

Interference Aware Real-Time Flows Scheduling in Cluster Based Wireless Sensor Networks

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Abstract

For the real-time scheduling in wireless sensor networks, Time Division Multiple Access (TDMA) under cluster architecture is usually considered as reasonable as well as scalable approach. Under this architecture, several type of inferences should be taken into account to allocate time slot. For this goal, we have already proposed a new real-time scheduling algorithm. But, it has several assumptions and constraints so their deployment is limited to some specific real scenarios. In this paper, we additionally concern the interference of a node which belongs to two clusters concurrently. Token based scheduling algorithm between two cluster heads is proposed to solve this problem. Token is given to each cluster head consequently so order of slot allocation is achieved automatically. Finally, simulation results are given to prove that more flows are delivered within the deadline than previous work due to avoidance of inter-cluster interference in efficient way.

Keywords: real-time, Interference, TDMA, scheduling, wireless sensor networks

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