



Contribution ID: 342

Type: poster

Real-time analysis of the operational state of the CMS strip tracker readout system

Monday, September 3, 2007 8:00 AM (20 minutes)

The CMS silicon strip tracker comprises a sensitive area of >200 m² and 10M readout channels. Its data acquisition system is based around a custom analogue front-end ASIC, an analogue optical link system and an off-detector VME board that performs digitization, zero-suppression and data formatting. The data acquisition system uses the CMS online software framework, known as XDAQ, to configure, control and monitor the hardware components and steer the data acquisition. Recent developments have seen the integration of the CMS offline software framework, known as CMSSW, within the online data acquisition system. This provides many new features and services within the online environment, such as distributed analysis within CMSSW, access to geometry and conditions data, and a monitoring framework. We review how the monitoring frameworks available within both XDAQ and CMSSW will be used to assess the operational state of the hardware components of the strip tracker readout system during data-taking and provide real-time feedback to shifters in the CMS control room. We will report on the software components, the chosen architecture, the various monitoring streams available, and our experiences of commissioning and operating large-scale systems at the tracker integration facility.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

CMS tracker collaboration

Authors: Dr GROSS, Laurent (Institut Pluridisciplinaire Hubert Curien, CNRS); Mr NIKOLIC, Milan (University of California); Dr BAINBRIDGE, Robert (Imperial College London); Dr MERISI, Stefano (INFN & Università di Firenze)

Co-authors: Dr GIASSI, Alessandro (INFN, Sezione di Pisa); Dr DELAERE, Christophe (CERN); Dr GIORDANO, Domenico (INFN & Università di Bari); Dr DROUHIN, Frederic (Universite de Haute Alsace); Dr BEAULIEU, Guillaume (Institut de Physique Nucleaire de Lyon); Dr COLE, Joanne (Rutherford Appleton Laboratory); Dr FULCHER, Jonathan (Imperial College London); Dr HAHN, Kristian (Massachusetts Institute of Technology); Dr MIRABITO, Laurent (Institut de Physique Nucleaire de Lyon); Mr WINGHAM, Matthew (Imperial College London); Mr CRIPPS, Nicholas (Imperial College London); Mr BEL, Sebastien (CERN); Dr TKACZYK, Slawomir (Fermi National Accelerator Laboratory)

Presenter: Dr MERISI, Stefano (INFN & Università di Firenze)

Session Classification: Poster 1

Track Classification: Online Computing