

On Control of Asynchronous Sequential Machines with Switching Capability

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Abstract : Corrective control enables us to change the stable state behavior of an asynchronous sequential machine without modifying inner logic of the machine. This paper addresses corrective control for asynchronous machines with switching capability. The considered asynchronous machine consists of a set of different submachines and switches to each machine according to a constant switching sequence. The control goal is to design a corrective controller such that the closed-loop system can match the behavior of a reference model. The reachability of the switched asynchronous machine is described by a logic calculation of the reachability of submachines. The design procedure of the proposed corrective controller is outlined, and the applicability of the proposed scheme is validated in an example.

Keywords : switched asynchronous sequential machines, corrective control, state feedback, switching sequences

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