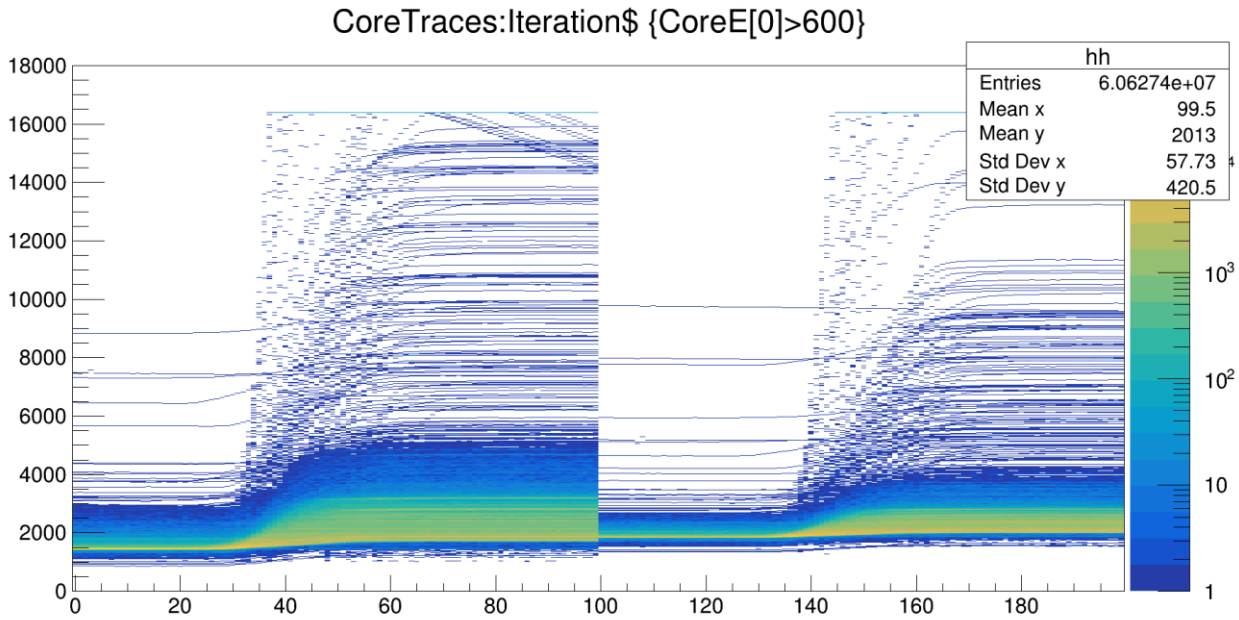
https://gitlab.in2p3.fr/agata/daq/pace-bitestreams

A second Zeptonova 2026 brief contract started with GANIL with few urgent tasks, mainly related with the GTS integration almost completed. The tasks were:

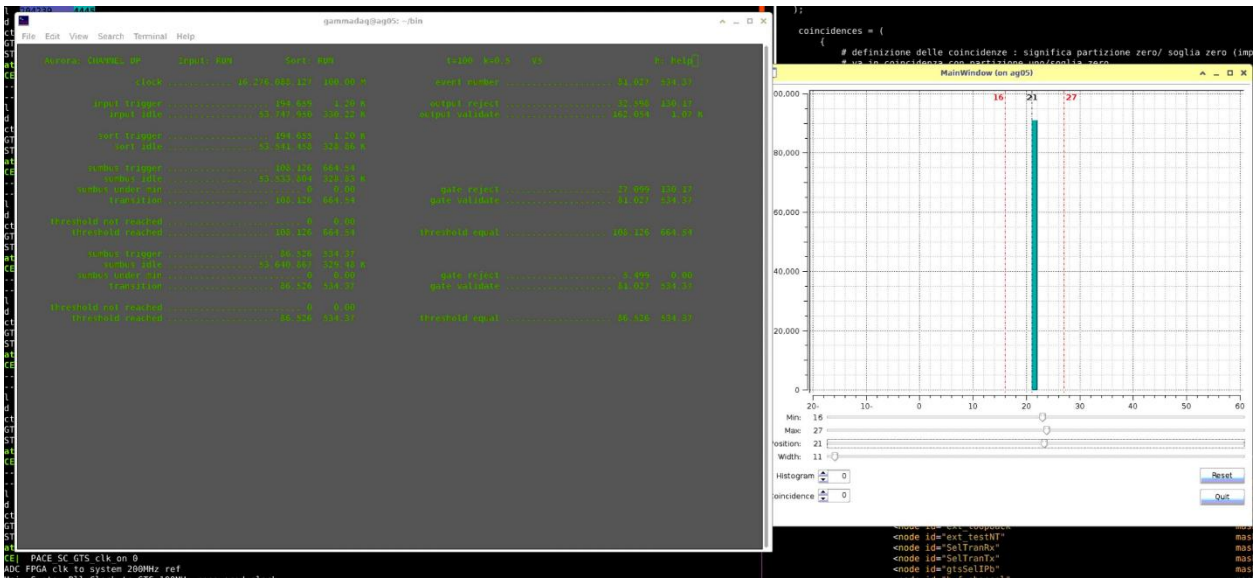
1. Maintenance of AGATA Ph2 PACE GTS to Trigger processor communication for Ph2 Firmware.
2. Maintenance and verification of the GTS fine delay measurement.
3. Maintenance and verification of the External Trigger signal for PACE Board and global time synchronization.

The Data formatting part of the firmware has also be modified under the request of the DAQ Working Group. The samples use 16 bits while the information is 14 bits. The location of the 2 extra bits is relevant for compatibility with the previous electronics and filters. A.Goasduff and G. Baulieu has checked the format and it seems ok, issues with the energy estimates in the Root tree.





The messages to and from the Trigger Processor are properly decoded. As reported in the last AMB meeting J.Collado performed a full simulation of both the NUMEXO2 encoder and PACE encoders to overcome the differences. Now the NUMEXO2 and PACE firmware are perfectly matching. Nevertheless, in early March we were not abl to get the Validations and Rejections properly from the Trigger Processor. With the help of Abderrahman Boujrad it was possible to install the old chipscope version in the GTS tree and we identified the issue as a bad Transceiver alignment after the GTS alignment procedure. The problem was solved by modification of the GTS alignment procedure.

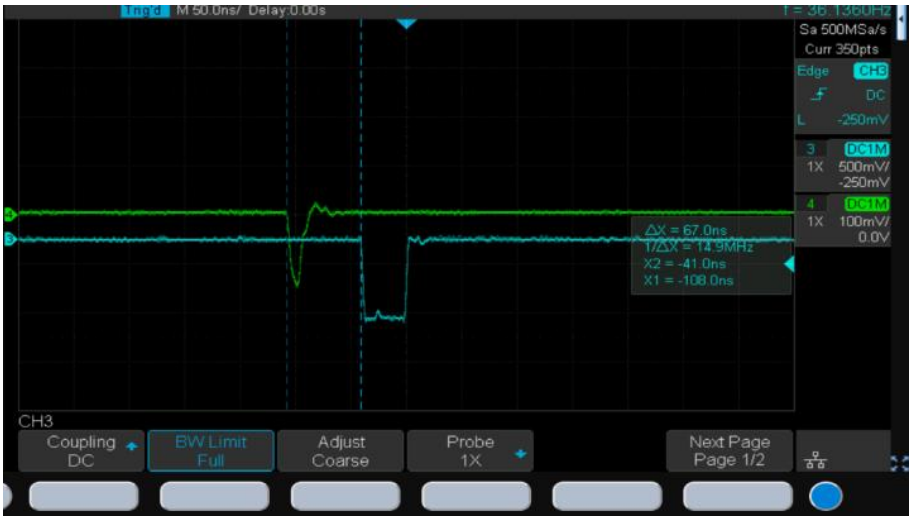


Presently the GTS Validation/Rejection process is working ok. The timeout has been tested

Following validation the data is sent to STARE and STARE sent the data to the SQM server. We (Alain and me) need still to check that the data are what is expected.

Regarding the second task, we are able to perform the coarse alignment regularly an A.Goasduff checked the stability of the GTS alignment over time, that shows a constant DeltaT with AGAVA over 1 day. The activity to be done in this short contract is to complete the fine alignment. Issues with the GTS test PACE board at LNL and some issues again in the Vivado compilation have delayed the test of the work done.

FULL TS AGAVA	Time from GTS alignment [min]	Last 2 bytes V2	Last 2 bytes AGAVA	DeltaTS
6C53CEA25	4.8	17	25	E
81DDA37DA	5.8	CC	DA	E
970128220	6.7	12	20	E
A6FBC114B	7.5	3D	4B	E
2D23055EC8	32	BA	C8	E
5522E25068	60	5A	68	E
64F5DA786E	72	60	6E	E
8BAD600B42	99	34	42	E
11BF289937C	203	6E	7C	E
2210807EA3E	390	30	3E	E
60C698ACCE4	1108	D6	E4	E
77F9D0AD00E	1374	00	0E	E



The External Trigger has been implemented in the firmware. There is possibility to extract the internal trigger or receive an external trigger. The AND of the external trigger with the internal is still to be tested.

Opened question on the invoicing with delivery delay.
We would need to evaluate a new contract if necessary for the rest of 2026 tasks.

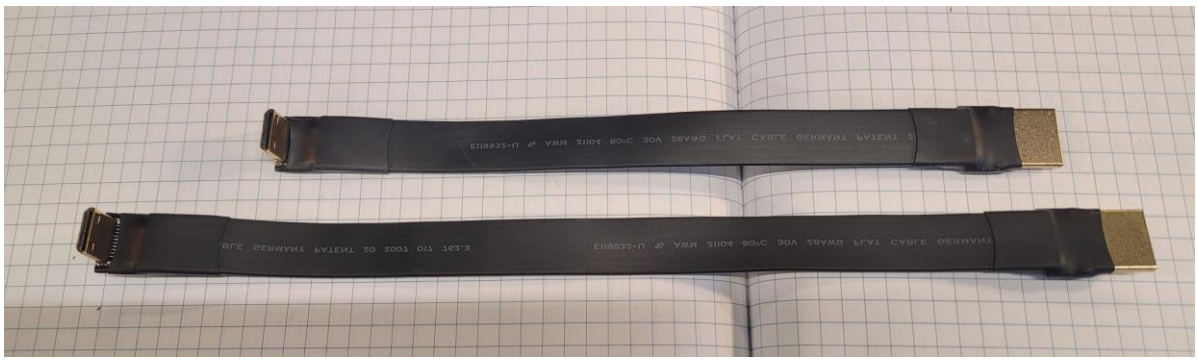
Tasks to be done beyond the present contract:
-Monitoring of the external trigger and the internal trigger to set the coincidence
-Complete SMART integration
-Ethernet on petalinux
-Support for the final firmware integration with Phase 1
-Cleaning and securing the deployment firmware version

PSU and Mechanics: (V.Gonzalez)
Missing PSU components for the new AGATA PSU-PH2 v2.13 delivered and sent for the pre-production series. The company can now proceed with the production of the 2 pre-production units to be checked before proceed with the complete production:
The GANIL received orders:

ACCELERATEUR D'LONS LOURDS		2_SIGBPLv2.5		
ACCELERATEUR D'LONS LOURDS		J-PH2 v2.13		
ACCELERATEUR D'LONS LOURDS		2-PWRBCKPLN2		
ACCELERATEUR D'LONS LOURDS		2_SIGBPLv2.5		

Production of the mechanics
On-going now partially subcontracted because of issues with the CNC machine.
90 PACE dissipaters and 84 heat exchangers ordered.
The 90 PACE dissipaters are due by the end of March and then the company will proceed with the heat exchangers.
Studying the inner cabling and the heat transmission elements to improve reliability of the mounting.
The front and back panels now in production at IFIC.

Cabling
Evaluating alternatives to the present DIGIOPT12 Slow Control HDMI cables, that show high failure rates.
GANIL has provided a sample procured by an EU company that will be tested and IFIC has provided a different set of cables but with higher rigidity.



STARE production and Firmware Status (N. Karkour, X. Lafay)

Production
Received TE0841-03-41l31-A SOMs 25 purchased by INFN and 39 by GANIL. Now enough for 135 STARES + spares.
All STARE motherboards are now being populated and tested.

Firmware
New version of the UDP firmware with counters for diagnostic, distributed.

STARE UDP protocols tested with source and receiver in different buildings and going through switches now has improved. Planning a qualification test (IP2I Lyon and IJCLab Orsay) with a 100Gb link

Summary of Procurement and Delivery Schedule
DIGIOPT12 v3.6, v3.7 and v3.7.1: delivered 90 core boards and 270 segment board, update of the fast-reset logical component completed for most of segment boards (9 missing)and ready by mid February 2026.

STARE hardware: ongoing the integration and test of the remaining STARE up to 135 STARES + spares ongoing.
Purchased 64 STARE SoMs TE0841-03-41I31-A, 25 by INFN and 39 by GANIL, already available.

STARE Firmware: existing for all versions of TE0841 SoMs. The existing firmware is based in UDP data transfer. Now with diagnostic counters.

PACE hardware: 39 PACE boards in Valencia to be tested by CAT.

The 25 TE0808-05-BBE81-E ordered by INFN were delivered on 3rd December 2025 and 12 are sent to Teydisa already, GANIL purchased 50 TE0808-05-BBE81-E delivered mid February 2026

Order for the 50 remaining PACE boards placed by INFN using 2025 funds. PCBs to be produced waiting for decisions.

PACE firmware: Mostly completed. Data format is now working and monitoring as well. Almost complete the GTS integration.
Necessary to explore how the MWD algorithms implemented work at high rates.

PSU and backplanes: 50 PSUv2.5existing since end of June, minor modification to gain stability ongoing.
PSUv2.5 supports already all DIGIOPT12 boards v3.6, v3.7 and v3.7.1. Changed design to PSUv2.6 (t13_rev1) due to component obsolescence. The PSUv2.6 board available since October. Purchasing order for 30 units to be placed by INFN on 2025 funds and 30 more already ordered on O.C. existing at GANIL. A total of 110 PSU will be existing early 2026.
Power backplane: 77 units existing and Signal backplane: 85 units existing.

Ongoing order by GANIL of 70 power backplane and 60 Signal backplanes, on core and O.C., to complete the production including spare

Mechanics:
- Boxes: 90 units + 15 units ordered now by GANIL
- Crates: 90 units + 5 ordered now by GANIL
- Cooling plates + heat exchangers:
  - 29 PACE cooling blocks (+ 8 to be update to new design) + 99 ordered
  - 78 STARE cooling blocks
  - 240 Digitopt12 cooling blocks
  - 59 Heat exchangers, Alodine treated + 84 ordered
- Frontal and rear panel under production.

Data Processing (O. Stézowski)

The primary objectives for Phase 2 include the maintenance and scalability**:** Ensuring the pipeline can handle data from up to 4π geometry, emphasizing robustness and scalability; the integration of Phase2 Electronics**:** Preparing for the inclusion of new hardware and software components; the Open Science/Open Data**:** Enhancing data accessibility, documentation, and compliance with open science principles.

Regarding the V2 Integration , the status is the following :

- Individual new stages of the pipeline (from STARE to DCOD) are almost fully developed. A pipeline up to PSA (Pulse Shape Analysis) at 5 kHz, with 2 PSA per node and direct connection, has been validated.
- Tests at Orsay (23-24 March 2026): A series of test with real hardware, building to building data transfer to the mini DAQ box have been performed
  - **First Test:** 18 STARES sending ADF frames to the server, including idle frames.
  - **Second Test:** 6 STARE emulators added, simulating 24 crystals.
  - **Third Test:** 18 STARES at 50 kHz + 6 emulators at 20 kHz, running for 15 hours without PSA. Some frame losses were observed, likely due to CPU emission issues.
- Monitoring**:** Switches and slow control of STARE cards were monitored, with basic IPBus commands executed and fake data used for testing.

Open question arises on the scalability in the midterm point of view**.** The system must scale up to 135 crystals, requiring rationalization, monitoring, and efficient use of RAM/network resources.

- Technological Upgrades:
  - Implementation of vector databases (Redis) for RAM memory exchanges.
  - Use of time-series databases for monitoring (e.g., temperature, LN2 levels).
  - Containers for both online (DCOD) and offline processing (DAemule).

    - Parallelism and concurrency improvements, with current PSA running up to 20 kHz.
- Future Work: Development of AGASPY and integration of AI-like algorithms.

Regarding the recent infrastructure upgrade :

    - 15 servers already installed at LNL (Legnaro National Laboratories).
    - Additional servers planned: 14 for 2π network, 1 Apollo server, and 5 C6400 servers.
    - RAM memory crisis addressed with 2 STARE per node (~60 + 40 + 8 channels).
    - Additional resources: 1 GPU server, 2 CPU servers, and 1 server with a 100 Gb/s network interface.

During the Orsay test, a power consumption benchmark was performed. It was measured, in the phase 2 environment, CPU-based, 300 W / node / 2 crystal. A 2p system will therefore use 15kW for PSA and about 5kW for the CEPH storage.

Open Science/Open Data

- Fairification of Data**:** Documentation improved for shifts and software.
- Simplified Procedures**:** Grid data handling simplified using Docker containers.
- Identity and Access Management**:** New service (Indigo-IAM) implemented.
- Metadata**:** Progressive addition of metadata (YAML, JSON, XML).
- Data Reorganization: Ongoing efforts to reorganize data and ensure grid compliance.
- Data Management Plan (DMP): Collaboration with ACC to create a full catalog of datasets.

Future Developments

- DPDK**:** Fast transfer from network cards directly to RAM, bypassing the OS kernel. Potential replacement for SQM by 2030.
- AI Integration: Plans to integrate AI for PSA/tracking and advanced monitoring before 2030.

PSA and Tracking R&D (A. Boston)

The next AI/ML OASIS workshop is announced. It will be only online.

The upgraded test cryostat was delivered to IPHC.

No Tracking activity.

Report on the A601 neutron test. Kept delayed due to Birmingham technical difficulties. Postpone for spring –summer.

IPHC scanning table. In 2025, A005 was fully scanned and analysed (see AGATA week); B003 scan completed, data are in Lyon and the new PD is learning the code to

process the neural network. C016 scan is starting. At the end, A,B,C scans will be done and will be analysed in the light of machin learning.

GSI : A005 have been repaired by MIRION. The detector is available for the collaboration. It will be scanned at GSI as it was already scanned at Strasbourg for comparison. A011 is presently at GSI for scanning

Salamanca : 2024 was devoted to fine-tuning all the acquisition software for the B003 scan. They have two completely different measurement systems (AGATA detector and its electronics, and gamma camera and its VME electronics), in addition to the analogue and logical parts building the coincidence conditions. Presently all data are grouped into a single tool storing the generated data directly to a database. The acquisition is done to files and from there to the database. The computer software still needs to be improved because it takes quite a long time to incorporate the data into the database from the files generated during acquisition. After an initial testing period, they began taking measurements on 27/01/2025 and finished on 24/04/2025, from a single configuration. That is, from a relative AGATA-gamma camera position. They encountered some desynchronization issues in the process. Subsequently, we rotated the AGATA detector to a new position relative to the gamma camera and restarted the measurements on 29/04/2025 until 03/06/2025. During the measurements the development all the analysis software started. First, creating a matching program to match AGATA events with those from the gamma camera. The AGATA electronics process all events in the detector, while the gamma camera only saves those in coincidence with AGATA. Each electronics had its own clock, with counters that diverged, and it was necessary to carry out several tests and adjustments, and finally decided to opt for a recurrent method that provided very good results. The method consisting on dividing the total sample into blocks and using the correlated events in one block to define the conditions for the next block. Some programs and algorithms have been developed that cover the different stages of the data analysis. At the moment only working with the AGATA signals.
In addition, they have conducted several related studies on Baseline analysis, check that the gain of each segment does not vary over time, study of filters to be applied. Currently they are studying how to make the comparison (PSC) for transient signal, and when ready we will start to look at the correlation with MBS.Liverpool :

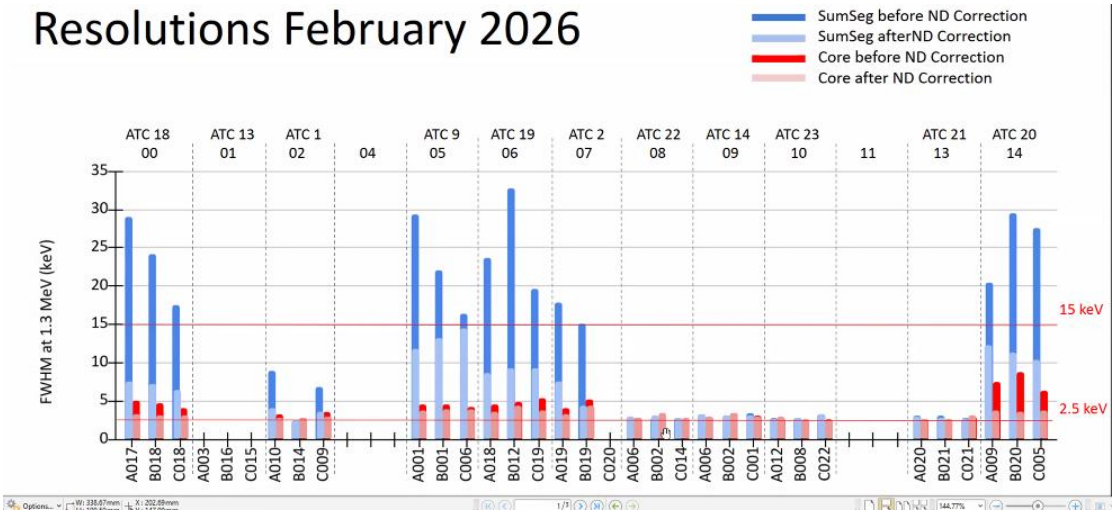
Liverpool activities : some issues in the porting to AGAPRO of the Fraser developments. An on-line meeting between Lyon and Liverpool is organized.

An important discussion is on-going on the next step for PSA basis. So far, the on-line processing is using the ADL basis with success. J. Ljungvall kept upgrading his approach via the AGATAGeFEM software package (10.1140/epja/s10050-021-00512-w). It seems that his package gives now better results than the historical ADL code. Before summer, a joined meeting with the full PSA WG and the software part of the DAQ WK will be organized to migrate the development to the AGAPRO prod branch and on-line. Joa is finalising the flow to ensure the reliable production of the basis. It is expected that a tracking improvement will be reached. Such evaluation will be conducted by the performance team.

The team will need to make a decision by end of 2026 on the use of PSA basis for the on-line.

Performance and Simulation (M. Labiche)

The overall situation at LNL was presented (see below). ATC18, 9 and 19 to be the next on the annealing line.



High energy run still under analysis. Data vs Simulation on-going

<u>Simulation WG:</u>
On the simulation aspect, progress on the documentation and validation on G4.11.
GDML file for the 0° campaign included and to be checked.
PARIS and NEDA are already in the package.

<u>Commissioning WG:</u>
0° campaign commissioning to be defined after Pre-PAC overview.

Dissemination (I. Kuti) – agata.org
Technical paper : "*The combined AGATA-DSSD set-up for the measurement of very small heavy-ion fusion cross sections*" by M. Del Fabbro et al was distributed to the AMB; comment have been given on the AGATA items and green light was given for publication

Contract (4.1k€) with the GlobalCommunication company in Spain for upgrading the agata.org web site was signed and funded by OC. Milestone in April for delivery.

Scientific production is excellent

From GANIL campaign :

Probing Exotic Cross-Shell Interactions at $N = 28$ with Single-Neutron Transfer on ^{47}K

C. J. Paxman[1,*], A. Matta[2], W. N. Catford[1], G. Lotay[1], M. Assié[3], E. Clément[4], A. Lemasson[4], D. Ramos[4], N. A. Orr[2] *et al.*

Show more

Phys. Rev. Lett. **134**, 162504 – **Published 25 April, 2025**

DOI: https://doi.org/10.1103/PhysRevLett.134.162504

\+ https://arxiv.org/abs/2601.06242v1 (PRC submitted)

First Observation of Multiphonon γ-Vibrations in an Odd-Odd Nuclear System

E. H. Wang[1,2,3,*], M. Abushawish[4], J. H. Hamilton[3], A. Navin[5,†], S. Bhattacharyya[6,7], J. Dudouet[4], G. H. Bhat[8], J. A. Sheikh[9,10], S. Jehangir[11] *et al.*

Show more

Phys. Rev. Lett. **136**, 072501 – **Published 18 February, 2026**

DOI: https://doi.org/10.1103/1gy6-v3sb

Shape evolution in neutron-rich odd-even $^{105-109}$Nb isotopes

M. Abushawish[1,*], E. H. Wang[2,3,4,†], J. Dudouet[1,‡], A. Navin[5], E. Clément[5], G. Duchêne[6], J. H. Hamilton[4], A. Lemasson[5], C. Michelagnoli[5,§] *et al.*

Show more

Phys. Rev. C **113**, 014308 – **Published 9 January, 2026**

DOI: https://doi.org/10.1103/sj3y-qnzp

Level structure of light neutron-rich La isotopes beyond the $N = 82$ shell closure

A. Navin[1,*], E. H. Wang[2,3,4,†], S. Bhattacharyya[5,6], Menglan Liu[7], Cenxi Yuan[7], M. Rejmund[1], A. Lemasson[1], S. Biswas[1,‡], Y. H. Kim[8] *et al.*

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Phys. Rev. C **112**, 044310 – **Published 16 October, 2025**

DOI: https://doi.org/10.1103/3jvn-hzdh

Eur. Phys. J. A (2026) 62:38
https://doi.org/10.1140/epja/s10050-025-01782-4

THE EUROPEAN PHYSICAL JOURNAL A

Regular Article - Experimental Physics

Triaxiality of neutron-rich ruthenium nuclei studied by lifetime measurements

J. S. Heines[1,2,a], V. Modamio[1,2], A. Görgen[1,2,b], W. Korten[3], E. Clément[4], J. Dudouet[5], A. Lemasson[4], J. Ljungvall[6,7], J. M. Allmond[8], T. R. Rodríguez[9], A. M. Bruce[10], D. T. Doherty[11], A. Esmaylzadeh[12], E. R. Gamba[10], J. Gerl[13], G. Georgiev[6], L. Knafla[12], P. Koseoglou[13], S. Lalkovski[14], H. -J. Li[4], G. Pasqualato[6], L. G. Pedersen[1], S. Pietri[13], D. Ralet[6], E. Sahin[1,2], S. Siem[1,2], P. -A. Söderström[13,15,16], C. Theisen[3], T. Tornyi[17]

Under review or distributed to the collaboration :

- $^{46}Ar(^{3}He,d)^{47}K$, submitted to PRL, D. Brugnara et al. (MUGAST)
- *Lifetime Measurements Probe the Evolution of the N=50 Gap Towards* ^{78}Ni, submitted to PRC, A. Gottardo et al (VAMOS fission)
- *Anomalous quadrupole transition probabilities in the* $f_{7/2}$ *mirror nuclei*", submitted to PRC, E. Escudeiro et al (NEDA)
- *Alternative approach to nuclear-structure studies: unsafe Coulomb excitation of* ^{106}Cd, submitted to EPJA D. Kalaydjieva (VAMOS MNT)
- Regularities ….Au isotopes Y. Cho submitted to PRL (VAMOS MNT)
- Measurement of the $^{15}O(\alpha,\gamma)^{19}Ne$ X-ray burst trigger reaction through first α particle-transfer reaction onto an exotic ion beam, J.S. Rojo et al to be submitted to PRL (MUGAST) – core list distributed.

- *Dual shape and intruder evolution between* ^{73}Zn *and* ^{75}Zn *isotopes*,to be submitted to PRC, G. Duchêne (VAMOS fission)
- Evolution of high-spin states in neutron-rich $^{195-202}Au$ isotopes approaching N = 126 shell closure to be submitted to PRC Y. Cho (VAMOS MNT)

From LNL2 campaign :

Physics Letters B
Volume 872, January 2026, 140084

Letter

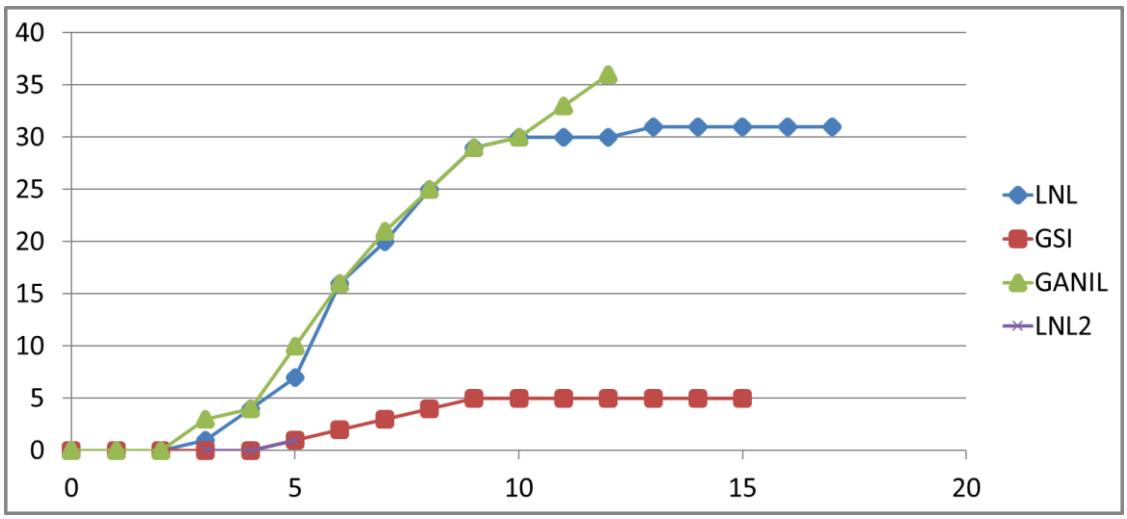
Fusion of $^{12}C+^{28}Si$ at deep sub-barrier energies

A.M. Stefanini [*a] ✉, G. Montagnoli [b c], M. Del Fabbro [b c], A. Goasduff [a], P.A. Aguilera Jorquera [b c], G. Andreetta [b c], F. Angelini [a b], L.V. D'Auria [b], M. Balogh [a], D. Bazzacco [c], J. Benito [b c], G. Benzoni [d], M.A. Bentley [e], N. Bez [c], A. Bonhomme [f], S. Bottoni [d g], A. Bracco [d g], D. Brugnara [a], L. Busak [h], S. Capra [d]...M. Zielińska [v]

Distributed to the core list author :

The CNO cycle in the Sun Constrained by a Novel sub-femtosecond Lifetime Measurement with AGATA
E. Pilotto et al to be submitted to NATURE

The publication statistics (DOI published) is presented below.



The AGATA week 2026 and next ACC meeting are jointly organized at Warsaw. The indico is setup https://indico.in2p3.fr/event/37746/ and registration open.