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PRINCIPAL LHCC DELIBERATIONS

27TH MEETING OF THE ATLAS RESOURCES REVIEW BOARD

10 NOVEMBER 2008

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SCIENTIFIC SECRETARY, LHCC

GENERAL

This document summarises the principal LHCC deliberations concerning ATLAS at the Committee's sessions in May, July and September 2008.

The LHCC congratulates the ATLAS Collaboration for successfully completing the installation of the detector and for preparing the experiment and the entire data chain for first LHC beams. The completion of the very complex and numerous tasks was made possible by the outstanding planning and efficient implementation by the ATLAS Collaboration.

CONCERNS FROM THE PREVIOUS ATLAS RESOURCES REVIEW BOARD

SUB-SYSTEM	CONCERN	STATUS
Magnets	Delay in global tests and commissioning.	The series of necessary tests and trainings was completed prior to first LHC beams to ensure a reliable operation of all the magnet parts – Solenoid, Barrel Toroid and the two End-cap Toroids – both in stand-alone and combined modes.
Resistive Plate Chambers	Dark current observed with the gas recirculation system.	Demonstration that the gas recirculation can be implemented without increasing the dark current is well underway.

EXPERIMENT COMMISSIONING

GENERAL

Most of the ATLAS sub-systems have passed successfully through a series of combined data tests with cosmic rays. ATLAS commissioning with beam started with the first LHC beams and particularly with the so-called 'splash events' on the LHC collimators around ATLAS. The calibration and alignment procedures are in progress while the ATLAS operational model works well.

MAGNETS

The ATLAS magnet system is operational. The series of necessary tests and trainings was completed to ensure a reliable operation of all the magnet parts – Solenoid, Barrel Toroid and the two End-cap Toroids – both in stand-alone and combined modes.

TRIGGER AND DAQ

Good progress was reported on the Trigger and DAQ, with many checks having been made during the cosmic-ray runs and with first LHC beams.

ON-LINE AND OFF-LINE

The on-line and off-line calibration procedures are well organized and have passed through various checks during the FDR-1 and FDR-2 Full Dress Rehearsals.

SOFTWARE AND COMPUTING

The ATLAS software has been extensively checked during the FDR-1 and FDR-2 Full Dress Rehearsals and is considered to be in a good state. The ATLAS computing operations are also in a good state and are ready for data taking.

EXPERIMENT SUB-SYSTEMS

The LHCC identified certain issues which remain outstanding, including the need to a) rectify the instability of the read-out modules for the Cathode Strip Chambers (CSCs), b) replace the failing TX timing transmitters common to the Semiconductor Tracker (SCT) and Pixel Detectors due to the high failure rate and c) consolidate the cooling system in order to ensure efficient running of the SCT and Pixel Detector in 2009. Moreover, the studies to demonstrate that the gas recirculation can be implemented without increasing the dark current are well underway.

The repair of the Inner Detector evaporative cooling system has made impressive progress, with all problems having been resolved and the plant was fully operational in time for the bake-out of the experimental beam pipe.

TECHNICAL DESIGN REPORT ON THE FORWARD DETECTORS

The LHCC recommended general approval of the ATLAS Technical Design Report (TDR) on the Forward Detectors for the Measurement of Elastic Scattering and Luminosity, and the TDR was subsequently approved by the Research Board in September 2008.