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Minimizing Police Patrol Response Times using Stochastic Simulation

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Abstract: Rapid police patrols response times in an emergency response system is a robust parameter to deter crime and detain law transgressors. Our research evaluates performance of a public safety Emergency Response System (ERS) in a large city in Mexico in terms of police patrol response times and provides alternate operating strategies to minimize this parameter based on an optimum allocation of police patrols to police districts. This research incorporates only half of the 7th police district to previously published results of six districts, given that this particular district is composed of eight police quadrants, and a regular district only contains four adjacent quadrants. Considering the desired minimum public safety ERS performance levels, alternative scenarios of the model were developed to evaluate optimized allocation of police patrols in each police quadrant to meet an international reference response time. Results identified viable configuration of additional police patrols to reach the ideal performance.

Keywords: Emergency Response Systems, Police Patrols Allocation, Response Time