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## Conference Co-Chairmen



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Research Institute for Intelligent  
Computer Systems,  
Ternopil National Economic University,  
Ternopil, Ukraine



Grigore Stamatescu,  
Department of Automatic Control and  
Industrial Informatics,  
University “Politehnica” of Bucharest,  
Bucharest, Romania

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Dora Blanco Heras  
University of Santiago de Compostela  
Rúa de Jenaro de la Fuente Domínguez  
Santiago de Compostela, 15782, La  
Coruña, Spain



John Kalomiros, Greece  
Technological and Educational Institute  
of Central Macedonia,  
Department of Informatics Engineering,  
Terma Magnisias, Serres,  
Greece, 62124

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Adina Magda Florea, Romania  
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### **Conference Co-Chairmen:**

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Igor Kotenko, Russian Federation

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Dan Popescu, Romania

Grigore Stamatescu, Romania

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Oksana Pomorova, Ukraine

Octavian Postolache, Portugal

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Linas Svilainis, Lithuania

Yuliya Tarabalka, France

Sergii Telenyk, Ukraine

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Jose Luis Vazquez-Poletti, Spain

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Stavros Vologiannidis, Greece

John Vourvoulakis, Greece

Janusz Zalewski, USA

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Nicoleta Arghira, Romania

Vasile Calofir, Romania

Ioana Fagarasan, Romania

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Sergiu Stelian Iliescu, Romania

Halyna Kryva, Ukraine

Taras Lendyuk, Ukraine

Oleksandr Osolinskiy, Ukraine

Iulia Stamatescu, Romania

Grigore Stamatescu, Romania

## IDAACS'2017 Conference Timetable

<b>Wednesday, September 20, 2017</b>				
<b>5:00 PM – 7:00 PM</b>	PRECIS Building, Faculty of Automatic Control and Computers <b>Registration</b>			
<b>7:00 PM – 9:00 PM</b>	PRECIS Building, Faculty of Automatic Control and Computers <b>Welcoming Reception</b>			
<b>Thursday, September 21, 2017</b>				
<b>8:00 AM – 5:00 PM</b>	PRECIS Building, Faculty of Automatic Control and Computers <b>Registration</b>			
<b>8:45 AM – 9:15 AM</b>	<b>PR001</b> PRECIS Building, Faculty of Automatic Control and Computers <b>Opening</b> <b>Welcome address by Mihnea Costoiu, UPB Rector</b>			
<b>9:15 AM – 10:15 AM</b>	<b>PR001</b> PRECIS Building, Faculty of Automatic Control and Computers <b>Plenary Session T1</b> <b>Kay Uwe Römer “Dependable Internet of Things”</b> Chair: Grigore Stamatescu			
<b>10:15 AM – 10:30 AM</b>	Walking to UPB Library			
<b>10:30 AM – 10:50 AM</b>	UPB Library Foyer <b>Coffee Break</b>			
<b>10:50 AM – 12:30 PM</b>	<b>Room A</b> <b>Session TA1:</b> Advanced Instrumentation and Data Acquisition Systems Co-chairs: Linas Svilainis, Mykhaylo Dorozhovets	<b>Room B</b> <b>Session TB1:</b> Workshop on Cyber Physical Systems and Internet of Things Dependability Co-Chairs: Vyacheslav Kharchenko, Andrzej Rucinski	<b>Room C</b> <b>Session TC1:</b> Special Stream in Cyber Security Co-Chairs: George Markowsky, Igor Kotenko	<b>Room D</b> <b>Session TD1:</b> Special Stream in Advanced Information Technologies in Environmental Sciences Co-Chairs: Yury Kolokolov, Kondo H. Adjallah
<b>12:30 PM – 1:10 PM</b>	UPB Library Foyer <b>Poster session TP</b> Co-Chairs: Vitaly Klyuev, Ivo Draganov			<b>Room D</b> <b>IAB meeting</b>
<b>1:10 PM – 2:10 PM</b>	UPB Library Foyer – Ground Floor <b>Lunch</b>			

<p><b>2:10 PM – 3:50 PM</b></p>	<p><b>Room A Session TA2:</b> Special Stream in High Performance Computing Co-Chairs: Volodymyr Turchenko, Oleksandr Sudakov</p>	<p><b>Room B Session TB2:</b> Workshop on Cyber Physical Systems and Internet of Things Dependability Co-Chairs: Vyacheslav Kharchenko, Andrzej Rucinski</p>	<p><b>Room C Session TC2:</b> Embedded Systems Co-Chairs: John Kalomiros, Oleksandr Drozd</p>	<p><b>Room D Session TD2:</b> Special Stream in Project Management Co-Chairs: Carsten Wolff, Wolfgang Tysiak</p>
<p><b>3:50 PM – 4:30 PM</b></p>	<p style="text-align: center;"><b>Room A</b> <b>Peter Reusch Memorial Session</b> Co-Chairs: Theodore Laopoulos, George Markowsky</p>			
<p><b>4:30 PM – 5:00 PM</b></p>	<p style="text-align: center;">UPB Library Foyer <b>Coffee Break</b></p>			
<p><b>5:00 PM – 8:00 PM</b></p>	<p style="text-align: center;"><b>City Tour</b></p>			

<b>Friday, September 22, 2017</b>				
<b>8:00 AM – 4:40 PM</b>	UPB Library Entrance Area <b>Registration</b>			
<b>8:30 AM – 9:30 AM</b>	Room A <b>Plenary Session F1</b> <b>Dan Cristea “My Geography Manual is Now Linked with the Web and the Real World”</b> Chair: Anatoliy Sachenko			
<b>9:30 AM – 11:10 AM</b>	Room A <b>Session FA1:</b> Special Stream in Smart Buildings and Smart Cities Co-Chairs: Ioana Fagarasan, Dan Popescu, Grigore Stamatescu	Room B <b>Session FB1:</b> Special Stream in Computer Systems for Healthcare and Medicine Co-chairs: Wieslaw Winiecki, Francesca Guerriero	Room C <b>Session FC1:</b> Special Stream in Cyber Security Co-Chairs: George Markowsky, Igor Kotenko	Room D <b>Session FD1:</b> Special Stream in Advanced Information Technologies in Environmental Sciences Co-Chairs: Yury Kolokolov, Kondo H. Adjallah
<b>11:10 AM – 11:30 AM</b>	Foyer <b>Coffee Break</b>			
<b>11:30 AM – 1:10 PM</b>	Room A <b>Session FA2:</b> Internet of Things Chair: Robert E. Hiromoto	Room B <b>Session FB2:</b> Artificial Intelligence and Neural Networks for Advanced Data Acquisition and Computing Systems Chair: Sigeru Omatu, Snejana Yordanova	Room C <b>Session FC2:</b> Advanced Topics in Process Control: Theoretical and Industrial Developments Co-Chairs: Nicolae Paraschiv, Emil Pricop	Room D <b>Session FD2:</b> Special Stream in Intelligent Robotics and Cognitive Systems Co-Chairs: Richard Duro, Yuriy Kondratenko
<b>1:10 PM – 2:10 PM</b>	UPB Library Foyer – Ground Floor <b>Lunch</b>			
<b>2:10 PM – 3:00 PM</b>	<b>Room A</b> <b>IEEE Romania</b> <b>YP meeting</b>		G Foyer <b>Poster Session FP</b> Co-Chairs: Leonid Lyubchyk, Anna Monovskaya	

<p><b>3:00 PM – 4:40 PM</b></p>	<p><b>Room A Session FA3:</b> Special Stream in Smart Buildings and Smart Cities Co-Chairs: Ioana Fagarasan, Dan Popescu, Grigore Stamatescu</p>	<p><b>Room B Session FB3:</b> Special Stream in Wireless Systems Co-Chairs: Axel Sikora, Uwe Grossmann</p>	<p><b>Room C Session FC3:</b> Data Analysis and Modeling Chair: Miki Sirola</p>	<p><b>Room D Session FD3:</b> Special Stream in Project Management Co-Chairs: Carsten Wolff, Wolfgang Tysiak</p>
<p><b>7:00 PM- 10:00 PM</b></p>	<p style="text-align: center;"><b>Conference Dinner</b></p>			



<b>Saturday, September 23, 2017</b>				
<b>8:00 AM – 11:00 AM</b>	UPB Library Entrance Area <b>Registration</b>			
<b>8:30 AM – 10:10 AM</b>	<b>Room A</b> <b>Session SA1:</b> Advanced Instrumentation and Data Acquisition Systems Chair: Fernando Lopez Pena	<b>Room B</b> <b>Session SB1:</b> Pattern Recognition and Digital Image and Signal Processing Co-Chairs: Kurosh Madani, Victor Krylov	<b>Room C</b> <b>Session SC1:</b> Special Stream in Cyber Security Co-Chairs: George Markowsky, Igor Kotenko	<b>Room D</b> <b>Session SD1:</b> Special Stream in eLearning Management Co-Chairs: Peter Arras, Galyna Tabunshchyk
<b>10:10 AM – 10:40 AM</b>	Foyer <b>Coffee Break &amp; Poster session SP</b> Co-Chairs: Piotr Bilski, Rao Aamir Khan			
<b>10:40 AM – 12:20 PM</b>	<b>Room C</b> <b>Session SC2:</b> Advanced Mathematical Methods for Data Acquisition and Computing Systems Chair: Vladimir Oleshchuk		<b>Room D</b> <b>Session SD2:</b> Special Stream in Advanced Information Technologies in Environmental Sciences Co-Chairs: Yury Kolokolov, Kondo H. Adjallah	
<b>12:20 AM – 1:10 PM</b>	Room A <b>Round Table and Closing Ceremony</b> Co-Chairs: George Markowsky, Anatoliy Sachenko, Griroge Stamatescu			
<b>1:10 PM – 2:10 PM</b>	UPB Library Foyer <b>Lunch</b>			

## Conference Technical Program

### Wednesday, September 20, 2017

5:00 PM – 7:00 PM

**Registration:** PRECIS Building, Faculty of Automatic Control and Computers.

7:00 PM – 9:00 PM

**Welcoming Reception:** PRECIS Building, Faculty of Automatic Control and Computers

### Thursday, September 21, 2017

8:00 AM – 5:00 PM

**Registration:** PRECIS Building, Faculty of Automatic Control and Computers

#### Room PR001. PRECIS Building, Faculty of Automatic Control and Computers 1

8:45 AM – 9:15 AM

**Opening.**

9:15 AM – 10:15 AM

**Kay Uwe Römer “Dependable Internet of Things”**

10:30 AM – 10:50 AM

**Coffee Break:** UPB Library. Foyer

10:50 AM – 12:30 PM

**Session TA1: Advanced Instrumentation and Data Acquisition Systems**

Room: A (UPB Library)

**Co-Chairs:** Linas Svilainis, Mykhaylo Dorozhovets

1. i17-117 Software-design for Internal Security Checks with Dynamic Integrity Measurement (DIM). Kai-Oliver Detken, Marcel Jahnke, Thomas Rix, Andre Rein. Germany
2. i17-151 The Device for Remote Measurements of Geometric Dimensions and Positions. Mykhaylo Palamar, Igor Zelinsky, Myroslava Yavorska. Ukraine

3. i17-177 Measurement of a Surface Temperature Distribution Using Multi-element Resistance Sensor. Mykhaylo Dorozhovets, Mariana Burdega. Poland, Ukraine
4. i17-340 Comparison of Direct and Transformer Drive High Voltage Ultrasonic Pulser Topologies. Andrius Chaziachmetovas, Tomas E. Gomez Alvarez-Arenas, Linas Svilainis. Lithuania, Spain
5. i17-166 Complex Criteria for Assessing the Quality of Biosensor Systems. Pavlina Kacarova, Agata Manolova, Vania I. Rangelova. Bulgaria

10:50 AM – 12:30 PM

### **Session TB1: Workshop on Cyber Physical Systems and Internet of Things Dependability**

Room: **B** (UPB Library)

**Co-Chairs:** Vyacheslav Kharchenko, Andrzej Rucinski

1. i17-338 Disruptive Innovation in the Era of Global Cyber-Society: With Focus on Smart City Efforts. Andrzej Rucinski, Raymond Garbos, Jason Jeffords, Sumit Chowdbury. USA
2. i17-245 Hardware Diversity and Modified NUREG/CR-7007 Based Assessment of NPP I&C Safety. Oleg Illiashenko, Vyacheslav Kharchenko, Ah-Lian Kor, Artem Panarin, Vladimir Sklyar. Ukraine, United Kingdom
3. i17-010 UNIX-Like Operating System Extension for Real-Time FPGA-Based SCCS Support. Anatoliy Melnyk, Viktor Melnyk, Andriy Kit. Ukraine
4. i17-223 Internet of Thing: Hierarhy of Smart Systems. Dmitry Maevsky, Andriy Bojko, Elena Maevskaya, Oleksandr Vinakov, Lyudmila Shapa. Ukraine
5. i17-229 Modelling of Healthcare IoT Using the Queueing Theory. Anastasiia Strielkina, Dmytro Uzun, Vyacheslav Kharchenko. Ukraine

10:50 AM – 12:30 PM

### **Session TC1: Special Stream in Cyber Security**

Room: **C** (UPB Library)

**Co-Chairs:** George Markowsky, Igor Kotenko

1. i17-093 Design Lifecycle for Secure Cyber-Physical Systems Based on Embedded Devices. Dmitry Levshun, Andrey Chechulin, Igor Kotenko. Russian Federation
2. i17-035 Security Amplification of the Computer-Aided Voting System Using Quantum Cryptography Protocols. Mikołaj Karpinski, Tomasz Gancarczyk, Aleksandra Klos-Witkowska, Igor Limar, Yevhen Vasiliu. Poland, Ukraine
3. i17-049 Methods of Data Protection for Quantum Secure Communication System. Stanislaw Rajba, Lukasz Wieclaw, Sergii Nikolaienko, Yevhen Vasiliu. Poland

4. i17-092 Correlation of Security Events Based on the Analysis of Structures of Event Types. Andrey Fedorchenko, Igor Kotenko, Didier El Baz. Russian Federation, France
5. i17-305 Analysis of Enhanced SDEx Method. Piotr Milczarski, Artur Hłobaż, Krzysztof Podlaski. Poland

10:50 AM – 12:30 PM

### **Session TD1: Special Stream in Advanced Information Technologies in Environmental Sciences**

Room: **D** (UPB Library)

**Co-Chairs:** Yury Kolokolov, Kondo H. Adjallah

1. i17-055 Modeling and Reconstruction of Nonlinear Dynamics Tendencies in Local Climate Systems. Yury Kolokolov, Anna Monovskaya. Russian Federation
2. i17-013 Detecting Aging of Process Sensors with Noise Signal Measurement. Topi Toosi, Miki Sirola, Jarkko Laukkanen, Mark van Heeswijk, Juha Karhunen. Finland
3. i17-203 Explanations Engine for Energy Management Systems. Amr Alzouhri Alyafi, Jean-Phillipe Guillbaud, Patrick Reignier, Stephane Ploix. France
4. i17-056 Decision-Support Technique on Risk Assessment Detailed for Local Climate and Distinct Productions. Yury Kolokolov, Anna Monovskaya. Russian Federation
5. i17-075 Geodynamic Monitoring of Development of a Karst on the Basis of Georadar Sounding. Oleg Kuzichkin, Elena S. Mikhaleva, Nikolay V. Dorofeev, Roman V. Romanov. Russian Federation

12:30 PM – 1:10 PM

### **Poster Session TP: UPB Library. Foyer**

**Co-Chairs:** Vitaly Klyuev, Ivo Draganov

1. i17-266 Prospects for Constructing Remote Laboratories for the Study of Cognitive Systems. Mykhailo Poliakov, Karsten Henke, Heinz-Dietrich Wuttke. Ukraine
2. i17-058 Application of a Phase-Measuring Method in the Inclino-metric Systems of Geotechnical Monitoring. Anastasia Grecheneva, Oleg R. Kuzichkin, Nikolay V. Dorofeev, Vladimir T. Eremenko. Russian Federation
3. i17-069 Determination of the Preliminary Phase of the Facility Destruction Based on the Resistance-Acoustic Method of Control. Oleg R. Kuzichkin, Artem A. Bykov, Nikolay V. Dorofeev, Konstantin V. Podmasteriev. Russian Federation

4. i17-107 Multidimensional Analysis and Visualization of Changes in Characteristic Seasonal Patterns of Local Temperature Dynamics. Yury Kolokolov, Anna Monovskaya. Russian Federation
5. i17-110 Mathematical Modelling of Infiltration Effect on Process of Salts Transfer in Layered Saturated-Non-Saturated Soils. Anatoliy Vlasyuk, Tetiana Tsvetkova, Pawel Falat, Aleksandra Klos-Witkowska, Kornel Warwas. Poland
6. i17-114 Weather Influence on Diseases Prevalence in Arkhangelsk Region. Darina Lagunova, Alexey Lagunov, George Martinov. Russian Federation
7. i17-116 Determination of Human's Lateral Profile in Terms of Applicants Selection for Working in the Arctic. Sergey Kabanov, Ludmila Morozova, Alexey Lagunov. Russian Federation
8. i17-197 Model-Based Analytics Oriented on the Intermittency Observed in Local Temperature Dynamics. Yury Kolokolov, Anna Monovskaya. Russian Federation
9. i17-312 Array DBMS in Environmental Science: Satellite Sea Surface Height Data in the Cloud. Ramon Antonio Rodrigues Zalipynis. Russian Federation
10. i17-026 Approach for the Unknown Metamorphic Virus Detection. Oleg Savenko, Sergii Lysenko, Andrii Nicheporuk, Bohdan Savenko. Ukraine
11. i17-140 Attack Identification for Software-Defined Networking based on Attack Trees and Extension Innovation Methods. Hui Xu, Jun Su, Xinlu Zong, Lingyu Yan. China
12. i17-231 High Performance Adaptive System for Cyber Attacks Detection. Myroslav Komar, Volodymyr Kochan, Lesia Dubchak, Anatoliy Sachenko, Vladimir Golovko, Sergei Bezobrazov, Ihor Romanets. Ukraine, Belarus
13. i17-060 Probabilistic Risk Analysis of Investment Projects Under Uncertainty. Alyona Shved. Ukraine
14. i17-240 How the Project Knowledge Management and the Sustainability in Project Management affect the Project Success. Leticia Fuentes-Ardeo, Jose Ramon Otegi-Olaso, Maria-Eugenia Aguilar-Fernandez. Spain
15. i17-313 The Model of Universal Project States Classifier in Project Management System. Alexei Korznyakov, Anatoly U. Gaida, Tigran Grigorian, Konstantin V. Koshkin. Ukraine
16. i17-255 PrimaDoc – an Enterprise Information Management System: Implementation of the Development and Deployment Project. Natalia Boyko, Iurii Teslia, Julia Khlevna, Yevhen Ivanov, Liubov Kubiavka, Tatiana Latysheva, Nataliia Yehorchenkova, Oleksii Yehorchenkov, Nataliya Kravchuk. Ukraine
17. i17-175 About the Problem of Correction of Digital Regulation Algorithms. Vladimir I. Rakov, Olga Zakharova, Pavel B. Korolev. Russian Federation
18. i17-135 On the Evaluation of Contemporary Commercial Barometric Pressure Sensors for Altitude Measurements. Dimosthenis E. Bolanakis, Theodore Laopoulos. Greece
19. i17-241 Evolutionary Network Model of Testing of the Distributed Information Systems. Oleksandr Martynyuk, Anna Sugak, Dmitry Martynyuk, Oleksandr Drozd. Ukraine

- 20.i17-030 Research of Time Characteristics of Search Methods of Inverse Element by the Module. Teresa Rajba, Aleksandra Klos-Witkowska, Stepan Ivasiev, Igor Yakymenko, Mykhailo Kasianchuk. Poland, Ukraine
- 21.i17-045 Model of Thermal Conduction for Layered Elements of Radio Electronic Systems with Foreign Inclusions. Vasyl Gavrysh, Roman Kochan, Ruslan Tushnytsky, Lubov Kolyasa. Ukraine
- 22.i17-073 Reduction of Noise Similar to Solar Interference in Computer Networks Based on Power Line Communication. Dmytro Rumiankov, Iryna Zhuravska, Larysa Solobuto, Maksym Musiyenko. Ukraine
- 23.i17-144 Organizing High-Speed Computations for Digital Governors. Vladimir I. Rakov, Olga Zakharova, Pavel B. Korolev. Russian Federation
- 24.i17-162 Control Flow Models using Petri Nets for Model Based Testing. Tomas Pospisil. Czech Republic
- 25.i17-276 Usage of Structural Optimization Algorithm of Neural Nets in Problems of Data Classification. Yaroslaw Dorogyy, Olena Doroha-Ivaniuk, Ulyana Dzelendzyak, Krzysztof Tomczyk. Ukraine, Poland
- 26.i17-021 The model for Decision Support on Design of the Hybrid Renewable Energy System. Olha Shulyma, Vira Shendryk, Yuliia Parfenenko, Sergii Shendryk. Ukraine
- 27.i17-147 Testing Automotive Reactive Systems using Timed Automata. Jan Sobotka, Jiří Novák. Czech Republic
- 28.i17-309 Skin Lesions Dermatological Shape Asymmetry Measures. Piotr Milczarski, Zofia Stawska, Paweł Maślanka. Poland
- 29.i17-157 Fuzzy-multiple Approach in Choosing the Optimal Term for Implementing the Innovative Project. Oksana Cheresnyuk, Valentyna Panasyuk, Svitlana Sachenko, Arkadiusz Banasik, Iryna Golyash. Ukraine, Poland
- 30.i17-264 IoT-based Situation Awareness Support System for Real-Time Emergency Management. Yana Krytska, Inna Skarga-Bandurova, Artem Velykzhanin. Ukraine

1:10 PM – 2:10 PM

**Lunch:** UPB Library. Foyer – Ground floor

2:10 PM – 3:50 PM

## **Session TA2: Special Stream in High Performance Computing**

Room: A (UPB Library)

**Co-Chairmen:** Volodymyr Turchenko, Oleksandr Sudakov

1. i17-103 Simulation of Lagre Neuronal Networks in Cloud and Grid with Graphics Processing Units. Oleksandr Sudakov, Andrii I. Cherederchuk, Volodymyr L. Maistrenko. Ukraine

2. i17-124 CUDA Multiclass Change Detection for Remote Sensing Hyperspectral Images using Extended Morphological Profiles. Javier López Fandiño, Dora B. Heras, Francisco Argüello, Richard J. Duro. Spain
3. i17-150 The Scheduler for Distributed Computer Systems Based on the Network-Centric Approach to Resources Control. Zhenbing Hu, Vadym Mukhin, Yaroslav Kornaga, Artem Volokyta, Oksana Herasymenko. China, Ukraine
4. i17-190 Drowsiness Monitoring in Real-time based on Supervised Descent Method. Nikolay Neshov, Agata Manolova. Bulgaria
5. i17-328 Towards the Simulation of Dynamic Network Objects with Distributed Parameters based on Block Difference Numerical Methods. Volodymyr Kushnarenko, Oleksandr Miroshkin, Volodymyr Svjatnyj. Ukraine

2:10 PM – 3:50 PM

### **Session TB2: Workshop on Cyber Physical Systems and Internet of Things Dependability**

Room: **B** (UPB Library)

**Co-Chairs:** Vyacheslav Kharchenko, Andrzej Rucinski

1. i17-248 Emerging Curriculum for Industry and Human Applications in Internet of Things. Vyacheslav Kharchenko, Oleg Illiashenko, Artem Boyarchuk, Vladimir Sklyar, Chris Phillips. Ukraine, United Kingdom
2. i17-242 Software Reliability Models and Assessment Techniques Review: Classification Issues. Dmitry Maevsky, Vyacheslav Kharchenko, Maryna Kolisnyk, Elena Maevskaya. Ukraine
3. i17-259 Reliability Issues for a Multi-Version Post-Severe NPP Accident Monitoring System. Vyacheslav Kharchenko, Herman Fesenko, Anatoliy Sachenko, Robert E. Hironoto, Volodymyr Kochan. Ukraine, USA
4. i17-342 Self-reconfigurable Cryptographical Coprocessor for Data Streaming Encryption in Tasks of Telemetry and the Internet of Things. Heorhii Vorobets, Oleksandr Vorobets, Valentyna Horditsa, Volodymyr Tarasenko, Olha Vorobets. Ukraine
5. i17-277 Challenges and Solutions for Mobile Object Control System. Dmytro Kravchenko, Oleksii Kravchenko, Steven Boeckx, Olga Gladkova, Anzhelika Parkhomenko. Ukraine

2:10 PM – 3:50 PM

### **Session TC2: Embedded Systems**

Room: **C** (UPB Library)

**Co-chairs:** John Kalomiros, Oleksandr Drozd

1. i17-038 Intelligent Speed Controller for Single-Phase Induction Motors Using Fuzzy APWM. Gregory Zigirkas, John Kalomiros. Greece

2. i17-070 Constrained Mixed-Critical Parallelization for Distributed Heterogeneous Systems. Robert Hoettger, Mustafa Özcelikörs, Philipp Heisig, Lukas Krawczyk, Carsten Wolff, Burkhard Igel. Germany
3. i17-299 Energy Profiling for Different Bluetooth Low Energy Designs. Marian-Emanuel Ionascu, Marius Marcu. Romania
4. i17-288 The Implementation of Extended Arithmetic on FPGA-based Structures. Alexander Palagin, Volodymyr Opanasenko. Ukraine
5. i17-261 Method and Technology of Synthesis of Neural Network Models Object Control with their Hardware Implementation on FPGA. Petro I. Kravets, Volodymyr M. Shymkovych, Volodymyr Samotyy. Ukraine, Poland

2:10 PM – 3:50 PM

### **Session TD2: Special Stream in Project Management**

Room: **D** (UPB Library)

**Co-Chairs:** Carsten Wolff, Wolfgang Tysiak

1. i17-081 Implementing a Project Management Approach for Public-Funded Projects in HEIs. Olga Mikhieieva, Ala Nuseibah, Clara Decelis Grewe, Carsten Wolff, Christian Reimann. Ukraine, Germany
2. i17-121 Investigating Impact of Effective Communication Practices and Project Complexity on Performance of International Development Projects. Gul Afroze, Rao Aamir Khan. Pakistan
3. i17-133 Minimum Viable Product Creation through Adaptive Project Management – An Extended Approach for the Management of Innovation Projects: the Ecochallenge Case. Ala Nuseibah, Christian Reimann, Maria Zadnepryanets, Carsten Wolff, Jose Ramon Otegi Olaso. Germany, Spain
4. i17-137 Monte Carlo Simulation and Critical Chains. Wolfgang Tysiak. Germany
5. i17-256 "Learning Through Practice" in IT Management Projects Master Program Implementation Approach. Grigory Steshenko, Viktor Morozov, Anna Kolomiets. Ukraine

3:50 PM – 4:30 PM

Room: **A** (UPB Library)

### **Peter Reusch Memorial Session**

**Co-Chairs:** Theodore Laopoulos, George Markowsky

4:30 PM – 5:00 PM

**Coffee Break:** Foyer

5:00 PM – 8:00 PM

**City Tour**



**Friday, September 22, 2017**

8:00 AM – 4:40 PM

**Registration:** UPB Library. Entrance Area

**Room A (UPB Library)**

8:30 AM – 9:30 AM

**Plenary Session F1**

**Dan Cristea “My Geography Manual is Now Linked with the Web and the Real World”**

9:30 AM – 11:10 AM

**Session FA1: Special Stream in Smart Buildings and Smart Cities**

Room: **A** (UPB Library)

**Co-Chairs:** Ioana Fagarasan, Dan Popescu, Grigore Stamatescu

1. i17-178 Microgrid Simulation for Smart City. Mihaela Puianu, Ramona-Oana Flangea, Nicoleta Arghira, Sergiu Stelian Iliescu. Romania
2. i17-202 ARX Models Inspired by Physics as a Service for Building's Users. Lisa Scanu, Stephane Ploix, Pierre Bernaud, Etienne Wurtz. France
3. i17-181 Data-driven Methods for Smart Building AHU Subsystem Modelling. Grigore Stamatescu, Iulia Stamatescu, Nicoleta Arghira, Cristian Dragana, Ioana Fagarasan. Romania
4. i17-196 Bayesian Network and Hidden Markov Model for Estimating Occupancy from Measurements and Knowledge. Manar Amayri, Quoc-Dung Ngo, El Abed El Safadi, Stephane Ploix. France
5. i17-182 Predictive Modeling of Occupancy Patterns in Smart Buildings. Claudia Florinela Chitu, Mokhloss Khadem, Valentin Sgârciu. Romania

9:30 AM – 11:10 AM

**Session FB1: Special Stream in Computer Systems for Healthcare and Medicine**

Room: **B** (UPB Library)

**Co-chairs:** Wieslaw Winiecki, Francesca Guerriero

1. i17-282 Skin Lesion Symmetry of Hue Distribution. Piotr Milczarski. Poland
2. i17-102 Distributed System for Sampling and Analysis of Electroencephalograms. Oleksandr Sudakov, Galyna Kriukova, Roman Natarov, Viktoriia Gaidar, Oleksandr Maximyuk, Sergiy Radchenko, Dmytro Isaev. Ukraine

3. i17-222 Accelerated Search of Human Activity Registered by Non-invasive Sensors. Ivo Draganov, Pavel Dinev, Ognian Boumbarov. Bulgaria
4. i17-239 Contrast Classification Rules for Mining Local Differences in Medical Data. Marharyta Aleksandrova, Oleg Chertov, Armelle Brun, Anne Boye. France
5. i17-184 Application of Regularized Ranking and Collaborative Filtering in Predictive Alarm Algorithm for Nocturnal Hypoglycemia Prevention. Galyna Kriukova, Nadiya Shvai, Sergei V. Pereverzyev. Ukraine

9:30 AM – 11:10 AM

### **Session FC1: Special Stream in Cyber Security**

Room: **C** (UPB Library)

**Co-Chairs:** George Markowsky, Igor Kotenko

1. i17-101 Combining Network Access Control (NAC) and SIEM functionality based on Open Source. Kai-Oliver Detken, Marcel Jahnke, Carsten Kleiner, Marius Rohde. Germany
2. i17-149 A Trust-Based Security Enforcement in Disruption-Tolerant Networks. Vladimir Oleshchuk. Norway
3. i17-221 eTPL: An Enhanced Version of the TLS Presentation Language Suitable for Automated Parser Generation. Axel Sikora, Andreas Walz. Germany
4. i17-225 Using N-step Matrix Factorization for Solving New User Cold-start Problem. Oleksandr Palchenko, Armelle Brun, Anne Boyer, Oleg Chertov. France
5. i17-123 Modeling and Learning Incident Prioritization. Leonard Renners, Felix Heine, Gabi Dreo Rodosek. Germany

9:30 AM – 11:10 AM

### **Session FD1: Special Stream in Advanced Information Technologies in Environmental Sciences**

Room: **D** (UPB Library)

**Co-Chairs:** Yury Kolokolov, Kondo H. Adjallah

1. i17-120 Land Degradation Estimation from Global and National Satellite Based Datasets Within UN Program. Nataliia Kussul, Andrii Kolotii, Andrii Shelestov, Bohdan Yailymov, Mykola Lavreniuk. Ukraine
2. i17-109 Establishment of Optimal Conditions For Yeast Containing Sewage Waters Clearing by Means of Ultrasound. Volodymyr Pohrebennyk, Natalia Bernatska, Pawel Falat, Aleksandra Klos-Witkowska, Karina Janisz, Krzysztof Sułkowski, Krzysztof Augustynek. Poland
3. i17-113 Mapping Method for Research of Arctic Ocean European Sector Beetles. Alexey Lagunov, Nadejda Podorojnyak. Russian Federation

4. i17-118 Resiliency Assessment of NDSC based Lifetime Maximization approach for Heterogeneous Wireless Sensor Network by Monte Carlo Simulation. Yousif E.E. Ahmed, Kondo H. Adjallah, Sharef F. Babikier, Romuald Stock. France
5. i17-076 Spatio-temporal Data Processing of Automated Geodynamic Monitoring System. Nikolay Dorofeev, Oleg R. Kuzichkin, Roman V. Romanov, Alexander V. Kos'kin. Russian Federation

11:10 AM – 11:30 AM

**Coffee Break:** UPB Library. Foyer

11:30 AM – 1:10 PM

**Session FA2: Internet of Things**

Room: **A** (UPB Library)

**Chair:** Robert E. Hiramoto

1. i17-159 Multiple Negative Selection Algorithm: Improving Detection Error Rates in IoT Intrusion Detection Systems. Marin E. Pamukov, Vladimir K. Poulkov. Bulgaria
2. i17-226 Area-Efficient and High-Throughput Hardware Implementations of TAV-128 Hash Function for Resource-Constrained IoT Devices. Ramla Ijaz, Muhammad Adeel Pasha. Pakistan
3. i17-168 Socially Aware Peers for Futuristic Web of Things. Kashif Zia, Arshad Muhammad, Dinesh Kumar Saini. Oman
4. i17-278 Simulation Performance Evaluation of Smart-M3 Applications for Internet of Things Environments. Andrey S. Vdovenko, Dmitry G. Korzun, Ivan V. Galov. Russian Federation
5. i17-165 Application of Artificial Immune Systems for the Creation of IoT Intrusion Detection Systems. Marin Emilov Pamukov. Bulgaria
6. i17-279 On Applicability of Wireless Routers to Deployment of Smart Spaces in Internet of Things Environments. Sergey A. Marchenkov, Dmitry G. Korzun, Anton I. Shabaev, Anatoly V. Voronin. Russian Federation

11:30 AM – 1:10 PM

**Session FB2: Artificial Intelligence and Neural Networks for Advanced Data Acquisition and Computing Systems**

Room: **B** (UPB Library)

**Co-chairs:** Sigeru Omatu, Snejana Yordanova

1. i17-122 Ensemble of Convolutional Neural Networks for Crop Classification of Sentinel-1 SAR Data. Mykola Lavreniuk. Ukraine
2. i17-164 Intelligent Approaches for Control of Nonlinear Plants with Significant Time Delay. Snejana Yordanova, Plamen Tzvetkov. Bulgaria
3. i17-186 A Biobjective Formulation for Filming Sport Events Problem using Drones. Luigi Di Puglia Pugliese, Francesca Guerriero, Enrico Natalizio, Nicola Roberto Zema. Italy
4. i17-291 Logics Based Application Integration for Interdisciplinary Scientific Investigations. Sergii Telenyk, Grzegorz Nowakowski, Kostiantyn Yefremov, Volodymyr Khmeliuk. Poland
5. i17-007 Convolutional Neural Network Based Solar Photovoltaic Panel Detection in Satellite Photos. Vladimir Golovko, Sergei Bezobrazov, Alexander Kroshchanka, Anatoliy Sachenko, Myroslav Komar, Andriy Karachka. Belarus, Ukraine

11:30 AM – 1:10 PM

**Session FC2: Advanced Topics in Process Control: Theoretical and Industrial Developments**

Room: **C** (UPB Library)

**Co-Chairs:** Nicolae Paraschiv, Emil Pricop

1. i17-198 Experimental Study of a Remote Control Data System for High Potential Environmental Threat. Carmen Silvia Oprina, Romul Mircea Margineanu, Otilia Cangea. Romania
2. i17-158 Binary Distillation Column Top and Bottom Compositions Control using Two PI Controllers Tuned with GA. Alina-Simona Baiesu, Nicolae Paraschiv. Romania
3. i17-078 Method of Load Resistance Energy Increase in the Electric Circuit with Constant Electromotive Force. Valeriy Martynyuk, Volodymyr D. Kosenkov, Mykola V. Fedula, Denys A. Makaryshkin, Liudmyla O. Kovtun. Ukraine
4. i17-228 Advanced Control Strategies for Irrigation Systems. Tiberiu Marinescu, Nicoleta Arghira, Daniela Hossu, Ioana Fagarasan, Iulia Stamatescu, Grigore Stamatescu, Vasile Calofir, Sergiu Iliescu. Romania
5. i17-237 Visual Servoing and Obstacle Avoidance Method Based Control Autonomous Robotic Systems Servicing a Mechatronics Manufacturing Line. George Ciubucciu, Razvan Solea, Adrian Filipescu, Adriana Filipescu. Romania

11:30 AM – 1:10 PM

**Session FD2: Special Stream in Intelligent Robotics and Cognitive Systems**

Room: **D** (UPB Library)

**Co-Chairs:** Richard Duro, Yuriy Kondratenko

1. i17-003 On the Initiation Phase of a Mixed Reality Simulator for Air Pollution Monitoring by Autonomous UAVs. Fernando López Peña, Alvaro Deibe, Felix Orjales. Spain
2. i17-0040 Combined Control of Impulse Processes in Complex Systems' Cognitive Maps with Multirate Sampling. Victor Romanenko, Yuriy Milyavsky. Ukraine
3. i17-024 Consensus Decentralized Control of Multi-Agent Networked Systems using Vector Lyapunov Functions. Leonid Lyubchyk, Yuri Dorofieiev, Artem Nikul'chenko. Ukraine
4. i17-052 A Versatile Robotic Platform for Educational Interaction. Martin Naya, Gervasio Varela, Luis Llamas, Moises Bautista, Juan Carlos Becerra, Francisco Bellas, Abraham Prieto, Alavaro Deibe, Richard J. Duro. Spain
5. i17-098 Simulation of Robot's Wheel-Mover on Ferromagnetic Surfaces. Mykyta Taranov, Christian Wolf, Joachim Rudolph, Yuriy P. Kondratenko. Ukraine, Germany
6. i17-345 Improvements of Force Tracking Performances for a Minimal Surgery Training System Using Haptic and Robot Devices. Vu Minh Hung, Viorel Mihai, Ion Ion, Nicolae Paraschiv, Cristian Dragana. Vietnam, Romania

1:10 PM – 2:10 PM

**Lunch:** UPB Library. Foyer – Ground Floor

2:10 PM – 3:00 PM

**Poster Session FP: UPB Library. Foyer**

**Co-Chairs:** Leonid Lyubchyk, Anna Monovskaya

1. i17-134 Features of Clamping Electromagnets Using in Wheel Mobile Robots and Modeling of Their Interaction with Ferromagnetic Plate. Yuriy Kondratenko, Yuriy Zaporozhets, Joachim Rudolph, Oleksandr Gerasin, Andriy Topalov, Oleksiy Kozlov. Ukraine
2. i17-302 Sparse Symmetric Nonnegative Matrix Factorization Applied to Face Recognition. Hennadii Dobrovolskyi, Nataliya Keberle, Yehor Ternovyi. Ukraine
3. i17-082 Automatic Inclusion Detection in Rough Ruby by Minimum Uniform Quantization Method. Saulius Sinkevicius, Paris Valdespino, Uxia Santas Lamas. Lithuania, Spain
4. i17-074 The Technique of the Automatic Positional of the Accelerometric Goniometric System. Nikolay Dorofeev, Anastasia V. Grecheneva, Oleg R. Kuzichkin, Vladimir I. Rakov. Russian Federation

5. i17-126 System Identification of Dynamics Spread of Microorganisms in Dairy Products Based on Pattern Recognition. Mykhaylo Palamar, Roman Sipravskiy. Ukraine
6. i17-077 Humanoid Robot Control with EEG Braiwaves. Yasen Yordanov, Georgi Tsenov, Valeri Mladenov. Bulgaria
7. i17-249 Optimal Control of Leader-Following Robots Under Random Effects. Sergei I. Osadchy, Anatoliy P. Ladanyuk, Valeriy A. Zozulya, Larisa G. Vikhrova, Viktor M. Kalich Ukraine
8. i17-012 Usage of Flying Robots for Monitoring Nitrogen in Wheat Crops. Vitalii Lysenko, Oleksiy Opryshko, Dmytro Komarchuk, Nadiia Pasichnyk, Nataliia Zaets, Alla Dudnyk. Ukraine
9. i17-191 Robust Hand Detection Using Arm Segmentation from Depth Data and Static Palm Gesture Recognition. Rytis Augustauskas, Arunas Lipnickas. Lithuania
10. i17-054 Hardware-Oriented Turbo-Product Codes Decoder Architecture. Yaroslav Krainyk, Vladyslav Perov, Maksym Musiyenko, Yevhen Davydenko. Ukraine
11. i17-023 A Method for Availability Estimation in TCP/IP Networks and Channels. Yuri M. Monakhov, Mikhail Yu. Monakhov, Vladimir N. Lantsov. Russian Federation
12. i17-141 An Improved Grey Wolf Optimizer Algorithm Integrated with Cuckoo Search. Hui Xu, Xiang Liu, Jun Su. China
13. i17-174 Increasing Speed of Genetic Algorithm-based Instance Selection. Mirosław Kordos, Aleksandra Klos-Witkowska. Poland
14. i17-183 Network Structure in CA Models of Contacts within Employees. Agnieszka Kowalska-Styczeń, Tomasz Owczarek. Poland
15. i17-066 Computational Device Authentication via Fluctuations of Analog-to-Digital Converter. Elena Nyemkova, Vyacheslav Chaplyga, Zenoviy Shandra, Roman Kochan, Tomasz Gancarczyk, Aigul Shaikhanova. Ukraine, Poland
16. i17-047 Segment Approximation Approach for Reconstructing of Surface Topology. Mikołaj Karpiński, Volodymyr Khoma, Anna Khoma, Lukasz Wieclaw. Poland
17. i17-132 Specialized Computer Based Real Time Road Signs Recognition System for Vehicles. Andriy Segin, Vasyl Yatskiv, Alina Davletova. Ukraine
18. i17-213 A Fast Image Match Method Based on Water Wave Optimization and Gray Relational Analysis. Wei Xu, Zhiwei Ye, Yuqian Hou. China
19. i17-214 Remote Sensing Textual Image Classification Based on Extreme Learning Machine and Hybrid Rice Optimization Algorithm. Yuqian Hou, Zhiwei Ye, Wei Xu, Lie Ma. China
20. i17-112 Cloud Computing Technologies in "Smart City" Projects. Lukasz Wieclaw, Volodymyr Pasichnyk, Natalija Kunanets, Oleksij Duda, Oleksandr Matsiuk, Pawel Falat. Ukraine, Poland
21. i17-217 Improved K-Means Algorithm Based on Hybrid Rice Optimization Algorithm. Chuan Liu, Chunzhi Wang, Jixiong Hu, Zhiwei Ye. China

- 22.i17-234 IoT-Based Physical Security Systems: Structures and PSMECA Analysis. Al-Khafaji Ahmed Waleed, Vyacheslav Kharchenko, Dmytro Uzun, Oleksandr Solovyov. Ukraine
- 23.i17-061 Analytic Design of the Optimum Control System for Five-degree-of-freedom Stand Simulator of the Spacecraft Motion. Valerii Azarskov, Leonid Blokhin, Aleksei Kurganskyi, Grygorii Rudyuk, Kszysztof Augustynek, Roman Kochan, Kornel Warwas. Ukraine, Poland
- 24.i17-143 Hybrid Method of Formation of Control Actions for Optimal Digital Control. Vladimir I. Rakov, Olga Zakharova, Pavel B. Korolev. Russian Federation
- 25.i17-171 The Loading Computation Algorithm on Bearings of Rollers of Belt Conveyor. Yerzhan Shayakhmetov, Bolat Manesanov, Zhulduz Dildebaeva, Roman Kochan, Stanislaw Zawislak. Kazakhstan, Poland
- 26.i17-200 System for Monitoring the Quasi-Stationary Technological Processes Based on Image-Cluster Model. Yaroslav Nykolaichuk, Ihor Pitukh, Nataliia Vozna, Halyna Protsiuk, Liubov Nykolaichuk, Orest Volynskyy. Ukraine
- 27.i17-048 Biometric Identification From Raw ECG Signal Using Deep Learning Techniques. Lukasz Wieclaw, Yuriy Khoma, Pawel Falat, Dmytro Sabodashko, Veronika Herasymenko. Poland, Ukraine
- 28.i17-086 The Etalon Models of Linguistic Variables for Sniffing-Attack Detection. Mikołaj Karpiński, Anna Korchenko, Pavlo Vikulov, Roman Kochan, Anatolii Balyk, Ruslan Kozak. Ukraine, Poland
- 29.i17-119 On Construction of High Order Elements in General Finite Fields. Roman Dunets, Bogdan Popovych, Roman Popovych. Ukraine
- 30.i17-014 Improvement of Data Acquisition Systems for the Measurement of Physical-chemical Environmental Properties. Vasyl Yatsuk, Tetiana Bubela, Yevhen Pokhodylo, Yuriy Yatsuk, Roman Kochan. Ukraine, Poland

3:00 PM – 4:40 PM

### **Session FA3: Special Stream in Smart Buildings and Smart Cities**

Room: A (UPB Library)

**Co-Chairs:** Ioana Fagarasan, Dan Popescu, Grigore Stamatescu

1. i17-193 Laboratory Scale Wind Energy Harvester. Ioana Fagarasan, Iulia Stamatescu, Cristina Nichiforov, Grigore Stamatescu, Nicoleta Arghira, Sergiu Stelian Iliescu. Romania
2. i17-204 Generalized Algorithm for the Non-intrusive Identification of Electrical Appliances in the Household. Piotr Bilski, Wiesław Winiecki. Poland.
3. i17-218 CH-AVATAR: A Context-Aware Platform for an Adaptive Cultural Heritage Experience. Mihai Barbos. Romania
4. i17-220 Energy Consumption in Smart Home: Persuasive Interaction Respecting User Values. H el ene Haller, Van-Bao Nguyen, Gilles Debizet, Yann Laurillau, Jo elle Coutaz, Ga elle Calvary. France

3:00 PM – 4:40 PM

### **Session FB3: Special Stream in Wireless Systems**

Room: **B** (UPB Library)

**Co-Chairs:** Axel Sikora, Uwe Grossmann

1. i17-131 Collaborative Business Models for AAL-Services Based on M2M-Communication. Uwe Grossmann, Bettina Horster, Igor Khess. Germany
2. i17-206 Energy Efficient Sensor Network Routing (EESNR) Protocol For Large Distributed Environmental Monitoring Applications. Awais Ahmed, Muhammad Adeel Pasha, Zahoor Ahmad, Shahid Masud, Axel Sikora. Pakistan, Germany
3. i17-207 Performance Evaluation of IEEE 802.15.4-Compliant Smart Water Meters for Automating Large-Scale Waterways. Zahoor Ahmad, Muhammad Adeel Pasha, Awais Ahmad, Abubakr Muhammad, Shahid Masud, Manuel Schappacher, Axel Sikora. Pakistan, Germany
4. i17-219 VTENN – A Virtualized Testbed for Embedded Networking Nodes. Manuel Schappacher, Artem Yushev, Mahbuba Moni, Axel Sikora. Germany
5. i17-232 Evaluation of Cluster Formation Algorithm in Large Scale Wireless Sensor Network. Cristian Dragana, Grigore Stamatescu, Viorel Mihai, Dan Popescu. Romania

3:00 PM – 4:40 PM

### **Session FC3: Data Analysis and Modeling**

Room: **C** (UPB Library)

**Chair:** Miki Siroła

1. i17-022 The Application of Runs Test for Evaluation of the Standard Uncertainty of the Arithmetic Mean of Autocorrelated Observation. Olena Nykypanchuk, Mykhaylo Dorozhovets. Ukraine, Poland
2. i17-208 Estimation of the Duration of RR-intervals of Electrocardiograms by Mean of Multi-start Optimization based on Wavelet Transformation. Galyna Shcherbakova, Shi Hao-Su, Victor Krylov, Natalija Bilous, Svitlana Antoshchuk. Ukraine, China.
3. i17-271 The Risks in the Social Networks – an Exploratory Study. Bogdan Tiganoaia, Alexandra Cernian. Romania
4. i17-125 Modeling the Conductivity of Nanotube Networks. Andriy Stelmashchuk, Ivan Karbovnyk, Roman Lazurak, Roman Kochan. Ukraine
5. i17-034 Impedance Spectroscopy of Supercapacitors on the Basis on Modified by the Ultrasound Activated Carbon Material. Igor Bordun, Volodymyr Pohrebennyk, Maria Sadowa, Vadym Ptashnyk, Aleksandra Kłos-Witkowska, Vasyl Martsenyuk. Ukraine, Poland

3:00 PM – 4:40 PM



## **Session FD3: Special Stream in Project Management**

Room: **D** (UPB Library)

**Co-Chairs:** Carsten Wolff, Wolfgang Tysiak

1. i17-227 Master Level Education in Project Management – the EuroMPM Model. Carsten Wolff, Jose Ramon Otegi Olaso, Sergey Bushuyev, Anatoliy Sachenko, Ruta Ciutene, Bassam Hussein, Tim Torvatn, Peter Arras, Christian Reimann, Andre Dechange, Nerea Toledo, Ala Nuseibah, Olga Mikhieieva. Germany
2. i17-154 Innovative Approach in International Educational Services. Alexander Ryzhkov. Ukraine
3. i17-243 Emperical Study of Critical Risk Factors Causing Delays in Construction Projects. Rao Aamir Khan, Warda Gul. Pakistan
4. i17-257 Projects Change Management in Based on the Projects Configuration Management for Developing Complex Projects. Viktor Morozov, Olena Kalnichenko, Alexander Timinsky, Iuliia Liubyma. Ukraine
5. i17-161 Multi-agent System of IT Project Planning. Oksana Dunets, Carsten Wolff, Anatoliy Sachenko, Grygoriy Hladiy, Igor Dobrotvor. Ukraine, Germany

7:00 PM – 10:00 PM

**Conference Dinner**

**Saturday, September 23, 2017**

8:00 AM – 11:00 AM

**Registration:** UPB Library. Entrance Area.

8:30 AM – 10:10 AM

**Session SA1: Advanced Instrumentation and Data Acquisition Systems**

Room: **A** (UPB Library)

**Chair:** Fernando Lopez Pena

1. i17-139 Power Factor Evaluation in Data Acquisition Systems. Constantin Daniel Oancea. Romania
2. i17-195 Thermocouple with Adjustable Error. Orest Kochan, Roman Kochan, Volodymyr Kochan, Jun Su. Ukraine, China
3. i17-339 Application of Binary Excitation Spread Spectrum Signals for Spectral Compensation. Linas Svilainis, Alberto Rodriguez-Martinez, Andrius Chaziachmetovas, Arturas Aleksandrovas. Lithuania
4. i17-192 Model-Based Testing of Automotive Distributed Systems with Automated Prioritization. Lukas Krejci, Jiří Novák. Czech Republic
5. i17-306 Precision Tracking of the Trajectory LEO Satellite by Antenna with Induction Motors in the Control System. Mykhaylo Palamar, Yuriy Pasternak, Andriy Palamar, Anatolii Poikhalo. Ukraine

8:30 AM – 10:10 AM

**Session SB1: Pattern Recognition and Digital Image and Signal Processing**

Room: **B** (UPB Library)

**Co-chairs:** Kurosh Madani, Victor Krylov

1. i17-029 The Method of Determining Patterns of Multi-State Electrical Appliances. Augustyn Wójcik, Wiesław Winiecki. Poland
2. i17-037 A Complete Processor for SIFT Feature Matching in Video Sequences. John Vourvoulakis, John Kalomiros, John Lygouras. Greece
3. i17-128 Machine-Awareness in Indoor Environment: A Pseudo-3D Vision-Based Approach Combining Multi-Resolution Visual Information. Kurosh Madani, Hossam Fraihat, Christophe Sabourin. France
4. i17-189 Creation of a Deep Convolutional Auto-Encoder in Caffé. Volodymyr Turchenko, Artur Luczak. Canada
5. i17-053 Feature Selection of Bills Using Spectral Sub-band Images. Sigeru Omatu. Japan

8:30 AM – 10:10 AM

**Session SC1: Special Stream in Cyber Security**

Room: C (UPB Library)

**Co-Chairs:** George Markowsky, Igor Kotenko

1. i17-246 The Problem of Interceptor Top Level Domains Revisited. George Markowsky. United States
2. i17-275 Analysis of Splitting Attacks on Bitcoin and GHOST Consensus Protocols. Lyudmila Kovalchuk, Dmytro Kaidalov, Oleksiy Shevtsov, Andrii Nastencko, Mariia Rodinko, Roman Oliynykov. Ukraine
3. i17-289 Integrating Visual Analysis of Network Security and Management of Detection System Configurations. Bastian Hellmann, Volker Ahlers, Gabi Dreo Rodosek. Germany
4. i17-130 A Secure Architecture for IoT with Supply Chain Risk Management. Robert Hiromoto, Michael Haney, Aleksandar Vakanski. United States
5. i17-025 Packet-wise Compression and Forwarding of Industrial Network Captures. Gerhard Hansch, Peter Schneider, Sven Plaga. Germany

8:30 AM – 10:10 AM

**Session SD1: Special Stream in eLearning Management**

Room: D (UPB Library)

**Co-Chairs:** Peter Arras, Galyna Tabunshchyk

1. i17-104 Project Oriented Teaching Approaches for E-learning Environment. Peter Arras, Dirk Van Merode, Galina Tabunshchyk. Belgium, Ukraine
2. i17-265 Modelling of Location Detection for Indoor Navigation Systems. Olena Petrova, Galyna Tabunshchyk. Ukraine
3. i17-301 Implementation of Accent Recognition Methods Subsystem for eLearning Systems. Eugen Tverdokhlebo, Hennadii Dobrovolskyi, Nataliya Keberle, Natalia Myronova. Ukraine
4. i17-336 Challenges of Using ICT in Education. Veronika Horniakova, Peter Arras, Tomáš Kozík. Belgium, Slovakia
5. i17-011 Tasks Distribution for Students Testing Based on Fuzzy Logic. Nadiia Vasylkiv, Lesia Dubchak, Taras Lendyuk, Iryna Turchenko, Inna Shylinska, Marek Aleksander. Ukraine, Poland

10:10 AM – 10:40 AM

**Foyer**

**Coffee Break & Poster session SP**

**Co-Chairs:** Piotr Bilski, Rao Aamir Khan

1. i17-337 Formalized Development of the State Transition Graphs Using the Erlang Phase Method. Serhiy Volochiy, Dmytro Fedasyuk, Ratybor Chohey. Ukraine
2. i17-199 Remote Monitoring of the Person Physiological State. Bohdan Shevchuk, Mykhaylo Geraimchuk, Orest Ivakhiv, Yuriy Brayko. Ukraine
3. i17-167 Information Resources Processing Using Linguistic Analysis of Textual Content. Jun Su, Victoria Vysotska, Anatoliy Sachenko, Vasyl Lytvyn, Yevhen Burov. Ukraine, China
4. i17-212 Opinion Mining: Book-Ranking Application. Yoichi Saito, Vitaly Klyuev. Japan
5. i17-059 Query Parsing in Order to Optimize Distributed DB Structure. Mykola Fisun, Mykhailo Dvoretzkyi, Alyona Shved, Yevhen Davydenko. Ukraine
6. i17-087 Mathematical Modelling of Three-dimensional Problem of Soil Mass Stressed-Strained State Considering Mass and Heat Transfer. Anatoliy Vlasyuk, Nataliia Zhukovska, Viktor Zhukovskyy, Aleksandra Klos-Witkowska, Ihor Pazdriy, Uliana Iatsykovska. Poland, Ukraine
7. i17-180 Researching Robustness of Information System for Measuring of Microcontrollers Average Power Consumption. Oleksandr Osolinskiy, Orest Kochan, Wieslaw Winiecki, Nataliia Yatskiv, Volodymyr Kochan, Konrad Grzeszczyk. Ukraine, Poland
8. i17-263 Information Technology of User Authentication in Cross-Platform Systems. Victor Krylov, Natalya Volkova, Yuliya Kozina. Ukraine
9. i17-205 Challenges in Assurance Case Application for Industrial IoT. Vladimir Sklyar, Vyacheslav Kharchenko. Ukraine
10. i17-329 Diagnostic Features Space Construction Using Volterra Kernels Wavelet Transforms. Andrey Medvedew, Oleksandr Fomin, Vitaliy Pavlenko, Viktor Speransky. Ukraine
11. i17-145 Hierarchical Cloud Storage Engine. Andrei Dobrin, Cristian Dragana, Grigore Stamatescu, Valentin Sgarciu. Romania
12. i17-071 Development of Simulator Automated Dispatch Control System for Implementation in Learning Process. Bogdan Orobchuk, Ivan Sysak, Serhii Babiuk, Teresa Rajba, Mikołaj Karpinski, Aleksandra Klos-Witkowska, Rafal Szkarczyk, Joanna Gancarczyk. Ukraine, Poland
13. i17-136 Intelligent Integration of Open-Access Weather-Climate Data on Local Urban Areas. Yury Kolokolov, Anna Monovskaya, Vadim Volkov, Alexey Frolov. Russian Federation
14. i17-335 Synthesis and Learning of Fuzzy Neural Networks for Solving Forecasting Problems. Serhii Okrenets, Andrii Fefelov, Volodymyr Lytvynenko, Volodymyr Osypenko, Maksym Korobchynskyi, Maria Voronenko. Ukraine

- 15.i17-343 Thermal Method for Monitoring of the Aircraft External Contour in Flight Under Conditions of Uncertainty. Andrii Babenko, Ivan Zharin, Vasyl Kazak. Ukraine
- 16.i17-043 Automation of Control Processes in Specialized Pyrolysis Complexes Based on Web SCADA Systems. Yuriy Kondratenko, Oleksiy Kozlov, Oleksandr Gerasin, Andriy Topalov, Oleksiy Korobko. Ukraine
- 17.i17-211 A Blended Mental Space as an Environmental for the Intelligent Data Acquisition. Sergei D. Bushuyev, Olena V. Verenysh, Ukraine
- 18.i17-267 Criteria to Estimate Quality of Methods Selecting Contour Inflection Points. Diana Zahorodnia, Yuriy Pigovsky, Pavlo Bykovyy, Viktor Krylov, Bohdan Rusyn, Vasyl Koval. Ukraine
- 19.i17-194 Wireless Smart Biosensor for Sensor Networks In Ecological Monitoring. Olexandr Palagin, Volodymyr Romanov, Igor Galelyuka, Volodymyr Hrusha, Olexandr Voronenko. Ukraine
- 20.i17-099 Fuzzy Cognitive Analysis and Modeling of Water Quality. Aleksandr Gozhyj, Irina Kalinina, Viktor Gozhyj. Ukraine
- 21.i17-187 Estimation of the Multidimensional Dynamical Characteristic Eye-Motor System. Vitaliy Pavlenko, Illia Ivanov, Evgeny Kravchenko. Ukraine
- 22.i17-344 Subject Model of Viable Management System for Project Teams. Yurii Ivanyshak, Oleg Sachenko, Zbyshek Dombrowski, Grygoriy Sapozhnyk, Yevheniya Martsenyuk. Ukraine

10:40 AM – 12:20 PM

## **Session SC2: Advanced Mathematical Methods for Data Acquisition and Computing Systems**

Room: C (UPB Library)

**Chair:** Vladimir Oleshchuk

1. i17-138 ASID: Advanced System for Process Control towards Intelligent Specialization in the Power Engineering Field. Iulia Stamatescu, Grigore Stamatescu, Ioana Fagarasan, Nicoleta Arghira, Vasile Calofir, Sergiu Stelian Iliescu. Romania
2. i17-100 On the Possibility of Optimization of the Discrete Cosine Transform to Increase a Computation Speed. Maxim Smolyakov, Pavel Avrashkov, Alexey Frolov, Lusiena Miroslovskaya, Dmitriy Sannikov. Russian Federation
3. i17-346 Comparison of Model Reference Adaptive Control and Cascade PID Control for ASTank2. Vu Minh Hung, Iulia Stamatescu, Cristian Dragana, Nicolae Paraschiv. Vietnam, Romania
4. i17-046 Microcontroller PIC based Traffic Light System with Collision Detection. Bohdan Borowik, Barbara Borowik, Volodymyr Karpynskyi, Roman Kochan, Łukasz Więclaw. Poland
5. i17-333 Statistically Oriented Tolerance Design with Correlation between Parameters of Components. Galina Shilo, Nataliia Furmanova. Ukraine

10:40 AM – 12:20 PM

**Session SD2: Special Stream in Advanced Information Technologies in Environmental Sciences**

Room: **D** (UPB Library)

**Co-Chairs:** Yury Kolokolov, Kondo H. Adjallah

1. i17-129 Systems Engineering for Metropolitan Energy Systems – Ruhrvalley. Carsten Wolff, Torben Lippmann, Uwe Lauschner. Germany
2. i17-067 Characterization, Monitoring and Failure Risks Assessment of Buried Ductile Steel Pipeline Subject to Earthquakes by using Wireless Sensors. Anca Coseru (Tuluca), Kondo H. Adjallah, Alexandre Sava, Valentin Zichil. France, Romania
3. i17-233 Monitoring pH with HART Communication. Cristian Pastrascioiu, Grigore Stamatescu. Romania
4. i17-115 Use of Unmanned Aerial Vehicles to Study Geese Populations in the Arctic. Alexey Lagunov, Vladimir Terekhin. Russian Federation
5. i17-215 Models of Particulate Matter Concentration Forecasting Based on Artificial Neural Networks. Mihaela Oprea, Marian Popescu, Elia Georgiana Dragomir, Sanda Florentina Mihalache. Romania

12:20 PM – 1:10 PM

**Round Table and Closing Ceremony: Room A**

**Co-Chairs:** George Markowsky, Anatoliy Sachenko, Grigore Stamatescu

1:10 PM – 2:10 PM

**Lunch:** UPB Library. Foyer – Ground Floor

## Registration

The Registration desk is open on

- Wednesday, September 20, from 7:00 PM to 9:00 PM in PRECIS Building
- Thursday, September 21, from 8:45 AM – 5:00 PM in PRECIS Building
- Friday, September 22, from 8:00 AM – 4:40 PM in UPB Library
- Saturday, September 23, from 8:00 AM – 11:00 AM in UPB Library

## Internet Access

IDAACS'2017 will provide free Wi-Fi Internet access for every participant with their own laptop/tablet/smartphone at the conference venues. Eduroam wireless networks are available in the PRECIS Research Center and other areas of the UPB campus.

## How to get to Bucharest

Bucharest “Henri Coanda” Otopeni Airport (OTP) is situated in the northern part of Bucharest, 20km from the city center. The airport can be reached by the Express Lines of the Regia Autonoma de Transport Bucuresti - <http://ratb.ro/eng>: 780 to Gara de Nord and 783 to Unirii Square/City Center. The buses depart from the ground floor of the Arrivals Terminal. Other options are available such as ridesharing services: Uber, Taxify or taxi (1.4RON/km).

## How to get to the conference venue (see the maps below)

Address: Universitatea “Politehnica” din Bucuresti, Splaiul Independentei 313, 060042 Bucharest

The UPB campus is conveniently located in central Bucharest, at short distance to the main railway station – Gara de Nord, and with good access to the public transport and metro networks - <http://www.metrorex.ro>. Due to its large size, there are two main entrances in the campus: the North entrance from Splaiul Independentei is closer to the main venue – UPB Library, the South entrance from Bd. Iuliu Maniu is closer to the opening session venue – Faculty of Automatic Control and Computers and the PRECIS Research Center.

Example RATB lines:

- 62 trolleybus line from Gara de Nord main entrance to “UPB” stop;
- 601 bus line from the University Square in the city center to “Complex Regie” stop.

### *Metro stations in close proximity to the campus:*

- Politehnica station / M3 Line;
- Grozavesti station / M1 Line.

\*Both lines offer direct trains to the old city center (conference dinner) and Piata Unirii.

RATB fares are loaded onto single use or reusable rfid cards, available from ticket offices in larger stations. A single trip costs 1.3 RON and the card has to be validated at each boarding of a bus/trolleybus/tramway. Other types of fares are available such as daily, weekly, etc.

Magnetic Metro cards are available in each metro station. The cost is 5 RON for a 2-trip card and 20 RON for a 10-trip card.

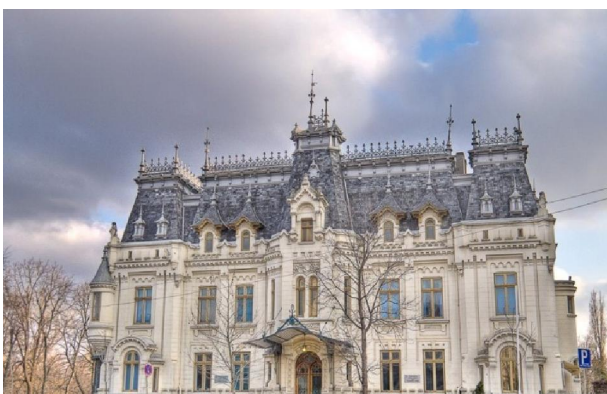
## About Bucharest

Bucharest is Romania's capital and the biggest financial, administrative and cultural centre. According to Eurostat, the Bucharest population has around 2,151,880 residents, being the 10th largest city of the European Union. Bucharest's crime rate is rather low in comparison to other European capital cities.

Bucharest hosts the biggest population of students in Romania and some of its largest universities.

Bucharest's eclectic architecture is a mix of historical (neo-classical), interbellum (Bauhaus and Art Deco), Communist-era and modern. In the period between the two World Wars, the city's elegant architecture and the sophistication of its elite earned Bucharest the nickname of "Little Paris". Bucharest is situated on the banks of the Dâmbovița River, which flows into the Argeș River, a tributary of the Danube.

The old town Bucharest is located at the very centre of the city. The area is home to many art galleries, antique shops and coffeehouses. At the centre of the historic area, the remains of the Old Princely Court (Curtea Veche), built in the 15th century by Vlad Țepeș, also known as Vlad Dracula can be found. The old city centre is now under partial renovation works.







## **About UPB – University “Politehnica” of Bucharest**

The University “Politehnica” of Bucharest ([www.upb.ro](http://www.upb.ro)) is the largest and most prestigious technical university in Romania with around 28000 students and 3000 faculty and staff, grouped under 15 faculties and 40 research centers. The mission of the University “Politehnica” of Bucharest has been thought over as a blend of education, research and innovation, which represents a key towards a knowledge-based society and economy. Creating knowledge mainly by scientific research, giving it out by education and professional training, disseminating it by information technologies, as well as the use of technological innovation are elements that define the university distinctive profile.



## About the Faculty of Automatic Control and Computers

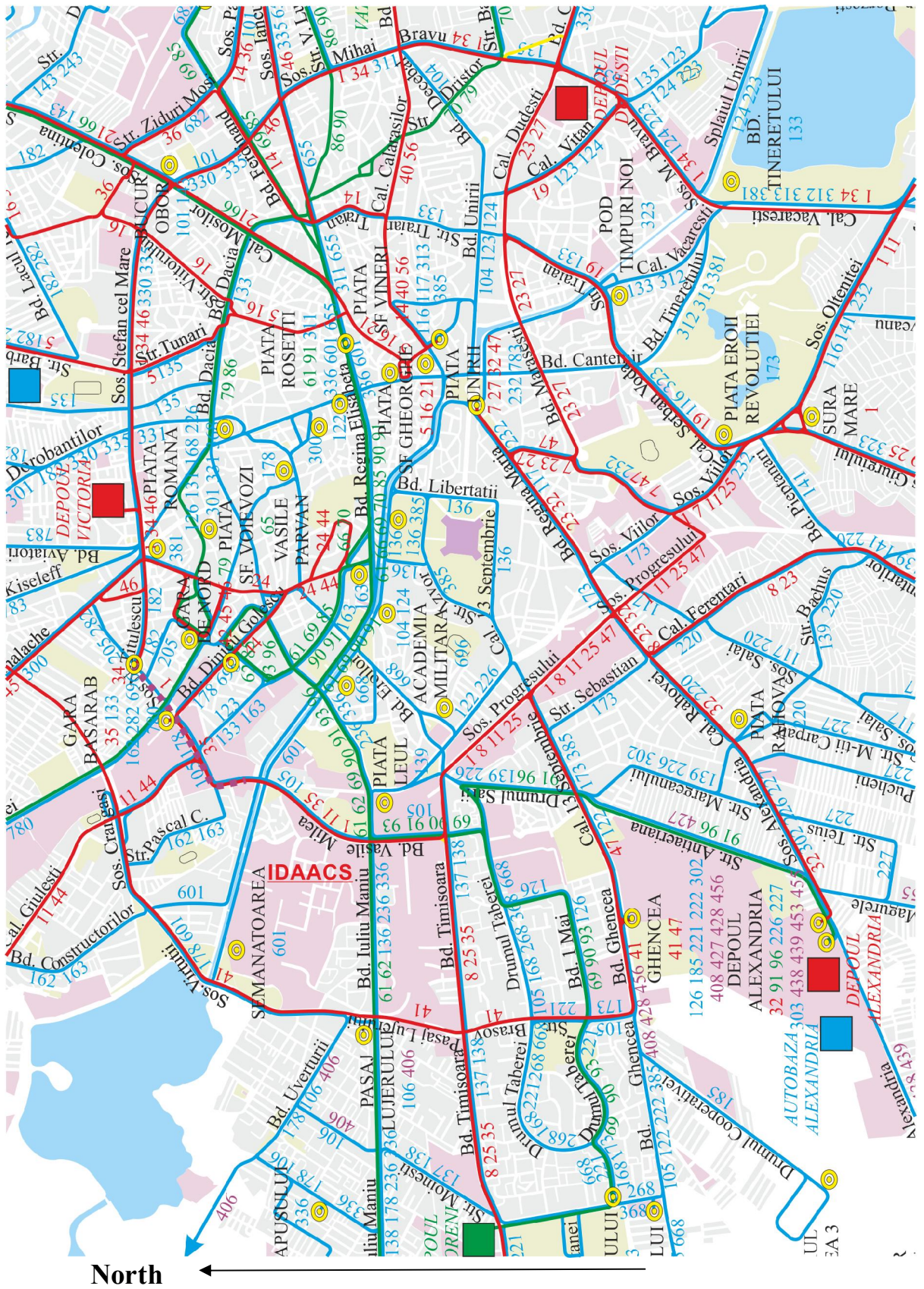


The mission of the Faculty of Automatic Control and Computers is to empower high-quality scientific research, to share knowledge through education in the domains of Computer Science and Information Technologies, and Systems Engineering, as well as to offer a stimulating, high-level professional and social environment to the students and academic staff within the faculty.

Building on its existing capacity and reputation, the strategy of A&C is to:

- Provide a distinctive learning and research environment;
- Maintain the leading position in the country and enhance its internationally recognized status;
- Uphold collaboration with other academic communities.

The Faculty of Automatic Control and Computers is organized into three Departments: Department of Automatic Control and Industrial Informatics, Department of Automatic Control and Systems Engineering, Department of Computer Science, comprising more than 150 teachers of whom over 40 are full professors. The Doctoral School of the Faculty of Automatic Control and Computers includes a total of 29 Ph.D. advisors and over 200 doctoral students in training. Each year, our faculty opens its doors to approximately 3,400 new students, in the 4 years undergraduate programme, the 2 years M.Sc. programme, and the Ph.D. studies. The Faculty houses prestigious research centers and laboratories, equipped to European standards, such as the National Center for Information Technology which includes the High Performance Computing Center, the Center for Research and Training in Robotics and Industrial Informatics Engineering; the Center for Automation and Process Control; the Dynamic systems Lab. Close working relationships with prestigious companies such as IBM (e-Business Academy, e-Government), Intel, Microsoft (Innovation Center), CISCO (CISCO Academy), ORACLE, Freescale, IXIA, National Instruments, Phoenix Contact, Asti, Rockwell Automation, Altran, UTI, IPA and others.



# METROREX

## METRO MAP BUCHAREST



**Metro Line in operation:**

- M1 Dristor - Pantelimon
- M2 Berceni - Pipera
- M3 Preciziei - Anghel Saligny
- M4 Gara de Nord - Parc Bazilescu

**Metro Lines under construction:**

- M5 Râul Doamnei - Pantelimon

**Future metro Lines:**

- M4 Straulesti - Depou Straulesti
- M6 Gara de Nord - Aeroport Henri Coandă Otopeni

Stations with elevators for persons with disabilities.

Click to highlight the proximity objectives.



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KEY TO SYMBOLS:	KEY TO AREA:	KEY TO AREA:	KEY TO AREA:
<ul style="list-style-type: none"> <li>Interchange station between metro lines</li> <li>Connection with CFR Railways</li> <li>Highways: A1/A2/A3</li> </ul>	<ul style="list-style-type: none"> <li>Area 1: Downtown</li> <li>Area 2: Berceni District</li> <li>Area 3: Mihai Bravu &amp; Vitan Districts</li> <li>Area 4: Titan District</li> </ul>	<ul style="list-style-type: none"> <li>Area 5: Pantelimon District</li> <li>Area 6: Colentina District</li> <li>Area 7: Lacul Tei &amp; Floreasca Districts</li> <li>Area 8: Aviatorilor &amp; Aviatiei Districts</li> <li>Area 9: Grivita &amp; Bucurestii Noi Districts</li> </ul>	<ul style="list-style-type: none"> <li>Area 10: Giulești District</li> <li>Area 11: Militari District</li> <li>Area 12: Drumul Taberei District</li> <li>Area 13: Rahova District</li> <li>Area 14: Ferentari District</li> </ul>

# University Politehnica of Bucharest Campus Map





