

# LHCb Technical Board 7&9 May 2001

DRAFT

## Agenda

Monday, 07/05/01

1. Discussion of the TDR for the Vertex Locator T. Ruf
2. Comments on RICH 2/M1 interference R. Lindner
3. Discussion and TB recommendation on the EDRs for E-Cal and H-Cal Modules
4. Discussion of the TDR for the Muon System B. Schmidt

Wednesday, 09/05/01

1. Approval of summary for last TB
2. RICH2: TB recommendation on width in z
3. IT: Conclusion on the baseline choice O. Steinkamp

AOB

- New results on cross shaped inner tracker M. Merk
- Presentation of EDMS in LHCb (postponed) D. Lacarrere
- LHCb milestones up to TDR submission

**Participants:** G. Carboni, J. Christiansen, H. Dijkstra, W. Flegel, R. Forty, John Harvey, H.J. Hilke, B. Hommels, B. Jost, D. Lacarrere, J. Lefrançois, R. Lindner, M. Merk, T. Nakada, T. Ruf, B. Schmidt, A.Schopper, O.Steinkamp. I. Videau,

Excused: (Monday)

O. Schneider, B. Koene, D. Websdale, C. Matteuzzi

1. T. Ruf presented the new draft of the TDR for the VELO, pointing out the changes applied to the first draft and the few missing parts.  
The submission of the draft version 3 to the collaboration is foreseen for May 10<sup>th</sup> and the deadline for any comment is proposed to be May 21<sup>st</sup>. The final document should be printed May 29<sup>th</sup>. The TB had a detailed discussion on the draft, which was generally well received. One major worry remained, the increased amount of material.  
**The TB requested that the optimization of the detector layout be continued after the TDR, with the aim to reduce the radiation thickness. The TB agreed on the proposed schedule for the TDR submission..**
2. R. Lindner informed the TB about the conflict in the layout of RICH-2 and Muon Station 1, caused by the suppression of T11 and the extension of RICH-2 by 330 mm in the downstream direction. The total width of RICH-2 amounts to +/- 4610 mm in x

at present, which restricts the space for the electronic racks of the first Muon Station (annex 1) and hence the maintenance of the SPD/PS detector. The RICH and Muon groups expressed their conviction that a solution could be found.

**The TB agreed on the extension of RICH-2 by 330 mm, if the conflict between RICH-2 and M1 can be solved.** RICH-2 will then cover the region from 9450 mm to 11900 mm in z.

3. The Calorimeter Group made a proposal for the steps following their Engineering Design Reviews (EDRs) for the ECAL and HCAL modules, which had been sent to the TB. After a short discussion, the **TB endorsed the conclusions of the EDRs and made the following recommendations.**
  - The purchase of raw materials should start on the basis of these EDRs.
  - The construction may start (i.e. contracts may be placed for machining the mechanical parts) after a Production Readiness Review (PRR) has been carried out inside the Calorimeter Group confirming the availability of approved final construction drawings and a detailed definition of quality control procedures validated on the module-0 construction.
  
4. B. Schmidt presented the changes introduced in the Muon TDR. A detailed discussion followed, although the TDR was considered to be in excellent shape. One item was debated extensively, the need for a custom made synchronization chip, considering the necessary effort.

**The TB decided** that a review on this subject should be organized soon, if possible in July 2001.

Comments to the TDR draft 2 should be sent before May and submitted to the LHCC on the May. **The TB agreed on the planning for the TDR, comments to be sent by May 14<sup>th</sup> and submission May 22<sup>nd</sup>**
  
5. O. Steinkamp informed the TB that the Inner Tracker group agreed to the statement made by the Technical Board in the last meeting (20.4.2001) on the choice of an all-silicon detector as baseline for the IT.

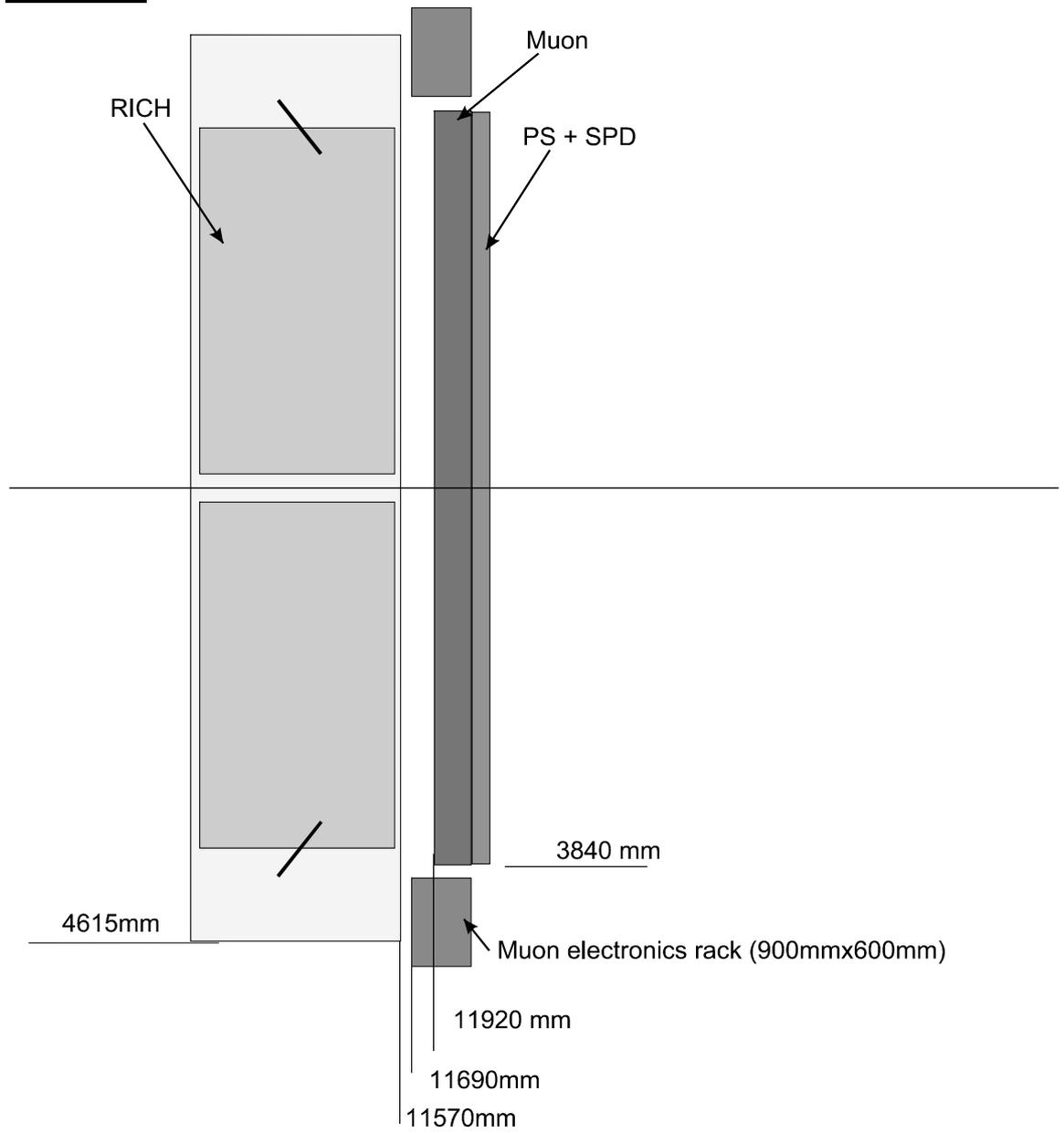
**AOB:**

- M. Merk presented studies of a 'cross-shaped' Inner Tracker optimized for maximal 10% occupancy in the Outer Tracker with nominal Luminosity at LHCb. This results in an Inner Tracker of  $500 \times 400 \text{ mm}^2 \oplus 1400 \times 200 \text{ mm}^2$  (see Annex 2).
  
- O. Steinkamp then presented three possible Inner Tracker layouts. A simple solution consists of four identical modules ( $220 \times 540 \text{ mm}^2$ ) arranged as a cross around the beam pipe (annex 3). This solution would have many advantages, but the number of the sensors would increase by 50% compared to the present design. O. Steinkamp added that further optimization studies are needed. In view of the Outer Tracker TDR submission in September, B.

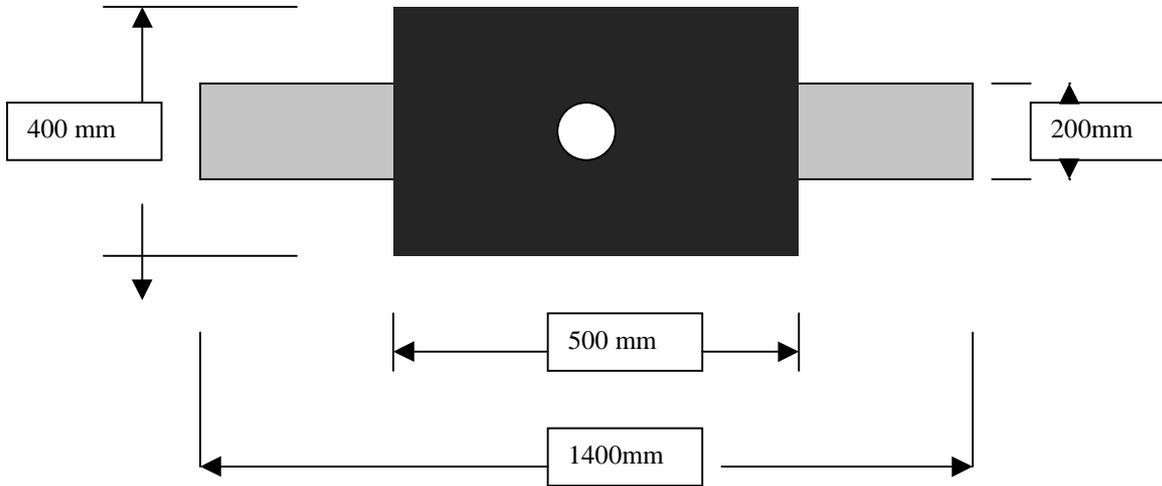
Hommels commented that the integration of a 'cross shaped' Inner Tracker in the Outer Tracker has to be clarified. The Outer Tracker Group feels that this can be arranged relatively easily for stations 7 to 10, but for the stations in the magnet further investigation are needed.

- No changes to the LHCb milestones (post TDR) were requested.
- Next TB on the 16<sup>th</sup> July 2001: Outer Tracker TDR

**Annex 1:**



**Annex 2:**



**Annex 3:**

