

Abstract: Real-Time Scheduling in Cyber-Physical Systems

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Abstract

Many researches have been performed for real-time scheduling. However, in CPS (cyber-physical system) where computers and physical systems are tightly coupled, we need to consider physical space (location, movement, etc.) as well as cyber space (CPU, network, storage systems, etc.). In this paper, we propose a new scheduling algorithm for CPS, where servicing node needs to move to serviced node for real-time services. Performance measurement by mathematics analysis shows that our LSTP (Least Slack Time First for CPS) algorithm reduces a deadline miss ration up to 49% and 22% comparing to FIFO (First In First Out) and LST (Least Slack Time First), respectively.

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