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Slow control and data acquisition systems in the Mu2e experiment

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The muon campus program at Fermilab includes the Mu2e experiment that will search for charged-lepton flavor violating processes where a negative muon converts into an electron in the field of an aluminum nucleus. The conversion process results in a monochromatic electron with an energy of 104.97 MeV, slightly below the muon rest mass. The goal of the experiment is to improve the previous upper limit by four orders of magnitude. Mu2e's Trigger and Data Acquisition System (TDAQ) uses {\it otsdaq} as its solution. Developed at Fermilab, {\it otsdaq} uses the {\it artdaq} DAQ framework and {\it art} analysis framework, under-the-hood, for event transfer, filtering, and processing.

{\it otsdaq} is an online DAQ software suite with a focus on flexibility and scalability. It provides a multi-user, web-based interface, accessible through a web browser.

A Detector Control System (DCS) for monitoring, controlling, alarming, and archiving has been developed using EPICS (Experimental Physics and Industrial Control System) open-source Platform. The DCS System has also been integrated into {\it otsdaq}, providing a multi-user GUI, web-based control, and monitoring dashboard that communicates with EPICS using an interface specifically designed and developed.

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