STATEMENT REPORT

**on the competition for the academic position of "Associate Professor"
in the scientific field: 4. Natural Sciences, Mathematics and Informatics,
professional field: 4.6. Informatics and Computer Science,
scientific specialty: Informatics,
for the needs of the Institute of Information and Communication Technologies (IICT)
at the Bulgarian Academy of Sciences (BAS),
Competition announced in State Gazette (SG) no. 40 (16/05/2025)**

This statement report has been prepared by Prof. Dr. Boyan Paskalev Bontchev, Department of Software Technologies, Faculty of Mathematics and Informatics (FMI) at Sofia University "St. Kliment Ohridski" (SU), as a member of the scientific jury for the competition according to Order No. 151 / 14.07.2025 of the Director of the Institute of Information and Communication Technologies (IICT) at the Bulgarian Academy of Sciences (BAS) and according to Protocol No. 1 of the meeting of the scientific jury on 17/07/2025.

Only **one candidate** has submitted documents to participate in the announced competition: Senior Assistant Professor Dr. Valentina Todorova Terzieva-Bogoycheva, Intelligent Systems Section, IICT-BAS.

I. GENERAL DESCRIPTION OF THE PROCEDURE AND SUBMITTED DOCUMENTS

1. Details of the procedure and documents

The documents submitted by the candidate in accordance with the competition comply with the requirements of the Act for the Development of the Academic Personnel of Republic of Bulgaria (ADAPRB), the Rules for Implementation of the ADAP of the Republic of Bulgaria (RIADAPRB) and the Rules on the Terms and Requirements for Acquisition of Academic Degrees and Occupation of Academic Positions of IMI-BAS.

To participate in the competition, the candidate, Senior Assistant Professor Dr. Valentina Terzieva-Bogoycheva, has submitted a list of documents, including an application for admission to the competition, a professional CV according to the European model, a copy of the diploma for the educational and scientific degree "Doctor", a certificate of internship in the specialty, a list of scientific publications for participation in the competition (which do not repeat those submitted for obtaining the educational and scientific degree "Doctor"), a list of inventions and other scientifically applied results, a list of citations (in WoS or Scopus, as well as in other international publications), summaries of street publications for participation in the competition in Bulgarian and English, a copy of the scientific publications for participation in the competition, a certificate of fulfillment of the minimum requirements of IICT-BAS, a certificate of original scientific and scientific-applied contributions, as well as a declaration of the absence of plagiarism in scientific works.

33 scientific publications were submitted for participation in the competition, which include: 32 scientific articles in publications, referenced and indexed in world-renowned databases of scientific information (Web of Science and/or Scopus), where:

- 16 of these publications have an SJR rank;
- 16 of these publications are referenced and indexed in Web of Science or Scopus.

Additionally, the candidate also presents one published chapter of a book, referenced and indexed in Scopus.

The submitted list of citations in Scopus or WoS contains 266 citations of 52 publications of the candidate, made for the period 2000-2025. The list of citations in other international publications contains 141 citations of 47 author publications, for the same time period.

The set of documents submitted by the candidate shows that Senior Asst. Prof. Dr. Valentina Terzieva-Bogoycheva meets the requirements of Art. 24 of the Law on Higher Education and Research in the Republic of Bulgaria and Art. 53 of the Law on Higher Education and Research in the Republic of Bulgaria for holding the academic position of "Associate Professor".

2. Short presentation of the applicant

Valentina Terzieva graduated as an electronics and automation engineer with additional pedagogical qualification for engineering disciplines at the Higher Institute of Mechanical and Electrical Engineering (currently Technical University - Sofia) in 1988. In 2022, she obtained the educational and scientific degree "Doctor" at the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences, defending a dissertation in the field of modeling and validation of personalized educational video games.

The candidate has extensive practical experience in numerous projects, where she carries out diverse scientific and research activities. She worked as a research associate at the municipal company "Sofinformatika" (Sofia, Bulgaria) and at the Institute of Information and Communication Technologies - BAS. From 2010 to the present, she has been working at the Institute of Information and Communication Technologies - BAS, where she has successively held the positions of chief assistant, assistant, engineer, and again chief assistant. Over the past two decades, her research activity has focused on modeling, design, development, and validation of applications of modern information and communication technologies in various thematic areas aimed at education. She has excellent communication skills, acquired while working in various teams, including in an intercultural environment. Additionally, her very good organizational and coordination skills, acquired while working in many national and international scientific projects, some of which were led by the writer of these lines, should be taken into account.

Chief Asst. Prof. Dr. Valentina Terzieva-Bogoycheva is the author of more than 120 scientific publications, of which over 60 are indexed in Scopus and/or in Web of Science. According to the world scientometric databases, the candidate's h-index in Scopus is 8, her h-index in Web of Science is 6, and her h-index in https://scholar.google.com/ is 12.

The candidate has participated as a researcher in a total of 12 scientific projects, of which three are international and nine are national. Currently, the candidate is participating in the implementation of 3 projects under the Scientific Research Fund of the Ministry of Education and Science.

3. General characteristics of the applicant's scientific work and achievements

The candidate submits 33 original scientific research papers for participation in the competition, which are selected from a list of a total of 126 scientific publications (including 65 papers since 2004, indexed in Scopus and/or in Web of Science, and another 61 other publications since 2007). The 33 publications submitted do not repeat those submitted in a previous competition for the candidate for the educational and scientific degree "Doctor". From them, as well as from the two other lists of publications submitted, it can be concluded that the candidate works mainly in the field of application of information and communication technologies (ICT) in the field of education.

From the verification of the certificate of compliance with the minimum national requirements under Art. 2b of the Law on the State Educational Service of the Republic of Bulgaria for the scientific field "Natural Sciences, Mathematics and Informatics", professional direction 4.6 Informatics and Computer Sciences, it becomes clear that the points for group of indicators A are 50 (with a minimum of 50), for group B - 148 (with a minimum of 100), for group D - 379 (with a minimum of 260), for group D - 600 (with a minimum of 70) and for group E - 150 (with a minimum of 20). The total number of points for all indicators is **1327** with a minimum total number of points equal to **500**, which exceeds the minimum sum of points **2.654 times**. Hence, the reviewer concludes, in a motivated and specific manner, that:

1. Scientific works meet the minimum national requirements (according to Art. 2b, para 2 and 3 of ADAPRB) and respectively the additional requirements of the Regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions in the Bulgarian Academy of Sciences, in particular for the occupation of the academic position of Associate Professor in the scientific field and the professional direction of the competition;

2. The scientific papers submitted by the applicant do not repeat those of previous procedures for acquiring a scientific title and academic position;

3. There is no proven plagiarism in the scientific papers presented at the competition.

4. Detailed analysis of the scientific and applied achievements of the candidate contained in the materials submitted for participation in the competition

The candidate submits 33 original scientific research papers for participation in the competition, which are selected from a list of a total of 126 scientific publications (including 65 papers since 2004, indexed in Scopus and/or in Web of Science, and another 61 other publications since 2007). The 33 publications submitted do not repeat those submitted in a previous competition for the candidate for the educational and scientific degree "Doctor". From them, as well as from the two other lists of publications submitted, it can be concluded that the candidate works mainly in the field of the application of information and communication technologies (ICT) in the field of education.

For participation in the competition, Senior Asst. Prof. Dr. Valentina Terzieva-Bogoycheva has submitted 33 original scientific research papers from a list of a total of 126 of her scientific publications since 2004. The 33 publications submitted are in specialized scientific journals in the field of the competition and do not repeat those submitted in a previous competition for the candidate to acquire the educational and scientific degree "Doctor". They are dedicated to research on both the application of ICT and electronic learning resources in school education in Bulgaria, and the use of technological tools for the creation and evaluation of various electronic learning resources. Additionally, a large part of the candidate's publications are dedicated to research on the application of ICT in:

- Technological support for the education of students with specific learning difficulties (e.g. dyslexia);
- Modeling, design, use, and validation of educational video games;
- Creation, use, and evaluation of intelligent learning environments.

The scientific publications submitted for participation in the competition convincingly prove substantial and significant scientific and applied scientific contributions of the candidate in the above topics. 16 of these publications are refereed and indexed in Web of Science or Scopus, and 16 of these publications have an SJR rank. The total impact rank (SJR) of the papers submitted for participation in the competition is 1.121 for group B and 1.927 for group D, i.e. a total of **3.048**. All submitted publications are in English.

In 22 of the publications on the list, the candidate is the first co-author, in 8 – the second co-author, and in another 3 – the third co-author. This clearly shows the significant contribution of the candidate to the submitted scientific papers.

There is a proven reflection of the candidate's results in the works of other authors. The total number of citations indexed in WoS or Scopus for the period 2000-2025 is **266**, excluding self-citations and hidden citations. The list of citations in other international publications contains **141** citations to 47 author publications, for the same time period. This explains the relatively high h-index and i10-indexes of the candidate in Google Scholar – 12 and 16, respectively.

5. Characteristics and evaluation of the candidate's project activity

Senior Asst. Prof. Dr. Valentina Terzieva-Bogoycheva has presented a number of testimonies of her intensive work on research projects, which leave no room for doubt about her experience as a long-term researcher. Her research activity includes work on national projects for the development of software tools for planning inventory based on forecast demand values according to a utility function built on historical data and expert assessment, data analysis for the integration of ICT resources in Bulgarian schools, ICT for a single digital market in science, education and security, smart adaptive video games for training, development of the Center of Excellence HERITAGE'BG, modeling and research of intelligent training systems and sensor networks, research of formal models for optimization and personalization of modern technological methods of STEM education, as well as for modeling intelligent tools for adaptive and personalized educational STEM video games.

In addition to the above-mentioned national projects, the candidate has also participated in three international projects related to landslide risk modeling and assessment for disaster prevention and mitigation, development and implementation of a virtual office and a virtual training platform to support the forest industry, and educational initiatives for climate-resilient European architectural heritage.

All of the above gives reason to give a very high assessment of the candidate's project work.

6. Critical notes and recommendations

I have no significant critical remarks on the works submitted for the competition. All publications are of an excellent methodological level and contain very in-depth analyses of the current state in the relevant scientific field, the formulation of the problem, accuracy and completeness of the proposed solutions, and the analysis of the obtained results, and adequate summaries and guidelines for future work. In all submitted publications, the candidate shows a high level of professionalism and excellent literary awareness.

As a recommendation to the candidate, I would like to suggest the idea of publishing more independent articles and that they be in well-indexed scientific journals.

7. Personal impression of the applicant

I have excellent personal impressions of Valentina Terzieva-Bogoycheva from our work on a number of national and international projects, as well as the scientific supervisor of her doctoral studies. We are currently working together within the framework of two national projects funded by the National Science Foundation at the Ministry of Education and Science and the UNITe project ("Universities for Science, Informatics and Technologies in e-Society") under the Operational Program "Science and Education for Smart Growth". I am convinced that the team of IICT-BAS benefits not only from her high professionalism, perseverance, and hard work, but also from her excellent human and collegial qualities proven over time.

8. Conclusion on the application

Having become acquainted with the documents and scientific papers presented in the competition and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, I do **confirm** that the scientific achievements meet the requirements of the Act for the Development of the Academic Personnel of Republic of Bulgaria, the Rules for its Implementation and the corresponding Rules of the Bulgarian Academy of Sciences, and the the Rules on the Terms and Requirements for Acquisition of Academic Degrees and Occupation of Academic Positions of IMI-BAS, for occupation by the candidate of the academic position "Associate Professor" in the scientific field and professional field of the competition. In particular, the applicant meets the minimal national requirements in the professional field, and no plagiarism has been detected in the scientific papers submitted for the competition.

I give a definitely **positive evaluation** to the application.

II. GENERAL CONCLUSION

Based on the above, I strongly **recommend** that the esteemed scientific jury propose to the Scientific Council of IICT-BAS to elect Senior Assistant Professor Dr. Valentina Todorova Terzieva-Bogoycheva to occupy the academic position of "Associate Professor" in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science, scientific specialty "Informatics".

22/08/2025
Sofia

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