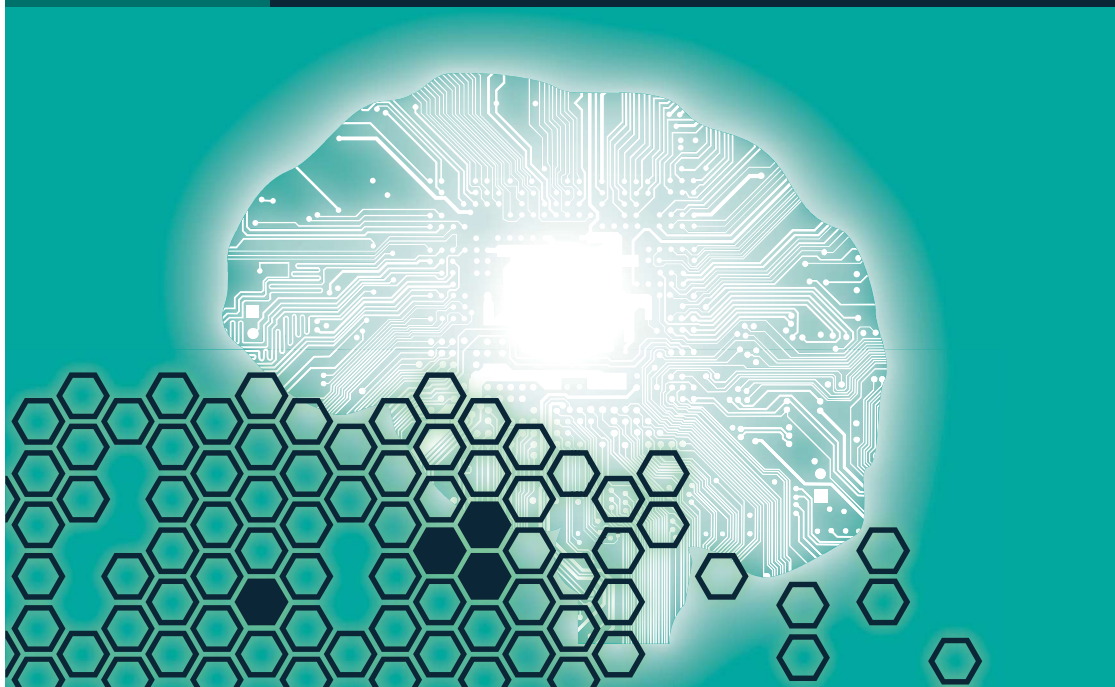




University of Žilina
FACULTY OF ELECTRICAL
ENGINEERING



Annual Report 2013

Faculty of Electrical Engineering



University of Žilina



Annual Report ²⁰¹³

Faculty of Electrical Engineering

2014

Contents



| | | | |
|----|---|-----|--|
| 5 | Faculty of Electrical Engineering Foreword | 61 | Department of Physics DPh |
| 7 | Profile and structure of the Faculty of Electrical Engineering | 71 | Department of Measurement and Applied Electrical Engineering DMAEE |
| 11 | Educational activities | 77 | Department of Electromagnetic and Biomedical Engineering DEBE |
| 17 | Scientific research activities | 87 | Department of Mechatronics and Electronics DME |
| 55 | Foreign activities | 97 | Department of Power Electrical Systems DPES |
| 59 | Main Tasks of the Faculty for the year 2014 | 111 | Department of Control and Information Systems DCIS |
| | | 123 | Department of Telecommunications and Multimedia DTM |
| | | 137 | Institute of Aurel Stodola in Lip-tovský Mikuláš IAS |



Department of Control and Information Systems



General Information

The Department of Control and Information Systems (further referred to as the DCIS) guarantees three study programmes in the study branch Automation at the University of Žilina. Specifically it is the study programme Automation in bachelor degree, study programme Process Control Engineering in MSc. degree and study programme Process Control Engineering in PhD. degree.

Research activities of the DCIS are oriented in the field of information and safety-related system analysis and synthesis ranging from solution of theoretical models to practical projects of operation including implementation. There are many sectors of activities in which the DCIS has an exclusive position in the Slovak Republic, especially in expertise activities in the field of analysis and synthesis of railway interlocking systems.

The area of reliable and safe information transmission and processing in control of selected critical processes both in safety-related systems for all kinds of transport, complex technologies and in security systems for protection of humans and property provides dynamic incentive for all the staff. Realization of information services for operative control supported by automation and computer technology is applicable in decisive branches of the national economy.

Activities performed at the DCIS are integrated to the national and international co-operation with academic and industry sphere and realized through various forms - from research projects to exchanges of students and experts.

In 2013 the staff of the DCIS consisted of 14 university teachers, 1 researcher, 2 technicians and administrative support and 8 full-time postgraduate students. The pedagogical staff consisted of 4 professors, 1 guest professor, 1 associate professor, 6 senior lecturers with an academic degree PhD, 2 senior lecturers without this degree.



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

Annual Report ²⁰¹³

Staff of the Department

| | |
|-------------------------------------|---------------------|
| Head of the Department: | Juraj Spalek |
| Vice-head of the Department: | Aleš Janota |
| Department secretary: | Rastislav Pirník |
| Study Consultant: | Peter Nagy |
| Administrative Support: | Klára Berešíková |
| Technical Support: | Kamila Kršíková |

Sections of the Department

Section of Automation and Signalling Systems

| | |
|--|--|
| Head of the Section: | Karol Rástočný |
| Professors: | Aleš Janota, Karol Rástočný, Juraj Spalek |
| Guest Professor: | Pavel Příbyl |
| Senior Lecturers (with PhD): | Jozef Hrbček, Vojtech Šimák, Juraj Ždánsky |
| Senior Lecturers (without PhD): | Peter Nagy |

Section of Communication and Information Systems

| | |
|--|--|
| Head of the Section: | Mária Franecková |
| Professors: | Mária Franecková |
| Associate Professors: | Peter Vestenický |
| Senior Lecturers (with PhD): | Tatiana Brončeková († 4.12.2013), Peter Peniak, Peter Holečko, Rastislav Pirník (since 1.9.2013) |
| Senior Lecturers (without PhD): | Emília Bubeníková |

Postgraduate Students

| | |
|------------------------------|--|
| Internal (full-time): | Ján Ďurech (since 1.9.2013), Tomáš Mravec (since 1.9.2013), Igor Miklóšik (since 1.9.2013), Michal Gregor, Tomáš Mikluščák, Lubomír Pekár, Ján Halgaš (till 19.8.2013), Peter Matis, Zuzana Lobotková, Marek Výrostko, Ján Beňuš (till 12.7.2013), Marián Hruboš |
| External (part-time): | Milan Slivka, Ján Slezák, Peter Nagy, Emília Bubeníková, Anna Cеровská, Peter Lúley |

Education

Courses in Bachelor and Master Degree Programmes

Bachelor Degree Programmes

| Code | Title | Sem. | Hours/Week L-S-LE* |
|---|-------------------------------|---|-----------------------|
| <i>Courses at the Faculty of Electrical Engineering</i> | | *(L) lessons - (S) seminars - (LE) lab. exercises | |
| 31100 | Algorithmisation of problems | 1 | 2-2-0 |
| 31443 | Theory of automated control 1 | 4 | 3-1-1 |
| 31504 | Bachelor project | 5 | 0-0-5 |
| 31521 | Communication security | 5 | 3-1-1 |



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

| Code | Title | Sem. | Hours/Week L-S-LE* |
|--|--|---|-----------------------|
| Courses at the Faculty of Electrical Engineering | | *(L) lessons - (S) seminars - (LE) lab. exercises | |
| 31534 | Single-chip controllers programming | 5 | 2-0-2 |
| 31536 | Sensor technology | 5 | 3-1-1 |
| 31541 | Control systems reliability and safety | 5 | 3-2-0 |
| 31209 | Programming languages 1 | 1 | 2-2-0 |
| 31202 | Information and communication networks | 2 | 1-0-2 |
| 31204 | Computing technical environment | 2 | 1-0-2 |
| 31425 | Logical systems | 4 | 3-1-1 |
| 31437 | Control systems | 4 | 2-1-2 |
| 31443 | Theory of information and signals | 4 | 3-1-1 |
| 31620 | Bachelor project 2 | 6 | 2-0-3 |
| 31600 | Bachelor work | 6 | 0-2-0 |
| 31606 | Distributed control systems | 6 | 3-1-1 |
| 31612 | Information systems | 6 | 3-1-1 |
| 31623 | Control systems programming | 6 | 2-0-2 |

Courses at the Faculty of Civil Engineering

| | | | |
|-------|---------------------|---|-------|
| 92347 | Applied electronics | 2 | 2-0-2 |
|-------|---------------------|---|-------|

External Bachelor Degree Programme

| Code | Title | Sem. | Hours/Week L-S-LE* |
|---|---------------------|---|-----------------------|
| Courses at the Faculty of Civil Engineering | | *(L) lessons - (S) seminars - (LE) lab. exercises | |
| 97347 | Applied electronics | 2 | 18-0-0 |

Master Degree Programmes

| Code | Title | Sem. | Hours/Week L-S-LE* |
|---|--|---|-----------------------|
| Courses at the Faculty of Civil Engineering | | *(L) lessons - (S) seminars - (LE) lab. exercises | |
| 32101 | Control systems safety analyses | 1 | 3-2-0 |
| 32103 | Information systems security | 1 | 3-0-2 |
| 32120 | Computer networks | 1 | 3-1-1 |
| 32130 | Theory of automated control 2 | 1 | 3-1-1 |
| 32142 | Signal processing appliances | 1 | 3-1-1 |
| 32124 | Signalling systems components | 1 | 3-1-1 |
| 32311 | Expert systems | 3 | 3-0-2 |
| 32316 | Master project | 3 | 0-0-5 |
| 32342 | Processes visualisation | 3 | 2-0-2 |
| 32301 | Signalling systems applications | 3 | 3-0-2 |
| 32302 | Security systems | 3 | 3-0-2 |
| 32329 | Applications of information systems in process control | 3 | 3-1-1 |
| 32202 | Higher programming languages applications | 2 | 2-1-2 |
| 32203 | Secure system communication | 2 | 3-1-1 |
| 32221 | Object-oriented system development | 2 | 2-0-2 |
| 32225 | Signal processing appliances | 2 | 3-1-1 |
| 32238 | Artificial intelligence | 2 | 3-1-1 |
| 32243 | Signalling systems | 2 | 3-1-1 |



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

| Code | Title | Sem. | Hours/Week L-S-LE* |
|--|------------------------------------|--|-----------------------|
| <i>Courses at the Faculty of Civil Engineering</i> | | <i>*(L) lessons - (S) seminars - (LE) lab. exercises</i> | |
| 32401 | Wireless communication | 4 | 4-1-2 |
| 32402 | Diploma work | 4 | 0-2-0 |
| 32403 | Diploma project | 4 | 0-0-10 |
| 32338 | Robotic systems | 4 | 4-0-2 |
| 32411 | Intelligent transportation systems | 4 | 4-2-0 |
| <i>Courses at the Faculty of Operation and Economics of Transport and Communications</i> | | | |
| 13P102 | Information systems in transport | 1 | 2-2-1 |



Science, Research and Development

Scientific-research and development activities of department are focused on the area of control tasks algorithmisation, automation of control on process, operational and management levels while utilising modern artificial intelligence approaches, and on the area of reliable, safe and secure communication and information processing in control of selected critical processes, above all the ones which imply the criterion of safety besides usual optimisation criteria. For reasons given there is a large number of research projects and cooperation projects with praxis and industry directed into the area of applied telematics and intelligent control and safety systems in transport and industry.

Laboratory of industrial processes control

The laboratory is oriented on development and simulation of algorithms for industrial processes control. The fundamentals of equipment are PCs, Siemens PLCs, extension modules for sensors and actuators connection, modules for remote inputs and outputs, visualisation panels, frequency converters and programming and configuration software. The interconnection of components and positions is realised by industrial networks. The operation of this technology is supported by actual models of industrial processes.

Laboratory of safety critical control systems

The laboratory is focused on development of safety related control systems. The fundamentals of technology equipment are PCs and Siemens PLCs with software support. Safety relevant communication between these programmable automata and cooperating devices is realised using safety relevant protocol PROFISAFE. The laboratory includes operational safety systems by Scheidt&Bachmann (BUES2000, ZBS2000).

Laboratory of traffic processes control

The laboratory is focused on the area of system identification, design and implementation of control algorithms for traffic and industrial systems. It is equipped with programmable logical automata, safety PLCs, I/O modules, converters, traffic and industrial systems models and specialised computers with software; Automation Studio, Safe Designer, MATLAB, Atmel Studio, RSLogix, RSLinx, RSView.

Laboratory Betamont

The laboratory aims on experimental works of PhD. students and final degree students of bachelor and master programmes. The focus is the area of development, customisation and realisation of experimental communication subsystem of Intelligent Transportation Systems (ITS). The development heads towards display appliances in the function of dynamic traffic

FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

signs, information panels and similar, primarily in the direction ITS infrastructure – driver. The development in laboratory also includes applications of distinct communication standards, primarily intended for the communication between vehicles, vehicles and infrastructure and between ITS infrastructure objects.

The laboratory is built within the following projects: „Centre of excellence for intelligent transportation systems and services I“, „Centre of excellence for intelligent transportation systems and services II“ and „New methods for measuring dynamic properties of motor vehicle and its interaction with roadway“ (in cooperation with BETAMONT), which have been acquired in the operational programme Research and development by the EU Structural funds agency of Slovak Department of Education.

Laboratory of information technologies

The laboratory is oriented on information systems (databases, web technologies, virtualisation), computer networks (modelling, simulation, monitoring) and its safety (penetration testing, intrusion detection, firewalls, cryptanalysis, antimalware).

Hardware equipment: Juniper IDP 75 – intrusion detection system; Fluke Networks Time Machine Express NTM - EX2 – network traffic monitoring device

Software equipment: OPNET Modeler + Wireless Suite – network modelling, simulation and emulation environment; OPNET IT Guru Academic Edition – academic edition of environment; PRTG Paessler Network Monitor – network traffic monitoring tool.

Laboratory of experimental tasks AB

The laboratory is intended for experimental operations related to bachelor, master and research tasks including realisation of electronic devices.

Laboratory of automated control theory and signal processing

The laboratory is aimed on testing of theoretical fundamentals from the area of automated control theory (continuous and discrete systems), theory of information and signals and digital signal processing with custom programs and MATLAB with its specialised toolboxes (Simulink, Control Toolbox, Signal Processing Toolbox). It includes actual educational models by Humusoft CE 151 (ball on plane) with accessories (Extended Real Time Toolbox and Real Time Windows Target) and appliances by IMFsoft (motor rpm regulator, temperature regulation).

Joint laboratory of tunnel systems AB

The laboratory serves for experimental works for bachelor, master and PhD. students by providing a joint laboratory of tunnel systems (JLTS) as a competence centre, which systematically cooperates on optimisation of equipment and permanent increasing of safety of tunnel systems in Slovak and Czech Republic. The laboratory is built within the projects „Centre of excellence for intelligent transportation systems and services II“ and „Transport telematics systems research centre“, which have been acquired in the operational programme Research and development by the EU Structural funds agency of Slovak Department of Education. A part of the laboratory will be a laboratory for research of methods for tunnel systems safety quantification.

Laboratory of modelling and simulation

The laboratory is aimed on education of specialised subjects requiring support of software tools. It is mainly intended for modelling of functional properties of control systems (UML; Rhapsody software tool), reliability and safety attributes (CARE software tool), control procedures and control structures (Matlab and Lab-



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

View environments). In case of need, it is available for other applications – design and work with database systems, expert systems and so on. The laboratory includes technology utilised in objects protection (alarm systems, electric fire signalisation, camera surveillance systems). The laboratory can also be utilised for students' individual work during working out the semester projects and diploma theses.

Laboratory of computer networks and secure communications

The laboratory is focused on the area of LANs including wireless communication technologies. The technical equipment for computer networks includes basic PCs, structural cabling distributor, switches and routers 3com a Cisco, IEEE 802.11 wireless networks analyser. The technical equipment for industrial communication networks includes PROFIBUS and CAN protocol analysers.

Laboratory of microcomputers and robotics

The laboratory is intended for research and development in the area of robotics and microcomputers. It is equipped with computers and programmable interfaces for ATMEL microcomputers and ABB industrial robots. The laboratory hosts the research of mobile sensor platform for robots navigation.

Laboratory of modelling, optimisation and simulation technologies for ITS

The laboratory is focused on development, modification and realisation of mathematical and simulation models for the support of traffic network control. The main objective is development of methods and algorithms for predictive control of telematic subsystems.

Device equipment: I/O card, SW - toolbox for predictive control, workstation for the complex control system model, specialised literature.

Co-operation

Co-operation Partners in Slovakia

- AP Signaling s.r.o., Martin
- AQUASTYL s.r.o., Považská Bystrica
- AŽD Slovakia, Bratislava
- B+R automatizace, s.r.o. – organisation section, Nové Mesto nad Váhom
- Betamont, s.r.o. Zvolen
- Faculty of Electrical Engineering and Information Technology, Slovak Technical University, Bratislava
- HP Slovakia, Bratislava
- KIA Motors, Žilina
- MtF, Slovak Technical University, Bratislava
- National highway company (Národná diaľničná spoločnosť a. s.), Bratislava
- ROBOTEK, s.r.o., Sučany
- Rockwell Automation Slovakia s. r. o.
- Scheidt&Bachmann Slovakia s. r. o., Žilina
- Siemens PSE, Bratislava
- Siemens PSE, Žilina
- Siemens s.r.o. Automation technology and traction division (IA&DT)
- Slovak Standards Institute, Bratislava
- SOMI Systems a.s., Banská Bystrica
- Technical university Košice
- URAP-Automatizácia s.r.o
- Transportation research institute, Žilina
- Slovak Railways, Bratislava



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

International co-operation Partners

- AŽD Praha Ltd., Prague, CR
- ELTODO EG, Prague, CR
- První Signální Inc., Ostrava, CR
- SIEMENS AG, I MO RA ML SEE, Vienna, Austria
- Siemens Ltd., CT DC EU IC MOL CZ, Prague
- Signalbau Inc., Přešov, CR
- Thales Rail Signalling Solutions GmbH, Vienna, Austria

Visitors to the Department

| Name | Institution | Length of stay |
|--------------------|--|----------------|
| Borna Abramovic | Faculty of Transport and Traffic Sciences, University of Zagreb, Department of railway transport | 1 day |
| Tomáš Šmerda | Technical division chief ELTODO - dopravní systémy s.r.o., Prague, CZ | 4 days |
| Vladimír Faltus | FD CTU Prague, CZ | 3 days |
| Valentina Hristova | Todor Kableskov University, Sofia, Bulgaria, | 5 days |



Visits to Foreign Institutions

| Name | Institution | Length of stay | |
|------------------|---|----------------|-------|
| Mária Franecková | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | FW |
| | Eltodo Prague | 2 days | CH1 |
| Aleš Janota | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | CH2 |
| | Wien, Austria – DC-TUD COST (20th meeting) | 3 days | CH3 |
| | Rijeka, Croatia – DC-TUD COST (21st meeting) | 3 days | CH4 |
| | Dubrovnik, Croatia (COST TU1105 - 4. MC meeting) | 3 days | CH5 |
| | West Pomeranian University of Technology Szczecin, Poland – Erasmus lecture stay | 5 days | |
| | FD CTU Prague | 3 days | |
| Karol Rástočný | Siemens s. r. o., CT DC EU IC MOL CZ, Prague, CR (Interlocking systems course) | 10 days | DPh |
| | TU Budapest, Hungary (lecture) | 3 days | DMAEE |
| | Altpro d.o.o., Zagreb, Croatia (research cooperation) | 4 days | DEBE |
| | VUŽ Prague, CR (work visit) | 1 day | DME |
| | KPM Konzult, Brno, CR (editorial board meeting) | 1 day | DPES |
| | New railway technology magazine | 1 day | |
| Juraj Spalek | FD CTU Prague | 1 day | |
| Rastislav Pirník | FD CTU Prague, Erasmus teacher mobility | 4 days | |
| Ľubomír Pekár | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | DCIS |
| Marián Hruboš | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | DTM |
| Jozef Hrbček | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | IAS |
| Vojtech Šimák | Silesian University of Technology, Faculty of Transport, Ustroň, Poland (TST 2013) | 3 days | |
| | Lappeenranta University of Technology, LUT Energy, Electrical Engineering, Control Engineering and Digital Systems, Lappeenranta, Finland, Erasmus lecture stay | 7 days | |
| Igor Miklóšik | ELTODO Transport systems s.r.o., Prague, CR, | 5 days | |
| Ján Ďurech | Study stay nt Silesian University of Technology, Department of mechatronics, Gliwice, 2013, Poland | 5 days | |

Annual Report ²⁰¹³

| | | |
|---------------|---|--------|
| | Silesian University of Technology, XIV International PhD Workshop OWD 2012, Wisła, Poland | 3 days |
| Juraj Ždánsky | West-Czech university in Pilsen (Applied Electronics 2013) | 2 days |

Other Activities

Specialised Lectures and Courses Organized by the Department

Information systems security management

Customer: Lecture for the students of Safe process control

Lecturer: Martin Šuták, GiTy Inc., Martin
Date: 15. 10. 2013

Tunnel operation, operational states

Lecturer: Rastislav Pirník
Where: UNIZA – Road tunnels dispatcher course for NDS
Date: 22.06.2013

Tunnel operation, operational states

Lecturer: Rastislav Pirník
Where: UNIZA – Road tunnels dispatcher course for NDS
Date: 15.11.2013

Tunnel operation control (central control system)

Lecturer: Jozef Hrbček
Where: UNIZA – Road tunnels dispatcher course for NDS
Date: 15.11.2013

Invited Lectures/Papers

Safety of Signalling Systems - Opinions and Reality

Lecturer: Karol Rástočný
Where: TU Budapest
Date: 22. 04. 2013

Interpretation and use of SIL-table

Lecturer: Karol Rástočný
Where: International conference OZT, Vyhne
Date: 13.-15.02.2013

International and European standardisation organisations for electronic communications

Lecturer: Rastislav Pirník
Where: USI UNIZA – Electronics experts course
Date: 01.02.2013

Information and communication networks

Lecturer: Rastislav Pirník
Where: UNIZA – Faculty of Civil Engineering
Date: 20.03.2013

Design of 3D model of a road communication for ITS applications

Lecturer: Rastislav Pirník
Where: ČVUT- Faculty of Transport
Date: 04.-08.11.2013

Membership in International Institutions /Committees

| | |
|-------------|--|
| Aleš Janota | Member of Domain Committee, Transport Urban Development - COST, Brussels Member of programme committee of the 13 th International conference Transport Systems Telematics TST'2013, Katowice-Ustroń, Poland: 23. – 26.10.2013 Member of programme committee of the XVII. International conference Computer Aided Science, Industry and Transport TRANSCOMP 2013, Zakopané, Poland: 2. – 5. 12. 2013 Member of programme committee of the 10 th Jubilee International Conference TransNav 2013 on Marine Navigation and Safety of Sea Transportation, Gdynia, Poland: 19. – 21. 6. 2013 Chairman of Editorial board of the international scientific journal Archives of Transport System Telematics, Katowice, Poland, ISSN 1899-8208 |
|-------------|--|



FW

CH1

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM


IAS

| | | |
|-----------------|--|-------|
| Karol Rástočný | Member of international programming council of TransNav International Journal on Marine Navigation and Safety of Sea Transportation, Gdynia, Poland, ISSN 2083-6473, ISSN 2083-6481 (electronic version) | |
| | Member of Scientific board of Faculty of Transport and Electrotechnics, UTH Radom, Poland (do 30.6.2013) | |
| | Member of ACM – Association for Computing Machinery, USA | |
| | Member of International Institute of Informatics and Systemics, USA | |
| | Member of programme committee of the 13 th International conference Transport Systems Telematics TST'2013, Katowice-Ustroń, Poland: 23. – 26.10.2013 | |
| | Member of programme committee of the 9 th International conference IEEE Applied Electronics, Pilsen, CR: 10. – 12. 09. 2013 | ↑ |
| | Member of Editorial board of the international scientific journal Transport Problems, ISSN 1896-0596 | |
| | Member of Editorial board of the international scientific journal Archives of Transport System Telematics, ISSN 1899-8208 | FW |
| | Member of Editorial board of the international scientific journal Advances in Electrical and Electronic Engineering, ISSN 1804-3119 | CH1 |
| | Member of Editorial board of the journal Nové železniční trendy (New railway trends), ISSN1212-3942 | CH2 |
| Juraj Spalek | Vice chief-editor of the scientific journal ANNALS OF FACULTY ENGINEERING HUNEDOARA – JOURNAL OF ENGINEERING, ISSN: 1584-2665, ISSN: 1584-2673, indexed in COPERNICUS – Journal Master List | CH3 |
| | Member of scientific board ACTA TECHNICA CORVINIENSIS – Bulletin of Engineering, e-ISSN: 2067-3809, Edited by Faculty of Engineering Hunedoara University Politehnica Timisoara, http://acta.fih.upt.ro/bibliographic-info.html | CH4 |
| | Member of Programme board of the international scientific journal Archives of Transport Systems Telematics, Polish Association of Transport Telematics, ISSN 1899-8208 | CH5 |
| | Member of Programme board of the international scientific multiconference Federated Conference on Computer Science and Information Systems FedC-SIS – event: International Conference on Wireless Sensor Networks (WSN'2013), Kraków, Poland, 8. – 11. September, 2013 (http://www.fedcsis.org/wsn/committee) | DPh |
| | Member of scientific board and reviewer of the international electronic conference ICTIC 2013 (Information and Communication Technologies- International Conference), FRI-UNIZA, March 25-29, 2013 | DMAEE |
| | Member of reviewer team of the International Journal of Mechanic Systems Engineering (IJMSE), World Academic Publishing Company | DEBE |
| | Member of scientific board of the 10 th European conference of young researchers and scientists TRANSCOM 2013, Žilina, 24. – 26. 6. 2013 | DME |
| | Member of international scientific programme board of the 13 th International conference Transport Systems Telematics TST'13, Katowice-Ustroń, Poland: 23. – 26. 10. 2013 | DPES |
| | Member of Editorial board of the international scientific journal Advanced in Electrical and Electronic Engineering, Poland, ISSN 1804-3119 | DCIS |
| | Member of Editorial board of the international scientific journal Archives of Transport System Telematics, CR, ISSN 189-8208 | DTM |
| Mária Franeková | | IAS |
| | | |

Annual Report ²⁰¹³

Juraj Ždánsky Member of Editorial board of the international scientific journal Journal of Scientific and Applied research, Bulgaria ISSN 1314-6289
Member of scientific-programme board of the Archives of Transport System Telematics, ISSN 1899-8208
Member of scientific-programme commission of the 13th International conference Transport System Telematics, Katowice, Ustroń, Poland, 23. – 26. 10. 2013

Membership in National Institutions/Committees

| | | |
|-----------------|--|---|
| Mária Franeková | Member of the Cultural and educational grant agency (KEGA) MŠVVaŠ, SR, KEGA committee Nr. 2 Member of the Technical standardisation committee nr. 83, Slovak Institute of Technical Standardisation (SÚTN), Bratislava Member of the Slovak society for cybernetics and informatics at the Slovak science academy (SSKI) Member of the PROFIBUS.sk association, FEI STU Bratislava Member of the organisational committee of International scientific conference RTT 2013 – 15th International Conference on Research in Telecommunication Technologies, Senec, SR: 11.-13.9.2013 Member of the international scientific board of the: „Meeting of automation, cybernetics and informatics departments (SKAKal 2013) of technical universities in SR and CR“ workshop, 11. – 13. September 2013, Rajecké Teplice, SR Member of the organisational board of Children university UNIZA, 8. – 12. 7. 2013, Žilina chairperson of the organisational board Meeting of employees, pensioners and friends KRIS 60 (STREPPP KRIS 60) |         |
| Aleš Janota | Member of the Technical standardisation committee Nr. 104 Industrial processes control, Slovak Institute of Technical Standardisation (SÚTN) Bratislava Member of the programme committee of the 21 st International symposium ŽEL 2013. Žilina, 04.- 05. 06. 2013 Member of the programme committee of the 15 th Slovak seminar of electro-technicians with international participation – 15.CSE, Trenčín:16. – 17.10. 2013 Chairman of organisational and international programme board of the Meeting of automation, cybernetics and informatics departments (SKAKal 2013) of technical universities in SR and CR, Rajecké Teplice: 11. – 13. 9. 2013 Member of scientific board of the 1 st International Virtual Conference on Intelligent Transportation Systems 2013, Žilina, SR: 26.– 30. August 2013 |      |
| Karol Rástočný | Member of the programme committee of the International conference of railway communication and interlocking technology, Vyhne, SR: 13. – 15. 02. 2013 Member of the programme committee of the 21 st International symposium ŽEL 2013. Žilina, 04.- 05. 06. 2013 Member of scientific and organisational board of SKAKal 2013, Rajecké Teplice, 11. – 13. 09. 2013 Chairman of the editorial board of AT&P Journal, ISSN 1335-2237 Member of the Technical standardisation committee Nr. 83, Slovak Institute of Technical Standardisation (SÚTN), Bratislava |   |
| Juraj Spalek | Member of the Slovak society for cybernetics and informatics of SAV (SSKI) | |

| | |
|------------------|---|
| | Member of the Slovak society for applied cybernetics and informatics (SSAKI) |
| | Member of the working group for technical sciences of the Agency for research and development support for Slovak Ministry of Education |
| | Member of the working group for OV 16 of the Accreditation committee of Slovak Ministry of Education |
| Jozef Hrbček | Member of organisational board of the 10 th International conference of young researchers TRANSCOM 2013, Žilina, 24. – 26. June 2013 |
| Juraj Ždánsky | Member of the programme committee of the International conference of railway communication and interlocking technology, Vyhne, SR: 13. – 15. 02. 2013 |
| | Member of the organisational board of the 10 th International conference of young researchers TRANSCOM 2013, Žilina, 24. – 26. June 2013 |
| Rastislav Pirník | Member of programme and organisational board of SKAKal 2013, Rajecké Teplice, 11. – 13. 09. 2013 |



FW

Membership in University Boards

CH1

| | |
|-------------------|--|
| Emília Bubeníková | Member of the executorial board of Alumni Club (KAP) FEE association |
| | Member of the Student scientific and expert contest |
| Mária Franeková | Member of the Faculty Committee for science branch 5.2.14 Automation at the FEE University of Žilina |
| | Member of the Scientific Board of FEE University of Žilina |
| | Chairperson of the Alumni Club (KAP) FEE association |
| Aleš Janota | Member of the Scientific Board of FEE University of Žilina |
| | Member of the Branch Committee for science branch 5.2.14 Automation at the FEE University of Žilina |
| | Member of the Branch Committee for science branch 9.2.9 Applied informatics at the FMI UNIZA (since 18. 4. 2013) |
| Karol Rástočný | Chairman of the Branch Committee for study branch 5.2.14 Automation at the FEE University of Žilina |
| | Member of the Scientific Board of FEE University of Žilina |
| | Member of FEE UNIZA senate |
| Juraj Spalek | Member of the Scientific Board of the University of Žilina |
| | Member of the Scientific Board of FEE University of Žilina |
| | Member of the Branch Committee for science branch 5.2.14 Automation at the FEE University of Žilina |
| | Member of the Branch Committee for science branch 9.2.9 Applied informatics at the FMI UNIZA |
| | Member of FEE UNIZA academic senate |
| Peter Vestenický | Member of the Branch Committee for science branch 5.2.14 Automation at the FEE University of Žilina |

CH2

CH3

CH4

CH5

DPh

DMAEE

DEBE

DME

DPES

DCIS

DTM

IAS

Contact Address

Department of Control and Information Systems **EN**

Faculty of Electrical Engineering
University of Žilina
Univerzitná 1, 010 26 Žilina
Slovak Republic
Phone: +421 41 513 3301
Fax: +421 41 513 1515
E-mail: kris@fel.uniza.sk
www: <http://kris.uniza.sk/english>

Katedra riadiacích a informačných systémov **SK**

Elektrotechnická fakulta
Žilinská univerzita
Univerzitná 1, 010 26 Žilina
Slovenská republika
Telefón: +421 41 513 3301
Fax: +421 41 513 1515
E-mail: kris@fel.uniza.sk
www: <http://kris.uniza.sk/>

[FW](#)[CH1](#)[CH2](#)[CH3](#)[CH4](#)[CH5](#)[DPh](#)[DMAEE](#)[DEBE](#)[DME](#)[DPES](#)[DCIS](#)[DTM](#)[IAS](#)