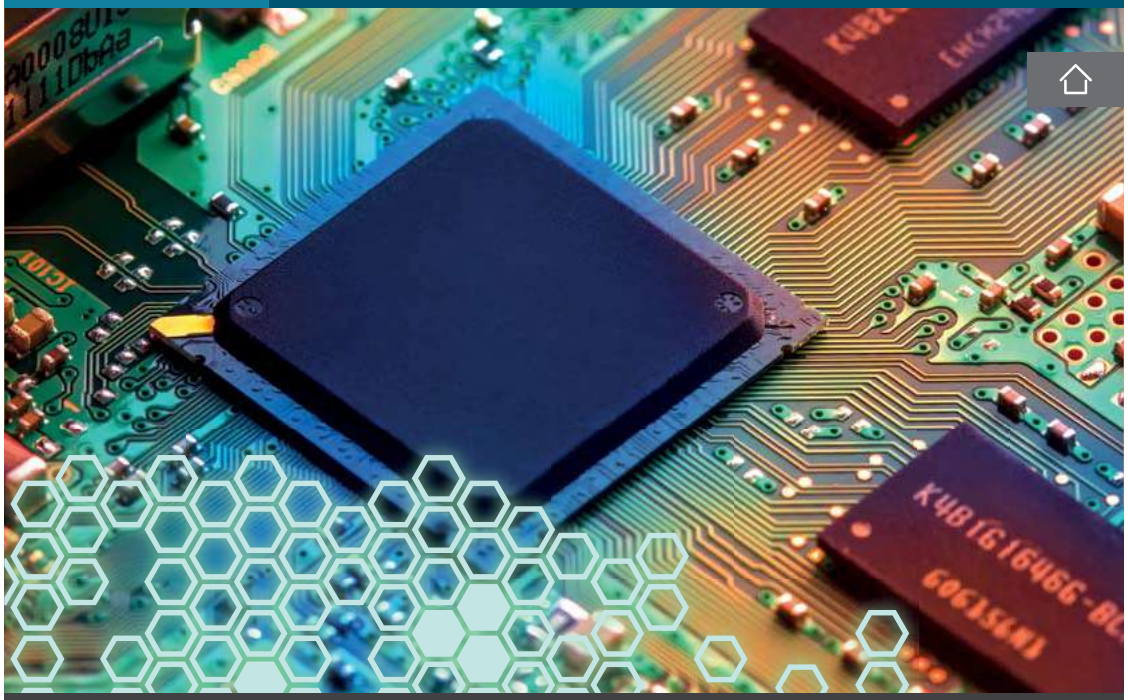
University of Žilina
FACULTY OF ELECTRICAL ENGINEERING



Annual Report 2014

Faculty of Electrical Engineering

University of Žilina

Annual Report 2014

Faculty of Electrical Engineering

2015

Graphical design - Jozef Dubovan

ISBN 978-80-554-1026-5

Contents

Faculty

Departments

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 2014 the staff of the DCIS consisted of 16 university teachers, 2 technicians and administrative support and 10 full-time postgraduate students. The pedagogical staff consisted of 4 professors, 1 guest professor, 2 associate professors, 8 senior lecturers with PhD. degree, and 1 research fellow with PhD. degree.

Staff of the Department

Head of the department:	**Juraj Spalek**
Vice-head of the department:	Aleš Janota
Secretary:	Rastislav Pirník
Study Consultant:	Peter Nagy
Administrative Support:	Klára Berešíková
Technical Support:	Kamila Kršíková
Research Fellows:	Michal Gregor

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 Přibyl
Associate Professor:	Juraj Ždánsky
Senior Lecturers (with PhD.):	Jozef Hrbček, Vojtech Šimák, Peter Nagy

Section of Communication and Information Systems

Head of the Section:	Mária Franeková
Professor:	Mária Franeková
Associate Professor:	Peter Vestenický
Senior Lecturers (with PhD.):	Emília Bubeníková, Peter Holečko, Alžbeta Kanáliková, Rastislav Pirník, Peter Peniak

Postgraduate Students

Internal:	Ján Ďurech, Marián Hruboš, Tomáš Mravec, Igor Miklošik, Michal Gregor (until 12.8.2014), Tomáš Mikluščak (until 12.8.2014), Ľubomír Pekár (until 30.9.2014), Peter Matis (until 28.2.2014), Zuzana Lobotková, Marek Výrostko (until 30.4.2014)
External:	Milan Slivka, Peter Nagy (until 31.1.2014), Emília Bubeníková (until 9.7.2014), Anna Cerovská (until 31.8.2014), Peter Lüley

Education

Courses in Bachelor and Master Degree Programmes

Bachelor Degree Programmes

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

Code	Title	Sem.	Hours/Week L-S-LE*
Courses at the Faculty of Electrical Engineering		*(L) lessons - (S) seminars - (LE) lab. exercises	
31202	Information 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 Special Engineering			
92347	Applied electronics	2	2-0-2
Faculty of Security Engineering			
97347	Applied Electronics	2	18-0-0

Master Degree Programmes

Code	Title	Sem.	Hours/Week L-S-LE*
Courses at the Faculty of Electrical 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	Safety 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	Safety systems applications	3	3-0-2
32302	Safety 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	Safety systems	2	3-1-1
32401	Wireless communication	4	3-1-1
32402	Diploma work	4	0-2-0

Code	Title	Sem.	Hours/Week L-S-LE*
Courses at the Faculty of Electrical Engineering		*(L) lessons - (S) seminars - (LE) lab. exercises	
32403	Diploma project	4	0-0-10
32338	Robotic systems	4	4-0-2
32411	Intelligent transportation systems	4	3-0-2

Research & Development

The 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. Actual models of industrial processes support the operation of this technology.

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 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.

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

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

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. 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 LabView 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

- ABB s.r.o., Banská Bystrica
- AP Signaling s.r.o., Martin
- Aquastyl, s.r.o., Považská Bystrica
- Avekol, s.r.o. Žilina
- AŽD Slovakia, Bratislava
- B+R automatizace, s.r.o. Nové Mesto nad Váhom
- Betamont, s.r.o. Zvolen
- Gity, a.s., Martin
- ELTODO SK, s.r.o. Bratislava
- FEI – Slovak technical university Bratislava
- FEI – Technical university Košice
- IBM Slovensko, Bratislava
- IS - Industry Solutions, a.s. Žilina
- MtF - Slovak technical university Bratislava
- Profibus.sk, FEI, STU Bratislava
- ROBOTEC, s.r.o., Sučany
- Scheidt&Bachmann Slovensko s. r. o., Žilina

- Siemens s. r. o., CEE RU-SK IC-MOL RA RA-COC
- Siemens s.r.o. Divízia Automatizačná technika a pohony (IA&DT)
- SjF - Slovak technical university Bratislava
- SkyToll, a.s. Bratislava
- SÚTN, Bratislava
- URAP-Automatizácia s.r.o
- Visteon Electronics Slovakia, s.r.o. - Námestovo
- Slovak association of electrotechnical industry, Bratislava
- ŽSR, Bratislava

International co-operation Partners

- Altas komercinis transportas (ALTAS), Maišiagala, Lithuania
- ALTPRO d.o.o., Zagreb, Croatia
- AŽD Praha s.r.o., Prague, CR
- Bernecker + Rainer Industrie Elektronik GmbH, Germany
- ELTODO EG, Praha, CR
- Faculty of transport, CTU, Prague, CR
- První Signální a.s., Ostrava, CR
- SDT – Sdružení pro dopravní telematiku (Transport telematics association), Prague, CR
- SIEMENS AG, I MO RA PEC, Vienna, Austria
- Siemens Aktiengesellschaft Oesterreich, IC MOL RCM ET, Vienna, Austria
- Signalbau, a. s., Přerov, CR
- Thales Rail Signalling Solutions GesmbH, Vienna, Austria
- Tollnet, a.s. Prague, CR

Visitors to the Department

Name	Institution	Length of stay
António Andonov	Todor Kableshkov University of Transport, Sofia, Bulgaria	5 days
Vladimír Gergov	Todor Kableshkov University of Transport, Sofia, Bulgaria	5 days
Jerzy Mikulski	Politechnika Ślaska, Wydzial Transportu, Katowice, Poland	10 days
Peter Tschulik	Siemens Aktiengesellschaft Oesterreich, Vienna, Austria	1 day
Milan Kunhart	AŽD Praha, CR	2 days
Andrzej Białoń	Centrum naukovo-techniczne kolejnictwa, Warszawa, Poland	3 days
Jakub Młyńczak	Politechnika Ślaska, Wydzial Transportu, Katowice, Poland	1 day

Visits to Foreign Institutions

Name	Institution	Length of stay
Mária Franeková	Veľké Karlovice, CR – ICCC 2014	2 days
	Todor Kableshov University of Transport, Sofia, Bulgaria	3 days
Peter Holečko	Transport telematics association, Praha, CR	1 day
Aleš Janota	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days

	Vienna, Austria – ICCVE 2014 conference and trade fair	2 days
	School of Architecture, Torino, Italy – 25. DC-TUD COST	2 days
	IFSTTAR, Paris, France – 24. DC-TUD COST	3 days
	Maribor, Slovenia – 23. DC-TUD COST	2 days
	University of Cantabria, Santander, Spain – TU1105 COST	2 days
	Brussels, Belgium – Smart Cities kick-off meeting	1 day
	Kopřivnice, CR - SDT meeting	2 days
	TU-VŠB Ostrava, CR	1 day
	VÚT Faculty of Civil Engineering, Brno, CR	1 day
Rastislav Pirník	ČVUT Faculty of Transport, Erasmus teacher mobility	4 days
	Ustroň, Poland - TST 2014	3 days
	Velké Karlovice, CR – ICCC 2014	2 days
Karol Rástočný	KPM Konzult, Brno, CR (Editorial board meeting, New railway technology)	2 days
	Silesian University of Technology, Ustroň, Poland (TST 2014)	3 days
	TU Pardubice, Faculty of Transport	2 days
Juraj Spalek	Vienna, Austria (ICCVE 2014)	2 days
	Kopřivnice, CR (Tatra, a.s.)	2 days
Juraj Ždánsky	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days
	Bernecker + Rainer Industrie Elektronik GmbH, Austria	2 days
Jozef Hrbček	Bernecker + Rainer Industrie Elektronik GmbH, Austria	2 days
	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days
Vojtech Šimák	Bernecker + Rainer Industrie Elektronik GmbH, Austria	2 days
	FEU Porto, Portugal, Erasmus teacher mobility	5 days
Marián Hruboš	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days
Igor Miklóšik	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days
Ján Ďurech	Silesian University of Technology, Ustroň, Poland - TST 2014	3 days
	University of Oxford, UK	3 days
Marek Mušák	University of Catania, Italy	151 days

Contracts (Business Activities)

Appraisal of national requirements fulfilment for installation of ETCS mobile unit on electric unit (EPJ) type 671 for the elaboration of assessment report by the notified body ARSENAL RACE

Customer:	Thales Austria GmbH, Handelskai 92, 1200 Vienna, Austria
Coordinator:	Peter Nagy
Note:	Contract within 16.12.2014 – 30.6.2015

P-103-0001/14: Overall appraisal of the Simis W SK system – Point version phase 4.4 V10.3.12

Customer: SIEMENS AG, Östereich, Siemensstr. 90, 1211 Wien, 2012
Coordinator: Karol Rástočný

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 a. s., Martin
Date: 11. 11. 2014

Hardware and software equipment of AŽD ESA 33 electronic interlocking box
Customer: Lecture for the 2nd degree students of the Process Control programme
Lecturer: Petr Jelínek, AŽD Praha, spol. s r.o.
Date: 25. 11. 2014

Software equipment of SIEMENS SIMIS W electronic interlocking box
Customer: Lecture for the 2nd degree students of the Process Control programme
Lecturer: Rastislav Kušpál, SIEMENS spol. s r.o., Žilina
Date: 5. 12. 2012

Control and interlocking technology in Budapest subway
Customer: Lecture for the DCIS students and staff
Lecturer: Géza Tarnai, TU Budapest
Date: 01.12.2014

Invited Lectures/Papers

Modernisation of Technology and Educations Methods Orientated to Area of Cryptography for Safety Critical Applications
Lecturer: Mária Franeková
Where: Todor Kableshkov University of Transport, Rimska Baňa - KEIT 2014, Bulgaria
Date: 20. 06. 2014

What contributes the University Scientific Park to the intelligent transport
Lecturer: Juraj Spalek
Where: Road Conference 2014, Bratislava
Date: 25. - 26. March 2014

Challenges and Unwanted Features of the Smarter Cities Development. International Conference on Mobility and Smart Cities, Springer-Verlag (in Print)
Lecturer: Milan Dado, Aleš Janota, Juraj Spalek
Date: 27 - 28.10.2014, Rome

Information and Communication Networks
Lecturer: Rastislav Pirník
Where: UNIZA – Faculty of Civil Engineering
Date: 16.04.2014

National traffic information system, state and realisation of NDIC.
Lecturer: Rastislav Pirník
Where: CTU – Faculty of transport
Date: 25.08.2014

Presentation of specifics of ITS technical studies within Slovak regional towns (Prešov, Martin and Ružomberok) and the problem of tunnel constructions in Slovakia.
Lecturer: Rastislav Pirník
Where: CTU – Faculty of transport
Date: 26-27.08.2014

Tunnel operation, operational states
Lecturer: Rastislav Pirník
Where: UNIZA – Road tunnels dispatcher course for NDS, run I
Date: 10.11.2014

Tunnel operation, operational states
Lecturer: Rastislav Pirník
Where: UNIZA – Road tunnels dispatcher course for NDS, run II
Date: 14.11.2014

Membership in International Institutions /Committees

Mária Franeková	Member of international scientific board of the 14th international conference Transport Systems Telematics TST'14, Katowice-Ustroń, Poland Member of editorial board of international scientific journal Advanced in Electrical and Electronic Engineering, Poland, ISSN 1804-3119 Member of editorial board of international scientific journal Archives of Transport System Telematics, CR, ISSN 189-8208 Member of editorial board of international scientific journal Journal of Scientific and Applied research, Bulgaria ISSN 1314-6289 Member of editorial board of international scientific journal for electrotechnics Elektrorevue, CR, ISSN 1213-1539
Peter Holečko	Member of Cooperative systems workgroup of Transport telematics association, Praha, CR
Aleš Janota	Member of programme board: 14th International conference on Transport System Telematics – TST 2014, October 22-25, 2014, Katowice–Ustroń, Poland chairman of scientific-programme board of journal Archives of Transport System Telematics, ISSN 1899-8208 Member of programme board of journal TransNav International Journal on Marine Navigation and Safety of Sea Transportation, Gdynia, Poland, ISSN 2083-6473 Member of programme board: 10th Symposium on Formal Methods FORMS/FORMAT 2014, October 1-2, 2014, Braunschweig, Germany Member of scientific board of XVIII. International conference Computer Aided Science, Industry and Transport TRANSCOMP 2014, Zakopane, Poland: 1-4. 12. 2014 transport commission: Polish science academy, Katowice, Poland
Rastislav Pirník	Member of Cooperative systems workgroup of Transport telematics association
Karol Rástočný	Member of programme board 14th international conference Transport Systems Telematics, Ustroň, Poland: 22. – 25. 10. 2014 Member of programme board 19th international conference IEEE Applied Electronics, Plzeň, CR: 9. – 10. 09. 2014

	Member of editorial board of international journal Transport Problems, ISSN 1896-0596 Member of editorial board of international scientific journal Archives of Transport System Telematics, ISSN 1899-8208 Member of editorial board of international scientific journal Advances in Electrical and Electronic Engineering, ISSN 1804-3119 Member of editorial board of journal New railway technology, ISSN1212-3942 Member of reviewing board of journal PROMET - Traffic&Transportation on Traffic and Transportation Research (Scientific Journal on Traffic and Transportation Research; Journal is covered by Thomson Reuters), ISSN: 1848-4069
Juraj Spalek	vice chief-editor of scientific journal Annals of faculty engineering hunedoara – Journal of engineering, ISSN: 1584-2665, ISSN: 1584-2673, indexed in Index COPERNICUS – Journal Master List Member of scientific board Acta technica Corviniensis – Bulletin of Engineering, e-ISSN: 2067-3809, Edited by Faculty of Engineering Hunedoara University Politehnica Timisoara Member of programme board of international scientific journal Archives of Transport Systems Telematics, Polish Association of Transport Telematics, ISSN 1899-8208 Member of reviewer team IET Intelligent Transport Systems ISSN: 1751956X, 17519578 Member of reviewer team TUNEL (ITA-AITES) ISSN 1211-0728
Juraj Ždánsky	Member of scientific-programme board of journal Archives of Transport System Telematics, ISSN 1899-8208 Member of scientific-programme commission 14th International conference Transport System Telematics, Katowice, Ustroň, Poland

Membership in National Institutions/Committees

Mária Franeková	Member of technical standardisation committee TK 83 railway applications, SÚTN Bratislava Member of Slovak cybernetics and informatics society at the Slovak science academy (SSKI) Member Profibus.sk association Member Scientific-technical association at the UNIZA Member of KEGA (commission Nr. 2) Member organising board UNIZA children university 2014, Žilina
Aleš Janota	Member of technical standardisation committee TK 104 Industrial process control, SÚTN Bratislava Member of programme board 22nd international symposium EURO-ŽEL2014 "New challenges for European railways", Žilina: 3.-4. 6. 2014 Member of programme board InTech – Intelligent Technologies 2014, September 11-13, 2014, Aquacity Poprad, Slovakia

Karol Rástočný	Chairman of programme board International conference of railway communication and interlocking technology, Vyhne, 12. – 14. 03. 2014 Member of programme board International symposium ŽEL 2014, Žilina, 3. – 4.6. 2014 Member of programme board International conference Intech, Poprad, 12. – 13. 9. 2014 Member of editorial board of AT&P Journal, ISSN 1335-2237 Member of technical standardisation committee Nr. 83, SÚTN Bratislava
Juraj Spalek	Member of scientific board ELEKTRO 2014 – 10th international conference: Slovakia, May 19-20, 2014 Member of Slovak cybernetics and informatics society at the Slovak science academy (SSKI) Member of Slovak association for applied cybernetics and informatics (SSAKI) Member of workgroup for OV 16 of Accreditation commission of Slovak ministry for education
Rastislav Pirník	Member of programme board of 10th international conference of railway communication and interlocking technology, Vyhne, SR
Jozef Hrbček	Member of organisation board 10th international conference ELEKTRO 2014, Rajecké Teplice, SR, 19. - 20. May 2014
Alžbeta Kanáliková	Member of organisational and programme board of 7th international conference Innovation process in e-learning, Bratislava, SR 20. 3. 2014

Membership in University Boards

Emília Bubeníková	Member of execution board KAP- EF Member of organising board of Electroolympics organised in cooperation with Slovak electrotechnics industry association
Mária Franeková	Member of faculty branch commission of 5.2.14 Automation branch Member of scientific board FEE UNIZA Chairperson of KAP- EF association
Aleš Janota	Member of faculty branch commission of 5.2.14 Automation branch Member of faculty branch commission of 9.2.9 Applied informatics FCI UNIZA Member of scientific board FEE UNIZA
Rastislav Pirník	Member of KAP- EF association Member VTS association at UNIZA
Karol Rástočný	Chairman of faculty branch commission of 5.2.14 Automation branch Member scientific board FEE UNIZA Member FEE UNIZA senate
Juraj Spalek	Member scientific board UNIZA Member scientific board FEE UNIZA Member of faculty branch commission of 5.2.14 Automation branch Member of faculty branch commission of 9.2.9 Applied informatics FCI UNIZA Member FEE UNIZA senate
Peter Vestenický	Member of faculty branch commission of 5.2.14 Automation branch

Juraj Ždánsky	Member of organising board of Electroolympics organised in cooperation with Slovak electrotechnics industry association

Awards

Marián Hruboš	Certificate of merit in category Designer of the Year 2014 Elosys 2014 exhibition
K. Rástočný, J. Ždánsky	Literature fund monograph prize (Scientific and expert literature and computer programs section) in the category natural and technical sciences for the writing Control systems with PLCs, Literature fund, Bratislava 2014
Juraj Spalek	Bronze medal FME TU Košice for the propagation of faculty reputation
	Commemorative medal of the FEI TU Košice for a long term cooperation with the Department of Cybernetics and Artificial Intelligence

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 riadiacich a informačných systémov **SK**
Elektrotechnická fakulta
Žilinská univerzita v Žiline
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