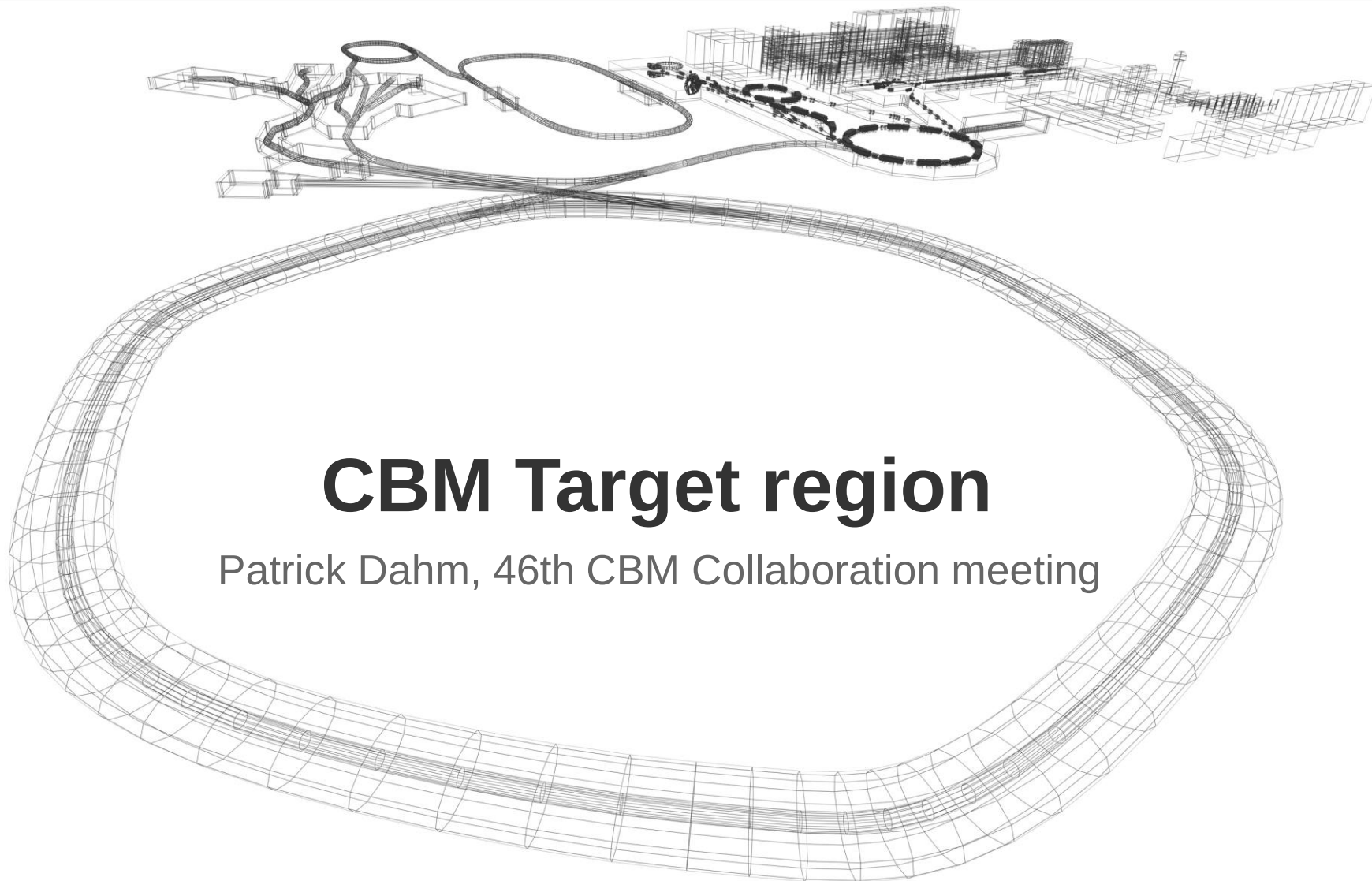
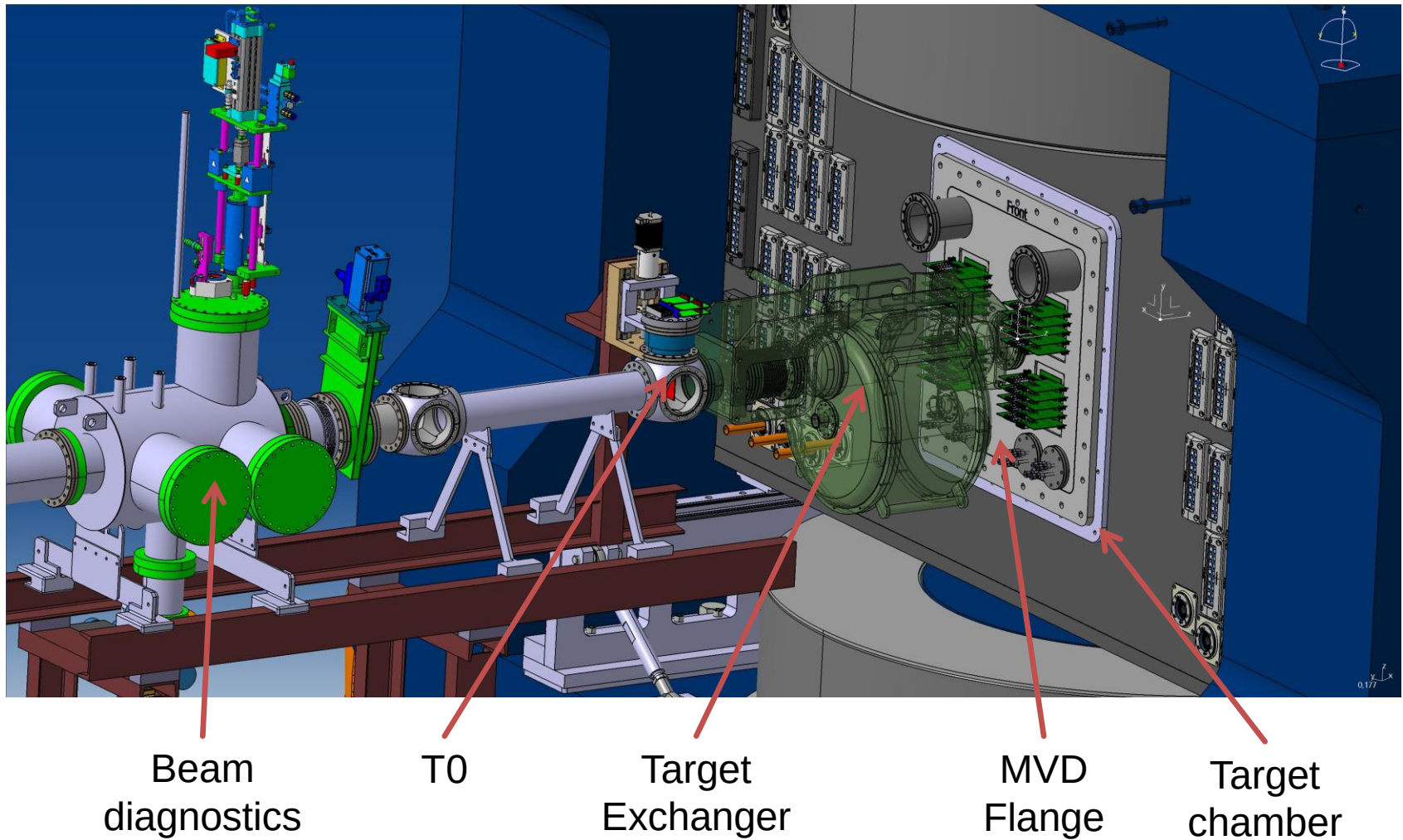




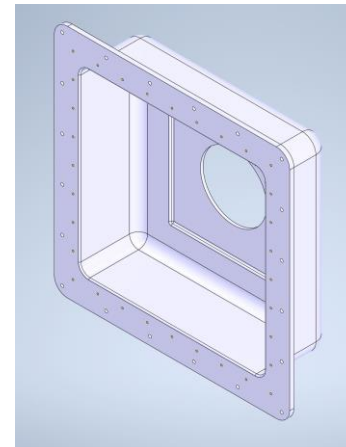
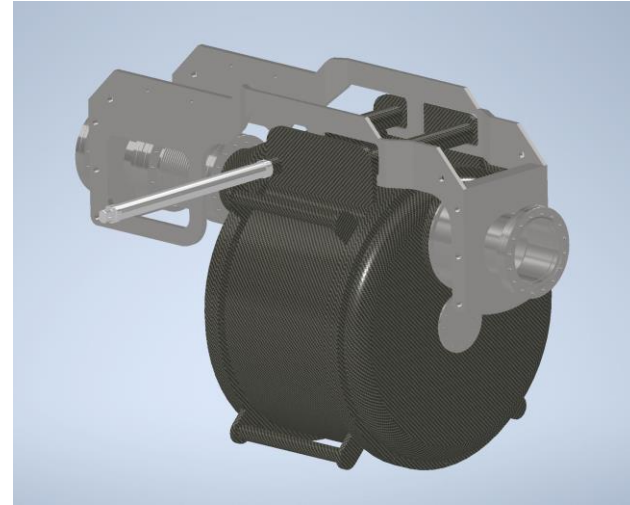
# CBM Target region

Patrick Dahm, 46th CBM Collaboration meeting

# General concept

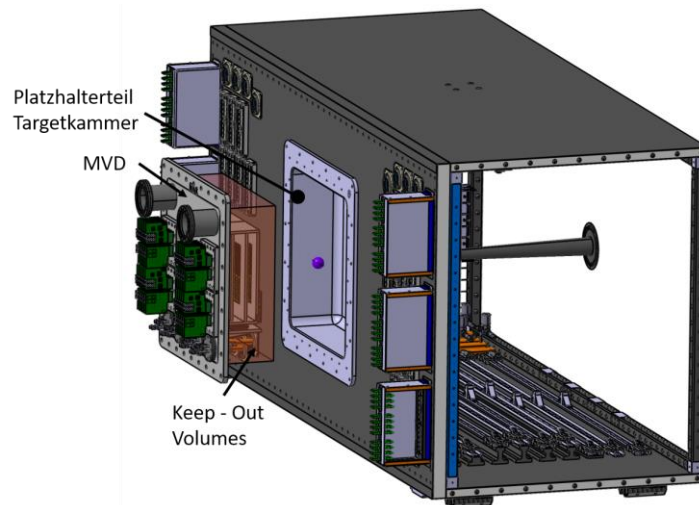
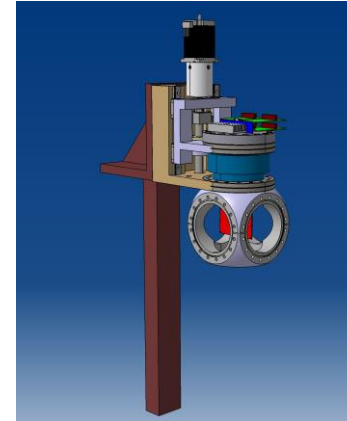


- Target Exchanger
- Target Chamber



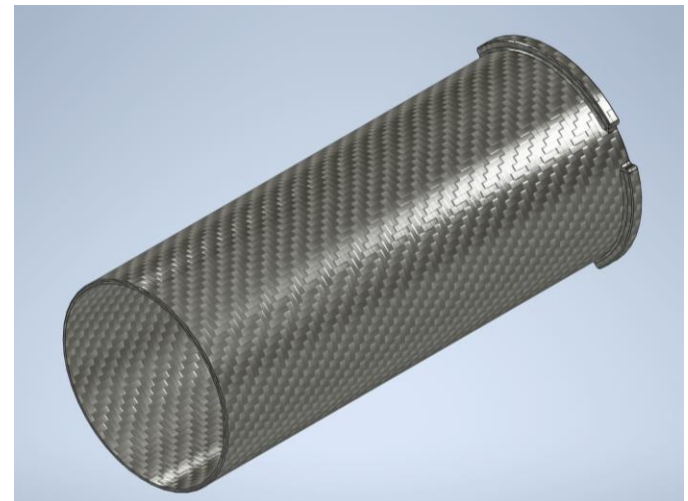
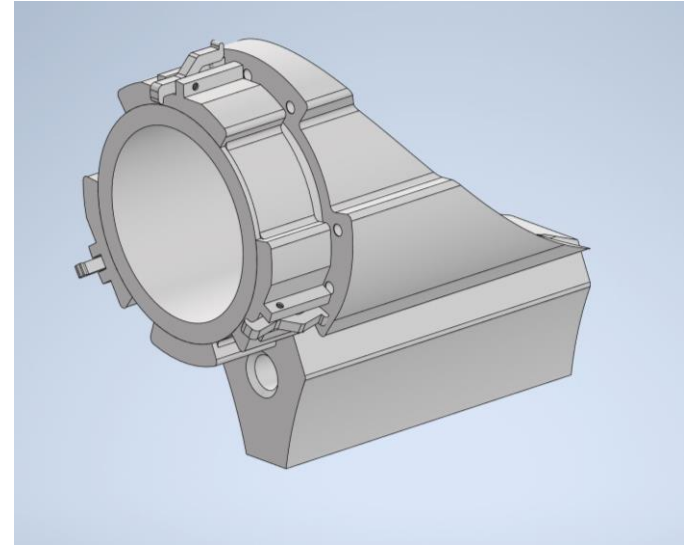
# Affected systems

- BMON / T0
- MVD
- STS



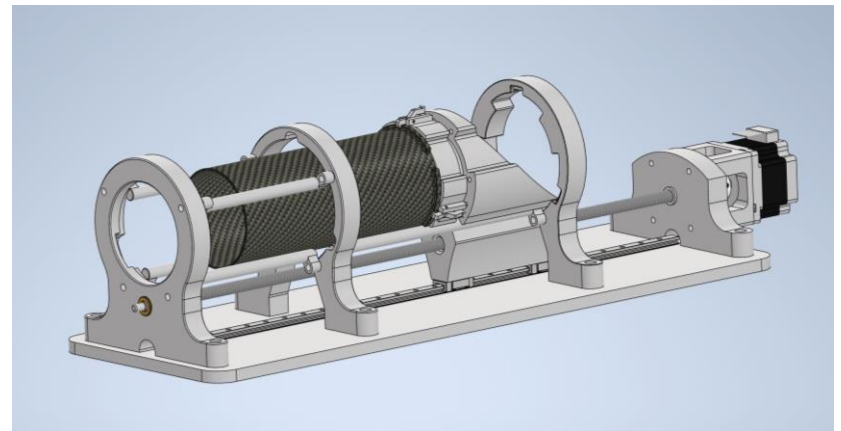
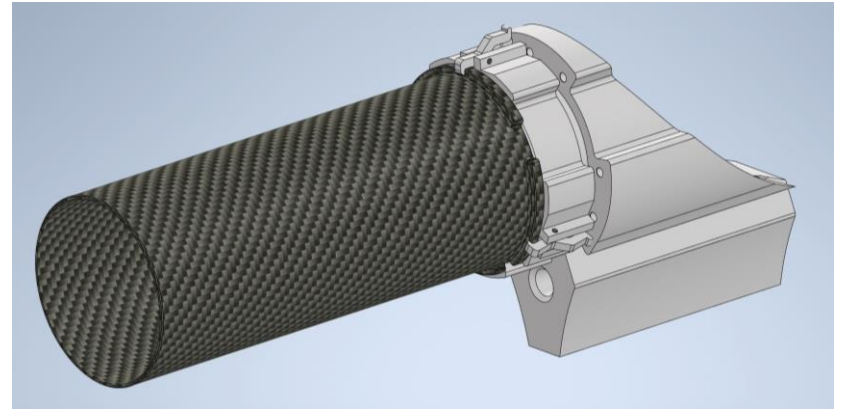
# Current Status – Target Exchanger

- Still in concept phase
- Feature studies started
- Demonstrator design ongoing
- Prototyping of first parts ongoing



# Next steps – Target Exchanger

- Simulations of targets and surrounding material
- Control concept
- Purchase of parts
- Mechanical demonstrator





# Current Status – Target Chamber

- Requirements collected
- Detailed specification document created
- Coordination with PWG and Simulations

| Anforderungsliste<br>Requirements List                 |  |                           |                                      |                                                         |
|--------------------------------------------------------|--|---------------------------|--------------------------------------|---------------------------------------------------------|
| Titel Konstruktionsauftrag<br>Title order construction |  | Auftrags-Nr.<br>Order-no. | Verantwortlich<br>responsible person | GSI<br>HELMHOLTZ<br>ZENTRUM FÜR<br>SCHWERIONENFORSCHUNG |
| STS Target chamber                                     |  | 0-TBD                     | P. Dahm                              |                                                         |

| Nr.<br>No.                               | Art<br>Type | Anforderungen<br>Requirement<br>*****g                                   | verantwortl.<br>responsible | Bemerkung<br>Remark                         |
|------------------------------------------|-------------|--------------------------------------------------------------------------|-----------------------------|---------------------------------------------|
| <b>1 Funktion</b><br>Function            |             |                                                                          |                             |                                             |
| 1.1                                      | F           | Seal towards STS box                                                     | O. Vasylyev                 | Given in STS TDR                            |
| 1.2                                      | M           | Vacuum tightness up to 10 <sup>-6</sup> mbar                             | O. Vasylyev                 | Given in STS TDR                            |
| 1.3                                      | F           | Mounting interface for MVD                                               | F. Matejcek                 | Space requirements discussed with MVD       |
| 1.4                                      | F           | Support of gravitational forces on STS framing or detector rail          | O. Vasylyev                 |                                             |
| 1.5                                      | W           | Thermal insulation of STS front wall                                     | O. Vasylyev                 | Concept to be given by contractor           |
| 1.6                                      | F           | Interface and seal für STS beampipe                                      | O. Vasylyev                 | Remains as currently implemented.           |
| 1.7                                      | F           | Interface and seal für STS/front flange                                  | P. Dahm<br>O. Vasylyev      | Implemented in coordination with STS Team   |
| 1.8                                      |             | Adjustability of MVD/front flange                                        | F. Matejcek                 | Discussed with MVD                          |
| <b>2 Störeffekte</b><br>Negative effects |             |                                                                          |                             |                                             |
| 2.1                                      | F           | Strong magnetic field ~0.8-1 [T]                                         |                             | Following Magnet TDR                        |
| 2.2                                      | F           | Radiation                                                                | TBD                         | TBD                                         |
| 2.3                                      | F           | Temperature gradient: T <sub>oaks</sub> = 23°C; T <sub>STS</sub> = -10°C | STS Project lead            | Following STS TDR; Out of date information. |
| <b>3 Geometrie</b><br>Geometry           |             |                                                                          |                             |                                             |
| 3.1                                      | M           | Available internal space 660(W)x660(H)x225(D)                            | MVD Team                    | Following CBM-TN-19004 MVD Keep-out Volumes |
| 3.2                                      | F           | Required surface area on STS front wall                                  | O. Vasylyev                 | In coordination with STS Team               |
| <b>4 Kinematik</b><br>Kinematics         |             |                                                                          |                             |                                             |
| 4.1                                      | F           | Mounting to the front wall of STS                                        | O. Vasylyev                 | In coordination with STS Team               |
| 4.2                                      | F           | Attachement to STS box                                                   | O. Vasylyev                 | In coordination with STS Team               |
| <b>5 Kräfte</b><br>Forces                |             |                                                                          |                             |                                             |

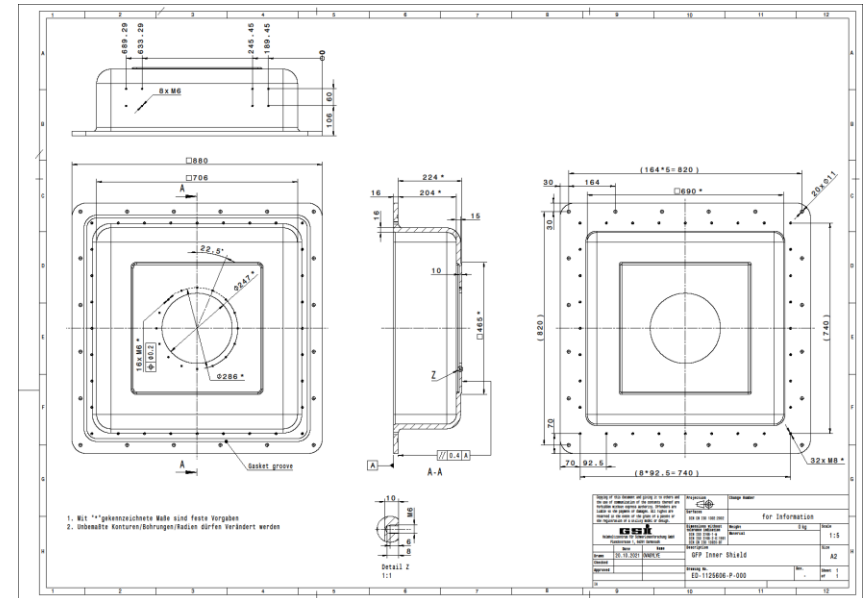
  

|                                                                                                                                                         |  |                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|
| Teammitglieder:<br>Team members:                                                                                                                        |  | Datum:<br>Date:                |
|                                                                                                                                                         |  | ersetzt Stand:<br>replaced by: |
| Art der Anforderung: F – Festanforderung M – Mindestanforderung W – Wunsch<br>Type of requirement: F – Fix requirement M – Minimum requirement W – Wish |  | Blatt: 1 von 4<br>Page: 1 of 4 |

Anforderungsliste\_Targetchamber.doc

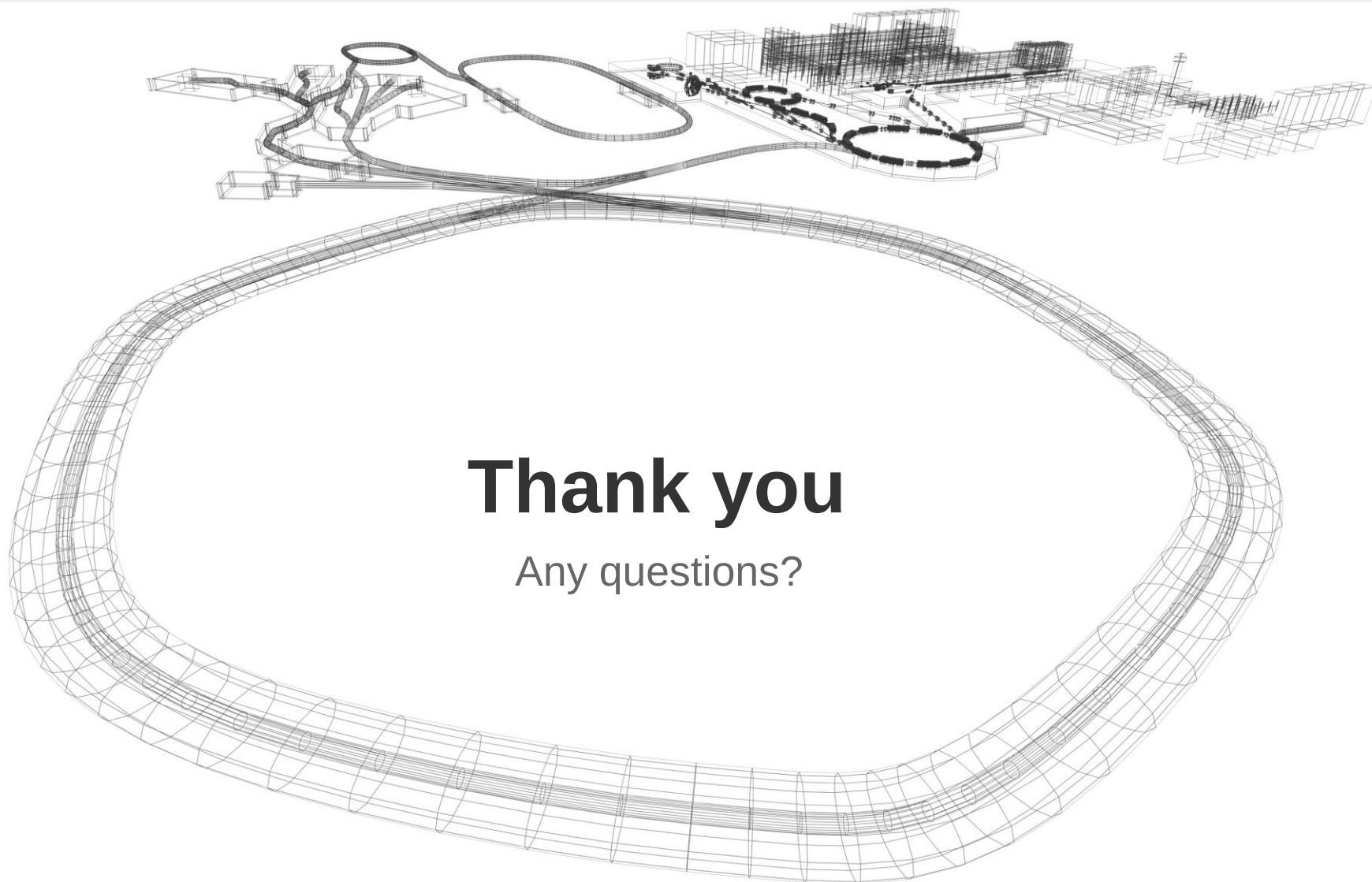
# Next Steps – Target Chamber

- Execution of material studies
- Evaluation of simulations
- Tender of Part





- Required precision of target position
- Evaluation of material budget
- Feedback on interface solutions
- Update on positions and space requirements



**Thank you**

Any questions?