

The Infrastructure Team

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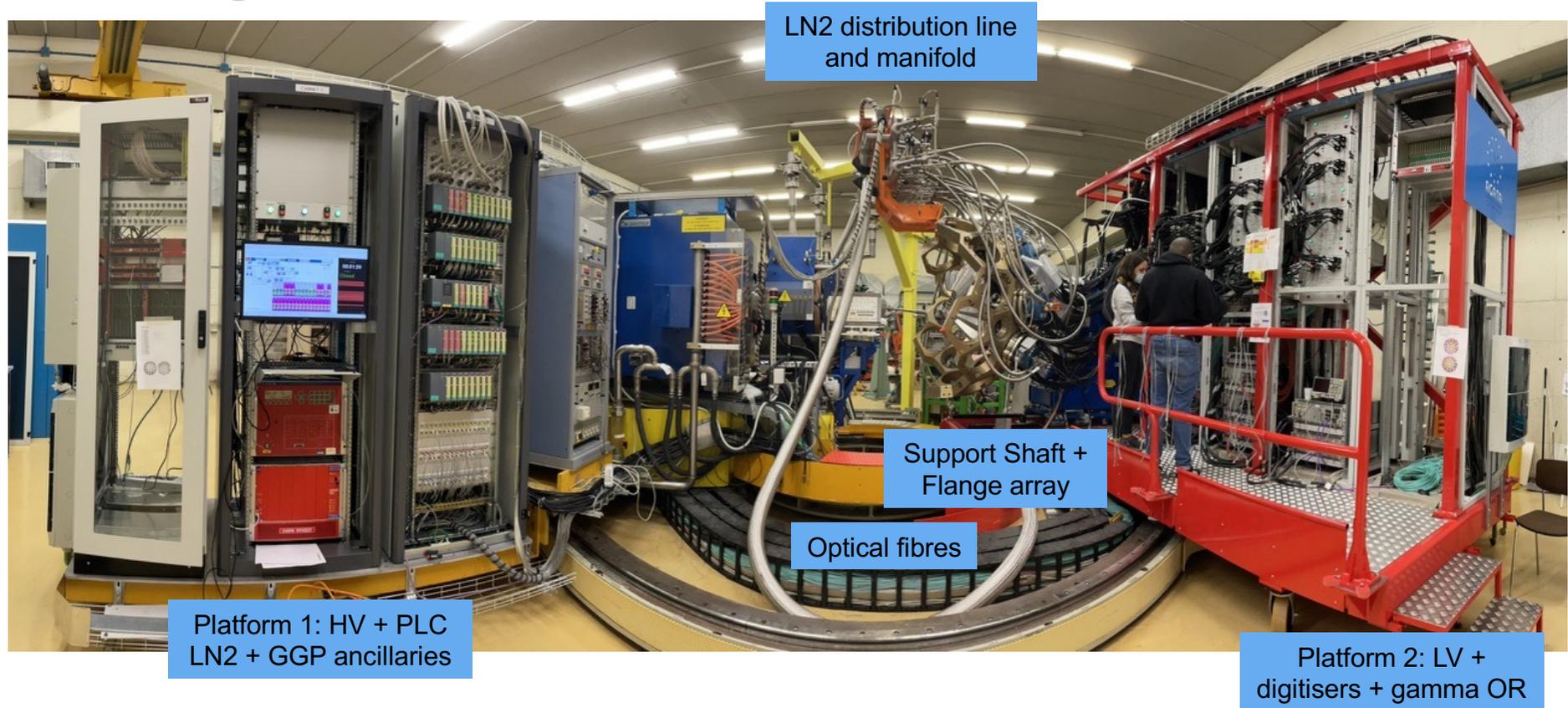
INFN – Sezione di Padova



AGATA Week, September 12, 2024



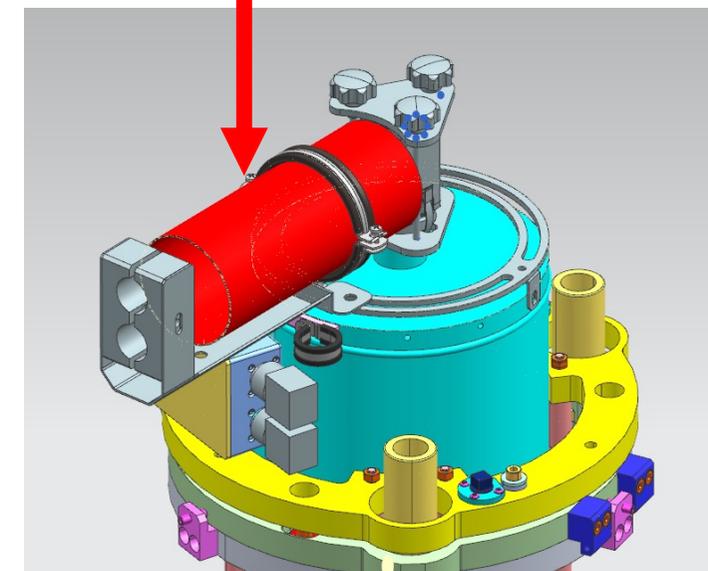
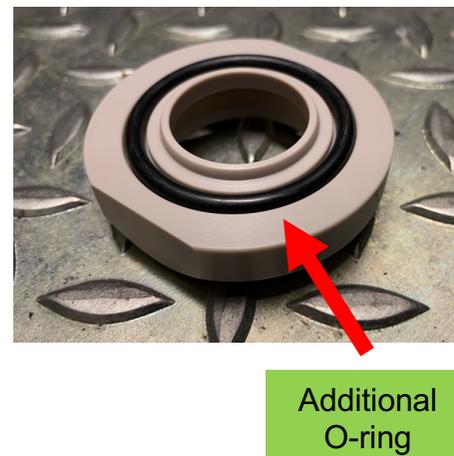
AGATA@LNL



LN2 filling system

Identified issues and adopted solutions

- Low opening thresholds of cryostat venting/overpressure valves
Venting valves closed by plastic ties. New calibrated valves opening at higher pressure? Safety issues (CTT)
- Fragile sealing of level capacitor feedthroughs
Not resolved yet
- Very thin bayonet O-ring
New peek adapter with additional O-ring
- Rigid metallic hoses
Fixture holding bayonet and metallic hose in place
- Humidity
Additional isolation around the bayonets and improved air circulation



Infrastructure - Detector Support System

LVPS

- New LVPS systems: 10/2023 (1) – 5/2024 (2)
Now **4 systems at LNL (32 LV channels)** + 1 test system at CEA Saclay
- Fixed issues with Profibus modules (Saclay) and connectors. *No problems for the experiments (manual control)*

HV system

- Purchase (UK) of **HV channels for 45 ATC** and return borrowed HV boards to GALILEO. Delivery ongoing and installation after Firmware upgrade. External Disable with optional RAMP DOWN (from PLC for example)

LN2 system

- **Two major issues** (following human mistakes)
 - ✓ *Damaged the Tank valve during de-icing. No problems with detectors*
 - ✓ *Accidentally closed valve pressurised air circuit. Emergency HV power down (all detectors) and partial warm up of 2 ATC (fully recovered)*
- *Updated EPICS IOC and GUI software (Saclay)*

Cables

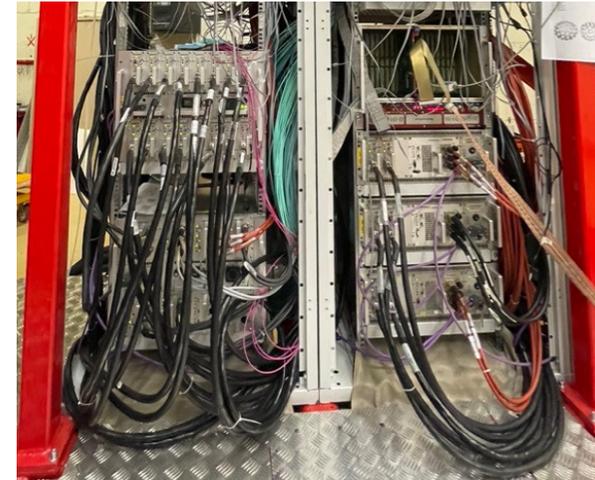
- Few damaged LV cables. *Spares available*

Other

- **Updated document** “Basic infrastructure for the AGATA array at the Legnaro National Laboratory, with some details from previous configurations at LNL, GSI and GANIL” for the configurations with **30 and 45 ATC**



LV cable



LVPS

Deadly effects on the electronics

Damaged digitizers from corrosion of Al plates and pipes

Adopted solutions: *anodizing of aluminum components. Heat exchanger using “non corrosive” cooling fluid. Started LNL water cooling system changes and purchase procedure.*

Expected delivery to LNL: **fall 2024**

Installation: **as soon as possible, depending on the beam time schedule**

Possible automatic shutdown after failure of the redundancy system (no external shutdown of the DigiOpt12 ...): EPICS command to shutdown the LVPS systems using temperature signals and if possible one from the differential pressure switches from the cooling system

