

Ph.D. dissertation Lt. M. Sc. Engineer Joanna SZKUTNIK-ROGOŹ

"Computer-aided modeling and optimization of strategies for selected problems, including reliability issues, in transport systems"

### **Abstract**

In this doctoral thesis a group of models and methods in the field of optimization of strategies supporting decision-making processes in the area of transport, taking into account the reliability of technical objects were presented. The description of the obtained results that make up the dissertation was divided into five chapters. The literature in the field of the considered issues concerning the modeling and optimization of computer-aided decision making strategies in transport systems was reviewed in the first chapter. In the second chapter, the conclusions resulting from the literature review, which allowed for the formulation of the purpose, thesis and the scope of this doctoral dissertation were presented. The models, methods and research techniques used, in the third chapter were described. In the fourth chapter, concerning mathematical modeling and optimization of strategies in transport systems, the original results of research carried out by the author of this dissertation were presented. The obtained results confirmed that the developed methodology enables the optimization of selected fragments of the decision-making process in transport systems. This dissertation is a summary of a series of scientific publications and is a synthetic description of the research carried out and the results obtained.