

## **REVIEW**

By

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Field of higher education: 9. Security and Defense. Professional line: 9.1. National Security

Of the dissertation submitted by Prof. Nikolay Stefanov Radulov, PhD in order to acquire the scientific degree of “doctor of science” in Security Strategies and Policies program in field of higher education: 9. Security and Defense, professional line: 9.1. National Security

**Reason for preparation of the review:** Order No. 3-PK-165 of 20 March 2020 of the Rector of the New Bulgarian University, Decision No. 07/17 March 2020 of the Academic Senate of the New Bulgarian University and Minutes from the first meeting of the scientific jury regarding the acquisition of the scientific degree of “doctor of science” in professional line: 9.1. National Security with Prof. Nikolay Radulov, PhD as candidate, of 24 March 2020.

**Subject:** Technological and Digital Transformations in Security. Security  
4.0

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### **Significance of the problem being researched in scientific and applied scientific terms**

The candidate Prof. Nikolay Radulov, PhD submits for discussion an important and topical subject that is being avoided by the academic staff in the field of national security due to its complexity and secrecy. It is composed in five parts with an integrative link, with a total volume of 379 pages. The problem's importance is determined first and foremost by the need of rapid implementation of the new technologies being the fruit of the Fourth Industrial Revolution into the system of national security. It is a fact that Bulgaria's lagging behind in this respect, there are no complex developments on this topic, and posing that problem is a factor for acceleration of the changes. Second, there also arise questions about the use of high technologies and digitization not only by the security authorities but also by the cross-border criminal networks and individual offenders who make use of the lagging. Third, the candidate proposes some solutions regarding the restructuring of the security system, the new organizational culture and limits of personal space of citizens and organizations.

### **Precisely formulated objectives and tasks of the dissertation**

The subject of the doctoral dissertation is clearly worded, it is comprehensibly decomposed into the individual sections, the introduction sets up premises for a purposeful scientific quest and for highlighting the candidate's personal achievements in this immense matter. I am impressed with the Industry

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4.0-related problems being slipped towards the security system and high tech. In terms of substance the topic is situated within the field stated by the author.

The doctoral thesis of Prof. Nikolay Radulov, PhD is from the period 1986-1992 at G. S. Rakovsky Academy of the Ministry of Defense on the topic: “Management Culture.” The distance in time, topic and set of problems is evident.

**Level of knowledge about the state of the problem and compliance of the literature cited. Accuracy of citing of a representative number of authors**

The attached documents show that the candidate has obtained and refined his education in some prestigious educational institutions specialized in the field of security and technologies. His professional experience proves his commitment to the work submitted in order that he can acquire the educational and scientific degree of “doctor of science.” His management experience enables him to have a visionary look into the future of the security system and public order. The same is complemented by the massive use of theoretical and applied developments (a total of 107 of which 2 in Bulgarian, 1 in Russian, and 104 in English). There are 213 accurate footnotes in the analysis. My conclusion is that the candidate is competent, abides by the scientific ethics, and submits independent solutions regarding the technological and digital transformations in security which can be summarized as Security 4.0.

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**Existence of a substantiated and developed theoretical model, methodology and methods of study and existence of candidate's own contribution when collecting and analyzing the empirical data.**

There is no doubt that the submitted work is scientific (theoretical and applied), that it purposefully integrates the field of security and technologies and that it proposes personal innovative solutions. The entire matter is dominated by one fundamental idea developed by way of precisely aimed tasks which are carried into and developed in substance in the five main parts of the work. It is apparent that the author has identified the key problems, interpreted the existing basis (works, empirical data, effective models, his own and others' expert notions, comparison and adaptation of the best practices and perspectives being developed) by employing adequate scientific methods. All this has resulted in a unique product of authorship that is useful, first, for education of the trainees and, second, for a professional discussion regarding the construction of a new security model dictated by the principles of Industry 4.0.

### **Characteristics of Dissertation's Scientific and Applied Scientific Contributions**

In principle, I agree with the contributions stated by the author after item 7. Conclusion of the dissertation. In this review I am presenting my personal views on the basis of the knowledge and experience I have.

The work submitted is of fundamental scale, it bring together into one scientific system several important fields: industrial revolution, security system,

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new characteristics of crime and public interest. There exists a full picture of relations between the new technologies and the desire to have them used or rejected by the institutions, the business and the public. All this reverses the directions in the theory of intelligence and counter-intelligence: some of them have been outlined in detail by the author while others have been presented as ideas.

The doctoral dissertation has accomplished a major aim: the requirements of Industry 4.0. have been transposed onto Security 4.0. The achievement is on the basis of the results of the analyses in Sections Two and Three. The historic method used well illustrates the objective course of production forces and the securities systems that follow it. I see a pattern in the technological lag of security and public order at each stage of development and I admire the extreme tone with respect to the management in this field (page 11 of the Author's Summary), which reacts evolutionarily against the background of innovations. The candidate has outlined the managerial tasks: new laws, investments in material resources and development of human potential.

One finds the clear applied orientation of the analysis in the guidelines given on the use of technologies, they have been stated by type, their advantages have been presented as the issues have not been (especially Part Five of the study). The most complex question has been identified: an objective assessment of their contemporary condition and the prospects for implementation in the security system. This new set of tools can be mastered in parallel with a structural optimization of the security services, redirection of bureaucratic staff and raising well-prepared leaders (especially 5.1).

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An important aspect of the work is the vision of high-tech security. I accept the author's treatment of starting from the particular individual and "... proceeding to the effect on civil and national security in a gradually widening circle... from security of one's own home, neighborhood – to the city, region, country, international community." However, my experience shows that the state has unifying and decisive importance for the performance of that task. The problem is that at this stage it goes after, and does not anticipate, the processes, and we have seen enough instances of inefficient restructuring. In this option I think that Prof. Nikolay Radulov, PhD has deduced some telling patterns of solutions after every part of the study supported by an analytical overview of numerous foreign and local best practices.

The candidate provides solutions of numerous conflict problems of modernization and, first and foremost, shows how the technological-digital security system will be humane and ethical with respect to the secrets of the citizens and their organizations. The threat of huge databases becoming a destructive tool of adversary subjects and specialists acting in bad faith depress the society and science must find an approach to guarantee the data.

I highly appreciate the inter-disciplinary nature of the topic being examined. The author points out that high-tech security is achieved by resolution, much science, resources and organizational culture. This is hard to achieve in the field of security (which is understandable due to the hierarchical and budgetary standards) but the candidate knows the system and proposes a balanced methodology. It opposes the conduct of the governance authorities and the objective course of life, the possibilities of crime (especially Section Six) and the law enforcement authorities, the categories of crime-counteraction, etc. Ultimately, the induction

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has collected a basic product that might be imperfect but nowhere will one find a ready solution put on the table for professional and scientific discussion.

In conclusion I maintain that the dissertation is a synthesis of achievements and applicable practices. The author gives his own extended view on the tasks defined in the introduction regarding the introduction of a high-tech set of tools into the system of security and public order,. The development is a right path towards creating an ecosystem of security based on selected and scientifically processed matter. What has been said demonstrates that the candidate has in-depth theoretical knowledge in the speciality and solves problems that are an original contribution to science.

### **Assessment of the Author's summary's compliance with the basics and contributions of the dissertation**

The volume of the author's summary of the dissertation submitted is 27 pages. It has been developed in compliance with the academic requirements. The same reflects the general outlines, composition and achievements of the dissertation.

### **Dissertation's impacts upon the external environment**

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The candidate has published some aspects of his dissertation in numerous prestigious scientific editions. He participates in television programs with his own scientific positions and management concepts. The topic is present in dozens of popular science articles in Bulgarian printed and electronic publications. All this socializes the problem, challenges the professional community and raises the authority of science. A synergic effect has been attained in the understanding of the new types of crime and the technological countering thereof.

### **Personal qualities of the author**

I have known the candidate since 1997-1999 when he held the office of Secretary (Deputy-Minister) of the Ministry of Interior. Subsequently, I have also had contacts with him on scientific topics in his capacity of Head of Department at the New Bulgarian University. My personal opinion (the Curriculum Vitae is emphatic as well) is that his achievements are the outcome of solid education, linguistic culture and impressive experience in many fields of governance.

### **Opinions, recommendations and remarks**

The work submitted is a complete, well-balanced system of concepts, integration junctures between narrative's elements and points of view. In this sense it is not purposeful to reconstruct individual treatments or solutions. I take the liberty of joining the debate provoked by the COVID-19 pandemic which has shown the actual lagging of institutions in the field of technology and also the unwillingness of the business and the people to be controlled. The reason is that our system of values lags behind the Fourth Revolution. It has also turned out that

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the hi-tech tools are necessary to the security services but also to the healthcare system, the local authorities, etc. At the same time the resources of the army have remained outside the problem. Which authority can envelope the development and management of those systems? Which treatments from the dissertation would Prof. Nikolay Radulov, PhD change today?

### **Conclusion**

All of the aforesaid shows that the dissertation meets the requirements and makes contributions to the national and European science on a subject that is yet to become topical. Taking the aforesaid into consideration I maintain with conviction my affirmative position with respect to the dissertation “Technological and Digital Transformations in Security. Security 4.0” submitted by Prof. Nikolay Radulov, PhD and recommend that the honorable scientific jury confer to the candidate the scientific degree of “doctor of science” in the field of higher education: 9. Security and Defense, professional line: 9.1. National Security.

03 April 2020  
City of Sofia

Review prepared by:  
Prof. Vladko Ivanov