24th International Conference on Distributed Computer and Communication Networks (DCCN 2021) – AGENDA
September 20 (Monday) – September 24 (Friday), 2021

Organizers

V.A. Trapeznikov Institute of Control Sciences of RAS (ICS RAS, Russia, Moscow)

Peoples' Friendship University of Russia (RUDN University), Moscow,

Tracks

Track A. Computer and Communication Networks: Architecture, Protocols and Technologies. Chair: Vladimir Vishnevsky. Co-chair: Dmitry Kozyrev
Track B.Modeling of Distributed Systems and Networks. Chair: Konstantin Samouylov. Co-chair: Irina Kochetkova
Track C. Distributed Systems Applications. Chair:Andrey Koucheryavy. Co-chair: Daria Ostrikova

	TIME (Moscow time)	DAY 1: Opening, Plenary session (part I)
Monday, September 20, 2021	11:30–11:45	**Conference Opening** **Chairman:*Vladimir Vishnevsky,*** ICS RAS
	11:45–12:00	**Welcome Speech: *Dmitry Novikov***, Director, ICS RAS **Welcome Speech: *Konstantin Samouylov,*** Director, AMCT Institute, RUDN
	12:00–13:00	**Performance Analysis of DRX Mechanism in LTE-A Networks using Markov Modeling** ***Dharmaraja Selvamuthu*** **,** Indian Institute of Technology, India
	13:00–14:00	**Recent Advances in Scheduling Theory and Applications in Robotics and Communications** ***Eugene Levner***, Holon Institute of Technology, Israel AND ***Vladimir Vishnevsky***, ICS RAS, Russia
	14:00–14:30	Break
	14:30–15:30	**Bridging 5G to 6G Networks: Problems and Challenges** ***Luis M. Correia*** , University of Lisbon, Portugal
	15:30–16:30	**Recent results in performance modelling of finite-source retrial queues with collisions and their applications** ***Prof. János Sztrik*** **,** University of Debrecen, Hungary
	16:30–17:30	**Software Fault Tolerance via Environmental Diversity** ***Kishor S. Trivedi,*** Duke University, USA

	TIME (Moscow time)	DAY 2: Plenary session (part II), Track sessions		
Tuesday, September 21, 2021	11:00–12:00	**Towards 6G Non-Terrestrial Networks** ***Giuseppe Araniti***, Mediterranea University of Reggio Calabria, Italy		
		A.1.1. Computer and Communication Networks: Architecture, Protocols and Technologies ***Chairs: Prof. V.Vishnevsky, Prof. K.Samouylov***	**B.1.1. Modeling of Distributed Systems and Networks** ***Chairs: Prof. A.Dudin, Prof. C.Kim***	**C.1.1. Distributed Systems Applications** ***Chairs: Prof. A.Koucheryavy, Prof. R.Kirichek***
	12:00–12:15	**Malik Alsweity, Ammar Muthanna, Andrey Koucheryavy** Traffic management algorithm for V2X based flying fog system (ID 751)	**Chesoong Kim, Alexander Dudin, Sergei Dudin, Olga Dudina** MULTI-SERVER LOSS QUEUEING SYSTEM WITH THE BMMAP ARRIVAL PROCESS (ID 650)	**Dmitry Namiot** On the applicability and limitations of formal verification of machine learning systems (ID 588)
	12:15–12:30	**Albina Pomogalova, Dmitriy Sazonov, Evgeny Donskov, Alexey Borodin, Ruslan Kirichek** Identification of narrowband wireless communication networks systems and Internet of Things devices using Blockchain technology (ID 845)	**Alexander Dudin, Sergei Dudin, Olga Dudina** Система BMAP/PH/1 с нагревом и охлаждением прибора (ID 578)	**Vladimir Vishnevsky, Olga Semenova, Bui Duy Tan** Использование машинного обучения для исследования систем поллинга с коррелированными входными потоками (ID 732)
	12:30–12:45	**Behrooz Daneshmand** Survey of Load balancing mechanisms based on SDN in 5G/IMT-2020 (ID 646)	**Alexander Dudin, Sergei Dudin, Olga Dudina** Система MAP/PH/1 с автономным ограниченным обслуживанием без прерывания (ID 579)	**Anton Bondarchuk, Dmitriy Shashev, Stanislav Shidlovskiy** Binary gradient computation and implementation in reconfigurable computing environments (ID 637)
	12:45–13:00	**Abbas Alzaghir, Andrey Koucheryavy** Multi Task Multi-UAV Computation Offloading Enabled Mobile Edge Computing Systems (ID 719)	**Alexander Dudin, Mei Liu** Многолинейная система с разнотипными ненадежными приборами и повторными вызовами (ID 647)	**Sergey Astafiev, Alexander Rumyantsev** Distributed Computing of Embarrassingly Parallel R Applications using RBOINC Package (ID 634)
	13:00–13:30	Break		
Tuesday, September 21, 2021		**A.1.2. Computer and Communication Networks: Architecture, Protocols and Technologies** ***Chairs: Prof. K.Samouylov, Prof. Yu. Gaidamaka***	**B.1.2. Modeling of Distributed Systems and Networks** ***Chairs: Prof. A.Krishnamoorthy, Prof. Varghese C. Joshua***	**C.1.2. Distributed Systems Applications** ***Chairs: Dr. I.Kochetkova, Dr. D.Ostrikova***
	13:30–13:45	**Amani Sabbagh, Maxim Shcherbakov** An efficient cluster routing protocol for vehicular ad-hoc network using bio-metaheuristic algorithm (ID 744)	**Nisha Mathew, Varghese C. Joshua, Achyutha Krishnamoorthy** A Two Server Queueing Inventory Model With Two Types of Customers and a Dedicated Server (ID 624)	**Vadim Efimov** Targeted massive incident notification system for a globally distributed computation network (ID 615)
	13:45–14:00	**Amani Sabbagh** Evaluation of reactive routing protocols performance under malicious attacks in VANET (ID 706)	**Khamis Abdullah Khamis AL Maqbali, Varghese C. Joshua, Achyutha Krishnamoorthy** On A Queue With Marked Compound Poisson Input And Exponentially Distributed Batch Service (ID 609)	**Sergey Poslavskiy, Dmitriy Shashev, Stanislav Shidlovskiy** Object classification using neural networks with binary input and binary feature extraction (ID 728)
	14:00–14:15	**Andrey Tyulin, Alexander Chursin, Igor Dubina** Development and application of intelligent systems for optimal production management of unique products (ID 673)	**Sinu Lal T S, Achyutha Krishnamoorthy, Varghese C. Joshua** A queueing model for observation of suspicious data (ID 700)	**Konstantin Mikhailov, Alexey Abramov** An innovative solution for analyzing the dynamics of slowly developing processes of changing the geometry of engineering structures using the example of a system for strengthening a rocky slope (ID 717)

	14:15–14:30	**Andrey Tyulin, Alexander Chursin, Alexander Yudin, Polina Grosheva** Basis for the formation of a digital ecosystem of an industrial holding (ID 672)	**Achyutha Krishnamoorthy, Anu Joshua** Batch Service Queueing System Associated with Inventory Transport (ID 627)	**Ekaterina Panteley, Viacheslav Abrosimov** Machine learning for recognition of events in hostile environments (ID 708)
	14:30–14:45	**Ivan Tsitovich** On Group Polling Method in Structured Wireless Sensor Networks for Very Rare Events Detecting (ID 597)	**Rostislav Razumchik** Joint stationary distribution in the two-channel queueing system with ordered entry, governed by one queue skipping policy (ID 685)	**Evgenia Anikina, Andrey Kalashnikov** Management of risks for complex computer network based on a general arbitration scheme (ID 691)
Tuesday, September 21, 2021	14:45–15:00	**Vladimir Vishnevsky, Konstantin Vytovtov, Elizaveta Barabanova, Vladislav Buzdin** Local Hybrid Navigation System of Tethered High-Altitude Platform (ID 734)	**Katsiaryna Kosarava, Dzmitry Kopats** Application of a queuing network with positive and negative arrivals for modeling a computer network with antivirus software (ID 613)	**Sergey Shorokhov** On Deep Option Pricing in Local Volatility Models (ID 629)
	15:00–15:15	**Konstantin Vytovtov, Elizaveta Barabanova, Vladimir Vishnevsky** Investigation of wireless hybrid communication system reliability under external influences (ID 641)	**Valentina Klimenok, Alexander Dudin, Olga Semenova** Unreliable retrial queueing system with a backup server (ID 844)	
	15:15–15:30	**Alexander Grebeshkov** Ontology-based model for sensor network fault management (ID 620)	**Tatiana Rusilko** Asymptotic Analysis of a Closed Exponential Queueing Network with Unreliable Nodes (ID 603)	
	15:30–16:00	Break		
		A.1.3. Computer and Communication Networks: Architecture, Protocols and Technologies ***Chairs: Prof. S.Stepanov, Dr. E.Sopin***	**B.1.3. Modeling of Distributed Systems and Networks** ***Chairs: Prof. N.Markovich, Prof. U.Krieger***	
Tuesday, September 21, 2021	16:00–16:15	**Sergey Stepanov, Mikhail Stepanov, Umer Andrabi, Dmitriy Petrov, Juvent Ndayikunda** Enhancing the Resource Sharing Capabilities of a Network by Deploying Network Slicing Procedure (ID 686)	**Natalia Markovich, Udo Krieger** Calculating the PageRank Vector of a Scale-Free Web Network Growing by Preferential Attachment (ID 600)	
	16:15–16:30	**Yves Adou, Ekaterina Markova** Analysis of non-Preemptive Scheduling for 5G Network Model within Slicing Framework (ID 695)	**Maksim Ryzhov, Natalia Markovich** Information Spreading in Non-homogeneous Evolving Networks (ID 683)	
	16:30–16:45	**Faina Moskaleva, Ekaterina Lisovskaya, Lyubov Lapshenkova, Sergey Shorgin, Yuliya Gaidamaka** Development of Radio Admission Scheme Model for 5G Network Slicing Framework as a Retrial Queue (ID 750)	**Voronina Maria, Yurii Orlov** Digitization of student's personal characteristics: statistical analysis of psychological tests results and the Spearman effect (ID 716)	
	16:45–17:00	**Kirill Ageev, Eduard Sopin** On the convergence of an iterative method for approximate analysis of a resource queuing system with signals (ID 746)	**Alexey Kislitsyn, Yurii Orlov** Statistical model of graph structure based on "VKontakte" social network (ID 718)	
	17:00–17:15	**Marina Buranova, Vyacheslav Kartashevskiy** OpenFlow-based software-defined networking queue model (ID 701)	**Iliyan Petrov** Hybrid MCDM for Cloud Services: AHP(blocks) & Entropy, TOPSIS & MOORA (case study based on QoS and QoE criteria) (ID 730)	
	17:15–17:30	**Stepan Rogozin** Ageneralized loss priority system with application to bandwidth sharing (ID 714)	**Iliyan Petrov** Combined "AHP-Block & Entropy" weighting of QoS/QoE criteria for Cloud Services selection with TOPSIS, MOORA and WPM (methodology improvements) (ID 731)	
	17:30–17:45	**Hoang Kinh** Adaptive learning in computer design of ship integrated management systems (ID 572)	**Yuriy Obzherin, Mikhail Nikitin, Stanislav Sidorov** Hidden Markov Model of the Control System Latent Failures of Technological Cell (ID 612)	
	17:45–18:00	**Anastasia Marochkina, Alexander Paramonov, Tatiana Tatarnikova** Ultra-dense Internet of Things model network (ID 752)	**Ruslana Nekrasova** Stability conditions for a multi-orbit retrial system with general retrials under classical retrial policy (ID 606)	

	TIME (Moscow time)	DAY 3: Track sessions		
Wednesday, September 22, 2021		**A.2.1. Computer and Communication Networks: Architecture, Protocols and Technologies** ***Chairs: Prof. D.Namiot, Prof. L.Abrosimov***	**B.2.1. Modeling of Distributed Systems and Networks** ***Chairs: Prof. A.Melikov, Prof. A.Nazarov***	**C.2.1. Distributed Systems Applications** ***Chairs: Dr. E.Markova, Prof. T.Atanasova***
	11:00–11:15	**Aleksandr Soldatenko, Daria Semenova** Algorithm of finding all maximal induced bicliques of hypergraph (ID 693)	**Anatoly Nazarov, Alexander Moiseev, Ivan Lapatin, Svetlana Paul, Olga Lizyura, Pavel Pristupa, Xi PENG, Li Chen, Bo BAI** Analysis of the Amount of Information in Semi-Markov Flow (ID 625)	**Mainak Mondal, Stanislav Shidlovskiy, Dmitriy Shashev, Michael Okunsky** Autonomous Infrared Guided UAV Landing System (ID 607)
	11:15–11:30	**Alyona Borisovskaya** Linux network device drivers: NAPI polling in kernel threads (ID 688)	**Agassi Melikov, Mamed Shahmaliyev, János Sztrik** Algorithmic Approach to Study the Model of Perishable Inventory System with Repeated Customers (ID 589)	**Alexander Grusho, Nick Grusho, Michael Zabezhailo, Elena Timonina** Statistical Method for Support of Responsible Decision (ID 704)
	11:30–11:45	**Van Dai Pham, Hao Do Phuc, Tran Duc Le, Ruslan Kirichek** A Method for Link Quality Estimation in LoRa Network based on Support Vector Machine (ID 748)	**Elena Danilyuk, Svetlana Moiseeva, Anatoly Nazarov** Asymptotic Diffusion Analysis of an Retrial Queueing System M/M/1 with Impatient Calls (ID 707)	**Dmitry Kochetkov, Aliaksandr Birukou, Anna Ermolayeva** The Importance of Conference Proceedings in Research Evaluation: a Methodology for Assessing Conference Impact (ID 721)
	11:45–12:00	**Tran Duc Le, Nguyen Duc Tai, Le Ba Luong, Van Dai Pham, Ruslan Kirichek** Analysis of Network Security Issues in the Join Procedure of LoRaWAN (ID 846)	**Konstantin Vytovtov, Elizaveta Barabanova, Vladimir Vishnevsky** Transient behavior of the M|M|1|n queuing system with piecewise-constant information flows (ID 640)	**Evgeny Mikhailov, Ivan Fedotov, Andrey Larionov** Эффективность радиочастотной идентификации транспортных средств с использованием аналитической аппроксимации и имитационного моделирования (ID 720)
	12:00–12:15	**Oleg Boychenko** Evaluation of the quality and optimization functioning information systems (ID 605)	**Anatoly Nazarov, Svetlana Paul, Tuan Phung-Duc, Maria Morozova** Scaling limits of a tandem retrial queue with common orbit and Poisson arrival process (ID 711)	
	12:15–12:30	**Sergey Kislyakov, Aleksandr Sotnikov, Vladimir Akishin** Customer Experience Model for Customer Digital Twin (ID 632)	**Anatoly Nazarov, Maria Samorodova** Waiting Time Asymptotic Analysis of a M/GI/1 Retrial Queue System (ID 576)	
	12:30–12:45	**Igor Buzhin, Maxim Bessonov, Yuriy Mironov, Mais Farkhadov** Integrity, resilience and security of 5G transport networks based on SDN/NFV technologies (ID 726)	**Nikita Krishtalev, Ekaterina Lisovskaya, Alexander Moiseev** Resource Queueing System M/M/∞ in Random Environment (ID 694)	
	12:45–13:00		**Ivan Lapatin, Alexey Blaginin** The two-dimensional Output Process of Retrial Queue with Two-Way Communication and MMPP input (ID 743)	
	13:00–13:30	Break		

Wednesday, September 22, 2021			**B.2.2. Modeling of Distributed Systems and Networks** ***Chairs: Prof. J.Sztrik, Prof. E.Morozov***	
	13:30–13:45		**Andras Meszaros, Evsey Morozov, Taisia Morozova, Miklos Telek** Numerical analysis of a retrial system with unreliable servers based on Laplace transform description (ID 703)	
	13:45–14:00		**Irina Peshkova, Evsey Morozov, Mariia Maltseva** On regenerative estimation of extremal index in queueing systems (ID 715)	
	14:00–14:15		**Ksenia Zhukova, Evsey Morozov** A large deviation analysis of a queueing system with general retrieval time (ID 698)	
	14:15–14:30		**Alexander Rumyantsev, Davide Pastorello, Enrico Blanzieri, Valter Cavecchia** On Convergence of Tabu-Enhanced Quantum Annealing Algorithm (ID 623)	
	14:30–14:45		**Ádám Tóth, János Sztrik** The Simulation of Finite-Source Retrial Queueing Systems With Two-Way Communications to the Orbit and Impatient Customers (ID 601)	
	14:45–15:00		**Ádám Tóth, János Sztrik** Simulation of Two-Way Communication Retrial Queuing Systems With Non-reliable Server, Impatient Customers to the Orbit and Blocking (ID 602)	
	15:00–15:15		**Mohamed Hedi Zaghouani, Hamza Nemouchi, János Sztrik** Analysis of cognitive radio networks with balking and reneging (ID 622)	
	15:15–15:30		**Attila Kuki, Tamás Bérczes, Ádám Tóth, János Sztrik** Modeling of non-reliable retrial queueing systems with collisions and catastrophic breakdowns (ID 633)	
	15:30–16:00	Break		
			B.2.3. Modeling of Distributed Systems and Networks ***Chairs: Prof. A.Andronov, Prof. V.Rykov***	
Wednesday, September 22, 2021	16:00–16:15		**Alexander Andronov, Iakov Dalinger, Nadezda Spiridovska** Computational algorithm for an analysis of a single-line queueing system with arrived alternating Poisson flow (ID 626)	
	16:15–16:30		**Ekaterina Bulinskaya** Risks Ordering and Reliability of Some Applied Probability Systems (ID 643)	
	16:30–16:45		**Galina Zverkina** On polynomial convergence rate for reliability system with warm standby (ID 610)	
	16:45–17:00		**Boyan Dimitrov, Vladimir Rykov** On k-out-of-n System under Full Repair and Arbitrary Distributed Repair Time (ID 884)	

	17:00–17:15		**Vladimir Rykov, Dmitry Kozyrev, Nika Ivanova** Применение теории разложимых полурегенерирующих процессов к исследованию системы k-из-n:F с частичным ремонтом (ID 765)
	17:15–17:30		**Hilquias Cravid, Ivan Zaryadov, Tatiana Milovanova** Single-server queueing systems with exponential service times and threshold-based renovation (ID 684)
	17:30–17:45		**Hector Gibson Kinmanhon Houankpo, Dmitry Kozyrev, Emmanuel NIBASUMBA, Bienvenue N'dah MOUALE MOUTOUAMA** Reliability Model of a Homogeneous Hot-Standby k-out-of-n System (ID 758)
	17:45–18:00		**Alexander Dagaev, Van Dai Pham, Ruslan Kirichek, O.V. Afanaseva, E.A. Yakovleva** Availability factor analysis of a network in mesh structure (ID 747)

	TIME (Moscow time)	DAY 4: Track sessions		
Thursday, September 23, 2021			**B.3.1. Modeling of Distributed Systems and Networks** ***Chairs: Prof. D.Efrosinin, Dr. S.Vasilyev***	**C.3.1. Distributed Systems Applications** ***Chairs: Prof. E.Shchetinin, Prof. D.Kulyabov***
	11:00–11:15		**Maksim Zharkov, Alexander Kazakov, Anna Lempert** К вопросу о применении теории массового обслуживания при моделировании работы железнодорожных станций (ID 689)	**Eugene Yu. Shchetinin, Anastasia Glushkova, Leonid Sevastianov, Anastasia Demidova** Detection of cardiac arrhythmia based on the analysis of electrocardiogram using deep learning models (ID 593)
	11:15–11:30		**Anastasia Gorbunova, Alexey Lebedev** Response Time Estimate for a Fork-join System with Pareto Distributed Service Time as a Model of a Cloud Computing System Using Neural Networks (ID 733)	**Dmitry Kulyabov, Anna Korolkova, Anastasia Demidova** Surrogate modeling assistant software (ID 705)
	11:30–11:45		**Anastasia Gorbunova, Vladimir Vishnevsky** Evaluation of the Performance Parameters of a Closed Queuing Network Using Artificial Neural Networks (ID 727)	**Vladislav Shatravin, Dmitriy Shashev, Stanislav Shidlovskiy** Developing of models of dynamically reconfigurable neural network accelerators based on homogeneous computing environments (ID 611)
	11:45–12:00		**Dmitry Efrosinin, Natalia Stepanova, János Sztrik** Algorithmic analysis of finite-source multi-server heterogeneous queueing systems (ID 759)	**Andrey Borisov, Robert Mukharlyamov, Kaspirovich Ivan** Construction of differential equations of a nonholonomic mechanical system and perspectives of motion control using artificial intelligence methods (ID 710)
	12:00–12:15		**Sergey Vasilyev, Galina Tsareva, Shakhmurad Kanzitdinov, Mohamed Adel Bouatta** Queueing analysis of a large-scale system with a small parameter (ID 953)	**Alexander Yudin, Polina Grosheva** Intelligent system for forecasting the effectiveness of space services in solving economic problems (ID 668)
	12:15–12:30		**Evgeny Polin, Svetlana Moiseeva, Alexander Moiseev** Асимптотический анализ неоднородной СМО M|GI|∞, функционирующей в марковской случайной среде, в условии эквивалентного роста времени обслуживания на приборах (ID 598)	**Yury Zatuliveter, Elena Fishchenko** The Automata-based Approach to Large Systems Control in the Global Computer Environment (ID 702)
	12:30–12:45		**Maria Shklennik, Alexander Moiseev, Lyubov Zadiranova** Метод марковского суммирования для исследования потока повторных обращений в двухфазной системе MAP|GI|∞ с мгновенной обратной связью (ID 687	
	12:45–13:00		**Evgeny Golovinov, Dmitrii Aminev, Dmitry Kozyrev, Vladimir Kulygin** Определение показателей долговечности распределённой коммуникационной сети метеостанций минимальной конфигурации (ID 682)	
	13:00–13:30	Break		
	13:30–13:45		**János Sztrik** Software Packages for Teaching Queueing Theory (ID 586)	

	TIME (Moscow time)	DAY 5: Round Table and Conference Closing
Friday, September 24, 2021	11:00–12:00	**Round Table: On applications of the distributed systems (Круглый стол по вопросам приложений распределённых систем)** ***Chairs: P rof. Vladimir Vishnevsky, Prof. Konstantin Samouylov***
	12:00–12:15	**Conference Closing**