

DESIGN OF KSTAR MACHINE CONTROL SYSTEM

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KSTAR is a fully superconducting tokamak being built in Korea to study advanced plasma physics for fusion and related technologies. The design of KSTAR requires capacities of long pulse operations and profile control of plasma, and the international collaboraty operations with multimedia technologies. The control and data system of KSTAR functions to supervise the KSTAR tokamak system operations, to control the plasma discharges, and to provide database systems with intelligent interfaces and high speed network. The design features are to adopt conventional 3-layer hierarchy structure such as UNIX or Windows based high level computers in the MMI layer, Tornado based realtime CPUs in the data acquisition layer, and individual devices equipped with standard communication protocols. EPICS will be widely used to incorporate the system integrity. In this paper, the strategy and structure of the KSTAR control system design will be presented as well as the construction schedule to complete this system successfully.