



STATEMENT

by Assoc. Prof. Dr. Eng. Prof. Anton Yankov Antonov
on the dissertation work
of Eng. Mariyan Iliev Rakhnev
on the topic:

*"Network-Centric Approach in Modeling and Optimization of
Contemporary Transport Technologies in Logistics"*

for the acquisition of the educational and scientific degree "Doctor"
in the field of higher education 5. Technical Sciences
Professional field 5.13. "General Engineering"
Doctoral Programme "Engineering Logistics"

1. General characteristics of the presented dissertation work

The present work is developed in 126 pages, it is composed of an introduction, three chapters with conclusions at the end of each chapter, a conclusion, contributions, and a list of 102 references (64 in Cyrillic and 38 in Latin) and 34 electronic addresses. The thesis includes 34 figures and 11 tables.

The submitted materials meet the minimum national requirements under Article 26, paragraphs 2 and 3 and Article 26, paragraph 5 of the Law on the Development of Academic Staff in the Republic of Bulgaria. It follows from the

foregoing that the conditions under Article 24, paragraphs 3 and 4, of the Academic Staff Regulations have been met. 1 of the Academic Staff Development Act in the Republic of Bulgaria.

2. Relevance of the problem

The dissertation is a scientific study in which a systematic analysis was made based on existing practices and summarizes research experience in the field of modern transport technologies in logistics, applying the integral approach with consideration of the value chain as the main integral characteristic of the material flow.

3. Contributions

Scientific contributions:

1. An analysis and summary presentation of the scientific and practical framework for the state of the network for combined transport in the Republic of Bulgaria, as a segment for the functioning of the transport logistics system for combined transport, has been made.

2. A systematic approach is proposed in the management of the combined transport system, as well as models and methods for designing and managing a logistic transport system in order to improve the economic efficiency of this type of transport.

Scientific and applied contributions:

1. The integral approach was applied in the optimization of the structure of the logistics supply chains in a transport logistics system, by using mathematical modeling and optimization. The integral paradigm is applicable only with the consideration of the value chain, as the main complex (integral) characteristic of the material flow.

2. Real application of graph theory and linear programming in the optimization of elements and structure of logistics chains.

4. Publications on the dissertation

The PhD student Eng. Mariyan Iliev Rakhnev is the author of three publications on the topic of the dissertation, which were presented at the scientific conference "MATTECH 2020" at Konstantin Preslavsky University of Shumen, in the Yearbook of Shumen University Konstantin Preslavsky University of Shumen, 2020 and in the journal SocioBrains, issue 68, April 2020 (electronic edition).

5. Author abstract

The abstract fully corresponds to the content of the defended dissertation and from it one can get an unambiguous idea of the research done.

6. Criticisms, recommendations and questions

The PhD student presents a dissertation that clearly shows good theoretical background and proven potential for further research. I would recommend the PhD student to develop his research activities in the field of analysis and evaluation of factors and processes in transport systems optimization.

Conclusion.

The candidate has submitted a scientific production that is characterized by its orientation towards solving real problems in the field of the professional field of the announced competition. The submitted works are of a high theoretical level and meet the requirements of the regulatory documents. I suggest the scientific jury to decide on the Eng. Mariyan Iliev Rakhnev to be awarded the educational and scientific degree "Doctor" in the field of higher education 5. "Technical sciences" Professional field. "General Engineering" Doctoral Programme "Engineering Logistics".

06/07/2023, Shumen

Member of the Scientific

Assoc. Prof. Eng. Anton Antonov , PhD

