

The Infrastructure Team

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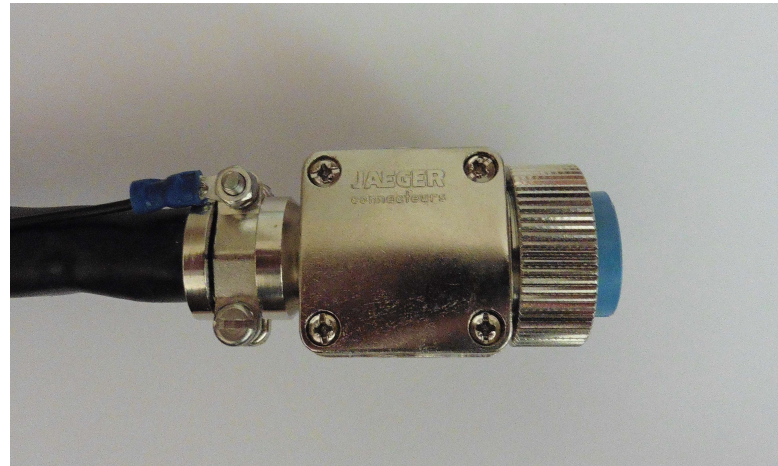


Highlights

- The experimental campaign closed end of July and the **detectors were kept cold** during the summer pause
- **The LN₂ and HV systems are powered from GANIL UPS together with many other devices.** In case of emergency shutdown (laboratory alarm) the detectors are powered off immediately (no HV ramp). Work in progress to use UPS status to activate a **controlled shutdown** (emergency detector fill and HV ramp down)
- **LN₂ system maintenance:** new PC MUSCADE, Profibus module repair
- **AXIS LVPS and new DIGIOPT12 Digitizers:** **frequent loss of SYNCH.** Digitizer LV conversion module too hot. Problem temporarily solved adding fans behind the new digitizers. **Proposal to remove all 6.5 V modules:** not used with new Digitizers
- **Instability of LN₂ level measurement in several detectors:** **patch box refurbishment is needed**
- **Infrastructure sufficient for AGATA 1 π (45 capsules)**

Highlights

- **Detector LV cable:** unsoldered pins on the Jaeger connectors. Excessive and continuous strain endured by the very stiff cable over the years. Installation of a cable clamp + accessory is necessary. New cable support to ease the array rotation must be considered. Only broken cables will be modified. Working cables will be modified after the end of the GANIL campaign in 2019/2020. *What about using a thinner and more flexible cables ? From electronics experts: more flexible cable is allowed but with the same diameter and shielding*



Future

- Document with array specifications and requirements for the host laboratory based on LNL, GSI and GANIL experience (present MoU with 20 ATC): *Basic infrastructure for the AGATA array. Checked by the AMB*
- AMB will prepare the new “Project Definition Document” before mid 2018 to permit all collaboration partners to ask for funds already in 2019 and have enough time to get ready for the 2021 move. AMB will soon confirm how many capsules will have to be included in this Project Definition
- No real work is foreseen before 2019, but paper work (global design study and cost estimation) must be done in 2018 to adjust the present project to the number of detectors specified in next MoU as will be defined by the AMB
- New mechanics and electronics specifications will determine DSS solutions

Future

- Next AGATA site after the GANIL campaign ? LNL, GSI, GANIL, HIE-ISOLDE and JYFL
- For the next installation we expect **changed conditions** and constraints in "old" sites. **What about the new ones ?**
- Common mechanics and infrastructure solutions, independent from the host laboratory. One or more **experts from each laboratory considered for AGATA installation should communicate specific requirements of their laboratory and check the compatibility with AGATA characteristics**
- When should we think about a major infrastructure upgrade ? Not only for LN₂ and HV but also LVPS and mechanics. Present infrastructure **not ready** to accomplish the present MoU specifications (2020 is very close)
- Future projects must comply with host laboratory standards and regulations (security, communication protocols, ...). A **representative of each laboratory** should be appointed to investigate specific technical issues

Autofill

Present

The LN₂ system is ready for **24 detectors**:

- 3 Valve Control Crates + 3 Profibus Crates, PLC
- 1 external LN₂ tank + 3 buffer tanks, LN₂ manifolds, valves, PT100, ...

2nd PT100 (close to the crystals) monitored with a Siemens PLC module, without interfering with the PBC/VCC hardware

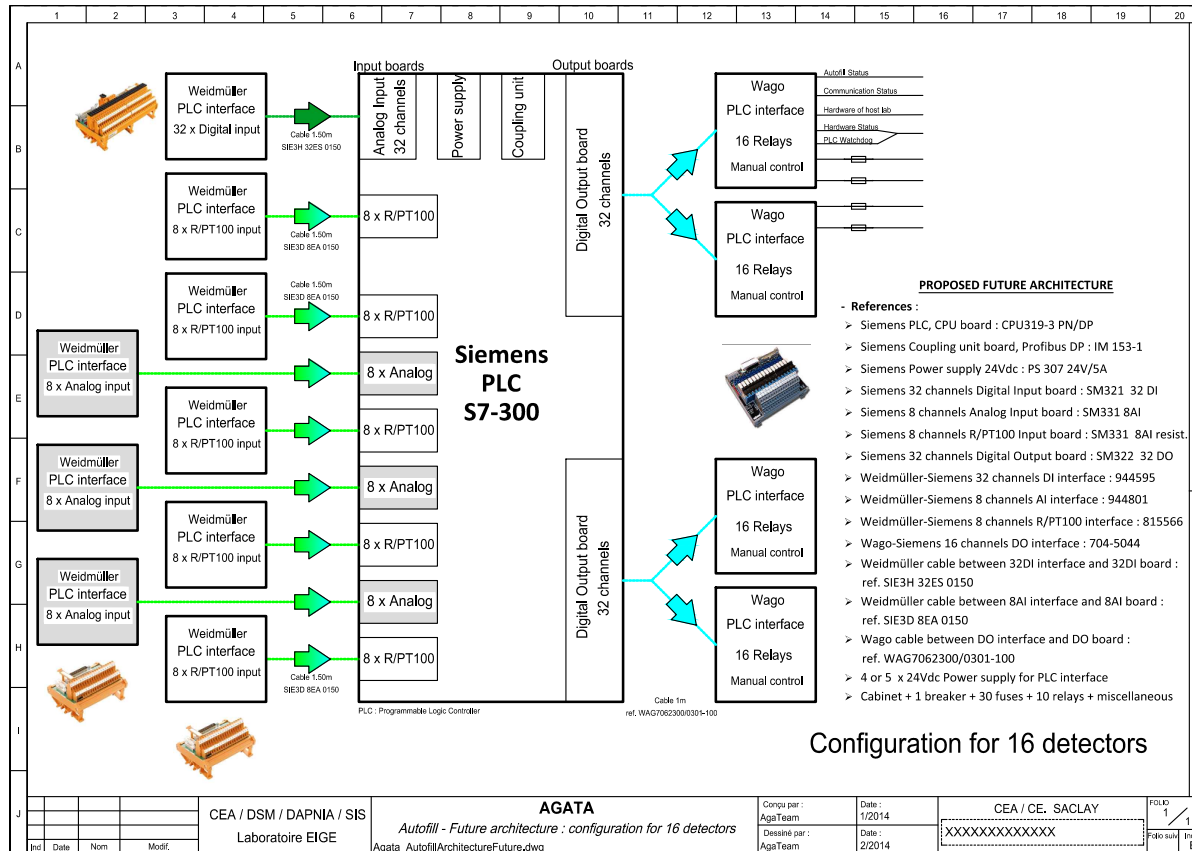
Future

The **draft for a new autofill system**, based on Siemens modules, has been prepared by Saclay (**1 PT100 reading and 16 detectors**) and presented to the AMB in 2013. Estimated **development time: ~ 2 years**

Aim: define a solution for 30 detectors, that could be extended to 60 detectors and find a nearly common cryogenic installation for the different host labs in order to minimize the changes in the PLC

AMB accepted to go for a prototype but the priority of has changed: **the project has been delayed by at least 2-3 years**

Autofill



Hardware for 16 detectors, single PT100 reading
Manual operation included

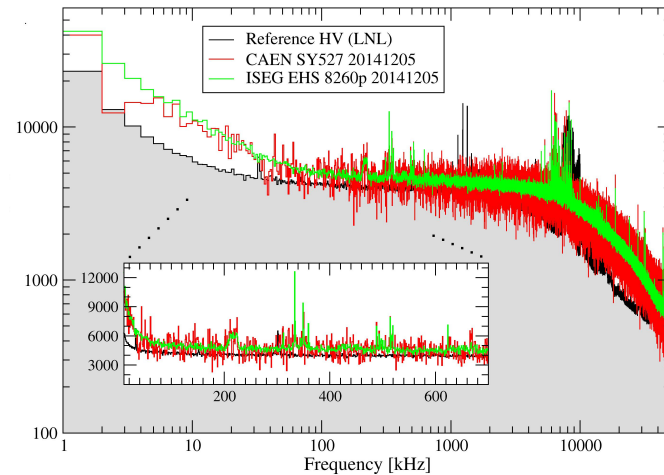
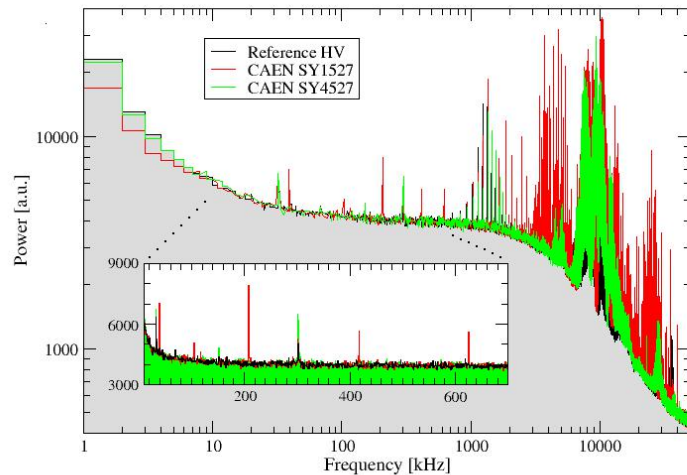
HV

Present

We have **2 CAEN SY527** mainframes + **12 HV boards** on loan from the **Gammapool**. In the current configuration, only 1 mainframe is required

Future

We have investigated the characteristics and performances of possible replacements. The systems considered (**CAEN SY4527** mainframe + **A1560H HV boards** and **ISEG crate + EHS 8260P HV boards**) have similar performances and are both excellent solutions for HPGe detectors

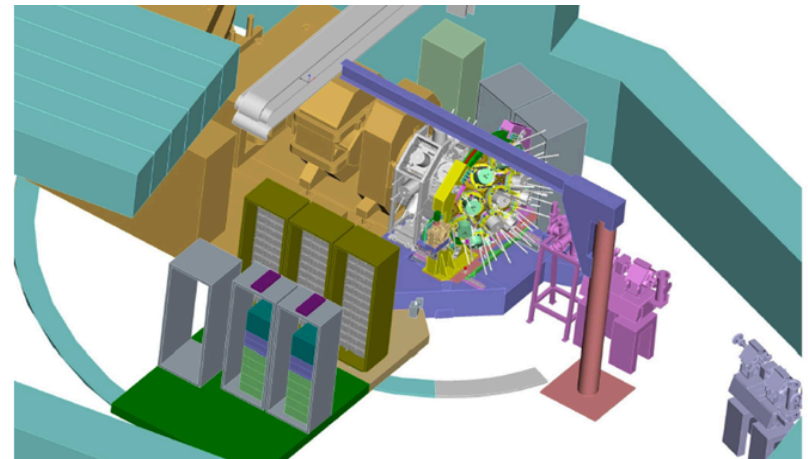
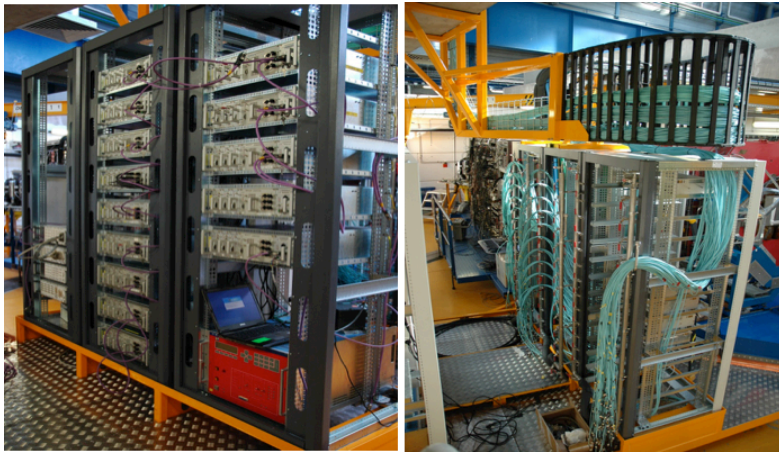


Space requirements

Could we squeeze AGATA 4π infrastructure in 3 racks ? No way with present electronics (3 racks necessary for 20 ATC)

DSS space requirement for 20 ATC

- 2 racks for 24 V1 digitizer boxes (8 ATC = 24 capsules),
- 1 rack for 12 V2 digitizer boxes (12 ATC),
- 3 racks hosting low-voltage and high-voltage power supplies, the detector control and support system and the Ge cooling system for twenty dewars



Team Activities

