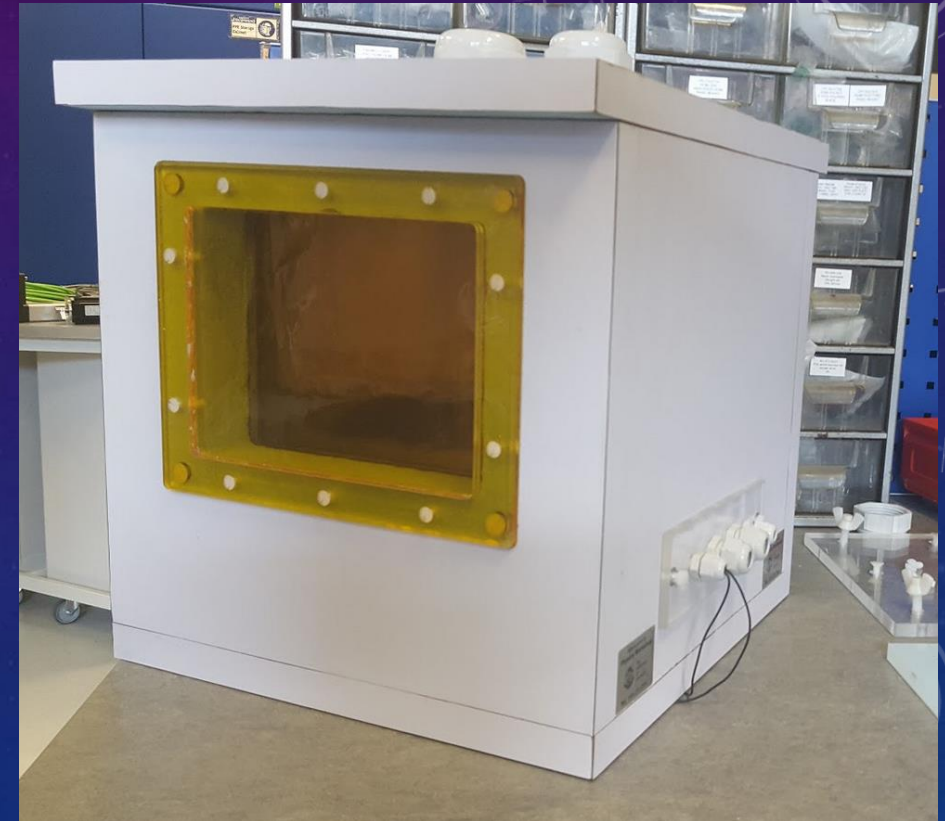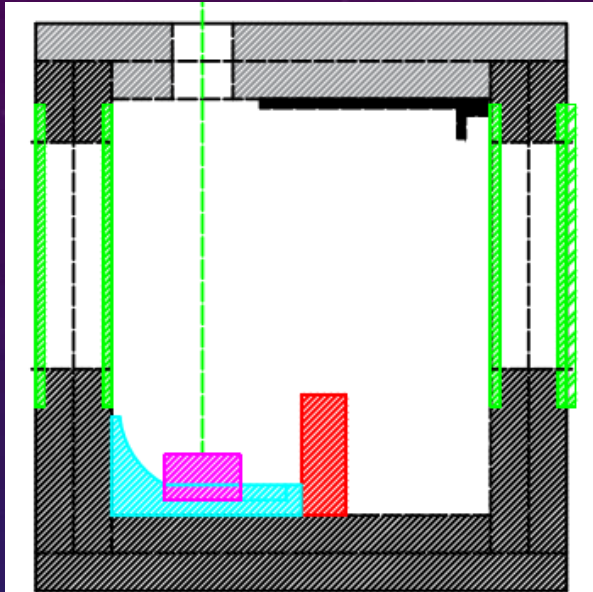# AIDA 2020 WP15 MEETING
WP15
UPGRADES TO THE BIRMINGHAM SCANNING SYSTEM IN 2019.

Richard French, Hector Marin-Reyes, Ben Kitchener, Gabriel Kapellmaan, Samantha Abrego, Alice Cryer, Paul Kemp-Russell, Kieren Howarth
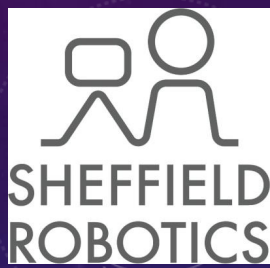
BACKGROUND: REVISED, SMALLER LN2 BOX....

❑ Increased window size for greater scanning ability.
❑ Smaller overall box dimensions for system stability.
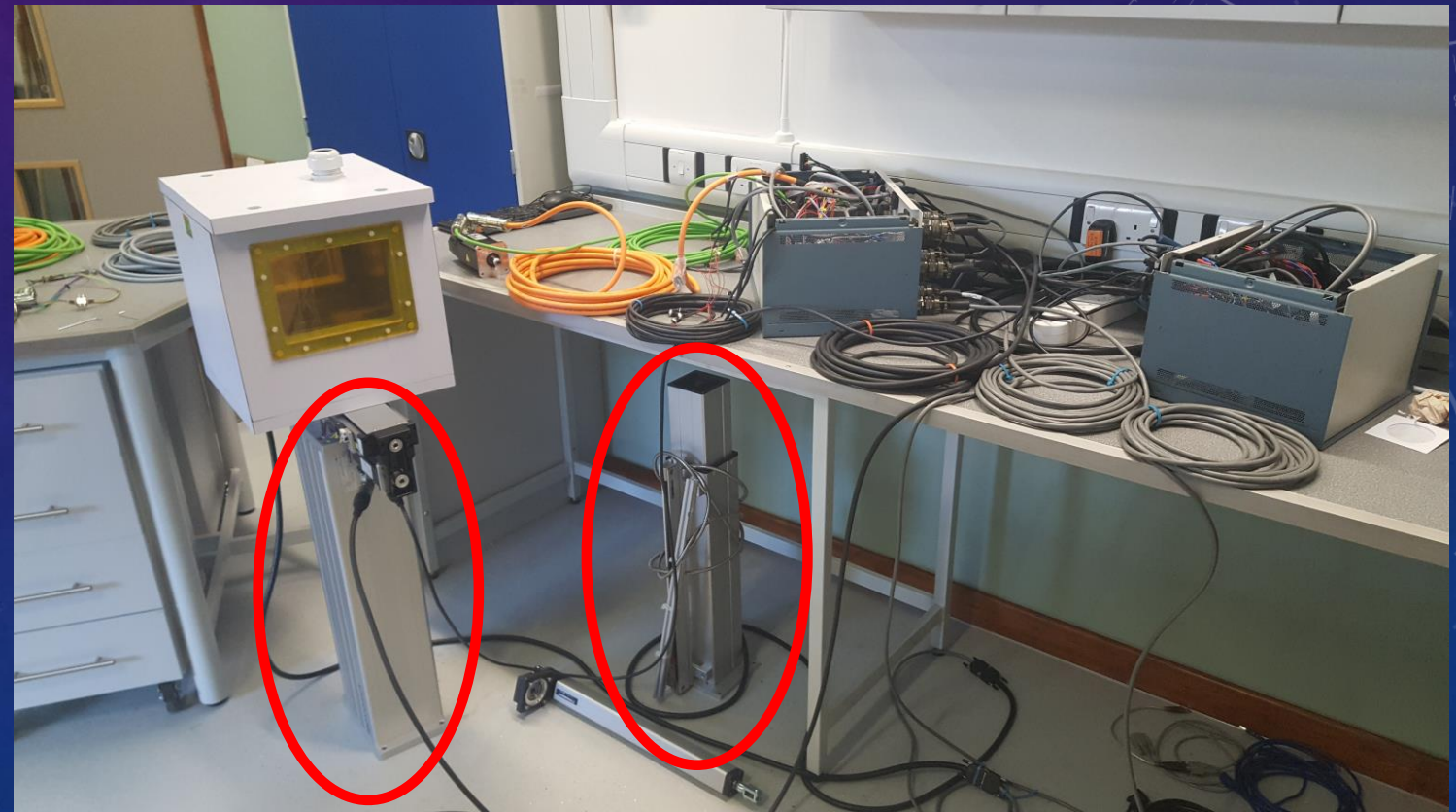❑ Size of sample mount area maintained (as per D15.8 2018 report)

❑ The SKF lifting pillar (taken from previous AIDA FP7 design) over time, has become a source of operational problems at Birmingham.
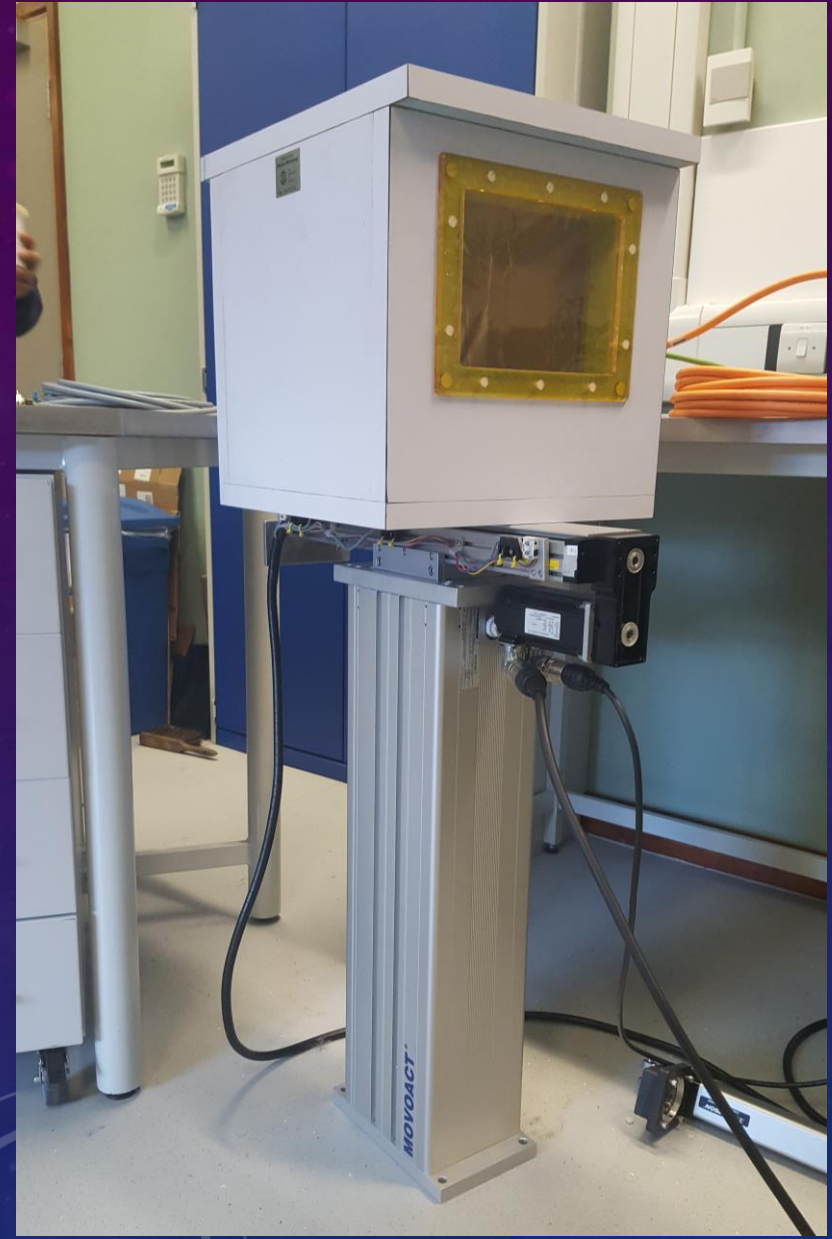
   ❑ The desired speed of operation (frequency) has exceeded the duty cycle of the motor within the pillar.
   ❑ A new lifting pillar housing has been procured.
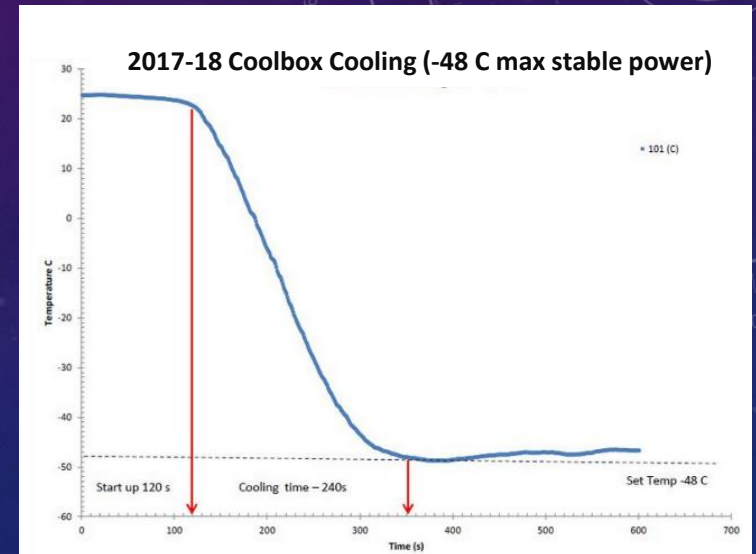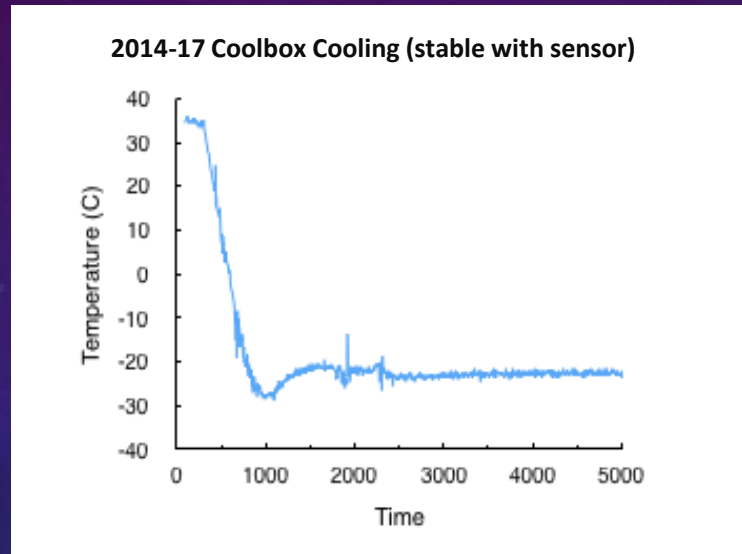   ❑ A high capacity stepper motor has been procured.

The assembly of the new custom made lifting pillar is now completed with a modified pillar housing to accept the new motor made in Sheffield.
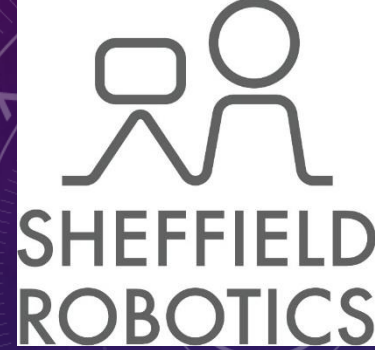
CONSTRUCTION COMPLETED BY APRIL 2018.

Final Cold Box

2014-17 Coolbox Cooling (stable with sensor)

2017-18 Coolbox Cooling (-48 C max stable power)

❑ New improved support (Z) pillar for better movement control (new).
❑ Reduced fan and heatsink size proportional to box
❑ Reduction of internal heat-load from fan.
❑ Cooling stable to operational (measured) irradiation temperatures at Birmingham.
❑ Summer 2018 to completion in September 2018:
   ❑ Final installation on site in Birmingham

FUTURE WORK: DUPLICATE R&D SYSTEM IN SHEFFIELD

To test and implement upgrades to the scanning system and software, a second scanning system and LN2 cooling unit is undergoing installation in Sheffield Robotics. Sited in the 300m² Robotics Foundry in the new purpose built 7 story, 5355m² Pam Liversidge Building for "Interdisciplinary Research".

This 2nd system is used for:

- Remote troubleshooting of the system in Birmingham

- Testing of software to improve user instructions

- Student teaching

- Staff training (software, engineering & users)

- Continued upgrades to the prototype system.

Have provided considerable staff training to Birmingham University staff on system software development.

READY TO GO

Thank you to all who contributed to this presentation