

# A Density-Based Algorithm for Redundant Reader Elimination in a RFID Network

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## Abstract

Radio frequency identification (RFID) technology has become more sophisticated in recent years and is being developed rapidly for a variety of applications. The problem of eliminating redundant readers has been reduced to the minimum cover problem and proved to be NP-hard. In this paper, a Density-based Redundant Reader Elimination Algorithm (DRRE) is presented; DRRE eliminates the redundant readers without influencing the number of usable tags. Simulation results demonstrate that the DRRE algorithm performed better in all instances in a variety of environments compared with other algorithms. In a densely deployed RFID network, the DRRE algorithm detected 85% more redundant readers than others.

Keyword :