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## **WELCOME TO FOROS**

### **WORKSHOP CHAIRMAN**

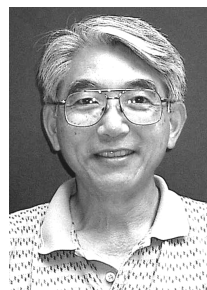


Anatoly Sachenko,  
The Institute of Computer Information Technologies  
Ternopil Academy of National Economy  
Ternopil, Ukraine

### **PROGRAM CO-CHAIRMEN**



Theodore Laopoulos,  
Electronics Lab., Physics Dept.  
Aristotle University of Thessaloniki  
Thessaloniki, Greece



Robert E. Hiromoto,  
Division of Computer Science  
The University of Texas  
San Antonio, Texas, USA

### **MESSAGE FROM CHAIRMEN**

The organizing committee welcomes you to the year 2001 International Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS), held in Resort Center FOROS, Foros, Crimea, Ukraine.

The IDAACS Workshop is organized by Ternopil Academy of National Economy, Institute of Computer Information Technologies. It is supported by International Association for the promotion of cooperation with scientists from the New Independent States (NIS) of the former Soviet Union (INTAS), NEC Corporation, Hewlett-Packard Company, Ministry of Education and Science of Ukraine, Ternopil Academy of National Economy, IEEE Region 8, Science and Technology Center in Ukraine and Post Pensional Bank "Aval". Technical cooperation and support is also offered by IEEE Instrumentation and Measurement Society (IMS), IEEE/IMS/Technical Committee on Education for Instrumentation and Measurement (EdIM).

The main goal of IDAACS'2001 is to provide a forum for discussion of recent advances in theory, technology and applications related to Intelligent Data Acquisition and Advanced Computing Systems. The applications areas include the

design of measurement, automation, and information retrieval systems in business, scientific research and education. The rapid development of intelligent data acquisition and high-performance computing (HPC) systems permits nowadays the successful application of more effective, sensitive and accurate methods in many different fields, from manufacturing and environmental monitoring, to medical systems and instrumentation.

IDAACS'2001 aim is to assemble teams and scientists from different parts of the world, to find out about each other's activities and research approaches and to enhance the prospects for future joint research collaborations among scientists, engineers, educators and businessmen from different countries. IDAACS'2001 will provide a forum in which professionals from different spheres – academia, industry, computer hardware manufacturers, public and private research institutions – may discuss topics of mutual interest. Researches from the New Independent States and from other European countries may meet personally and establish a network of professional contacts. Especially, this workshop is expected to promote the development of relationships between Ukrainian academic and industrial institutions and their counterparts in the other Western, Eastern and Southern countries.

The organizing committee has received about 100 abstracts from different countries from all over the world. The selection of the accepted papers was based on three independent reviews performed by an international panel of experienced colleagues (their names appear in a following page of the proceedings). Their contribution to the quality and success of the workshop is hereby also grateful acknowledged. To outcome of this selection process is 30 papers scheduled for oral presentation and 35 papers scheduled for poster presentation. Poster sessions are considered as important part of the workshop, and in order to enhance the effectiveness of these presentations, the posters will be available in parallel to the oral sessions during all days of the Workshop.

The Workshop will be held at the Foros–climatic health-center, which is situated at the occidental part of the South coast of Crimea in Foros. Flora and climate of the South coast have a number of own peculiarities, which in comparison with the most popular Yalta's zone, are phenomenal. Mild climate, affectionate sea, rocky mountains, evergreen flora, fresh air, short winter and long summer, summer with a low humidity without heat – all that makes favorable conditions for a treatment and international meetings placing.

We would like to thank all those who contributed to the organization of this Workshop, in the first place our abovementioned sponsors.

We welcome all the participants to the International Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications. We hope that this Workshop will be a successful and fruitful event for all of you and will contribute to further developments in the field of Intelligent Data Acquisition and Advanced Computing Systems.

Have a useful Workshop and a good time at Foros!

## **IDAACS'2001 WORKSHOP COMMITTEE**

### **Honorary Chairman:**

Yaroslav Yatskiv, Ukraine  
First Deputy of Minister of  
Education and Science of Ukraine

### **Honorary Co-chairman:**

Olexander Ustenko, Ukraine  
Rector of Ternopil Academy of  
National Economy

### **Workshop Chairman:**

Anatoly Sachenko, Ukraine

### **Program Co-chairmen:**

Theodore Laopoulos, Greece

Robert E. Hiromoto, USA

### **International Program Committee:**

Pasquale Arpaia (Italy)	Anatoly Melnyk (Ukraine)
Olli Aumala (Finland)	Vic Oppermann (Netherlands)
Frank Baetke (Germany)	John Pollard (UK)
Pasquale Daponte (Italy)	Vincenzo Piuri (Italy)
Custodio Dias (Portugal)	Peter J. A. Reusch (Germany)
Valeri Didenko (Russia)	Sergiy Rippa (Ukraine)
Mikhail Dorojevets (USA)	Raouf Sadykhov (Belarus)
Halit Eren (Australia)	Harald Schumny (Germany)
Colin Fyfe (UK)	Antonio Cruz Serra (Portugal)
Vladimir Golovko (Belarus)	Tarek Sobh (USA)
Sergei Gorlatch (Germany)	Vladimir Sobolev (Russia)
Lucio Grandinetti (Italy)	Alexander Sovlukov (Russia)
Sitharama Iyengar (USA)	Ninoslav Stojadinovic (Yugoslavia)
Simon Jones (UK)	Vladimir Tarasenko (Ukraine)
Ivan Kalchev (Bulgaria)	Allen Tucker (USA)
Izzet Kale (UK)	Milan Vasilko (UK)
Damir Kalpic (Croatia)	Eugen Volodarsky (Ukraine)
Nikolay Kolev (Bulgaria)	Antonio Volpentesta (Italy)
Janusz Kowalik (USA)	Peter Wide (Sweden)
Anthony Lauria (USA)	Hideki Yamamoto (Japan)

### **Local Organizing Committee:**

Oleg Adamiv (Ukraine)	Alexander Lazarchuk (Ukraine)
Mykhailo Dubinsky (Ukraine)	Taras Lendyuk (Ukraine)
Mykola Dyvak (Ukraine)	Iryna Lesnyak (Ukraine)
Anatoly Katvaluk (Ukraine)	Mykola Matviyiv (Ukraine)
Volodymyr Kochan (Ukraine)	Olena Mul (Ukraine)
Roman Kochan (Ukraine)	Volodymyr Turchenko (Ukraine)
Tymur Korkishko (Ukraine)	Igor Vasiltsov (Ukraine)
Vasyl Koval (Ukraine)	Vitaliy Vitsentiy (Ukraine)

## Registration

The Registration Desk is open on

- Sunday, July 1 from 15:30 to 19:00.
- Monday, July 2 from 8:00 to 13:00 and from 15:00 to 19:00.
- Tuesday, July 3 from 8:00 to 13:00 and from 15:00 to 19:00.
- Wednesday, July 4 from 8:00 to 13:00.

## Cocktail Party and Workshop Banquet

**Monday, July 2** – the Cocktail party will be held during the first evening of the Workshop in the resort center Foros. Invited speakers from NEC and Hewlett-Packard Company will speak.

**Tuesday, July 3** – the Workshop Banquet will be held on Tuesday evening. Participation in these events is free for registered participants.

## Crimea and Foros Information



Distances from Foros are:

- to railway station (st. Sevastopol) - 40 km;
- to railway station (st. Simferopol) - 120 km;
- to airport (Simferopol) - 150 km;
- to airport (Sevastopol) - 50 km;
- to seaport (Yalta) - 40km.

The Crimean peninsula, South European in the Ukraine, is coextensive with the Crimean Autonomous Republic. The peninsula, connected with the mainland to the North by the narrow Isthmus of Perekop, projects southward from the rest of the Ukraine into the Black Sea, which bounds it on all sides except the North East. There it is bounded by the Sea of Azov. Kerch Strait, joining the latter and the Black Sea,

separates the Crimea from the Caucasus on the East. The Crimea extends from 320 km (about 200 miles) from East to West and about 175 km (about 110 miles) from North to South. The terrain consists predominantly of a level upland plain, an extension of the Russian steppes. Several parallel mountain ranges occupy the Southeast part of the peninsula.

The climate in the plain area is cold and windy in the winter season and extremely arid in the summer. The climate of the southeastern coastal strip is mild and healthful, and the land is fertile. Among the flora there are cork oaks, olives, laurels and cypresses. Fruit trees and vineyards are numerous. The coastal section is the principal resort area of the former Soviet Union. The leading resort town of the Crimea is Yalta, scene of the historic World War II Yalta Conference.

The population of the Crimea is composed mainly of Russians, Ukrainians and Tatars with smaller groups of Bulgarians and Greeks. The administrative center and principal city is Simferopol and the leading port is Sevastopol.

Steep slopes, which border a settlement on the North, are indented with deep ravines, mountains and a forest park zone. Rare plants near the sea create an original, peculiar, unique climatic zone, which differs from Yalta's zone.

Special influence on the characteristics of the local microclimate is a park zone of the resort, which is considered as one of the best in Crimea. The park was found at 1885-1895 by a famous painter, academician of painting, professor of Russian Academy of Art Klever, agronomist Enko and horticulturist Albrekht. There are 348 forms of spices and trees and bushes, such as gigantic sequoia, fluvial cedar, pine-trees - Sobinova, arizona cypress, louisiana, silver fir and evergreen bushes from Japan and China.

The annual air temperature is a half-degree lower than in Yalta (+12-14°C). In winter air's temperature is +4,3°C, and in summer it is +23-24°C. Continuance of sunshine is longer than in Yalta (2300 hours). Summer in Foros is longer and winter is mild, because of disposition the local mountain ridges and separate heights. The holiday season is approximately 155-160 days. The water temperature in the sea is from +8°C in winter till +24°C in summer. Winds mainly are easterly and westerly. Cold north winds are rare than in Yalta, that's why during the days there is not sharp jump of the temperature and daily amplitude is smaller.

## **Foreign Currency Exchange and Banking Facilities**

The Ukrainian currency is Ukrainian Hryvna (UAH). Currency exchange booths are available at the airport terminals, railway stations, travel agencies, banks and other places in Foros and nearby cities. Major credit cards are usually accepted in most banks of Foros and nearby cities. Obtaining cash ATM cards (or credit cards) is very easy in Foros, Yalta, Sevastopol and Simferopol from the "Bankomats" that can be found at almost every bank office. The exchange rate is approximately 5.5 UAH – 1 USD.

## **Internet Access**

The Workshop will provide free e-mail capability. Five computers will be available to check your emails and to send short messages. Since about 70 participants are expected, and we share a common communication line with limited bandwidth, there may be queues – please, minimizing your emailing time when other colleagues are waiting for the computers, and do not try to download large files at any time using the browser. The IDAACS'2001 WEB pages will be available locally on each machine.

The computers will have Telnet and Secure Telnet (ssh) and WEB browsers, so you can connect to your home server and remotely read your messages and send new ones.



<b>Time</b>	<b>Sunday July 01</b>	<b>Monday Jul 02</b>	<b>Tuesday Jul 03</b>	<b>Wednesday Jul 04</b>
8:00 - 9:00	Breakfast	Breakfast	Breakfast	Breakfast
9:00 - 11:00	Pick up to Resort Center Foros, Accomodation and Registration	Session M1 - Open Ceremony & Plenary Session	Session T1 – Advanced and High Performance Computing Systems	Session WM – Advanced Mathematical Methods for Data Acquisition and High Performance Computing
11:00 - 11:30		Coffee Break	Coffee Break	Coffee Break
11:30 - 12:30		Session M2 – Neural Networks in Data Acquisition and Advanced Computing Systems	Session T2 – Instrumentation and Data Acquisition Systems	Poster Session WP – Information Systems for Education and Commercial Applications
12:30 - 13:30				Round Table
13:30 - 15:30	Lunch	Lunch	Lunch	Lunch
15:30 - 16:30	Pick up to Resort Center Foros, Accomodation and Registration	Session M3 – Intelligent Measurement and Control Systems	Poster Session TP – Advanced Data Acquisition Systems and Neural Networks	Excursion tour
16:30 - 17:00		Coffee Break	Coffee Break	
17:00 - 17:30		Poster Session MP – Advanced Computing Systems in Science and Industry	Session T3 - INTAS Monitoring Day	
17:30 - 18:00				
18:00 - 19:00	Dinner	Dinner		
19:00 - 20:00		Cocktail Party and Informal Discussion, Discussion Leader - HP Representative	Workshop Banquet	Closing Session and Vine Tasting
20:00 - 22:00				

## Workshop Technical Program

### Sunday, July 01

- 8:00 – 9:00**                      **Breakfast**
- 9:00 – 13:30**                    **Pick up to Resort Center Foros, Accommodation and Registration**
- 13:30 – 15:30**                   **Lunch**
- 15:30 – 19:00**                   **Pick up to Resort Center Foros, Accommodation and Registration**
- 19:00 – 20:00**                   **Dinner**

### Monday, July 02

- 8:00 – 9:00**                      **Breakfast**
- 9:00 – 11:00**                    **Session M1 – Opening and Plenary Session**  
*Chair:*                              *Anatoly Sachenko, Ternopil Academy of National Economy, Ukraine.*
1. Greetings from the Honorary Chairman. *Yaroslav Yatskiv*, First Deputy of Minister of Education and Science of Ukraine, Ukraine.
  2. Greetings from IEEE Region 8. *Levent Onural*, Director of Region 8, Turkey.
  3. NEC and its Supercomputing Business - Status and Future Vision. *Joerg Stadler*, NEC Corporation.
  4. Computing Curricula 2001 and IDAACS. *Allen Tucker*, Bowdoin College, USA.
  5. (Title Will be Defined Later) *Robert E. Hiromoto* The University of Texas Division of Computer Science, USA
- 11:00 – 11:30**                    **Coffee break**
- 11:30 – 13:30**                    **Session M2 – Neural Networks in Data Acquisition and Advanced Computing Systems**  
*Chair:*                              *Theodore Laopoulos, Aristotle University of Thessaloniki, Greece.*
1. GMSK Neural Network Based Demodulator. *Domenico Grimaldi*, Dip. di Elettronica, Informatica e Sistemistica Università della Calabria, *Andrea Aiello*, *Sergio Rapuano*, Facoltà di Ingegneria, Università del Sannio.

2. An Analytical Approach to the Neuronal Mechanisms Underlying the Memory Storage in the Brain (Experimental Study). *Elias Koutsoukos, Anthony Maillis, Costas Stefanis*, University Mental Health Research Institute, Greece, *Elias Angelopoulos*, Athens University, Greece.
3. An Approach to Self-Training of the Mobile Robot. *Vladimir Golovko, Oleg Ignatiuk*, Brest State Technical University, Belarus, *Rauf Sadykhov*, Institute of Engineering Cybernetics of NASB, Belarus.
4. A Comparative Evaluation of Neural Classification Techniques for Identifying Multiple Fault Conditions. *Alwyn Hoffman, N. Van Der Merwe*, Potchefstroom University for CHE, South Africa, *C.Stander, P. Heyns*, University of Pretoria, South Africa.
5. The New Method of Historical Sensor Data Integration Using Neural Networks. *Volodymyr Turchenko, Volodymyr Kochan, Anatoly Sachenko*, Ternopil Academy of National Economy, Ukraine, *Theodore Laopoulos*, Aristotle University of Thessaloniki, Greece.
6. Using Delay Based Networks for Detecting Coherent Structures in Turbulence from Hot-Wire Anemometer Signals. *Fernando López Peña, Sánchez Simón M., Richard J. Duro, Vilaboy Rego D.*, Universidad de la Coruña, Spain.

**13:30 – 15:30**

**Lunch**

**15:30 – 17:00**

**Session M3 – Intelligent Measurement and Control Systems**

*Ñhair:*

*Domenico Grimaldi, Sannio, Università della Calabria, Italy.*

1. A Web-Based Mobile Medical Monitoring System. *John Pollard, S. Rohman, M Fry*, University College London, United Kingdom.
2. Development of a Stand Alone Monitoring System (S.A.MO.S.). *Constantinos Kosmatopoulos, N. Tsagourias*, Aristotle University of Thessaloniki, Greece.
3. Application of Fuzzy Models in Control Systems of Boiler Aggregates Technological Processes. *Alexander Prokhorenkov*, Murmansk State Technical University, Russia, *I. Saburov*, State Regional United Heating Enterprise "TEKOS", Russia, *Alexander Sovlukov*, Institute of Control Sciences, Russia.
4. Measurement of SCI Patient's Buttock Pressure on Wheelchair and Bed. *Yoshio Tanimoto, Akihiro Tokuhiko, Hideo Takechi*, Kibikogen Rehabilitation Center, Japan, *Hirosuke Takechi, Hideki Yamamoto*, Okayama University, Japan.

5. Statistical Synthesis and Optimal Decomposition in the Intelligent Monitoring Systems Design. *Anatoliy Platonov, Wieslaw Winiński, Warsaw University of Technology, Poland.*

**17:00 – 17:30**                      **Coffee Break**

**17:30 – 19:00**                      **Poster Session MP – Advanced Computing Systems in Science and Industry**

*Chair: Volodymyr Tarasenko, National Technical University of Ukraine “Kyiv Polytechnical Institute”*

1. X-MatchPRO: A High Performance Full-Duplex Lossless Data Compressor on a ProASIC FPGA. *José Luis Núñez, Simon Jones, Loughborough University, United Kingdom, Stephen Bateman, BridgeWave Communications, USA.*
2. Using a Look-Up Table for Code Execution in Small Microcontrollers System with Dash Memory. *Constantinos Kosmatopoulos, N. Tsagourias, Aristotle University of Thessaloniki, Greece.*
3. The Competitive Sensor Fusion Algorithm for Multi Sensor Systems. *Vasyl Koval, Ternopil Academy of National Economy, Ukraine.*
4. Contour Extraction Algorithms for LSI Circuit Video Image processing. *Alexandr Doudkin, A. Selikhanovich, D. Vershok, State Scientific Establishment “Institute of Engineering Cybernetics”, Belarus, Rauf Sadykhov, Belarussian State University Informatics and Radioelectronics, Belarus.*
5. Iterative Algorithm for Discrete Orthogonal Transformation of Signals in Base of Two-dimensional Functions. *Alexandr Doudkin, A. Machnev, A. Selikhanovich, State Scientific Establishment “Institute of Engineering Cybernetics”, Belarus.*
6. A Status Report on VisPar: A Visual Tool for Designing Parallel Programs. *Sergei Gorlatch, Technische Universität Berlin, Germany, Henry Kehbel, Universität Passau, Germany.*
7. Automatic Microinjection System Using Stereoscopic Microscope. *Hideki Yamamoto, Tetsuya Sano, Sojiro Hasebe, Okayama University, Japan.*
8. The New Methods of Switch Mode Power Supply Designing for Computer Facilities. *Volodymyr Yaskiv, Ternopil State Technical University, Ukraine.*
9. Image Analysis of Left Ventricle Wall Motion by MRI Tagging. *Hideki Yamamoto, Tetsuya Sano, Tsuneharu Morito, Yoshio Hiraki, Okayama University, Japan.*

10. A Strategy and Outlook for Creation in Ukraine the Multilevel Computer Networks with Opened Optical Channels. *Yaroslav Nykolaiychuk, Vasyl Yatskiv, Taras Lendyuk*, Ternopil Academy of National Economy, Ukraine, *Yuri Kudriashov*, Scientific-Industrial Association, Ukraine.
11. Design System for Japanese Kimono. *Hideki Yamamoto, Tetsuya Sano, Sojiro Hasebe*, Okayama University, Japan.
12. Estimation of the Reliability, Speed and Cost Parameters of the Different Type of Flip-Flops. *Igor Vasiltsov*, Ternopil Academy of National Economy, Ukraine, *Bogdan Mandzij, Andrij Bench*, National University “Lvivska Polytechnika”, Ukraine.
13. Interactive Software Tool for Data Visualisation, *Mykola Kolodnytsky, Andriy Kovalchuk*, Zhytomyr Institute of Engineering and Technology, Ukraine.

**19:00 – 20:00**

**Dinner**

**20:00 – 22:00**

**Cocktail Party and Informal Discussion,  
Discussion Leader – HP Representative**

## **Tuesday, July 03**

**8:00 – 9:00**

**Breakfast**

**9:00 – 11:00**

**Session T1 – Advanced and High Performance  
Computing Systems**

*Chair:*

*Vladimir Golovko, Brest State Technical University,  
Belarus.*

1. A New Parallel Fast Cosine Transform Algorithm. *Anatoly Melnyk, Yury Ermetov*, National University “Lvivska Polytechnica” , Ukraine.
2. Steganography Effects in Various Formats of Images. A Preliminary Study. *Giuseppe Mastronardi, Marcello Castellano, Francescomaria Marino*, DEE - Politecnico di Bari, Italy.
3. Novel Recursive-DCT Implementations: A Comparative Study. *Süleyman Sýrý Demirsoy, Robert Beck, Ýzzet Kale, Andrew G. Dempster*, University of Westminster, United Kingdom.

4. Computational Grids to Solve Large Scale Optimization Problems with Uncertain Data. *Chefi Triki, Lucio Grandinetti*, University of Calabria, Italy.
5. Base Structures of the High Performance Multichannel Encryption Processors. *Anatoly Melnyk*, National University “Lvivska Polytechnica”, Ukraine, *Tymur Korkishko*, Ternopil Academy of National Economy, Ukraine.
6. Traffic Control Assistance in Connection Nodes: Multi-Agent Applications in Urban Transport Systems. *Hakim Laïchour, Salah Maouche*, Université des Sciences et Technologies de Lille, France, *René Mandiau*, Université de Valenciennes et du Hainaut Cambrésis Le Mont Houy, France.

**11:00 – 11:30**                      **Coffee break**

**11:30 – 13:30**                      **Session T2 – Instrumentation and Data Acquisition Systems**

*Chair:*                                      *Alexander Sovlukov, Institute of Control Sciences, Russia.*

1. Instruction-Level Power Consumption Estimation Embedded Processors Low-Power Applications. *S. Nikolaidis, Theodore Laopoulos*, Aristotle University of Thessaloniki, Greece.
2. Virtual Spectrum Analyser Based on Data Acquisition Card. *Piotr Bilski, Wieslaw Winiecki*, Warsaw University of Technology, Poland.
3. Minimization of Parameters Number Describing Accuracy of Data Acquisition System. *Alexander Bykov, Valeriy Didenko, Andrey Movchan, Juriy Solodov*, Moscow Power Engineering Institute (Technical University), Russia.
4. Sensor Systems for Equipment for Determination of Stochastic Electromagnetic Field. *Vitalij Nichoga, Ludmyla Dikmarova, Petro Dub*, Physico-Mechanical Institute of the National Academy of Sciences, Ukraine, *Zdzislaw Kaczmarek*, Kielce University of Technology, Poland.
5. Flexible Sampling Frame Measurement System. *O. Bazylevych, Orest Ivakhiv, S. Yatsyshyn*, National University “Lvivska Polytechnica”, Ukraine.

**13:30 – 15:30**                      **Lunch**

**15:30 – 16:30**

**Poster Session TP – Advanced Data Acquisition Systems and Neural Networks**

*Chair:*

*Eugene Volodarsky, National Technical University of Ukraine, "Kyiv Polytechnical Institute", Ukraine.*

1. Metrological Automatic Support in Intelligent Measurement Systems, *Vladimir Sobolev*, Saint-Petersburg State Electrotechnical University, Russia, *Anatoly Sachenko*, Ternopil Academy of National Economy, *Pasquale Daponte*, Università del Sannio, *Olli Aumala*, Automation Department, Tampere University of Technology, Finland.
2. A Modified Impulsive Force and Pressure Sensor Intended for Waveform Reconstruction Purposes. *Zdzislaw Kaczmarek*, *Cezary Kaczmarek*, Kielce University of Technology, Poland, *Vitalij Nichoga*, Physico-Mechanical Institute of National Academy of Sciences, Ukraine.
3. Extraction of Peak Pressure Position Information from the Spark-Plug Ionization Signal. *Yassir Moudden*, *Abd-Krim Seghouane*, *Oliver Boubal*, Service des Mesures - Supe<sup>l</sup>ec, France.
4. Technical Base for Separated Rooms Climate Automatic Control. *Konstantyn Spasokukotskiy*, *Dmitri Jelondz*, *Traenkler Hans-Rolf*, Universitaet der Bundeswehr Muenchen, Germany.
5. Monitoring of Heat Transfer in Buildings. *Gorazd Lipnik*, *Vojko Matko*, FERl, Slovenia.
6. Methods for Identification of Random Processes Characteristics in Information Processing Systems. *Alexander Prokhorenkov*, Murmansk State Technical University, Russia.
7. Computing Instrumentation of Immitance Sensor Parameters. *Volodymyr Vasiluyk*, *Eugeny Pohodylo*, *Petro Stolyarchuk*, National University "Lvivska Polytechnika", Ukraine, *Mykhailo Chyrka*, Ternopil Academy of National Economy, Ukraine.
8. Data Acquisition Aspects in Experimental Researches of Electromechanical Systems Dynamics. *Yuri Kolokolov*, *Stanislav Koschinsky*, State Technical University of Orel, Russia.
9. Development of the Integrating Analog to Digital Converter for Distributive Data Acquisition Systems with Improved Noise Immunity. *Roman Kochan*, *Oleg Berezky*, *Andriy Karachka*, *Igor Maruschak*, *O. Bojko*, Ternopil Academy of National Economy, Ukraine.

10. Modeling Nonlinear Dynamic Using Multilayer Neural Networks. *Vladimir Golovko, Yury Savitsky, Nikolay Maniakov*, Brest State Technical University, Belarus.
11. Fuzzy Neural Networks in Intelligent Manufacturing Systems. *Galina Setlak*, Rzeszow University of Technology, Poland.
12. An Application of “Neocognitron” Neural Network for Integral Chip Images Processing. *Rauf Sadykhov*, Belorussian State University of Informatics and Radioelectronics, Belarus, *Maxim Vatkin*, Institute of Engineering Cybernetics, Belarus.
13. Computerised Investigation of Robust Measurement Systems. *Nikolay Kolev, Snejana Yordanova, Plamen Tzvetkov*, Technical University of Sofia, Bulgaria.
14. Informative Parameters of External Field of Underground Pipeline in the Problems of Remote Testing of Corrosion Protection. *Liudmyla Dikmarova, Vitalij Nichoga, Petro Dub*, Physico-Mechanical Institute of the National Academy of Sciences, Ukraine.

**16:30 – 17:00**                      **Coffee Break**

**17:00 – 20:00**                      **Session T3 – INTAS Monitoring Day**

*Chair:*                                      *Theodore Laopoulos, Aristotle University of Thessaloniki, Greece.*

1. INTAS 96-2108 – "Millimeter-Wave Processing of Silicon Nitride Ceramics" (*Olga Getman*, Institute for Problems of Materials Science, Ukraine)
2. INTAS-Belarus 97-2028 – “Neural System for Control of the Mobile Robot” (*Vladimir Golovko*, Brest State Technical University, Belarus, *Rauf Sadykhov*, Institute of Engineering Cybernetics of NASB, Belarus)
3. INTAS 97-1001 – “Graph Colourings Theory for Scheduling the Transmission of Messages in a Local Communication Network” (*Vadim Vizing*, Odessa Academy of Food Technologies, Ukraine)
4. INTAS-Belarus 97-0093 – “Operator Decomposition of Graphs” (*Stanislav Suzdal, R. Tyshkevich*, Institute of Mathematics, Belarus)
5. INTAS 97-0606 – "Development of an Intelligent Sensing Instrumentation Structure I.S.I.S". (*Theodore Laopoulos*, Aristotle University of Thessaloniki, Greece, *Chefi Triki*, University of Calabria, Italy, *Anatoly Sachenko, Volodymyr Kochan, Volodymyr Turchenko, Roman Kochan*, Ternopil Academy of National Economy, Ukraine, *Vladimir Golovko, Yuri Savitsky*, Brest State Technical University, Belarus)

**20:00 – 22:00**                      **Workshop Banquet**



## Wednesday, July 04

**8:00 – 9:00**                      **Breakfast**

**10:00 – 12:00**                      **Session W1 – Advanced Mathematical Methods for Data Acquisition and High Performance Computing**

*Chair: Anatoly Melnyk, National University “Lvivska Polytechnica”, Ukraine*

1. Metadata - A Key to Data Acquisition and Information Retrieval. *Peter Reusch, Fachhochschule Dortmund, Germany.*
2. The Experimental Design in Tasks of Interval Models Identification. *Mykola Dyvak, Hryhoriy Hladiy, Vitaliy Vitsentiy, Ternopil Academy of National Economy, Ukraine.*
3. Learning of Biological Behaviour by Classifier. *Hideaki Kanoh, MEIJI University, Japan, Akihiro Hosokawa, Dainippon Screen Mfg.Cu.Ltd., Japan.*
4. Software for Interval Analysis and Synthesis of Tolerances in CAD Systems. *Vladimir Krischuk, Galina Shilo, Nikolay Gaponenko, Zaporizhzhia State Technical University, Ukraine.*
5. Modeling of Products Sale Velocity and Products Recommended Structure on the Basis of a Data Reduction Method. *Roman Pasichnyk, Bogdan Maslyyak, Vitaliy Vitsentiy, Ternopil Academy of National Economy, Ukraine.*
6. Group Velocity and Dispersion Coefficient in the Distributed Sensor of Vibration in Fibre Optic Michelson’s Interferometer Configuration. *Bogdan Kizlik, Military University of Technology, Poland, Vitalij Nichoga, Petro Dub, Physico-Mechanical Institute of the National Academy of Sciences, Ukraine.*

**11:00 – 11:30**                      **Coffee break**

**11:30 – 12:30**                      **Poster Session WP – Information Systems for Education and Commercial Applications**

*Chair: Allen Tucker, Bowdoin College, USA*

1. Signal Processing and Modeling of Dynamical Objects on the Basis of Their Description as Discrete Information Sources, *Olena Mul, Andriy Segin, Ternopil Academy of National Economy, Ukraine.*

2. Problems of the Operating Analysis of Bank Very Large DBMS. *Sergiy Rippa*, Academy of State Tax Service of Ukraine, Ukraine, *Jakiv Smolij*, Aval-bank, Ukraine.
3. The Philosophy and Driving Forces in the Development of Measurement Science - Some Views upon the Problems. *Ivan Kalchev*, Technical University of Sofia, Bulgaria.
4. Scheduling of Examination Terms Based on Past Experience. *Damir Kalpic*, *Zvonimir Vanjak*, *Mirta Baranovic*, University of Zagreb, Croatia.
5. Informational and Analytical System for Support of Financial and Credit Activity. *Elzbeta Marecka*, Academy of Computer Sciences and Management, Ukraine.
6. A Solution of a Travelling Salesman Problem by a Method Correlative-Regression of the Analysis. *Basil Shut'*, *Igor Prozherin*, Brest State Technical University, Belarus.
7. The Information System of Control Risks. *Oles Beley*, Lviv Commercial Academy, Ukraine, *Svitlana Sachenko*, Ternopil Academy of National Economy, Ukraine.
8. Development of Distance Education System in ICIT TANE. *Igor Bilousov*, *Olexander Novosad*, *Oleg Adamiv*, Ternopil Academy of National Economy, Ukraine.

**12:30 – 13:30**

**Round Table**

*Chair:*

*Peter J. A. Reusch Fachhochschule Dortmund - University of Applied Sciences, Germany*

**13:30 – 15:30**

**Lunch**

**15:30 – 20:00**

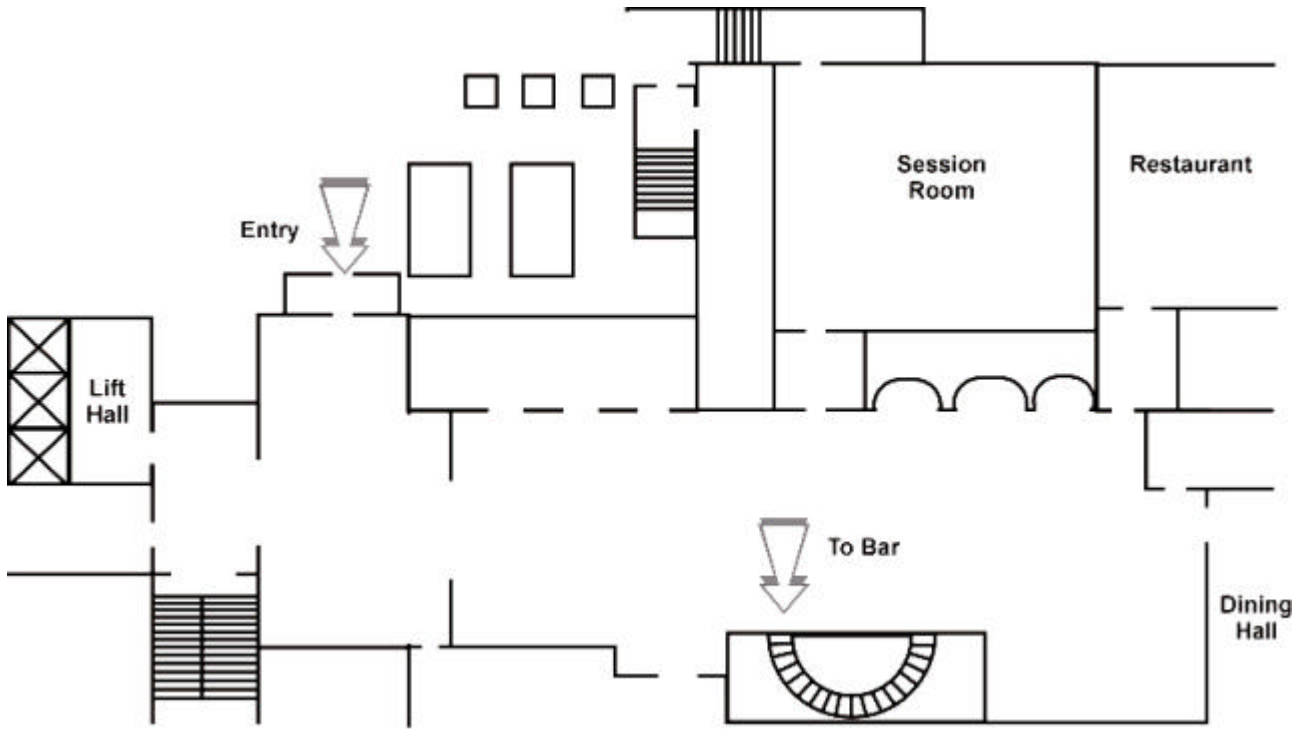
**Excursion Tour**

**20:00 – 22:00**

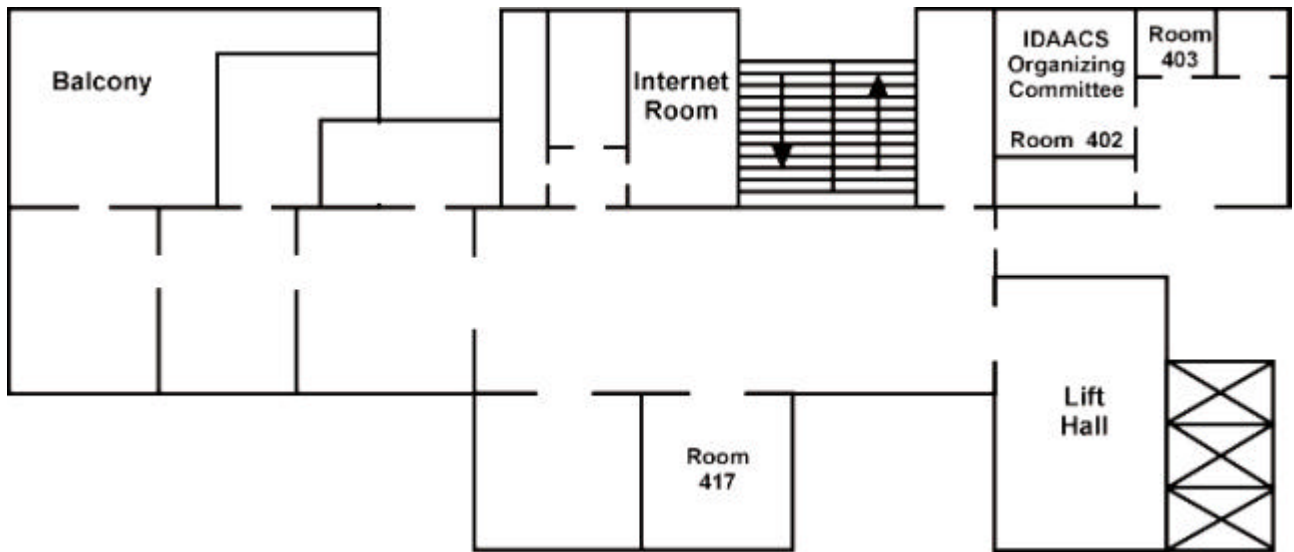
**Closing Session and Vine Tasting**

# Resort Center FOROS - Floors Plan

## 5<sup>th</sup> Floor (Ground)



## 4<sup>th</sup> Floor (Underground)



## NOTES