

OPINION

by

Dr. Eng. Nedyalko Todorov Katrandzhiev, Professor at UHT-Plovdiv

of a dissertation for awarding the educational and scientific degree "**Doctor**"

in the field of higher education: *5. Technical sciences,*

professional field: *5.3. Communication and computer equipment*

doctoral program: *"Automation of areas of the intangible field*

(medicine, education, science, administrative activities, etc.)".

Author: *Mag. Veselin Zdravkov Mengov*

Topic: *"System for remote access to educational resources in the field of telecommunications and information systems"*.

Supervisor: *Assoc. Prof. Eng. Sotir Sotirov, Ph.D. – Plovdiv University "Paisii Hilendarski"*.

1. General presentation of the procedure and the doctoral student

By order No. PD-21-2152 dated 23.11.2023 of the Rector of Plovdiv University "Paisii Hilendarski" (PU), I have been appointed as a member of the scientific jury to ensure a procedure of a dissertation work defense on the topic "System for remote access to educational resources in the field of telecommunications and information systems" for the acquisition of the educational and scientific degree "doctor" in the field of higher education 5. Technical sciences, professional field 5.3. Communication and computer equipment, doctoral program Automation of areas of the intangible field (medicine, education, science, administrative activities, etc.). The author of the dissertation is M.Sc. Veselin Zdravkov Mengov – full-time doctoral student at the EKIT department of the Faculty of Physics and Technology with the supervisor Prof. Dr. Sotir Sotirov from Plovdiv University "Paisii Hilendarski". According to the procedure mag. Veselin Zdravkov Mengov has submitted the following documents:

- ✓ request to the Rector of the PU to disclose the procedure for the defense of a dissertation work;
- ✓ CV in European format;
- ✓ protocol of preliminary discussion in the department;
- ✓ dissertation work;
- ✓ abstract in Bulgarian and English;
- ✓ list and copies of scientific publications on the topic of the dissertation - 6 pcs.;
- ✓ list of noticed citations;
- ✓ certificate of fulfillment of the minimum national requirements;
- ✓ declaration of originality and authenticity of the attached documents.

All documents meet the requirements and based on this I determine the candidate's eligibility for further evaluation.

2. Relevance of the topic

The possibility of time and place independence has always sounded attractive. The presented dissertation offers such an opportunity to complement the traditional face-to-face training with the possibility of remotely conducting experiments in the field of technical sciences, working with real equipment and real data. The proposed system for remote access to educational resources in the field of telecommunication and information systems would also be extremely useful in cases where it is necessary to switch to a remote form of education due to medical or other reasons. The actuality of the topic is indisputable.

3. Knowledge of the problem

M.Sc. Veselin Zdravkov Mengov, during the development of the dissertation, referred to 99 literary sources. Almost all sources are in Latin. Of these, 38 are articles or documentation from internet sites. The set goal is well formulated, which is based on knowledge of the problem and the need to achieve the goal.

4. Research methodology

Six tasks were set to achieve the goal of the dissertation work. They are well chosen and solving them would lead to the achievement of the goal.

The dissertation presents the methodology for developing the system for remote access to educational resources, describing the software prototype of the system and user profiles. The stages through which the development of the system for remote access to educational resources goes were considered. A methodology for comprehensive assessment of the system for remote access to educational resources was also presented.

5. Characterization and evaluation of the dissertation work and contributions

I assess the dissertation work as useful for the scientific community. Scientific-applied and applied contributions have been realized. The most important of them are:

- An approach for implementing a web-based system for access to educational resources was proposed.
- Architecture of a system for remote access to educational resources was presented.
- The basic requirements for evaluating systems for remote access to learning resources were summarized.
- The software of the system for access to educational resources had been implemented.
- The software and hardware for the remote laboratories, integrated into the system for access to educational resources, had been implemented.
- A method for remote access to laboratory equipment through a web interface had been implemented.

6. Assessment of the publications and personal contribution of the PhD student

The publications presented on the dissertation cover the main highlights of the subject. The doctoral student, M.Sc. Veselin Zdravkov Mengov, has one independent publication and is first author in five other scientific publications. Five of the publications are indexed in Web of Science and one is indexed in Scopus. The personal contribution of the PhD student is undoubted considering that he is the first author in five publications and is an independent author of one article.

7. Dissertation abstract

The abstract was presented in Bulgarian and English and reflected the most important moments of the dissertation work.

8. Recommendations for future use of dissertation contributions and results

Notes

The goal and the tasks of the dissertation were written twice but in different way - most likely, there is an old previous version of them left in one place.

Point 1.8 has the title "Goals and tasks" - The goal of the dissertation work is one, and to achieve it, several tasks are solved, i.e. point 1.8 should be Goal and objectives.

Many of the hyperlinks to the literature sources in the list of references do not open.

Recommendations

The final versions of the submitted manuscripts to be reviewed more thoroughly, so as not to allow the submission of uncorrected texts, etc. If hyperlinks are present, they must be reviewed for activity, as the last, before finalizing the final document!

It would be better to start with Cyrillic sources in References, followed by Latin sources in alphabetical order. Some sources have been noted which are in Latin but written with Cyrillic titles, which is also not good.

To update the statistics of the proposed questionnaires with more respondents in the future, since with 15 respondents it is not correct from a scientific point of view to draw a statistical conclusion due to the compromised representativeness of the respondent sample.

I recommend that in future, the doctoral student joins larger scientific groups, as the topic is extremely current and promising. This would lead to an increase in the base of training resources in engineering disciplines and beyond telecommunications and information systems, and the construction of better remote laboratories that, through appropriate scheduling, could be used by several universities.

CONCLUSION

The dissertation contains scientific and applied results, which represent an original contribution to science and meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the Law and the relevant Regulations of PU "Paisii Hilendarski" .

The dissertation shows that the doctoral student mag. Veselin Zdravkov Mengov has in-depth theoretical knowledge and professional skills for independent conducting of scientific research.

Due to the above written, I confidently give my **POSITIVE** assessment of the conducted research to prove a scientific thesis and **propose to the honorable scientific jury to award the educational and scientific degree "doctor" to M.Sc. Vesselin Zdravkov Mengov in the field of higher education: 5. Technical sciences, professional field 5.3. Communication and computer equipment, doctoral program "Automation of areas of the intangible field (medicine, education, science, administrative activities, etc.)"**.

29.01.2024

Author of the opinion:

/Prof. Dr. Eng. Nedyalko Todorov Katrandzhiev/