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Tile-in-One: An integrated system for data quality and conditions assessment for the ATLAS Tile Calorimeter

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The Tile Calorimeter (TileCal) is a crucial part of the ATLAS detector which jointly with other calorimeters reconstructs hadrons, jets, tau-particles, missing transverse energy and assists in muon identification. It is constructed of alternating iron absorber layers and active scintillating tiles and covers region |eta| < 1.7. The TileCal is regularly monitored by several different systems, which were developed mainly during the commissioning of the detector in order to meet distinct collaboration's requirements. Any problems are reported and immediately investigated, which results in data quality efficiency very close to 100% achieved in last several years. Although the TileCal tools are maintained, the underlying technologies are becoming gradually outdated.

The Tile-in-One strives to integrate all data quality and conditions assessment TileCal tools into one common system. This system is implemented as a web application with main machine being the gateway for so-called plugins. The plugin is a standalone small web application hosted on a single virtual machine. The plugins are separated into virtual machines due to the requirement for different data sources and to avoid interference in order to increase stability of the platform. The main server is responsible for authentication and authorization of the users as well as the management of the plugins. Currently the platform consists of 13 plugins in various stages of development. The implementation details of the Tile-in-One web system and as well as selected plugins will be presented.

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