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Subject: Comments on the CDR draft
Date:     Thu, Nov 16, 2017 at 2:58 PM
From:     "Jianming Qian" <qianj@umich.edu>
To:       "Joao Guimaraes Costa" <guimaraes@ihep.ac.cn>
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Hello Joao,

I have some free time at SJTU today. Below please find my comments in random order on the CDR draft. Most of these are general in nature, I have refrained from textual comments. Good luck!

Best, Jianming

- The CDR should present one baseline detector concept. I'd suggest not to present other possibilities as options, not the second detector concept. Terminology should be clear. For example, the full silicon tracker is an option for the tracking detector, by itself it is not a detector concept.

- Each subdetector chapter should state clearly at the beginning performance requirements that are considered for the proposed detector concept(s). It may mean some repetitions if the performance requirements for all subdetectors are summarized in an early Chapter, but I think it is important to begin the chapter with this information.

- The overall subdetector geometry should be presented clearly. For each subdetector concept, estimates of number of channels, volume or weight of potential cost-driving materials should be included.

- For subdetectors with multiple concepts, there should be a section discussing pros and cons of each concept. A simple collection of multiple concepts makes things a bit disjoint.

- Ideally it will be good to have a table for each subdetector concept summarizing most important parameters and information. Many important numbers are embedded in the text, but it will be much easier for a reader to find the information if they are summarized in a table.

- At least for the baseline concept, each subdetector should have a complete schematics.

- The presentation flow, level of details and format of each subdetector chapter should be harmonized.

- Each subdetector option should discuss areas that R&D's are required.

- There should be text on triggers and readout. I don't think these are problems, but trigger and DAQ concepts need to be included in CDR. Confusion about the trigger and DAQ are already apparent at the mini-review.

- a nice, simple schematics for the baseline detector concept. I suspect it will be used widely in presentations.

- vertex, the presentation of the <1% detector occupancy requirement can give people the misimpression that the occupancy could be a problem when in fact the expected occupancy (~0.01%?) is far smaller. This needs to be commented on.

- calorimeters, I think some justifications are needed for the very fine readout proposed. Most of the collider calorimeters built so far have less than 5 readout layers, this is a far cry from the proposed concept with 30 or 40 active readout layers.

- muon detector: why such complicated muon system? Muon momentum should be measured very precisely in the inner detector, only muon ID is required.