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PRINCIPAL LHCC DELIBERATIONS

15TH MEETING OF THE LHCC RESOURCES REVIEW BOARD

19 OCTOBER 2005

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GENERAL

This document summarises the principal LHCC deliberations concerning LHCb at the Committee's sessions in May and June 2005.

Installation of infrastructure and technical services in the experimental area are well advanced. Issues concerning the interference due to installation of LHC Machine components in the LHCb experimental hall that could potentially cause delays to the LHCb installation are being addressed.

STATUS OF THE LHCb TECHNICAL DESIGN REPORTS

	<i>Submission to LHCC</i>	<i>Research Board Approval</i>
Magnet TDR	December 1999	April 2000
Vertex Locator TDR	May 2001	November 2001
Inner Tracker TDR	November 2002	February 2003
Outer Tracker TDR	September 2001	February 2002
RICH Detector TDR	September 2000	February 2001
Muon Detector TDR	May 2001	November 2001
First Addendum Muon Detector TDR	January 2003	February 2003
Second Addendum Muon Detector TDR	April 2005	September 2005
Calorimeter TDR	September 2000	February 2001
Trigger (L0/L1) TDR	September 2003	February 2004
Online System TDR	December 2001	April 2002
Computing TDR	June 2005	
Re-optimized Detector TDR	September 2003	February 2004

CONCERNS FROM THE PREVIOUS LHCb RESOURCES REVIEW BOARD

SUB-SYSTEM	CONCERN	STATUS
Vertex Locator (VELO)	Difficulties in procuring the ancillary systems.	Good progress was reported on the ancillary systems, including the vacuum system, bellows, RF box, prototype CO ₂ cooling system and Al-cast capillaries.
Trigger Tracker	Delays in the delivery of sensors and in the ladder production.	Production of sensors and ladders is now advancing well.

RICH Detectors	Slow delivery of Hybrid Photo Diode (HPD) pixel read-out.	Delivery of the HPDs will now be completed only in January / February 2007. Their installation is, however, expected to be straight-forward.
Muon System	Delays in MWPC production.	MWPC detectors for the Muon System are in production at all sites and the several hundred produced so far are of good quality. The Committee, however, took note of the outstanding delays in MWPC production, which indicates that the M2-M5 chambers will be in time while the M1 chambers will be arranged to optimize the physics output.

DETECTOR SUB-SYSTEMS

VERTEX LOCATOR (VELO)

Progress was reported on the Vertex Locator (VELO), but the required production rate of modules needs to be demonstrated and the module production remains tight.

INNER TRACKER AND TRIGGER TRACKER

Good progress was reported on the Inner Tracker and Trigger Tracker, but the schedule to complete these detectors on time remains tight. Delivery of the pre-series printed-circuit boards is now on the critical path.

OUTER TRACKER

Delays in the production of the Outer Tracker have been recovered.

PARTICLE IDENTIFICATION

Work on the RICH-1 detector is advancing but concerns remain on the timely availability of the beryllium mirrors and the Hybrid Pixel Detectors (HPDs). A further two month delay was reported in the HPD production schedule and the delivery of the HPDs will now be completed only in January / February 2007. Their installation is, however, expected to be straight-forward. Good progress was reported on the RICH-2.

CALORIMETERS

Good progress was reported on the Calorimeters.

MUON SPECTROMETER

The LHCb Second Addendum to the Muon System Technical Design Report describes the choice of technology for the inner part of the first muon station, for which ageing due to high particle rates was studied. Due to the high particle rates, triple-GEM technology has been chosen for the innermost region, while wire chambers are used for the rest of the system. The Second Addendum was recommended for approval by the LHCC and was endorsed by the Research Board.

MWPC detectors for the Muon System are in production at all sites and the several hundred produced so far are of good quality. The Committee, however, took note of the outstanding delay in MWPC production, which indicates that the M2-M5 chambers will be in time while the M1 chambers will be arranged to optimize the physics output.

TRIGGER AND ONLINE SYSTEM

Good progress was reported on the Trigger and Online System.

COMPUTING

The LHCC is currently reviewing the LHCb Computing Technical Design Report.