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Online and offline software for the CMS strip tracker data acquisition system

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The CMS silicon strip tracker, providing a sensitive area of $>200 \text{ m}^2$ and comprising 10M readout channels, is undergoing final assembly at the tracker integration facility at CERN. The strip tracker community is currently working to develop and integrate the online and offline software frameworks, known as XDAQ and CMSSW respectively, for the purposes of data acquisition and detector commissioning. Recent developments have seen the integration of many new services and tools within the online data acquisition system, such as event building, online distributed analysis within CMSSW, an online monitoring framework, and data storage management. We review the various software components that comprise the strip tracker data acquisition system, the software architectures used for “local” and “global” data-taking modes, and our experiences during commissioning and operation of large-scale systems.

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

CMS tracker collaboration

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