

CMS ECAL DAQ Monitoring system

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The Large Hadron Collider (LHC) at CERN Geneva has entered the Run 2 era, colliding protons at a center of mass energy of 13 TeV at high instantaneous luminosity. The Compact Muon Solenoid (CMS) is a general-purpose particle detector experiment at the LHC. The CMS Electromagnetic Calorimeter (ECAL) has been designed to achieve excellent energy and position resolution for electrons and photons. The ECAL DAQ system is composed of more than 200 off-detector electronic boards. Monitoring the status of the DAQ boards during data taking is essential for an efficient and stable acquisition system. For this purpose a new web application, EcalView, has been developed. EcalView runs on a light JavaScript server framework based on Node.js and Express.js. It is composed of several routines (mainly a specific routine for each board type) that cyclically collect the status of the electronics and display the information for web requests. On the client side, graphical interfaces, based on Vue.js libraries, retrieve the data (only if new information are available) and display information regarding the electronics status and errors. For each board, detailed information can be loaded and presented in specific pages if requested by the expert. Server side routines store information on electronics errors in a SQLite database in order to perform offline analysis about the long term status of the boards.

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