O P I N I O N

by Prof. Irina Alexandrovna Radeva, PhD – Institute of Information and Communication Technologies – BAS

of a dissertation for awarding the educational and scientific degree "Doctor" in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science, PhD program Informatics

Author: **Tsvetomira Ivanova Kazashka**

Title: **"Creating an Ontology of Bulgarian Dance Folklore"**

Supervisors: **Prof. Stanimir Nedyalkov Stoyanov, PhD and Prof. Daniela Kirilova Dzheneva, PhD**

By Order No. PD-22-487/21.02.2025 of the Rector of the of Plovdiv University "Paisii Hilendarski" (PU) Prof. Rumen Mladenov, PhD for providing a procedure for defending a dissertation on the topic "**Creating an ontology of Bulgarian dance folklore**" for acquiring the educational and scientific degree "Doctor" in the field of higher education **4. Natural Sciences, Mathematics and Informatics**, professional field **4.6. Informatics and Computer Science**, PhD program Informatics, report No RD-21-427/21.02.2024 by Prof. Angel Atanasov Golev, PhD - Dean of the Faculty of Mathematics and Informatics and in accordance with Art. 4. of the ADASRB, Art. 2. (2), Art. 30. (3) the RIADASRB and Art. 37. (1) of the RIADASPU, I have been appointed as a member of the Scientific Jury.

As a member of the Scientific Jury, I have received:

- an application form to the Rector of the Plovdiv University for the opening of a procedure;
- CV in European format;
- minutes of the preliminary discussion in the department;
- opinions from supervisors on the readiness for preliminary discussion;
- abstract (in Bulgarian and foreign language);
- dissertation;
- a declaration of originality and authenticity of the attached documents;
- a reference for compliance with the minimum national requirements;
- list of publications;
- copies of publications on the topic of the dissertation;
- Official note ex. No 10/04.02.25 for participation in the project "Study of the motivation of staff for career development in a regional cluster of crop production", funded by the National Science Fund under contract № KP-06-H65/15 of 15.12.2022.

The dissertation is in a volume of 155 pages. and includes: introduction, four chapters, conclusion, bibliography, 5 appendices, 15 tables and 52 figures.

The goal formulated in the dissertation is: "to continue the work on building a platform for digitization of our cultural and historical heritage, as an adaptation of ViPS. A major component of this extension of the platform to be an ontology of folk dances."

To achieve the goal, five tasks have been formulated:

1. To present a conceptual framework, conducting an analysis of the current state and emphasizing existing experience related to Virtual Physical Space (ViPS).
2. To select and analyse examples of Bulgarian folk dance based on the works of Prof. Kiril Dzenev.
3. To analyse existing semantic models, evaluate their capacity, and lay the groundwork for creating new semantic models for Bulgarian dance folklore.
4. To implement the theoretical framework in an experimental setting and develop an architecture and ontology for the selected examples.
5. To disseminate the results within the scientific community through publications and participation in international scientific conferences.

The relevance of the study stems from the need for digitization of the cultural and historical heritage of Bulgaria, which is part of the broader efforts to preserve and promote national traditions and identity. The development of an ontology of Bulgarian dance folklore plays an important role in this process, as it allows for systematization, classification and interpretation of dance forms typical for different ethnographic regions of the country.

The concept of Virtual Physical Space (ViPS), which integrates the physical and virtual environments, provides new opportunities for the presentation and preservation of cultural elements through digitization. This concept creates prerequisites for building intelligent systems for teaching and researching cultural heritage.

The study is also relevant due to its compliance with the priorities of the 9th EU Framework Program "Horizon Europe", which promotes the preservation, digitization and promotion of cultural heritage. The development of an ontology for Bulgarian dance folklore contributes to these goals by proposing new methods for the integration of intangible cultural objects.

The results presented in the dissertation can be systematized as follows:

Scientific and applied contributions:

1. Building an ontological model of Bulgarian dance folklore - a semantic model for classification and structuring of artifacts related to Bulgarian dance folklore has been created.
2. Adaptation of a classification matrix for Bulgarian folk dances - a matrix with 5 main characteristics for classifying dances has been developed, which serves as the basis of ontology.

Applied contributions:

1. Development of a prototype of an ontology - a prototype of an ontology using modern methods of semantic modelling and ontological standards has been implemented.
2. Integration of ontology with the ViPS concept - integration of ontology in the architecture of Virtual Physical Space for digitization of cultural and historical heritage is demonstrated.

These results represent a combination of theoretical and practical achievements in the field of semantic modelling, the construction of ontologies and their integration into the concept of Virtual Physical Space (ViPS). The work extends the application of ontological models to a specific and insufficiently studied field – Bulgarian dance folklore, and proposes methods for systematization and classification of intangible cultural objects.

The created ontology and its integration into the ViPS platform provide a scientifically based approach to the presentation of dance heritage, which can be used for both research and educational purposes.

I accept that the presented results correspond to the scope and content of the goals and objectives set and have the potential for further development. The PhD student demonstrates the necessary theoretical and practical knowledge in the specialty, has built skills and gained experience in conducting independent scientific research.

The dissertation presents **2 publications** in collections of scientific papers from international conferences, refereed and indexed in WoS/Scopus. The publications are co-authored, in English and published in 2024.

The dissertation publications show that the stages in the work and the main results obtained have been presented to the scientific community and demonstrate the ability of the PhD student to present the results of her work and document them in an appropriate academic format.

The points presented according to the requirements for the educational and scientific degree "Doctor" in group D are 36 points with a minimum requirement of 30 points, which **fulfils the** conditions of the RIADASRB and the RDASUP.

No data on noticed citations are presented.

I am convinced of the personal participation of the PhD student in the conducted dissertation research, and that the formulated contributions and results obtained are her personal merit.

The abstracts are 32 pages long in Bulgarian and English and present the dissertation.

I have no evidence of plagiarism or unreliability of the scientific data presented in the dissertation.

CRITICAL NOTES:

1. According to Art. 27 (2) of the RIADASRB, instead of "Conclusion" should be used "Conclusion – summary of the results obtained".

2. For a more complete presentation of the results, it would be good to have a more detailed summary of the results obtained in the conclusion with a clear separation of scientific, applied and applied contributions.

QUESTIONS:

1. Why did you choose exactly the five characteristics (ethnographic area, artistic-social function, composition of participants, number of participants, accompaniment) as the basis for your classification?
2. What technical challenges did you encounter in modelling dance works in OWL format?
3. How do you see the integration of your ontology in the educational process of AMTII "Prof. Asen Diamandiev"?
4. What would be the next steps to turn the prototype into a fully functional system for digitization of dance heritage?

C O N C L U S I O N

The dissertation contains scientifically applied and applied results that represent an original contribution to science and meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations for the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria (RI-ADASRB), the relevant Regulations of the Plovdiv Universuty "Paisii Hilendarski" and the additional faculty requirements of the FMI under the RDAS of the Plovdiv University.

The dissertation shows that PhD student **Tsvetomira Ivanova Kazashka** has in-depth theoretical knowledge and professional skills in the professional field 4.6 "Informatics and Computer Science" by demonstrating qualities and skills for independent scientific research.

In view of the above, I confidently give my **positive assessment of** the presented dissertation, abstract and results achieved, and **I propose to the honourable scientific jury to award the educational and scientific degree of "Doctor" to Tsvetomira Ivanova Kazashka in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6 "Informatics and Computer Science", doctoral program "Informatics".**

21.03.2025

Signature: …….

Prof. Irina Radeva, PhD