



# LIVERPOOL PP GROUP MEETING

## LSDC Report

Tim Jones  
(May '25)



- Goal is to support the delivery of detector sub-systems to major national and international programmes and support our generic detector development programmes
  - Facilities: 100 m<sup>2</sup> of Class 5 (100) and 250 m<sup>2</sup> Class 7 (10,000) clean rooms
  - Staff: Mike Lockwood,
    - Staffing is a critical issue – need support / cover for Mike.
  - PhD: Alan Taylor – production development (DarkSide 20k SiPM arrays)
- Major Activities
  - Mu3e, ATLAS ITk, Darkside20k SiPM array assembly, Generic Detector R&D, &c

Tom



Mike

- LEAF
  - Bronze award (July '24) – will repeat for this year (a bit more onerous) & look to move towards Silver in year to come. Topics to address might include
    - Waste segregation & re-cycling
    - Notices promoting mindfulness (eg fume cupboards, lights)
- Wenzel LS1010 CMM
  - Deemed (reluctantly) to be beyond economical repair. Removal & disposal planned for w/c 3/6<sup>th</sup>. Leaves us with FARO Vantage (laser tracker) and GSI V/Stars/N (Photogrammetry) for large volume metrology. Work on ATLAS hampered (IMHO) by lack of access to top-end point-cloud metrology software.
- HVAC
  - 2<sup>nd</sup> pair of HVAC system compressors replaced (funded by FRCS).
    - 1 pair of the old type still in use – tick-tock, tick-tock.....
  - Seeking quotation for the purchase of (spare) AHU fan motors - to minimise down-time in the event of a failure.
- Network Infrastructure
  - Installation of additional network connections to replace use of local (now banned) multi-port switches.
- Re-validation
  - February 10<sup>th</sup>



- As part of the PP22-25 CG we bid (and received funding for) an Aerotech Gantry Positioning System
  - Concern over effort needed to develop gantry into fully operational system
  - Considered fully-configured commercial die-placer as an alternative
- Die Placer Procurement
  - Tender specifications drawn up & process administered by Ann Bickerstaffe (procurement)
  - Nominated suppliers
    - Amadyne CAT II / INSETO
    - Datacon 2200 evo / Accelonix
    - MAT 6500 / SiTest
  - Amadyne CAT II selected on basis of cost and technical merit
  - Procurement launched in December '24
  - Buy-off w.c 21/7, expect delivery 4-6 weeks later.
- Commissioning
  - Experience from previous equipment investments is that we need to define a project – and a team – to work on getting the system fully up and running
    - Module construction for LHCb Might Tracker





- Detector Construction
  - ATLAS ITk: Barrel Strip & Endcap Pixel (occupies > 60% of LSDC)
  - Darkside 20k SiPM assembly
  - Mu3e
- Equipment
  - Amadyne CAT II die placer should arrive over the summer – target LHCb MT sub-module assembly for initial development work.
  - Invest in tooling & training to get most out of laser tracker & V-STARS photogrammetry systems for large volume metrology – need to understand commercial software to manipulate point-cloud data and compare with CAD – currently using CREO (CAD software)
  - No Capital Equipment awarded in CG25-29 (currently) - what is the impact on our R&D programme?
- Facility
  - Understand timescales for replacement of final two (old-type) condensers – who pays ?
  - Investigate progressing to LEAF silver award
  - Update Risk Assessments for LSDC - last done during COVID
    - Facility: Access / emergency egress / gowning / lone working / confined spaces / radiation
    - Equipment: Robotic systems (wire bonder, glue dispenser, probe station, die placer, SmartScope, etc),
    - Processes: NO – this will be responsibility of Pis running projects using LSDC.

