



**МИНИСТЕРСТВО НА ОТБРАНАТА**  
**ИНСТИТУТ ПО ОТБРАНА „ПРОФЕСОР ЦВЕТАН ЛАЗАРОВ”**  
София 1592, бул. „Проф. Цветан Лазаров” № 2, факс: 02/92 21 808, <http://di.mod.bg>

**REVIEW**

by **Professor, D.Sc. Veselin Tselkov**

UNIVERSITY OF LIBRARY STUDIES AND INFORMATION  
TECHNOLOGIES

on the competition for holding the academic position

**„ASSOCIATE PROFESSOR“**

**Field of higher education 5. "Technical Sciences", Professional field 5.2.  
"Electrical Engineering, Electronics and Automation", Scientific specialty  
"Automated Systems for Information Processing and Control"**

Announced by the Ministry of Defence  
State Gazette, issue 109 of 21.12.2021

With candidate

**Major Dr. Eng. ANGEL DIMITROV GENCHEV**

## **I. PAPERS SUBMITTED BY THE CANDIDATE WHICH ARE ACCEPTED FOR EVALUATION BY THE REVIEWER**

The list of all works of Dr. Angel Genchev includes a total of 49 titles, as follows:

- Dissertation, abstract and two publications for obtaining a scientific and educational degree Doctor;
- Monograph and publication - 22;
- Scientific developments and research - 23.

In the announced competition, Major Dr. Angel Genchev participated with twenty scientific papers proposed for review. All papers proposed for review are outside the papers submitted for the award of the scientific and educational degree of Doctor. The reviewer accepts for review all proposed monographs, publications, works and teaching aids, as corresponding to the topic of the competition. The materials proposed for review can be divided into the following groups as follows:

- Monographs – 3 (Annex 2, section II.2);
- Publications – 36 (Annex 2, section II.3), classified by the reviewer as follows:
  - Articles in scientific periodicals – 5 (one publication is in a periodical with an impact factor and one publication is in a journal with SJR);
  - Papers in collections of papers from international conferences – 11 ;
  - Papers in proceedings of national conferences (some of them with international participation) – 3;

- ***Research activity***

The reviewer also notes:

- Research works – 15 practical developments (software programs, information subsystems, системи, systems, working computer prototypes, etc.), most of which have been implemented for the needs of defense, in which practically a large part of the published theoretical research has been realized;
- The participation of the candidate Major Dr. Angel Genchev in research, descriptions, assignments, programs, methodologies, etc., related to the construction of corporate information systems, data centers, communication and information environments for collaboration, operational centers and etc– 8;
- Research projects – a total of 22, of which:
  - 5 international projects;
  - 2 national research projects;
  - 15 projects with departmental scope.

Papers submitted for review are published in the following languages:

- Bulgarian – 15;
- English - 5.

### ***Authorship***

- The authorship of the monograph submitted for review (1 copy) is with two authors;
- The authorship of the submitted for review publications (19 copies) is as follows:
  - 7 are independent works of the candidate;
  - 9 are with two authors;
  - 3 are more than two authors.

For all joint publications, the reviewer did not find the relevant separation protocols attached and accepted equal, proportional participation.

### ***Citation***

There are thirteen citations in total, citing six scientific papers, distributed as follows (Appendix 1.2):

- Citation in scientific journals, referenced and indexed in world-famous databases with scientific information - 3 pcs .;
- Citation in collective volumes with scientific review - 10 pcs.

## **II. GENERAL CHARACTERISTICS OF THE RESEARCH AND SCIENTIFIC-APPLIED ACTIVITY OF THE CANDIDATE**

Major Dr. Angel Genchev graduated from Higher Military School, Shumen, specialty - "Computer Engineering and Automated Control of Troops", qualification "engineer - master". In 2006 he defended his dissertation on scientific specialty 02.07.20 "Communication Networks and Systems", topic of the dissertation: "Adaptive management of frequency resources in mobile cellular radio networks for military purposes" and received educational and scientific degree "Doctor".

He has many specializations, qualifications and certificates. He has been working in the military, scientific and military-scientific fields since 1998, which includes units on combat duty and specialized units for the construction and development of information and communication systems and technologies for the needs of defence.

He currently works on the position of "senior expert" at "Professor Tsvetan Lazarov" Defence Institute.

The candidate's research is in the field of automated control systems, information processing methods, information security, modern information systems and technologies, cloud architectures and virtualization, modern data centers, sensors and sensor technologies, modeling with generalized networks, information systems, etc. Independently or in cooperation, he participates in the development of several information systems in the field of defence, which are

implemented in operation. Participates in international and national research projects under research programs related to cyber security, artificial intelligence, European research networks and others.

The candidate's works can be referred to professional field 5.2 "**Electrical Engineering, Electronics and Automation**", scientific specialty **Automated systems for information processing and control** and can be classified in the following areas:

- Research related to information and communication systems and technologies, cyber security, data centers and cloud environments;
- Research related to integrated collaborative information environments and computer systems to support crisis management decisions;
- Automated control systems, automated information systems and application programs for the needs of defence.

### **III. EVALUATION OF THE CANDIDATE'S SPECIAL TRAINING AND ACTIVITY**

Maj. Dr. Angel Genchev is an established specialist and respected researcher, both in research and development and in the implementation and operation of Automated Control Systems of the Ministry of Defence and the Bulgarian Army. He currently holds the position of senior expert at "Professor Tsvetan Lazarov" Defence Institute.

It is certified as "Administering Microsoft Share Point Portal Server 2003", "Designing IT Platform Collaborative Applications with Microsoft Share Point 2003" (Microsoft certified Partner for Learning Solutions) and others.

He has a command of English with a certificate of English proficiency STANAG 6001 № 0014989/26.11.2010 г, level 3-2+-3-3.

#### **IV. EVALUATION OF THE MAIN SCIENTIFIC RESULTS AND CONTRIBUTIONS**

The candidate's contributions can be related to the scientific specialty **Automated systems for information processing and control**, in the areas shown above and can be summarized (according to the reviewer) in the areas:

- Methods, approaches, models and research to accelerate the processing of information in automated control systems – risk management, cyber security and cyber incidents;
- Information and communication systems and technologies, computer systems to support decision-making for crisis management - architectural approach, artificial intelligence, acquisition and analysis of sensory data;
- Automated control systems, automated information systems for the needs of the Bulgarian Army - open source products, cloud architectures and services.

The published results can generally be divided into scientific, scientific-applied and applied.

##### **Scientific contributions**

The scientific contributions of the candidate can be reviewed and evaluated in the following areas:

- Enrichment of existing knowledge;
- Application of scientific achievements in practice and realized economic effect.

The reviewer notes the most important of them as follows:

- The views on modern data centers, their architecture, the main types, the

principles of organization of their work, the requirements for them, as well as the peculiarities of building a system of data centers for security and defence are presented;

- The Intelligent Defence Concept proposes an IT infrastructure to support NATO's joint missions and operations;
- An analysis of virtualization systems was performed in order to design and build data centers. Basic criteria for choosing a virtualization software platform are proposed.

### **Scientific and applied contributions**

The scientific and applied contributions are in the field of information and communication systems and technologies, computer systems for decision support and integrated information environments for joint work, the most important of which are:

- Comparative analysis of modern technologies, integrating communication and information means - the so-called unified (generalized) communications and a variant of their use to increase the efficiency of management is considered;
- Solutions for creating information environments for joint work in the management processes for the needs of security and defense. An architectural approach for creating an information environment for collaboration is proposed, based on the application of three types of architectural views - functional (operational), systemic and technical;
- Analysis of the possibilities for using virtualization, the possible directions and perspectives for technological integration of services.

### **Applied contributions**

The applied contributions are in the field of design, development and implementation of operational and tactical tasks, complexes, subsystems and systems, in which a number of innovative approaches and solutions for automated information processing, adopted and implemented in the Bulgarian Army.

The following can be noted:

- Automated information system of BA and its development;
- Project for building a prototype of a highly reliable cloud architecture of a system of data centers with an implemented platform, providing an information environment for collaboration;
- Exploring the possibilities of using different open source office packs for the needs of defense officials.

### **V. SIGNIFICANCE OF CONTRIBUTIONS TO SCIENCE AND PRACTICE**

The significance of the contributions can be assessed by their applicability in the various implemented projects (international and national) in which Maj. Angel Genchev was a participant and coordinator. It is also worth noting the research developments implemented in practice (projects, tasks, complexes and systems).

### **VI. EVALUATION OF THE AUTHOR'S PARTICIPATION IN THE RECEIPT OF CONTRIBUTIONS**

The personal contribution of the candidate in obtaining the results in the papers submitted for review is indisputable. His authorship is without doubt. Careful analysis of the total scientific output of the candidate allows us to conclude that the above scientific contributions are entirely his personal work. I



did not find plagiarism and I accept that the works and contributions in it are the personal work of the candidate.

## **VII. CRITICAL NOTES AND RECOMMENDATIONS**

The reviewer does not find significant scientific errors in the presented works and publications, but allows himself to make several critical remarks and recommendations, mostly aimed at improving future research and publications:

- Greater activity and independence in the formulation and solution of scientific and applied tasks;
- The author's contribution is not clearly shown everywhere:
  - The known scientific results used;
  - Separation protocols or references to authorship;
- To increase the precision in the presentation and formulation of original contributions.

## **VIII. PERSONAL IMPRESSIONS**

I know Dr. Angel Genchev from our joint participation in many scientific forums. I am familiar with and observe his scientific and career development. He has high morals and self-esteem. He has a broad general culture, deep and lasting scientific interests in the field of automated information processing and management systems in defense and security. The personal impressions formed in this way give me the opportunity to evaluate the candidate as a researcher and expert-specialist in the specific scientific field.

## **IX. CONCLUSION**

I express my absolute conviction that Associate Professor Major Dr. Angel Genchev is a highly erudite, educated and correct researcher and lecturer. His general assessment, as well as the specific assessment of scientific and practical

results and contributions give me reason to express my positive opinion and to offer the members of the distinguished jury to vote positively for the academic position "ASSOCIATE PROFESSOR", field of higher education **5. Technical Sciences**, professional field 5.2 **Electrical Engineering, Electronics and Automation**, scientific specialty **Automated systems for information processing and control** of Major Dr. Angel Genchev.

08.04.2022 г.

Sofia

Member of the Jury: /TV/

/Professor, D.Sc. Veselin Tselkov/