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# PRINCIPAL LHCC DELIBERATIONS

20TH MEETING OF THE LHCb RESOURCES REVIEW BOARD

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16 APRIL 2008

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## GENERAL

This document summarises the principal LHCC deliberations concerning LHCb at the Committee's sessions in November 2007 and February 2008.

The major LHCb detector parts are close to completing their commissioning, global commissioning runs are in progress and the preparation for the first LHC physics run in 2008 is well advanced. The LHCC considers that it is realistic to expect LHCb to have an initial working detector for the start of LHC operation in 2008.

## CONCERNS FROM THE PREVIOUS LHCB RESOURCES REVIEW BOARD

| SUB-SYSTEM | CONCERN | STATUS |
|---|---|---|
| Outer Tracker (OT) | Gain loss observed in the straw chambers. | The gain loss observed in the modules from the series production has been traced to the glue used in the fabrication process. Tests on a newly-produced module with Tra-Bond glue, which replaces the Araldite glue, show that the gain loss is due to the out-gassing from the Araldite glue. The LHCC considers that the issue of the OT gain loss remains a serious concern. |

## EXPERIMENT SUB-SYSTEMS

### VERTEX LOCATOR

Good progress was reported on the Vertex Locator (VELO). R&D for the replacement of the RF foil, which developed a leak between the beam pipe vacuum and secondary vacuum, is on-going. The leak is considered to be very small and it is not expected to cause short-term operating problems for LHCb or for the LHC machine. The LHCC endorses the start of construction of new VELO modules, proposed to replace the existing modules once their performance deteriorates from radiation effects after about three years of nominal LHC running.

### INNER TRACKER AND TRIGGER TRACKER

Good progress was reported on the Inner Tracker (IT) and Trigger Tracker (TT), with no major concerns having been identified.

## OUTER TRACKER

All three stations of the Outer Tracker (OT) are mounted on their C-frames and are fully equipped with detectors together with almost all of the read-out electronics. Concerning the observed gain loss, tests on a newly-produced module with Tra-Bond glue, which replaces the Araldite glue, show that the gain loss is due to the out-gassing from the Araldite glue. Flushing of the modules and their *in situ* heating, which are found to reduce the effect of the gain loss, are in progress. However, the LHCC considers that the issue of the OT gain loss remains a serious concern.

## RING IMAGE CHERENKOV DETECTORS

An increase in the silicon bias current, consistent with glow discharge, during ramping of the high voltage has been observed on some of the Hybrid Photon Detectors (HPDs) of the Ring Image Cherenkov detector RICH-2. Investigations on understanding the origin of the problem are in progress. The current failure rate is about 10% and is being monitored carefully. The LHCC considers that this could become a major concern.

## CALORIMETERS

Good progress was reported on the Calorimeters, with no major concerns having been identified.

## MUON SYSTEM

Good progress was reported on the Muon System, with no major concerns having been identified.

## ONLINE SYSTEM

Good progress was reported on the Online System, with no major concerns having been identified.

## COMPUTING AND SOFTWARE

Good progress was reported on the computing and software, with no major concerns having been identified.