INTERNATIONAL CONFERENCE

ICACNGC 2023

ON ADVANCED COMPUTING & NEXT-GENERATION COMMUNICATION

PROGRAM

OCT 12–13, 2023

Saint Petersburg, Russia

Hybrid Mode

НАУКА И УНИВЕРСИТЕТЫ НАЦИОНАЛЬНЫЕ ПРОЕКТЫ РОССИИ

SPbSUT

RUDN university

ENSA KHOURIBGA

جامعة الأمير سلطان PRINCE SULTAN UNIVERSITY

ABOUT THE CONFERENCE

The second International Conference on Advanced Computing & Next-Generation Communication ICACNGC 2023 organized by organized by the The Bonch-Bruevich Saint Petersburg State University of Telecommunications, Russia. This conference provides an opportunity to account for state-of-the-art works, future trends impacting Advanced Computing & Next-Generation Communication, that concerns to organizations and individuals, thus creating new research opportunities, focusing on elucidating the challenges, opportunities, and inter-dependencies that are just around the corner.

ICACNGC 2023 was devoted to Advances in Computing & Next-Generation Communication. It was considered a meeting point for researchers and practitioners to implement advanced information technologies into various industries.

There were 65 paper submissions from 12 countries. Each submission was reviewed by at least two chairs or PC members. We accepted 21 regular papers (32%). Unfortunately, due to limitations of conference topics and edited volumes, the Program Committee was forced to reject some interesting papers, which did not satisfy these topics or publisher requirements. We would like to thank all authors and reviewers for their work and valuable contributions. The friendly and welcoming attitude of conference supporters and contributors made this event a success!

Conference Chairs

THE CONFERENCE TOPICS

Track 1: Next Generation Communication

- Machine Learning and Artificial Intelligence in Communication Networks
- Deployment of MEC for 5G systems.
- Offloading algorithms for MEC based radio access networks.
- Designing and developing intelligent core network for 5G systems based on SDN.
- Integrating SDN core network with MEC based radio access network.
- AI algorithms for 5G systems.
- Network slicing and NFV.
- Novel network structures that support both dense deployment and ultra-low latency applications.
- 6G networks and enabling technologies.

Track 2: Cyber-Physical Systems

- Architectures and Networking for CPS
- Smart City
- IoT
- Software platforms and systems for CPS
- Foundations of CPS
- Human-machine interactions
- Sensing and monitoring
- Specification languages and requirements
- Design, optimization, and synthesis
- Testing, verification, certification
- Applications of CPS technologies
- Tools, testbeds, demonstrations and deployments
- Blockchain
- Applications of big data analytics for CPS
- Telepresence services
- Hologram
- Robotics
- Digital twins

Track 3: Cloud, Distributed and Parallel systems

- Architectures and Networking for CPS
- Smart City
- IoT
- Software platforms and systems for CPS
- Foundations of CPS
- Human-machine interactions
- Sensing and monitoring
- Specification languages and requirements
- Design, optimization, and synthesis
- Testing, verification, certification
- Applications of CPS technologies
- Tools, testbeds, demonstrations and deployments
- Blockchain
- Applications of big data analytics for CPS

CONFERENCE COMMITTEE

GENERAL CHAIRS
- **Dr. Ahmed A. Abd El-Latif**, Prince Sultan University, Saudi Arabia
- **Prof Amir Hussain**, School of Computing, Edinburgh Napier University, 219 Colinton Road, Edinburgh, EH11 4BN, UK.
- **Dr. Ammar Muthanna**, Telecommunication Networks and Data Transmission Department, St. Petersburg State University of Telecommunications, Saint Petersburg, Russia.

STEERING COMMITTEE
- **Prof. Dr. Andrey Koucheryavy**, Telecommunication Networks and Data Transmission Department, St. Petersburg State University of Telecommunications, Saint Petersburg, Russia
- **Prof. Dr. Muhammad Imran**, FIEEE FRSE James Watt School of Engineering, University of Glasgow, G12 8QQ, UK
- **Prof. Konstantin Samouylov**, Peoples' Friendship University of Russia, Russia
- **Prof. Mohammad Hammoudeh**, Information and Computer Science Department King Fahd University of Petroleum & Minerals, Saudi Arabia
- **Prof. Mohammed El-Affendi**, College of Computer and Information Sciences, EIAS Data Science Laboratory, Prince Sultan University, Riyadh, Saudi Arabia
- **Prof. Yassine Maleh**, SMIEEE, National School of Applied Sciences, Khouribga, Morocco

SPONSORSHIP COMMITTEE CHAIRS
- **Dr. Ammar Muthanna**, Telecommunication Networks and Data Transmission Department, St. Petersburg State University of Telecommunications, Saint Petersburg, Russia.

PROGRAM CHAIRS
- **Dr. Abdelhamied A. Ateya**, Prince Sultan University, Saudi Arabia
- **Dr. Yasir Javed**, Prince Sultan University, Saudi Arabia
- **Dr. Maria Makolkina**, The Bonch-Bruevich Saint Petersburg State University of Telecommunications, Russia
- **Dr. Irina Kochetkova**, RUDN University, Russia
- **Dr. Bassem Abd-El-Atty**, Luxor University, Egypt
- **Dr. Mohamed Hammad**, Prince Sultan University, Saudi Arabia
- **Dr. Mudasir Ahmad Wani**, Prince Sultan University
- **Dr. Peng jialiang**, Heilongjiang University, China
- **Dr. Jiawen Kang**, Nanyang Technological University, Singapore

PUBLICITY CHAIRS
- **Dr. Abdelhamied A. Ateya**, Prince Sultan University, Saudi Arabia
- **Dr. Mudasir Ahmad Wani**, Prince Sultan University, Saudi Arabia
- **Prof. Houcemeddine Hermassi**, Ecole Nationale d'Ingénieurs de Carthage (ENI-Carthage), Tunisia

PUBLICATION CHAIRS
- **Dr. Ahmed A. Abd El-Latif**, Prince Sultan University, Saudi Arabia
- **Dr. Yassine Maleh**, SMIEEE, National School of Applied Sciences, Khouribga, Morocco
- **Dr. Ammar Muthanna**, The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia

TECHNICAL PROGRAM COMMITTEE
- **Xuehu Yan**, National University of Defense Technology, China
- **Matthieu Perrin**, Nantes University, France
- **Wei-Chiang Hong**, Asia Eastern University of Science and Technology, Taiwan
- **Yakubu Makeri Ajiji**, Kampala International University, Uganda
- **Dr Mai Moodley Maiendra**, Moodley and Associates, India
- **Benabdellah Mohammed**, Mohammed First University, Oujda, Morocco
- **Bahaa Eddine Elbaghazaoui**, Ibn tofail University, Morocco
- **Patel Ankit R.** , University of Minho, Guimaraes, Portugal
- **Marium Malik**, The Superior University
- **Yasmine Harbi**, Universite Ferhat Abbas Setif1 Algeria
- **Abdultaofeek Abayomi**, Durban University of Technology, South Africa
- **Giuseppe Ciaburro**, Università della Campania Luigi Vanvitelli, Italy
- **Mani Zarei**, Islamic Azad University, Tehran, Iran
- **Zakaria Sabir**, Ibn Tofail University, Morocco
- **Mohammad Samadi Gharajeh**, Polytechnic Institute of Porto, Portugal
- **Ghizlane Orhanou**, Mohammed V University in Rabat, Morocco
- **Della Krachai Mohamed**, University of Science and technologies of Oran, Algeria
- **Pedro Antonio Martin Cervantes**, Universidad de Almeria, Spain
- **Yilun Shang**, Northumbria University, UK
- **Mounia Zaydi**, University Hassan 1st, Morocco
- **Dr. Narina Thakur**, Bhagwan Parshuram Institute of Technology, Delhi, India
- **Dalibor Dobrilovic**, Technical Faculty "Mihajlo Pupin" Zrenjanin, Serbia
- **Khalid El Makkaoui**, Mohammed First University, Nador, Morocco
- **Yassine Sadqi**, University Sultan Moulay Slimane, Beni Mellal, Morocco
- **Ramgopal Kashyap**, Amity University Chhattisgarh, India
- **Rathin Shit**, International Institute of Information Technology, Indioa
- **Khalid El Gholami**, University Sultan Moulay Slimane, Beni Mellal, Morocco

- **Pankaj Pal**, RCC Institute of Information Technology, India
- **Badr Bentalha**, ENCG Fez, Moroocco
- **Rhoulami Khadija**, Faculty of science Rabat, Morocco
- **Tekouabou Koumetio Cédric Stéphane**, Faculty of Sciences, El Jadida, Morocco
- **Sheikh Shah Mohammad Motiur Rahman**, Daffodil International University, Bangladesh
- **Dilbag Singh**, School of Computing and information technology, Manipal University Jaipur, India.
- **Ahmed Sedik**, Kafrelsheikh University, Egypt
- **Said Fathy El-Zoghdy**, Menoufia University, Egypt
- **Edmond S. L. Ho**, Northumbria University, UK
- **Ibrahim A. Elgendy**, Harbin Institute of Technology, China
- **Ahmed Ghoneim**, king Saud University, Saudi Arabia
- **Samir Elmougy**, Mansoura University, Egypt
- **Praveenkumar Padmapriya**, SASTRA University, India
- **Manoranjan Mohanty**, University of Technology, Sydney
- **Paweł Pławiak**, Cracow University of Technology, Poland
- **Neggaz Nabil**, Université des sciences et de la technologie d'oran -USTO-MB Algérie
- **Tlemsani Redouane**, Université des sciences et de la technologie d'oran -USTO-MB Algérie
- **Ali Asghar Heidari**, School of Computing, National University of Singapore
- **Laith Mohammd Abualigah**, Amman Arab University
- **Robertas Damasevicius**, Silesian University of Technology
- **Kashif Hussain**, Bahria University, Karachi, Pakistan
- **Brahim Lejdel**, Eloued University
- **Reza Moghdani**, Persian Gulf University
- **Ibrahim A. Elgendy**, Computer Science and Technology, Harbin Institute of Technology, China
- **Ammar Muthanna**, The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia.
- **Muhammad Ibrahim**, Virtual University of Pakistan.
- **Reem I. Alkanhel**, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia.
- **Faisal Jamil**, Jeju National University, Jeju, South Korea
- **Amir Chaaf**, Chongqing University of Posts and Telecommunications, Chongqing, China
- **Mohammed Saleh Ali Muthanna**, Chongqing University of Posts and Telecommunications, China
- **Soha Alhelaly**, Saudi Electronic University, Saudi Arabia
- **Khizar Abbas**, Jeju National University, Korea
- **Ahsan Rafiq**, Chongqing University of Posts and Telecommunications, China
- **Mehdhar Al-gaashani**, Chongqing University of Posts and Telecommunications, China
- **Fengjun Shang**, Chongqing University of Posts and Telecommunications, China
- **Mashael Khayyat**, College of Computer Science and Engineering, University of Jeddah, Jeddah, Saudi Arabia
- **Rhoulami Khadija**, Mohammed V University, Morocco
- **Roose Philippe**, University of Pau, France
- **Sadqi Yassine**, FP – Beni Mellal, Morocco
- **Samadi Gharajeh Mohammad**, Polytechnic Institute of Porto, Portugal
- **Sarea Adel**, Ahlia University, Bahrain
- **Sea Alex Denioux**, Africa Fintech Network, Ivory Coast
- **Shaker Noha**, Africa Fintech Network, Egypt
- **Shang Yilun**, Northumbria University, UK
- **Shariar Houssain**, Kennesaw State University, USA
- **Sheraz Anwar**, Xiamen University, China
- **Sheta Alaa**, Electronics Research Institute, Egypt
- **Shiu Hung-Jr**, Tunghai University Taichung, Taiwan
- **Shojafar Mohammad**, SMIEEE University of Surrey, UK
- **Siarry Patrick**, University of Paris 12, France
- **Soule-Dupuy Chantal**, U. Paul Sabatier, France
- **Souri Alireza**, Halic University – Istanbul, Turkey
- **Su Chao-Ton**, National Tsing Hua University, Taiwan
- **Tarbalouti Said**, Cadi Ayyad University-Marrakech, Morocco
- **Tardif Pierre-Martin**, UdeS, Canada
- **Tawalbeh Lo'ai A.**, SMIEEE – Texas A&M University – San Antonio, USA
- **Tekouabou Cédric Stéphane**, Mohammed VI Polytechnic University, Morocco
- **Thakur Narina**, Bharati Vidyapeeth College of Engineering New Delhi, India
- **Thaseen Sumaiya**, VIT University, India
- **Tsai Sang-Bing**, University of Electronic Science and Technology of China, China
- **Hong Wei-Chiang**, Jiangsu Normal University, China
- **Weizhi Meng**, Technical University of Denmark, Denmark
- **Yuan Xiaohong**, North Carolina A&T State University, USA
- **Zahrane Tarik**, Cadi Ayyad University Marrakech, Morocco
- **Zarei Mani**, IAU of Shahr-e-Qods – Tehran, Iran
- **Zohdy A. Mohamed**, Oakland University, USA

CONFERENCE KEYNOTES

Vishnu Ram OV

India

Independent Research Consultant, Vice Chair, ITU-T Focus Group on Autonomous Networks

AI/ML and Autonomy in 5G/6G networks: A standards perspective

Vishnu has hands-on experience in the field of Telecom industry for 25 years, developing and implementing standards, and holds 14 international granted patents. He is a senior member of IEEE, an active member of NWG13 (National Working Group 13) in India and a Vice Chair of ITU-T focus group on Autonomous Networks and co-convener of ITU-T Correspondence Group on datasets (cg dataset).
He was nominated to Scientific Advisory Board Associate (SABA) member of Motorola Networks and was Senior Specialist (Radio Resource Management) – Nokia Networks. From 2018, he works as an independent researcher, is the co-editor of ITU-T Focus Group specifications on Machine learning in 5G.
He is the curator of the in-person, ITU AI/ML in Communications workshop in Geneva on 05 July 2023 and curated 100+ Discovery series of webinars under ITU AI4Good. In recognition of the contribution to ITU-T Study Group 13 standardization activities and the excellent work performed, he was awarded certificate of appreciation by ITU. His current work includes coordinating standards initiatives, liaisons with other SDOs, industry bodies, open source and academia, mentoring student projects and coordinating the ITU "AI/ML in 5G" Challenge around the globe. He has served as a guest editor of JICTS (Journal of ICT Standardization) special Issues on Zero touch service management and in the editorial team for ITU Journal on Future and Evolving Technologies (ITU J-FET) special issues on AI/ML.

Prof. Konstantin Samouylov

Russia

Institute of Computer Science and Telecommunications

Resource Loss Systems and Performance Analysis of Wireless Networks

Konstantin Samouylov received his PhD in probability theory from the Moscow State University, in 1985, and a Full Doctor of Sciences degree in telecommunications from the Moscow Technical University of Communications and Informatics, in 2005. During 1985-1996 he held several positions at the Faculty of Science of the Peoples' Friendship University of Russia (RUDN University) where he became a head of Telecommunications System Department in 1996. Since 2014 he is a head of the Applied Probability and Informatics Department, and since 2017 he also holds the position of Director of Computer Science and Telecommunications Institute at the RUDN University. He was visiting professor/professor-research at Lappeenranta University of Technology and Helsinki University of Technology (Aalto), Finland; Moscow Technical University of Telecommunications and Informatics, Russia; Moscow International Higher Business School (Mirbis), Russia; University of Pisa, Italy. He was a member of the ITU-T SG11 and IFIP TC6 WG 6.7. He worked and works now in a number of r&d projects within different frameworks, e.g., COST IRACON, COST INTERACT, within projects of Russian Foundation for Basic Research (RFBR), TEKES (Finland) and companies including Nokia, Telecom Finland, VTT, Rostelecom, etc. He is a member of editorial boards and reviewer of several scientific magazines, he is co-chair and TPC member of several international conferences. His current research interests include applied aspects of probability theory and stochastic processes, queuing and teletraffic theory, performance analysis of 5G/6G networks, resource allocation in heterogeneous wireless networks, wireless network slicing, IAB, URLLC and eMBB. He has authored and co-authored over 250 scientific and conference papers and seven books.

Prof. Amir Hussain

United Kingdom

Edinburgh Napier University

Towards trustworthy AI for Assistive Healthcare: Real-world Use Cases, Challenges and Opportunities

Amir Hussain received his B.Eng (highest 1st Class Honours with distinction) and Ph.D degrees, from the University of Strathclyde, Glasgow, U.K., in 1992 and 1997, respectively. Following postdoctoral and academic positions at the Universities of West of Scotland (EPSRC postdoctoral fellow: 1996-98), Dundee (Research Lecturer: 1998-2000) and Stirling (Lecturer: 2000-4; Senior Lecturer: 2004-8; Reader: 2008-12; Professor: 2012-18) respectively, he joined Edinburgh Napier University (ENU), in Scotland, UK, in 2018 as a Professor in the School of Computing. He is currently institutional Research Theme Lead for AI and Advanced Technologies and founding Head of the Data Science and Cyber Analytics (DSCA) Research Group. He is also founding Head of the Cognitive Big Data Analytics (CogBiD) Research Lab, and co-Lead of the Centre for Cardio-Vascular Health. He currently holds a number of Visiting Professorships. He has previously held Visiting Professorships at the Massachusetts Institute of Technology, USA and University of Oxford, UK. He has (co)authored three international patents and around 500 publications, including over 200 international journal papers, 20 Books/monographs and 100+ Book chapters with (current Google h-index of 60, i10-index of 225, and 43+ Research Gate score). He has led major cross-disciplinary research projects , as Principal Investigator, funded by national and European research councils, local hand international charities and industry, and supervised over 50 PhD students and postdoctoral researchers to-date. His high-profile PhD graduates include (amongst numerous others): Prof Erik Cambria (NTU, Singapore – the world's most highly-cited AI researcher in sentiment analysis) and Dr Soujanya Poria (2018 Presidential Young Investigator Award Winner, Singapore).

Prof. Ahmed A. Abd El-Latif

Saudi Arabia

Prince Sultan University

Dynamical systems and Artificial Intelligence models for 6G communications

Ahmed A. Abd El-Latif (SMIEEE, MACM) received the B.Sc. degree with honour rank in Mathematics and Computer Science in 2005 and M.Sc. degree in Computer Science in 2010, all from Menoufia University, Egypt. He received his Ph. D. degree in Computer Science & Technology at Harbin Institute of Technology (H.I.T), Harbin, P. R. China in 2013. He is an associate professor of Computer Science at Menoufia University, Egypt, and at EIAS Data Science Lab, College of Computer and Information Sciences, Prince Sultan University, Saudi Arabia. In more than 17 years of his professional experience, he published over 280 papers in journals/conferences including 10 books with over 9400 citations. He was also selected in the 2023, 2022, 2021 and 2020 Stanford University's ranking of the world's top 2% scientists. He involved in government and international funded R&D projects related to the widespread use of artificial intelligence for 5G/6G networks. He received many awards. He is a fellow at Academy of Scientific Research and Technology, Egypt. His areas of interests are Cybersecurity, 5G/6G Wireless Networks, Post-Quantum Cryptography, Artificial Intelligence of Things, AI-Based Image Processing, Information Hiding, Dynamical systems (Discrete-time models: Chaotic systems and Quantum Walks). He is the leader of mega grant program "Research of network technologies with ultra-low latency and ultra-high density based on the widespread use of artificial intelligence for 6G networks". Dr. Abd El-Latif is the chair/co-chair of many Scopus/ EI conferences. He is the EIC of International Journal of Information Security and Privacy, and series editor of Advances in Cybersecurity Management. Also, academic editor/ associate editor for set of indexed journals (Scopus journals' quartile ranking).

Prof. Andrey Koucheryavy

Russia

Bonch-Bruevich Saint Petersburg State University of Telecommunications, Communication Networks and Data Transmission department

HolNetverse (Holographic Network verse)

After graduating from Leningrad University of Telecommunications in 1974, A. Koucheryavy joined Telecommunication Research Institute LONIIS, where he worked till October 2003 (from 1986 to 2003 as the First Deputy Director). Dr. A. Koucheryavy holds Professor position at the Bonch-Bruevich St. Petersburg State University of Telecommunications (SUT) since 1998. There, in 2011 he became a Chaired Professor in "Telecommunication Networks and data transmission" department. Dr. A. Koucheryavy was an advisor of the Central Science Research Telecommunication Institute (ZNIIS) from 2003 to 2010.

Co-founder of the International Teletraffic Seminar (1993, 1995, 1998, 2002); founder of the model network for digital networks at LONIIS (1997); co-founder of the model network for packet networks at ZNIIS (2004); co-founder of the Internet of Things Laboratory (2012) and Quality of Experience and IPTV Laboratory (2014) at SUT. Chair of the Scientific school on teletraffic theory in LONIIS (1990 – 2003); Founder and scientific school chair "Internet of Things and self-organizing networks" in SUT (2010 up to now); Steering committee member of IEEE technically co-sponsored series of conferences ICACT and NEW2AN.

SG11 ITU-T vice-chairman 2005 – 2008, 2009 – 2012. WP3/WP4 SG11 chairman 2006 – 2012, WP4 SG11 vice-chairman 2015-2016, Chairman of SG11 in Study period 2017- march 2023. Co-founder of International Testing Center for new telecommunications technologies at ZNIIS under ITU-D competence. Host and technical program committees member of the "Kaleidoscope 2014" at SUT.

Honorary member of Popov's society (2002).

Time Zone in GMT +3

CONFERENCE PROGRAM

DAY 1 October 12, 2023

10:30	**Registration**
11:00	**Opening Speech**
11:20	**Keynote 1**
11:50	**Coffee Break**
12:10	**Keynote 2, 3**
13:10	**Lunch Break**
14:10	**Keynote 4, 5**
15:10	**Session 1** Next Generation Communication
16:40	**Coffee Break**

DAY 2 October 13, 2023

11:00	**Session 2** Cyber-Physical Systems
12:00	**Coffee Break**
12:20	**Session 3** Cyber-Physical Systems
13:20	**Lunch Break**
14:20	**Session 4** Cloud, Distributed and Parallel systems
16:20	**Coffee Break**
16:40	**Closing Ceremony**

Join Our Zoom Video Meeting for 2 days

CONFERENCE SESSIONS PROGRAM

DAY 1 October 12, 2023

Session 1
Next Generation Communication

2 **System level Model for Interference Evaluation in 5G Millimeter-Wave Ultra-Dense Network with Location-Aware Beamforming**
Grogoriy Fokin

21 **Approximate waiting times for queuing systems with variable cross-correlated arrival rates**
Mikhail Bogachev, Nikita Pyko, Nikita Tymchenko, Svetlana Pyko, and Oleg Markelov

36 **Short-term application backup system using edge computing nodes**
Abdukodir Khakimov Ammar Muthann

38 **Analysis of network coding methods for adaptive data transmission systems**
Sergey Vladimirov, Artem Fomin

50 **Estimation of Noise Immunity of Amplitude-Phase Modulated Signals when Transmitting a Fractional Number of Bits per Symbol**
Mark Mendelson, Vadim Egorov, Dmitriy Kopylov

63 **Cluster Head Nodes Selection in High Density 3D IoT Networks**
Paramonov A.I., Marochkina A.V.

DAY 2 October 13, 2023

Session 2
Cyber-Physical Systems

4 **Enhancing Satellite Communication Efficiency through AI-Based Traffic Prioritization**
Phuc Hao Do, Tran Duc Le, Aleksandr Berezkin, and Ruslan Kirichek

9 **Artificial Edge Computing Enabled Secure Offloading in LoRaWAN-Based IIoT Networks**
Mohammed Saleh Ali Muthanna, Andrei Lashchev, Klimovskoy Pavel Sergeevich, Mescheryakov Ilya, Tselykh Alexey

12 **High Efficient 3D Object Transmission System for HTC 6G Services**
Svechnikov Daniil, Artem Volkov, Andrey Koucheryavy

Session 3
Cyber-Physical Systems

25 **Technologies of the telepresence suit on-board network: research and development**
Georgii Inkin, Artem Morachevsky, Varvara Mineeva, Artem Volkov

42 **Study of multimedia and holographic traffic to create a data distribution model for a multi-tier cloud architecture.**
Vadim Kovalenko, Nikolay Demidov, Frank Houndonougbo

56 **3D deployment of Unmanned Aerial Vehicles on trajectory and placement: Survey**
Tung Duong Tran, Ammar Muthanna, Andrey Koucheryavy

65 **Security and Privacy in 6G networks based on Multi-key Generation in AES Block Cipher**
Alsarhan Mohammed Qahtan

Session 4
Cloud, Distributed and Parallel systems

6 **Blockchain network node rating system as an additional mechanism for reducing transactional fraud activity**
Elmir E. Iskhakov Vitalii N. Bakatov Albina V. Pomogalova Evgeny A. Donskov Vasiliy S. Elagin

17 **Analysis of the Signal Propagation Impact Factors in WLAN Indoor Positioning Fingerprinting on Accuracy Performance**
Mrindoko R. Nicholaus, Francis A. Ruambo, Elijah E. Masanga

24 **Mitigating Backdoor Threats in Windows and Linux Servers with a Zero Trust SDP Architecture and Snort IDS/IPS**
Francis A. Ruambo, Elijah E. Masanga, Mrindoko R. Nicholaus

31 **Study of Guard Interval Duration in the Operation of IEEE 802.11 Networks for Industrial Applications**
Anton Vikulov, Svetlana Skorobogatova

42 **Research of the current protection state of IEEE 802.11ax networks**
Maxim Kovtsur, Minyaev Andrey, Anton Kistruga, Vinnikov Semyon, Yasser Mark

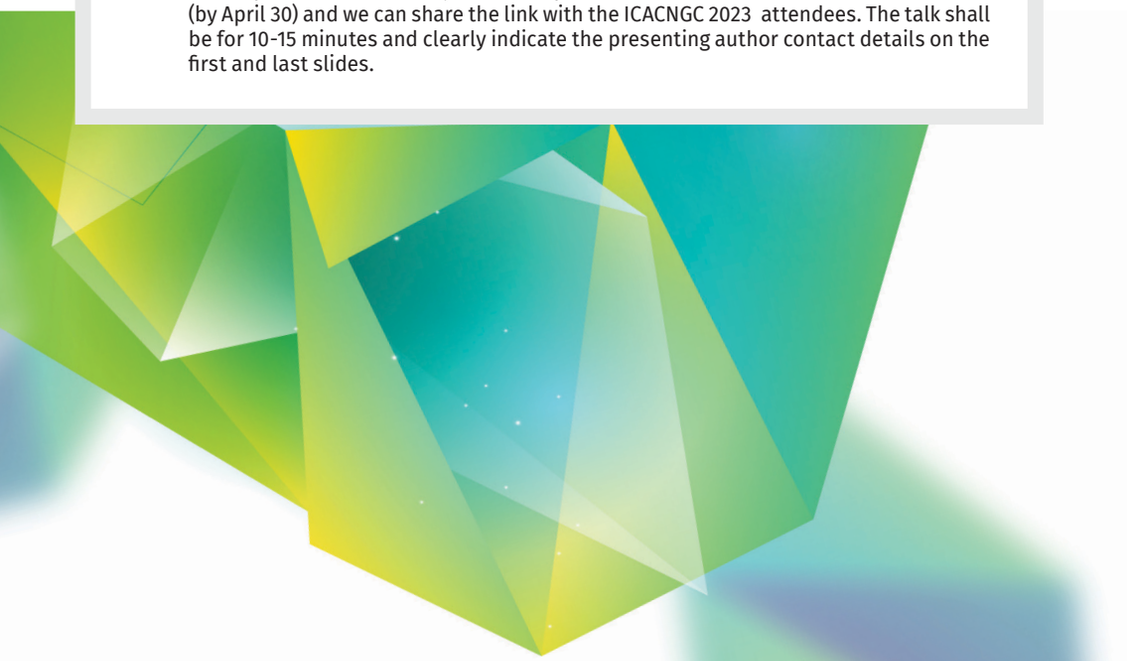
51 **Intersegmental FPV Control of Unmanned Systems in Hybrid Satellite-Terrestrial Communication Networks**
A. Berezkin, A. Suhodoeva, I. Tumanov, R. Vivchar, A. Slepnev, R. Kirichek

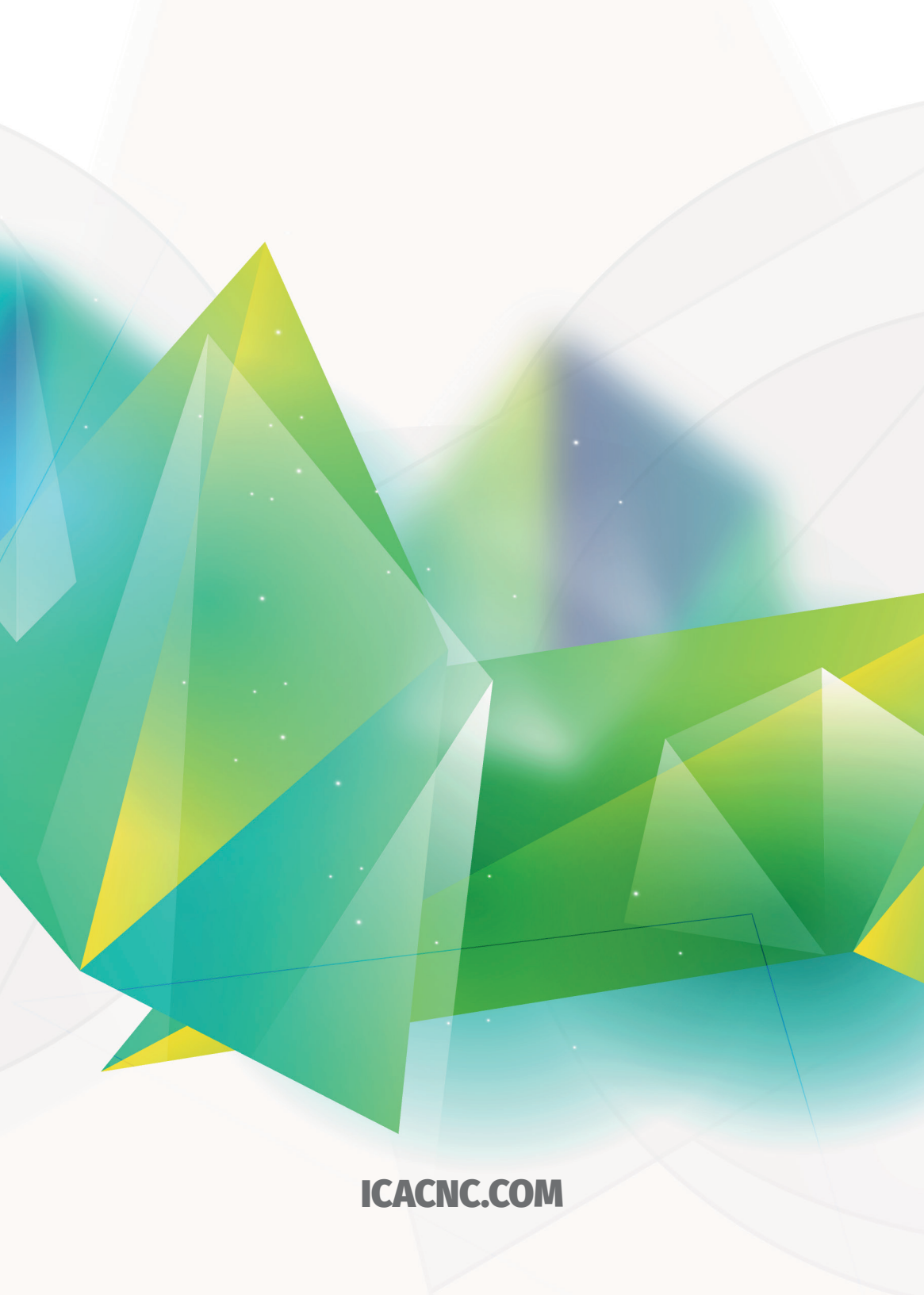
58 **Enhancing Blockchain Security: Multisignature approach in Cardano smart contract design**
Albina V. Pomogalova, Anastasia A. Martyniuk, Kirill E. Yesalov, Kirill A. Dvoretskov

62 **Analysis of models and methods for building fault-tolerant distributed storage systems for data center resilience.**
Natalia Redrugina Artem Shvidkiy

PRESENTATIONS GUIDELINES

1. Oral presentations for the ICACNGC 2023 have been allocated 15 minutes of effective presentation time, plus 2 minutes given to Q/A and 30 sec turnaround time between speakers.
2. All presentations are in English.
3. Arrive 10 minutes before the session start time to prepare your power point presentation. Please, start and end your presentation on time and keep the time schedule.
4. Bring your presentation in MS-PowerPoint or Adobe PDF formats. A volunteer will be at your disposal to help you show it in your room.
5. We will use the ZOOM platform for online presentations. All the plenary talks will be online. You may choose to present the paper using one of the following options:
    a. Online on ZOOM platform: If you chose this option, then we will schedule your online presentation according to the program.
    b. Offline presentation: You may record the presentation and share us the URL / YouTube link (by April 30) and we can share the link with the ICACNGC 2023 attendees. The talk shall be for 10-15 minutes and clearly indicate the presenting author contact details on the first and last slides.





ICACNC.COM