

ATLAS DAQ/HLT infrastructure

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The ATLAS DAQ/HLT equipment is located in the underground counting room and in the surface building. The main active components are rack-mounted PC's and switches. The issues being resolved during the engineering design are powering and cooling of the DAQ/HLT equipment, monitoring of the environmental parameters, installation and maintenance procedures. This paper describes the ongoing activities and presents the proposed solutions.

Summary

The ATLAS DAQ/HLT system handles data coming in parallel from the detector. The readout system, located in the underground counting room, and the computing farm, located in the surface building are both based on rack-mounted PC's and network switches. They are now entering the installation stage and therefore need an operational infrastructure. It includes counting rooms design, rack selection, supply of electrical power from the distribution network and UPS, as well as cooling of the equipment and monitoring of the environmental parameters. The engineering design of the infrastructure is a common activity of ATLAS DAQ/HLT and Technical Coordination together with CERN Technical Support division. The task of the DAQ/HLT is to define their specific requirements and to find a common solutions within DAQ/HLT and with other experiments and Information Technology division. The example is the LHC PC rack project which lead to a common water-cooling solution for the horizontal air flow inside the racks. For the power distribution, the DAQ/HLT formulated their requirements, supplied the Technical Coordination with results of preliminary studies and working together towards the most cost effective final design. The implementation of the monitoring of the environmental parameters is a full responsibility of the DAQ/HLT. We are aiming to have a single coherent management and monitoring tool based on IPMI, Linux tools and standard tools developed for the ATLAS Detector Control System and integrated into overall operation of the experiment. Installation and maintenance procedure of the DAQ/HLT equipment is supported by the Rack Wizard - a graphical interface for electronics configuration and cabling databases.

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