Hard Real-time CORBA (HRTC) for process control systems

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Abstract
Control systems for process plants are complex applications running in several interacting computers with varying degrees of integration. The construction, deployment and maintenance of the software system is a difficult problem and distributed object oriented technology offers a good way to deal with it. The open standard CORBA provides flexible middleware capable of integrating complex applications in heterogeneous environments. Even with recent advances in the real-time specification for CORBA, it is only suitable for soft real-time applications and do not deal with the tight requirements of closed control loops. In this paper, a process control testbed is used to unveil the hurdles toward the goal of CORBA control systems. The benefits of such technology are discussed.

Keywords: Networked control, Hard Real-Time, CORBA, Process Control, Distributed Object Computing

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