

Cross-Community Committee activity report

Marc Labiche
STFC Daresbury Laboratory

On behalf of Carl Bruno
Chair of the cross-community committee

Cross-community committee panel members

(since November 2022)

- Carlo Bruno (chair)
- Alison Laird
- Ken Livingston
- Dan Doherty
- Kieran Flanagan
- Rodi Herzberg
- Marc Labiche

Two CCC meetings in 2023:

April 2023:

STFC/NPGP requested CCC to review and provide comment on the level of CC effort requested by the community for the new CG physics themes and for future projects.

Nov 2023:

First discussion for the assignment of the level of CC effort recommended by NPGP to support physics themes and projects. CCC agreed a plan but will meet again early 2024 once the outcome of CG and PPRP projects are fully known.

Current cross-community posts

Target maker and senior technician (1 FTE)

Paul Morrall at DL

Software (2 FTEs)

Dan Judson at Liverpool

Carl Unsworth at DL

Electronics (3.8 FTEs)

Jim Thornhill (50%FTE) and Dave Wells at Liverpool

Moschos Kogimtzis, James Lawson (up to Sep23) and Ian Lazarus (30%FTE) at DL

The process to recruit a replacement for James is on-going.

Mechanics (3.5 FTEs)

Richard Smith (50%FTE) and Mike Cordwell at DL

Dave Seddon at Liverpool

David Chorlton at Manchester.

For a total of 10.3 FTEs/year until September 2024

Electronic & software support 2023

- **MiniBall** – new E-DAQ based on FEBEX readout board delivered, after come across several challenges (lack of documentation and hardware limitations). The developed firmware includes constant fraction discriminator (CFD) and moving window deconvolution (MWD).
- **ISOL-SRS (ISS/CARME)** – support for experiments at CERN and GSI, for the test system at Liverpool. Some DAQ improvements completed. On-going work for the redesign and manufacture of some of our printed circuit boards to accommodate the new ssd detectors.
- **AIDA** – support for experiments and new design of the AIDA FEE card mezzanine to interface to Beam diagnostics and facilitate information transfer into the timestamped data stream of DESPEC (NUSTAR) at FAIR.

Electronic & software support 2023

- **New Timepix3 readout cards (linked to EIC WP2)** – ASIC and flange PCBs have been designed, manufacture and commissioned. VHDL register block is completed. FMC card schematic completed and component purchased. Layout work delayed by MiniBall and James' departure but on-going at RAL.
- **Ion Trap** – Development of a “4.5 kV” switch board for ion trap applications. Activity also affected by James' departure. The board schematic was completed, and the board layout work is on-going at RAL.
- **AGATA** phase 2 electronics – Simulation of pre-processing optimisation completed. Long trace data have been requested for characterisation and validation. Contribution to the AGAT EPJA-Topical issue: *Eur. Phys. J. A (2023) 59: 133*
- **SIGMA**: Preparatory work to implement the SIGMA detector into the DAQ system at MARA, in JYFL.

Electronic & software support 2023

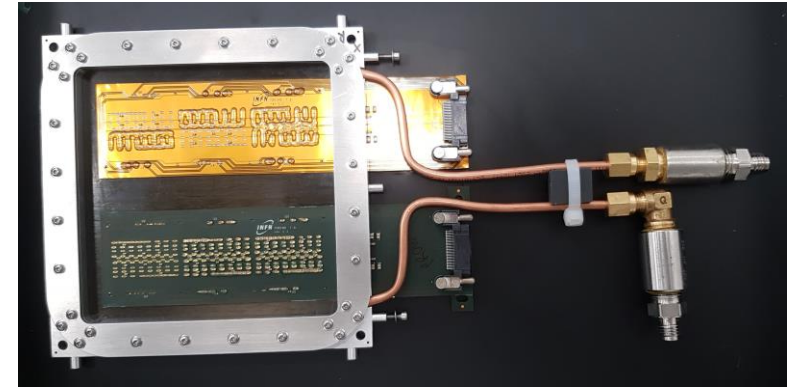
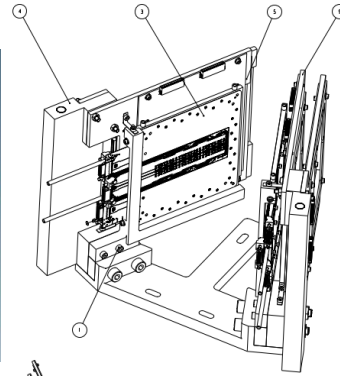
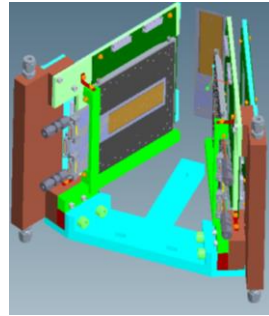
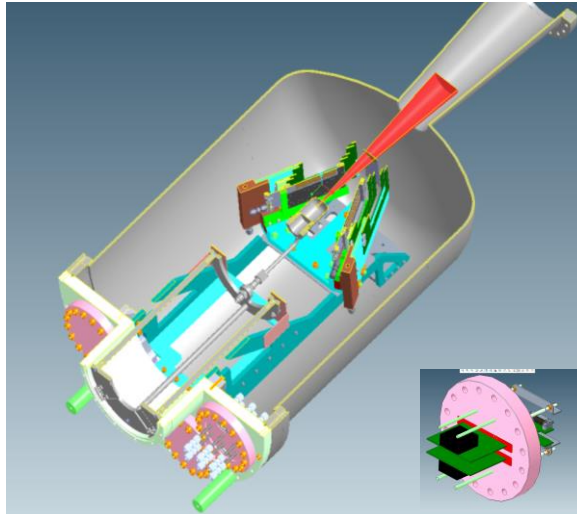
- Applied projects support: image reconstruction algorithm code developed for the **GRI project**. Support provided for the installation and first measurement at MIRION in Warrington.

Generic support:

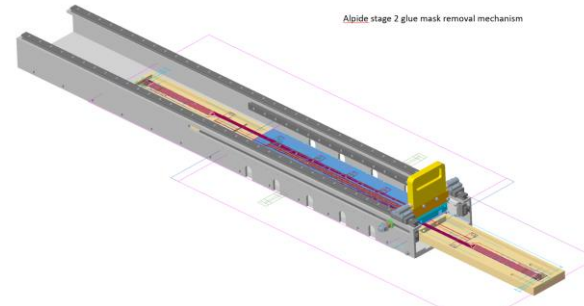
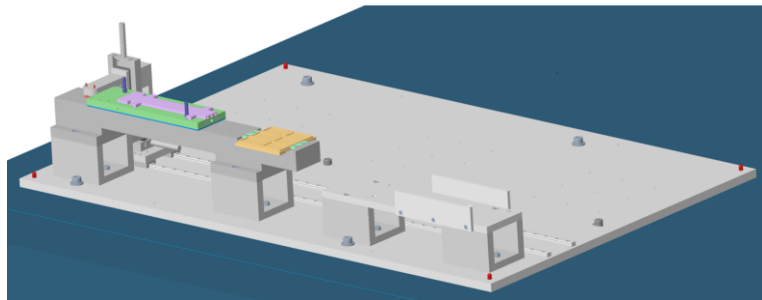
- **MIDAS**.
- **CAEN** digitisers. These new digitisers are being implemented in a new DAQ system (PyDAQ) developed at DL as a substitute to MIDAS. Work on the Caen V2740 digitiser has also started at Liverpool and tested with the scanning table.
- **Grant preparation** (proposed solutions, quotations, effort cost estimates)
- **Laboratory maintenance** operations (server maintenance, risk assessments, ...)

Mechanical & design support 2023

- **Support Upcoming R3B of experiments:** design of a new flange, two ALPIDE-based detector stations and cooling pipe completed. Assembly is on-going at GSI.



- **R3B-TRT interim:** Modification of some of the ALICE upgrade jig designs and design of a mechanism for the precise removal of the glue mask



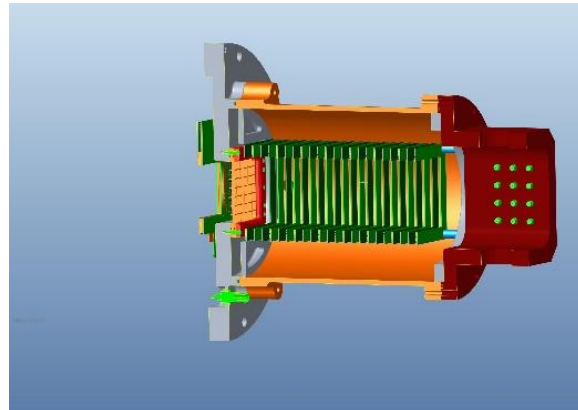
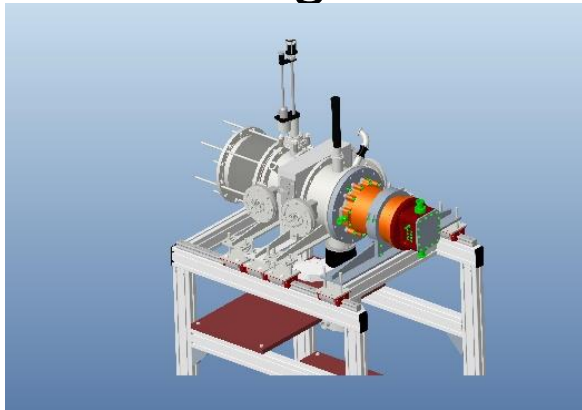
Mechanical & design support 2023

- **ISS** – Detail design of the new motorised target system and motorised beam blocker now complete. Most pieces manufactured and assembly test at DL on-going.

Support frame for ISS fission detector completed and assembly about to start

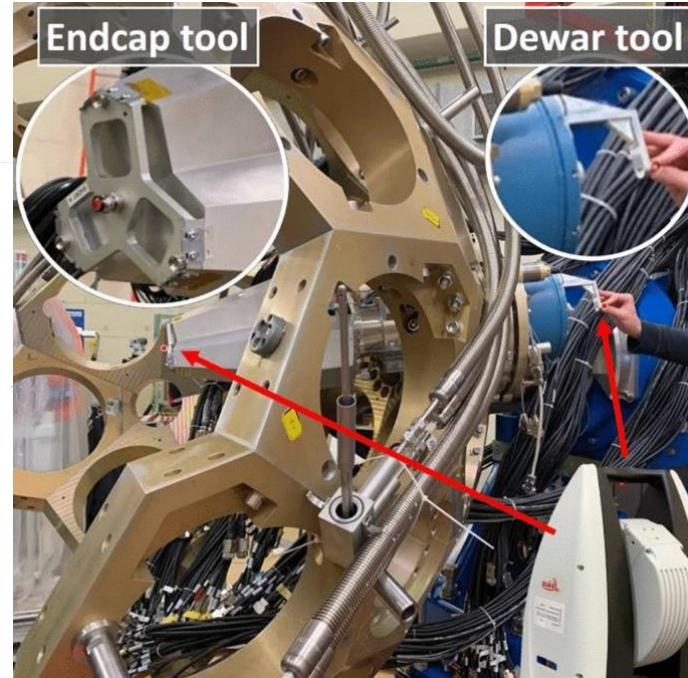
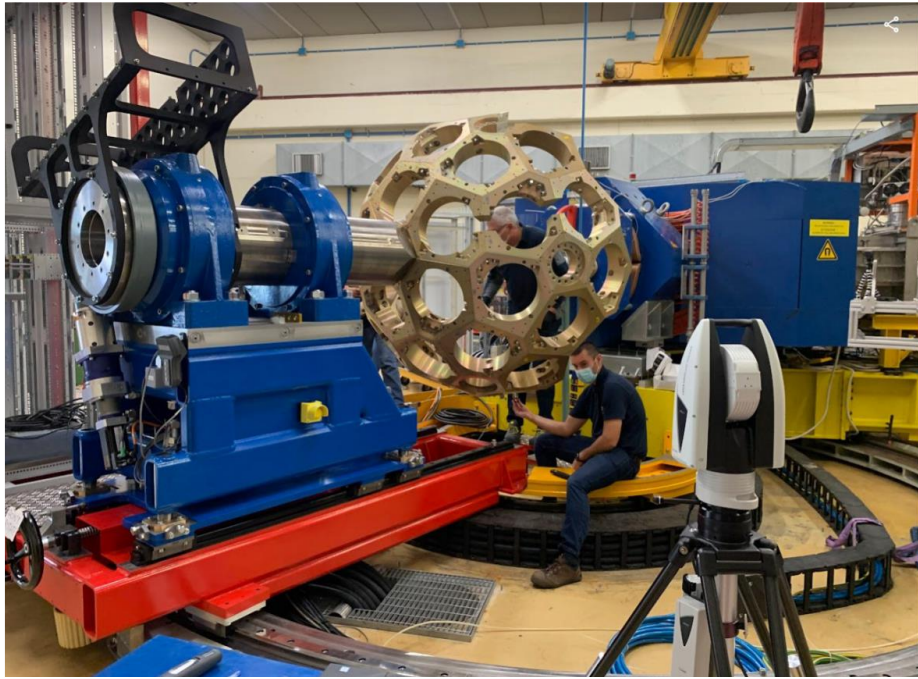


- **MARA JYFL** – design of an Ionisation chamber at MARA



Mechanical & design support 2023

- AGATA – Contribution to the AGATA EPJA topical issue, entitled: [AGATA: mechanics and infrastructures](#) - *Eur. Phys. J. A* (2023) **59**: 166



- Grant preparation support
- Laboratory maintenance operations

What's next for the CCC ?

- Current CG Funding for CC posts and activities runs to Sep 2024
- Following the outcome of CG and Projects grants, the CCC will review the CC effort allocation plan and will attempt to profile the effort over the grant period with the input from the PIs.

Further information <http://npg.dl.ac.uk/XCommunity/>

For any new request effort:

- | | |
|---------------------------------------|---------------|
| • Electronics Engineering Coordinator | Ian Lazarus |
| • Software Engineering Coordinator | Marc Labiche |
| • Mechanical Engineering Coordinator | Richard Smith |