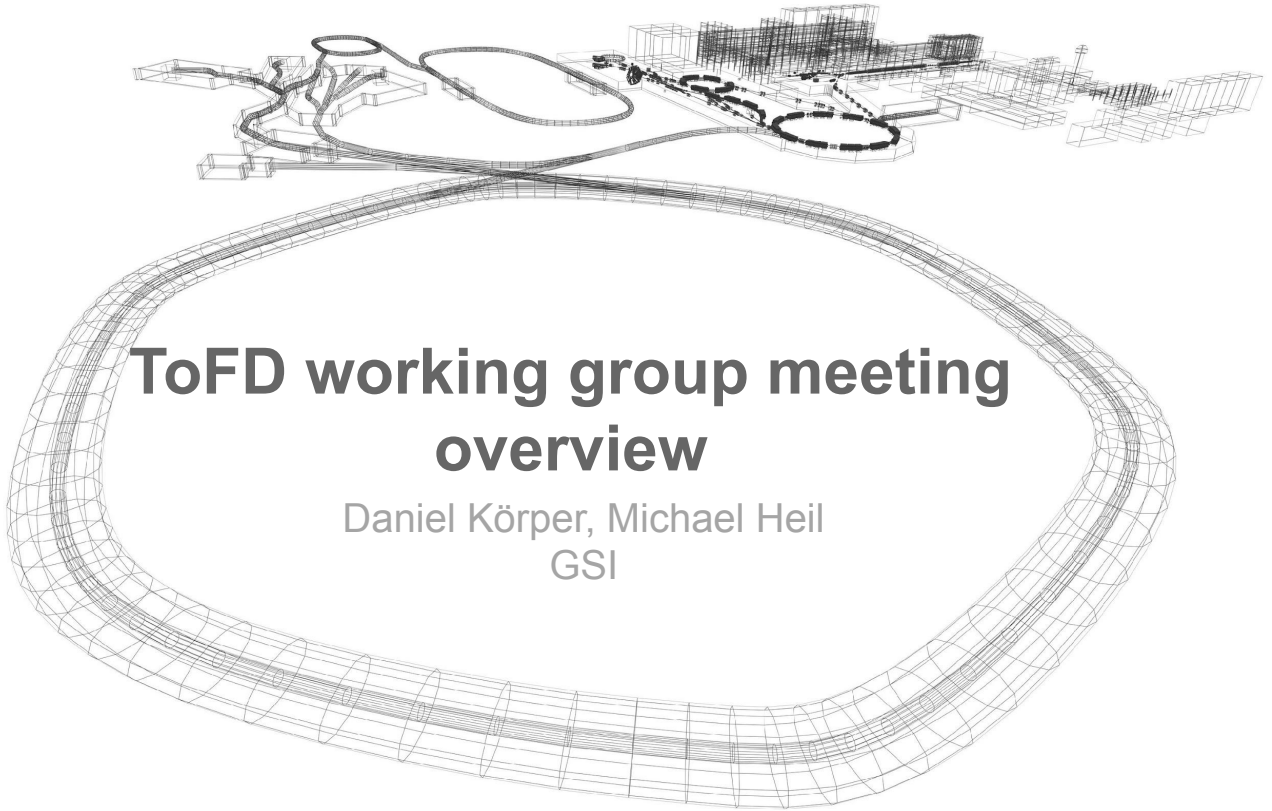


ToFD working group meeting overview

Daniel Körper, Michael Heil
GSI

ToFD working group

New working group since summer 2023, has 6 members (collaboration has 254).

Defining tasks of the working group:

- maintenance of the detector (exchange bars, PMTs)
- improve and further develop the detector
  (firmware updates, new requirements for new experiments, …)
- educate shifters
- write instructions in the Wiki, documentation, …

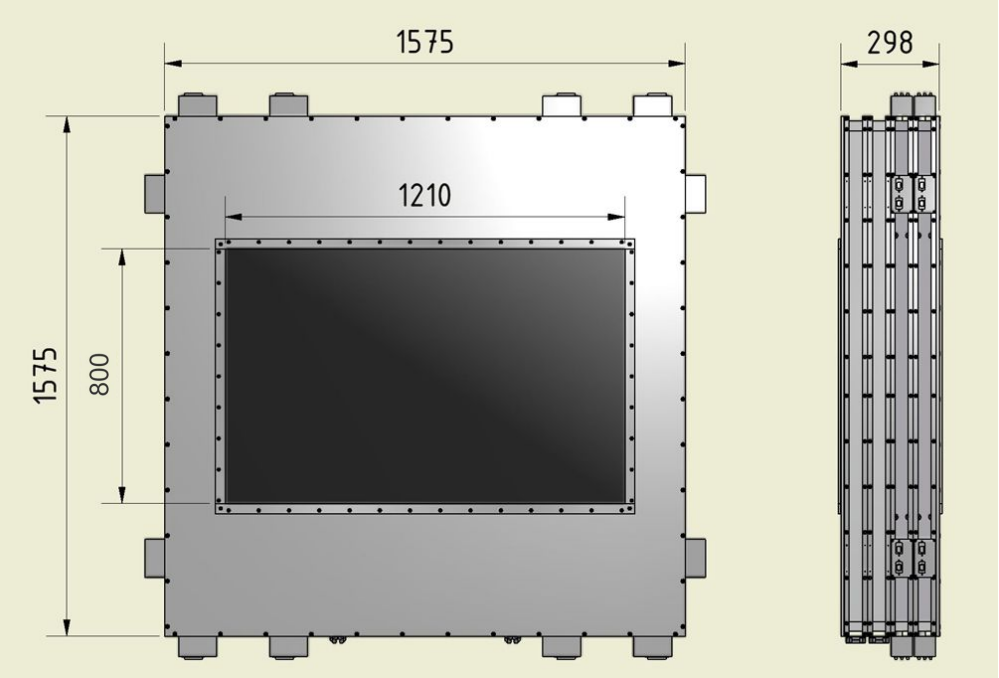
see e.g. talk by Andreea

The goal is to provide a detector in perfect conditions for an experiment!

What we can't do:

- organize and do all shifts for experiments
- produce calibration parameters for the experiments
- write online or analysis code in R3BRoot …

ToFD - Overview

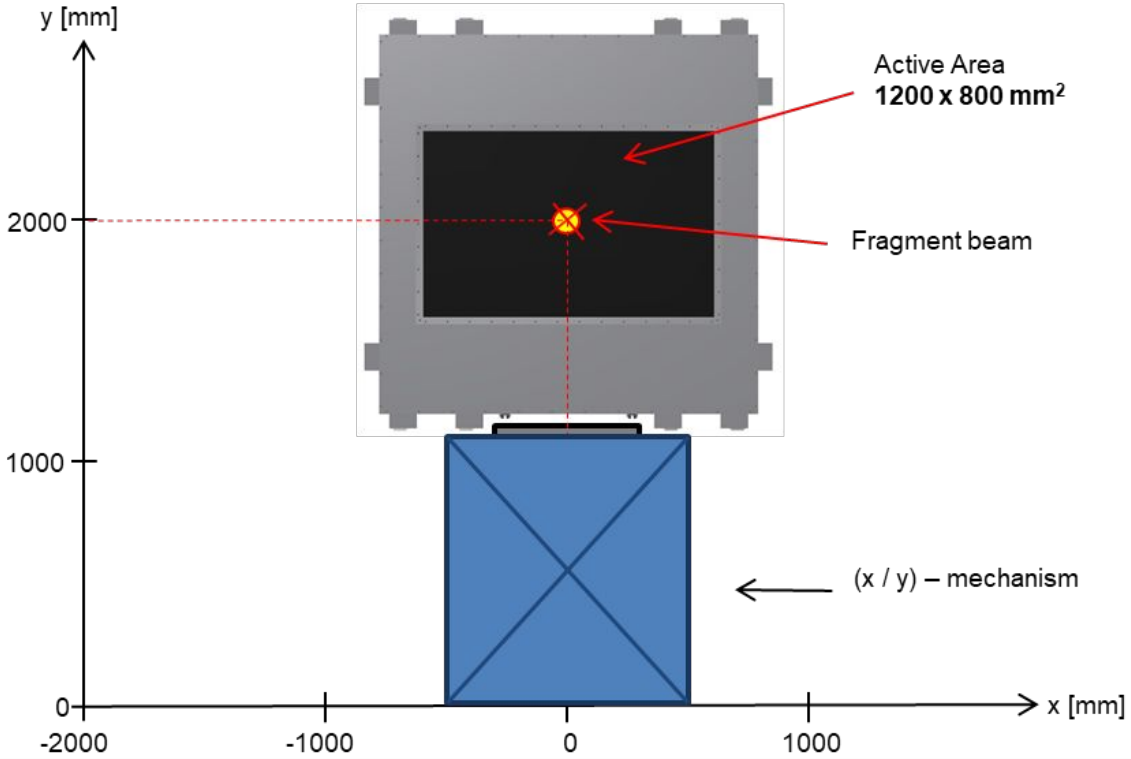


Front view

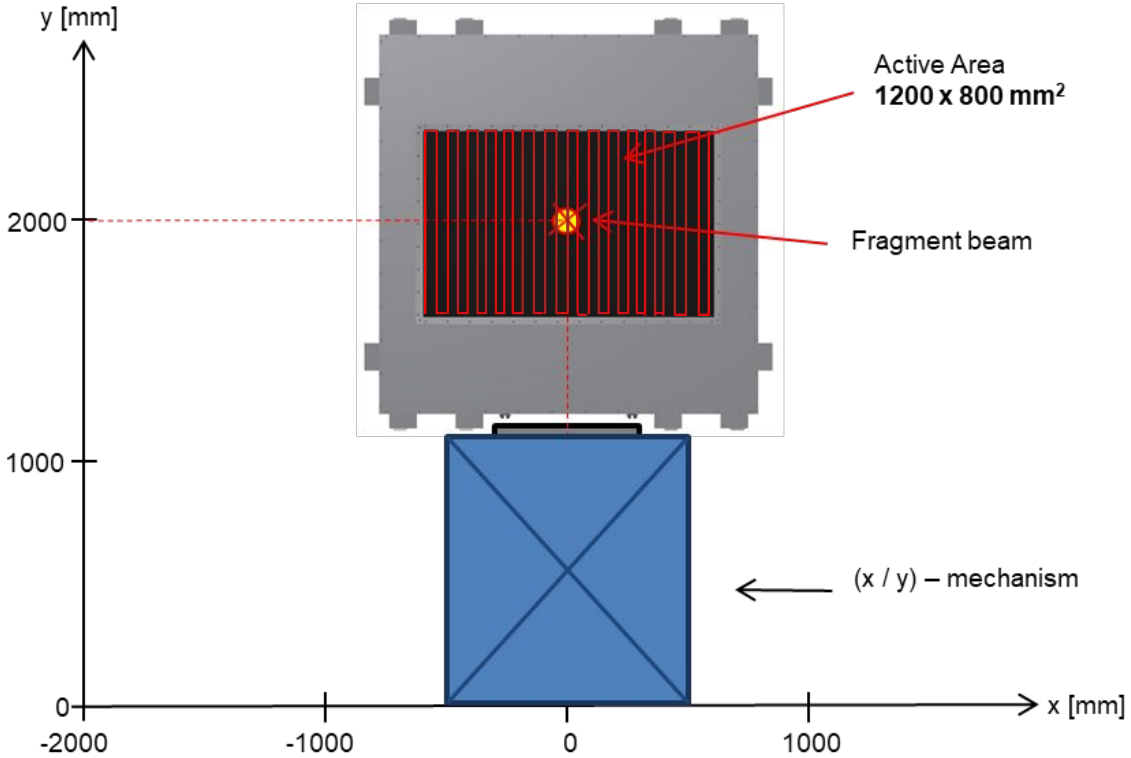
Side view

Weight: ~ 250 kg

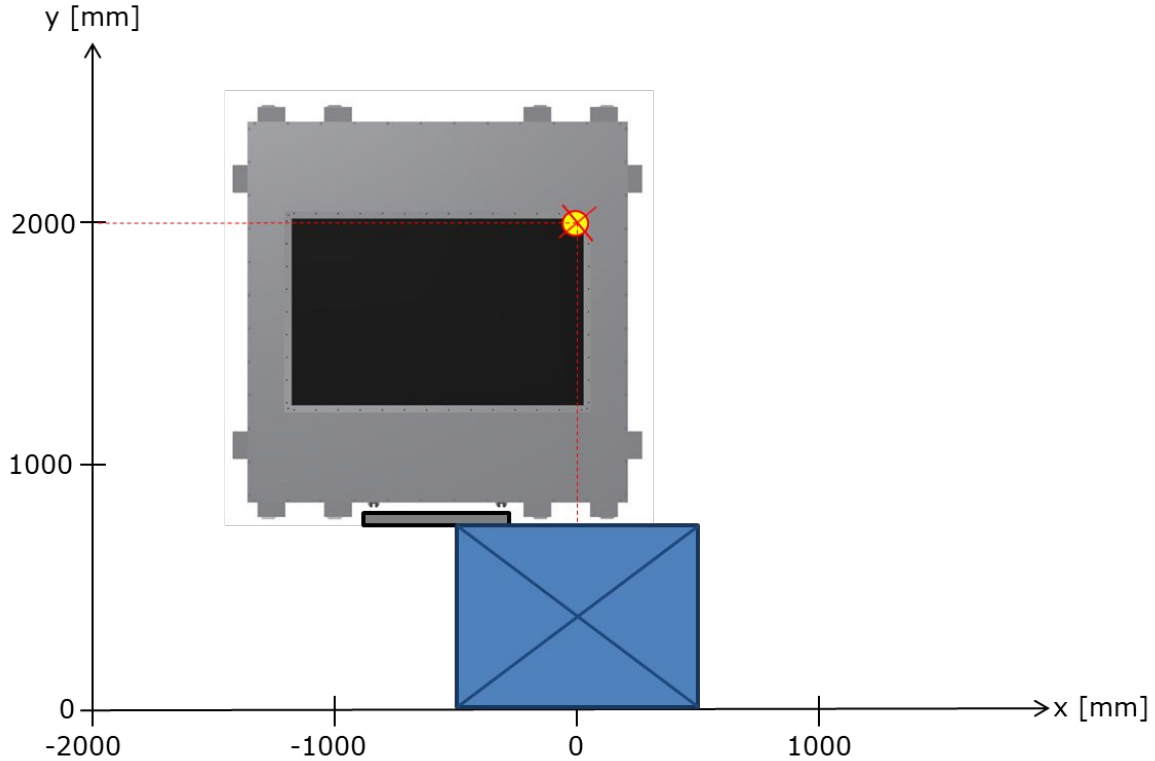
Movement of the ToFD - Beamposition



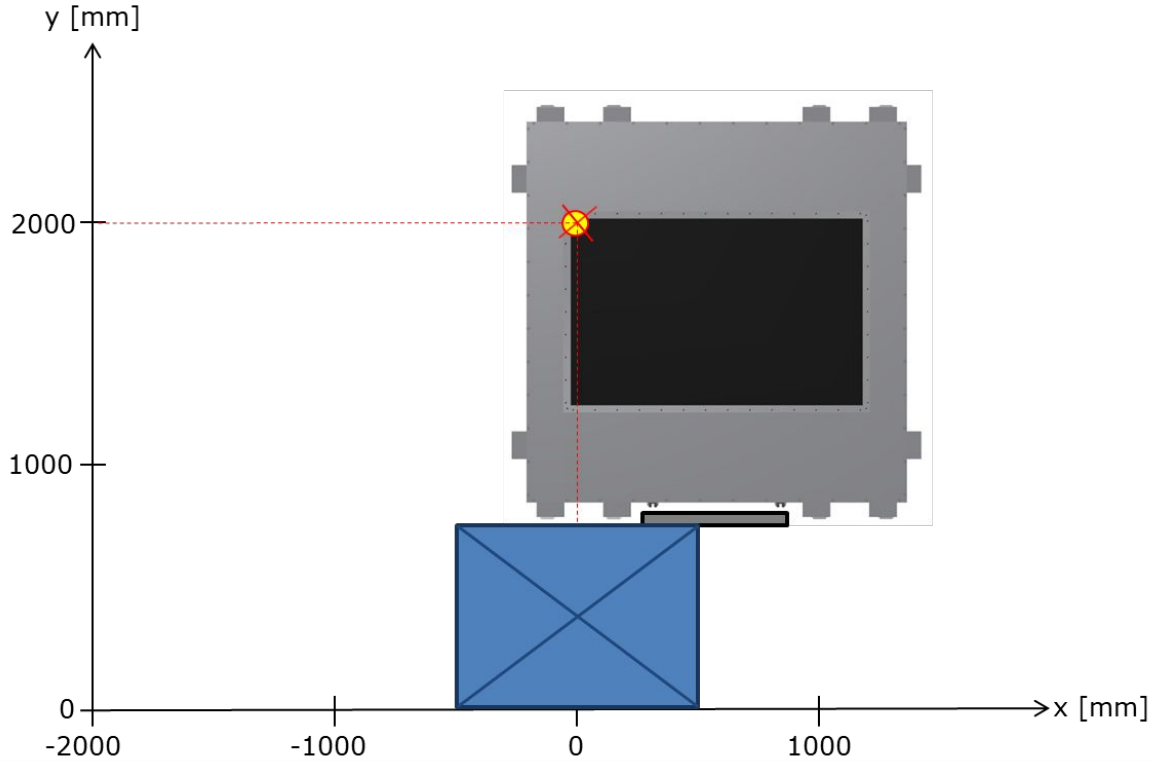
Movement of the ToFD - Meander



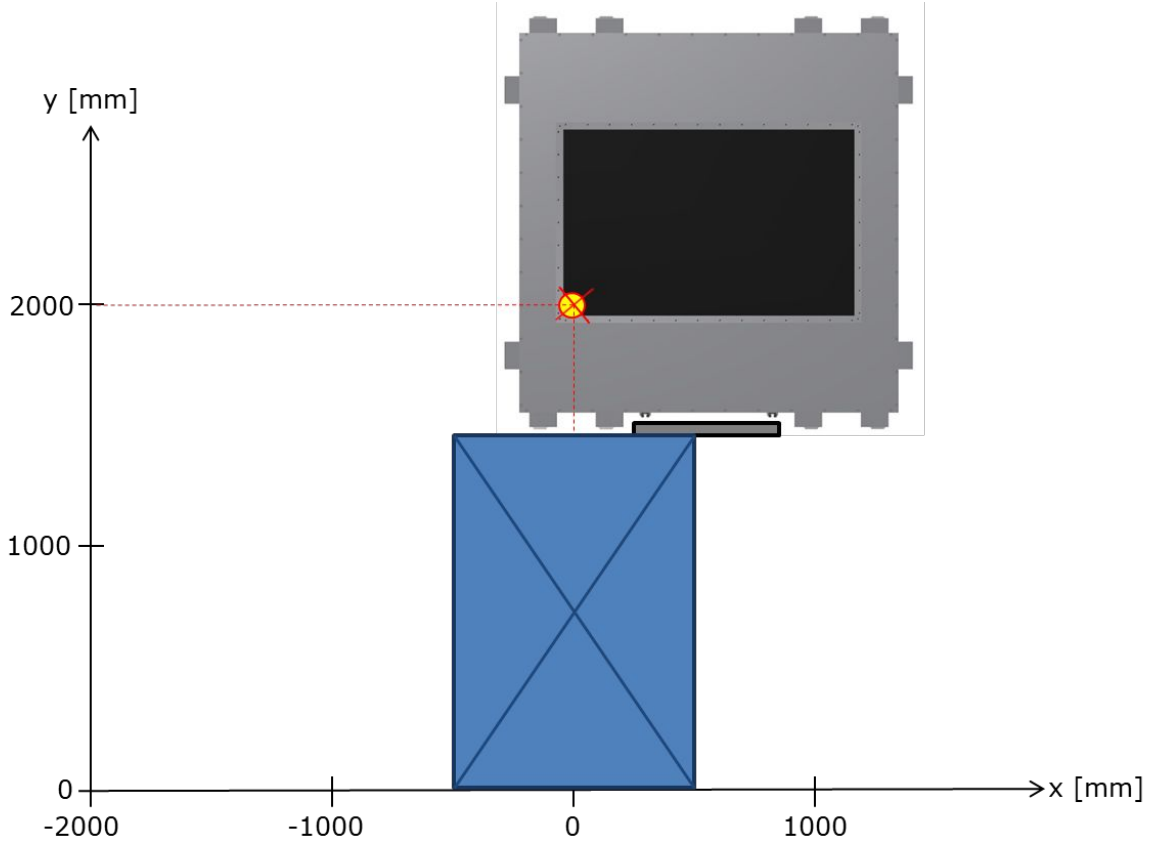
Movement of the ToFD - x_{min} / y_{min}



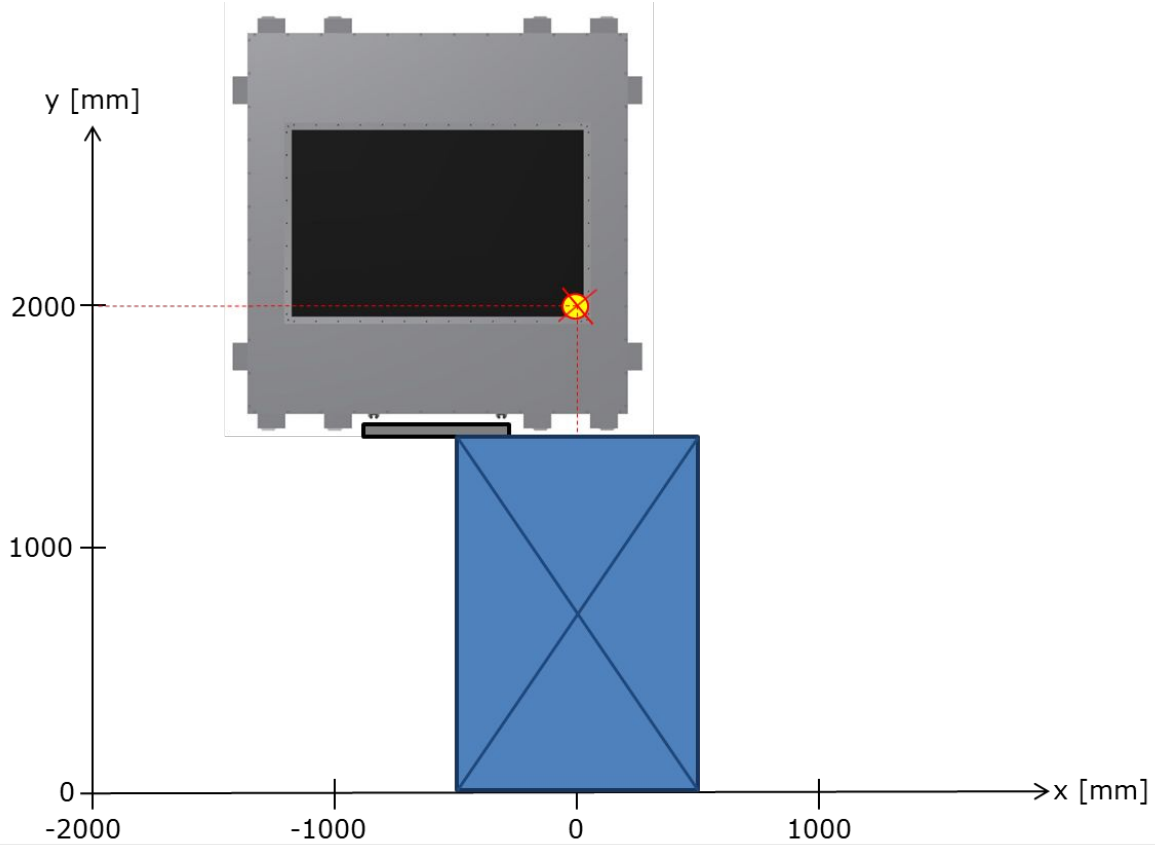
Movement of the ToFD - x_{max} / y_{min}



Movement of the ToFD - x_{max} / y_{max}

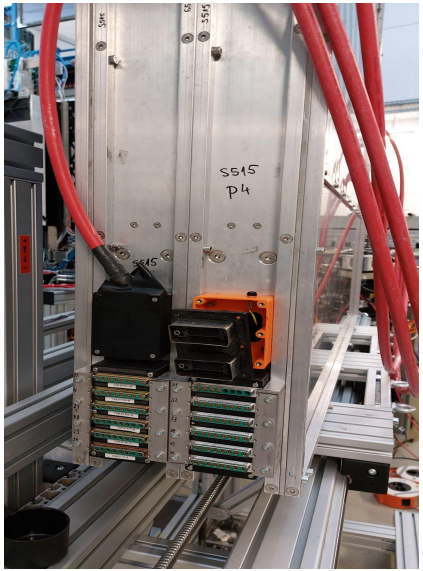


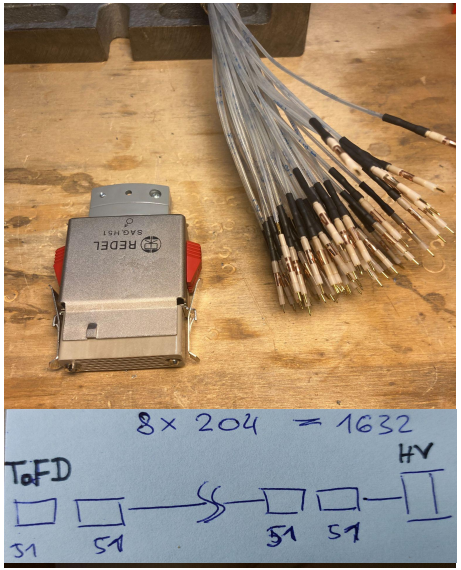
Movement of the ToFD - x_{min} / y_{max}



ToFD - what happened so far …

- All Caen Radial HV connectors were replaced by Redel connectors
- Mapping of HV channels was checked and corrected in epics.



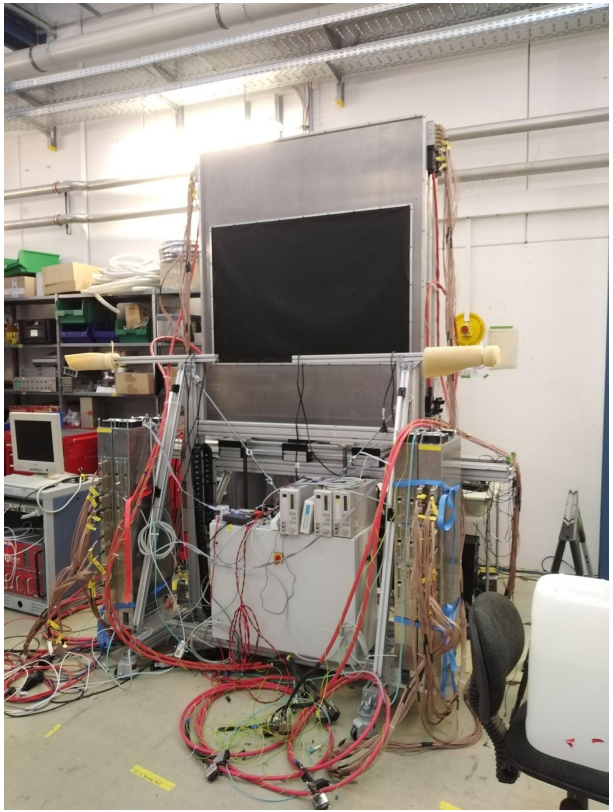


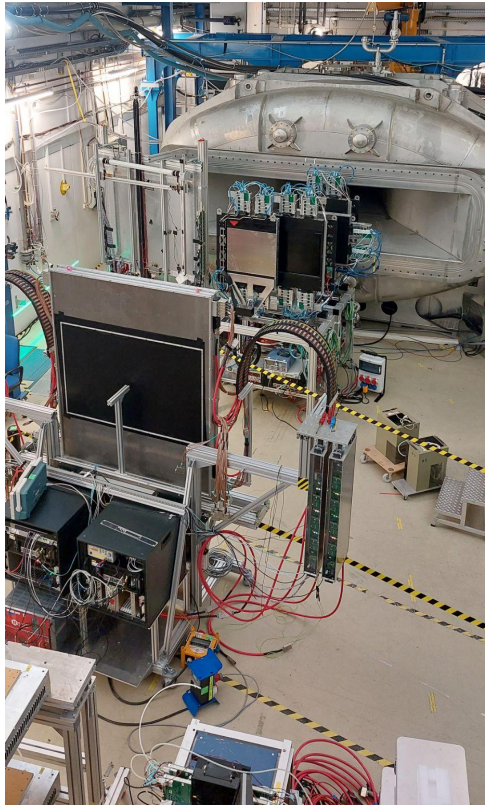
ToFD - what happened so far …

- Broken signal channels were repaired.
- 2 Racks for PC, Switch, … and HV modules
- Changed cabling and organisation of modules to allow easy splitting in two halves (needed for AsyEOS).
- Draglines for safe movement of the detector during meander runs were installed.
- X/Y movement for maintenance via remote control
- New support structure for plane 3 and 4 under construction (needed for AsyEOS).

for the performance of the detector in the year 2024, see talk by Leyla

ToFD, before and now

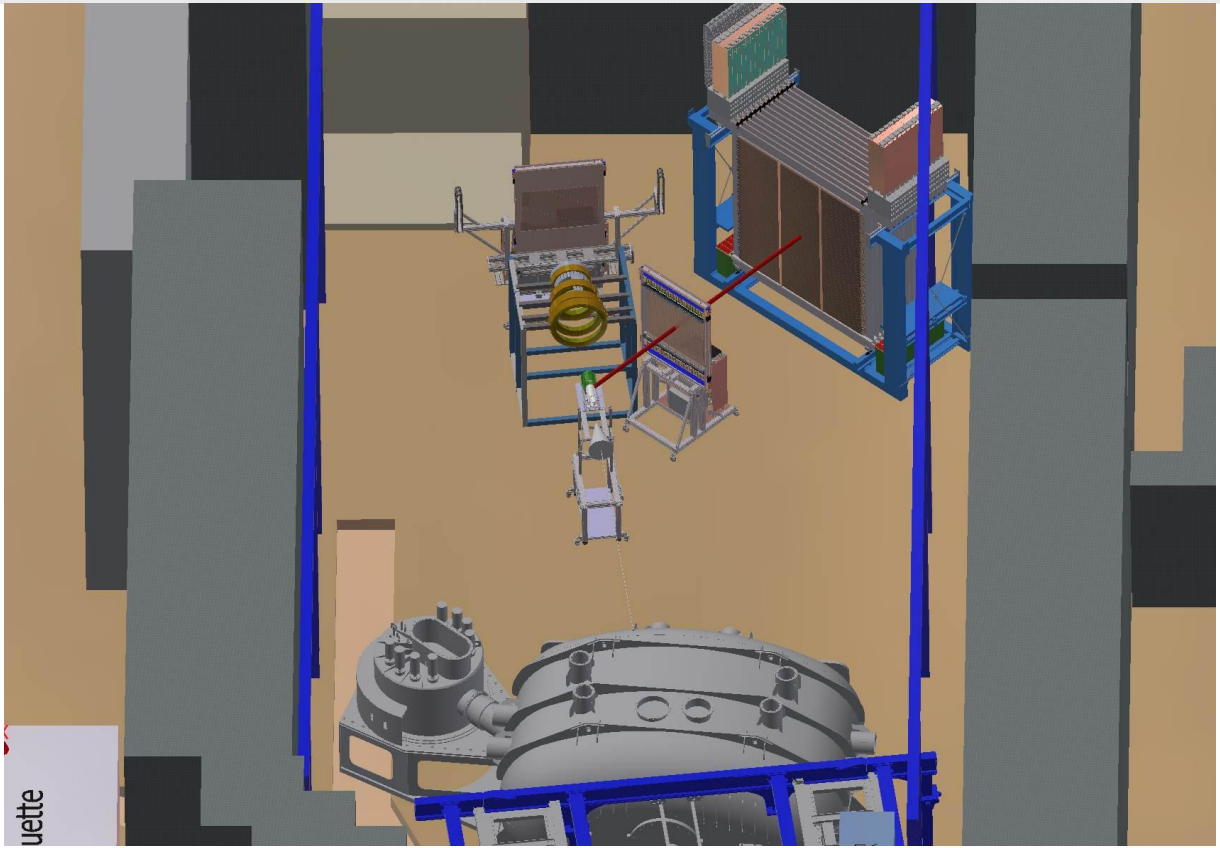




ToFD for AsyEOS in 2025

Two ToFD double planes

- at 0°
  - for fragments
- at 50°
  - as veto for protons

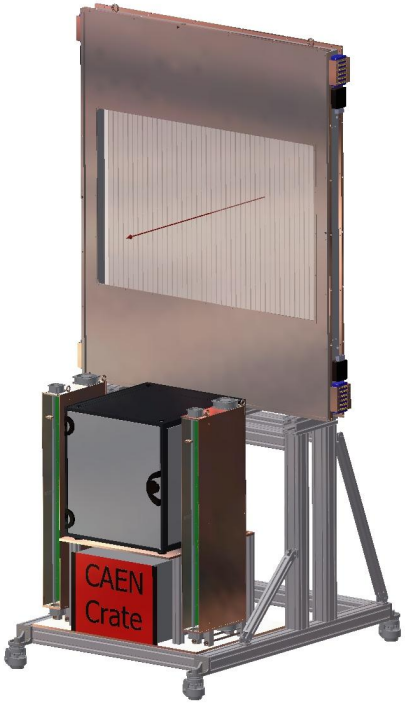


ToFD for AsyEOS in 2025

ToFD, 2 planes on X/Y mechanism

ToFD, 2 planes on fixed support

ToFD for AsyEOS in 2025

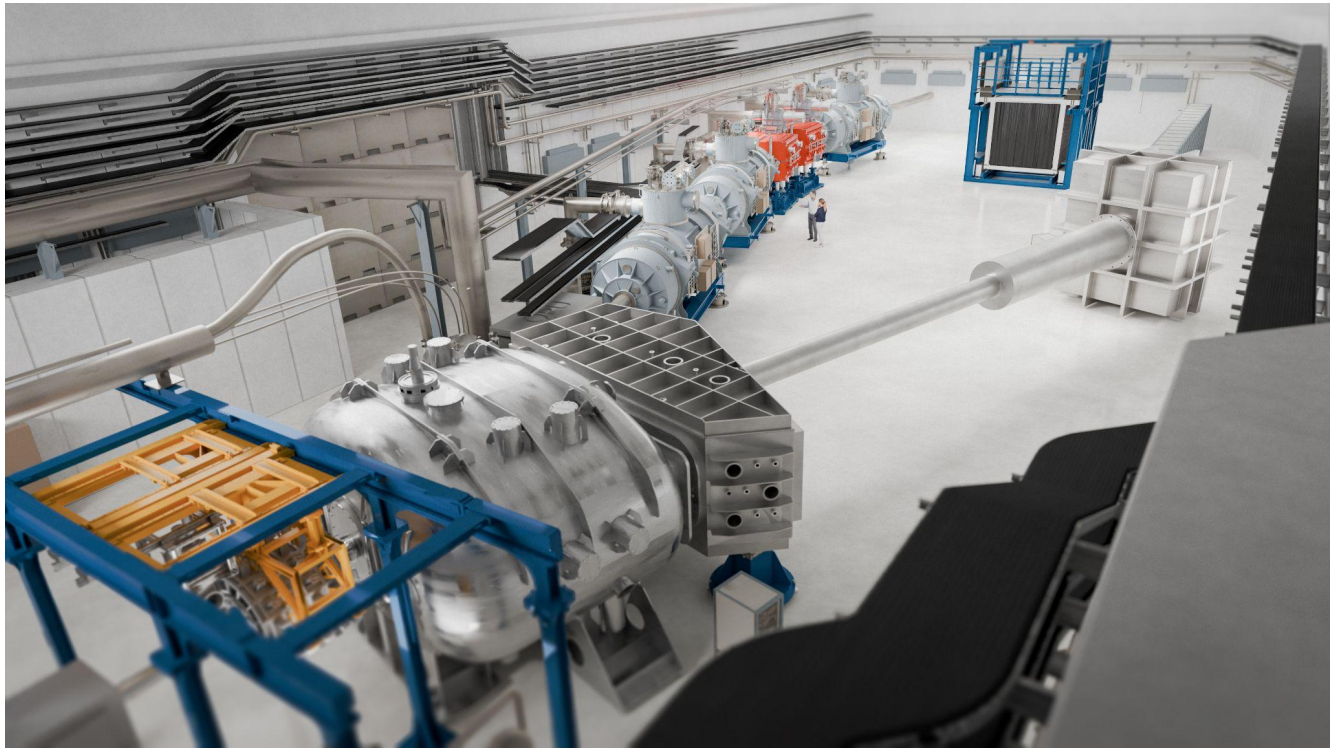


ToFD, 2 planes on fixed support

fixed support, ready to install 2 ToFD planes

Future plans for ToFD at HEC

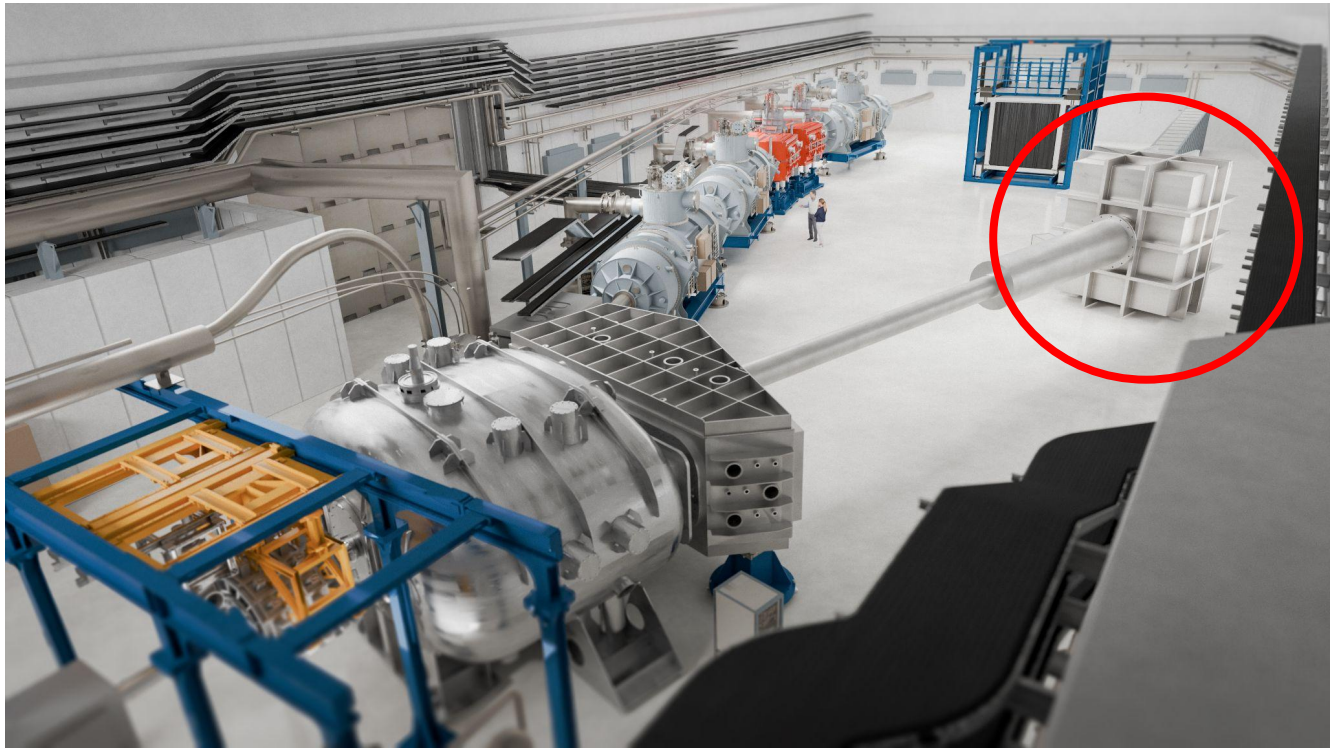
ToFD in the vacuum chamber at the far end of the Fragmentarm



Download-Link:
https://sf.gsi.de/d/7cc1aec3a2154f6ba0a9/

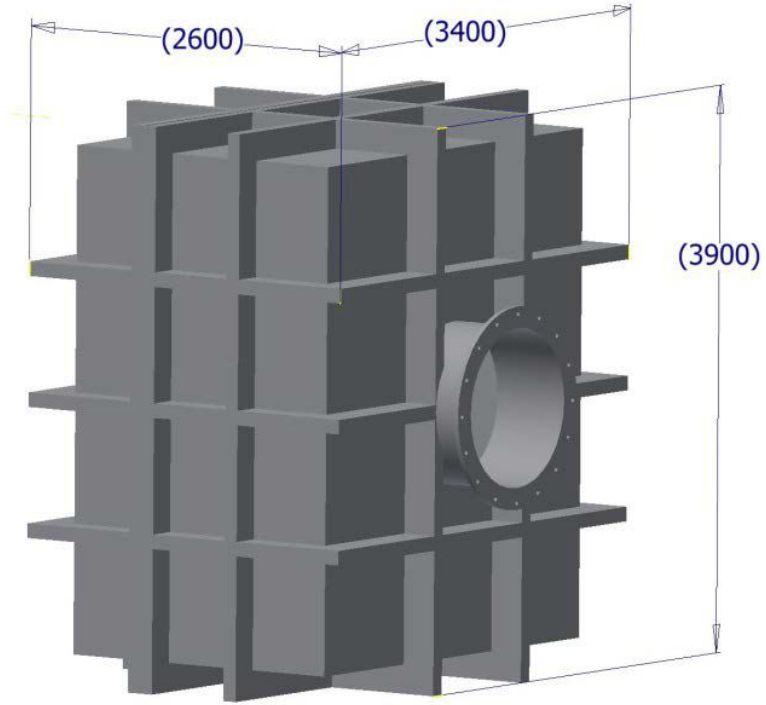
Future plans for ToFD at HEC

ToFD in the vacuum chamber at the far end of the Fragmentarm

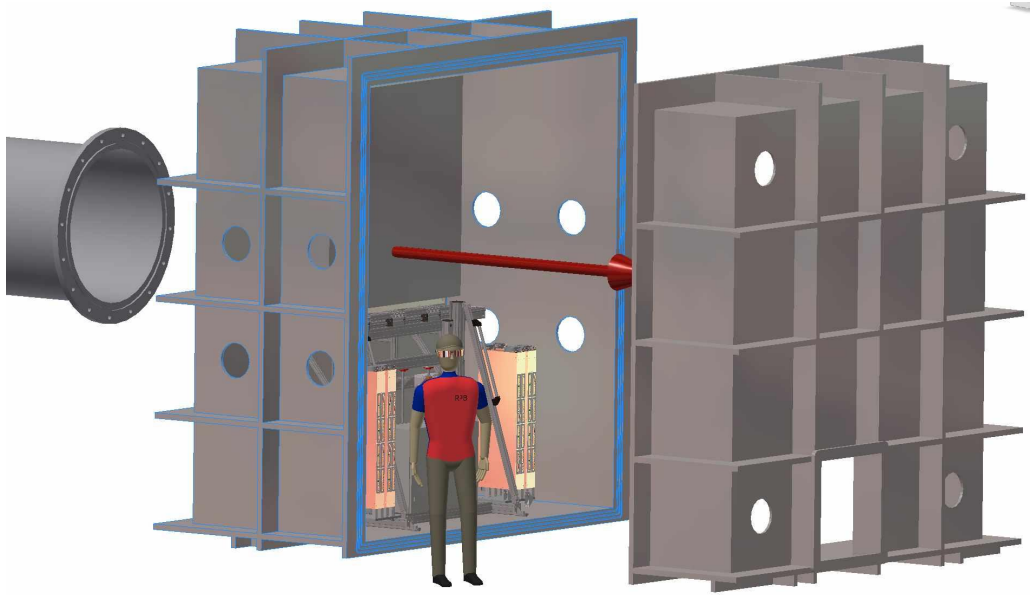


Download-Link:
https://sf.gsi.de/d/7cc1aec3a2154f6ba0a9/

Future plans for ToFD at HEC



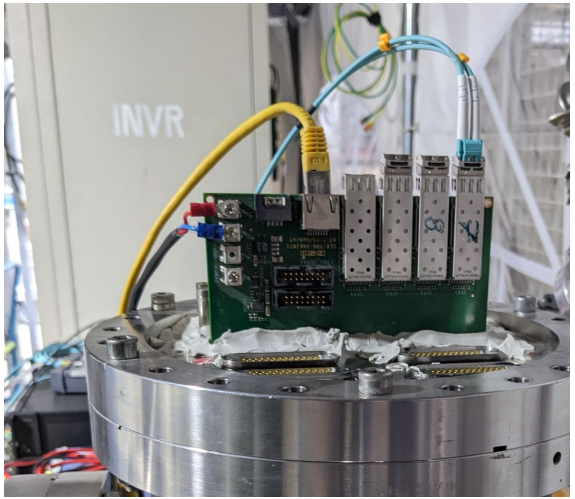
Dimension of the vacuum chamber



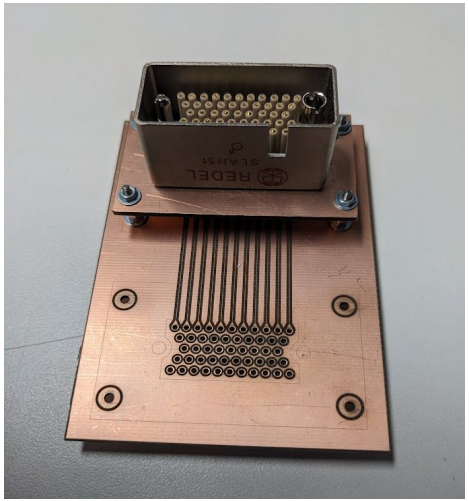
vacuum chamber in the slit open mode

Signal and HV feedthroughs

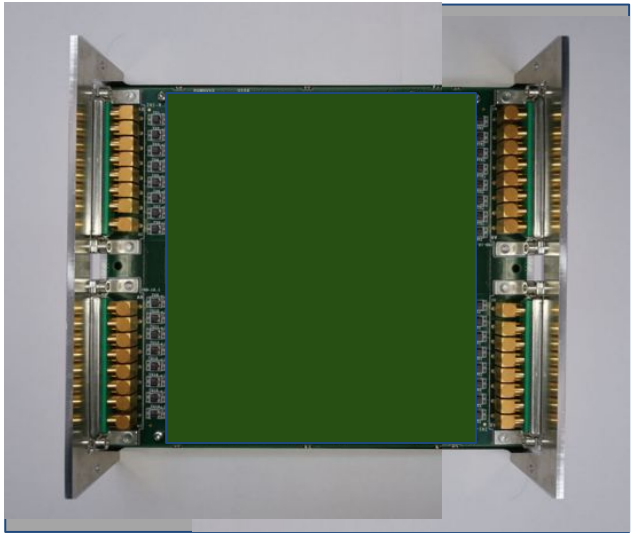
We plan feedthroughs via PCB boards, glued in slits of flanges.
All existing cables can be used in future.



HV vacuum feedthroughs
(352 channels)



Signal cable vacuum feedthroughs
(352 channels)



First prototype by Karsten Koch (EEL)