16th IFAC World Congress - Final Report
Prague, Czech Republic, 4 - 8 July, 2005

Contents:

IFAC Fellow Nominations for 2006

The IFAC Fellow Nomination material for the 2006 round of nominations is now on the IFAC website at:

http://www.ifac-control.org/about/awards.htm#fellows

If you plan to submit a Nomination and are eligible to make such a nomination, please follow these steps:

• Read the Nominator Instructions File
• Fill in the IFAC Fellow Nomination Form
• Send this form to the IFAC Secretariat by e-mail by **31 December, 2005**
• Double-check the provided contact addresses of the References (The IFAC Secretariat will contact them)
• Any question, as well as the result of your Nomination, should be handled through the IFAC Secretariat

If you have been proposed as Reference for IFAC Fellowship Nomination, please, follow these steps:

• Read the IFAC Fellow Reference File
• Fill in the form included in this file
• Submit the form to the IFAC Secretariat by e-mail by **1 March, 2006**

In this and the next issues of the IFAC Newsletter we shall publish excerpts from the Final Report, compiled by Petr Horacek, IPC Co-Chair. In this issue we shall concentrate on some statistical material and on the technical contents of the IFAC World Congress in Prague in July 2005 as manifested in the Plenary- and Semi-Plenary Papers given.

Petr Horacek, IPC Co-Chair

It was a great pleasure to welcome the participants of the 16th IFAC World Congress held in Prague, Czech Republic, from July 4 to July 8, 2005.

The Congress was a great opportunity for presenting new results and directions of Automatic Control theory, technology and applications. As such, it mainly concentrated on the following key points:

- emphasis on invited lectures including plenaries, surveys and tutorials,
- industry participation promotion,
- attracting young people to study and work in the field.

The participants of the 16th IFAC World Congress had the opportunity to take part in the wide spectrum of categories for technical presentations, including plenary lectures, survey papers, regular papers of both lecture and poster session types and panel discussions. Immediately preceding the formal opening of the Congress, tutorials and workshops were offered giving participants an opportunity to learn new principles, methodologies, technologies and applications that have been developed in recent years. The Congress was a great success in terms of number of submitted contributions and participants.

Papers submitted	3284
Papers accepted for the final program*)	2456
Countries contributing to the program	73
Overall attendance	2462
Attendance from academia	2099
Attendance from industry	363
Countries represented by the registration	63

*) The figure includes plenary and semi-plenary papers, reports for panel discussions including so called Milestones, oral presentations and posters combined.

Overall figures regarding authors and co-authors of papers scheduled for the final program are given in the following table .

Total number of authors of accepted papers	5162
Average number of authors per an accepted paper	2
Authors of accepted papers from academia	4805
Authors of accepted papers from industry	357
Number of countries contributing to the technical program	73

Industrial Participation

One of the key points of the IFAC World Congress Prague 2005 was to encourage people from industry to attend the Congress either as contributors or passive participants.

The effort made by the International Program Committee and members of the IFAC Technical Board resulted in participation of 176 different companies from 30 countries all around the world in the Congress technical program. There were 279 authors from industry authoring or co-authoring papers scheduled for the final program.

Plenary and Semi-Plenary Sessions

Well-known experts in emerging/important areas of interest within IFAC were invited to share their expertise with Congress participants. Six plenary sessions were organized.

The first plenary speaker was **R. Kalman**, Swiss Federal Institute of Technology, Zurich, on **"The Evolution of System Theory: My Memories and Hopes"**. There was no chair left in the Congress Hall of the Prague Congress Center as everybody was eager to see and hear the living legend of System Theory. R. Kalman reviewed the evolution of system theory over the last 100 years, and especially since R. M. Foster's famous 1924 paper. His inevitable conclusion was that (after the basic physical issues have been cleared up) progress or failure in engineering research in system theory has been directly linked to progress or failure in solving the underlying purely mathematical problems, regardless of whether these problems were already the subject of study in another unrelated context or had to be formulated ab initio.

The second plenary speech was industry oriented. **S. Chand**, Vice President and Chief Technical Officer of Rockwell Automation, Milwaukee, presented a plenary paper entitled "**From Electric Motors to Flexible Manufacturing: Control Technology Drives Industrial Automation**". Industrial Automation has evolved from stand-alone, hard-wired relay panels to a contemporary, networked system of today that supports flexible manufacturing and enterprise integration. The presentation summarized the major technical trends, and highlighted the continuing opportunities and challenges for the application of control technologies. Trends such as the adoption of open networks like the Ethernet, migration of intelligence to sensors and actuators, and the evolution of semiconductor and sensing technologies, are driving greater distribution of control and decision-making in the architecture. The diversity of future needs was illustrated by two applications described in detail: electric motor control and autonomous agent-based systems for fault-tolerant control. S. Chand introduced the program of the first Industry Day.

The program of the first Industry Day continued by an attractive plenary given by **R. Isermann**, Institute of Automatic Control, TU Darmstadt, on "**Mechatronic Systems: Innovative Products with Embedded Control**". Many technical processes and products in the area of mechanical and electrical engineering are showing an increasing integration of mechanics with digital electronics and information processing. Formerly mechanical functions are replaced by electronically controlled functions, resulting in simpler mechanical structures and increased functionality. Of major importance are the simultaneous design of mechanics and electronics, hardware and software and embedded control functions resulting in an integrated component or system. The contribution summarized ongoing developments for mechatronic systems, presented design approaches and examples of mechatronic products and considered especially the various embedded control functions and systems integrity. R. Isermann started with the historical development and gave definitions for mechatronic systems. Then the design methodology of mechatronic systems was considered, taking into account the design steps of simultaneous, integrated engineering. Typical development models, known as V-models, were shown, including specification, off-line simulation, control prototyping, code generation, function and system testing with hardware-in-the-loop simulation, calibration/tuning of control functions, validation and verification and field testing. Examples of mechatronic systems, like braking systems (ABS, ESP), the brake bywire electro-hydraulic brake system (EHB), steering systems (active front steering), active suspension systems, common rail injection systems, variable valve control systems, variable geometry turbochargers and automatic gears, were shown. Realization of embedded control functions for mechatronic systems including reliability and safety functions was discussed. Experimental results were shown for automotive drive dynamic sensors and electrical AC motors. An outlook described the development to intelligent mechatronic systems, faulttolerant systems and drive-by-wire vehicles and discussed requirements for the education in mechatronics.

The program of the second Industry Day was introduced by a plenary presentation given by **M. Bruns**, Vice President A&D AS Process Automation, Siemens AG. The topic was "**Some Trends in Industrial Automation**". Several fast growing technologies were discussed, namely: RFID, Industrial Wireless LAN, with the main goal to increase reliability to a level where "wireless is as safe as a wire", isochronous RT Ethernet and ICs for this technology. It was explained that the objective of isochronous RT Ethernet is to use the same Ethernet infrastructure for office and also for time critical applications e.g. machine & drive control. Current R&D focuses on refining network traffic control algorithms in order to ensure safe and reliable data transmission. R&D activities in Augmented Reality, as the intelligent combination of normal human visual perception and of computer generated information, were presented. The plenary then dealt with applications like plant design, complex service & maintenance and remote expert support.

A broadly attractive presentation addressing successful automatic space missions was given in the plenary entitled "**The Mars Exploration Rovers: Hitting the Road on Mars**" by **N. Cox**, NASA Jet Propulsion Laboratory, Pasadena. Since the beginning of time, people have been fascinated by Mars. The history of missions was covered. Development of Mars Exploration Rovers was explained and their successful landing on Mars in January 2004 was described. The presentation discussed how the Mars Rover mission fitted into the overall Mars Program and NASA. The full story of building the rovers including autonomous control ability on the surface was described. The process of developing and testing autonomous functions was documented. Since landing, NASA had seen those capabilities at work and they have been critical in the rovers success at finding evidence of past water. There was a remarkable and positive feedback from the audience regarding the topic and also the form of the presentation. Unlike the other plenary presentations, N. Cox did not focus on automatic control itself but presented Aerospace as an application area where automatic control plays a leading role. The presentation itself was a great success. A number of young people discussed the topic with Mrs Cox days after the presentation.

In the "**Issues on Robust Adaptive Feedback Control**" by **M. Athans** et al., MIT and Universidade Técnica de Lisboa, the recent progress in the field of robust adaptive control was summarized. A general philosophy for designing "robust" adaptive multivariable feedback control systems for plants that include both unmodeled dynamics and uncertain real parameters in the plant state description was discussed. More recent approaches to the adaptive problem involve multiple-model techniques where the parameter uncertainty set is subdivided into smaller subsets; each giving rise to a different plant model but with reduced parameter uncertainty. The identification of the most likely model was carried out by a "supervisor", which either switches in and out the controllers based primarily on deterministic concepts or relies upon stochastic designs (dynamic hypotheses-testing) that generate on-line posterior probabilities reflecting which of the models is more likely. The following questions regarding models employed were defined: (a) how to divide the initial large parameter uncertain set into N smaller subsets, (b) what should be the size of each subset and (c) how big should N be. The talk focused on "robust performance" requirements on the adaptive system implemented by one of the available multiple-model methods by exploiting recent advances on robust nonadaptive designs using the so-called mixed-mu methodology. A systematic method for selecting the smallest number of models while guaranteeing a priori bounds on desired performance was presented.

Semi-plenary sessions concluded the technical program on Monday and Wednesday. **M. Morari**, Swiss Federal Institute of Technology, Zurich, presented an attractive talk on "**Hybrid Systems: Theory, Computation and Applications**". Historical examples and an introduction to the emerging area of hybrid systems, i.e. dynamical systems with switches, were provided. Examples from power electronics, systems with hard bounds and/or friction, driver assistance systems, anesthesia and active vibration control were described as systems belonging to the category. Theoretical developments were highlighted and the extensive software that helps to bring the theory to bear on the practical examples was mentioned. In conclusion, an outlook for hybrid systems and control was generalized.

The second semi-plenary lecture by **J. Bokor**, Hungarian Academy of Science, Budapest, and **G. Balas**, University of Minnesota, was on "**Linear Parameter Varying Systems: A Geometric Theory and Applications**". Linear Parameter Varying (LPV) systems appear in many modeling and control problems related to aerospace or vehicle system applications. This talk proposed a geometric view on the LPV systems. Elaborating the geometric concepts and tools of parameter varying invariant subspaces, the authors investigated invariant subspace algorithms for a class of LPV systems. Using the geometric results and the associated invariant subspace algorithms, prototype control problems like disturbance decoupling problem and the like were discussed for affine LPV systems. The advantage gained by using LPV formalism was shown and solutions to some non-linear problems, that could be hardly computable in the original nonlinear form, were demonstrated. Applications to aerospace control design and road vehicle control systems were shown using MATLAB.

The other two semi-plenary lectures were organized within the program of the second Industry Day. The first semi-plenary lecture of the Industry Day, entitled "**A Distributed Automation Framework for Plant-Wide Control, Optimisation, Scheduling and Planning**", was prepared jointly by **V. Havlena**, Honeywell Laboratory Prague, and **J. Lu**, Honeywell Process Solutions, Phoenix. The objective of the talk was to identify current open problems and trends in plant wide control and demonstrate a solution based on distributed, solution component based architecture for integrated process management, embracing the layers of Advanced Process Control, Real Time Optimisation and Planning & Scheduling, in selected application areas. The problems and outlined solutions were intended to stimulate discussion as well as attract more research interest.

A more specific issue was presented in the last semi-plenary "**Systems Engineering for Irrigation Systems: Successes and Challenges**" by **I. Mareels et al**. In Australia gravity fed irrigation systems are critical infrastructure essential to agricultural production and export. By supplementing these large scale civil engineering systems with an appropriate information infrastructure, sensors, actuators and a communication network it is feasible to use systems engineering ideas to improve the exploitation of the irrigation system. The presentation reported how classical ideas from system identification and control can be used to automate irrigation systems to deliver a near on-demand water supply with vastly improved overall distribution efficiency.

Petr Horacek, IPC Co-Chair

IFAC Congress Awards
Presented at the Closing Session of the
XVIth IFAC World Congress
Prague, Czech Republic, 4 - 8 July, 2005

The IFAC Congress Applications Paper Prize 2005 (APP)
The IFAC Congress Young Author Prize 2005 (YAP)
The IFAC Congress Best Poster Prize 2005

IFAC Congress Applications Paper Prize

The criteria for the APP are as follows

The prize is given for outstanding technical contributions at an IFAC Congress in the area of control applications. This includes, but is not limited to, case studies, design and implementation of control systems and optimization of operations in a process, but generally excludes work of a simulation or laboratory scale nature that does not embrace work on an actual full-scale process.

The prize and a certificate are awarded at each Triennial IFAC World Congress. (Funding provided by IFAC.)

The winner is determined from a shortlist (typically 5 or less) of finalists at the Congress based on the written paper and the oral presentation.

This time, two papers were awarded the Applications Paper Prize from among 4 finalist papers

The papers winning the Applications Paper Prize were

Actual Engaged Gear Identification: A Hybrid Observer Approach

Balluchi Andrea   (PARADES, Italy)
Luca Benvenuti   (Università di Roma, Italy)
Claudio Lemma   (PARADES, Italy)
Alberto Sangiovanni-Vincentelli
                 (PARADES, Italy and
      University of California at Berkeley, USA)
Gabriele Serra   (Magneti Marelli
                 Powertrain, Italy)

Citation: For Hybrid Observers for on-line Identification of Gear Position in Automobiles to Improve Fuel Economy and Emissions
Technical area: 7.1. Automotive Control

Process Control of an Open Plate Reactor

Staffan Haugwitz   (Lund Institute of
                 Technology, Sweden)
Per Hagander   (Lund Institute of
                 Technology, Sweden)

Citation: For Application of Model Predictive Control to an Innovative Chemical Reactor/Heat Exchanger Combination to Enable Process Intensification
Technical area: 6.1. Chemical Process Control

The other finalists for the Applications Paper Prize 2005 were

Nonlinear Model Predictive Control of Batch Processes: An Industrial Case Study
Zoltan Nagy   (University of Stuttgart)
Bernd Mahn   (BASF Aktiengesellschaft,
                 Ludwigshafen)
Rudiger Franke   (ABB Corporate Research,
                 Ladenburg)
Frank Allgower   (University of Stuttgart)
Technical area: 6.1. Chemical Process Control

Evaluation of Sliding Mode Observer for Vehicle Sideslip Angle
Joanny Stéphant   (Laboratoire HEUDIASYC,
                 UMR CNRS-UTC, Compiegne, France)
Ali Charara   (Laboratoire HEUDIASYC,
                 UMR CNRS-UTC, Compiegne, France)
Dominique Meizel   (GERME, ENSIL, Limoges,
                 France)
Technical area: 7.5. Intelligent Autonomous Vehicles

IFAC Congress Young Author Prize

The criteria for the YAP are as follows

The prize is for the best paper at an IFAC Congress of an author (in exceptional cases authors) younger than 35 years. If a paper has more than one author all authors must meet the age requirement.

The prize and a certificate is awarded at each IFAC Triennial World Congress. (Funding provided by IFAC.)

Authors younger than 35 (who feel they have a high quality paper) can submit their paper for consideration for the YAP, as mentioned in the Call for Papers of the respective IFAC World Congress. Authors wishing their paper to be considered should include a statement that they will be 35 or younger at the starting date of the Congress. All papers submitted to the YAP that have been accepted in the normal Congress review procedure are considered as being nominated for the YAP.

The criteria are the highest technical quality and a good presentation of the results.

The winner is determined from a shortlist (typically 5 or less) of finalists at the Congress based on the written paper and the oral presentation.

This time, two papers were awarded the Young Author Prize from among 4 finalist papers

The papers winning the Young Author Prize were

Dynamic Output Feedback Stabilization of a Class of a Nonholonomic Hamiltonian Systems

Satoru Sakai   (Kyoto University)
Kenji Fujimoto   (Nagoya University)

Citation: The paper established equivalence of state feedback and output feedback for port control Hamiltonian systems, making implementation of the controller easier
Technical area: 2.3. Non-Linear Control Systems

Stabilization of Networked Control Systems: Designing Effective Communication Sequences

Lei Zhang   (University of Maryland,
                 USA)
Dimitrios Hristu-Varsakelis   (University of
                 Macedonia, Greece)

Citation: The paper established an innovative design for periodic protocol for networked control
Technical area: 2.2. Linear Control Systems

The other finalists for the Young Author Prize 2005 were

Robust Decentralized Pole Assignment
Alireza Esna Ashari   (University of
                 Tehran, Iran)
Batool Labibi   (K. N. Toosi University of
                 Technology, Iran)
Technical area: 5.4. Large Scale Complex Systems

Aviator's Design of Multi-Objectives Control Laws
Matthieu Jeanneau   (AIRBUS)
Jérôme Lamolie   (AIRBUS & Ecole Centrale
                 de Lille)
Guilhem Puyou   (AIRBUS); Nicky Aversa
                 (AIRBUS)

IFAC Congress Best Poster Prize

The criteria for the IFAC Congress Best Poster Prize 2005 are as follows

The prize is for the best poster paper accepted and presented at the IFAC Triennial World Congress. The prize is in the competence of the IFAC Congress organizers.

The prize and a certificate is awarded at each IFAC Triennial World Congress at the Closing Session. (Funds are provided by the National Organizing Committee.)

All poster papers accepted for the Congress have been reviewed by the Selection Committee and 5-10 finalists are selected. The finalists are informed of being finalists in advance of the Congress.

The criteria are the highest technical quality and a good presentation of the results.

The paper winning the Best Poster Prize 2005 was

Towards Deadband Control in Networked Teleoperation Systems
S. Hirche
P. Hinterseer
E. Steinbach
M. Buss

The other finalists for the Best Poster Prize 2005 were

A New Fractional Frequency Synthesizer Architecture with Stability and Robustness Analysis
M. Houdebine
S. Dedieu
M. Alamir
O. Sename

Synthesis of Fixed Structure Controllers for Discrete Time Systems
Waqar Malik
Swaroop Darbha
Shankar P. Bhattacharyya

Hand Movement Improvement on Visual Target Tracking by Model-Based Compensator
Takenao Sugi
Junko Ide
Masatoshi Nakamura
Hiroshi Shibasaki

Robust Control with Youla Parametrization of Yeast Fed-Batch Cultures
A. Vande Wouwer
F. Renard
S. Valentinotti
D. Dumur

The Power, Beauty and Excitement
of the Cross-boundaries Nature of Control
Workshop for Highschool Students and Teachers at the
IFAC World Congress
Prague, Czech Rep. July 2, 2005

The Workshop was organized for the first time jointly by the IFAC Committee on Control Education and the IEEE Control Systems Society Committee on Control Education.

It was the first weekend of vacation for Czech highschool students and it was the furst sunny day after many rainy days. It was the perfect Sunday - beautiful and exciting. Students and their teachers from all over the country arrived early in the morning in the Czech Technical University in Prague to listen about the beauty and excitement of control.

Everything was well prepared by the local organizers Petr Horacek and Zdenek Howzalek, assisted by many others. Welcome remarks were given by Michael Sebek, the Chair of the National Program Committee of the IFAC World Congress. Then the exciting presentations began:

Theodore E. Djaferis, Professor and Associate Dean of Engineering at the University of Massachussetts, Amherst, began by speaking about the power of feedback. Automatic Control is a fascinating field of study. The theory and practices developed over the years can be applied to a wide range of automation problems, making the field universally applicable. Automatic Control is truly multidisciplinary as problems frequently involve a number of disciplines. In his talk he explored the use of feedback in Automatic Control applications. Rather than talking in broad terms, he introduced the subject by considering a specific example - an Automatic Control System for vehicle collision avoidance. This will lead to a better understanding of the different pieces involved in the Automatic Control puzzle and the process used to solve problems.

Next **Christos G. Cassandras**, Professor of Manufacturing Engineering and Professor of Electrical and Computer Engineering from Boston University, spoke about "When Computers Control: Joys and Perils of Automation". The purpose of this presentation was to demonstrate the pervasive role of feedback in both physical and manufacturing systems, thus motivating "Automatic Control". His presentation also tried to show the pitfalls of automation, when it is not done "quite right", thus introducing basic challenges in environments ranging from manufacturing to communication networks and transportation. Computer simulation and a LEGO-based mini-car factory were presented as examples of educational tools for teaching the principles of Automatic Control.

Mark W. Spong, Donald Biggar Willett Professor of Engineering from Urbana spoke about future careers in Mechatronics and Control Systems. Mechatronics is the synergistic combination of precision mechanical engineering, electronic controls and systems engineering in the design of products and processes. Mechatronic Systems are "smart systems" of all kinds including robots, drive-by-wire cars, fly-by-wire airplanes, and consumer electronics. His talk gave examples of advances in control systems and mechatronics and discussed career opportunities for students in these areas.

Petr Horacek, Associate Professor, Czech Technical University in Prague and Head of the Process Control Department ProTyS, a.s. Czech Hi-Tech Company, spoke about the increased role of automation techniques in large industrial projects. Techniques for modelling, identification, real-time control and supervision have been in the centre of interest in many fields of industry for decades. Surprisingly, there are problems that have not been solved yet or there are new problems arising. The talk described large industrial projects being solved in cooperation with academia and students of the Czech Technical University, Faculty of Electrical Engineering in particular. The presentation gave a summary of problems and techniques used in modelling, simulation and control in the glass industry (glass furnaces a fibre-glass production), the food industry (cheese production) and electrical power systems (maintaining stability of power generation, transmission and distribution in a liberalized energy market). The large potential for highschool student involvement in such industrial projects and project-driven education was discussed.

Bozenna Pasik-Duncan, Professor of the Mathematics Department and Information and Telecommunication Centre, University of Kansas, spoke about the random walk around some stochastic control problems in telecommunication, finance and medicine. The modern world is full of randomness and noise. Her lecture focused on modelling different types of noise in systems. She took a random walk around some stochastic adaptive control problems in telecommunication and finance industries as well as in medicine, in particular epilepsy. She observed that real world problems have become more and more complex and have generated the need for development of new exciting stochastic calculus. It was concluded that the partnership of mathematics and control engineering, and collaborative effort in research are necessary for success in solving these problems.

Ljubo Vlacic, Professor and Director, Intelligent Control Systems Laboratory, Griffith University, spoke about Cooperative Driverless Vehicles. The idea of intelligent vehicles has brought with it the promises of heightened safety, reliability and efficiency. No longer would the onus of responsible driving be placed on fallible humans, in fact, the very idea of car crashing, or causing damage to someone would be completely alien and unthinkable. Congestion would entirely evaporate as computers took control of vehicles and decided the optimal route for greatest efficiency. While this seems extremely idealistic, there is an element of truth to these benefits that intelligent vehicle technologies can provide. Thanks to the most recent development of decision and control algorithms, intelligent vehicles are now even capable of undertaking driving maneouvres in cooperation with each other. This talk addressed intelligent vehicle technologies and gave superb examples of cooperative driverless vehicles for cities.

The Workshop aimed to inspire interest from youth towards studies in Automatic Control and to assist highschool teachers in promoting the discipline of Automatic Control among their students. It was composed of several short but effective presentations on various problems from the real world that have been solved by using control engineering methods, techniques and technologies. The attractiveness and excitement of choosing a career in control engineering was addressed. Live interaction between the presenters and the audience was an important feature of the Workshop.

The Workshop was a successful and memorable event. It is expected to be continued at other major conferences. The next one will take place at the CDC/ECE'05 in December, in Seville, Spain. The collaborative effort of both IFAC Committee on Control Education and IEEE CSS Committee on Control Education has played an important role internationally in Control Education.

B. Pasik-Duncan
L. Vlacic

WHO IS WHO IN IFAC

Dear Newsletter Readers,

On the occasion of the IFAC World Congress in Prague, I was elected to the office of IFAC Secretary. Therefore, let me use this opportunity to thank Gusztav Hencsey, who served IFAC for 21 years in this function, for his excellent work and all the time he dedicated to this job. Since matters at the Secretariat were in excellent shape, it was easy for me to start with my new position. Gusztav was supported by Barbara Aumann and Ernestine Rudas who did an excellent job too, and I hope they will help me with my work in the same manner as they have done with Gusztav.

Let me use the following lines to introduce myself briefly. My scientific interests are focused on non-linear control using differential geometric and differential algebraic methods. Currently I have the position of a Professor for Automatic Control at the Johannes Kepler University of Linz in Austria. Since IFAC's Secretariat is located in Laxenburg, a beautiful village close to Vienna, it is not difficult for me to be in permanent contact with the office.

Today the presence of a scientific organization in the Worldwide Web is essential. Already in Gusztav's period the Newsletter has changed from a handmade newspaper to an electronically published report of events, information and technical activities which everybody can also download from IFAC's website. But electronic development will go on; web-based information, administration, etc. will be among the next challenges. It is the Secretary's goal to prepare a web-based content management system together with a database for affiliates to support IFAC's events and administration. Another challenge will be an electronic archiving system for IFAC's publications. The task force "Database for Affiliates, Archiving and Paper Handling" has already been founded to define IFAC needs with respect to these topics and to prepare proposals for their realization.

The position of the Secretary is an administrative one which should help a scientific organisation in handling and managing its affairs. Therefore, I have no particular vision for this job, I believe visions of bureaucratic or administrative institutions, even of a small secretariat, are often more a threat than a hope. My goal will be to make the administration as clear as possible and to suggest changes only, which keep any additional bureaucratic or administrative burden as small as possible. Following this way I hope that the Secretariat will be able to support our organisation in the same successful manner as it has done until now.

Let me thank my predecessor once more for his excellent work. I hope that all of you, who have helped IFAC to become such a successful scientific organisation, will continue with your work in the same manner. Although science also causes administrative work, let us not forget that science is an important source of intellectual pleasure, too.

Title	2006	Place	Further Information
IFAC Symposium Mathematical Modelling – 5th MATHMOD	February 08 – 10	Vienna Austria	http://www.mathmod.at e-mail: inge.troch@tuwien.ac.at
IFAC Workshop Programmable Devices and Embedded Systems - PDeS	February 14 – 16	Brno Czech Rep.	www.pdes2006.feec.vutbr.cz e-mail: pdes2006@feec.vutbr.cz
IFAC Workshop Control Applications in Post-Harvest and Processing Technology CAPPT 2006	March 26 – 29	Potsdam Germany	http://CAPPT2006.atb-potsdam.de e-mail: cappt2006@atb-potsdam.de
IFAC Symposium System Identification – SYSID 2006	March 29 - 31	Newcastle Australia	http://sysid2006.org e-mail: secretariat@sysid2006.org
IFAC Sympoisum Advanced Control of Chemical Proceses -ADCHEM 2006	April 2 – 5	Gramado Brazil	http://www.adchem.org e-mail: adchem@enq.ufrgs.br
IFAC Workshop Control Applications of Optimization	April 26 – 28	Cachan-Paris France	http:www.ens-cachan.fr/cao06 e-mail: sec.ifac.cao06@ens-cachan.fr
IFAC Symposium Information Control Problems in Manu- facturing – INCOM 2006	May 17 – 19	St. Etienne France	http://www.emse.fr/incom.fr e-mail: incom06@emse.fr
IFAC Symposium Automated Systems Based on Human Skill and Knowledge	May 22 – 24	Nancy France	http://www.ensgsi.inpl-nancy.fr/ASBoHS06/ e-mail: Laure.Morel@ensgsi.inpl-nancy.fr
IFAC Conference 6th Analysis and Design of Hybrid Systems ADHS'06	June 07 – 09	Alghero Italy	http://www.diee.unica.it/adhs06/ e-mail: adhs06@diee.unica.it
2006 American Control Conference - in cooperation with IFAC -	June 14 – 16	Minneapolis MN, USA	http://www.a2c2.org/conferences/acc2006/ e-mail: misawa@ceat.okstate.edu
IFAC Conference Improving Stability in Developing Nations through Automation – ISA'06	June 15 – 17	Prishtina Serbia Montenegro Kosovo	http://www.ihrt.tuwien.ac.at/swiis2006/ e-mail: to be announced
IFAC Symposium 7th Advances in Control Education –ACE 06	June 21 - 23	Madrid Spain	http://www.dia.uned.es/ace2006/index.html e-mail: ace2006@dia.uned.es
IFAC/IEEE Symposium Power Plant and Power System Control	June 25 – 28	Kananaskis/Alberta Canada	http://ifacpps2006.org/ e-mail: ifacPPS2006@ucalgary.ca
IFACConferences Analysis and Control of Chaotic Systems	June 28 – 30	Reims France	http:// www.univ-reims.fr/chaos06 e-mail: chaos06@univ-reims.fr
IFAC Symposium 5th Robust Control – ROCOND	July 05 – 07	Toulouse France	http://www.laas.fr/rocond06 e-mail: rocond06@laas.fr
IFAC Workshop 6th Time Delay Systems	July 10 – 12	L'Aquila Italy	http:// to be announced e-mail: to be announced
Asian Control Conference - in cooperation with IFAC	July 18 – 21	Bali Indonesia	http://www.ascc2006.com e-mail: secretariat@ascc2006.com
IFAC Workshop Lagrangian and HamiltonianMethods for Nonlinear Control	July 19 – 21	Nagoya Japan	http://www.robot.kuass.kyoto-u.ac.jp/lhmnlc06/ e-mail : to be announced
IFAC Workshop Fractional Differentiation and its Applications	July 19 – 21	Porto Portugal	http://www.gecad.isep.ipp.pt/FDA06 e-mail: fda06@dee.isep.ipp.pt
IFAC Symposium Control in Transportation Systems	August 29 – 31	Delft Netherlands	http:// to be announced e-mail:// to be announced
IFAC Symposium Fault Detection, Supervision and Safety of Technical Processes – SAFÉPROCESS	August 30 – September 1	Beijing China	http://www.au.tsinghua.edu.cn/safe/safeprocess2006/ e-mail: safeprocess2006@mail.tsinghua.edu.cn
IFAC Symposium 8th Robot Control – SYROCO	September 6 – 8	Bologna Italy	http://www-lar.deis.unibo.it/syroco2006/ e-mail cmelchiorri@deis.unibo.it
IFAC Workshop Bio-Robotics III	September 9 – 10	Sapporo Japan	http://to be announced e-mail: to be announced

FORTHCOMING EVENTS (ctd.)

Title	Date	Place	Further Information
IFAC Symposium Mechatronics Systems	September 12 – 14	Heidelberg Germany	http://www.mechatronics2006.com e-mail: ringelmann@vdi.de
IFAC 50th Anniversary Celebration **Present and Future of Automatic Control**	**September** **15**	**Heidelberg** **Germany**	http://www.vdi.de/ifac50
IFAC Symposium 6th Modelling and Control of Biomedical Systems	September 20 – 22	Reims France	http://www.univ-reims.fr/mcbms06 e-mail: mcbms06@univ-reims.fr
IFAC Workshop Automation in Mining, Mineral and Metal Processing	September 20 – 22	Cracow Poland	http://konferencje.polsl.pl/IFAC2006 e-mail: IFAC2006@polsl.pl
IFAC Workshop Energy Saving Control in Plants and Buildings	October 2 – 10	Bansko Bulgaria	http://IFAC_ESC.tu-sofia.bg e-mail: to be announced
IFAC Workshop Nonlinear Model Predictive Control for Fast Systems (NMPC_FS'06)	October 9 – 11	Grenoble France	http:// www.lag.ensieg.inpg.fr/NMPC_FS06/ e-mail: NMPC_FS@lag.ensieg.inpg.fr
Title	**2007**	**Place**	**Further Information**
IFAC Symposium Computer Applications in Biotechnology - CAB-10	June 4 – 6	Cancun Mexico	www.lingen.unam.mx/CAB-10 e-mail: to be announced
IFAC Symposium Dynamics and Control of Process Systems - DYCOPS-8	June 6 – 8	Cancun Mexio	http://www.lingen.unam.mx/DYCOPS-8 e-mail: to be announced
IFAC Symposium Automatic Control in Aerospace	June 25 – 29	Toulouse France	http://aca2007.onera.fr e-mail: aca2007@oneracert.fr
2007 American Control Conference - in cooperation with IFAC -	July 11 – 13	New York NY, USA	http://www.a2c2.org/conferences/acc2007/ Email: judd@ohio.edu
IFAC Symposium 11th Large Scale Systems: Theory and Applications	July 23 – 25	Gdansk Poland	http:// to be announced E-mail: to be announced
IFAC Symposium 12th Automation in Mining, Mineral and Metal Processing - MMM	August 21 – 24	Quebec City Canada	http://www.gch.ulaval.ca/ifacmmm07/ e-mail: ifacmmm07@gel.ulaval.ca
IFAC Symposium Nonlinear Control Systems	August 22 – 24	Pretoria South Africa	http:// www.nolcos2007.org.za e-mail: noc@nolcos2007.org.za
IFAC Symposium Analysis, Design and Evaluation of Human-Machine Systems	September 4 – 6	Seoul Korea	http:// to be announced e-mail: to be announced
IFAC Conference Management and Control of Production and Logistics – MCPL'2007	September 27 – 30	Sibiu Romania	http:// to be announced e-mail: to be announced
IFAC Symposium System Structure and Control - SSSC 2007	October 17 – 19	Iguacu Brazil	http://www.sssc07.br e-mail: to be announced
Title	**2008**	**Place**	**Further Information**
17th IFAC WORLD CONGRESS	July 6 – 11	Seoul Korea	http://www.ifac2008.org e-mail: Secretariat@ifac2008.org
American Control Conference - in cooperation with IFAC	June 12 – 14	Seattle, WA USA	http:// to be announced e-mail: to be announced

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http://www.ifac-control.org/generated/fcevents.htm

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http://www.ifac.cz