TWO-LEVEL CHANNEL MODEL IN THREE-LEVEL CONTROL SYSTEM

S. E. Karnaev, D. Bolkhovityanov, P. B. Cheblakov, Y. I. Eidelman, A. V. Makeev, BINP SB RAS, Novosibirsk

Abstract

The modern classical architecture of a control system includes three levels: client application level, server level for synchronization of data exchanges and hardware level, which includes hardware drivers. There are two different types of data exchange in the three-level control: between client and server levels and between server and hardware levels. The concept of "channel" maintains the both types of data exchange. The channel implementation connects a physical characteristic of a controlled facility (in the client level) with a corresponding value in an electronic device. The presented paper describes a two-level channel model, which includes the difference between the data exchange types. The two-level channel model separates the specific attributes of the data exchange types and provides a flexible interface between a physical characteristic of a facility and an implementation of electronics. The model includes two levels of channels: client channels connected with facility physical characteristics and hardware channels connected with electronics. A description of channel types, relations between two levels and an exchange protocol project are presented in this paper.

CONTRIBUTION NOT RECEIVED

Data and Information management