REVIEW

on the competition for the academic position
"Associate Professor"
in the professional field 4.6. Informatics and Computer Sciences, Informatics
(Embedded and Autonomous Systems),
for the needs of Sofia University „St. Kliment Ohridski" (SU),
Faculty of Mathematics and Informatics (FMI),
announced in SG No. 74 from 21 August 2010 and on the Internet sites of FMI and SU

Review prepared by: **prof. dr. Vladimir Todorov Dimitrov - FMI at SU "St. Kliment Ohridski",** as a member of the scientific juri on the higher education area 4. Natural sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Sciences and by the Order № РД 38-497/19.10.2020 of the Rector of Sofia University.

Only one candidate has submitted documents for participation in the announced competition: senior assistant, Dr. Ioannis Parmenion Patias, from the Department of Computer Informatics, FMI, SU "St. Kliment Ohridski".

I. COMMON DESCRIPTION OF APPLIED MATERIALS
1. Information about the application

The submitted documents from the applicant meet the requirements of the ADAS in RB, the RAADAS in RB and The Rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at Sofia University "St. Kliment Ohridski" (RTCAADOAPSU).

For participation in the competition, the candidate, senior assistant professor Ioannis Parmenion Patias applied a list of 11 titles, incl. 6 publications in Bulgarian and foreign scientific publications and scientific forums, 3 monographs and 2 books.

The presented list of documents meets the requirements of the ADAS in RB, the RAADAS in RB and RTCAADOAPSU for participation in the competition for "associate professor".

2. Information about the candidate

Ioannis Parmenion Patias was born on February 26, 1969, He is a citizen of the Hellenic Republic.

The candidate completed his higher education in 1993 at VMEI - Sofia, with a diploma of Engineer in Electronics and Electrical Engineering, TU 59131 / 28.06.93.

The candidate subsequently successfully defended his doctoral dissertation on "Methods and tools based on descriptive logic for presenting knowledge in decision support systems", scientific specialty 02.21.04 "Computer systems, complexes and networks", diploma VAK 27200 / May 7, 2001, at the Technical University - Sofia.

Since 1996, he has been working for various companies in Greece and Bulgaria in the field of Information technology. He works on a number of national and international projects in the Balkans.

In parallel, he is a part-time lecturer at several universities in Greece and Bulgaria. Since 2014, he has been a part-time lecturer at FMI at Sofia University "St. Kliment Ohridski", and since 2016, he has been a senior assistant at the Department of Computer Informatics.

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

The general list of scientific papers is 27 as follows: 22 are in proceedings of scientific conferences, 2 - in scientific journals, 1 monograph and 2 chapters from a book. A report from the "Authors" system is presented, where the activity of the candidate is reflected in more details - it is not according to the requirements of this competition.

I exclude from the review the two diploma theses and the dissertation itself.

The publications in the proceedings of the scientific conferences are in English. Two of them [4] and [9] have been published in journals - these are publications other than those listed in the section "Article in a scientific journal" of "a) List of all publications". Scientific conferences are international and peer-reviewed. Publications [1, 5, 6] are in SJR editions and are indexed in Scopus. Publication [5] is in a journal with IF.

Both articles in English are in the American Journal of Engineering Research with an impact factor. The first one is written by the candidate and is dedicated to risk management training, and the other one is co-authored – on the use of mobile medical applications in patient care.

The monograph is written by the candidate, in English and it is a modernized version of the defended dissertation. It is issued by UI "St. Kliment Ohridski" in 2020.

The two chapters on "Robotics" and "Sensors" are from the book "Autonomous Systems: Platforms, Applications, Perspectives". The book is co-authored with prof. Vasil Georgiev and part-time assistant professor Hristo Hristov. This book is a monograph on the

subject. It is used as a textbook in the discipline "Embedded and Autonomous Systems", which is mandatory in the curriculum of the master's program "Embedded Systems" at FMI at Sofia University "St. Kliment Ohridski".

The scientific fields in which the candidate works, reflected in his publications on the general list of publications, are as follows:

- Autonomous and embedded systems (robotics), section "Chapter from a book" [1, 2], section "Book" [2], section "Monograph" - the only one, according to the dissertation, section "Article in a collection (at a conference, etc.)" [6, 8-11, 13, 14].
- Project management, section "Book" [1], section "Article in a scientific journal" [1], section "Article in a collection (at a conference, etc.)" [12].
- E-health, section "Article in a scientific journal" [2], section "Article in a collection (at a conference, etc.)" [4, 5, 7].
- E-construction, section "Article in a collection (at a conference, etc.)" [1-3].
- Knowledge bases, section "Article in a collection (at a conference, etc.)" [15-22].

Analysis of the minimum national requirements (under Art. 2b, para. 2 and 3 of ZRASRB) and respectively of the additional requirements of Sofia University "St. Kliment Ohridski" for holding the academic position of "Associate Professor" under 4.6. Informatics and computer science (Embedded and Autonomous Systems)

According to the attached reference for the minimum national requirements, I accept:

- Group A - 50 points out of 50 points (minimum 50 points).
- Group B - 100 points out of 100 points (minimum 100 points)
- Group D - 203 points out of 276 points (minimum 200 points). The monographs presented in the reference are co-authored by "Risk Management in a Project" and "Design of Robotic Systems" and I accept half of the points, which is equivalent to a chapter from a book or a collective monograph. I do not accept the publication "I. Patias, V. Georgiev, Modeling an Implementation of Bus Rapid Transit Corridor Based on Isolated or Coordinated Traffic Prioritization and Automatic Location, Proceedings of the 6th International Conference on Applied Internet and Information Technologies (AIIT'2016), Bitola , 3-4 June 2016, doi: DOI: 10.20544 / ERSICT.02.16.P02", which is not published and indexed in the requirement's databases.
- Group D - 66 points out of 88 points (minimum 50 points). The reference contains 11 quotations, which are 6 points each.

The scientific papers submitted by the candidate meet the Minimal national requirements (under Art. 2b, para. 2 and 3 of ZRASRB) and the additional requirements of Sofia University "St. Kliment Ohridski" for holding the academic position of "Associate Professor" in the scientific field and professional field of the competition.

The scientific papers presented by the candidate

The last competition in which the senior assistant Ioannis Patias has been participated is in 2016. The publications presented for the competition are from the period 2016-2020. The only publication from 2016 is "I. Patias, V. Georgiev, Modeling an Implementation of Bus Rapid Transit Corridor Based on Isolated or Coordinated Traffic Prioritization and Automatic Location, www.ersict.org, Proceedings of the 6th International Conference on Applied Internet and Information Technologies (AIIT'2016), Bitola, 3-4 June 2016, doi: DOI: 10.20544 / ERSICT.02.16.P02", which is not available at the specified address, so I can exclude it from consideration.

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

There is no legally proven plagiarism and at least I am not aware of such in the scientific papers submitted at the competition.

4. Characterization and evaluation of the applicant's teaching activity

The candidate as a part-time and full-time lecturer has led in FMI at "St. Kliment Ohridski" in the period 2016-2020 lectures and exercises in a number of disciplines for bachelors and masters: databases, databases – workshop, artificial intelligence, knowledge-based systems, e-business systems, management of risk, project risk management and design of robotic systems. In the period 2015-2019, he has held courses in English for the Erasmus program. A detailed reference is attached in the submitted documents.

In general, from the submitted documents and from my personal impressions, I appreciate senior assistant professor Ioannis Patias positively in his capacity as a lecturer at FMI at Sofia University "St. Kliment Ohridski".

5. Substantive analysis of the scientific and applied scientific achievements of the candidate contained in the materials for participation in the competition

For the competition, the candidate has submitted 11 publications: 1 monograph on the defended doctoral dissertation, 2 monographs co-authored with another author, 2 chapters from a collective monograph, 4 publications in conference proceedings and 1 publication in a

journal. The publication "I. Patias, V. Georgiev, Modeling an Implementation of Bus Rapid Transit Corridor Based on Isolated or Coordinated Traffic Prioritization and Automatic Location, www.ersict.org, Proceedings of the 6th International Conference on Applied Internet and Information Technologies (AIIT'2016), Bitola, 3-4 June 2016, doi: DOI: 10.20544 / ERSICT.02.16.P02" is excluded from the consideration as it is specified in the Research Gate and is missing at the specified address. Therefore, I review 10 publications.

The only numbering is in the general list of publications and I will follow it below. Directly, without specifying the section, it is from "Article in a collection (at a conference, etc.)".

Scientific contributions by areas:

• <u>Autonomous and embedded systems (robotics), section "Chapter of a book" [1, 2], section "Book" [2], section "Monograph" - the only, in the dissertation, section "Article in a collection (at a conference and etc.)" [6, 11].</u>

Contribution 1.4 is in the category of Autonomous and embedded systems. The contributions from the section "Monograph" are attached to this contribution – the only one, according to the dissertation, the publication from the section "Chapter from a book" [1] and the publication [6]. The monograph does not directly affect the mentioned contribution. The chapters from the book is not attached to the materials and is dropped from consideration. Evidence is presented and checked for the existence of the book from which the chapters are indicated. This contribution remains only with the publication [6].

Publication [6] is directly on the topic of the contribution. A SWOT analysis and discussion was made on it. Based on this publication, contribution 1.4 can be accepted.

• <u>E-health, section "Article in a collection (at a conference, etc.)" [4, 5, 7].</u>

The publication [4] is just an extended abstract. The paper itself is not published on the website of the magazine nor is it submitted in the materials for the competition. Although it is a valid publication, I exclude it from the review of this scientific contributions – the extended abstract is too short to be considered a scientific contribution.

For the **contribution 1.2**, which is in the field of e-health, the publication from the section "Monograph" was used - the only one, according to the dissertation and publication [4]. The monograph only refers to the publication [5] for testing architectures for the case of e-health, but lacks specifics for the application field. For reasons of publication [4] set out above, I will not consider the validity of contribution 1.2.

Contribution 1.3 is in the category of e-health. Here are the publications from the "Monograph" section – the only one in the dissertation, the publications from the "Book"

section [1, 2] and publication [5]. The monograph does not deal specifically with the topic of e-health. The books are not presented with the materials, which are dropped from consideration. Of course, the evidence for their existence has been presented and verified. I am familiar with book [2].

It remains a publication [5] to consider the contribution 1.3.

Publication [5] is on the topic of e-health. Here the focus is on big data in the public health sector. The work with these data is presented in processes and substantiated recommendations for the case are included. Based on this publication, I accept a scientific contribution 1.3.

Contribution 1.5 is in the e-health category. Here are the publications from the "Monograph" section – the only one in the dissertation, the publications from the "Book" section [1, 2] and the publication [7]. The monograph does not deal specifically with the topic of e-health. The books are not presented in the materials that is why they are dropped from consideration. Of course, the evidence for their existence has been presented and verified. I am familiar with book [2].

Publication [7] is on the topic of e-health. A mobile solution in the field of telemedicine is presented. The authors propose a variant with a transition to a cloud-based application. I accept contribution 1.5 based on this article.

• E-construction, section "Article in a collection (at a conference, etc.)" [1].

The only publication in this section focuses on construction and engineering and in particular the integration of GIS and BIM standards. The implementation of EU BIM in CityGML technology is considered. The author then moves on to cloud infrastructures by reducing the use of EU BIM to IaaS in a cloud federation. Four requirements for IaaS cloud infrastructure for application in construction and engineering have been defined. The requirements are presented as the views of the author, the argumentation is very weak and is applicable to all areas of application, and therefore I cannot evaluate the results to the level of scientific contribution 1.1.

Contribution 1.6 is dropped due to lack of submitted materials.

Of the materials submitted for the competition, there are 7 citations in editions with impact factor and SJR.

Regarding the co-authorship in the materials submitted for the competition:

• The presented monograph is independent.

• The chapters of a book are in a monograph co-authored with two other co-authors, but it is clear which chapters belong to the candidate.

• Both books are co-authored with another co-author - there is no reference: who wrote which chapters.

6. Critical notes and recommendations

The candidate includes in the list of publications in proceedings of scientific conferences, articles that have been published in scientific journals, which gives priority to the proceedings of scientific conferences, which is incorrect. A publication may be published in a conference proceedings, but only a portion of the conference proceedings, even revised ones, are published in a scientific journal – this is standard practice.

Presenting the materials of the competition in scanned pdf format is not a good practice for formatting the materials.

The presented materials lack numbering in a number of places, which makes it difficult to review.

The presented publications are arranged by scientific contributions. This approach is the exact opposite of areas, publications and contributions that the candidate had to follow.

Evidence of some publications is included in the submitted materials, but not the publications themselves. The lack of relevant materials is mentioned above. Such a situation necessitates a refusal to review the missing materials.

The text is poorly edited in a number of places. It creates the impression of poor knowledge of the Bulgarian language - especially in the wording of the contributions.

7. Personal impressions of the applicant

I know the candidate Ioannis Patias from 2016 as a senior assistant at the Department of Computer Informatics, FMI at Sofia University "St. Kliment Ohridski". There are three main lines in his teaching activity: engineering – in the field of embedded systems, business – in the field of risk management, and databases. The first field is directly related to his engineering education and has the best results in this field as a teacher. The other two areas are developed primarily by his project activities. In addition, there are formally diplomas and certificates in business matters.

The native language of Ioannis Patias is Greek, but he speaks Bulgarian at a level that allows him to be a lecturer at FMI at Sofia University "St. Kliment Ohridski".

8. Conclusion on the application

Having become acquainted with the materials and scientific works presented in the competition and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, I **confirm** that the scientific achievements meet the requirements of the ARAS in RB, the Regulations for its implementation and the corresponding Regulations of SU "St. Kliment Ohridski" for appointment on the academic position "associate professor" in the science area and professional field of competition. In particular, the candidate meets the minimum national requirements in the professional field and it is not found plagiarism in submitted of scientific works in the competition.

I give my **positive** opinion to the application.

II. OVERALL CONCLUSION

Based on the above, I recommend to the scientific jury to suggest to the competent authority in the selection of the Faculty of Mathematics and Informatics at SU "St. Kliment Ohridski" to elect senior assistant professor Dr. Ioannis Parmenion Patias to take the academic position "associate professor" in the professional field 4.6. Computer science and informatics.

14.12. 2020   Review prepared by: .

            (prof. dr. Vladimir Dimitrov)