

# TDR Editing

Sunday CEPC TDR Meeting  
Aug 12, 2025

Joao Guimaraes

# IDRC Review Status

- Daniela insists that in the very minimum the committee should have at least 15 days to read the report
  - She still thinks **15 days is not sufficient**, and proposes we give her the TDR asap (even before they schedule the meeting)
    - This will also put pressure on the committee to find time to review the TDR
- **Deadline of August 5 was not achieved** → that would have allowed review of TDR in mid August
- Previews polls outcome was attendance < 50% for all days in late August or early September
  - Will split the review into groups

Not acceptable solution found

Sessions	Time	Available	Not available
Plenary 1 (General talks + electronics	2025-08-26 T14:00	7: Anna, Christophe, Cristinel, Gregor, Maksym, Paul, Tommaso	Akira, Bob, Burkhard, Frank-Dieter, Hitoshi, Iván, Jim, Roberto, Roman, Liang
Plenary 2(Mechanics, Magnet, Cost)	2025-08-26 T19:00	9: Anna, Christophe, Cristinel, Gregor, Maksym, Paul, Tommaso, Akira, Burkhard	Bob, Frank-Dieter, Hitoshi, Iván, Jim, Roberto, Roman, Liang
MDI, vertex, TPC, Silicon?	2025-08-27 two sessions	Hitoshi, Gregor, Paul, Maxim, Anna	Ivan (need to ask him again)
Muon	2025-08-28 T14:00	Anna, Paul	(missing Liang is not available after Aug 22)
Software and performance	2025-09-02 T19:00	Frank, Christine	Tenchini, Gay, Han, Kowalewski
Calorimeter	Sep 10 or later 2025-09-03 T14:00	Tommaso, Roman	James is not available in whole period
TDAQ	??	missing Colin	

- New poll for the IDRC meeting has been started (including Aug 26 - Sep 28) — only 9 out 18 people have responded so far

# IDRC Review Status

- Daniela insists that in the very minimum the committee should have at least 2 weeks to read the report
  - She still thinks **2 weeks is not sufficient**, and proposes we give her the TDR asap (even before they schedule the meeting)
    - This will also put pressure on the committee to find time to review the TDR
- Why a deadline of today, Aug 12?
  - Be ready for the earliest possible date for the review start (Aug 26)
  - Provide a report to the committee ASAP, giving them more time to review, and forcing them to settle the review dates
- **Plan:**
  - **Compile a new version (version 0.5.2) with all updates**
    - In particular collecting all new figures, and having authors checking the merged version for mistakes
    - Some chapters are still not ready, but they can refresh what they have currently
    - Authors need to cross check chapters relevant to them:
      - Everyone needs to check chapter 2 and chapter 15 for consistency with their own chapters
      - Don't think "I will do that later" unless corrections will take significant time to implement
  - AFTER all checks, **version 0.6** will be produced to be sent to committee for review

# Status of the TDR

## Status of your chapter

例 Ch0, still need to....

1. Ch0
2. cha1 : Okay, but joao is still shrinking some sections
3. Chapter 5: finish
4. Chapter 10, finish
5. Chapter 13: completed
6. chapter11, finish
7. Chapter 14: finish
8. Executive Summary: finalized.
9. Chapter 08: finish
10. Chapter 12: finish.
11. Chapter 06: 90% completed, the subsection of Design parameter will be finalized by Joao, the section of future plan and cooling is still shrinking.
12. Chapter 17: finish
13. Chapter 3: finish
14. Chapter 7: finalised
15. Chapter 16: Figure 16.1 updated with increased font.
16. Chapter 4: 98% finish. Small fix for Figure 28 will be done by Tuesday.
17. Chapter 2: finish
18. Chapter 9: 98% completed. the description of installation of detector modules in to yoke gaps will be added.
19. chapter 15: finished, except that check of beam-background impact is still ongoing.

- Move acknowledgments and Executive Summary to frontmatter of the TDR (before list of contents)

- **Chapter 1: Introduction**

- Remove overlap with chapter 2
- Explain better the operational scenarios and which applies to the current TDR
- Compress text a bit

- **Chapter 2: Concept**

- Author: finished
- Make sure that all information on the detector concept from chapter 1 is also in chapter 2
- Still find it difficult to find all performance requirements in chapter 2. Important to have a clear location to find these
- Still think that merging detector challenges with requirements would be better, no need to split and repeat information — no time for me to do this yet



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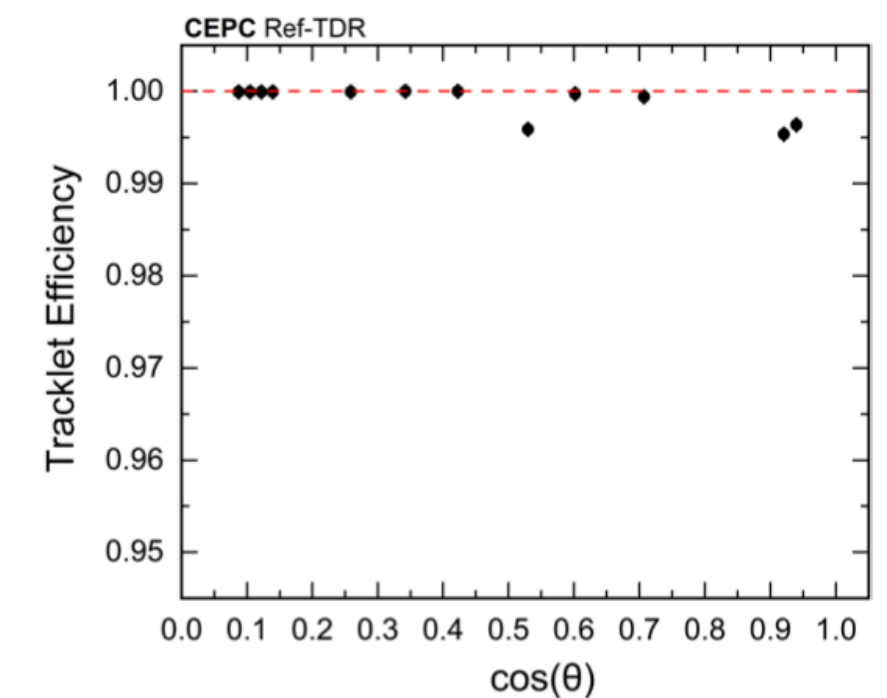
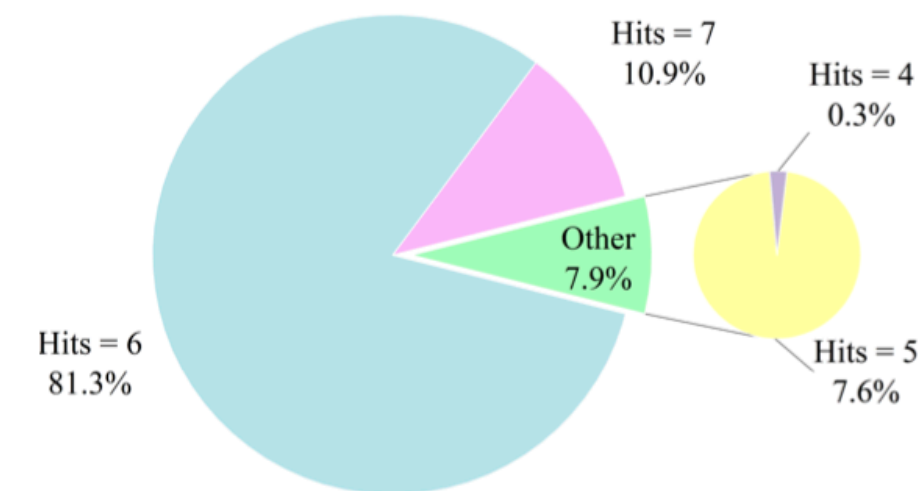
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- **Chapter 3: Backgrounds**

- Author: finished

- **Chapter 4: Vertex**

- Author: 98% finished. Small fix for figure 28 will be done by Tuesday



- Looks much improved
- Reviewed by Yifang

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- **Chapter 5: Silicon Tracker**

- Author: finished

- **Chapter 6: TPC**

- Author: 90% completed, the subsection of Design parameters will be finalized by Joao, the section of future plan and cooling is still shrinking
  - (Some misunderstanding: I will not finalize this. The parameters and write up are to be done by Mingyi and Huirong)
- A lot of work done in the last few days
  - Many technical details better understood and documented
  - Should make a quick check of the impact of changes on the material budget with offline colleagues, but changes are not that big relative to what was already in the simulation
    - Inner wall radiation length was 0.55%, it is now 0.63%
    - Outer wall radiation length was 0.55%, it is now 0.79%
  - Endplate material reduced significantly (aluminum endplate reduced from 135 mm to 25 mm, after careful FEA study done) → effective volume of TPC increased



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- **Chapter 6: TPC**

- Much editing and consolidation still to happen
- Move(d) to use double micro-mesh micromegas as default readout
  - Refer to USTC prototype as support material for this decision

- **Chapter 7: ECAL**

- Author: finished
- Reviewed by Yifang

- **Chapter 8: HCAL**

- Author: finished
- Reviewed by Yifang

- **Chapter 9: Muon**

- Author: 98% completed. the description of installation of detector modules in to yoke gaps will be added
- A lot of great work done recently to improve this chapter. Many details added.
- Need to make sure our efficiency and fake rate is well understood and documented
- A lot of text was still blue or red yesterday...
- Previous version reviewed by Yifang

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- **Chapter 10: Magnet**

- Author: finished

- **Chapter 11: Electronics**

- Author: finished
- Check overlap with TPC electronics
- For me cables, and channel counting is still rather preliminary, but no time to improve much at this point

- **Chapter 12: DAQ**

- Author: finished

- **Chapter 13: Offline**

- Author: finished

- **Chapter 14: Mechanics**

- Author: finished
- A lot of details added recently. Much improved. Connections FEAs are now clear
- A word on the HCAL supports?
- Would like to still improve text a bit, if time allows



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- **Chapter 15: Performance**

- Author: finished, except that check of beam-background impact is still ongoing
- Deadline to finish last studies?

- **Chapter 16: Electronics**

- Author: Figure 16.1 updated with increased font

- **Chapter 17: Cost**

- Author: finished

# Keeping track of modifications


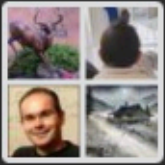
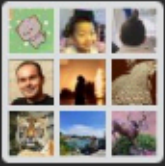
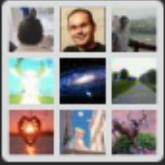
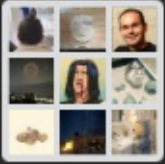

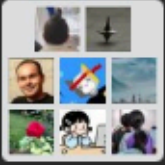


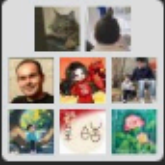

- **Spreadsheet monitoring the status in IHEP docs:**

- <https://docs.ihep.ac.cn/link/ARF4C648FCA57D4CF281A8E821A110229E>
- 文件名: Status of TDR.xlsx
- 文件路径: AnyShare://ZHANG Zhaoru(zhangzr)/CEPC Det TDR/Status of TDR.xlsx

- Please fill in your input now, and **keep it updated** as we move along

- We will try to do the same!

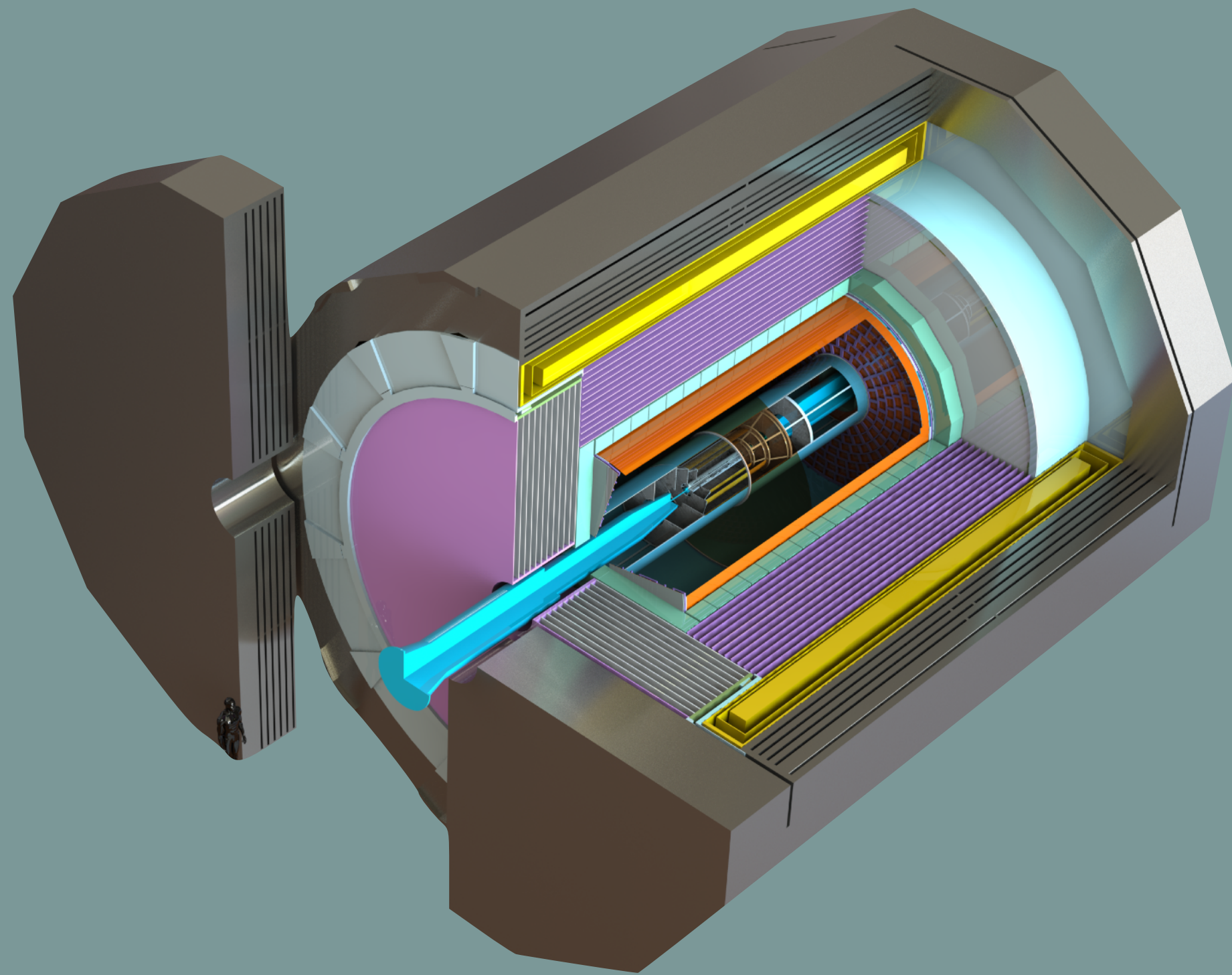
- Provide feedback for improvements

	TDR - Ch02 - Concept(6)
	TDR - Ch09 - Muon(4)
	TDR - Ch12 - TDAQ(9)
	TDR - Ch4 - Vertex(9)
	TDR - Ch7 - ECAL(11)
	TDR - Ch8 - HCAL(6)
	TDR - Ch6 - TPC(8)
	TDR - Ch5 - Tracker(8)
	TDR - Ch10 - Magnet(8)
	TDR - Ch11 - Electronics(8)
	RefTDR_Leaders_Editors(28)



Cover

## CEPC Reference TDR

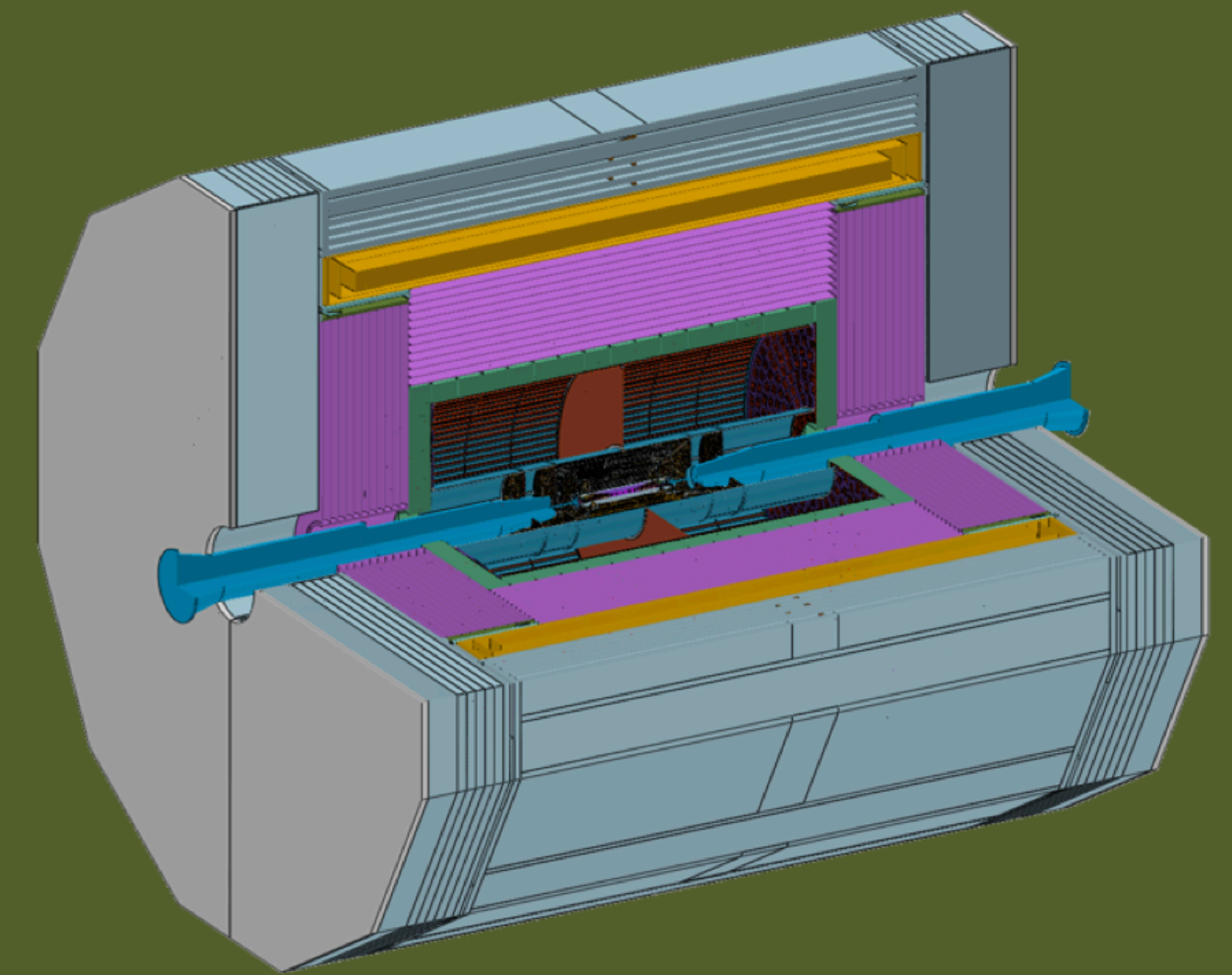


Draft v0.5.0

## CEPC Reference Detector

### Technical Design Report

Version: v0.5.0 build: 2025-07-15 07:37:45+08:00





# IDRC review possible dates and deadlines

Date		IDRC Members	TDR Readiness date
<b>Aug 19</b>	Evening	9	<b>Aug 5</b>
<b>Aug 20</b>	Afternoon	8	Aug 6
	Evening	10	
<b>Aug 21</b>	Afternoon	8	Aug 7
	Evening	11	
<b>Aug 22</b>	Evening	8	Aug 8
<b>Aug 26</b>	Evening	9	<b>Aug 12</b>
<b>Aug 27</b>	Afternoon	8	Aug 13
	Evening	9	
<b>Aug 28</b>	Evening	8	Aug 14