



## REVIEW

**By: Prof. Eng. Stanimir Mihaylov Sadinov, PhD**

**University of Telecommunications and Post, Sofia**

**Department: Telecommunications**

**Field of Higher Education: 5. Technical Sciences**

**Professional Field: 5.3. Communication and Computer Engineering**

**Scientific Specialty: Communication Networks and Systems**

**Regarding:** documents submitted for participation in the procedure for the academic position of “ASSOCIATE PROFESSOR” in Field of Higher Education 5. “Technical Sciences”, Professional Field 5.3. “Communication and Computer Engineering”, thematic area “Design, Security and Monitoring of Communication and Sensor Networks”, for the needs of the Department of Information Technologies, University of Telecommunications and Post.

**Candidate in the procedure:**

Chief Assist. Prof. Eng. Filip Atanasov Tsvetanov, PhD

**Procedure announcement:** State Gazette, Issue No. 57/23.06.2026

**Grounds for submitting the review/opinion:** participation as a member of the Scientific Jury for the competition, pursuant to Order No. 3-UPA-181/10.08.2026 issued by the Vice-Rector for Academic Affairs of the University of Telecommunications and Post.

## **1. Information about the procedure**

VUTP announced the competition for the academic position of "associate professor" in the State Gazette, issue 57 of 23.06.2026, for the needs of the Department of Information Technologies, in field 5. "Technical Sciences", professional field 5.3. "Communication and Computer Engineering", scientific area "Design, Protection and Monitoring of Communication and Sensor Networks". Only one candidate is participating in the competition. The submitted set contains all required documents on education, professional experience, scientific output, scientometric indicators, citations, contributions, and teaching activity, and allows a well-founded assessment of the candidate.

## **2. Brief Information about the Candidate/Candidates in the procedure**

Chief Assist. Prof. Eng. Filip Atanasov Tsvetanov, PhD, is an engineer in "Computer Systems and Technologies", holds a Master's degree in Public Administration with a Master's program in "National Security" from the South-West University, and a PhD in "Communication Networks and Systems" from the "Angel Kanchev" University of Ruse. His dissertation, "A Study of Low-Rate Communication Networks," laid the foundation for his subsequent research on sensor and mesh networks.

His academic career began in 2011 at the South-West University "Neofit Rilski" as an assistant, and since 28.09.2015 he has held the position of chief assistant. The submitted documents confirm 14 years and 9 months of teaching experience. He also has nearly 7 years of academic experience at VUTP, where he was elected associate professor in 2017 in "Theoretical Foundations of Communication Engineering (Sensor Networks)". His research interests cover communication and computer networks, IoT, cloud and embedded systems, industrial communications, cybersecurity, and monitoring. His profile is presented in international scientific databases such as Scopus, ORCID, Web of Science, Google Scholar, etc.

## **3. Fulfilment of the Requirements for Appointment to the Academic Position**

### **3.1. Fulfilment of the Quantitative Requirements for Appointment to the Academic Position**

According to the summary and detailed reference, the candidate takes part

in the competition with 813 points against a minimum required 400: group A – 50/50; group B – 100/100; group C – 290/200; group D – 233/50; group E – 140 points against a zero national minimum. The points with which the candidate participates in this competition exceed the legal threshold by 413. The verified distribution across the individual positions corresponds to the summary values.

To participate in the competition procedure, the candidate submitted 20 works: a habilitation monograph; another independent monograph; a book based on the dissertation; six publications in refereed and indexed journals; nine publications in peer-reviewed non-indexed journals or collective volumes; and two university textbooks. 23 citations, totaling 233 points, have been presented for assessment under group D indicators.

The submitted documentation contains detailed, verifiable evidence of the publication of the scientific works and the declared citations included in the scientometric indicators for the competition.

### **3.2. Fulfilment of the Qualitative Requirements for Appointment to the Academic Position**

The candidate holds the educational and scientific degree “Doctor”, and has teaching and research experience related to the professional field. The scientific problems addressed and the works themselves outline a consistent line of development and build-up in the modeling of low-rate and sensor networks, connectivity assessment, QoS and energy efficiency, data protection, cloud integration, industrial and computer security, and remote monitoring. The habilitation thesis is an independent work and directly corresponds to the competition, and models, algorithms, simulations, and experimental configurations support the author's contribution. The methodological apparatus used in the works combines modeling, algorithms, simulations, laboratory prototyping, measurements, and analysis of real network traffic. The combination of theoretical and experimental approaches increases the reliability and practical applicability of the results in the candidate's scientific works.

A review of the candidate's academic profiles in databases such as Scopus, Web of Science, and Google Scholar confirms the visibility and applicability of the scientific results and the candidate's international recognizability.

I particularly welcome the connection between research, project, and teaching activity. The results find practical reflection in laboratory developments, thesis topics, and course content, demonstrating an ability to translate scientific achievements into educational and applied practice. Based on the results presented, I consider that the qualitative requirements for holding the academic position of “associate professor” have been met.

#### **4. Evaluation of Teaching Activities**

Teaching activity is a strength of the candidate. He teaches courses in computer, communication, and sensor networks; network security; monitoring systems; wireless and industrial communications; embedded systems; and energy technologies, as well as 11 courses in English for international and Erasmus+ students. In his teaching, the candidate combines theory, simulation, laboratory experimentation, and implementation with Arduino, ESP32, STM32, Raspberry Pi, and sensor and network devices. Blackboard, electronic monitoring, and project-based assignments are used; functioning teaching models have been created together with students.

The specialized reference records 29 successfully graduated master’s students and 29 bachelor’s students, seven projects with students and young researchers, 32 trainees under the “Student Internships” program, as well as 14 completed and 6 ongoing trainees under “From Higher Education to Employment”, 7 publications with students, and participation and work on 11 projects under the “Erasmus+” program as teaching mobilities at a European university. The candidate has led an international team of five students. The two university textbooks and the transfer of scientific results into teaching further enhance the positive assessment. I give a high assessment of the candidate’s teaching work.

#### **5. Characteristics and Significance of the Submitted Scientific Works/Publications**

The independent monograph “Security in the Integration of Sensor and Industrial Networks into the Internet and Cloud Structures” (2022) is central. It examines the secure connection of resource-constrained sensor devices and

industrial networks to the internet and cloud platforms. It addresses MQTT, TLS/SSL, TPM, segmentation, DMZ, industrial firewalls, IDS, and defense in depth; it verifies algorithms for secure data publishing through experimental configuration and traffic analysis.

The second monograph systematizes preventive data protection in computer and industrial networks, while the book “Computer Simulations of Communication Networks” develops models for IEEE 802.15.4/ZigBee mesh networks. The indexed publications examine hardware threats, connectivity and energy efficiency, secure cloud transmission, and medical IoT. Of particular importance is the experimental comparison of AMQP and CoAP in terms of latency and processor load using a prototype with Raspberry Pi 4 and ThingsBoard.

The remaining publications extend the field of application to QoS throughout the network life cycle, sensor clouds, sleep modes, optical sensors, critical VHF radio systems, and mobile robots.

The candidate's international recognizability and visibility can be traced in the Scopus and Google Scholar databases. Although the candidate has presented a limited number of citations for participation in the competition, the review shows significantly high scientific recognizability, with an h-index of 7 and an h-index of 8, respectively. Taken together, these indicators show that the candidate's results reach a wide audience and resonate beyond the institution and the country.

## **6. Evaluation of the Main Scientific and Applied Scientific Contributions**

After reviewing and summarizing the submitted works and materials, and agreeing with the scientific, applied, and educational-methodological contributions formulated in detail by the candidate, I systematically formulate the main contributions in the following mutually complementary areas:

**First**, approaches for the secure integration of sensor networks into the cloud have been developed and verified through MQTT, TLS/SSL, and TPM, supplemented by segmentation, DMZ, IDS/DPI, VPN, and defense in depth. This contribution is applied and directly aligns with the competition.

**Second**, we developed models and simulation algorithms for connectivity, communication efficiency, QoS, and the energy behavior of mesh networks,

linking node placement and number to coverage, routes, and remaining energy resources. These results are of both scientific and applied significance.

**Third**, applied architectures have been implemented for remote monitoring and cloud processing: a comparison of AMQP/CoAP, an IoT model for diabetic patients, and the integration of ThingSpeak, Node-RED, OpenSSL, XBee, and Raspberry Pi, verified through traffic analysis.

**Fourth**, hardware threats and preventive methods for sensor devices have been systematized; a differential optical sensor and solutions for energy autonomy, critical radio communications and security systems have been proposed. These contributions combine modeling, simulation, experimentation and design recommendations, and outline a sustainable research line.

**Fifth**, integration of the scientific results into educational activity. These are reflected in textbooks, practical guides, e-learning courses, laboratory exercises and student projects, and are used in the training of graduating students, doctoral students and international students. A teaching and laboratory environment has been built to transfer and further develop the accumulated knowledge and practical experience.

## **7. Assessment of the Presence/Absence of Plagiarism in the Submitted Scientific Works/Publications**

The materials presented contain no indication of established plagiarism, improper borrowing, or incorrect use of other authors' results. Sources and co-authorship are duly indicated, and the individual contribution is supported by independent work and a described share in the collective developments.

## **8. Critical Remarks and Recommendations**

The presented scientific papers and evidence are accurately prepared and formatted according to the requirements of the scientific community and the University of Telecommunication and Post; therefore, I have no comments on the presented documentation.

The accumulated research, teaching, and organizational experience supports the expectation that the candidate will take an even more active role in developing scientific capacity in the professional field.

## 9. Conclusion

The materials presented outline a candidate with extensive academic experience, consistent specialization, significant teaching activity, and strong international recognition. Chief Assist. Prof. Eng. Filip Atanasov Tsvetanov, PhD, fulfills the quantitative and qualitative requirements. The 813 points substantially exceed the minimum of 400, and the works correspond to the announced scientific area. An H-index of 7, citations in Scopus and Google Scholar, and the high usage of individual publications confirm the international impact of the results. Indexed publications, monographs, textbooks, and project activity support contributions in secure cloud integration, sensor network modeling, hardware security, and IoT monitoring.

Based on the assessment carried out, I give a **positive review** and confidently propose that the esteemed Scientific Jury recommend Chief Assist. Prof. Dr. Eng. Filip Atanasov Tsvetanov for election to the academic position of "ASSOCIATE PROFESSOR" in field 5. "Technical Sciences", professional field 5.3. "Communication and Computer Engineering", scientific area "Design, Protection and Monitoring of Communication and Sensor Networks", for the needs of the Department of Information Technologies at the University of Telecommunications and Post”.

18.09.2026  
Sofia

Scientific Jury  
/Prof. E

Съгл. 33ЛД