LHCb Technical Board 11 December 2002

Agenda

1. **Approval of last TB summary**
2. **Outcome of the LHCC November session** — **T.Nakada**
3. **Comprehensive Review and LHCC document** — **T.Nakada**
4. **Addendum to the Muon TDR** — **G.Carboni**
5. **Status of the Photon Detector** — **O.Ullaland/D.Websdale**
6. **RICH1, B-field and Trigger** — **H. Dijkstra**
7. **News**
8. **A.o.B.**
   - **TB calendar 2003**

Participants: G. Carboni, J. Christiansen, H. Dijkstra, J. Harvey, D. Lacarrere, J. Lefrançois, R. Lindner, M. Merk, T. Nakada, A. Pellegrino, T. Ruf, B. Schmidt, O. Schneider, A. Schopper, A. Smith, O. Ullaland, H. Voss (for SiTr), D. Websdale (telephone), W. Witzeling

Excused: R. Forty, C. Matteuzzi, O. Steinkamp, U. Straumann,

1. **Approval of last TB summary:** The Summary of the TB on 25th November 2002 was approved.

2. **Outcome of the LHCC November session**. T. Nakada summarized the outcome of the last LHC Committee. LHCb gave two presentations in the open session, in the following closed session (where LHCb was not present) strong concern about the delayed submission of the LHCb-light TDR was expressed and a number of questions concerning LHCb-light were raised by the Committee. As a consequence, the LHCC requests an intermediate written document that should describe the present status of the LHCb-light optimization. The document has to be submitted for the next LHCC (i.e. by mid January), it will essentially contain Tatsuya's presentation on the re-optimization of the LHCb detector with some additional numbers. Tatsuya presented the outline of the document together with the names of persons in charge of the different chapters.

3. **Comprehensive Review**: The first LHCC Comprehensive Review is scheduled for 27 and 28 January 2003. It is a two-day, in-depth review where all LHCC referees (some 30 members) participate. Participation on LHCb side is limited to the relevant experts for each session. Subjects of the parallel sessions are: Status of project, production, milestones, schedule and resources. The presentations should not take longer than one hour followed by 30 minutes discussion.

4. **Addendum to the Muon TDR**. G. Carboni described the changes in the muon system and presented the new production strategy following the decision to abandon the RPCs and to replace them by MWPCs.

The first muon station will now be made of two layers with panels made of honeycomb instead of Esadur. For all stations, the wire pitch will be increased from 1.5 to 2 mm, which has no measurable loss on efficiency in a 20ns time window and will save 100 kCHF.
As the fabrication of RPCs was planned to be performed by industry, the production of the additional MWPC represents an important additional load, more tooling equipment as well as human resources are required. Two new production lines are envisaged, one at PNPI (a second line) and one in Firenze. The later one has still to be agreed on by INFN.
The cost of the new Muon system has increased by 150 kCHF with respect to the cost given in the TDR, which represents 1.5% of the whole project costs. One possibility to cope with this situation is to stage parts of station four. The HV supplies and 50% of the electronic board production could be delayed to save ~300 KCHF. The situation will be reviewed in one year. In case that the CARIOCA chip cannot be used, an additional extra cost of 700KCHF has to be expected.
The muon group will prepare the Muon System addendum to the TDR that will include the changes in the project organization, new cost estimates and sharing of responsibilities. It will be sent to the TB members for comments beginning of January.
The muon system EDR with a detailed description of the chambers is now planned for week 16 in 2003.

5. **Status of the Photon Detector**. Starting with a reminder on the conclusions of the photon detector review from the 24 June 2002 (see TB 16-09-02), O. Ullaland informed the TB about the coming RICH milestone review on Wednesday 8 January 2003. On the agenda are status of the HPD and MaPMT projects and the B-field constraints. The review committee consists of D. Websdale, N. Harnew, B. Jean-Mari, C. Fabjan and M. Ferro-Luzzi. The referees are asked to submit a report to the LHCb RICH project on Monday 20 January 2003. The report and the recommendation by the RICH group will then be forwarded to the TB.

6. **RICH1, B-field and Trigger**: There has been an extensive discussion on the situation of the B-field close to RICH1. At the moment there is no realistic design for the RICH1 photon detector shielding that gives a sufficient magnetic field for the Trigger while the field close to the HPD does not exceed the maximal value allowed.
The data production for the LHCb-light TDR has to start end February in order to keep the LHCb-light TDR schedule. As a consequence the magnetic field has to be frozen now, because the time is very limited for further optimization. A solution for the magnetic shielding satisfying both constraints cannot be expected in the very near future, the Technical Board decided to implement a best guess for the magnetic field map. (Note added after the meeting: following further investigations, it was decided to use the older field map called 043)

7. **News:** W. Witzeling reported that the date for the one day Installation Review originally foreseen in the period 4 to 6 March has been shifted by one week and will now take place in the period 12-14 March 2003.

8. **A.o.B**: W.Witzeling presented the provisional calendar for TB meetings in 2003, the additional Technical Boards, i.e. the ones not during LHCb weeks will be held on Thursdays. The proposed dates are as follows:

Wed 21 May	LHCb Week (clash with LHCC)
Thu 3 July	First version LHCb-light TDR
Thu 24 July	Final draft of LHCb-light TDR + final draft of Trigger TDR
Wed 26 November	LHCb Week

Next Technical Board: Thursday 23rd January 2003 at 13:00 hrs in Room 1-1-25
(please note the unusual starting time!)