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**USING RELIABILITY MODELS TO IMPROVE SECURITY
SYSTEMS' PERFORMANCE AT MINIMUM COST**

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Abstract

Adopting reliability as one of the five dimensions of service quality is very important in both manufacturing and service industries. This research evaluates the reliability of a physical security system and provides ways to improve the system reliability. The target is to improve the system reliability at minimum cost. The security system consists of nine different processes (subsystems). Each subsystem performs a predefined function. The developed reliability model represents the entire system. The research provides possible ways to improve the system reliability by changing the system structure without the need to increase the system cost. In addition, there are detailed calculations that account for the security system reliability, as well as, some analyses of the results.

Keywords: Reliability, optimization, transportation network, security system, Service Quality