

Realization of Detector Control System of Physics Experiment



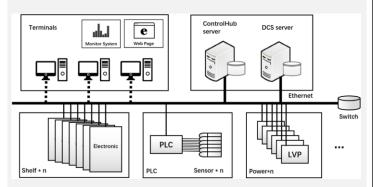
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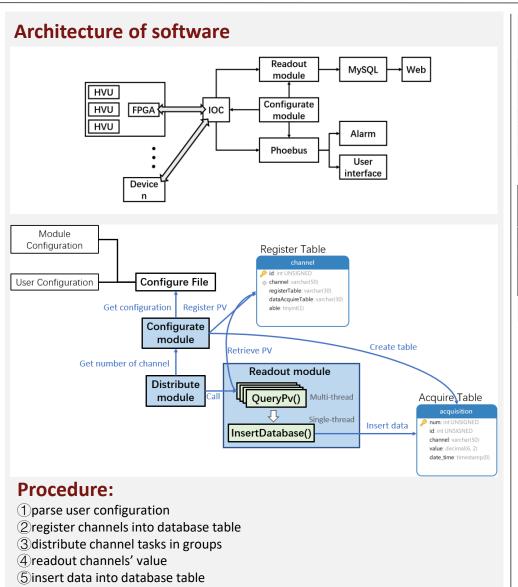
Abstract

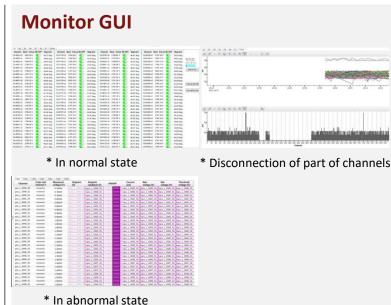
A control system was developed, supports to communication with custom-made hardware, and implement functions of data acquisition, alarm management, data archiving. This control system is based on EPICS and focuses on development of IPbus driver support. This control system design, including human—machine interfaces, alarm system, historical data archiving system and Web service, etc. At present, the system has been used by the experiment of Jiangmen Underground Neutrino Observatory to monitor status of electronics test.

Architecture of DCS



It is easy to implement distributed architecture for EPICS-based DCS, which can realize data sharing between devices in LAN, and has developed a variety of drivers for use, which greatly reduces the workload of software development. The relationship between the components of the DCS is shown schematically in figure. In the electronics test, the DCS needs to monitor electronics, PLC, and LVP(low voltage power).





Webpage

This work uses LAMP (Linux+Apache+MySQL+PHP) as the development platform and combines the browser scripting language Javascript and Ajax (Asynchronous Javascript and XML) technology to realize web page functions. The entire design follows the MVC pattern and modularity.

