Mechanical and Technical

The Daresbury, Liverpool and Manchester mechanical effort consists of Grant, Burrows, Seddon and Smith with technical support from Paul Morrall (note: 3 months leave from July to Sept 2019). Over the past year, they have worked on a range of projects including:

- AGATA support for new grant proposal to PPRP, schemes for LNL phase mechanics
- R3B – technician support for ongoing ASIC optimisation/resolution improvement tests including preparation for tests at KVI
- ISOL-SRS:
    - WP2 (storage ring option) at GSI/FAIR completion of design and support for procurement by University of Edinburgh.
    - WP4 Base plate returned to DL for motor replacement and some mechanical upgrades. All performed and ready to go when PM returns from sick leave at the end of September. Test assembly of new Si array onto baseplate motor system done (June) prior to shipment of array to CERN. Motors re-tuned to match final configuration.
    - Ongoing liaison with CERN and visits to arrange magnet He filling and participate in fill work.
- ISS Recoil Detector (Manchester), part of system at ISOLDE. Work includes design and liaison over fit into overall layout for area. Also insertion/removal support mechanism
- ALICE Technical support in commissioning the staves at Daresbury. All staves successfully delivered.
- Applied projects –3D gamma imager (IPS)
- Triple Plungers (Miniball and JYFL)
- SHARC2 and MARA Beamline (York)
- FiFI, STEFF, CRIS (Manchester)
- ProSPECTus (Medical imaging device), Cryostat optimisation undertaken.
- IDS design work undertaken (Liverpool)

4.2 Electronics and Software

The Daresbury and Liverpool software and electronics effort consists of Thornhill, Judson, Wells, Coleman-Smith (now retired), Hill (ALICE work), Kogimtzis, Pucknell, Laff (until Nov 18 only) Lawson, Lazarus and Unsworth. Over the past year, they have worked on a range of projects including:

- R3B silicon tracker. Ongoing support to optimise performance of the full system.
- Ongoing support of AGATA, including electronics repairs. Input provided for the next phase project definition.
- ISOL-SRS Build of Si detector array in LSDC (mount Si, mount ASICs, wire bond, test with alpha sources)
- ISOL-SRS Support of DAQ systems at CERN and GSI and test system in Liverpool.
- Support for ALICE, stave testing (now complete as of July 2019).

- AIDA Support for system at RIKEN and work on the system at GSI still ongoing.
- LYCCA, now at Koln. Support for users (alongside expert user, Tom Davinson).
- FATIMA – Support for planned UWS experiment on digital gammasphere including investigation of CAEN CFD algorithm.
- Timepix project to design and build a prototype Timepix3 readout for a pair polarimeter and focal plane microscope experiments for University of Glasgow.
- JYFL timestamp acquisition system. ZyDF clock module (new timestamping/synchronisation system), planning to build further systems.
- New Merger software -now working.
- MINIBALL DAQ. FEBEX system- in-depth familiarisation with Febex firmware and software.
- General support of systems and software.
- Applied projects –3D gamma imager (IPS) .
- Note the main EDAQ laboratory at Daresbury T9 refurbishment is now complete (funded by STFC Technology Department). University of Liverpool lab recently refurbished using UoL funds.
- DAQ support for the four digital systems at Liverpool used for the applied work including the 3D gamma imager, DEPICT Iodine therapy and Ge detector characterisation projects.
- Work with CAEN to understand and resolve software/firmware stability and compatibility issues following CAEN firmware upgrade.