

## **STATEMENT**

**From Prof. DSc. Eng. Elena Dikova Shoikova, Department of Computer Science,  
UNIBIT, scientific specialty 02.20.01 "Theory of electronic circuits "**

**for obtaining the scientific degree "Doctor" in the field of higher education 9. Security  
and defense, professional field 9.1. National Security**

**with candidate Veselin Monev Monev.**

### **1. Grounds for the statement**

By Order of the Rector of NBU № 3-PK-127, I have been appointed as a member of the scientific jury for the defense of the doctoral dissertation of Veselin Monev Monev, PhD student in self-study, in the Area of higher education: 9. Security and Defence, Professional field: 9.1. National Security in the scientific specialty "Security Strategies and Policies" for the award of educational and scientific degree "Doctor". Topic of the dissertation: "Increasing the applicability of blockchain technologies in the context of information security." At the first meeting of the scientific jury on 16.04.2021 I was appointed to give a statement.

### **2. Significance of the researched problem in scientific and scientific-applied relation.**

The topicality and importance of the candidate's research and development in the field of convergence of information security and blockchain technologies is indisputable.

Blockchain is a relatively new technology, with disruptive potential in relation to traditional approaches. Many of the existing solutions are characterized by a low degree of maturity, and organizations and individuals who develop blockchain-based initiatives will face the challenges of digital transformation.

The candidate's achievements and the approbation of his research and development in front of national and international professional audiences, which prove the importance and usefulness of the contributions in the work for science and practice, are expected to be used by security and management professionals interested in the most important aspects of information security in blockchain technologies.

### **3. Justification of the goals and tasks in the dissertation.**

The author of the dissertation has clearly and specifically defined the purpose and objectives of the dissertation in the context of the growing need in modern organizations for knowledge and a deeper understanding of the relationship between specific subfields of information security and blockchain technology.

Considering that the object of research in the dissertation are blockchain technologies, and the subject is to increase the applicability of these technologies in the context of information security, the author correctly focuses his attention on the implementation of three main tasks, namely:

- Identification of the most important aspects of information security related to blockchain technologies.

- Establishing the importance of these aspects for several categories of organizations and individuals.
- Proposing strategies with relevance in information security to increase the applicability of blockchain technologies.

In response, after building the conceptual framework and identifying the most important aspects of information security in blockchain solutions, the author proposes a framework for management strategies and approaches with the integration of adequate security mechanisms in organizations.

#### **4. Correspondence between the chosen research methodology and the set goal and tasks of the dissertation.**

The present work has an exploratory nature and analytical character.

The author has correctly chosen to carry out research through a qualitative methodology in the implementation of the defined goals and objectives in the dissertation.

This has allowed him to conceptualize the diverse aspects of information security in blockchain technologies in the context of the challenges of digital transformation, which in turn is the basis for the development of the proposed management strategies and tasks.

The review and analysis of a large number of modern sources - 148 (academic articles, industry reports, books, websites, etc.), most of which were published in the period from 2018 to 2020, show that the doctoral student has carefully studied the current information and has acquired in-depth knowledge in the field of dissertation topics.

#### **5. Scientific and scientific-applied contributions of the dissertation.**

I accept the contributions stated in the dissertation, which have a scientific-methodical and scientific-applied character.

More specifically, the contributions are as follows:

- **Establishment of a theoretical framework** related to the object and subject of the research - blockchain technologies and information security. This is achieved through systematization, descriptions and explanations of various definitions and concepts, including blockchain platforms; blockchain types; basic concepts, components and characteristics of a blockchain; participants; applied scenarios; information security objectives and controls.
- **Research and systematization of relevant aspects of information security** that are directly related to blockchain technologies. These include the necessary software development skills; security in architecture and development through the main goals of information security: confidentiality, integrity, accessibility, responsibility, auditability and privacy, as well as additional properties and goals, such as safety, maintainability, irrefutability, reliability and authenticity; cryptographic methods, vulnerabilities and risks.
- **A total of 23 categories of information security aspects** have been identified that are key to understanding blockchain technologies, such as an algorithm for unanimity, resilience to censorship, origin and transparency..

- **A methodology with 621 data points is proposed** and a comparative analysis of the 23 aspects from the perspective of the different categories of subjects is performed (developing, maintaining, implementing, regulating, consulting and auditing, researching, using (organization and individual)). The analysis establishes the different levels of competence and determines the degree of importance of information security for these categories of subjects..
- **19 general strategies have been proposed** to increase the applicability of blockchain technologies in the context of information security in support of security and management professionals. Some of them are specific to blockchain, while others are largely applicable to other technologies.

## **6. Evaluation of the publications on the dissertation.**

The doctoral student Vesselin Monev participates in the competition as an independent author with five publications, of which 3 publications in English presented at the international conference in Bulgaria - InfoTech-2020, indexed in Scopus and 2 publications in Bulgarian presented at the international scientific conference " Wide Security "in Bulgaria.

According to item 2 of the decisions of the scientific jury in the minutes of the first meeting on 16.04.2021, the candidate has 160 points according to the criteria of NBU for assessment of the minimum requirements for educational and scientific degree "doctor", with 80 points required, which gives grounds to accept compliance.

## **7. Citation from other authors, reviews in the scientific press, etc.**

No citation data are given.

## **8. Opinions, recommendations and notes.**

The dissertation is presented in two versions: original version in English in a volume of 144 pages and version in Bulgarian (translation) in a volume of 166 pages in a form corresponding to the specific requirements of the NBU department.

It is necessary to emphasize the author's ability for in-depth review, summary and systematization of current information on the topic of the dissertation, the application of a systematic approach and methods for comparative analysis in research.

The content is very well structured, clear and logical professional language is used.

There are some unnecessary repetitions in the text, which increases the volume. Also, the Bulgarian version of the dissertation would benefit if the terms result or contribution were used instead of the term "discovery".

Taking into account the merits of the presented dissertation I would recommend the author to prepare and publish a textbook on the topic.

## **9. Conclusion.**

The dissertation contains original scientific-methodical and scientific-applied results and shows that the candidate has in-depth theoretical knowledge and professional skills, as well as abilities for independent research, proven by three certificates in information security and five

independent publications. The dissertation has achieved the set goals and shows that the doctoral student Veselin Monev is a young scientist.

The study has the necessary qualities and meets the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Ordinance on the Development of Academic Staff at NBU for obtaining educational and scientific degrees "Doctor."

In this regard, I give my POSITIVE EVALUATION and recommend to the esteemed scientific jury to award Veselin Monev Monev the educational and scientific degree "DOCTOR" in the professional field 9.1. "National Security", in the scientific specialty "Security Strategies and Policies".

07.05.2021

Sofia

Signature:



(Prof. DSc Eng Elena Shoikova)