

Minutes: Rehearsal of meeting with IDRC Chair in July 27, 2024

- 09:00 - 18:00 (Beijing Time)

Meeting agenda and minutes

- indico page: <https://indico.ihep.ac.cn/event/22992/>

Overview: Jianchun

- Yifang:
 - skip basic introduction of CEPC
 - P4: spend less time on it
 - P7: 4th concept plot needs to be updated
 - P10: change to 2D plot with dimensions, get latest version from Quan
 - P4: table should be consistent with Accelerator TDR, add TDR reference
 - P9-10: combine two tables, p10 simplify table, only show 1-2 comparison
 - P11: simplify, only mention TDR has 16 chapters
 - P12: simplify, combine reviews in Mar and Apr 2025 to one review, remove row of Oct 30, 2025
 - Carefully check, make sure consistence
- Xinchou:
 - missing R&D and experience, comparison with international experiments
 - missing team experience in different experiments, age structure, convince her even without international cooperation, our team can achieve it.

Electronics: Wei Wei

- Status report
 - outline of electronics
 - VTX: transfer Taichu3 to 65nm, size 15*15 um², using standard process
 - CAL: high count rate
 - ITK: refine design
- Discussion:
 - Yifang: cannot understand high counting rate of Calorimeter. Need double check with Haoyu
 - Yifang: Haoyu should report background simulation result regularly, with comparison with other experiment to convince reliability of the result. Sub-detector should check simulation with Haoyu
 - Meng: Need to unify definition of hit rate with Haoyu
 - Yifang: make a table to explain parameter definition in samples.

- Jianchun: Fei provide template of table for sub-detectors

Vertex: Zhijun Liang

- Xinchou:
 - should focus on TDR, other R&D put in backup
 - missing outline, schedule
 - list technical key technologies
 - add reference for other technology (stitching)
- Yifang:
 - firstly clarify baseline, then talk about others
 - add a table, clarify what have done, requirement of final design, what should do to achieve final goal, the aim of doing it
 - introduce what team members have done, experience
- Jingbo: Re-order logic of the talk, clarify baseline is stitching
- Xiaomei: mentions how we get ALICE latest progress -- by cooperation

Tracker: Qi Yan

- p30: missing timeline, indicate which part should be done before TDR
- Yifang: missing OTK working plan
- team missing everyone's experiences
- Jianchun: too many technical details, make sure all the numbers are correct and consistent
- Zhijun: p10: talk more about LGAD, this is our advantage
- Zheng: P6 clarify why we did these sensor chips, purpose
- Jingbo: suggest to firstly clarify outline
p3: TID>800kGy, to be confirmed with Haoyu
- Yifang: The talk should include all aspects, since Daniela is more familiar with strip, spend more time on LGAD technology and OTK.
- Xiaomei:
 - unify talk sturcture,
 - start from physics target,
 - show detector indicators, then
 - show a table, indicate based on these indicator, what we have done,
 - then introduce every R&D and results.
 - intorduce team
 - in summary, show the table again, what we are missinng and our plan.
- Manqi: p27 add a new line to show impact of OTK
- Chengguang: show more comsertive values and precision

Gaseous detector: Huirong Qi

- Yifang:

- included too many R&D, cannot find priority
- TPC"improved PID"is not proper
- P7: PID at Tera-Z, should list all parameter, not only for Z
- DC is backup plan, spend less time on it
- Jianchun:
 - p31 clarify plan of future prototype
 - show less words in slides
- Manqi:
 - need to validate 500*500 is feasible
- Yulan:
 - Clarify advantage of this TPC design
 - P5 no need to mention again
- Chengguang:
 - p6: clarify the condition of 100um
 - clarify difference of material budget in barrel and endcap
- Xiaomei:
 - Clarify total area, number of modules, number of types
 - p21 emphasis main indicators
 - beam test needs to test whole detector, not module

ECAL: Yong Liu

- Yifang:
 - introduce team experience
 - explain why BMR are different between beam test and simulation
- Manqi:
 - Too much information. Crystal ECAL should be main part, logic to be improved
 - P3 directly introduce BMR
 - p11 more explanation needed. mention ASIC is temporary used for beam test, later we will design new one

HCAL: Boxiang Yu

- Yifang:
 - For plastic, only remain test beam result, other parts removed
 - mainly talk about glass-scintillator, put 3-5 slides to show design, research, sample production, test, patch production..
 - include Sen Qian for talk preparation, add test result of glass from him
 - Don't put results not shown in Tuesday meeting or CEPC day
- Jingbo: improve logic of talk
- Yifang: p19: cooling is not urgent for now

- Manqi:
 - show the logic of choosing glass scintillator
 - p6: check BMR values
- Yifang: ask Jianebi whether he will attend on Aug 7

Muon: Yuguang Xie

- Jianchun: to be unify whether include cost later
- Yifang: should change to unified template

Magnet: Feipeng Ning

- p17, good example, list number of people and experience
- p8, emphasis we are "only one"/No.1 for..
- p22, second sentence is not proper, should give people information that we have confidence.
 - We're confidence that we will finish all the required elements and will deliver this part into TDR
 - **this sentence fit to all the talks**
- Xiaomei: list engineer separately, balance number of students

MDI: Haoyu Shi

- p10, change IP to RF - Haijing Wang
- p13, remove FCC table, use your own results
- p5, need explanation, why choose this values
- p18, demonstrate whther and when you can finish;
- logic of these sentence are not reasonable. clarify which parts are finished, which parts are not
- the table in backup need to update

Electronics: Wei Wei

- Xinchou:
 - Clarify source of different design, add institutes
 - p27 good example of schedule
 - p28, change sequence of last two sentences
- Jingbo: p12 add international experiment contribution
- Manqi: total power consumption?
 - Wei: need further optimization

Trigger and DAQ: Fei Li

- replace FTE with number of manpower
- define levels and well explained

Software: Weidong Li

- not clear purpose of participating this collaboration, clarify our contribution
- sub-detector related software should put in sub-detector talk. For example, calorimeter only talk about BMR
- add the table shown before
- talk about software contribution on detector, for example, fast simulation used on detector performance study
- For computing, missing hardware computing, including scale, data size (consistent with online), CPU requirement...
- P25, change "international cooperation help us" to "what we developed can be world wide used, everyone can join in"
- Xinchou: clarify we are the first one to implement software on detector
- introduce chapter outline

Mechanics: Quan Ji

- Yifang:
 - Explain the existing design and provide an introduction. Indicate that deformation, load-bearing, safety factors, etc., will be addressed. The focus is not on installation.
 - Do not mention the installation design is the best, as it needs to undergo review, and do not repeat steps.
 - clarify that there is still much work to be done, but with this idea, the entire installation is likely feasible.
 - Emphasize that there are too few personnel, but there will be more joining in the future, including experts from JUNO and HEPS.
 - List the future tasks to be completed and demonstrate that the timeline can be met.
 - Mechanical personnel from other sub-detectors must fully cooperate and complete tasks according to requirements. Therefore, clearly outline the tasks, specify when each sub-detector should be completed, and what should be completed by when.
 - Lastly, explain how to integrate everything together and create a plan.
- Jianchun: Hall layout, electronic, and cooling installation plan.