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Keeping aviation security costs down in regional airports with a risk based approach

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Summary

Security related Costs in Air Transportation have increased due to the intensification of terrorist activities. The economic viability of an airport is limited by its fixed operating costs (such as infrastructure maintenance, security, and communications), part of which are imposed by Legal Framework or Regulation. Therefore, Small and Medium Sized Airports (SMSA) face additional challenges.

The current Security Framework imposes general rules without considering the characteristics of SMSA, so there is a need for these airports to reduce its costs base keeping the reliability of its Security Levels.

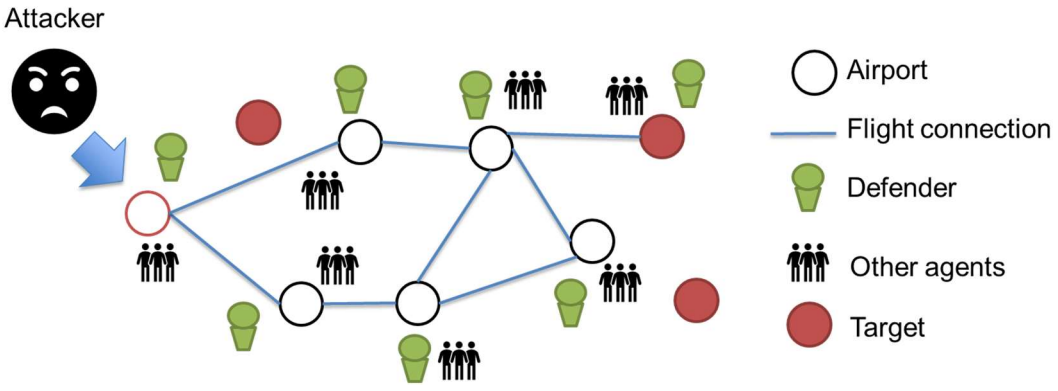
This investigation will study a new approach to Security that explores the particularities of Small and Medium Sized Airports (SMSA), such as, the reduced traffic, smaller aircrafts, reduced number of support services, smaller infrastructures or even the geographic and economic context of the region, influencing the risk undertaken by these, and considering the produced risk not only by a single airport, but by a isolated network of SMSA connected to larger airports and, therefore, to a larger network. We will hence focus on the Tactical/Strategical level of Aviation Security, while considering some operational details.

The objective is to develop a risk and cost-efficiency analysis method to be used in the context of airport security in SMSA. The methodology will be able to identify and assess the compensatory measures (processes, procedures, equipment, etc.) more suitable to the particularities of a SMSA and taking advantage of these, while satisfying the current legal framework, or proposing alterations to it, while guaranteeing an acceptable security risk. These measures will be taken to reach a reduction in the airport costs, which, in other turn, will help turn air transportation in smaller airports "cheaper".

An Agent-Based Simulation Model will be used, as it can incorporate different theories to cope with the current aviation security issues, such as Game Theory, Risk Management, Percolation Theory and Cost Efficiency Analysis. With this, the goal will be to build a simulation model in which scenarios can be run to compare its resulting outputs. Hence, the resulting risk of the current and of the proposed airport network security will be calculated, while analyzing its costs against the benefits and the efficiency of different scenarios.

Keywords

Security, small and medium airport, risk assessment, air transportation.



Depiction of the simulation model.