



Update on the Mechanical Design of the Barrel DIRC Readout Unit

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PANDA Collaboration Meeting 18/1



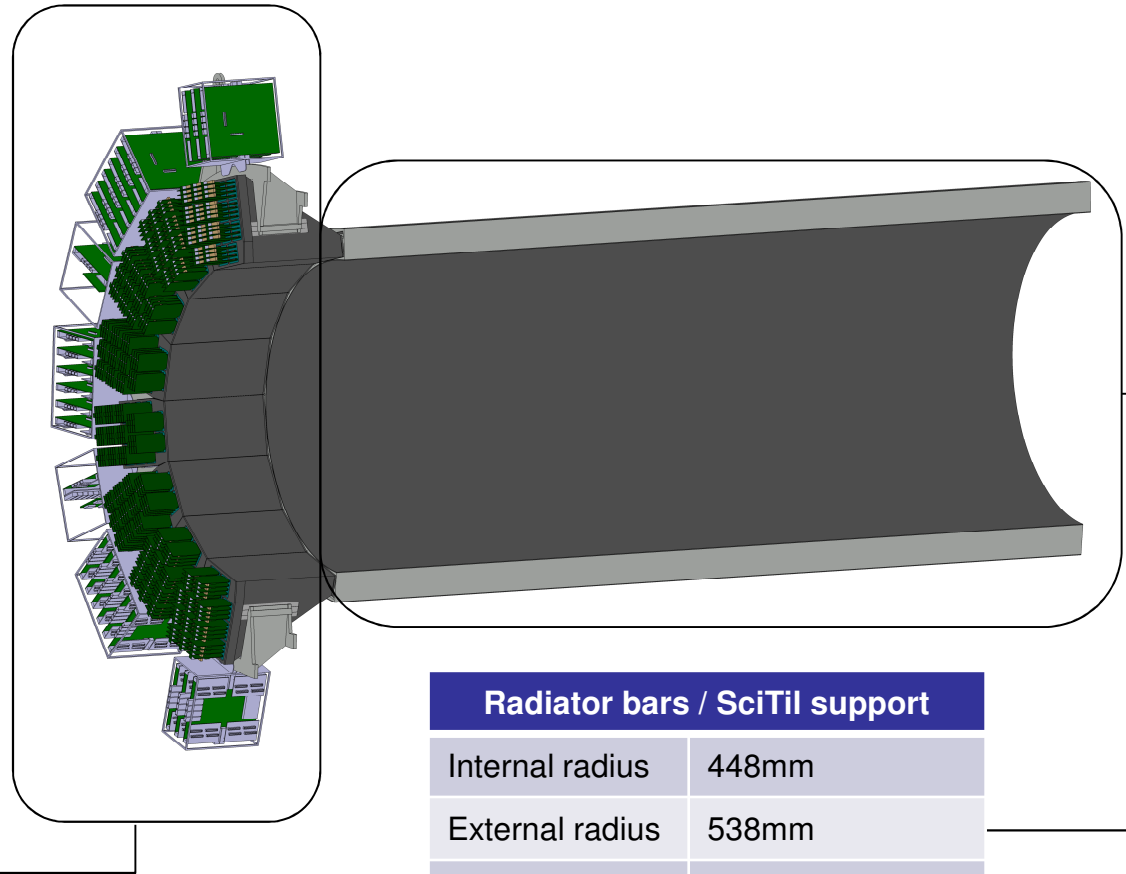
Outlines

- Main parts of the Barrel DIRC
- Readout unit – cryostat attachment point request
- Optical coupling – cookie production

Main parts of the Barrel DIRC

Expansion Volume / Readout unit

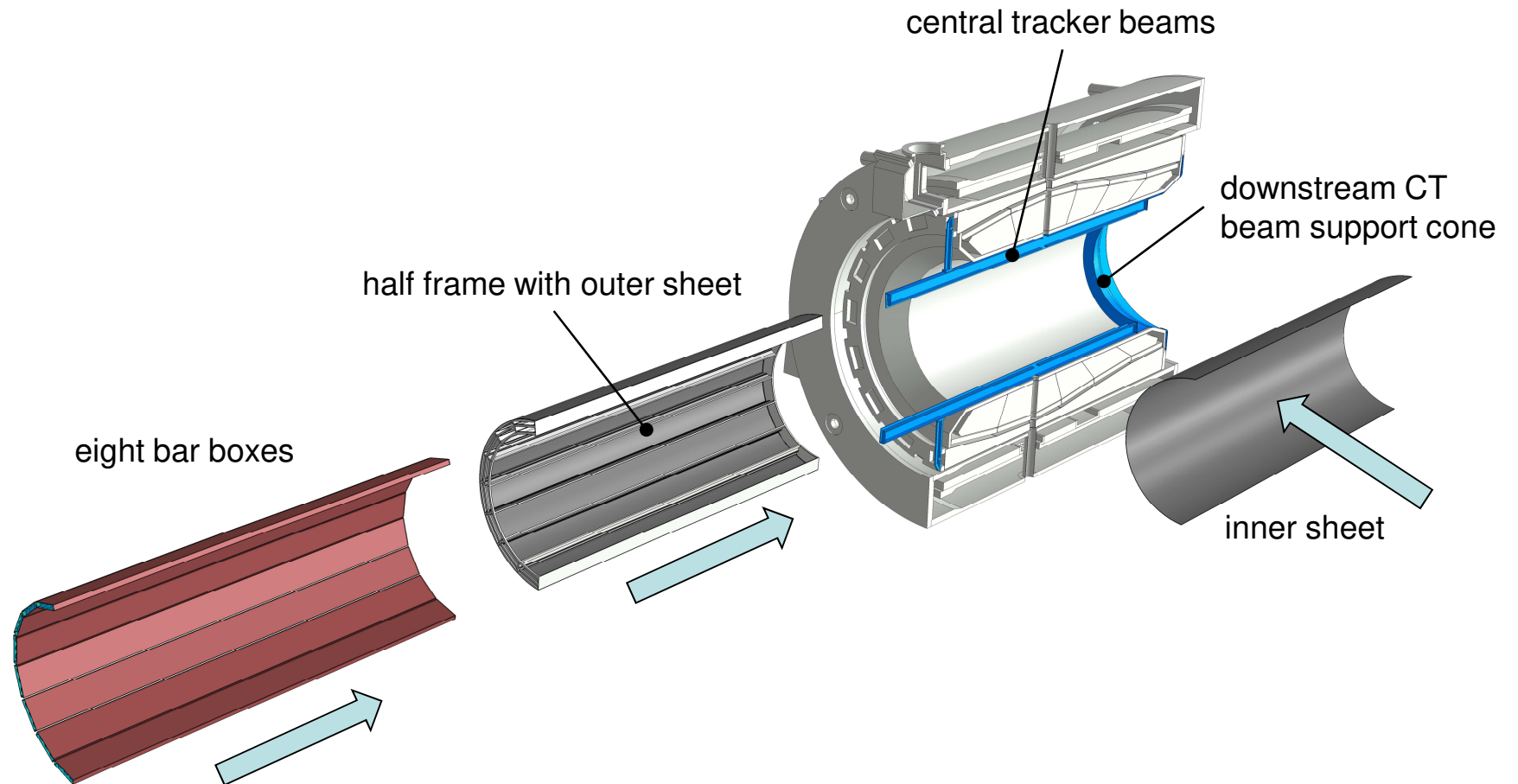
Internal radius	448mm
External radius	1080mm
Total weight	≈ 500kg
z-position	-1710... -1190mm
Δz	520mm



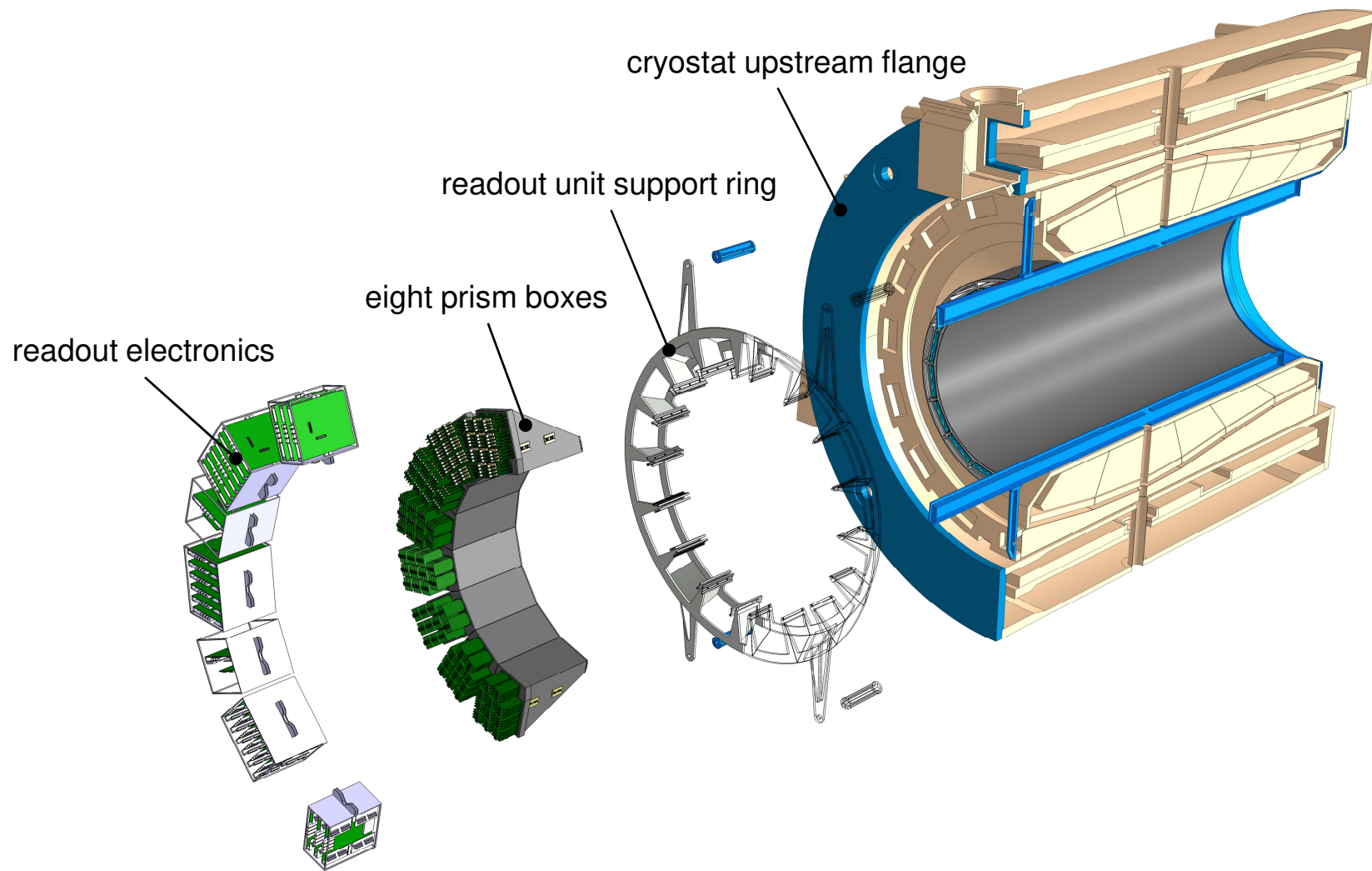
Radiator bars / SciTil support

Internal radius	448mm
External radius	538mm
Total weight	≈ 400kg
z-position	-1190... +1270mm
Δz	2460mm

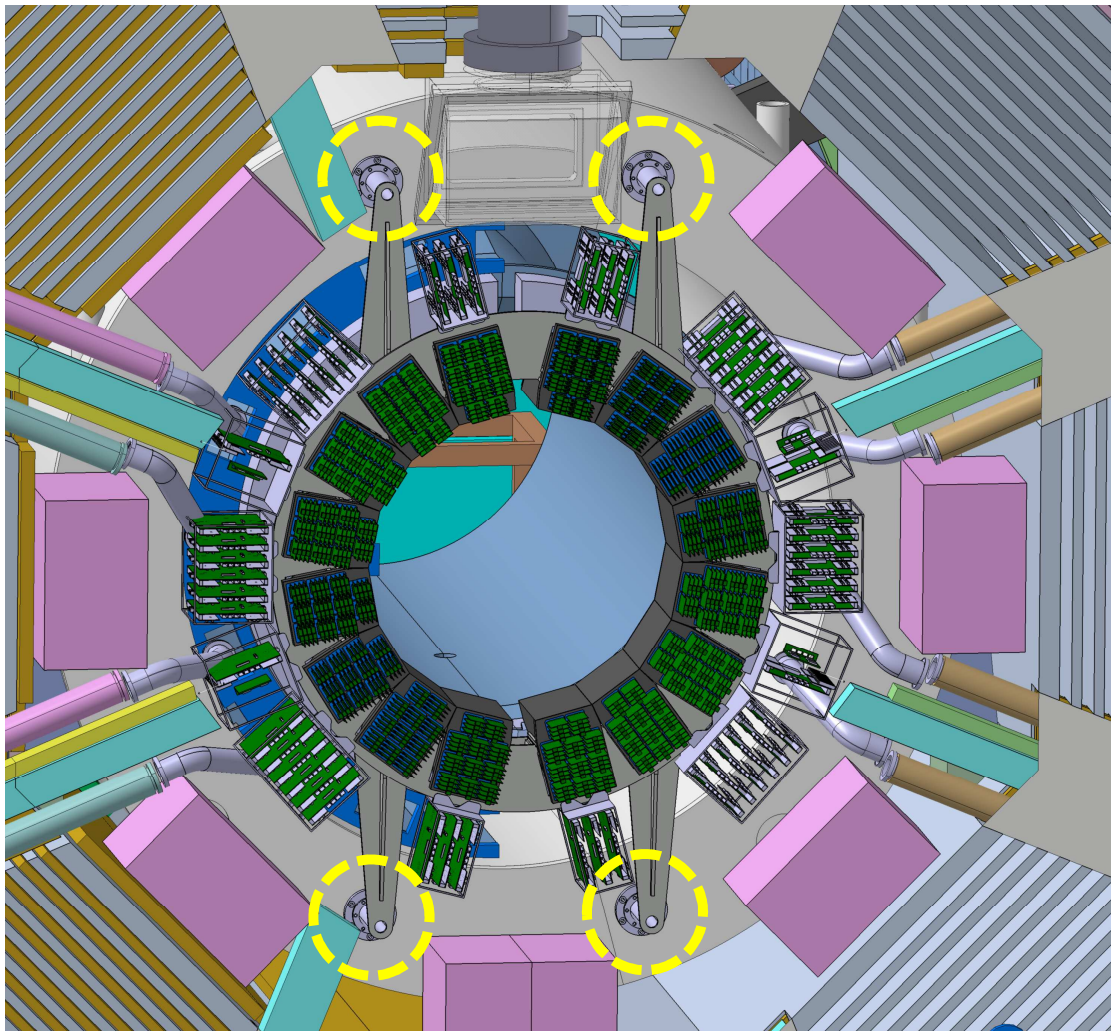
Main parts of the Barrel DIRC



Main parts of the Barrel DIRC



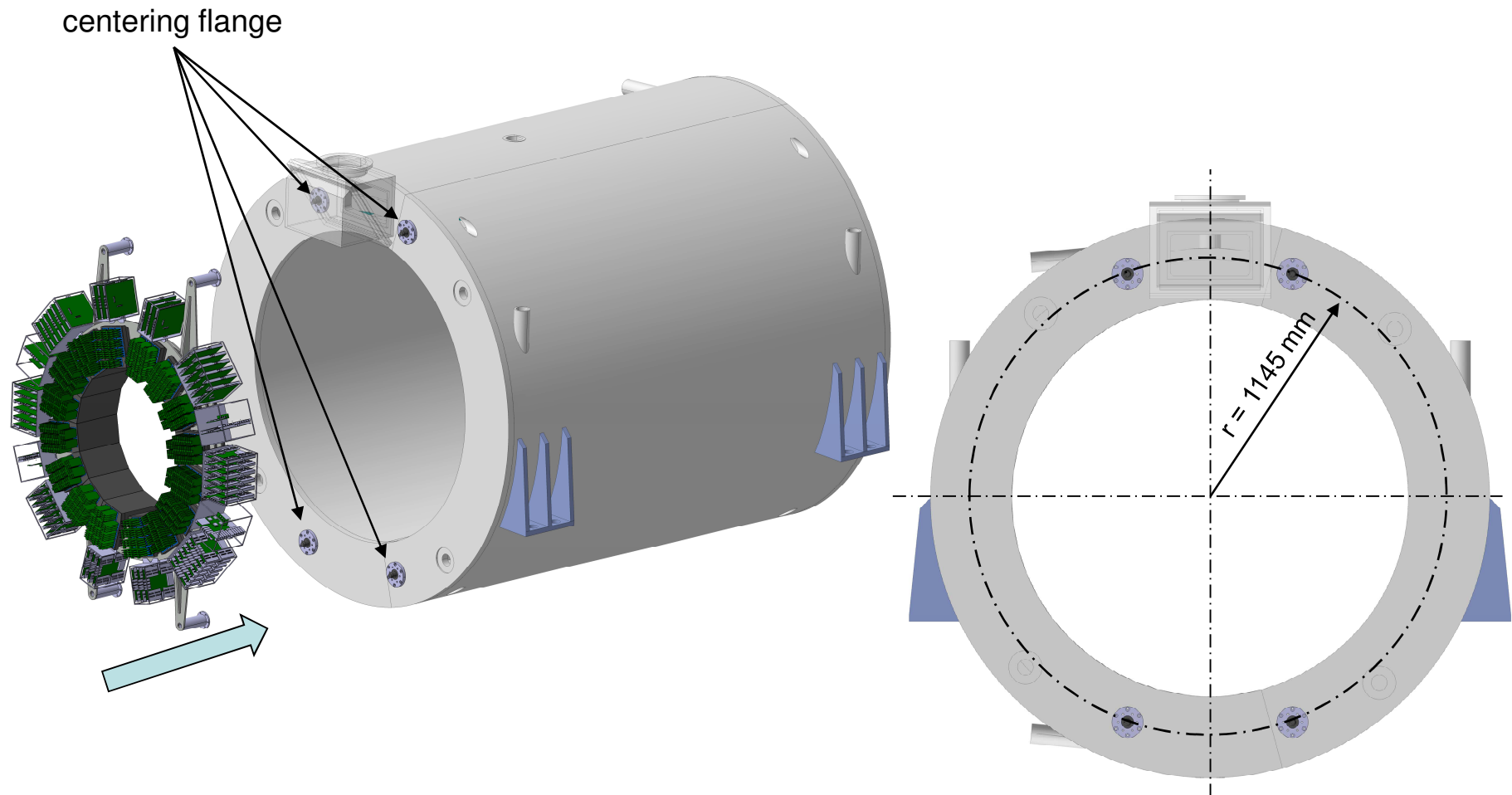
Readout unit – cryostat attachment points



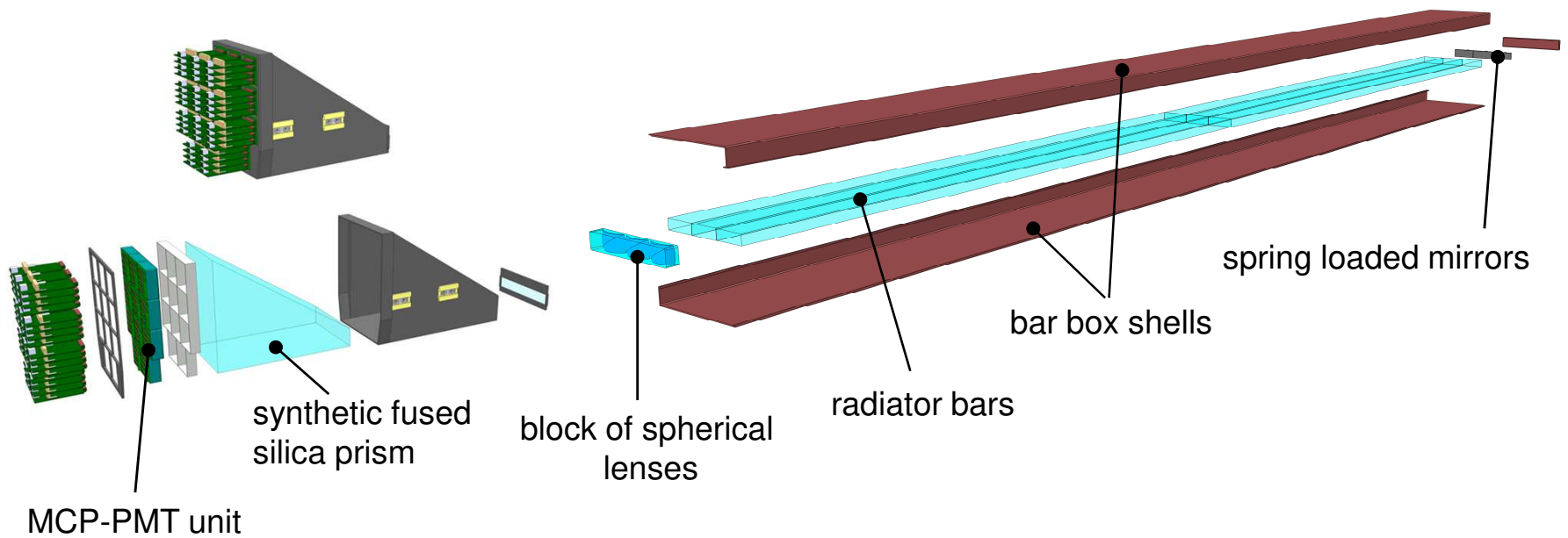
Attachment point request:

- Four blind hole circles with threads to mount centering flanges.
- After the first alignment the centering flanges remain mounted to ensure a high repeat accuracy during positioning.

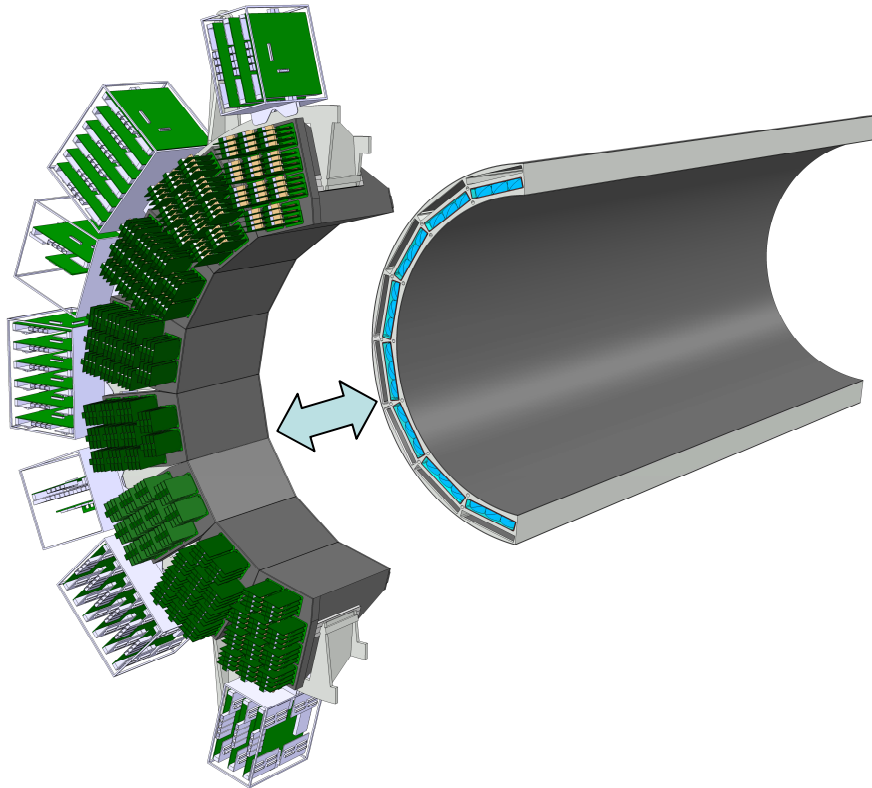
Readout unit – cryostat attachment points



Optical coupling – cookie production



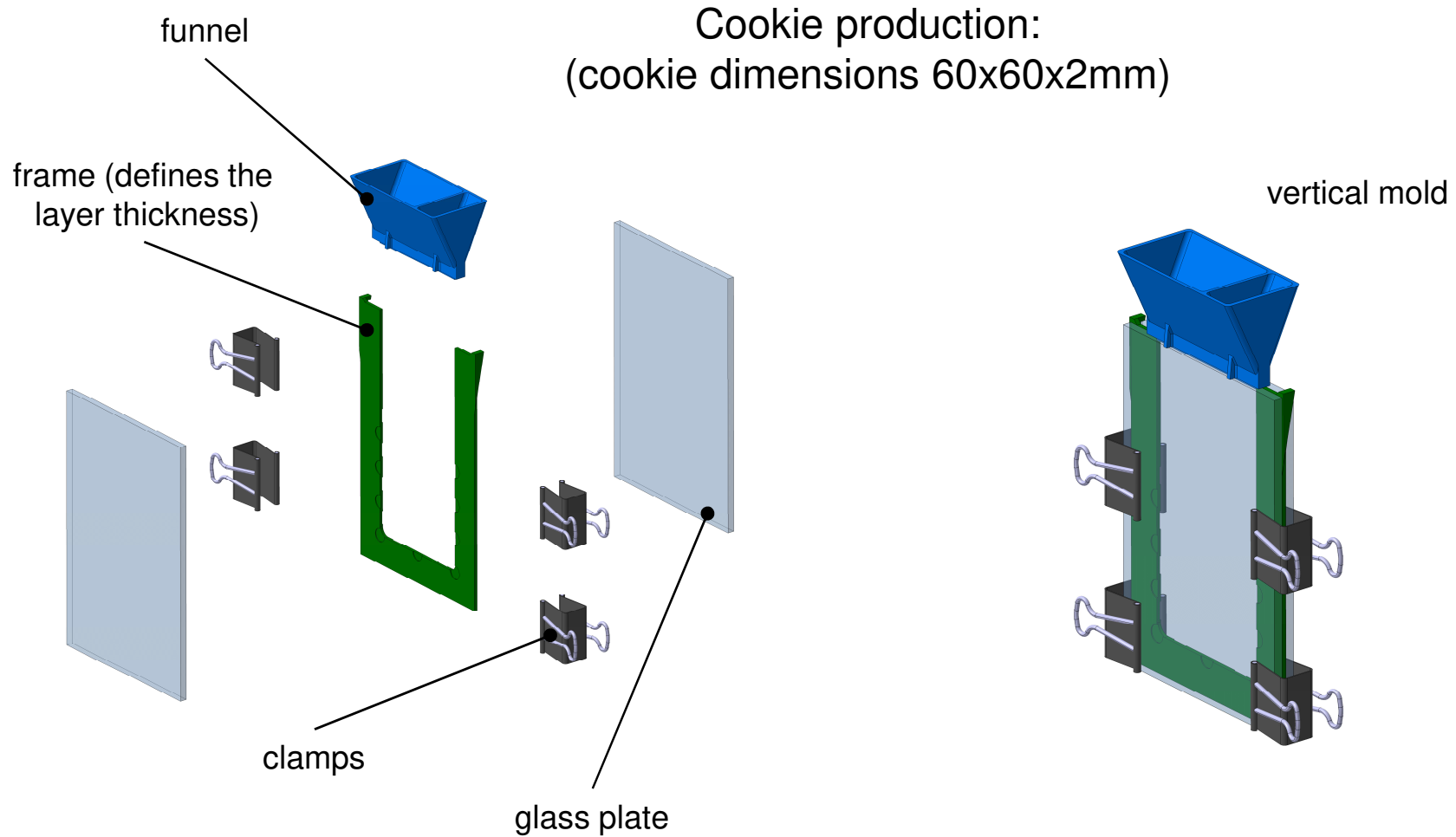
Optical coupling – cookie production



Optical coupling between readout unit and radiator bars:

- Coupling procedure on-site. Preassembly in cleanroom not possible.
- The procedure demands easily detachable components in case of dismantling the readout unit.

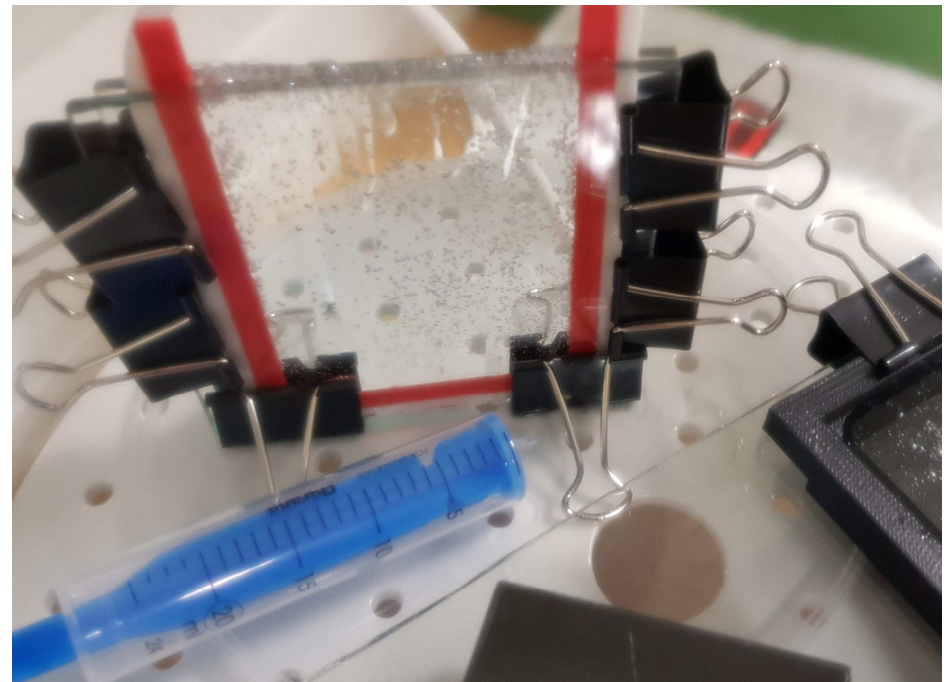
Optical coupling – cookie production



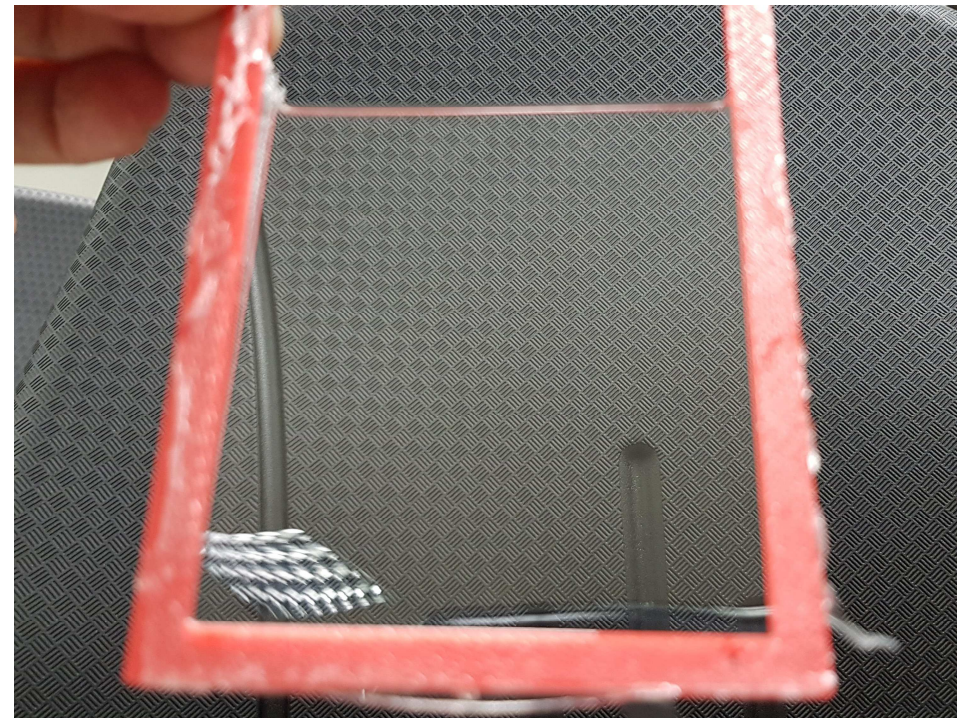
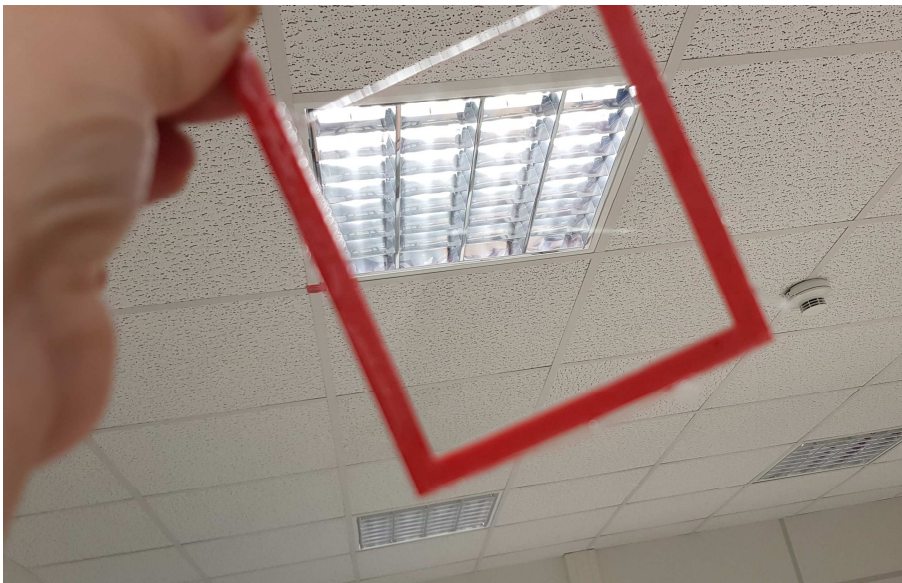
Optical coupling – cookie production



Degassing procedures in vacuum vessel.



Optical coupling



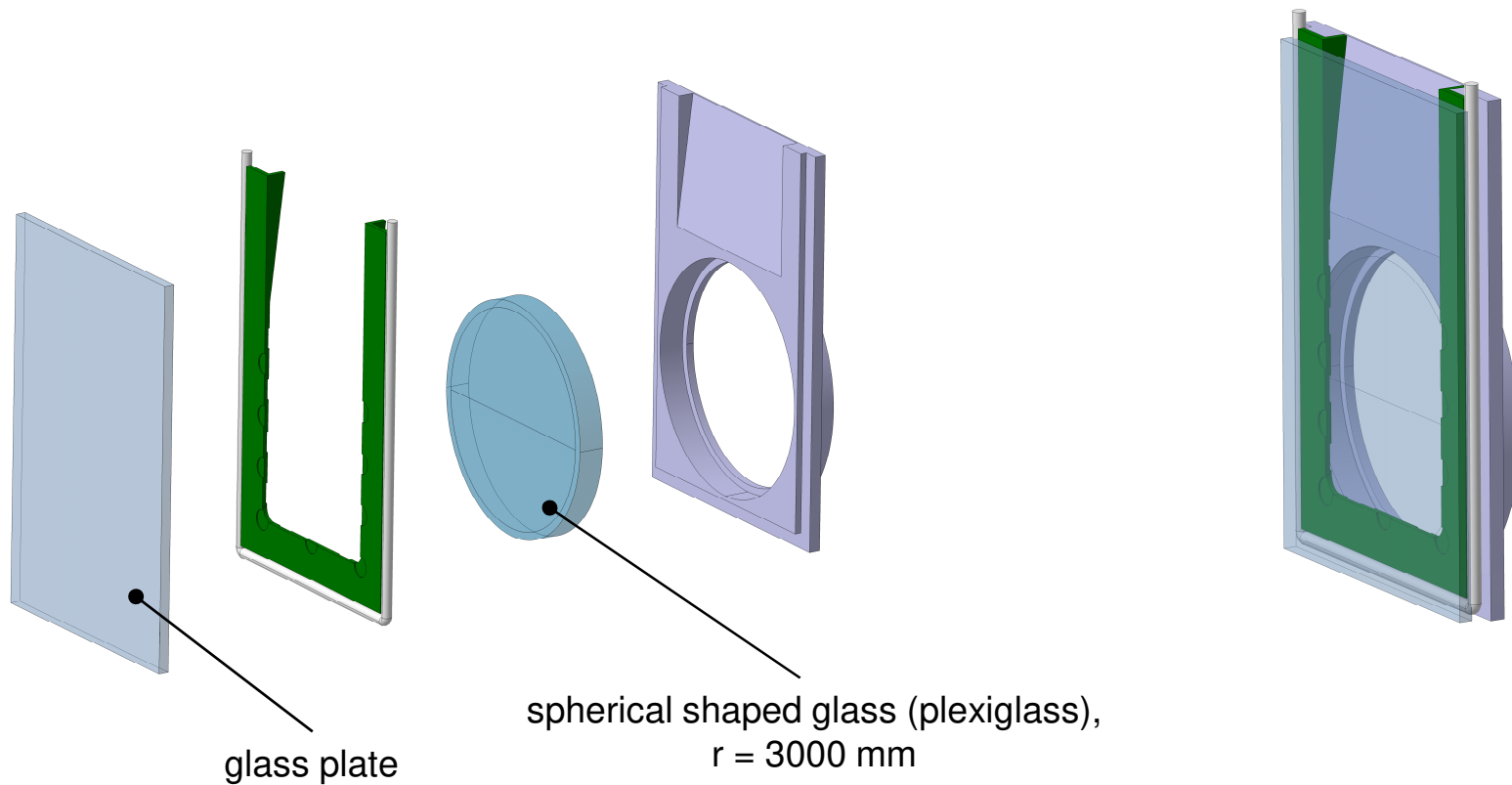
Demolded flat cookie:

- easy to handle inside the frame

Optical coupling – cookie production

Cookie production:

- Next step: Production of spherical shaped cookies to avoid air bubbles during coupling process and to simplify the decoupling.





Outlook

- Cookie production in progress. Gain first experiences with self-made cookies during next beam time in July 2018.
- Outgassing test for screening materials starts in the next months (identify possible contamination of the bar surface).
- The first DIRICH layout is in work. Backplanes will be ordered soon.