

Abstract

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Admission Control and Performance Evaluation for Distributed Door Entry Wireless Networks

In this paper, we propose a novel smart access control system for large enterprises. The proposed system performs the following functions: (1) limits access to secured areas in a given physical facility only to authorized users, (2) provides authorized users with configurable and differentiated access rights to the same premises based on their assigned credibility and time-schedules, (3) maintains centralized event logs with date/time stamp for all users that have granted access to the system, and (4) keeps track of all their movement activities across the premises, allowing for further analysis of their behaviour during working hours. All of these functions are mainly intended to: (1) be carried out automatically and wirelessly with neither human intervention nor slowing down the organization's workflow, (2) avoid installation cost overhead, (3) minimize the running cost, (4) simplify system repairs and shorten its downtime, and (5) allow for future upgrades with almost little no hardware changes along with slight firmware code modifications. The proposed system is implemented as a prototype model that presents both the hardware and the firmware aspects of the design. The built prototype shows success of the proposed system and hence it is promising for physical implementation in real systems at larger scales.