

CERN-RRB-2010-016
23 MARCH 2010

PRINCIPAL LHCC DELIBERATIONS

30TH MEETING OF THE ATLAS RESOURCES REVIEW BOARD

20 APRIL 2010

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GENERAL

This document summarises the principal LHCC deliberations concerning ATLAS at the Committee's session in February 2010.

The LHCC considers that ATLAS has made excellent progress in all aspects of the experiment and the Committee congratulates the ATLAS Collaboration on its achievements.

CONCERNS FROM THE PREVIOUS ATLAS RESOURCES REVIEW BOARD

SUB-SYSTEM	CONCERN	STATUS
Cathode Strip Chambers	Rate capability of the read-out modules of the Cathode Strip Chambers (CSCs).	Rate capability problems have been resolved and the read-out rate of the CSCs has improved up to 40 kHz.
LAr Electromagnetic Calorimeter	Failure of front-end optical transmitters of LAr Electromagnetic Calorimeter.	ATLAS continues to monitor the failures and is developing a long-term plan to resolve the issue.
Inner Detector Cooling System	Reduced operational efficiency.	The stability and reliability of the evaporative cooling system remain a concern. Given the expected long lifetime of the experiment, replacement of the evaporative cooling plant is warranted.

STATUS OF THE EXPERIMENT

The Committee was very impressed with all facets of the ATLAS performance in the 2009 data run. The experiment pulled together and the results presented showed this clearly. Specifically,

- ATLAS has made tremendous progress demonstrating their readiness in the areas of detector operations, offline processing and reconstruction and physics analysis based on results presented with the 2009 collisions.
- A large number of low-level detector performance plots demonstrated a detailed understanding of the ATLAS detector's performance.
- Several plots containing "physics variables" were shown demonstrating excellent agreement between data and Monte Carlo.

- While the 2009 accelerator run provided a very limited number of physics collisions, the ATLAS experiment was well prepared for beam. The experiment collected data with better than 85% overall efficiency. While the trigger and offline were not “stressed” in this data acquisition period, they still performed well.

- ATLAS has made maximal use of this newly-collected data to better understand detector performance and start understanding higher-level physics variables. Moreover, ATLAS has developed a plan for the coming months to complete many detector performance studies and hopes to bring a number of these to publication. The same is true for their cosmic-ray studies. ATLAS wants to advance and complete analysis of the current data set to be ready before the next set will start arriving in 2010. ATLAS Management also has a plan in place on how to move forward with the 7 TeV run to maximize their physics impact and throughput.

ATLAS, in conjunction with the CERN Management and CMS, should develop a plan for accelerator operations and performance so that both accelerator and experiments make the best possible use of technical stops and shutdowns. This plan will guide not only the upgrade planning but also form the basis of the physics planning of the experiment.

The LHCC encourages ATLAS to continue to pursue their upgrades. It is important to finalize the silicon detector cooling system and begin its fabrication. Furthermore, the experiment should complete the Technical Design Report of its Insertable B-Layer (IBL) as it had been planning.

The Committee will be reviewing in the coming months various issues, including: the staffing of the detector shift room; the performance of the trigger and offline; the cooling of the silicon detectors, the read-out of the Cathode Strip Chambers, and the LAr calorimeter optical links and power supplies.