

**THE SCHEDULE FOR  
28<sup>th</sup> INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL CONFERENCE  
EXTREME ROBOTICS (ER-2017)**

**November 2-3, 2017, Russian State Scientific Center for Robotics and Technical Cybernetics (RTC)  
21 Tikhoretsky prospect, Saint-Petersburg, Russia**

November 2, 2017 (Thursday)					
<b>09:00 –10:30</b>	Registration of the participants, second floor (Central Entrance, RTC). Welcome coffee. RTC Conference-Hall foyer, third floor.				
<b>10:30 – 12:30</b>	Conference opening. RTC Conference Hall, third floor. Plenary session. RTC Conference Hall, third floor.				
<b>12:30 – 13:30</b>	Lunch-time		Transfer to the Military Academy of the Signal Corps named after S.M. Budjonny		Transfer to the State-Financed Institution of Supplementary Education – Technical Activity and Information Technologies Center for Children and Young People in Pushkin district of Saint-Petersburg
		<b>13:00 – 13:30</b> Coffee-break. Small Conference-Hall of the Military Academy of the Signal Corps named after S.M. Budjonny.			
<b>14:00 – 15:00</b>	Sections sessions and Conference Events.				
	<b>Section 1.</b> 3027 RTC Room, third floor.	<b>Section 2.</b> 3017 RTC Room, third floor.	<b>Section 3.</b> RTC Conference Hall, third floor.	Roundtable Discussions (participation restricted, according to tickets; only for Russian participants). Small Conference-Hall of the Military Academy of the Signal Corps named after S.M. Budjonny (3, Tikhoretsky pr., Saint-Petersburg)	<b>14:00 – 14:30</b> Coffee-break.
					<b>14:30 – 15:30</b> Presentation of new competence Extreme Robotics in the frame of WorldSkills Russia Junior Development in Saint-Petersburg. State-Financed Institution of Supplementary Education – Technical Activity and Information Technologies Center for Children and Young People in Pushkin district of Saint-Petersburg (12, Naberezhnaya ul., Pushkin, Saint-Petersburg).
<b>15:00 – 15:30</b>	Coffee-break. RTC Conference-Hall foyer, third floor.		Coffee-break. Small Conference-Hall of the Military Academy of the Signal Corps named after S.M. Budjonny.		
<b>15:30 – 18:00</b>	Sections sessions and Conference Events (Continue).				
	<b>Section 1.</b> 3027 RTC Room, third floor	<b>Section 2.</b> 3017 RTC Room, third floor	<b>Section 3.</b> RTC Conference Hall, third floor	Roundtable Discussions (participation restricted, according to tickets; only for Russian participants). Small Conference-Hall of the Military Academy of the Signal Corps named after S.M. Budjonny (3, Tikhoretsky pr., Saint-Petersburg).	Presentation of new competence Extreme Robotics in the frame of WorldSkills Russia Junior Development in Saint-Petersburg. State-Financed Institution of Supplementary Education – Technical Activity and Information Technologies Center for Children and Young People in Pushkin district of Saint-Petersburg (12, Naberezhnaya ul., Pushkin, Saint-Petersburg).
					Transfer to the RTC
<b>18:00 – 20:00</b>	Festive program devoted to the Conference opening. RTC Banquet room, second floor.			Cultural Program.	Festive program devoted to the Conference opening. RTC Banquet room, second floor.

<b>November 3, 2017 (Friday)</b>					
<b>10:00 – 11:00</b>	Sections sessions and Conference Events (Continue).				
	<b>Section 1.</b> 3027 RTC Room, third floor.	<b>Section 2.</b> 3017 RTC Room, third floor.	<b>Section 3.</b> RTC Conference Hall, third floor.	Youth section of Poster Session. 4003 RTC Room fourth floor.	Roundtable on robotics application in medicine. Pavlov First Saint-Petersburg State Medical University (6- 8, L'va Tolstogo ul., Saint- Petersburg).
<b>11:00 – 11:30</b>	Coffee-break. RTC Conference-Hall foyer, third floor.				Coffee-break.
<b>11:30 – 13:00</b>	Sections sessions and Conference Events (Continue)				
	<b>Section 1.</b> 3027 RTC Room, third floor.	<b>Section 2.</b> 3017 RTC Room, third floor.	<b>Section 3.</b> RTC Conference Hall, third floor.	Youth section of Poster Session. 4003 RTC Room fourth floor.	Roundtable on robotics application in medicine. Pavlov First Saint-Petersburg State Medical University (6- 8, L'va Tolstogo ul., Saint- Petersburg).
<b>13:00 – 14:00</b>	Lunch-time				
<b>14:00 – 16:30</b>	Sections sessions and Conference Events (Continue)				
	<b>Section 1.</b> 3027 RTC Room, third floor.	<b>Section 2.</b> 3017 RTC Room, third floor.	<b>Section 3.</b> RTC Conference Hall, third floor.	Meeting of Technical committee on standardization «Robotics». 4003 RTC Room fourth floor.	Youth Session: format presentation for youth robotic competitions RTC Cup and international competitions RoboCup: Rescue. Peter the Great St. Petersburg Polytechnic University (SpbPU), Scientific-Research Campus Building, (29A, Polytekhnicheskaya ul., Saint-Petersburg).
					Coffee-break.
<b>16:30 – 17:00</b>	Coffee-break. RTC Conference-Hall foyer, third floor.			Coffee-break. 4003 RTC Room, fourth floor.	Transfer to the RTC
<b>17:00 – 18:00</b>	Final Plenary session. RTC Conference Hall, third floor.				
<b>18:00 – 20:00</b>	Festive program devoted to the Conference closing. RTC Banquet room, second floor.				

**THE PROGRAM FOR  
28<sup>th</sup> INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL  
CONFERENCE EXTREME ROBOTICS (ER-2017)**

**NOVEMBER 2, 2017 (THURSDAY)**

<b>10:30 – 10:40</b>	<b>Conference opening</b>	<b>Conference-Hall, RTC, third floor</b>
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*Welcoming addresses for Conference participants:*

*Director and Chief Designer of RTC, Doctor of Technical Sciences **Alexander Lopota***

*Head of the Interagency Task Force of the Military-Industrial Commission of the RF **Oleg Martyanov***

*Deputy head of Federal Agency for Technical Regulation and Metrology **Anton Shalaev***

*Vice-chairman of Committee on Industrial Policy and Innovations of Saint-Petersburg  
**Vadim Hrabrov***

*Acting as Chairman of Committee for Education and Higher School of Saint-Petersburg **Irina Ganus***

*Executive vice-president of the Union of Industrialists and Entrepreneurs of St. Petersburg  
**Eugeny Gorin***

*General Director JSC "NPO SM", corresponding member RAS **Mikhail Sil'nikov***

*Rector Academician of the Russian Academy of Sciences, Academician of the RAS **Sergey Bagnenko***

*Director General The FSBI NMRRC of the Ministry of Health of the Russian Federation,  
Academician of the RAS **Andrey Kaprin***

*Rector of Moscow Technological University, Doctor of Technical Science **Stanislav Kudzh***

*Honorary Chief Designer of RTC, Doctor of Technical Sciences, Professor **Eugeny Yurevich***

<b>10:40 – 12:30</b>	<b>Plenary Session</b>	<b>Conference-Hall, RTC, third floor</b>
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*Co-chairmen:*

***Oleg Martyanov***

*Doctor of Technical Science, Professor **Eugeny Yurevich***

*Doctor of Technical Sciences **Alexander Lopota***

*Technical assistant: **Marina Burkina***

*(Verbal presentation duration is up to 15 minutes. Answers to the questions - up to 5 minutes)*

1. ***Alexander V. Lopota (Doctor of Technical Sciences Director and Chief Designer of RTC, Saint-Petersburg)*** The main directions of service robotics development
2. ***Yuriy V. Vizilter (Doctor of Physical and Mathematical Sciences Senior Research Scientist of MAI, Moscow)*** Computer sight and machine learning for robotics
3. ***Alexey Ev. Semenov (Geoskan group of companies, Saint-Petersburg)*** Aerial photography for problems of extreme robotics
4. ***Maksim V. Zabelin (Deputy head of Federal Medical Biological Agency of Russia, Moscow)*** The main directions of medical robotics development in Federal Medical Biological Agency
5. ***Andrey D. Kaprin (RAS Academician, Doctor of Medical Sciences, Professor, Director General of FSBI NMRRC of the Ministry of Health of the Russian Federation, Obninsk town)*** Robotic technology for medicine
6. ***Alexey A. Romanov (Doctor of Technical Sciences Deputy Director for Science of JSC «Russian space systems», Moscow)*** The paradigm shift in the development of innovative products: from separate R & D works to digital full life-cycle projects
7. ***Alexey I. Borovkov (PhD, Professor, Vice-principal of SPbPU SPbPU, Saint-Petersburg)*** Factories of the future – Foundation for the development of robotics
8. ***Anton P. Shalaev (Deputy head of Federal Agency for Technical Regulation and Metrology, Moscow)*** Use of standardization tools in the creation and perfection of robotics

14:00 – 18:00

Session I. Theory and design methods of robotic systems

3027 RTC Room,  
third floor

Co-chairmen:

Doctor of Technical Science, Professor **Valentin Pryanichnikov**

Candidate of Technical Sciences **Alexander Ivanov**

Technical assistant: **Alena Chebykina**

*(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)*

1. **Shardyko I.V., Titov V.V. (RTC, Saint-Petersburg)** A closed-form solution of ik task for a 6-dof manipulator with pitch axes offset and a technique of fast joint space trajectory computation
2. **Gradetsky V.G., Knyazkov M.M., Sukhanov A.N., Chashchukhin V.G (Institute for Problems in Mechanics RAS, Moscow)** Oscillatory processes in electromagnetic miniature robots
3. **Piscariov A.A., Mikhailov B.B. (BMSTU, Moscow)** Initial estimate evaluation methods in 3D-surface approximation tasks
4. **Vatamaniuk I.V., Saveliev A.I. (St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences)** Mobile robotic platform as a component of cyber-physical smart space
5. **Kapustina O.M. (National Research University «Moscow Power Engineering Institute», Moscow)** An analytical solution of the inverse kinematics problem of KUKA YOUNBOT, parameterized by generalized coordinates of its platform
6. **Glazunov V.A., Aleshin A.K., Shalyukhin K.A., Rashoyan G.V., Antonov A.V., Popov A.M., Yudkin V.M. (Institute of Machines Science named after A.A. Blagonravov of the Russian Academy of Sciences, Moscow)** Synthesis and analysis of parallel structure robots for working in extreme environments
7. **Belonozhko P.P. (Bauman Moscow State Technical University, Moscow)** Comparative analysis of dynamics of one-degree of freedom manipulators on movable and hinged foundations
8. **Kazantsev V.N., Pavlov V.A. (RTC, Saint-Petersburg)** Terminology and approaches to a definition of modular robot structure
9. **Kopylov V.M. (RTC, Saint-Petersburg)** A Method for measuring of small oscillations of spacecraft payload
10. **Andreev V.P., Kim V.L., Pletenev P.F. (MSTU «STANKIN», ML «Sensorica», IINET RSUH, Moscow)** The principle of the full functionality of modules in heterogeneous modular mobile robots
11. **Vasiliev I.A. (RTC, Saint-Petersburg)** Algorithms of motion of the wheeled-walking platform
12. **Moskovchenko V.M., Baranov V.V. (Southern Russian State Polytechnical University of M.I. Platov Novocherkassk town)** Model of impact on robotic systems
13. **Vilisov V.Ya. (Energy IT LLP, Korolyov city, Moscow Oblast)** Learning a robotic system how to behave in an optimal mode in the conditions of resistance
14. **Arkhipov M.V., Golovin V.F., Vzhesnevsky E.A. (Moscow Polytechnic University)** Human-machine interface of the manipulation robot

14:00 – 18:00

Session II. Robotic Systems Control

3027 RTC Room,  
third floor

Co-chairmen:

Doctor of Technical Science, Professor **Arkadiy Yushchenko**

Candidate of Technical Sciences, **Sergey Polovko**

Technical assistant: **Elisabeth Pashchenko**

*(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)*

1. **Stepanov D.N., Smirnova E.Yu. (RTC, Saint-Petersburg)** A method of mobile robot position estimation correction using visual location of natural landmarks
2. **Kiy K.I. (Keldysh Institute of Applied Mathematics (Russian Academy of Sciences)** Computer vision algorithms for analyzing signal objects in a road scene
3. **Kirillov S.N., Kostkin I.V. (OOO “Izhevskiy Radiozavod”, Izhevsk town)** Adaptive algorithm for processing underwater and overwater images under influence of interference factors
4. **Leskov A.G., Seliverstova E.V. (Bauman Moscow State Technical University, Moscow)** Planning and choice of method of capture of the deformable object algorithm

5. **Makarychev V.P.** (RTC, Saint-Petersburg) Adaptive visual servo control of robots
6. **Andreev V.P., Tarasova V.E.** (MSTU «STANKIN», International Laboratory «Sensorika», International Institute of the New Educational Technologies, RSUH, Moscow) Identification of objects using scanning angular movements of ultrasonic sensor
7. **Minkin Yu.I.<sup>1</sup>, Panchenko A.V.<sup>1</sup>, Шканаев A.Yu.<sup>1</sup>, Konovalenko I.A.<sup>1</sup>, Putbntcev D.N.<sup>2</sup>, Sadekov R.N.<sup>3</sup>** (<sup>1</sup>JSC «Cognitive»; <sup>2</sup>Institute for Systems Analysis, FRC CSC RAS; Institute of Engineering Physics, Serpukhov town) Computer vision system: a tool for evaluating the quality of wheat in a grain tank
8. **Panchenko A.V.<sup>1</sup>, Shkanaev A.Yu.<sup>1</sup>, Krochin D.A.<sup>1</sup>, Polevoy D.V.<sup>2</sup>, Sadekov R.N.<sup>3</sup>** (<sup>1</sup>JSC «Cognitive»; <sup>2</sup>Institute for Systems Analysis, FRC CSC RAS; Institute of Engineering Physics, Serpukhov town) Analysis of straw row in the image to control the trajectory of the agricultural combine harvester
9. **Shipovalov E.A., Pryanichnikov V.Ev.** (KIAM RAS, IINET RSUH, MSTU «STANKIN», IL «Sensorika», Москва) Automated mission planning for mobile robots using on-board computers with hybrid architectures
10. **Kirsanov K.B., Davydov D.V., Pryanichnikov V.E.** (International Laboratory «Sensorika», MSTU «Stankin», IINET RSUH, Moscow; KIAM Russian Academy of sciences) Interatsionnye software for remote programming of intelligent service and handling robots
11. **Yushenko A.S., Lebedev K.R., Zabihafar S.H.** (Bauman Moscow State Technical University) Adaptive Neural Network Control of Quadrotor helicopter
12. **Pavlovsky V.E., Shamin A.Yu.** (Keldysh Institute of Applied Mathematics of RAS; (Mechanics-mathematical faculty of the Moscow State University of M.V. Lomonosov, Moscow) The dynamic model and optimal control of the motion of the robot-yacht with differet forms of the sail
13. **Zhukov Y.A., Korotkov E.B., Slobodzyan N.S.** (Baltic state technical university «VOENMEH» named after D.F. Ustinov, Saint-Petersburg) Control of high-precision space application system of positioning and orientation on the basis of hexapode with "the spatial sensor of position"
14. **Briskin E.S., Sharonov N.G., Kalinin Ya.V., Maloletov A.V., Serov V.A.** (Volgograd State Technical University) On the features of motion control of mobile robots with walking locomotor of discrete interacting with the support surface

<b>14:00 – 18:00</b>	<b>Session III. Developments and application of RTC</b>	<b>RTC Conference Hall, third floor</b>
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*Co-chairmen:*

*Doctor of Technical Science, Professor Victor Pavlov*

*Candidate of Technical Science Vladimir Pavlov*

*Technical assistant: Klavdia Kachilina*

**(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)**

1. **Gogin P.V., Zarutckiy N.V.** (RTC, Saint-Petersburg) Development of reconfigurable movement wheel type locomotor for mobile robot
2. **Malenkov M.I., Volov V.A., Guseva N.K., Kuzmenko D.N., Lazarev E.A.** (JCS Scientific-Technical Center «ROCAD») The results of the design&layout researches aimed at the improvement of the traversability of the planetary rovers
3. **Ryadchikov I.V., Nikulchev E.V., Sechenev S.I., Sinitsa S.G., Bolshakov A.V., Feshin A.A., Alotaki A.M., Smirnov A.N., Volkodav P.P.** (Kuban State University, Krasnodar, Moscow Technological Institute) Design and control of self-stabilizing angular robotics ANYWALKER
4. **Gavrilov A.E., Leonard A.V., Mishustin O.A., Selyunin D.M., Hantimirova S.B.** (Volgograd state technical university) The universal walking insectomorphic platform
5. **Gorobtcov A.S., Andreev A.E., Tarasov P.S.** (Volgograd State Technical University) Experience in designing and testing of humanoid robot control system
6. **Gorobtcov A.S., Andreev A.E., Tarasov P.S., Skorikov A.V.** (Volgograd State Technical University) Hexapod mini robot scout
7. **Ignatiev M.B., Popov V.P., Sergeev M.B.** (Saint-Petersburg state University of Aerospace Instrumentation) The problem of the external control of driving offenders to improve road safety
8. **Ignatyev M.B., Erokhin V.A., Lipinskiy Ya.A., Makin P.I.** (Saint-Petersburg state University of Aerospace Instrumentation) Information-computational system of a robot designed to inspect the pipeline

9. **Netkacheev A.G., Bychkovskiy D.N. (RTC, Saint-Petersburg)** 3D printed molds in production of robots and robotic complexes
10. **Poduraev Yu.V. (Moscow State University of Technology «STANKIN»)** Approach and experience of design of medical collaborative robotics for laser surgery and bioprinting
11. **Motienko A.I.<sup>1</sup>, Ronzhin A.L.<sup>1</sup>, Altunin A.A.<sup>2</sup>, Kryuchkov B.I.<sup>2</sup>, Usov V.M.<sup>2</sup> (<sup>1</sup>SPIIRAS, St. Petersburg; <sup>2</sup>Gagarin Research&Test Cosmonaut Training Center, Star City, Moscow region)** A evacuation of a cosmonaut in a spacesuit during extravehicular activity on the lunar surface with assistance of rescue robots
12. **Afonin V.L. (IMASH RAN, Moscow)** Robotic systems for finishing processing of a feather of gasturbine engine vanes
13. **Platonov A.K., Sokolov S.M., Boguslavskiy A.A., Beklemishev N.D., Trifonov O.V., Davydov O.V., (Keldysh Institute of Applied Mathematics of RAS, Moscow)** Regarding the choice of the range-finding sensors in the tasks of mobile robotics
14. **Aryskin A.A., Ksenzenko, A.J., Marzanov Yu.S., Prycev E.A., Pryanichnikov V.E., Khelemendik R.V., Eprikov S.R. (International Laboratory «Sensorika», MSTU «Stankin», INET RSUH, Moscow; KIAM Russian Academy of sciences)** Industrial automation with remote access and automatic resolution of logical contradictions for industry 4.0

**10:00 – 16:30****Session I. Theory and design methods of robotic systems****3027 RTC Room,  
third floor***Co-chairmen:**Doctor of Technical Science, Professor Valentin Pryanichnikov**Candidate of Technical Sciences Alexander Ivanov**Technical assistant: Alena Chebykina**(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)*

1. *Stankevich L.A., Sonyikin K.M., Gundelakh F.V. (SPbPU, Saint-Petersburg)* Human-robot interaction based on noninvasive brain-computer interface
2. *Korotkov A.L., Nogin M.A., Rogov A.V., Shmakov O.A. (RTC, Saint-Petersburg)* Test site for evaluation of technical characteristics of mobile robotic complexes of ultra-light and light classes
3. *Shmakov O.A. (RTC, Saint-Petersburg)* Experimental studies of serpentine motion control of a snake robot
4. *Moskovchenko V.M.<sup>1</sup>, Lauta O.S.<sup>2</sup>, Ivanov D.A.<sup>2</sup>, Kotcynayk M.A.<sup>2</sup>, Saenko I.B.<sup>2</sup> (<sup>1</sup> Southern Russian State Polytechnical University of M.I. Platov Novochoerkassk town; <sup>2</sup> Military Academy of the Signal Corps named after S.M. Budjonny, Saint-Petersburg)* Application of the method of converting stochastic networks for intellectual impacts modeling
5. *Moskovchenko V.M.<sup>1</sup>, Dementiev V.E.<sup>2</sup>, Kotcynayk M.A.<sup>2</sup>, Nechepurenko A.P.<sup>2</sup>, Krasnov V.A.<sup>2</sup> (<sup>1</sup> Southern Russian State Polytechnical University of M.I. Platov Novochoerkassk town; <sup>2</sup> Military Academy of the Signal Corps named after S.M. Budjonny, Saint-Petersburg)* Approach to forecasting of protocol impacts on robotic systems
6. *Borisov A.V. (The Branch of National Research University "Moscow Power Engineering Institute" in Smolensk)* The model of the exoskeleton with links of variable length with an arbitrary number of lumped masses on the link: study of the influence of the location of the masses on its dynamics
7. *Vasiliev A.V. (RTC, Saint-Petersburg)* Development and study of the complete computer model motion of mobile mini-robot with reconfigurable chassis transport system
8. *Briskin E.S., Kalinin Ya.V. (Volgograd State Technical University)* On energetically efficient gaits of walking robots
9. *Grishin V.S. (SEC «Robotics» BMSTU, Moscow)* Semirealistic simulation application to design and analyze robotics systems
10. *Pavluk N.A. (St. Petersburg Institute for Informatics and Automation of Russian Academy of Sciences)* Modeling of bearing support structure for pelvic mechanism of anthropomorphic robot ANTARES
11. *Osipov O.Yu., Meshcheryakov R.V., Shepelenko M.G. (FGBU VO «TUSUR», Tomsk city)* Designing digital models of elements of the electromachine part of electromechatronic modules of robotic systems
12. *Vasilyev I.A. (RTC, Saint-Petersburg)* Simulation of rescue robot for use in rescue operations group
13. *Shalumov A.S. (Scientific-research institute «ASONIKA» LTD)* Automated modeling of extreme external factors in design of robotic systems
14. *Prokopovich G.A., Podmazov I.V. (United Institute of Informatics Problems, Minsk, Republic of Belarus)* A new kind of spherical robot motion using the mechanical energy recuperation
15. *Orlova S.R. (SPbPU, Saint-Petersburg)* Exploring of deep convolutional neural network SSD for people and car detection by the mobile robot vision system
16. *Aniskin D.S., Andreev A.B. (Central research institute of chemistry and mechanics, Moscow)* Computational researches of aerodynamic characteristics of a rectangular wing with a symmetric profile by means of a ANSYS CFX program complex
17. *Gavrilenko S.A., Davydchik V.V., Eliseev I.A., Sevastjanov S.I. (Publik Share Society «Information Telecommunication Technologies», Saint-Peterburg)* The time-probability models and methods for motivation of the composition of receiving complex of communications for compact robotic submarine object
18. *Malyutin N.V. (LTD «CB IGAS», Moscow)* Practice and prospects of development of analytical methods for the analysis of equipment resistance to extreme destabilizing factors exposure

Co-chairmen:

*Doctor of Technical Science, Professor Arkadiy Yushchenko*

*Candidate of Technical Sciences, Sergey Polovko*

*Technical assistant: Bannister Zoya*

*(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)*

1. *Andreev V.P., Kim V.L. (MSUT «STANKIN», International Laboratory «Sensorika», International Institute of the New Educational Technologies, RSUH, Moscow)* The transport module motion organization in the composition of the heterogeneous modular mobile robot
2. *Andreev V.P., Pletenev P.F. (MSTU «STANKIN», IL «Sensorika», IINET RSUH, Moscow)* Intermodular as a part method for heterogeneous modular robot
3. *Komarov A., Bahshiev A.V. (SPbPU, Saint-Petersburg)* Review of architectures of artificial neural networks for computer vision systems in mobile robotics
4. *Dobrynin D.A. (Federal research center «Information and control», Russian Academy of Sciences)* Design of learning control system for exoskeleton control tasks
5. *Manko S.V., Diane S.A.K., Lokhin V.M., Novoselsky A.K. (Moscow Technological University MIREA, Moscow)* Robotic group control for debris removal and construction disassembly in the atomic industry
6. *Kazakov L.N., Botov V.A., Soloviev D.M. (Yaroslavl State University named after P.G. Demidov)* Pilot study of a covert control channel by the MRP-100 robotics platform
7. *Antonenko S.I., Makarychev V.P. (RTC, Saint-Petersburg)* Research of dynamics of submersible vehicle propellers
8. *Eprikov S.R., Pryanichnikov V.E. (International Laboratory «Sensorika», MSTU «Stankin», INET RSUH, KIAM Russian Academy, Moscow)* Technology of multi-agent control of robotarium and production cells with simultaneous simulation
9. *Nazarova A.V., Meixin Zhai (Bauman Moscow State Technical University, Moscow)* Distributed problem solving in multi-agent robotic system
10. *Zenkevich S.L., Hua Zhu, Meixin Zhai (Robotics Training-Research Center, Bauman Moscow State Technical University)* The movement control of robots in a group based on the smoothing trajectory
11. *Martynova L.A., Konyukhov G.V., Pashkevich I.V., Rukhlov N.N. (Concern CSRI Elektropribor)* Multi-agent approach to the group management of AUV in conducting seismic examination
12. *Gradetsky V.G.<sup>1</sup>, Ermolov I.L.<sup>1</sup>, M.M. Knyazkov<sup>1</sup>, E.A. Semenov<sup>1</sup>, S.A. Sobolnikov<sup>2</sup>, A.N. Sukhanov<sup>1</sup> (<sup>1</sup>IPM RAS, Moscow, <sup>2</sup>FSUE VNIIA, Moscow)* Interaction peculiarities for common transportation task within a group of UGVs equipped with high passability movers
13. *Gerasuyto S.L., Podmazov I.V., Procopovich G.A., Sychev V.A. (United Institute of Informatics Problems, Minsk, Republic of Belarus)* Multi-camera vision system for a spherical robot
14. *Prokopovich G.A., Sychev V.A. (United Institute of Informatics Problems, Minsk, Republic of Belarus)* Mechatronic onboard computation system conceptualization for group control of microrobots
15. *Shilayev S.N., Shilayev A.S., Zhukov A.A., Zakirov R.N., Gradetsky V.G., Градецкий Б.Г., Bolotnik N.N. (IPM RAS, Moscow)* Concept of a control system of the microrobot for space application
16. *Kamenev A.A. (Military space Academy named after A.F. Mozhaisky, Saint-Petersburg)* Main directions of development of matrix detectors for space robot
17. *Ayupova D.R. (SPbPU, Saint-Petersburg)* Development of a control system for the electromechanical drive of the aerodrome radar complex
18. *Varlashin V.V. (SPbPU, Saint-Petersburg)* Software and hardware complex for experimental studies of serpentine motion control using motion capture system
19. *Briskin E.S.<sup>1</sup>, Serov V.A.<sup>2</sup>, Sharonov N.G.<sup>1</sup>, Penshin I.S.<sup>2</sup> (<sup>1</sup>Volgograd State Technical University; <sup>2</sup>JSC "FRPC "Titan-Barricades")* On features of mobile robots motion control with anchor-rope propulsion devices
20. *Noskov V.P. (Bauman Moscow State Technical University, Moscow)* Information and navigation models and fields in control systems perspective RTC with the hinged equipment



Co-chairmen:

*Doctor of Technical Science, Professor Victor Pavlov*

*Candidate of Physico-Mathematical Sciences Alexander Nikolaev*

*Technical assistant: Tatiana Volpyas*

**(Verbal presentation duration is up to 10 minutes. Answers to the questions - up to 5 minutes)**

1. **Lopota A.V., Polovko S.A., Shubin P.K., Smirnova E.Yu. (RTC, Saint-Petersburg)** Conceptual issues of innovative development of marine rescue robotics in extreme arctic conditions
2. **Savin M.V.<sup>1</sup>, Tcarichenko S.G.<sup>2</sup> (<sup>1</sup>EMERCOM of Russia; *Scientific research Institute "Geodesy", Moscow region*)** Robot for mine
3. **Koshurina A.A., Gai V.E., Dorofeev R.A., Hapilov E.M., Bobko S.S. (NNSTU, SEC «Transport», Nizhny Novgorod)** The development of the robotic platform for rescue operations in emergency coal mines
4. **Lazarev I.V., Timofeev A.N. (RTC, Saint-Petersburg)** End-effector mechanism of space manipulator
5. **Fominov I.V. (Military space Academy named after A.F. Mozhaisky, Saint-Petersburg)** Types of use of space robots on the basis of passive periodic coplanar flight over orbital objects
6. **Mukhin R.S., Polin A.V. (SpbPU, Saint-Petersburg)** Specialized end effector for space manipulation system
7. **Yaskevich A.V., Chernyshev A.E. (Energiya Rocket and Space Corporation, Moscow region)** Designing of parallel manipulator for new peripheral docking mechanism
8. **Ermolov I.L.<sup>1</sup>, Kononov A.F.<sup>2</sup>, Hripunov S.P.<sup>2</sup> (<sup>1</sup> *Scientific Council on mechatronics and robotics of Russian Academy of Sciences*; <sup>2</sup>*Fund of perspective researches, Moscow*)** Unification in Robotics
9. **Galkin I.A. (Naval academy, Saint-Petersburg)** Organization of navigation support for marine robotic complexes in operationally important areas of the world ocean
10. **Oparin A.I. (The training center in the field of deep-water activities of the Ministry of defense of Russia)** Operational formation and application of heterogeneous groups to realize undersea research and work
11. **Malutin N.V. (LTD «CB IGAS», Moscow)** Promising marine robotic system for detection, transportation and disposal of hazardous substances and items
12. **Zhukov A.I. (State research institution «Council on study of productive forces», Saint-Petersburg)** About the practical use of surface hydrographic equipment (sea surface vehicles)
13. **Ksenzenko A.Ya., Marzanov Ju.S., Prysev E.A., Pryanichnikov V.E., Chernyshev V.V. (International Laboratory «Sensorika», MSTU «Stankin», INET RSUH, Moscow; KIAM Russian Academy of sciences, Moscow; Volgograd State Technical University )** Prototyping of a contactless data exchange and energy supply for a group of underwater robots-satellites with walking on the bottom the base station
14. **Novikov I.E. (RTC, Saint-Petersburg)** Study of the possibilities of the earth's surface aerial radiation monitoring efficiency improvement
15. **Kozhemyakin V.A. (ATOMTEX Scientific and production unitary enterprise, Republic of Belarus, Minsk)** Gamma radiation detection units for use with remotely operated means aircrafts for radiation monitoring purposes
16. **Silnikov M.V., Lazorkin V.I., Kulakov V.I., Pomazov V.S. (Special Materials Corp., Saint-Petersburg)** Automated complex of non-lethal shock based on electric discharge technologies
17. **Rudianov N.A., Khrushev V.S. (3d CNII MD RF, Moscow)** Organization of the acquisition and formalization of knowledge of intelligent systems of prospective autonomous military robotic complexes in the course of pilot operation of remote-controlled complexes
18. **M. Dudziak (MIRNOVA Academy, Zelenograd, Russia Академия Мирнова, Зеленоград, Россия)** Extreme complex systems, uncertain and uncooperative robotic networks, and control strategies based upon stochastic algorithms
19. **M. Dudziak (MIRNOVA Academy, Zelenograd, Russia Академия Мирнова, Зеленоград, Россия)** Reconfigurable cooperative robotic networks for agriculture and environmental remediation
20. **M. Dudziak (MIRNOVA Academy, Zelenograd, Russia Академия Мирнова, Зеленоград, Россия)** Athos, a functional-logic operating system for robot communities with self-organization and persistent learning capabilities
21. **Gudkov M.A., Luk'yanchik V.N., Ovsjannikov S.N. (Military Academy of telecommunication, Saint-Petersburg)** The creation of a ground-based robotic complex of advanced aircraft aimer for the management of assault and army aviation

22. **Chadnov A.V., Paliy O.I., Gudkov M.A.** (*Military Academy of the Signal Corps named after S.M. Budjonny, Saint-Petersburg*) Development of technologies military mobile communication and management pilotless mobile robotic complexes on the basis of the modified LTE-Advanced Pro technology
23. **Moskovchenko V.M.<sup>1</sup>, Maksimov A.S.<sup>1</sup>, Kireev S.H.<sup>2</sup>, Gudkov M.A.<sup>2</sup>, Dementiev V.E.<sup>2</sup>** (*Southern Russian State Polytechnical University of M.I. Platov Novochoerkassk town; <sup>2</sup>Military Academy of the Signal Corps named after S.M. Budjonny, Saint-Petersburg*) Security in control of robotic systems using neural networks
24. **Moskovchenko M.V.<sup>1</sup>, Kuznetcova V.V.<sup>1</sup>, Lauta O.S.<sup>2</sup>, Kribel A.M.<sup>2</sup>, Kotcynayk M.A.<sup>2</sup>** (*<sup>1</sup>Southern Russian State Polytechnical University of M.I. Platov Novochoerkassk town; <sup>2</sup>Military Academy of the Signal Corps named after S.M. Budjonny, Saint-Petersburg*) Approach to forecasting protocol impacts on robotic systems

17:00 – 18:00

**Final Plenary session. Conference closing**

**RTC Conference Hall,  
third floor**

*Co-chairmen:*

**Oleg Martyanov**

*Doctor of Technical Science, Professor Eugeny Yurevich*

*Doctor of Technical Sciences Alexander Lopota*

*Technical assistant: Marina Burkina*

***Summaries from Sessions Chairmen;***

***Discussion on conference results and issue points;***

***Making Conference issue.***