

Integration of the support tube

- Functionality and mechanical requirements of the tungsten tube
- Integration of the supports of tungsten tube in the detector.
- Conclusions.

Functionality and mechanical requirements of the tungsten tube

- Functionality of the tungsten tube:

- 1) Support the MDI magnet included cryostat and the beam pipe.

- 2) Support the SVT, layer00 and all services needed.

- Mechanical Requirements:

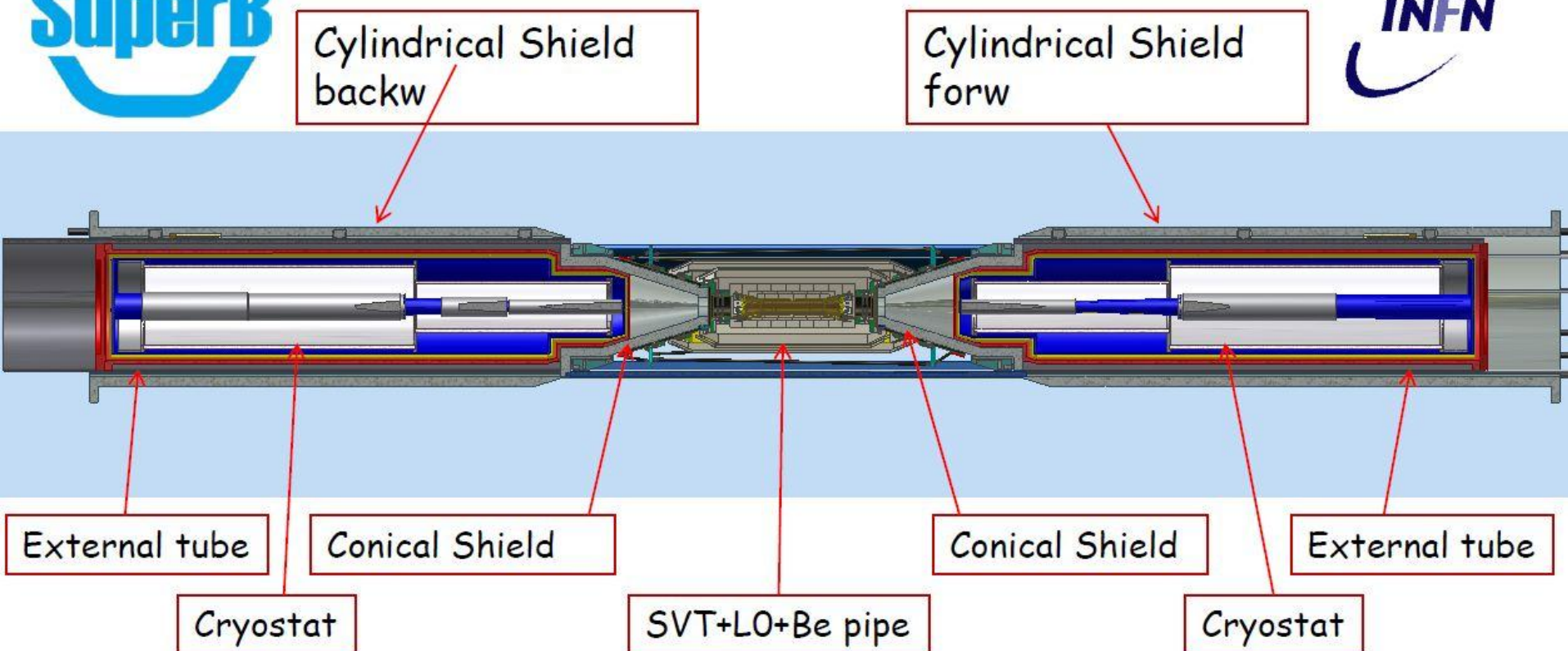
- 1) Mechanical strength (in all configurations)

- 2) Initial positioning accuracy and mechanical stability.

(???)

Load transfer to the tungsten tube proposed

- The cryostats are in contact with the tungsten tube thru the spherical bearings and the anti rotation system. The cryostats support the conical shields.
- The conical shields support SVT, Layer00 and the beam pipe in the interaction region.
- For these reasons supports need to allow an initial nominal mounting position and a fine alignments when everything will be installed. (internal and/or external)



The SVT/LO cables run over the cryostat vessel, confined in the External tube

The External Tube :

- joints mechanically the cryostat to the Conical shield
- brings the rails to slide I.R. assembly with respect to the recirculating spheres on the Cylindrical shield

Integration of the supports of tungsten tube in detector.

- Forward:

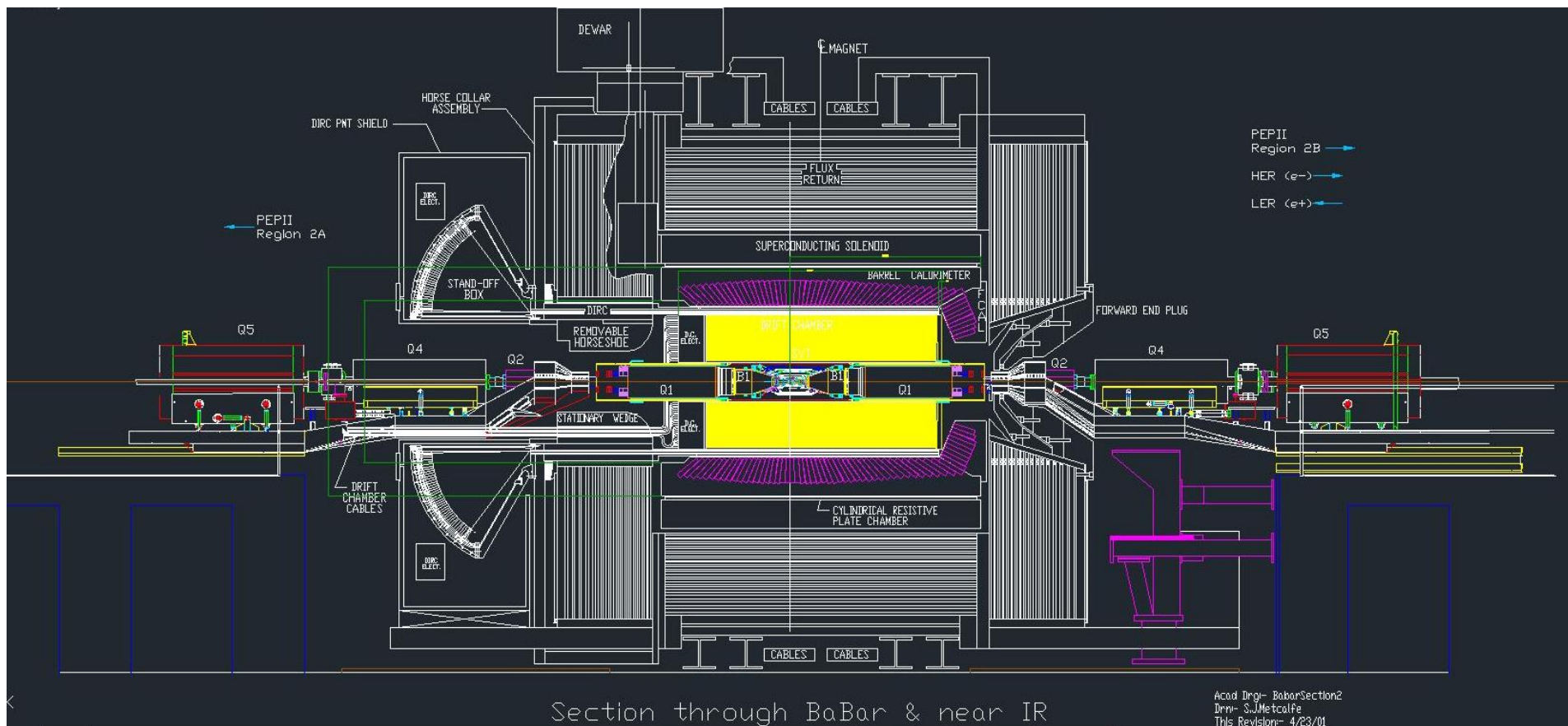
- 1) Extension of the magnet ear restrains. Implication we go in front of calorimeter.
- 2) We limit the access inside (DCH, FPID, etc)

- Backward.

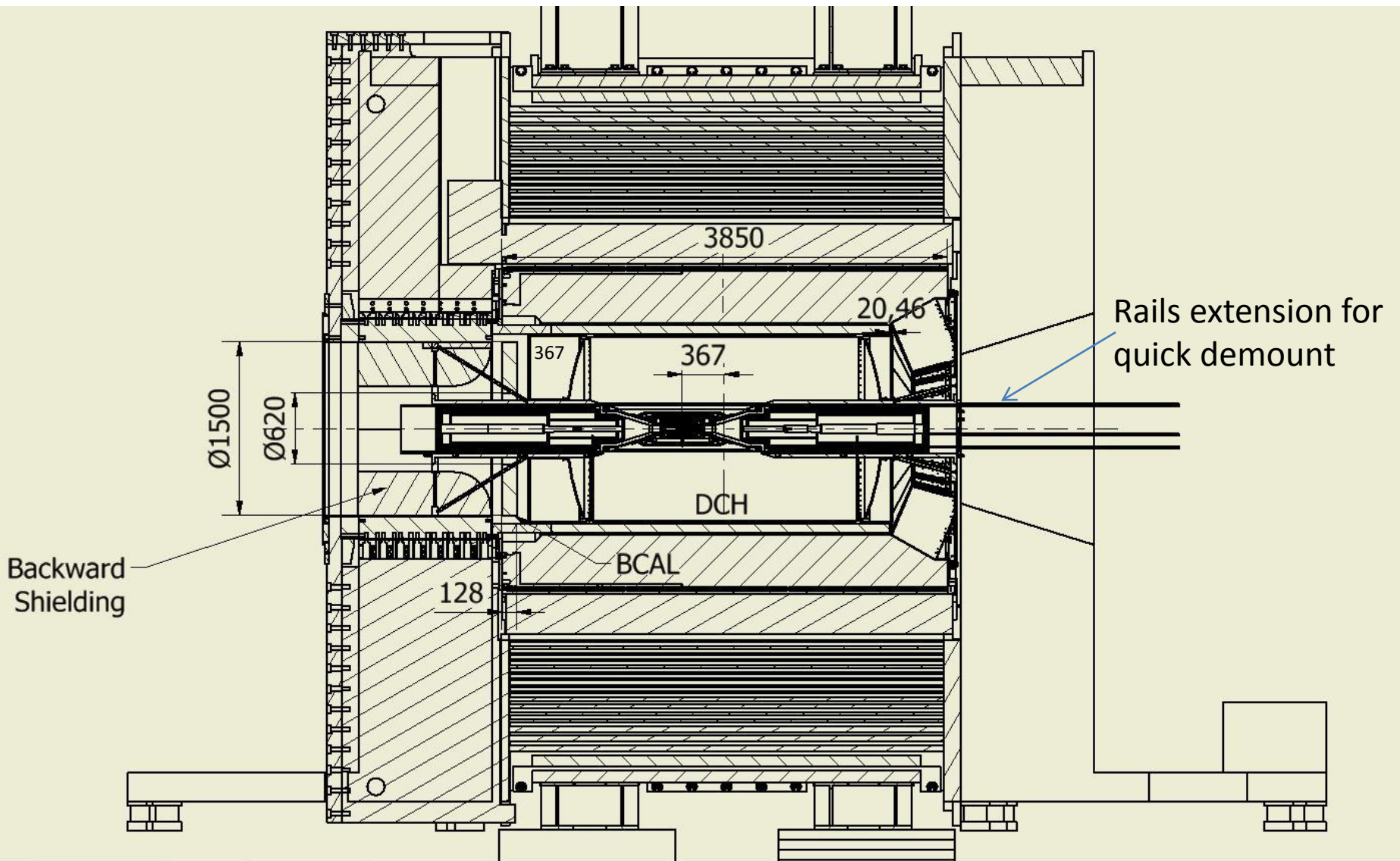
- Structure inside the strong tube of DIRC

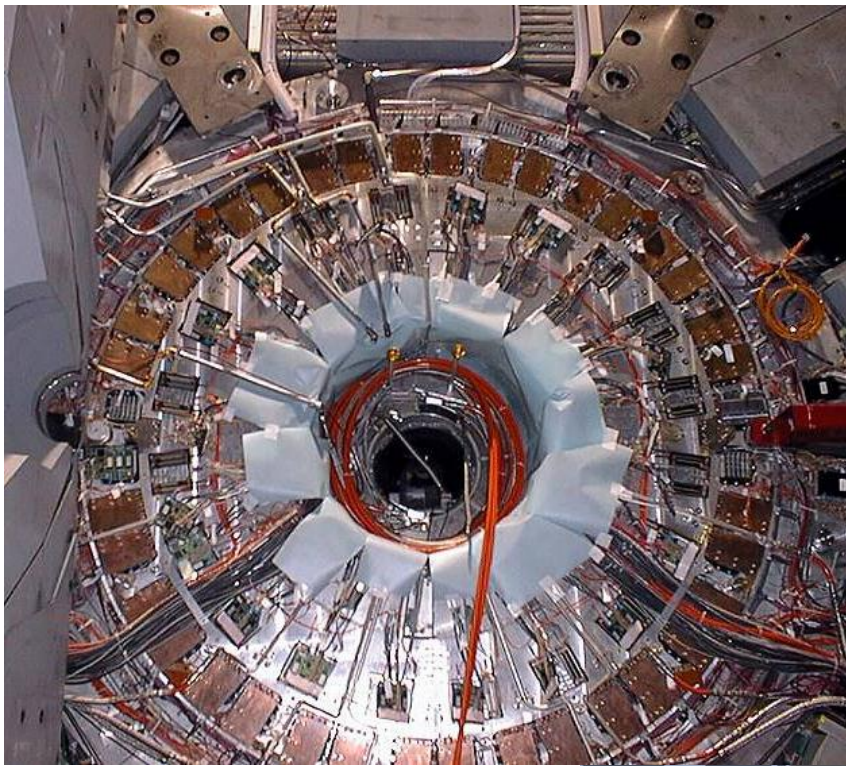
- 1) We limit the access for the (DCH, BCAL, etc)

Babar reference geometry drawing



146mm and 246mm are the access respectively to inner tube and backward shielding and between the forward calorimeter.





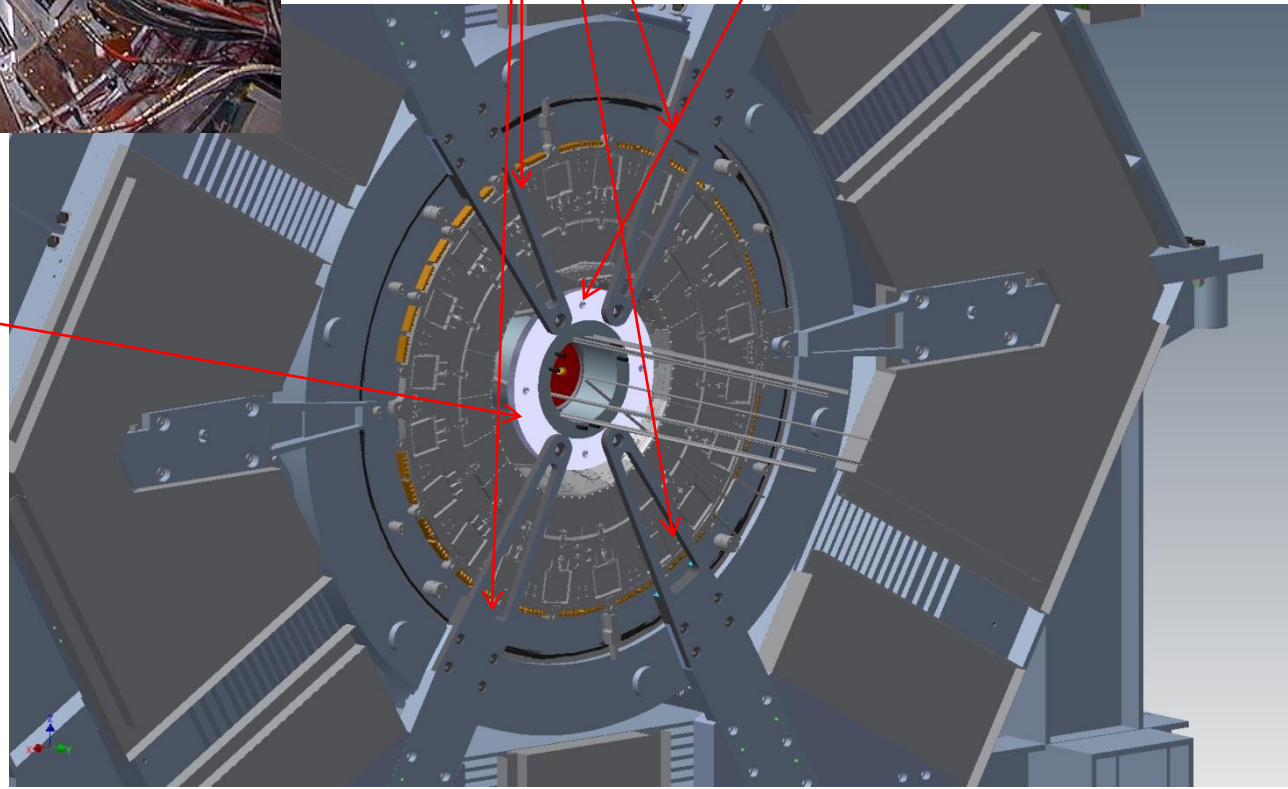
Integration DHC SVT layer0

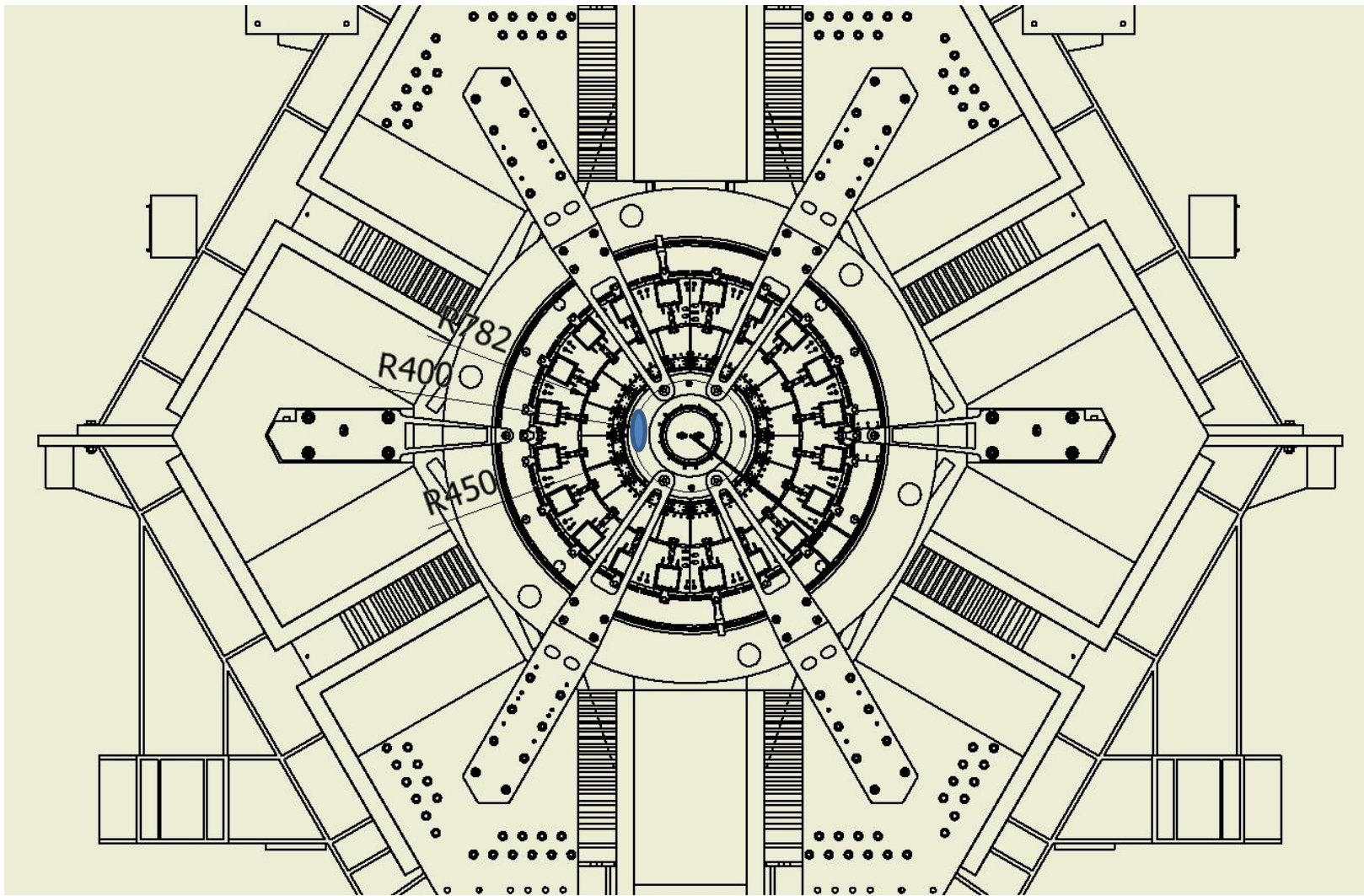
Forward service of Babar

Extension of the Magnet ears

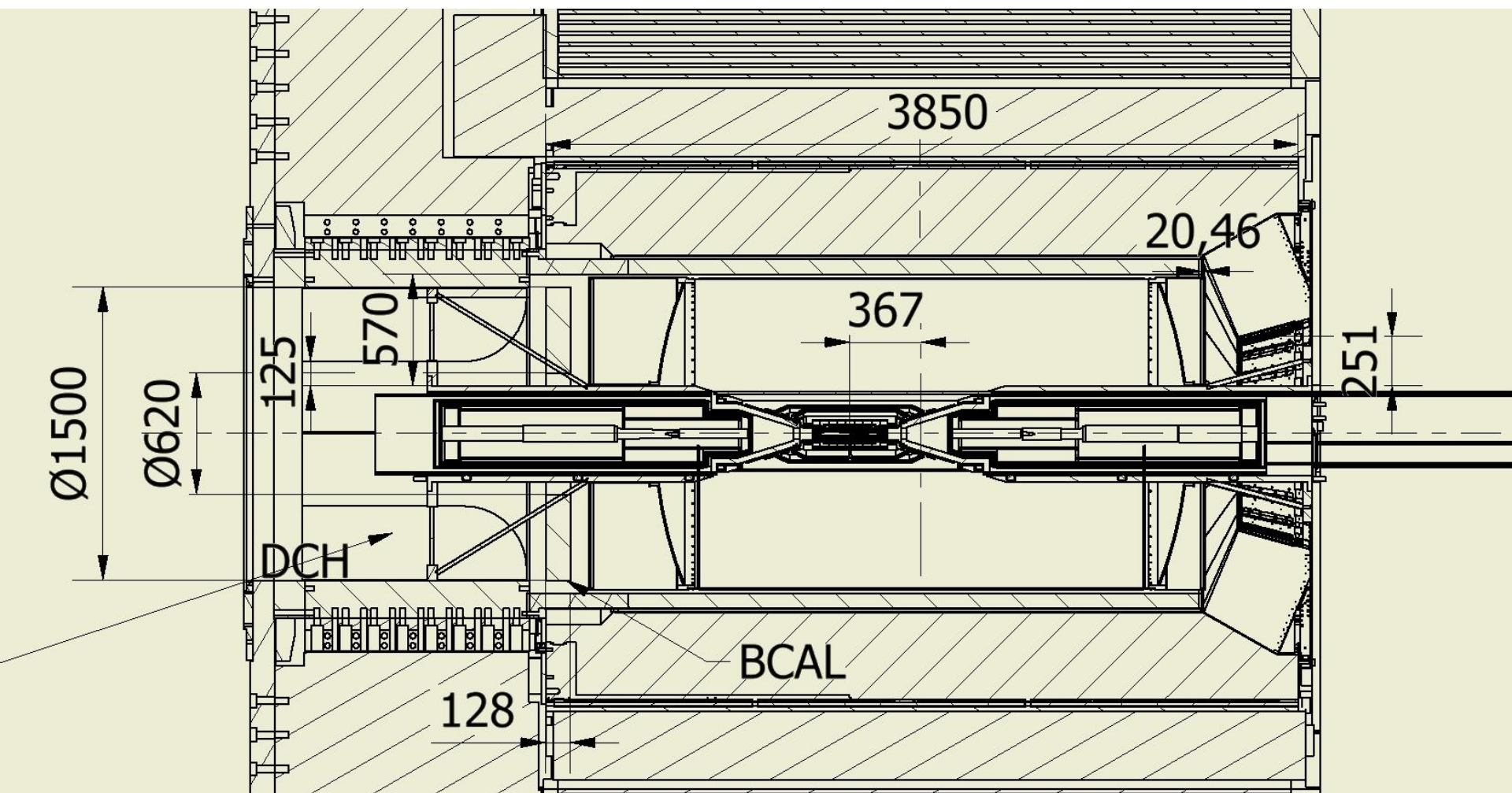
Struts and rods adjustable

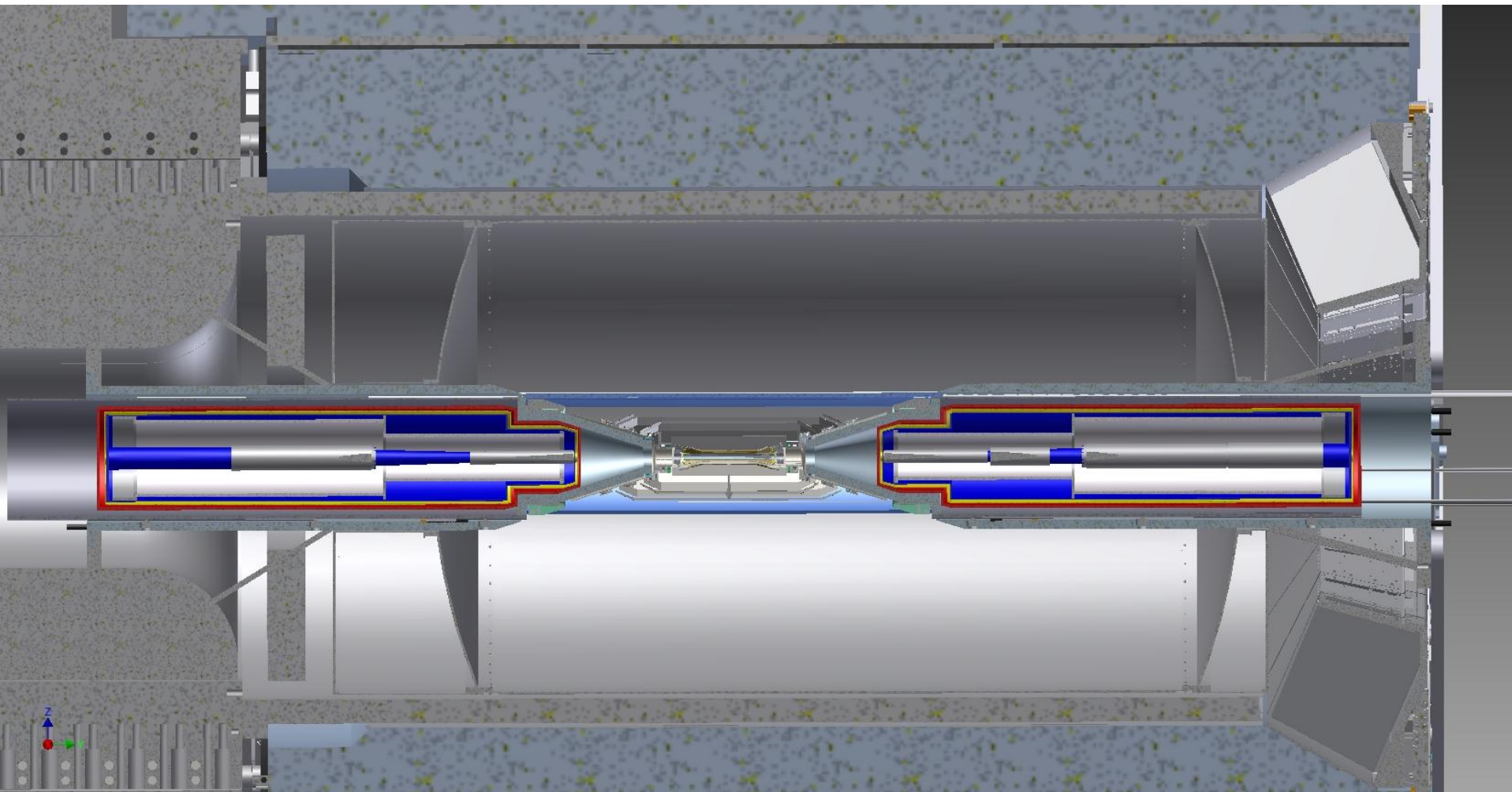
Inner ring





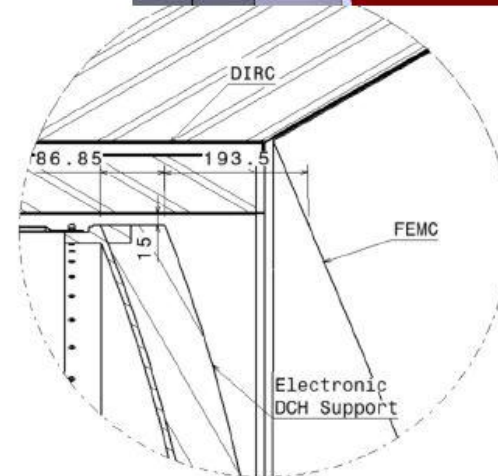
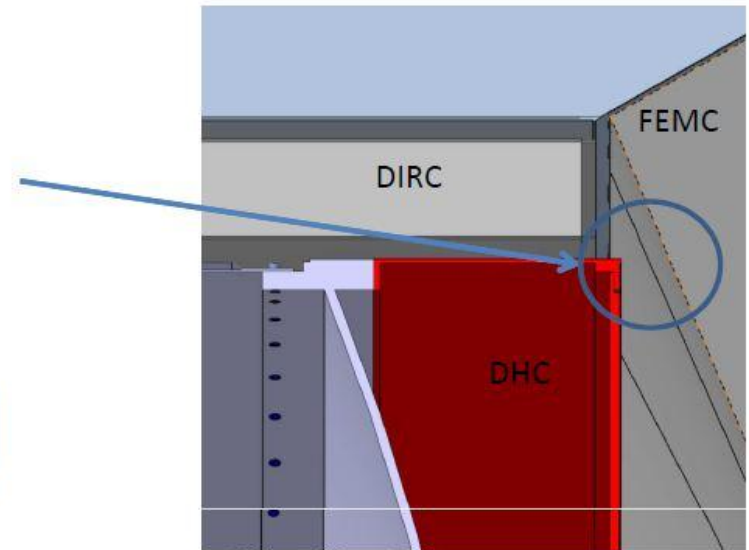
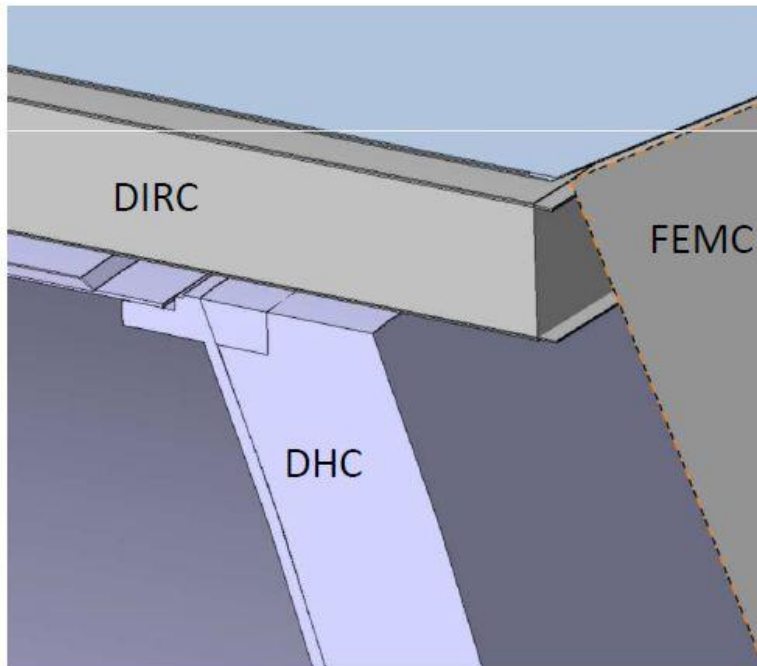
We have a 332mm to pass thru, but we can improve the space in a proper location. However in the narrow area the space between the tungsten tube and FCAL is 225 mm





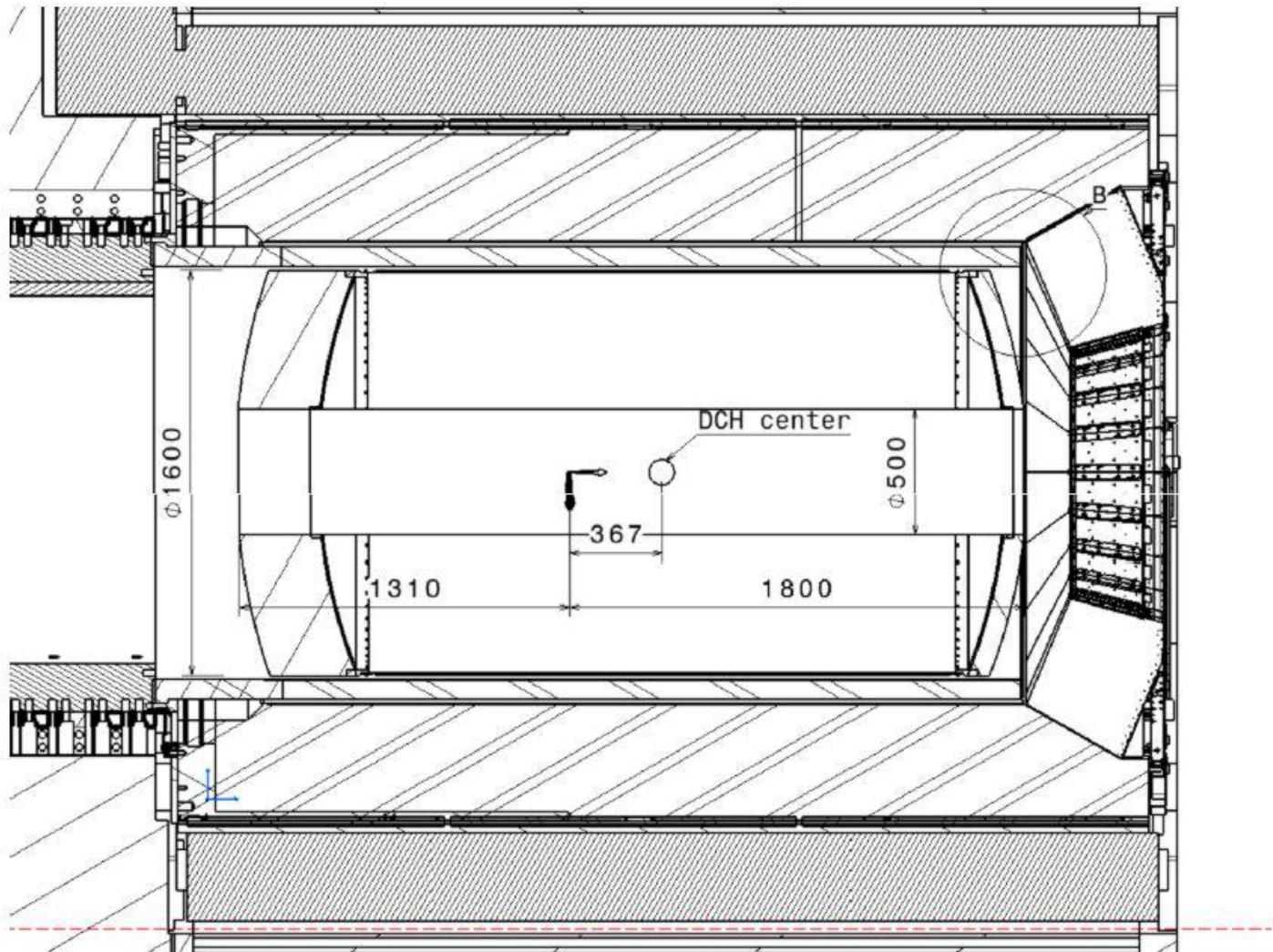
FWD DCH Supports

FLAT electronic support is not acceptable for FPID



Detail B
Scale: 1:5

DCH – DIRC interface



We need to know, where the DCH can be attached (FWD and BWD)

Conclusions

We have to review all the inner region of SuperB starting for the actual configuration with the available space.

So inner tracker DCH, FPID, and BCAL must be consider the actual layout arrangement inside the detector to face the problems of supporting, mounting, detector and service access.

We can propose solution that must be validate by all parts involved.