A large, complex industrial machine, likely a particle accelerator component, is the central focus. It features a dense arrangement of brass-colored metal plates, pipes, and structural elements. A person in a dark blue shirt and black pants stands in the background, providing a sense of scale. The machine is situated in a large, well-lit industrial facility with yellow overhead cranes visible. The overall scene conveys a sense of advanced engineering and mechanical infrastructure.

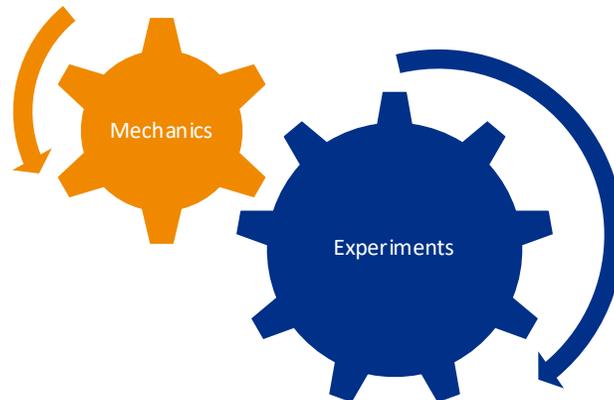
AGATA Week
September 2024

Mechanics

Richard Smith
Mechanical infrastructure lead

Mechanics update

- New support structure and 2pi array installed early 2022
- 2.5+ years in operation and mechanics continues to perform well
- Improvements to safety, speed and accuracy of installing ATCs
- Local team have good experience with installing and aligning ATCs
- Providing stable and accurate positioning of various detector systems
- Lots of interest in the instrument, proposals and experiments



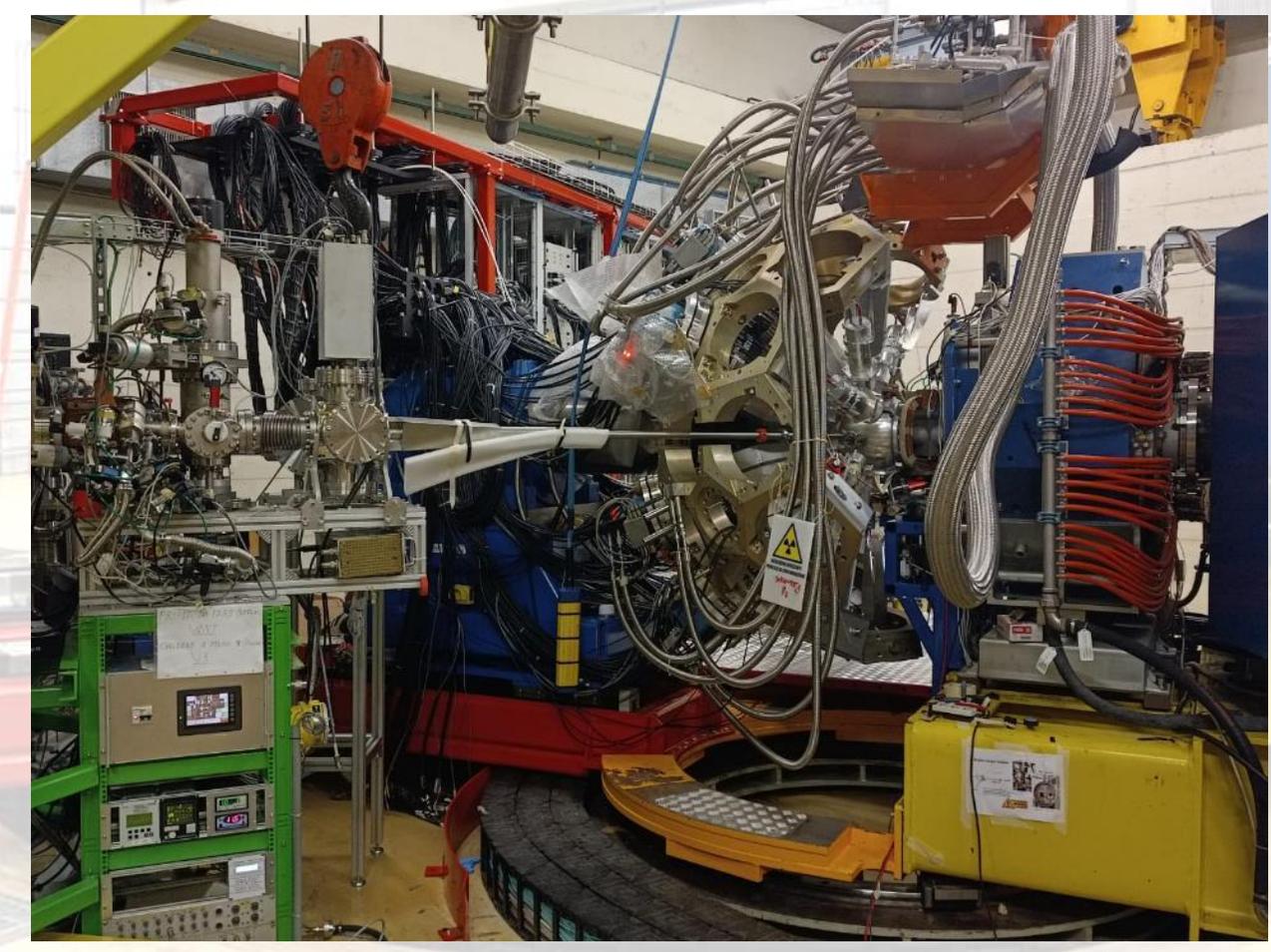
WARNING !
HIGH VOLTAGE
ATTENZIONE !
ALTA TENSIONE







2024





**Positioned
within 0.1mm**

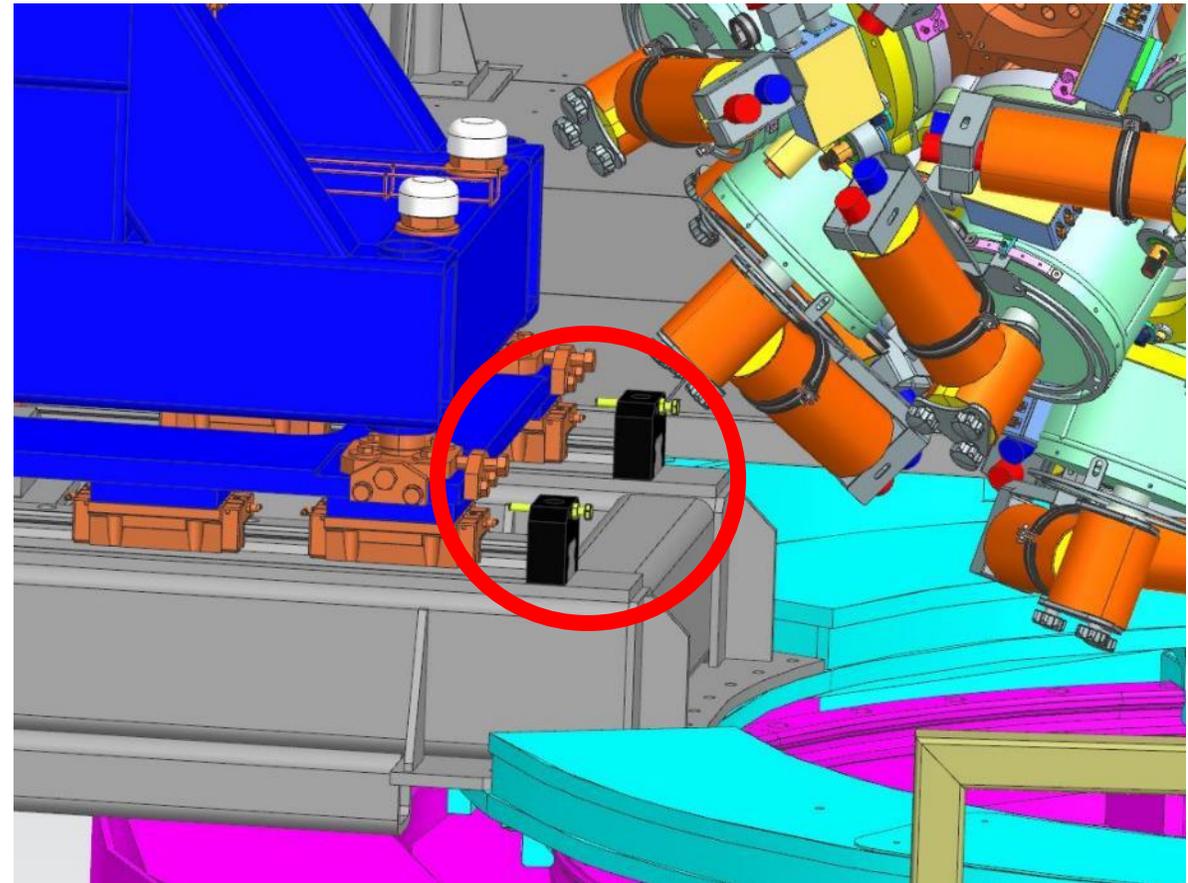
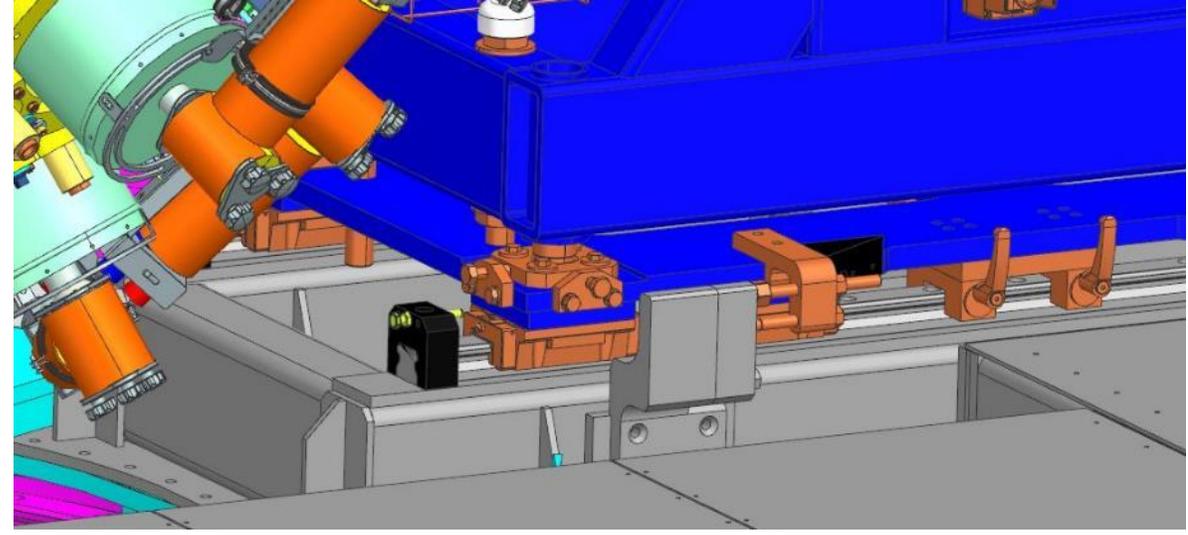
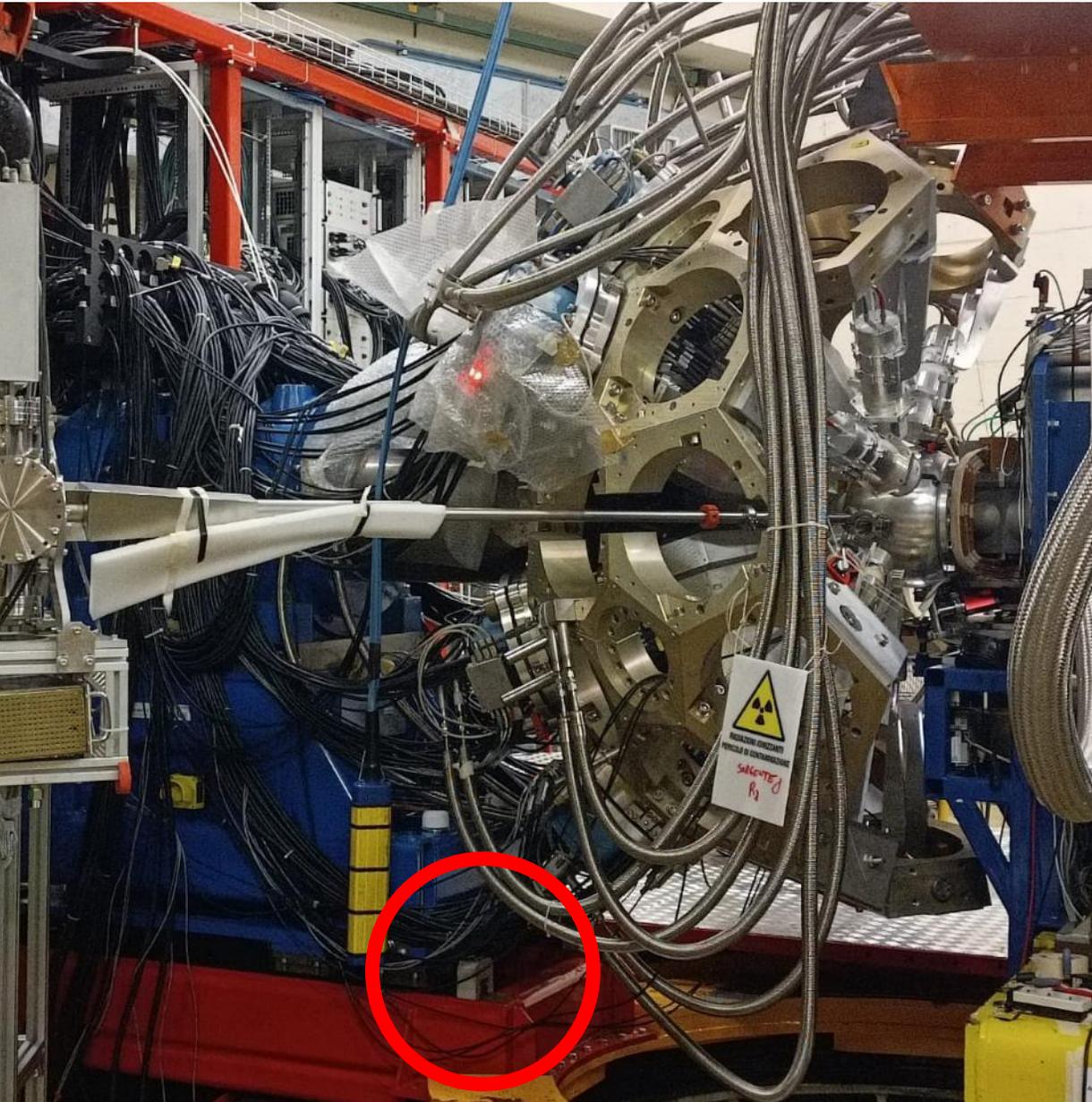


**3
HOURS**

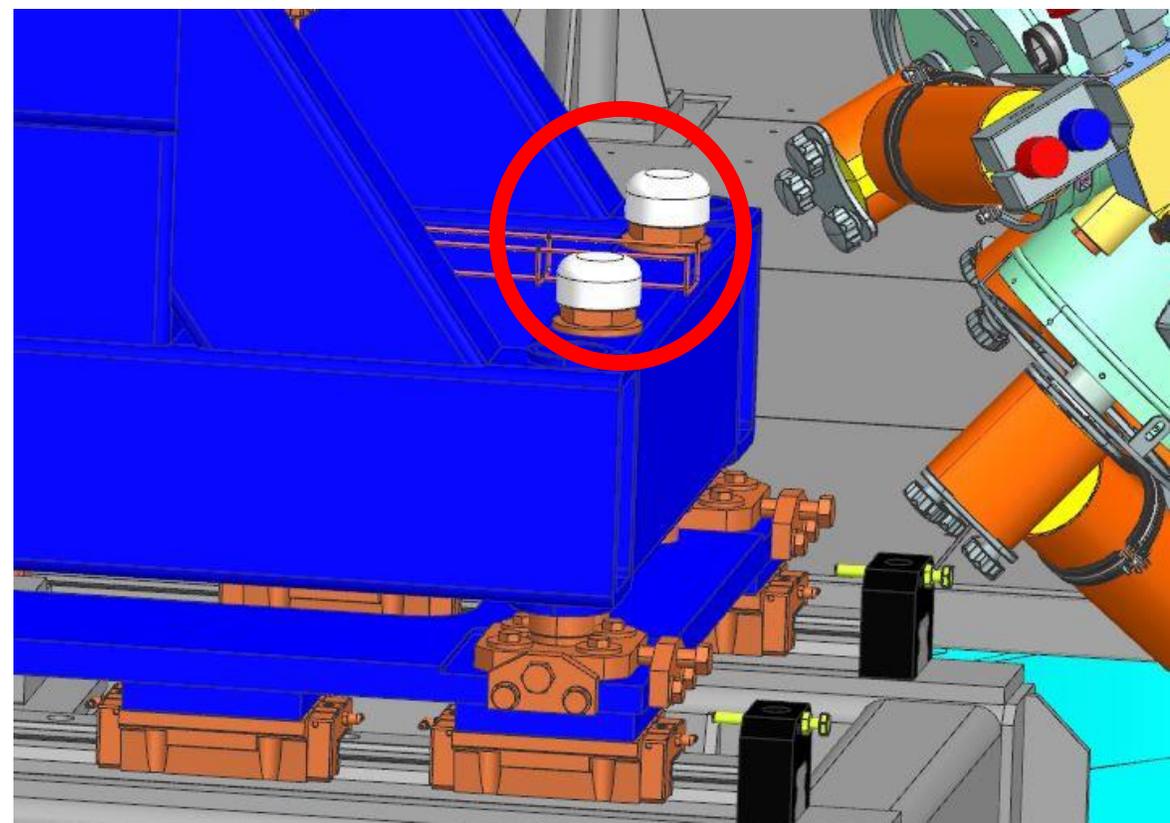
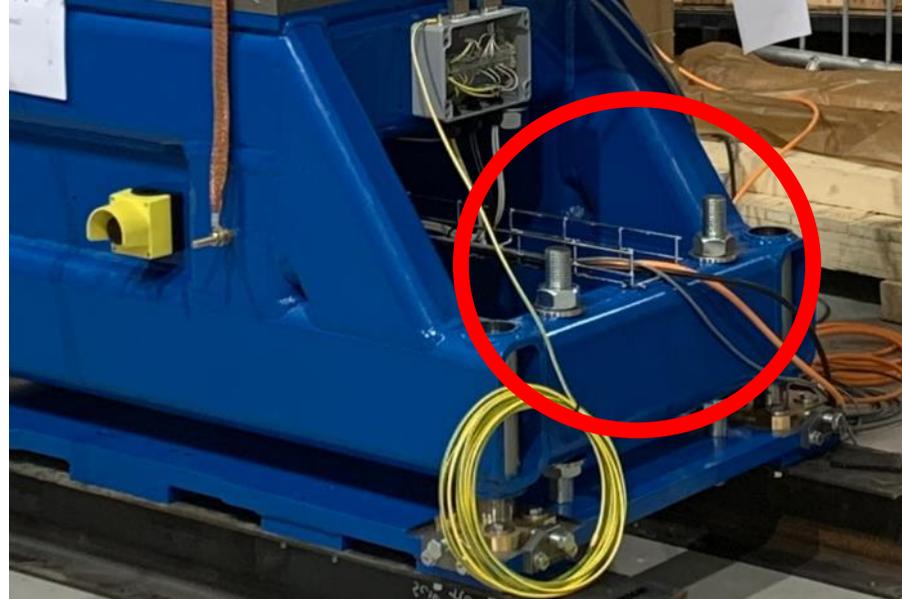
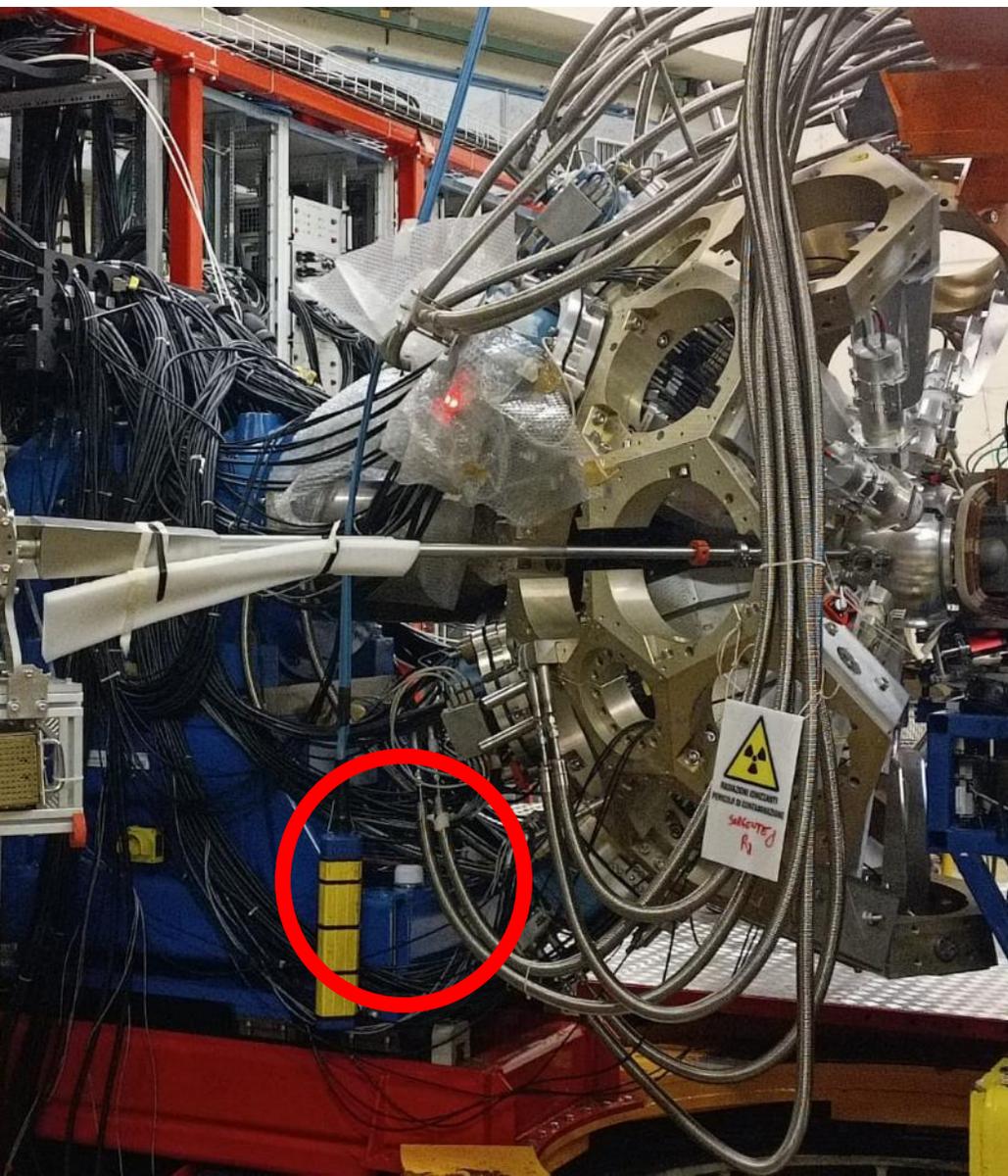
Upgrades

- Additional end-stops (mechanical limits) on the linear rails
- Protective caps on top of the kinematic screw to protect the cables
- Redesigned the cable cradle to provide more freedom of movement
- Locking the position of the cables on the rack
- Large platform added around the instrument

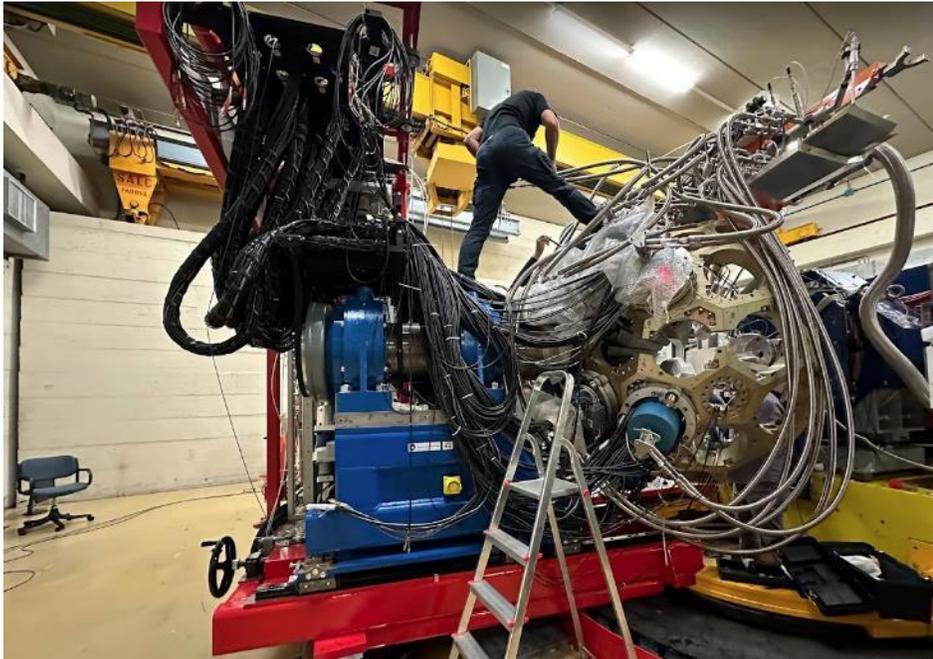
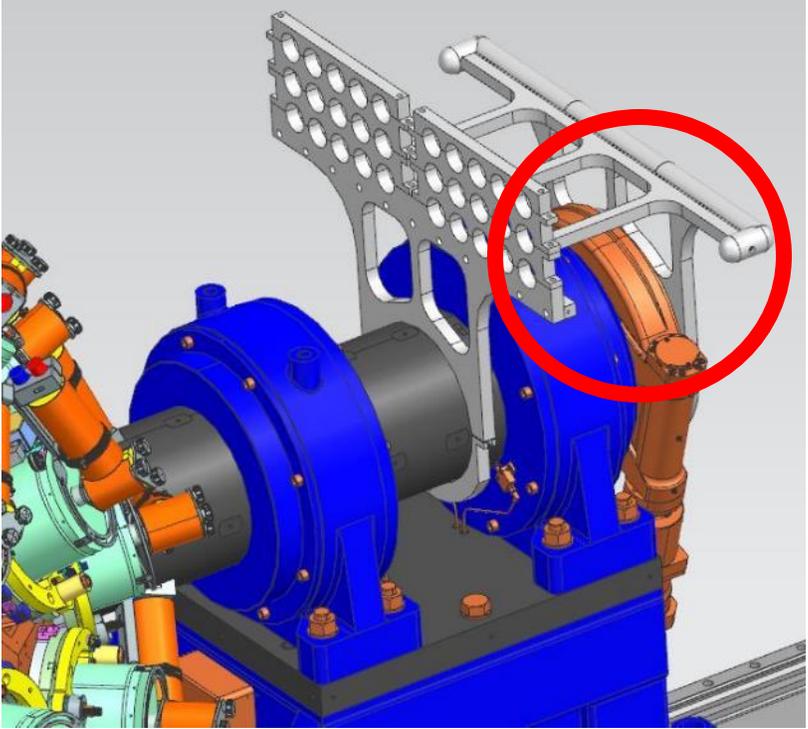
Additional mech limits



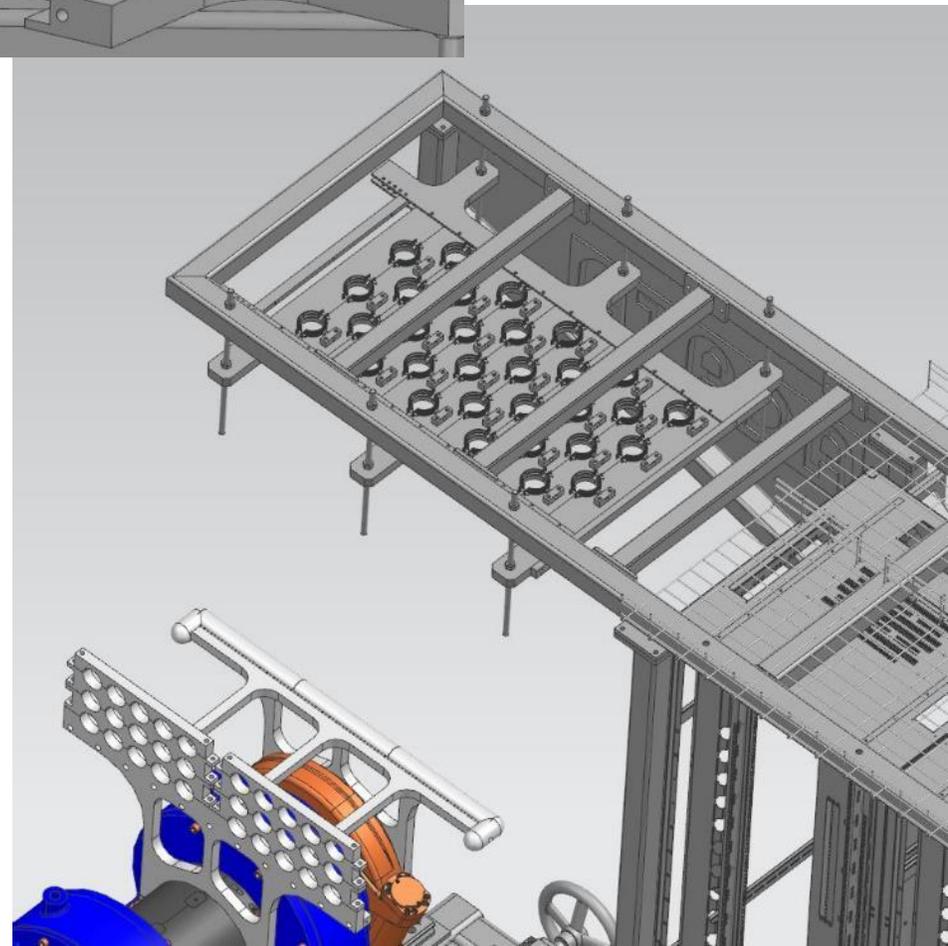
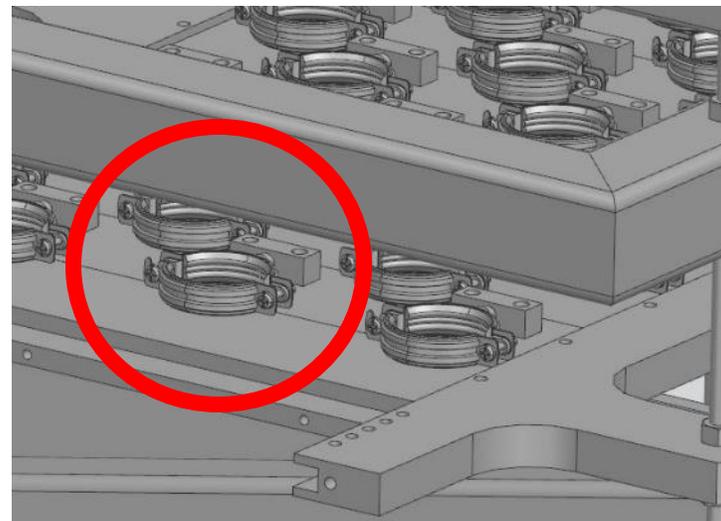
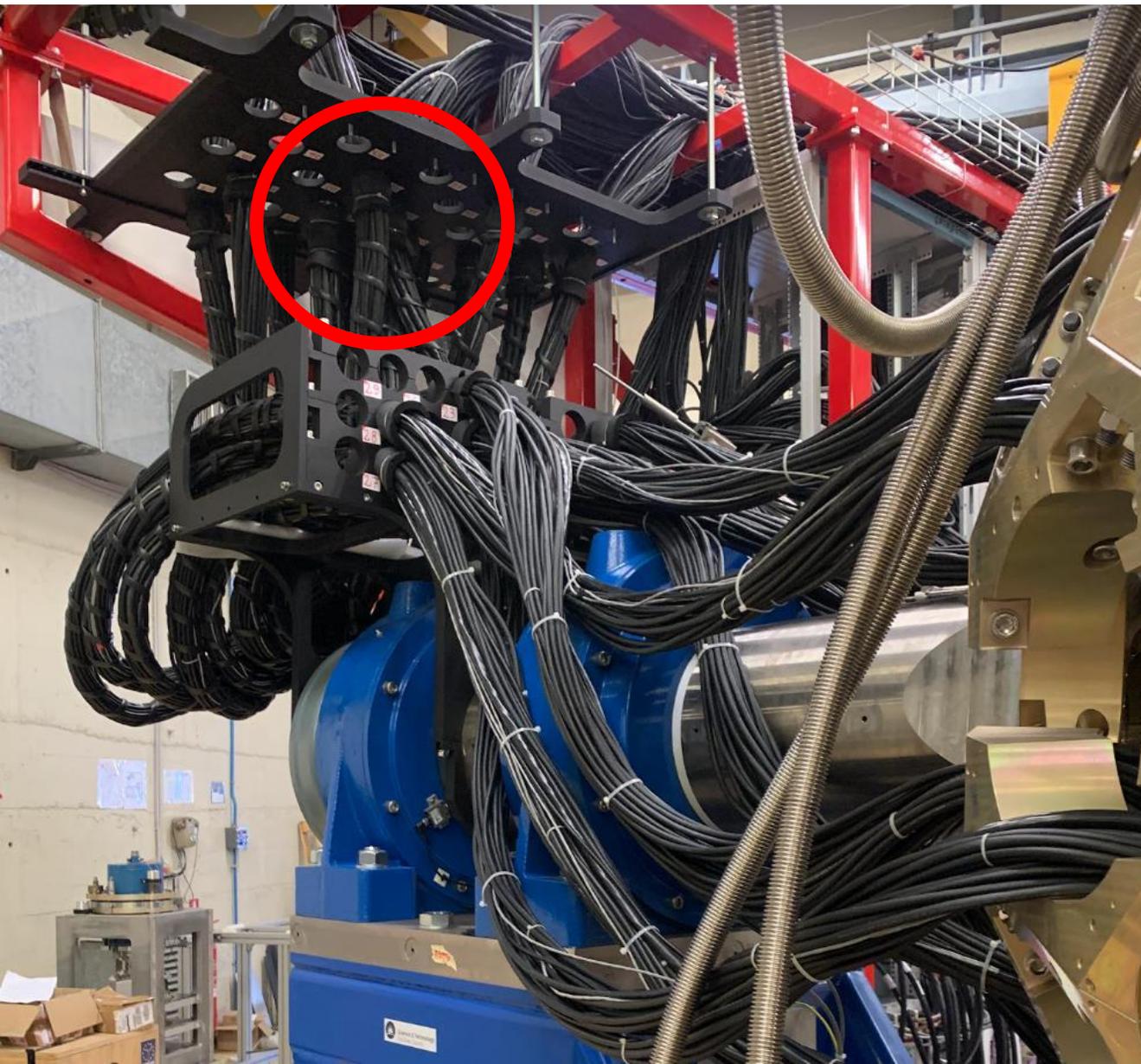
Protective caps



Cable movement

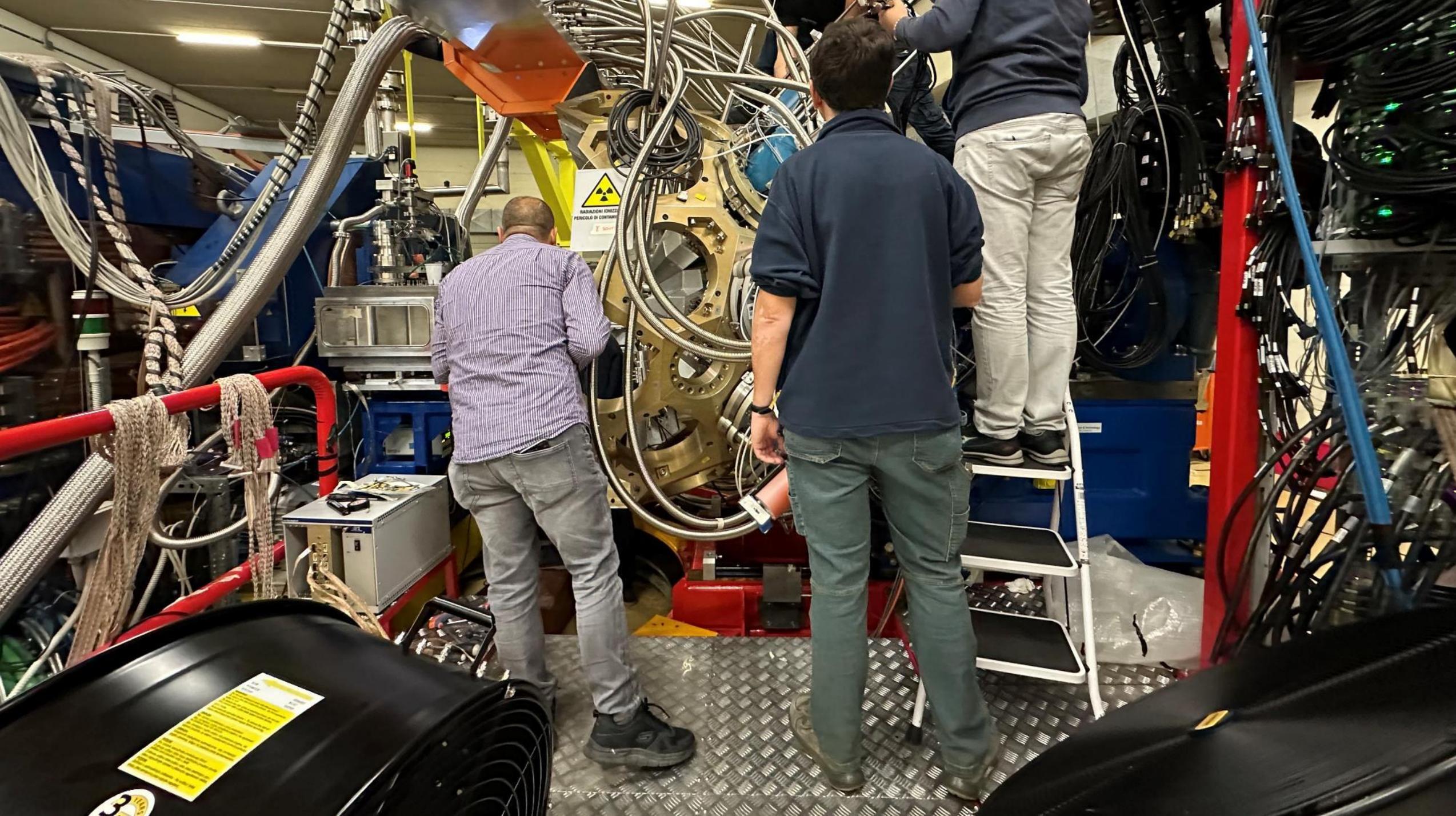


Cable anchors

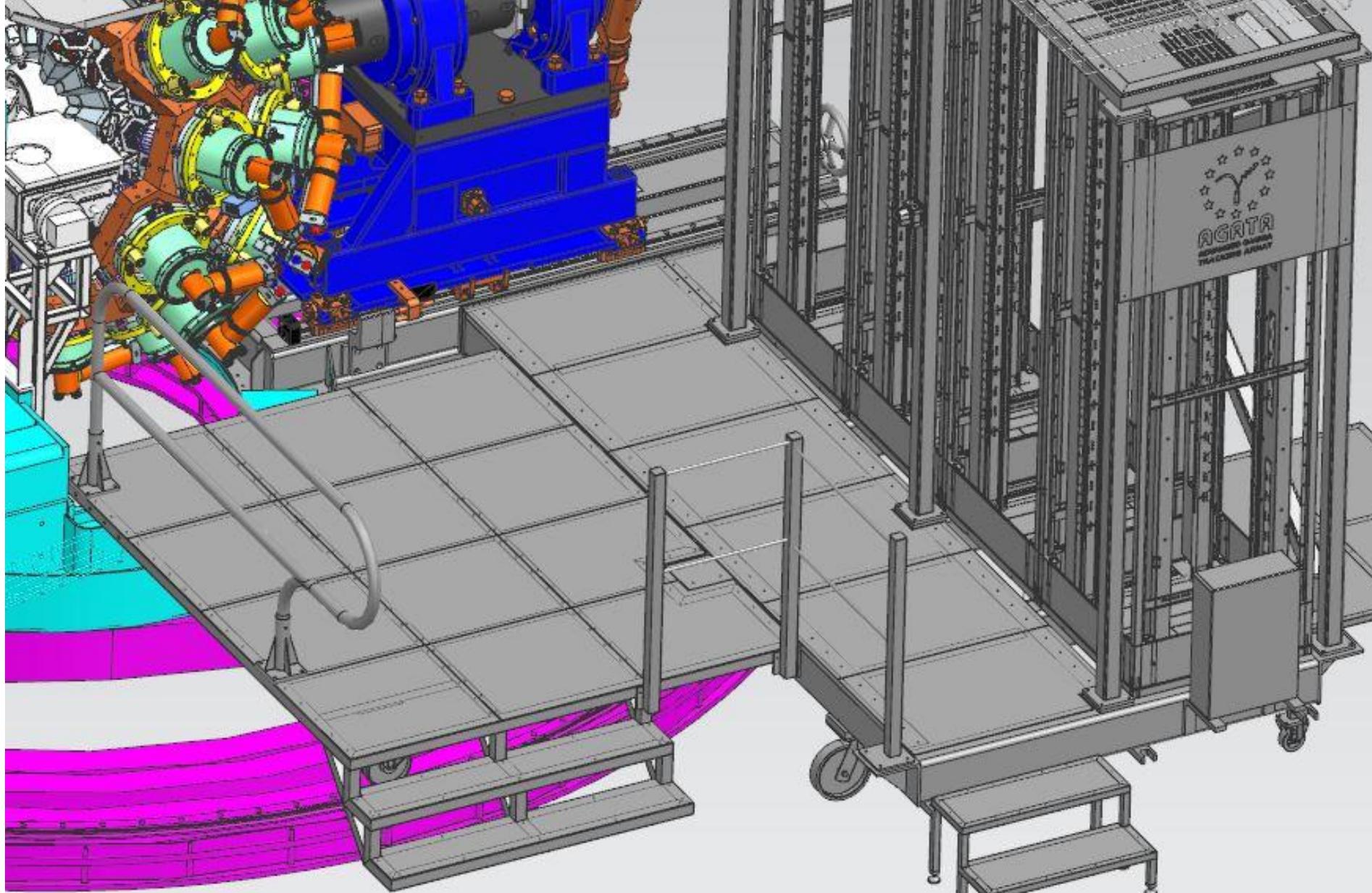




Caution
Trip Hazard



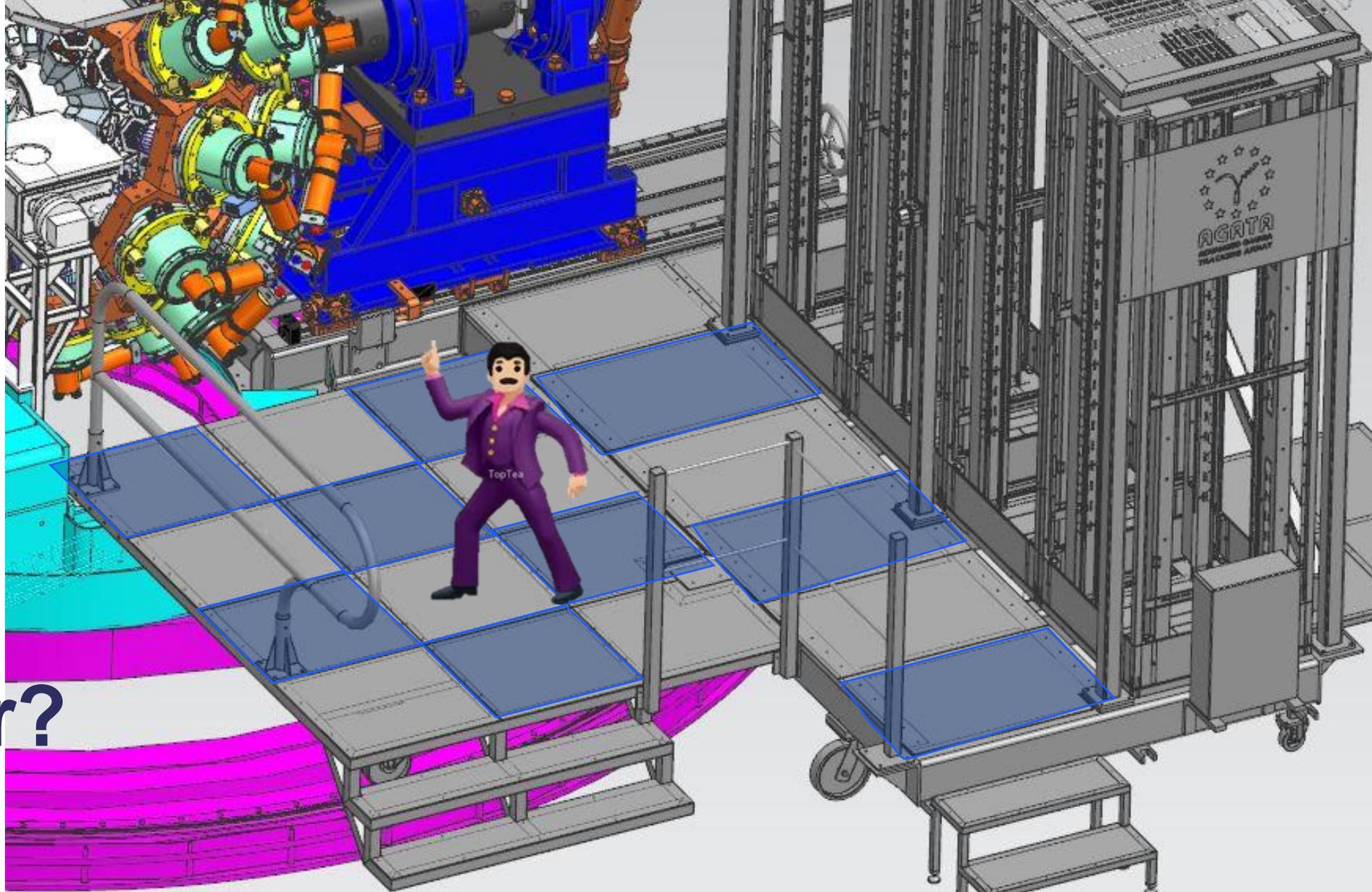
Platform



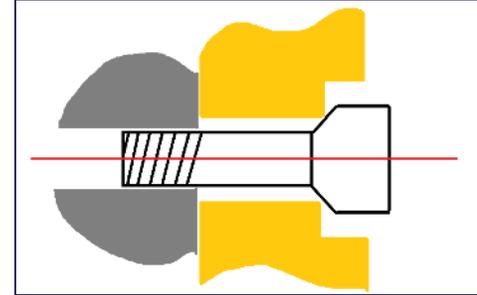
Platform

..or

Dancefloor?

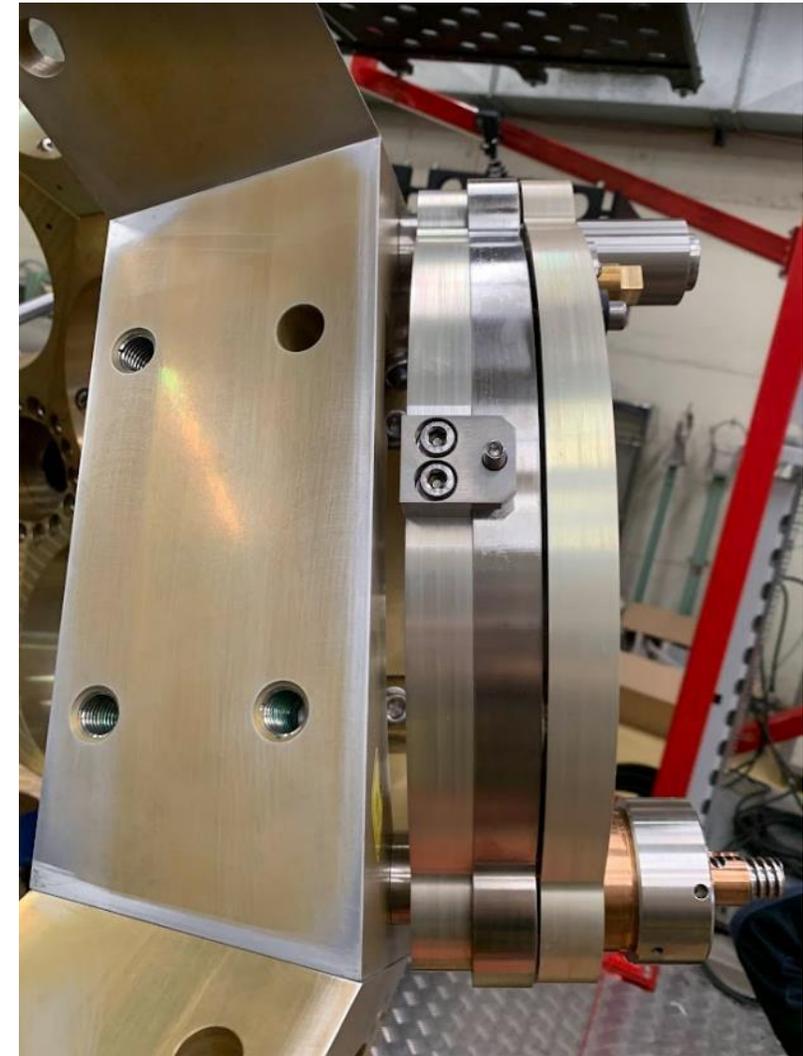
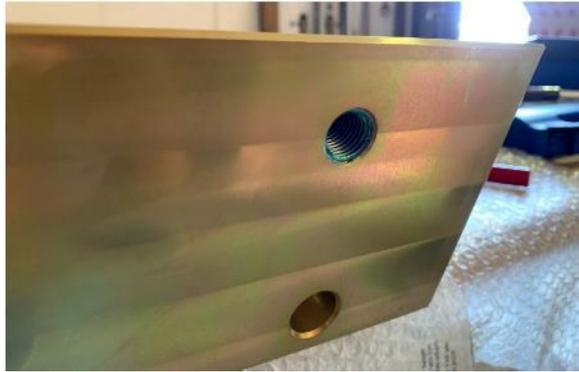


Lessons learned...



Lessons learned

- Handling of flanges
- Marked surfaces



Lessons learned

- Transporting
- Building entrances
- Site visits



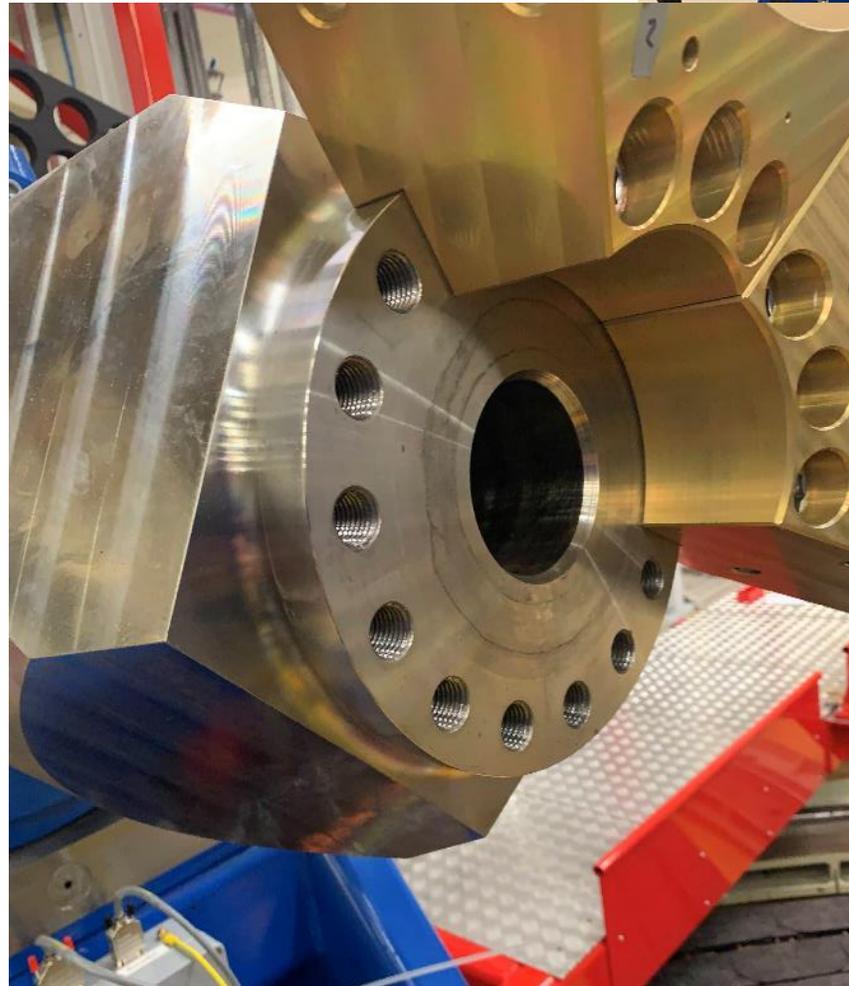
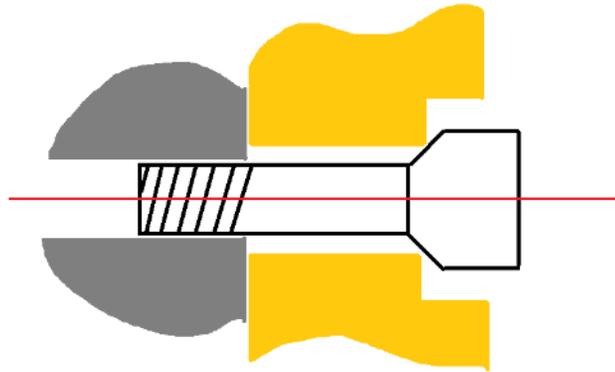
Lessons learned

- Shaft material/coating
- Surface oxidisation
- Cosmetic

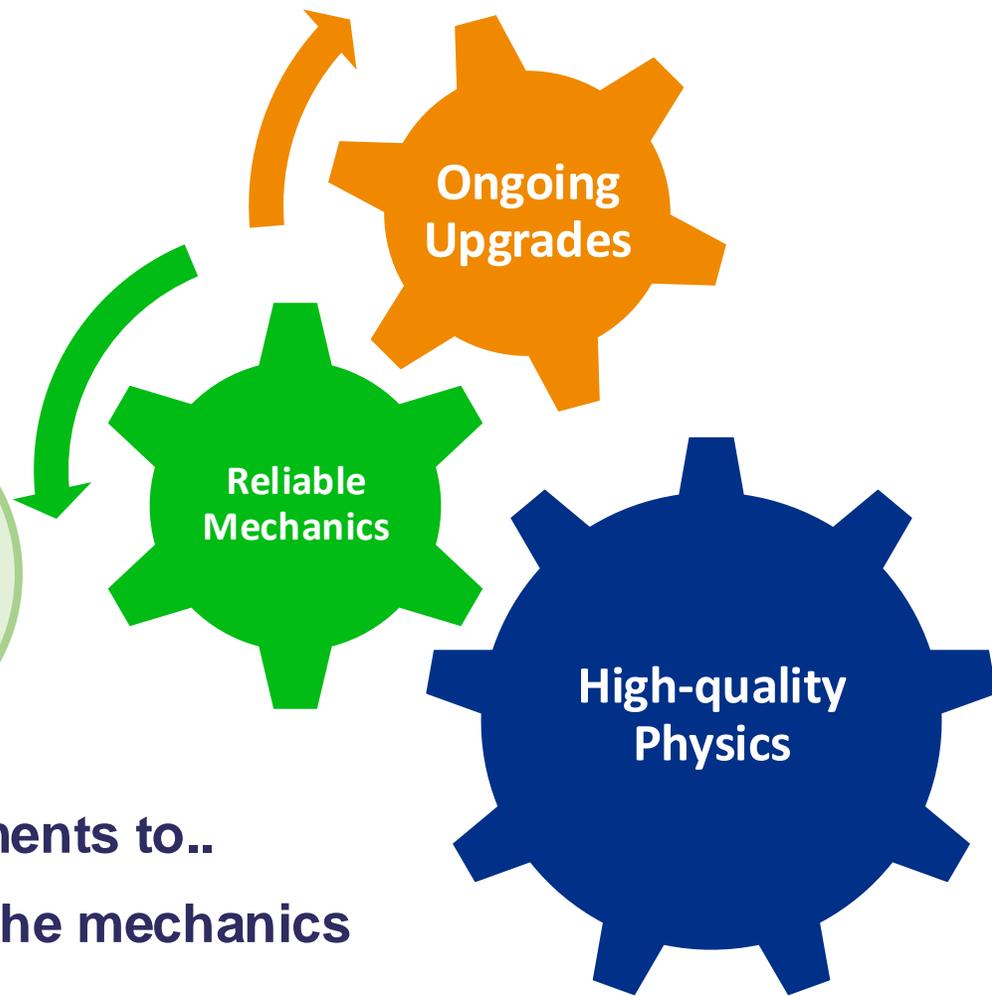
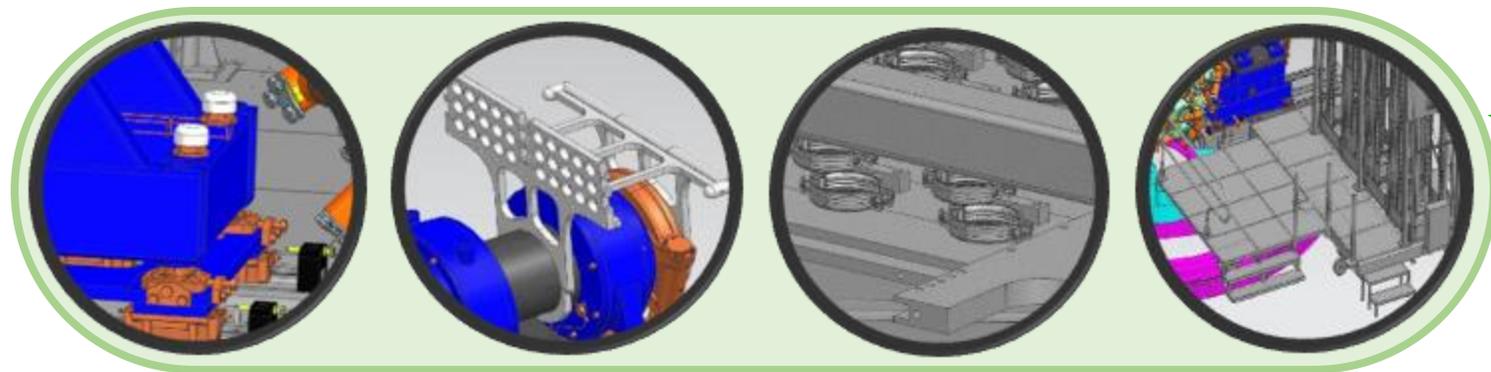


Lessons learned

- Alignment of first 5 flanges
- Alignment tooling
- Temp tapered pins



Mechanics summary



Ongoing mechanical improvements and developments to..

Safety, speed, efficiency, accuracy and repeatability of the mechanics

facilitate high-quality physics

Thanks

