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ATLAS TDAQ system: current status and performance

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In 2010 the ATLAS Trigger and Data Acquisition (TDAQ) system has been operated with an overall efficiency of 96%, while meeting evolving and demanding conditions. By the end of the proton run, the LHC instantaneous peak luminosity had increased by 5 orders of magnitudes. Correspondingly the ATLAS first-level trigger rate grew by a factor 100, reaching 40 kHz, roughly half of the design rate. Concurrently, the event building and data saving rates reached and exceeded the design performance. Moreover, the installation of additional computing power yielded a system whose characteristics are now comparable with the final ones. In this paper we will report on achievements and issues encountered during 2010. On this basis, we will follow discussing the preparations for the 2011 data-taking period, in particular with respect to the expected increase in LHC luminosity and the predicted reaching of the design first-level trigger rate.

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