

# **An Intelligent System to Predict Risk and Costs of Cargo Thefts in Road Transport**

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## **Abstract**

The article looks at the simulations of the possibility of theft risk occurrences with taking into account different types of cargo, its price and a carriage phase. The risk analysis was conducted by using original algorithms developed on the basis of artificial neural networks that take into account, among others, the probability of the cargo theft risk in a particular stage of the order for different types of cargo. The authors specify the forecasted loss values that refer to the type of stolen cargo, including penalties depending on the stage of the carriage. The research and the method described in this article enable the engineers to create a tool/program that facilitates the process of making decisions about additional cargo insurance or the use of monitoring systems for the location and parameters of the cargo. The method can also be used by the insurance companies to determine rates for cargo insurance.

**Keywords:** road transport, cargo parameters monitoring, risk identification, simulation of theft risk, transport risk and costs

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