

Optimizing Aviation Security Architectures using the SAFE Model

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(ABSTRACT)

The Federal Aviation Administration (FAA) wishes to minimize the overall operational costs of their aviation security detection systems. These systems consist of a collection of security devices. The objective of this research is to develop an algorithm to design the optimal system of devices. The Secure Air Flight Effectiveness (SAFE) Model accomplishes this objective by using the probability of detection and the probability of giving a false alarm for each individual device. A Generalized Hill Climbing (GHC) algorithm was implemented to identify the system with the minimum operational cost. Suggestions for future research directions are also included.