

**Subject:** TIC meeting 3/4, 2024 (planning for TDR effort (PID, far detectors); LFHCAL absorbers) - main outcome

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Dear Colleagues,

this e-mail is to underline the main outcomes of the March 4 TIC meeting, dedicated (i) to complete the panorama of the planning for the TDR effort and (ii) to a report for a proposed modification of the LFHCAL absorber. The careful reports by the speakers have been appreciated.

(i) Planning for the TDR effort

PID

The excellent report has presented the planning for the 4 PID DSCs dedicated to pFRICH, HPDIRC, dRICH and ToF by AC-LGADs.

Thanks to the punctual contribution from the DSCs and to two preparatory meetings of the PIC CC WG, the report has detailed the activities foreseen in 2024, carefully illustrated with the corresponding timelines, while some overview of the timelines after 2025 has also been provided.

The main support requested by the different DSCs is summarized here:

- pFRICH: laboratory and project support for integration and services;
- dRICH: project help for mechanics, safety and infrastructure, interaction tagger, component QA in USA, further workforce for reconstruction and global PID;
- hpDIRC: recuperation of BaBar bars, FEE studies, integration of software in EICRecon;
- ToF: global support and cooling, design of the read-out chain, simulations.

A question has been raised and remains open: what the impact of the physical background is on the PID devices

and how it can be estimated in case of standalone softwares.

Far Forward

The planning for the different subsystem of the far forward region has been presented, including tracking for RPs, OMDs and B0, calorimetry for B0 and ZDC.

Further studies about the response of the ECal portion in the ZDC are ongoing and will be presented at TIC in two weeks.

The main support requested by the different subsystems is summarized here:

- for RPs and OMDs: engineering support needed (cooling, support/insertion system);
- for B0: engineering support needed (cooling, installation concept).

(ii)

The proposal of modifying the absorber of the LFHCAL replacing the tungsten layers with ion layers has been presented, illustrating the effect on the performance for single particle as obtained from simulation.

No relevant differences in energy, space and angle resolution are put in evidence.

The construction is made easier when tungsten is not used and the cost is reduced.

This information is complemented by another element, not presented at the TIC meeting:

- the strength due to the solenoid magnetic field is reduced in the configuration where the tungsten is replaced with iron

(news from Valerio Calvelli communication by Elke).

On the basis of the report and complementary information, TIC recommends the adoption of the absorber configuration with tungsten replaced by iron.

If this notes need corrections/integration, please, write me back.

Thank you.

Best greetings, Silvia

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