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aLIGO Guardian: an EPICS-based state machine automation platform

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The Advanced LIGO project has developed a new automation platform to handle the complicated automation needs of their newly upgraded detectors. Written entirely in Python and using EPICS for all communications, the platform, called Guardian, consists of a hierarchy of distributed state-machine automaton processes. Each automaton controls a particular sub-domain of the instrument, with the full hierarchy control the entire detector.

This talk will discuss the concept and implementation of this novel platform, how automation logic is programmed into the system, and how the aLIGO project has deployed it for use in commissioning and automating complex, large-scale interferometric gravitational wave detectors.

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