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RFID Antenna Coverage Optimization

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DOI: <https://doi.org/10.15368/theses.2008.5>

Available at: <http://digitalcommons.calpoly.edu/theses/17>

Date of Award

5-2008

Degree Name

MS in Industrial Engineering

Department

Industrial and Manufacturing Engineering

Advisor

Tali Freed

Abstract

This research focuses on the problem of determining the location of RFID antennas required to read RFID tags from all items in a facility, such that the number of antennas is minimized. We formulate the problem as a Set Covering optimization problem. We develop a heuristic algorithm for this NP-Complete problem. We also develop a computerized system, RFIDMIN, which enables for the automated calculation of the minimum number and location of RFID antennas, given the size of the facility and

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antenna specifications. RFIDMIN can be used by companies to implement an effective RFID system at lowest hardware costs.

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