

Study of central control system for FAST

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Abstract FAST(The Five-Hundred-Meter Aperture Spherical Radio Telescope) is an under-building radio telescope which will be the largest single dish in the world. Through the study of the central control system, in accordance with the actual operation of the telescope and observation process, this article introduces the physical models for engineers and observers, the central control system architecture design, basic support modules and the necessary interfaces. We simulated observation control process and telescopes monitoring and control process, and took Active Reflector System as a subsystem example to complete the control system design and implementation using EPICS (Experimental Physics and Industrial Control System). The Central control system, with active reflector systems, feed supporting system has been taken to an integration test at Miyun model. In the case of the normal operation of the various sub-systems of the Miyun model by the central control system, a coordinated control is achieved.

Keywords FAST · Central control system · Architecture design · Active reflector · EPICS

1 Introduction

In order to speed up the process of exploring the universe, the Chinese astronomical community to build the world's largest single-diameter radio telescope –

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