

*FACULTY OF ELECTRICAL ENGINEERING AND INFORMATICS  
OF  
THE TECHNICAL UNIVERSITY OF KOŠICE*

**THE SEVENTH INTERNATIONAL SCIENTIFIC  
CONFERENCE**

**ELECTRONIC  
COMPUTERS and INFORMATICS  
ECI 2006**

*The conference is organized by  
The Department of Computers and Informatics*

*In co-operation with:  
Slovak Society for Applied Cybernetics and Informatics - SSAKI  
Czech and Slovak Society for Simulation - CSSS*

*Sponsoring by:  
Hewlett-Packard Slovakia, s.r.o., Bratislava  
Siemens Program and System Engineering, s.r.o., Bratislava  
Acceture, s.r.o., Bratislava  
Sybase SK, a.s., Bratislava  
Koger, Inc., Košice  
Information Technology Dep. Toronto, Kanada*

*September 20-22, 2006*

*Košice – Herľany*

*Slovakia*

## ***Introduction***

*ECI 2006 conference is the seventh event under the logo ECI, held in Košice – Herľany and is organized by the Department of Computers and Informatics of the Faculty of Electrical Engineering and Informatics. The conference is being organized as the international scientific conference under the auspices of the Czech and Slovak Society for Simulation and the Slovak Society for Applied Cybernetics and Informatics in cooperation and with sponsorship of the Hewlet-Packard Slovakia, s.r.o., Bratislava; Siemens Program and System Engineering, s.r.o., Bratislava; Acceture, s.r.o., Bratislava; Sybase SK, a.s., Bratislava; Koger, Inc., Košice and Information Technology Dep. Toronto, Kanada.*

*The conference is aimed at providing the environment for fertilization new ideas, widespreading of the scientific results, establishing new professional contacts among the participants coming from academic and also from non academic institutions. Some space is devoted to problems pertaining educational issues at the university level. The paper submitted to Programme Committee passed through rewiewing process that was caried out by international team of experts that did excellent work in that respect. The present leaflet provides necessary information for participants to the conference on various aspects connected with the participation.*

*The conference topics that were announced in the call of papers have been merged and organized into the following sections:*

*AIT - Advanced information technologies and practices  
FF - Formal foundations of information technologies  
PPG - Programming languages and new paradigms  
ACA - Advanced computer system architectures  
SIM - Modelling and simulation of systems*

*So welcome to Herľany and to ECI 2006.*

*Štefan Hudák, Ján Kollár  
Programme Chairs*

## ***Conference Organization***

The Department of Computers and Informatics (DCI) is in the charge of organizing body of the conference.

**Honorary Committee:** prof. Ing. Juraj Sinay, DrSc. - *chairman*  
*Rector of the Technical university of Košice*  
prof. Ing. Milan Jelšina, CSc.  
*DCI FEI TU Košice*

**General chair:** prof. Ing. Dušan Kocur, CSc.  
*Dean of FEI TU Košice*

**Programme chairs:** prof. Ing. Štefan Hudák, DrSc.  
doc. Ing. Ján Kollár, CSc.

**Organization Committee:** doc. Ing. Ján Bača, CSc. - *chair*  
Š. Korečko  
D. Mihályi  
M. Paralič  
J. Porubän  
D. Sobotová - *secretary*  
M. Straka  
S. Šimoňák  
P. Václavík

## ***Contact address:***

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## ***Secretariat:***

Conference secretariat: Department of Computers and Informatics

Address: Letná 9, 042 00 Košice

Phone: +421-55-602 2562

Ing. Dagmar Sobotová, E-mail: Dagmar.Sobotova@tuke.sk

## ***Conference Information***

The conference is periodically organized by the Faculty of Electrical Engineering and Informatics of the Technical of University Košice.

The main aim of the conference is to provide the possibility to the authors from the academic and non academic institutions of Slovakia and from abroad to present the results of the research conducted in the institutions in the field of Computers and Informatics.

### ***Registration:***

Registration will be made on Wednesday from 7:00-8:30 am on the fifth floor of the main building of the Technical University at the Department of Computers and Informatics. The participants, which will travel to the conference place individually, can register themselves directly at the conference place in Herľany (please, inform us before).

### ***Official Language:***

The official language of the conference will be English.

### ***Conference Schedule:***

#### **Wednesday, September 20, 2006**

7:00 - 8:30	Registration at DCI FEI TU Košice
8:30 - 9:00	Departure to Herľany
9:00 - 10:00	Accommodation
10:00 - 11:30	<b>Opening - general chair</b>

#### ***Invited Talk 1***

*Prof. A.A.Letichevsky, Prof. N.S.Nikitchenko:*

Specifying systems with basic protocols: foundations, languages, and tools

12:00	Lunch
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Herľany	Track	7,00 -8,30	8,30	9,00-10,00	10,00-11,30	12,00	14,00 - 15,20	15,40 - 16,40	17,00 - 18,00	19,00
Wednesday 20. Sept. 06	A	Registration	Departure to Herľany	Accommo- dation	Invited Talk1	Lunch	AIT	AIT	AIT	Welcome Party
	B						ACA	ACA	ACA	
	C						PPG	PPG		

Herľany	Track	7,00	8,00	9,00-10,00	10,20 - 12,00	12,00	14,00 - 15,20	15,40 - 16,40	17,00 - 18,00	19,00
Thursday 21. Sept.06	A		Breakfast	Invited Talk 2	AIT	Lunch	SIM	SIM	Discussion	Dinner
	B				ACA		ACA	ACA	Discussion	
	C				FF		FF	FF	Discussion	

Herľany	Track	7,00	8,00 - 10,00	10,00 - 16,00				16,00	17,00	18,00 - 19,00
Friday 22. Sept. 06		Breakfast	Departure to H.Tatras	Tourist Trip				Departure	Dinner	Departure to Košice

AIT - Advanced information technologies and practices

FF - Formal foundations of information technologies

PPG - Programming languages and new paradigms

ACA - Advanced computer system architectures

SIM - Modelling and simulation of systems

**Wednesday, September 20, 2006**

## **Track A**

**Section: AIT - Advanced information technologies and practices**

14:00 - 15:20

**Chair person:** *František Zbořil*

1. *Luboš Matějka, Jiří Šafařík*: Distributed File Systems on Mobile Devices
2. *Rositsa Doneva, Daniel Denev, George Totkov*: The BEST e-Learning Practices
3. *Vladimir Andoga, František Jakab, Lucia Kapová, Michal Nagy*: Virtual Laboratory: Component Based Architecture Implementation Experience
4. *Csaba Szabó, Ondrej Pločica, Zdeněk Havlice*: Application of AI in the Multi-Layer Architecture of Information Systems

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Doina Zmaranda*

5. *Bohuslav Sivák, Jarmila Škrinárová*: The Neural Networks in Quantum Computing
6. *František Jakab, Miroslav Michalko, Miroslav Biñas*: Integrated Solutions for Videostreaming Portal
7. *Miroslav Biñas, Ivetka Adamuščinová, František Jakab*: Videoconference Archive Solution Based on Distributed Architecture

16:40 - 17:00

Coffee break

17:00 - 18:00

**Chair person:** *Bohuslav Sivák*

8. *Zdenek Velart, Petr Šaloun*: Evaluation Testing with Strong Motivation
9. *Miroslav Beličák, Marek Paralič, Zdeněk Havlice*: Distributed Service-Oriented Information Systems with Open Architecture
10. *Jan Kaiser, Milan Frank*: General Interactive Rendering System for MVE-2

**Wednesday, September 20, 2006**

## **Track B**

**Section: ACA - Advanced computer system architectures**

14:00 - 15:20

**Chair person:** *Ján Kolenička*

1. *Ivan Plander*: A New Approach to Conflict-Free Optical Three-Stage Clos Switching Networks Based on MOEMS Crossconnects
2. *Liberios Vokorokos, Norbert Ádám, Anton Baláž*: Algorithm Mapping of Neural Network for Neural DF KPI Architecture
3. *Vladimír Siládi, Michal Vagač*: A Parallel Genetic Algorithm for Optimization an Irregular Connecting Network Topology
4. *Maciej Czyżak*: Fast RNS Combinational Multipliers for Small Moduli

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Ivan Plander*

5. *František Jakab, Gorazd Baldovský, Ján Genči, Juraj Gierl*: Unique Packet Identifiers for Multipoint Monitoring of QoS Parameters
6. *Josef Bokr, Vlastimil Jáneš, Mária Jánešová*: Logic Object Decomposition
7. *Milan Jelšina, Milan Roško*: Mechanisms Presented in Data Flow / Multithreaded Architectures to Effectively Tolerate Latency and Synchronization Costs

16:40 - 17:00

Coffee break

17:00 - 18:00

**Chair person:** *František Jakab*

8. *František Jakab, Katarína Kleinová, Martin Vozár, Michal Jakab, Jozef Janitor*: Possibilities to Provide VoIP with Required Quality
9. *Josef Strnadel*: On Distribution of Testability Values in Scan-Layout State-Space

## Wednesday, September 20, 2006

### **Track C**

#### **Section: PPG - Programming languages and new paradigms**

14:00 - 15:20

**Chair person:** *Robert Györödi*

1. *Norbert Pataki, Zoltán Porkoláb, Zoltán Istenes:* Towards Soundness Examination of the C++ Standard Template Library
2. *Ján Kollár:* Structural Proposition for Aspect Oriented Software Evolution
3. *Jaroslav Porubän, Peter Václavík:* Inheritance Profiles of Process Functional Programs
4. *G. Andrejková, M. Levický, J. Oravec:* Approximation of Shortest Common Superstring using Neural Networks

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Ján Kollár*

5. *Marek Běhálek, Petr Šaloun:* Paralelization of Process Functional Language
6. *Peter Václavík, Jaroslav Porubän:* Objects in Functional Languages
7. *Jana Bandáková:* Towards a Dynamic Software System Evolution

16:40 - 17:00

Coffee break

### **General Session**

18:00 - 18:30

Presentation of Sponsors

19:00

Dinner & Welcome Party

## Thursday, September 21, 2006

8:00

Breakfast

9:00 - 10:00

### **Invited Talk 2**

*Prof. Ing. Petr Jančar, CSc.:*

Verification of computer systems (Theoretical Aspects)

10:00 - 10:20

Coffee break



## Track A

### Section: AIT - Advanced information technologies and practices

10:20 -11:20

**Chair person:** *Nikolaj Nikitchenko*

1. *František Zbořil jr., František Zbořil:* Meta-interpretation of the t-Sapi Language
2. *Doina Zmaranda, Gianina Gabor, Antoniu Nicula:* Aspects Regarding Variable Times Usage in Real-Time Scheduling Policies
3. *Robert S. Győrödi, Cornelia Győrödi, Marian Teodor:* The Implementation of Pair-Wise Linear Regression Plug-in Algorithm in Microsoft SQL Server 2005 Analysis Services
4. *Lukas Valenta, Premysl Brada:* Automated Generating of OSGi Component Versions

12:00

Lunch

### Section: SIM - Modelling and simulation of systems

14:00 - 15:20

**Chair person:** *Mikuláš Alexík*

1. *Václav Mikolášek, Stanislav Racek, Petr Grillinger:* The Design of a Simulation Environment for Time-Triggered Ethernet Networks
2. *Milan Stork, Josef Hrusak, Daniel Mayer:* Chaotic Systems Simulation and Implementation
3. *Jiří Kunovský, Milan Pindryč:* Experimental Comparisons of Simulation Algorithms

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Stanislav Racek*

4. *Miroslav Svítek:* Frequency Domain Data Reduction
5. *Mikuláš Alexík, Marek Lučivjanský:* Hardware in Loop Simulation of Learning Algorithm Based on Sliding Mode and Neural Nets Control
6. *Peter Kurdel, Jolana Sebestyénová:* An Accession to Distributed Modelling and Simulation of Systems in Grid Infrastructure

16:40 - 17:00

Coffee break

17:00 - 18:00

Discussion

## Track B

### Section: ACA - Advanced computer system architectures

10:20 - 11:40

**Chair person:** *Maciej Czyżak*

1. *Vít Fábera, Vlastimil Jáneš*: Estimation of Dependency on Variables of Boolean Function using Boolean Cube - Case Study
2. *Tomáš Brabec, Róbert Lórencz*: Arithmetic Unit Based on Continued Fractions
3. *Liberios Vokorokos, Martin Chovanec, Jana Trelová*: Improvement of Security Protocols Based on Asymmetric Encryption Key Mechanism
4. *Ján Bača, Milan Hauliš*: Fault Location in the Fault Tolerant System

12:00

Lunch

14:00 - 15:20

**Chair person:** *Vlastimil Jáneš*

1. *Tomáš Herrman*: Testability Analysis Based on Formal Model
2. *Tomáš Zahradnický, Róbert Lórencz*: Automatic Running Error Analysis
3. *Pavel Kubalík, Hana Kubátová*: Design Methodology for High Reliable System
4. *Ján Kubek*: FSM-based IP Cores Analysis

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Róbert Lórencz*

5. *Richard Růžička*: DFT Flow for RT Level Digital Circuits Using iFCoRT System
6. *Marek Straka, Branislav Sobota*: Instruction Set Emulator of Model DF KPI Architecture
7. *Michal Štepanovský*: Modeling and Simulation of MOEMS-based Optical Switch

16:40 - 17:00

Coffee break

17:00 - 18:00

Discussion

## Track C

### Section: FF - Formal foundations of information technologies

10:20 - 11:40

**Chair person:** *Valerie Novitzká*

1. *Dmytro B. Buy, Lyudmila N. Silveystruk*: Formalization of Structural Constraints of Relationships in Model „entity-relationship”
2. *Zenon Ulman*: Non-standard Binary Weighted Number Systems
3. *Slavomír Šimoňák, Štefan Hudák, Štefan Korečko*: PETRI2APC: Towards Unifying Petri Nets with othe Formal Methods
4. *Štefan Korečko, Štefan Hudák, Slavomír Šimoňák*: Behavioral Aspects of B-machine from the Petri Nets Point of View

12:00

Lunch

14:00 - 15:20

**Chair person:** *Zenon Ulman*

1. *Nikolaj Nikitchenko, Ludmila Omelchuk, Stepan Shkilniak*: Formalisms for Specification of Programs over Nominative Data
2. *Daniel Mihályi, Valerie Novitzká, Viliam Slodičák*: Categorical Logic over Church's Types
3. *Daniel Mihályi, Valerie Novitzká, Viliam Slodičák*: How to Combine Church's and Linear Types
4. *Zoltán Horváth, Zoltán Csörnyei, László Lövei, Viktória Zsók*: Functional Programming Concepts in Computer Science Education

15:20 - 15:40

Coffee break

15:40 - 16:40

**Chair person:** *Dmytro B. Buy*

5. *Vitaly German, Alexander Godlevsky, Alexander Letichevsky, Nikolaj Nikitchenko*: Deductive Requirements Checking in VRS
6. *Olena Yatsenko*: Interconversion of Graph-schemes of Algorithms and UML Diagrams
7. *Anatoliy Doroshenko, Georgiy Tseytlin, Olena Yatsenko, Lubov Zachariya*: Clone of Functional n-relations: Construction, Tools, Applications

16:40 - 17:00

Coffee break

17:00 - 18:00

Discussion

### **General Session**

18:30

Dinner

### **Friday, September 22, 2006**

7:00	Breakfast
8:00	Departure to High Tatras
10:00 - 16:00	Tourist Trip
16:00	Departure to Stará Lesná
17:00	Farewell dinner in Stará Lesná
18:00	Departure to Košice

### ***Social Programme***

Welcome Party

Date time: Wednesday, September 20, 2006, 19:00 pm

Venue: Recreation Center of TU

Admission: All participants are invited

Trip to High Tatras

Date time: Friday, September 22, 2006, 8:00 am

Venue: Štrbské Pleso

Admission: All participants are invited

### ***Period and Venue***

Period: September 20-22, 2006

Venue: Herľany

Address: UVZ Herľany

Phone: +421-55-6964 125

### ***During the conference time:***

Address: UVZ Herľany

Phone: +421-55-6964 125

Ing. Dagmar Sobotová

## ***Registration***

Application for registration should be made by completing the registration form and returning it with proof of remittance of the registration conference fee.

## ***Registration Fees***

The registration fee covers postage, complete stay in Herľany including food and coffee service during the conference, accommodation from September 20<sup>th</sup> to September 22<sup>th</sup>, 2006, common free transport by bus from Košice to Herľany and backward. The cost of the conference proceedings may be optionally included in the registration fee. The decision is up to the participant and should be marked in the registration form.

Registration fee	until 31.7.2006	5 600,- Sk	(150,- EUR)
with proceedings	after 31.7.2006	6 000,- Sk	(160,- EUR)
Registration fees is	until 31.7.2006	4 600,- Sk	(123,- EUR)
without proceedings	after 31.7.2006	5 000,- Sk	(133,- EUR)

## ***Confirmation and Receipt***

No confirmation or acknowledge message will be sent to the participants upon receipt and acceptance of the registration form.