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Software Updates for the Main Detector Controls Webpage at the STAR Experiment at Brookhaven National Laboratory[1] EMMA DUFRESNE, Creighton University — STAR (Solenoidal Tracker at RHIC), the high-energy physics experiment at Brookhaven National Laboratory, analyzes collisions of heavy ions traveling at relativistic speeds using various detectors. For safety reasons, remote computers are programmed to retrieve data from these detectors. A controls system is set in place to manage the various computers that allow STAR to function. STAR's control system uses EPICS (Experimental Physics and Industrial Control System), a set of open-source software tools that enable communication with the computers. The largest part of the controls system involves the operation of power supplies and monitoring their voltage values. Detector operators and the shift leader can monitor safety information about the detectors from a single webpage. Information about water and gas alarms, operating status of the sub-detectors, and environmental conditions are seen at a glance. The detector controls framework is being gradually updated to include PC-based rather than embedded computers and to incorporate PyEpics, an interface that allows EPICS to interact with the Python Programming language. These changes will allow for easier maintenance and updates in the future. This project was to re-write the code that gathers and fills the main detector controls webpage with information, remove outdated values and eliminate the need for frequent rebooting. In alignment with the overall trend for detector controls, it was written using PyEpics and HTML formatting. This new code was successfully implemented before the end of the 2019 run.

[1]Creighton University's Clare Boothe Luce Scholarship

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