

PROGRAM

4th International Workshop on Information, Computation, and Control Systems for Distributed Environments

(ICCS-DE 2022, <https://iccs-de.icc.ru/en/>)

July 4-8, 2022, Irkutsk, Russia

The languages of the workshop are English and Russian.

The schedule of events indicated Moscow time (GMT+3). Irkutsk time (GMT+8) is indicated in parentheses.

July 4, 2022	EVENT
05:00 – 13:00 (10:00 – 18:00)	REGISTRATION OF WORKSHOP PARTICIPANTS, Institute Lobby
11:00 – 11:10 (16:00 – 16:10)	<p align="center">OPENING CEREMONY (offline-online), Room 407</p> <p align="center">Chairs: <i>Igor Bychkov</i>¹, <i>Andrei Tchernykh</i>²</p> <p align="center">¹ Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia idstu@icc.ru</p> <p align="center">² CICESE Research Center, Ensenada, México chernykh@cicese.mx</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p>
	<i>Igor Bychkov and Andrei Tchernykh</i> . Greetings to the workshop
11:10 – 11:50 (16:10 – 16:50)	<p align="center">PLENARY SESSION (offline-online), Room 407</p> <p align="center">Chairs: <i>Andrei Tchernykh</i>¹, <i>Evgeny Cherkashin</i>²</p> <p align="center">CICESE Research Center, Ensenada, México chernykh@cicese.mx</p> <p align="center">² Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia eugeneai@irnok.net</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p>
	11:40 (16:40) <i>Zeljko Stojanov</i> . Software Architectures in Complex Socio-Technical Systems: Review and Experiences
11:50 – 12:30 (16:50 – 17:30)	<p align="center">SECTION: INFORMATION AND TELECOMMUNICATION SYSTEMS (offline-online), Room 407</p> <p align="center">Chairs: <i>Zeljko Stojanov</i>, <i>Evgeny Cherkashin</i>²</p> <p align="center">University of Novi Sad, Technical Faculty "Mihajlo Pupin", Serbia zeljko.stojanov@uns.ac.rs</p> <p align="center">² Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia eugeneai@irnok.net</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p>
	<i>Dalibor Dobrilovic, Jasmina Pekez, Eleonora Desnica, Ljiljana Radovanovic, Dragica Radosav, Milica Mazalica and Sinisa Mihajlovic</i> . Model of sensor network for solar radiation data acquisition
	<i>Aleksandra Stojkov and Zeljko Stojanov</i> . Software Reengineering: A Qualitative Study in two Software Companies
12:30 – 13:00 (17:30 – 18:00)	Excursion to the public access center Irkutsk Supercomputer Center of the SB RAS
13:00 (18:00)	BUFFET, Dining room

July 5, 2022	EVENT
04:00 – 06:00 (09:00 – 11:00)	<p style="text-align: center;">PLENARY SESSION (offline-online), Room 407</p> <p style="text-align: center;">Chair: <i>Gennady Rugnikov</i> Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia rugnikov@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <p>04:00 (09:00) <i>Igor Bychkov</i>. Fundamentals, methods and technologies for digital monitoring and forecasting of the environmental situation on the Baikal natural territory</p> <p>04:40 (09:40) <i>Igor Bychkov, Vadim Potapov and Evgeniy Schastlivtsev</i>. Comprehensive environmental monitoring of mining enterprises using the Internet of things and Earth remote sensing data</p> <p>05:20 (10:20) <i>Sagit Valeev and Natalya Kondratyeva</i>. Multilevel reference models of business processes</p>
06:00 – 06:05 (11:00 – 11:05)	Break
06:05 – 07:25 (11:05 – 13:05)	<p style="text-align: center;">SECTION: INFORMATION AND TELECOMMUNICATION SYSTEMS (offline-online), Room 407</p> <p style="text-align: center;">Chairs: <i>Sagit Valeev</i>¹, <i>Roman Fedorov</i>² ¹ Sochi State University, Sochi, Russia vss2000@mail.ru ² Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia fedorov@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <p><i>Evgeny Barakhtenko, Valery Stennikov, Dmitry Sokolov and Gleb Mayorov</i>. Foundations of the development of digital twins for the design of integrated energy systems</p> <p><i>Dmitry Sokolov, Valery Stennikov, Evgeny Barakhtenko and Gleb Mayorov</i>. Development of a software platform for creating digital twins of integrated energy systems</p> <p><i>Evgeniy Fereferov and Alexei Hmel'nov</i>. GeoARM instrumental system: capabilities and application experience</p> <p><i>Alexandra Spasibko, Evgeniy Fereferov and Aleksandr Vetrov</i>. Information technology for support archaeological research</p> <p><i>Natalia Beresneva and Aleksey Edelev</i>. A risk-oriented approach to identifying energy system critical components</p> <p><i>Olga Basharina</i>. Methodology for Collecting, Processing, and Analyzing Socio-Economic Information</p>
08:00 – 09:00 (13:00 – 14:00)	Lunch

July 6, 2022	EVENT
05:00 – 05:40 (10:00 – 10:40)	<p style="text-align: center;">PLENARY SESSION (offline-online), Room 407</p> <p style="text-align: center;">Chair: <i>Sergey Ul'yanov</i></p> <p style="text-align: center;">Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia sau@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <hr/> <p>05:00 (10:00) <i>Jorge Mario Cortes-Mendoza</i>. Performance–Energy tradeoff consolidation with contention-aware resource provisioning in containerized clouds</p>
05:40 – 05:45 (10:40 – 10:45)	Break
05:45 – 07:45 (10:45 – 12:45)	<p style="text-align: center;">SPECIAL SECTION FOR YOUNG SCIENTIST (offline-online), Room 407</p> <p style="text-align: center;">Chairs: <i>Jorge Mario Cortes-Mendoza</i>¹, <i>Alexey Kovtunenکو</i>², <i>Sergey Ul'yanov</i>³</p> <p style="text-align: center;">¹ South Ural State University, Chelyabinsk, Russia kortesmendosak@susu.ru</p> <p style="text-align: center;">² Ufa State Aviation Technical University, Ufa, Russia askovtunenکو@mail.ru</p> <p style="text-align: center;">³ Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia sau@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <hr/> <p><i>Sergey Gorsky, Roman Kostromin and Ivan Sidorov</i>. Integration of containerization tools for automatization of development and execution of applied packages</p> <hr/> <p><i>Anton Tolstikhin</i>. Control strategies for searching and monitoring sources of a concentration field</p> <hr/> <p><i>Ivan Ignatev</i>. BigData technologies: opportunities and prospects for import substitution in the Russian Federation</p> <hr/> <p><i>Mikhail Chekan</i>. Comparative Analysis of Tools for Automating Microgrid Modeling</p> <hr/> <p><i>Egor Shiriaev, Ekaterina Bezuqlova, Nikolay Kucherov and Viktor Kuchukov</i>. Study of the mathematical model of the method for comparing numbers in RNS for even ranges</p> <hr/> <p><i>Ekaterina Bezuqlova, Egor Shiriaev, Nikolay Kucherov and Viktor Kuchukov</i>. Error correction codes as a modification of the steganography technique</p> <hr/> <p><i>Vitaly Ushakov</i>. Construction of reachability areas in the perturbations space</p>
08:00 – 09:00 (13:00 – 14:00)	Lunch

July 7, 2022	EVENT
05:00 – 07:00 (10:00 – 12:00)	<p style="text-align: center;">PLENARY SESSION (offline-online), Room 407</p> <p style="text-align: center;">Chair: <i>Olga Nikolaychuk</i> Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia nikoly@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <p>05:00 (10:00) <i>Vladimir Moskvichev, Vadim Potapov and Ulyana Postnikova</i>. Information system of territorial risk and security management: concept and results</p> <p>05:40 (10:40) <i>Valeriya Gribova</i>. AI systems and technologies for their development. What should they be?</p> <p>06:20 (11:20) <i>Alexey Kovtunenko</i>. Distributed processing of streaming data based on software agent technology</p>
07:00 – 07:05 (12:00 – 12:05)	Break
07:05 – 08:05 (12:05 – 13:05)	<p style="text-align: center;">SECTION: INTELLIGENT SYSTEMS (offline-online), Room 407</p> <p style="text-align: center;">Chairs: <i>Valeriya Gribova</i>¹, <i>Olga Nikolaychuk</i>² ¹ Institute of Automation and Control Process, FEB RAS, Vladivostok, Russia gribova@dvo.ru ² Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia nikoly@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <p><i>Alexander Stolbov, Anna Lempert and Alexander Pavlov</i>. A Web-based Software System for Intelligent Support in Modeling and Forecasting the Water Resources</p> <p><i>Aleksandr Reznik and Aleksandr Soloviev</i>. Intelligent software system APP-MNIT for analytical calculations using parallel computing</p> <p><i>Alexei Hmelnov</i>. Writing code for Reading Binary Data in an Application Using File Format Specifications in FlexT and the Driver of Binary Files</p>
08:05 – 10:00 (13:05 – 15:00)	Lunch

July 7, 2022	EVENT
<p>10:00 – 12:00 (15:00 – 17:00)</p>	<p style="text-align: center;">SECTION: PARALLEL AND DISTRIBUTED COMPUTING SYSTEMS (offline-online), Room 407</p> <p style="text-align: center;">Chair: <i>Evgeny Cherkashin</i> Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia eugeneai@irnok.net</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <hr/> <p><u><i>Darya Romanova</i></u>. Combinational circuits design in the functional-flow parallel programming language</p> <hr/> <p><u><i>Oleg Sukhoroslov, Maxim Gorokhovskiy, Roman Ilgovskiy, Tagir Kuskarov, Yuri Semenov and Andrey Vetrov.</i></u> Towards a General Framework for Studying Resource Management in Large Scale Distributed Systems</p> <hr/> <p><u><i>Vladimir Devyatkov, Timur Devyatkov, Maxim Fedotov, Rasul Minnikhanov and Vasily Shestyuk.</i></u> Simulation environment GPSS Studio and modeling tool GPSS World Core</p> <hr/> <p><u><i>Alexander Feoktistov, Andrei Tchernykh and Vladimir Dmitriev.</i></u> Mitigating Uncertainty of Resource Allocation in Heterogeneous Computing Environment</p> <hr/> <p><u><i>Sergey Gorsky.</i></u> Framework Orlando Tools: Current State and Key Development Directions</p> <hr/> <p><u><i>Roman Kostromin.</i></u> Overview of computation containerization tools in a high-performance distributed public-access environment</p>
<p>12:00 – 12:30 (17:00 – 17:30)</p>	<p style="text-align: center;">CLOSING CEREMONY (offline-online), Room 407</p> <p style="text-align: center;">Chair: <i>Igor Bychkov</i> Matrosov Institute for System Dynamics and Control Theory of SB RAS, Russia idstu@icc.ru</p> <p>Technical secretary: <i>Mikhail Kalashnikov</i> Matrosov Institute for System Dynamics and Control Theory SB RAS, Russia, Irkutsk, Russia, mk@icc.ru</p> <hr/> <p><u><i>Igor Bychkov.</i></u> Summing up the results of the workshop</p>