

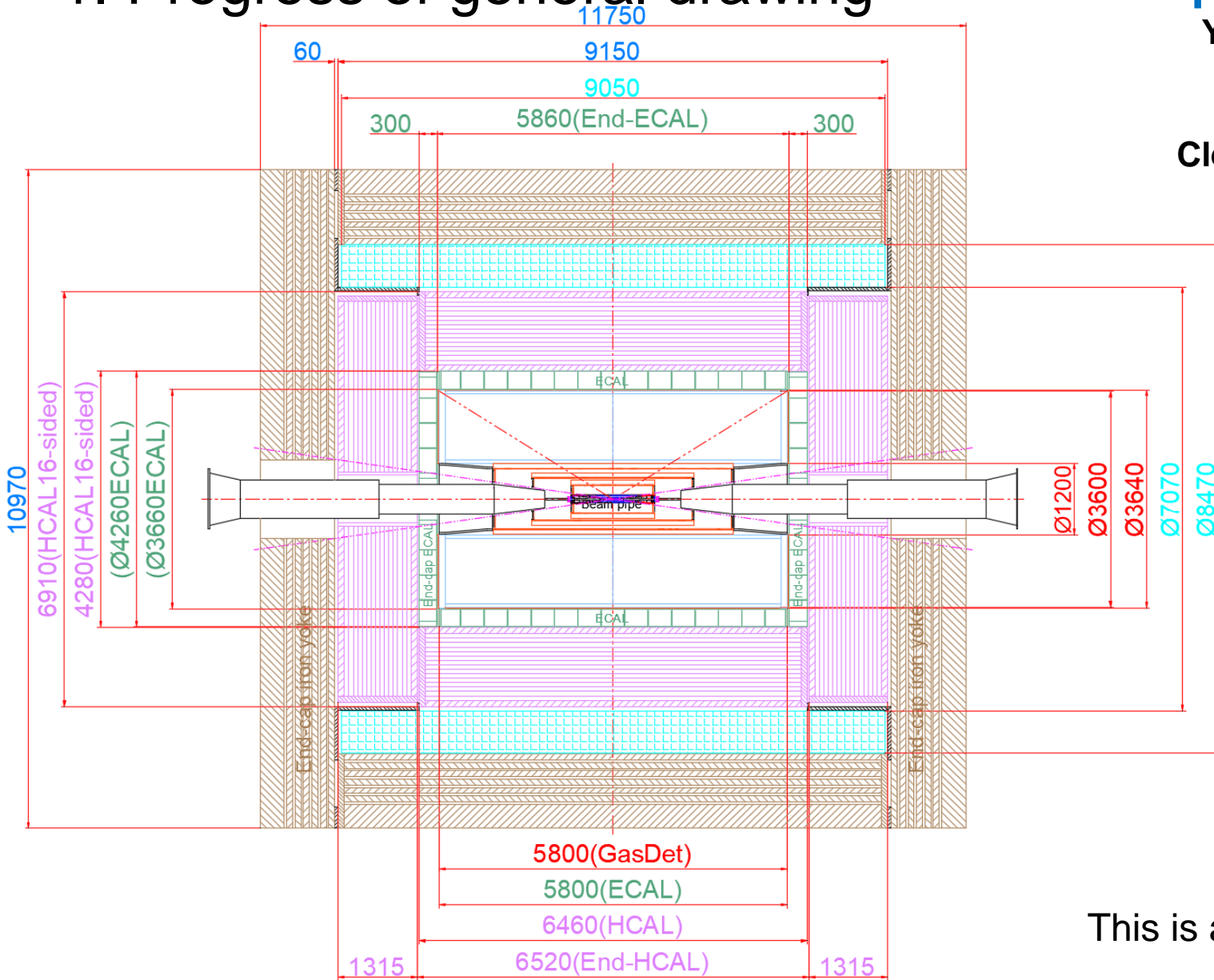
# Progress in mechanical design of CEPC **detector** TDR

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## Content:

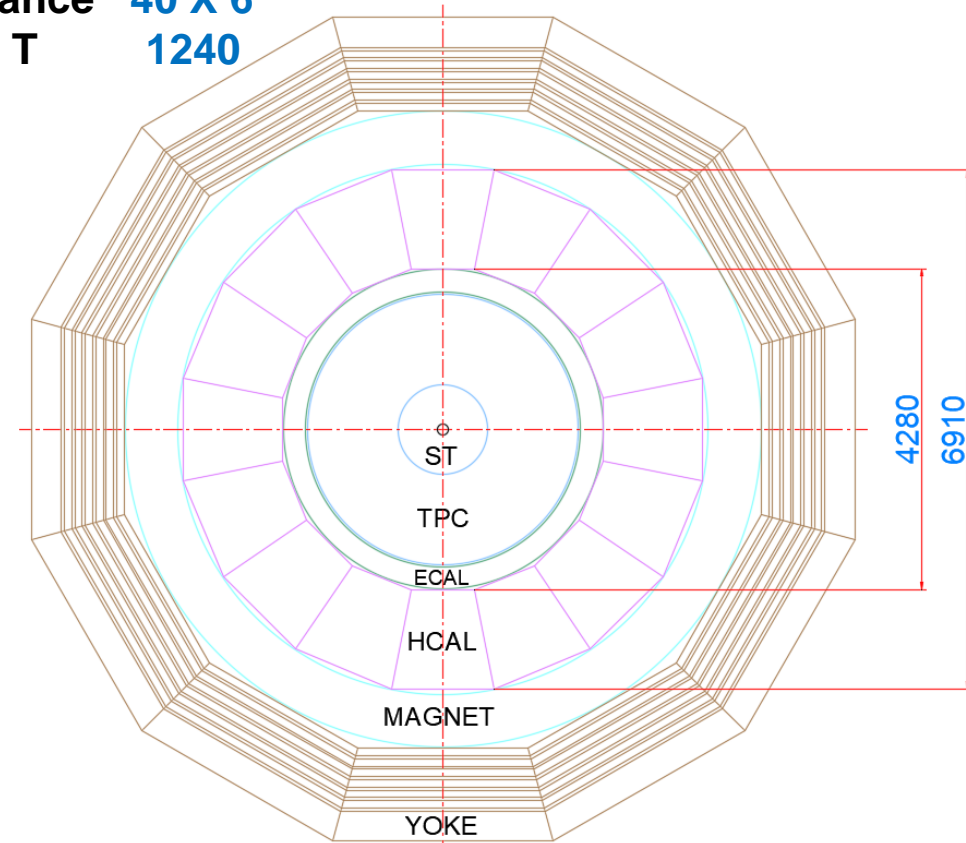
1. Progress of general drawing
2. How to complete the general drawing?

# 1. Progress of general drawing



## Update:

Yoke (7 layers)	
6 layers	100
1 layers	400
Clearance	40 X 6
T	1240



This is a general drawing with very small clearance.

# Challenge

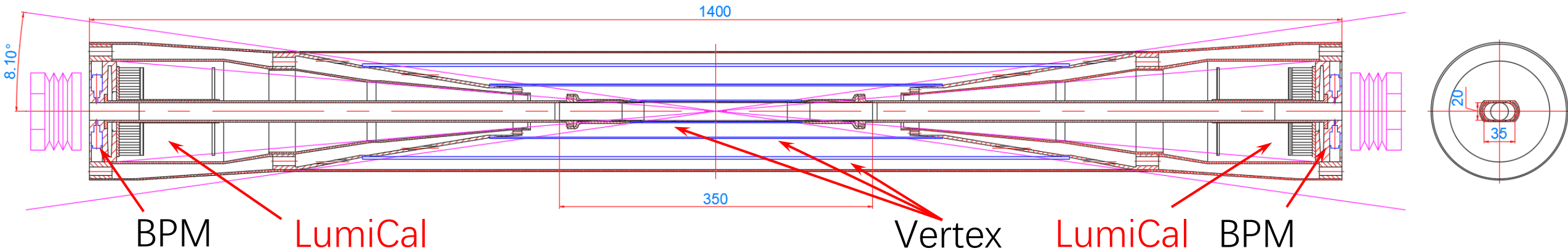
Basic dimensions and interrelationships of sub detectors (see table below): **Starting from IP**

	R (mm)		Axis (mm)		Comment/status
Yoke (T: 1300 mm)	4245 ~ 5485 (12-sided) (Barrel Yoke) L: 4575 X 2 = 9150 Total H: 5485 X 2 = 10970		4635 ~ 5875 (End Yoke) 4635 – 4575 = 60 (Total L: 5875 X 2 = 11750)		
Magnet (T: 700 mm)	R3535 ~ R4235 L: 4525 X 2 = 9050		0 ~ 4525		
HCAL (T: 1315 mm)	2140 ~ 3455 (16-sided) (Barrel HCAL) L: 3230 X 2 = 6460		3260 ~ 4575 (End HCAL) 外形待定		
ECAL (T: 300 mm)	R1830 ~ R2130 (参考圆, 比较阶段) (Barrel ECAL) L: 2900 X 2 = 5800		2930 ~ 3230 (End ECAL) 外形待定		
OTK	R1800 ~ R1820 (Barrel OTK)		2910 ~ 2930 (End OTK)		
TPC	R600 ~ R1800 L: 2900 X 2 = 5800		0 ~ 2900		
ST	R79 ~ R590 (暂定和待定)		待定		
Beampipe/Vertex/LumiCal	0 ~ R76.5		0 ~ 700		
	Vertex	R1,R2,R3?	Vertex	L1,L2,L3?	
	LumiCal	?	LumiCal	550 ~ 670	

Note: The data in the table are radius and half length

# How to complete the general drawing?

Way: Attack one by one



Design requirement of **Vertex**:

$T \leq 20 \text{ }^\circ\text{C}$   
 $\Delta T < 10 \text{ }^\circ\text{C}$  or  $7 \text{ }^\circ\text{C}$   
Vibration  $< 1 \mu\text{m}$  (?)

Requirement of components:

LumiCal (?)  
BPM (?)  
Beampipe(?)  
Vacuum interface(?)

## Multi-professional and multi-system joint discussions

Tomorrow:

The first discussion between the overall mechanical system and subsystems will be arranged



Too many problems to be discovered

**Solution (?)**

Thanks