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The Framework Design of the Detector Control System of JUNO

The Jiangmen Underground Neutrino Observatory (JUNO) is the second phase of the reactor neutrino experiment. The detector of the experiment was designed as a 20k ton LS with a Inner diameter of 34.5 meters casting material acrylic ball shape. Due to the gigantic shape of the detector there are approximate 10k monitoring point of temperature and humidity. There are about 20k channels of high voltage of array PMT, electric crates as well as the power monitoring points. Since most of the first phase software of the DCS was developed on the framework based on windows, which is limited by operation system upgrade and commercial software, the framework is necessary for DCS of JUNO. The paper will introduce the Design of the framework of the DCS based on EPICS (Experimental Physics and Industrial Control System) running Linux OS. The implementation of the IOCs of the high-voltage crate and modules, stream device drivers, and the embedded temperature firmware will be presented. The software realization and the remote control method will be presented as well as the development of the GUIs by CSS (Control System Studio). The framework can be widely used in the project with the similar hardware and software interfaces.

Minioral

Yes

Description

EPICS

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