

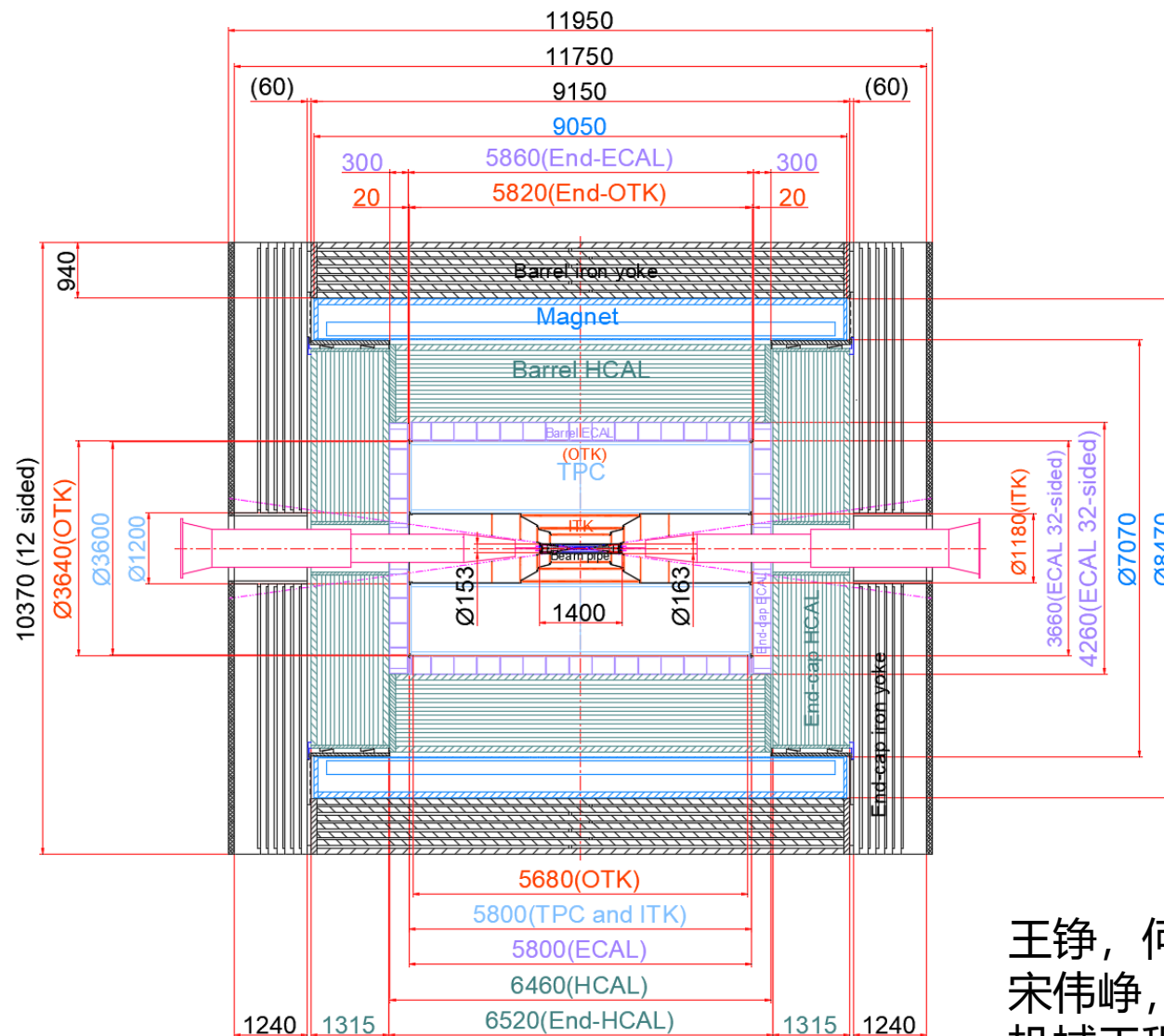
Progress in mechanical design of CEPC detector TDR

Ji Quan

December 17, 2024

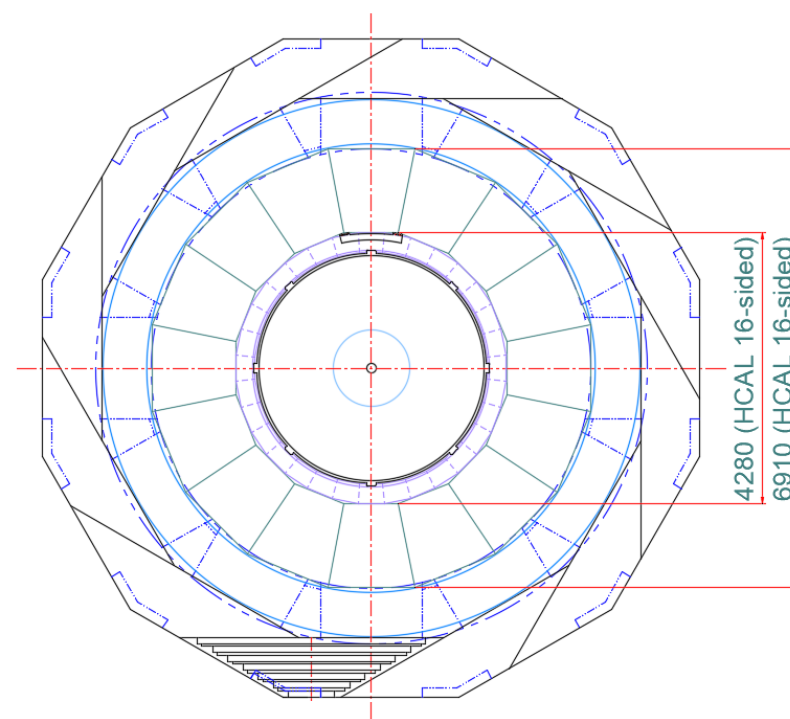
1. Progress of General Drawing --- Completed

Boundary and Dimensions :



Update: --- Boundary and Connection

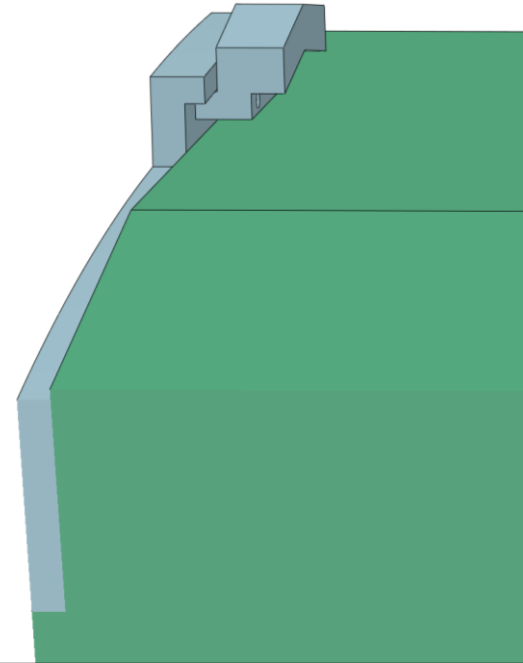
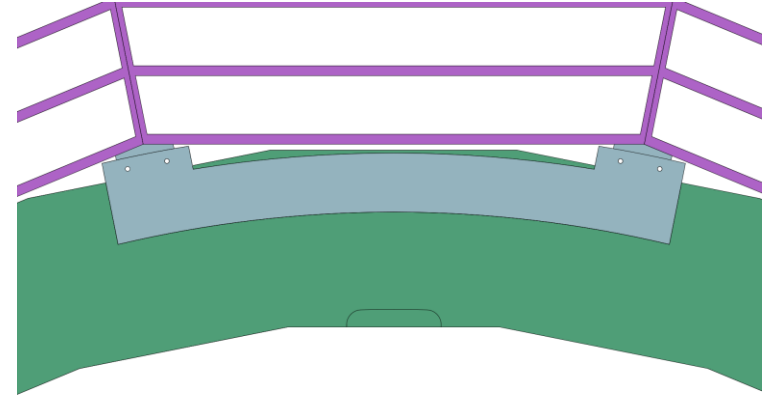
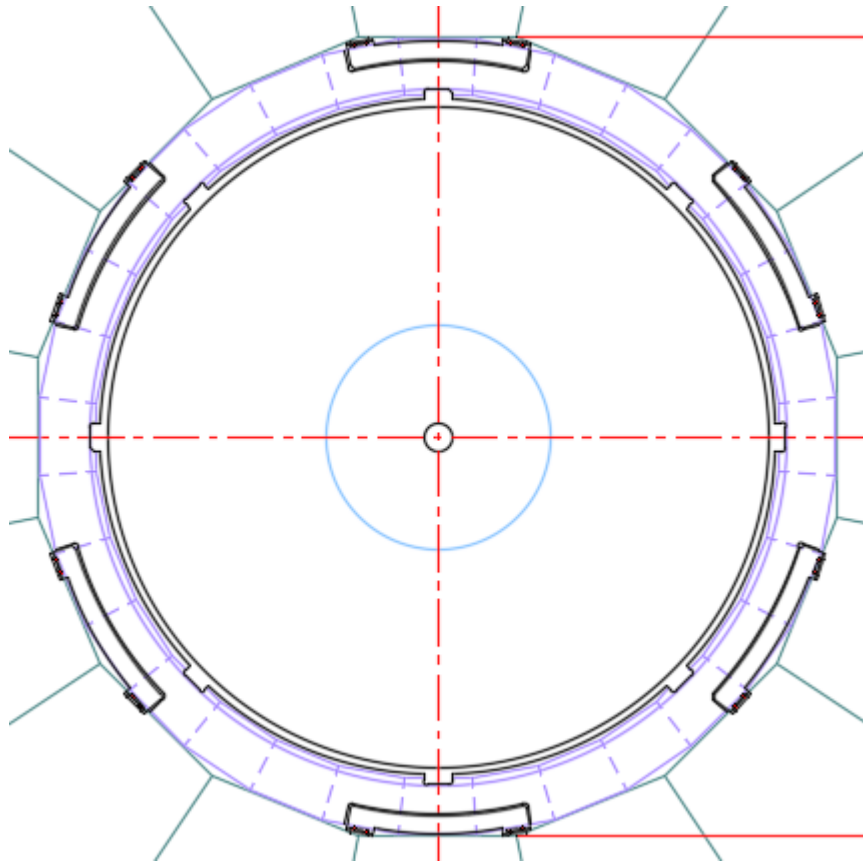
ECAL (Barrel and END)
TPC (+ OTK)
ITK (Barrel and END)



王铮, 何苗, 钱森, 刘勇, 祁辉荣, 严琪, 李卫东, 孙胜森
宋伟峥, 魏微(严熊波, 常劲帆), 宁飞鹏, 石浩琦
机械工程师,

2. Progress Connection Design --- Barrel ECAL

Suspended connection design

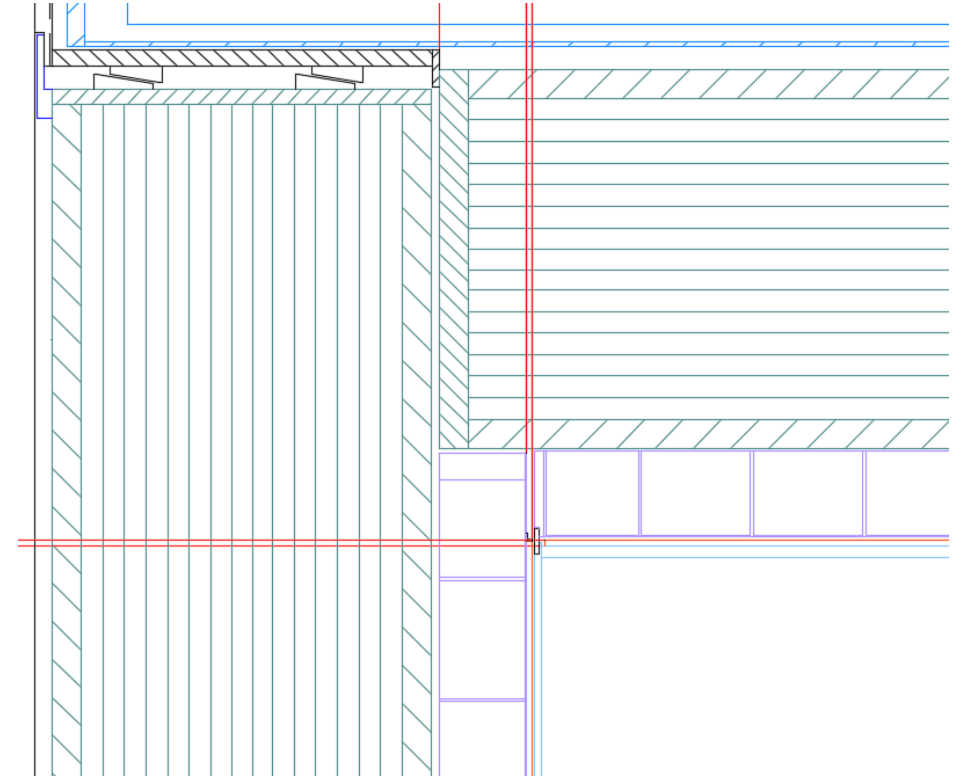
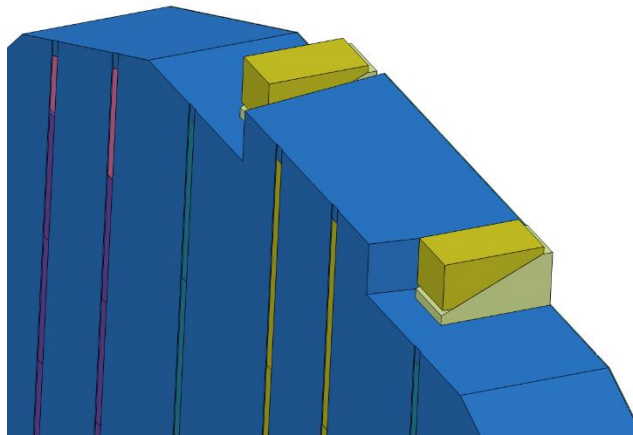
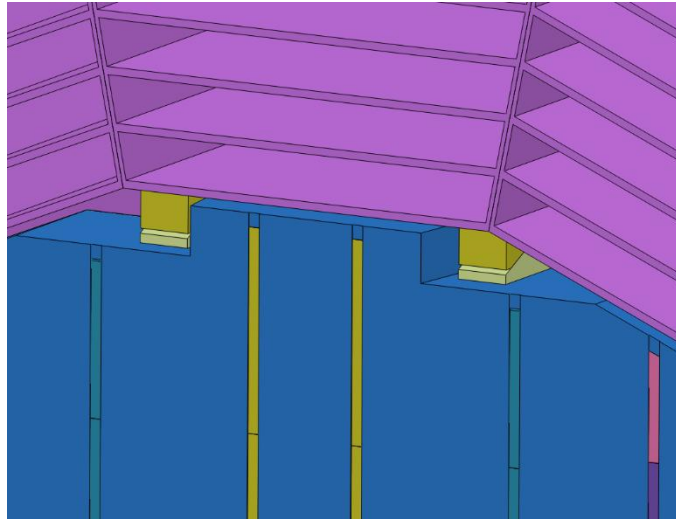
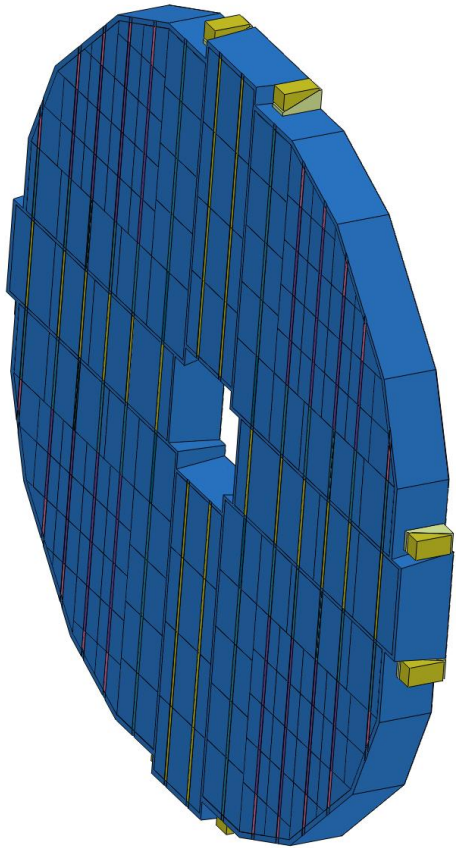


纪全, 裴亚田, 夏商
钱森, 刘勇

2. Progress Connection Design --- END ECAL

纪全, 余洁冰, 裴亚田, 夏商
钱森, 刘勇

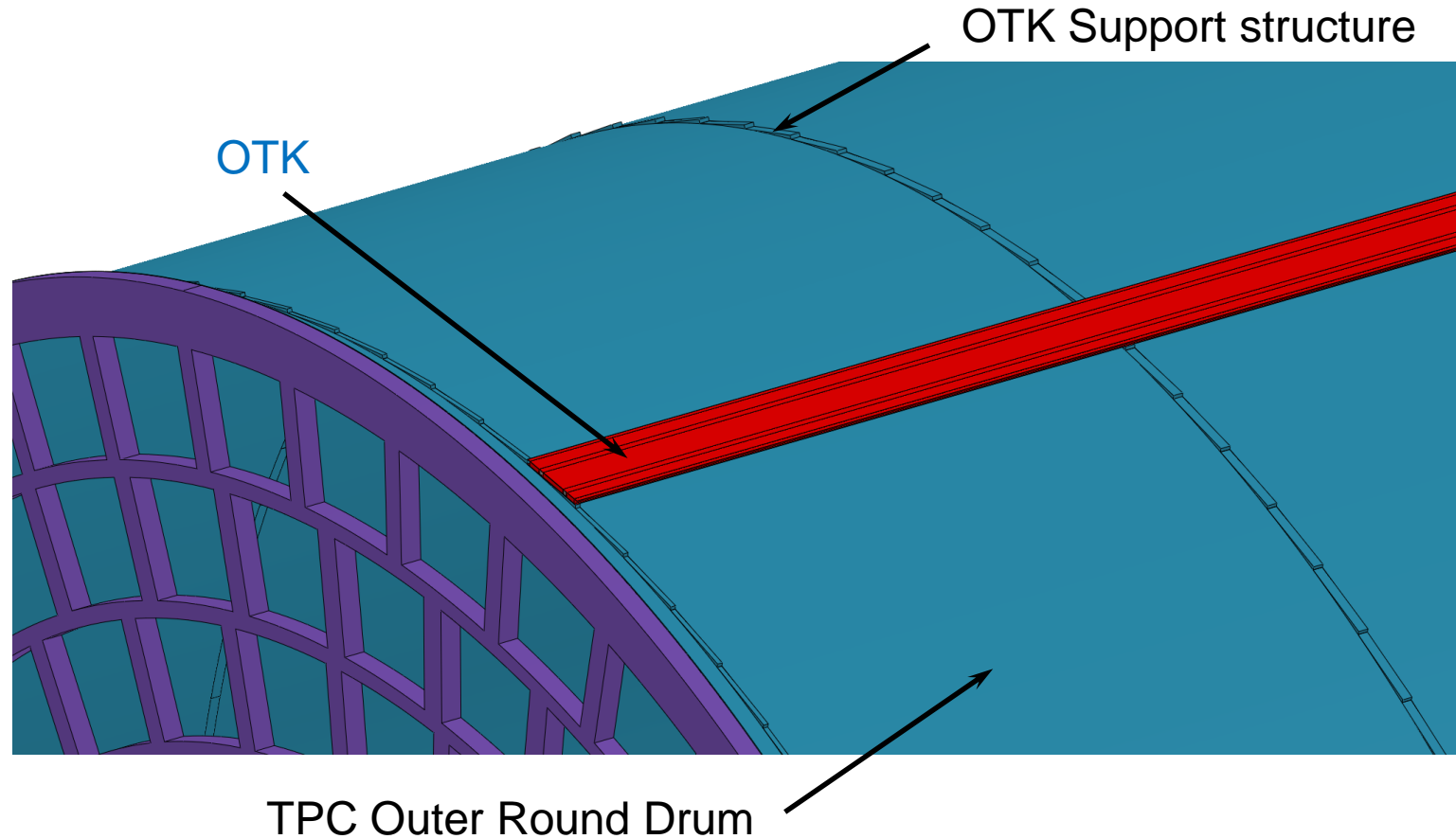
Squeeze connection design



End-cap ECAL+OTK : Fixed on the Barrel HCAL

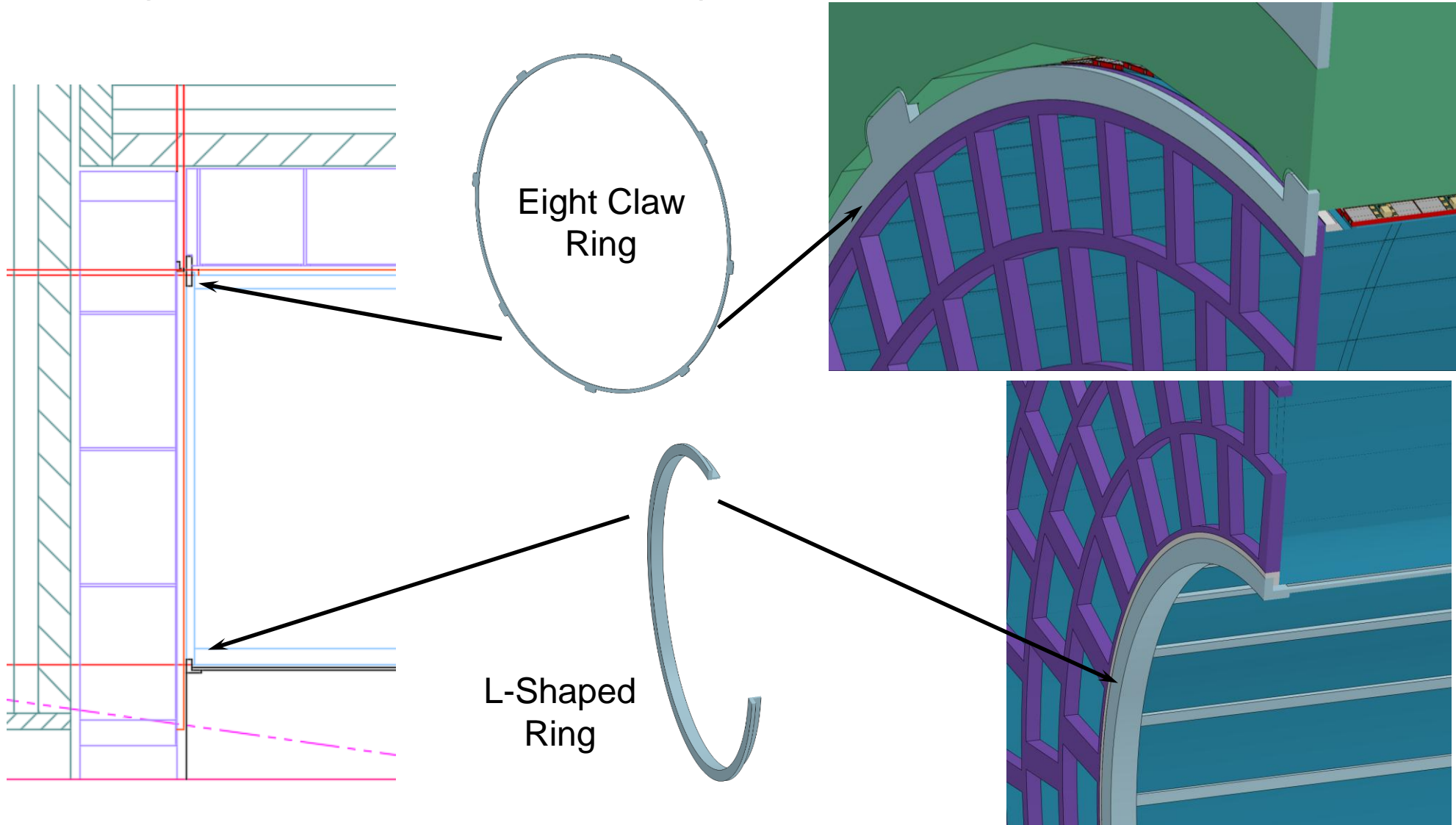
2. Progress Connection Design --- TPC and OTK

纪全, 张俊嵩, 李宇杰, 夏商
祁辉荣, 严琪



Connection design between OTK and TPC

2. Progress Connection Design --- TPC and others



ECAL and TPC

纪全, 张俊嵩
李宇杰, 夏商
祁辉荣, 严琪

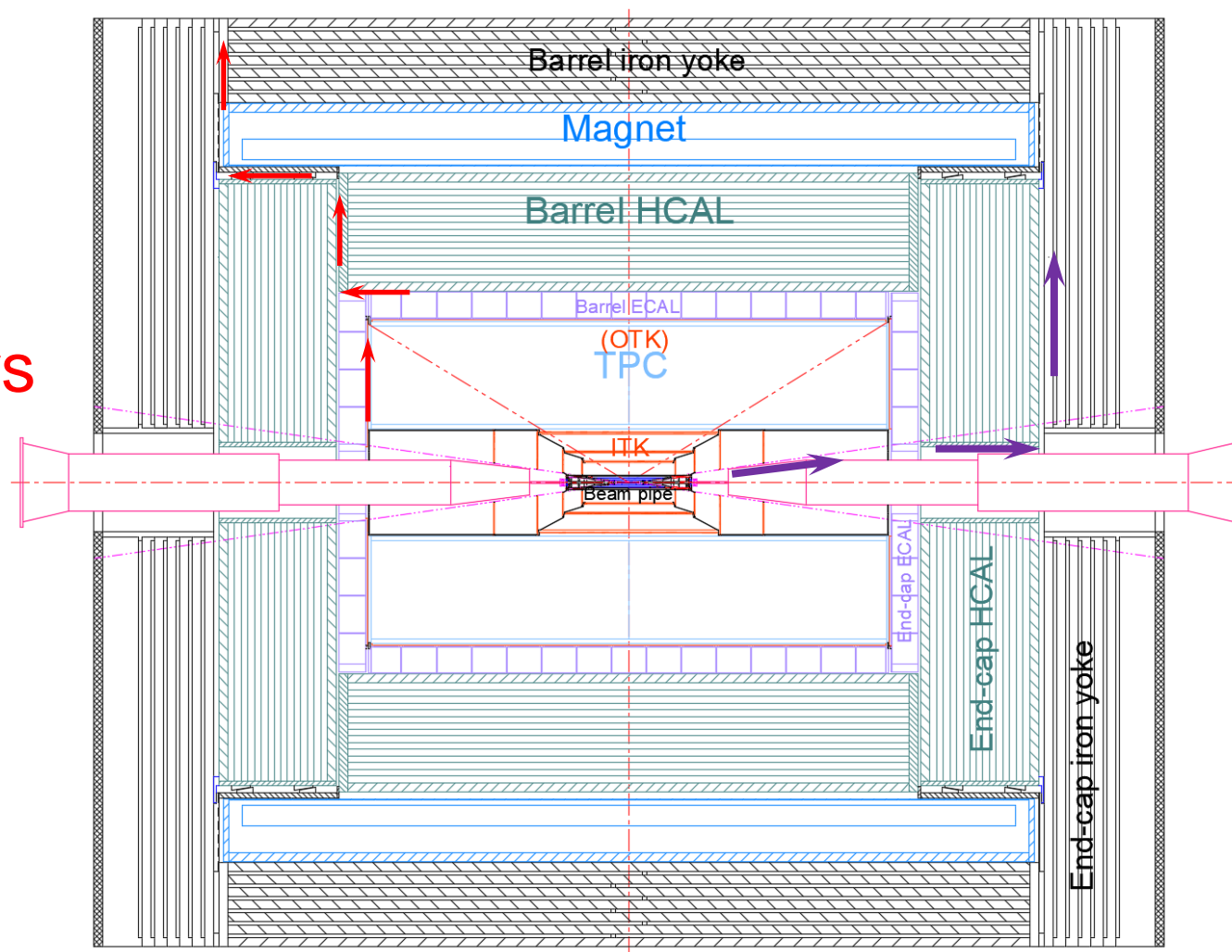
ITK and TPC

Connection design between ECAL & ITK and TPC

3. Pipeline path

纪全, 李宇杰, 夏商
严雄波
严琪, 张弈晗, 骆首栋

Pipeline path of
ECAL & HCAL
and
Tracker Detectors



Pipeline path of
Beampipe
(LumiCAL)
(Vertex)
(BPM)



MDI
(纪全, 石潞琦)

4. Work arrangement after the Regular meetings

昨天 11:02

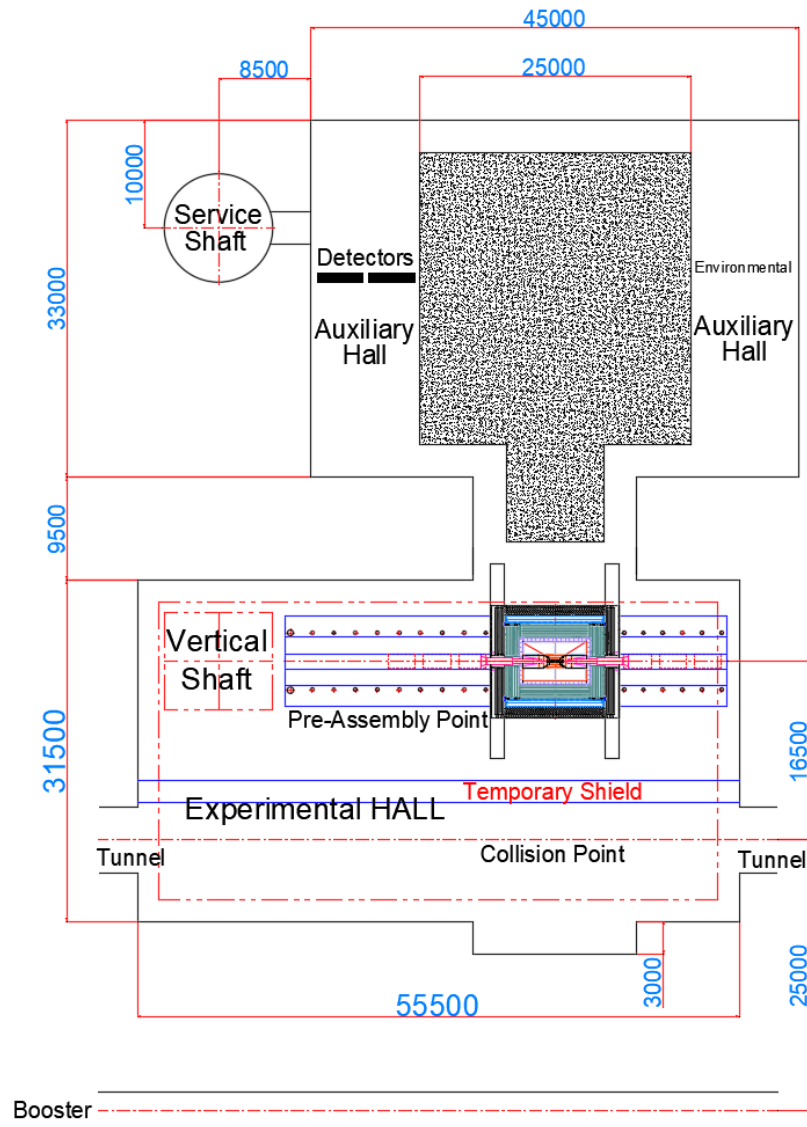
另请大家将各自的冷却设计及管线要求等，与总体设计有关部分，整理1或页2页发给我。



主要包括:

1. 冷却工作参数
2. 冷却管直径, 数量
3. 电缆线直径, 数量
4. 管线排布---有图有文
5. 总热负载

5. Completion status of Ref-TDR Report



Progress : Completed chapters 1 and 2

- ✓ 14.1 Overview of Detector Machinery
 - 14.1.1 Overall layout of detectors (**Detectors requirement**)
 - 14.1.2 Overall design requirement (**Dimensions, Boundary, Alignment accuracy.....**)
- ✓ 14.2 Connection structure between the Sub-detectors
 - 14.2.1 Iron Yoke
 - 14.2.1 Connection structure of the **Magnet**
 - 14.2.2 Connection structure of the **Barrel HCAL**
 - 14.2.3
 -

Progress : Unfinished

- 14.3 Installation design of sub detectors
 -
- 14.4 Design of detector auxiliary facilities
 - (**Cryogenic, Cooling, Gas, Electronics,**)
- 14.5 Underground experimental hall and its auxiliary hall
 - 14.5.1 Underground experimental hall
 - 14.5.2 Auxiliary hall**
- 14.6 Summary