IFAC International Federation of Automatic Control
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1998
No. 5
October

Newsletter

Contents:

Information Control in Manufacturing – INCOM'98

9th IFAC Symposium

Nancy/Metz, France, 24 – 26 June, 1998

The main objective of the INCOM'98 Symposium was to bring together researchers and practitioners belonging to the international scientific and industrial communities in the field of the automation of the Production Systems, in order to underline the new contributions of the Information of Control-Command towards the progress of Industrial Engineering. This symposium was composed of plenary sessions and panel discussions allowing discussions on the 6 selected topics, parallel sessions and posters, to outline the most significant advances. This symposium wanted to be a place of exchanges and privileged debates in order to prepare the scientific and industrial challenges of automation of the companies of the next century.

The 6 major topics of the symposium were covered in a homogeneous way in the plenary sessions as well as in the parallel and poster sessions. The plenary sessions played particularly well their role of opening subjects for discussion since they were followed by audiences varying from 60 to 150 participants. The parallel sessions provided room for presentations of good scientific quality on each of the 6 topics. Only the poster sessions did not have the audience which this type of presentation deserves.

The main objective of the INCOM '98 symposium was achieved with a good participation from the academic and non academic communities which was 77% and 23% respectively.

With 45% of the participants from abroad, the international character of the symposium was significant. 58% of the contributions came from 28 countries of 5 continents.

THE 6 TOPICS OF INCOM'98

ADVANCED AUTOMATION ENGINEERING

The increasing software and hardware capabilities of Information Control Technologies have contributed to Process System Automation Engineering as well as to Manufacturing System Automation Engineering for several decades; each one with its own approach. First, this topic aims at outlining that the relevant concepts, theories, models, methods, methodologies, languages and tools have to be unified to cover a whole Automation Engineering life-cycle in order to take into account the hybrid nature of an Industrial Control System. This topic also aims at focusing on advances in the field of Automation Engineering such as control-software components verification, automation object-oriented modeling, distributed control architectures, embedded control systems, synchronous approaches, and so on. Finally, this topic aims at investigating new paradigms as well as new application areas for Automation Engineering at large.

EMERGING TECHNOLOGY FOR ADVANCED MANUFACTURING

One of the major consequences of Factory Automation during the last decades has been the emergence of new technologies based on the integration of software-based technologies within hardware-based ones to increase the productivity of the whole automated production system. First, this topic aims at outlining that the relevant existing engineering processes have to be integrated in a concurrent approach in order to engineer or reengineer an advanced industrial system. This topic also aims at focusing on advances in the field of Production System Automation such as the product system, the process system, the actuation & measurement system, the supervision system, the maintenance system, the management system, etc. Finally, this topic aims at investigating new technologies as well as new application areas for Industrial Automation at large.

INFORMATION TECHNOLOGY FOR INTEGRATION IN MANUFACTURING

Despite the advances in Information Technology, Enterprise Integration is still a challenge at the company level (intra-enterprise integration) or among enterprises (inter-enterprise integration) as well as for the extended enterprise for creating a synergy between people, technology and processes to satisfy customers' requirements. First, this topic aims at outlining Integration as an interdisciplinary problem relying on organizational, technological, economic and human issues. This topic also aims at focusing on enterprise modeling, organizational aspects, resource aspects, process description languages, process management, workflow management, information systems, information infrastructures, electronic data exchange, product and process data modeling, integration platforms and model enactment issues for integrated production problems. Finally, this topic aims at investigating new methodological and technological ways as well as new application areas for Integration in Manufacturing at large.

INTELLIGENT MANUFACTURING AND PROCESS SYSTEM ENGINEERING

Industrial System Engineering is undergoing a major paradigm shift as the hierarchical model which has contributed to the development of Automation Engineering, Factory Automation and Enterprise Integration during the second half of the 20th century and which now seems not fully suitable for supporting Global Manufacturing towards the 21st century. First, this topic aims at outlining that Enterprise Integration has to move to distributed architectures in order to support the dynamic relationships required by the next generation of Manufacturing and Process Systems. This topic also aims at focusing on a holonic approach, functional engineering, agent-based architectures, intelligent field factory, virtual manufacturing environment, distributed autonomous systems, etc. Finally, this topic aims at investigating new ways of engineering as well as new application areas for distributing "Somewhat of Intelligence" in Manufacturing at large.

MANAGEMENT OF ADVANCED MANUFACTURING TECHNOLOGY

However, Human-centered Industrial Engineering is probably the major challenge that both the industrial and academic communities will have to take up both in Research & Development and Education & Training to meet the Intelligent Integration vision for rebuilding the Enterprise of the next century. First, this topic aims at outlining the impact of sophisticated Information Control Technologies, not only on the Product or the Technical System, but also on the Human System. This topic also aims at focusing on advances in socio-technical management of technology such as innovation, learning by doing, decision making, cognition, etc. Finally, this topic aims at investigating new ways of thinking as well as new application areas for managing Advanced Manufacturing Technology at large.

INDUSTRIAL SAFETY, DEPENDABILITY AND QUALITY

In this way, Human-centered Industrial Engineering has to deal with the problem of finding a balance between the growing complexity of Industrial Systems and the control of the risks incurred by their overall environment. First, this topic aims at outlining that breaking off the partitioning of the multi-disciplinary points of view on the Safety, Reliability and the Quality of a Complex System with a global and integrated approach is the key for industry to successfully master the failures of Control-Systems based on sophisticated Information Technologies. This topic also aims at focusing on advances in design, instrumentation, diagnosis, operation, organization, standardization, certification, etc., related to safety systems. Finally, this topic aims at investigating new ways of engineering as well as new application areas for integrating Safety, Dependability and Quality in Industry at large.

INCOM'98 was built around these 6 topics related to advances in Industrial Engineering, from the more classic fields to the emergent trends about information control in manufacturing.

Exchanges between industrial R&D and academic R&D outlined a significant gap between the two communities. This difference is not only scientific but also in the objectives of research; for example, it appeared, at plenary sessions, that a scientific corpus could be well established and admitted in an academic community but could not really be implemented in the industrial world. It is the control of research which is in question; the practical validation of work is often a simulation or such a rough approximation of industrial reality that the results have little chance to be applied. Research is often in "open-loop" with respect to the industrial world or in "closed-loop" within a community which permanently self-validates its assumptions and results of work. Thus, certain researchers of INCOM' 98 felt embarrassed by the fact that the subjects as discussed in parallel sessions did not enable them to follow all work of their community; they did not understand that this organisation made it possible for them to open their minds to other scientists and disciplines. In conclusion, the Cybernetic Model should be applied to the process of research itself.

CONCLUSIONS AND RECOMMENDATIONS

It is the methodical construction of the program of INCOM'98 during 3 years which led to its scientific success. An important international committee brought together representatives of the academic and industrial communities on a high scientific level (academics, researchers, doctor-engineers, members of international programs of R&D, ...). The program was then built on 3 types of sessions which gave it a coherent scientific base. Indeed, the plenary and organized sessions made it possible to guarantee a priori a logic set of themes with the whole symposium objective (advances in industrial engineering) which explains the strong industrial implication (the industrialists knew in advance what to expect from this conference).

Gerard Morel

Real Time Programming

23rd IFAC/IFIP Workshop

Shantou, Guangdong Province, China, 23 – 25 June, 1998

Owing to the proliferation of embedded computerised control systems in all areas of our lives, the amount of software installed in these systems is presently doubling within just 18 months. This simple figure suffices to characterise the significance of the area of real time programming and real time software engineering. Owing to the corresponding demands for the functionality and dependability of complex real time systems, our intellectual and engineering abilities are being challenged to come up with practical solutions to the problems faced in their design and development.

Covering all aspects of software engineering for real time and embedded computer control systems, the IFAC/IFIP Workshops on Real Time Programming have addressed this important field for already more than 30 years. This year the meeting was held in Shantou, Guangdong Province, P.R. China. It was organised on behalf of the Chinese Association of Automation by Shantou University, and held on its premises. The workshop was generously supported, both ideally and financially, by the Shantou City Municipal Government, the Chaozhou City Municipal Government, the Advanced Education Committee of Guangdong Province, Sun Microsystems and by Shantou University.

The participants came from 13 countries. Their number (80) was larger than in former years, but could easily be handled with the excellent conference facilities of Shantou University. Fifty participants came from the Chinese mainland showing the great interest of Chinese scientists to participate in an international conference.

The 48 submissions coming from Europe, North America and the Far East were reviewed by at least three referees each, leading to the selection for presentation of 25 regular papers and 10 short papers. Thirty of these papers were from academia, 1 from industry-academia, and 4 from government research agencies. It is worth mentioning that 7 papers were the result of international co-operation, and that there were not any no-show papers.

The six regular sessions addressed the subject areas real time communication and formal specification, operating systems and their analysis, real time scheduling, real time programming, embedded systems, and neural networks in real time systems. Two poster sessions were held in the evening of the opening day for the presentation of the short papers.

Three world-class Keynote Speakers reported on research topics they are presently pursuing:

- Prof. Alan Shaw, University of Washington, U.S.A., gave an invited talk on "Real-Time Issues in Air Traffic Management (and Related) Systems",
- Prof. Wei Zhao, Texas A&M University, U.S.A., and City University of Hong Kong, presented a keynote speech on "Real-Time Communications in Computer Networks", and
- Dr. C. C. Lim, University of Adelaide, Australia, gave a talk on "Real-Time Scheduling Theory in Real-Time Control Applications".

The workshop commenced with an opening ceremony, in which Prof. Liang, Vice-President of Shantou University, Prof. Huang, Chairman of Shantou University, Prof. Hong, Vice-President of Shantou City, Prof. Dai, President of the Chinese Association of Automation, and Prof. Halang, Chairman of the IFAC Technical Committee on Real Time Software Engineering, addressed the participants with welcoming speeches. In the evening of the Workshop's first day the participants were hosted to a banquet in Shantou University. At the evening of the second day the participants went by bus to the Hotel of Shantou City, where they were received to a banquet by Prof. Jiang, Vice-Chairman of Shantou City, and Prof. Hong, Vice-President of Shantou City. The day ended with a boat tour around Shantou harbour. The Workshop's scientific programme closed in the late morning of the third day. In the offical closing ceremony, the participants were addressed by Prof. Liang, Prof. Dai and Prof. Halang.

Lichen Zhang and Wolfgang A. Halang
Conference Chairmen of WRTP'98

Control Engineering Practice Volume 6 Number 5, May 1998

Preview:

IFAC Meeting Papers – Keyword Listing

Linear Time Delay Systems

IFAC Workshop

Grenoble, France, July 6–7, 1998

This first Workshop in the rapidly growing field of time delay systems was organized by the Laboratoire d'Automatique de Grenoble, ENSIEG, INPG-CNRS, France. This Workshop was sponsored by the TC Linear Systems. The 50 participants had the possibility to listen to 4 plenary sessions, 2 invited sessions as well as 30 contributed papers selected from 40 submitted papers coming from 17 countries. The first Plenary session on "Systems over Rings: Geometric Theory and Applications" was presented by G. Conte (Italy). The second one, on "Algebraic Tools for the Control and Stabilization of Time Delay Systems" was given by J.-J. Loiseau (France). C.E. De Souza (Brazil) pointed out main aspects on the "Robust Stability and Control of State-Delayed Systems". The last Plenary session concerning "Finite Spectrum Property and Predictors" was presented by A.W. Olbrot (U.S.A.). The technical papers, arranged in 11 sessions, covered the field of linear time delay systems, including algebraic and structural properties, stability analysis, stabilization, Hinf control, robust stabilization and some applications. This Workshop provided an opportunity for fruitful scientific exchanges in a very pleasant atmosphere, including interesting discussions during the gala dinner. Because of the growing interest in the subject, it was decided to organize the next event on this topic in the year 2000.

L. Dugard J.M. Dion, M. Fliess
NOC Chairman, Conference Editor, IPC Chairman

Control Engineering Practice Volume 6 Number 6, June 1998

Preview:

IFAC Meeting Papers – Keyword Listing

Algorithms and Architectures for Real-Time Control (AARTC'98)

5th IFAC Workshop

Cancun, Mexico, 15–17 April, 1998

This Workshop moved to the American continent for the first time through the support of Professor Fabian Garcia Nocetti (IIMAS, UNAM, Mexico City) and the Mexican National Member Organisation. The Workshop, which was held at Krystal Hotel, Cancun, Mexico, was the fifth in the series; previous Workshops have been held at Bangor-UK, September 1991, Seoul-Korea, August/September 1992, Ostend-Belgium, May/June 1995 and last year in Vilamoura, Portugal.
The objective of the Workshop was to discuss and present new research and application results in emerging new developments in software and hardware for real-time control, as well as to bring together engineers and computer scientists from both the academic and the industrial world. While these meetings support a variety of interests with strong real-time industrial relevance, software tools and methods and the use of computational intelligence (neural networks, fuzzy logic) formed a core of the contributions this time in Cancun.
Following the Portugal, 1997 example for this IFAC Workshop series, the International Program Committee required full draft papers for review and also admitted "Late Breaking Extended Abstracts" to the Workshop. These abstracts consisted of short 2 page papers which described very recent research results. The IPC was very pleased with the high quality of the original 60 contributions received.
Two well-known international experts in the field were invited by the IPC to present plenary lectures. They were:
Professor Rolf Isermann (Darmstadt University of Technology, Germany): Hardware-in-the-loop simulation for the design and testing of control systems;
Professor Bernard Widrow (Stanford University, USA): Adaptive inverse control based on non-linear adaptive filtering.
Both Keynote Lectures attracted much interest and debate and, indeed, both Lecturers were active in discussions throughout the meeting.
Professor Graca Ruano organised a Special Session on Parallel and Distributed Algorithms for Real-Time Signal Processing and Control, arising out of a successful EU/Latin America programme.
In all, 2 plenary lectures and 46 regular & "late breaking" papers from 20 countries, were presented in 18 technical sessions during the three days of the Workshop. Professor Fabian Garcia Nocetti (UNAM, Mexico City) chaired the NOC and he and his team deserve great credit for the excellent Workshop organisation. Sessions ran smoothly and were well attended and an excellent rapport between delegates was promoted by warm hospitality from our Mexican hosts and social events which captured the spirit and culture of Mexico. For example, delegates were delighted to be led by a Mexican mariachi band for entertainment at a Gala Dinner at a local restaurant.
During the Workshop, the IPC reviewed papers presented at the meeting for possible publication in Automatica, Control Engineering Practice and IFAC Affiliated Journals. The AARTC Technical Committtee (Chair, Professor Wook Hyun Kwon) also held a useful meeting, where, amongst other things, a proposal to stage AARTC 2000 in Valencia, Spain was supported. And a Best Paper Award was established for subsequent Workshops through a donation by Professor Kwon.

Fabian Garcia Nocetti (NOC Chair) & Peter Fleming (IPC Chair)

Impressum:

Medieninhaber und Herausgeber:
International Federation of Automatic Control (IFAC),
Zurich
Schlossplatz 12, A-2361 Laxenburg, Austria

Verlagsort und Redaktion:
Dipl.Ing. Dr. Gusztáv Hencsey
Schlossplatz 12, A-2361 Laxenburg

Hersteller:
Artur Schefczik & Sohn
August-Reuss-Gasse, A-1130 Wien

Editor: Gusztáv Hencsey
Layout: Ernestine Rudas
published bimonthly

automatica

A Journal of IFAC the International Federation of Automatic Control

Papers from the September 1998 Issue

Papers from the October 1998 Issue

Papers from the November 1998 Issue

European Scientific and Industrial Collaboration on Promoting Advanced Technologies in Manufacturing WESIC'98

WESIC/IFAC Workshop

Girona, Spain, 10–12, June 1998

During June 10–12, 1998 the first WESIC Workshop on scientific and industrial collaboration to promote advanced technologies in manufacturing took place at the University of Girona, Spain. The event was sponsored by the University of Girona and cosponsored the European Community, IFAC, CICYT (Spanish Interministerial Comission for Science and Technology), the City Council of Girona and the Autonomous Catalan.

The workshop brought together around 100 participants from 12 European countries. It provided the suitable forum for companies, universities, institutes and research centres for interchanging their experiences in meeting the needs of advanced technology involved in manufacturing systems. Companies, research and educational institutions keen on collaborating in scientific projects of their sectors showed particular interest.

The workshop focused its activity on control and related technologies applied to the following subjects:

1. Robotics Integrated in Manufacturing
2. Control of Mechatronic Systems
3. Computer Integrated Manufacturing
4. Image Processing & Computer Vision
5. Intelligent Systems in Manufacturing and Control
6. Quality Control
7. Communications and Distributed Systems

After the official opening and the plenary session dedicated to the recent trends in research and to the EU 5th Framework Programme presentation, the workshop continued with the topic-specific *parallel sessions* in the first two days.
Participating research institutions introduced their activities in two sessions while some companies showed their products during the Workshop.
A special afternoon session was dedicated to the 2nd II/TAP Workshop on Distance Learning Conception and Exploitation of the Virtual Laboratory in the Framework of the "Virtual Campus: Academic and Industrial Vision". Here, valuable and real experiences in the distance education field were presented from the United Kingdom, Switzerland, France and Spain.
The last day, three *specialised sessions* (1. Supervision and Control of Autonomous Robots, 2. Vision Systems for Inspection with Self-learning Capabilities, and 3. Intelligent Systems in Manufacturing) and two *tutorials* (1. Simulation: An Industrial Need?, and 2. Uncertain Systems and Interval Analysis) were held, as well as a summary of the workshop activities was made.

Joan Batlle, WESIC'98 Chairman

IFAC

FORTHCOMING EVENTS

1998
No. 5
Oct.

Title	1998	Place	Deadline	Further Information
IFAC Conference Control Applications in Marine Systems – CAMS ,98	October 27 - 30	Fukuoka Japan	-	Prof. K. Kijima Kyushu University, Dept. of Naval Architecture Higashi-ku, Fukuoka 812, Japan FAX: +81/92/632 1560
IFAC Workshop 5th Intelligent Manufacturing Systems	November 9 - 11	Gramado Brazil	-	Prof. Carlos E. Pereira Rua Siqueira Campos 341/304 CEP 92010 - 230, Canoas RS, Brazil FAX: +55/51/ 316 3129 e-mail: cpereira@iee.ufrgs.br http:www.iee.ufrgs.br/iee.cepport.htm
VIII Latin American Congress on Automatic Control (in cooperation with IFAC)	November 9 - 13	Viña del Mar Chile	-	Prof. Gastón Lefranc H. Escuela de Ing. Electrica U. Catolica de Valpareiso Casilla 4059, Valpareiso, Chile FAX: +56/32/273804 e-mail: glefranc@aix1.ucv.cl http: //gavilan.die.uchile.cl/~mduartem/ACCA

Title	1999	Place	Deadline	Further Information
IFAC/IFIP Workshop 24th Real Time Programming	May 31 - June 2	Wadern Germany	18 December 1998	Alceu Heinke Frigeri, FernUniversität Hagen D-58084 Hagen, Germany FAX: +49/2331/987-375 e-mail: Alceu.Frigeri@FernUni-Hagen.de http://www.fernuni-hagen.de/IT/wrt
18th American Control Conference (in cooperation with IFAC)	June 2 – 4	San Diego CA, USA	-	Prof. A. Haddad, AACC Secretariat Dept. of ECE, North Western Univ. 2145 Sheridan Road Evanston, IL 60208-3118, USA FAX: +1/647/491 4456 e-mail: acc99@ece.nwu.edu http://www.marquette.edu/acc1999/
IMACS/IFAC 3rd Intl. Symposium Mathematical Modelling and Simulation in Agricultural and Bio-Industries	June 7 – 9	Uppsala Sweden	15 November 1998	SLU Conference Services, POB 7059 S-75007 Uppsala, Sweden FAX: +48/18/673530 e-mail: IMACS@slu.se
15th IMEKO WORLD CONGRESS	June 13 - 18	Osaka Japan	-	Society of Instrument and Control Engg. 35-28-303,1-Chome Hongo, Bunkyu-ku Tokyo 113, Japan FAX: +81/3/3814 4699
14th IFAC WORLD CONGRESS	**July 5 - 9**	**Beijing PRC**	-	**IFAC'99 IPC Secretariat Institute of Systems Science Chinese Academy of Sciences Beijing 100080, PR China FAX: +86/10/6258 7343 e-mail: ifac99@iss03.iss.ac.cn http://www.ia.ac.cn/ifac99/ifac99.html**
15th IFORS WORLD CONGRESS	August 16 - 20	Beijing PRC	30 Nov. 1998	IFORS XV Conference Secretariat Institute of Applied Mathematics Chinese Academy of Sciences Beijing 100080, PR China FAX: +86/10/6254 1689 e-mail: orchina@public.east.cn.net http://www.ifors.org/leaflet/triennial.html
16th IAARC/IFAC/IEEE Int. Symposium Robotics and Automation in Construction – ISARC 99	Sept. 22 – 24	Madrid Spain	11 January 1999	ISARC'99 Secretariat Universidad Carlos III de Madrid, c/Butarque, 15 E-28911 Leganés (Madrid), Spain FAX: +34- 91 624 94 26 e-mail: isarc99@ing.uc3m.es http://www.uc3m.es/isarc99
EFITA/IFAC Conference Information Technology in Agriculture	Sept. 27-30	Bonn Germany	*	Prof. Dr. Gerhard Schiefer University of Bonn, Meckenheimer Allee 174 D-53115 Bonn, Germany FAX: +49/228/733431 e-mail: schiefer@uni-bonn.de
EPS/IFAC Intl. Conference Accelerators and Large Experimental Physics Control System – ICALEPCS'99	Oct. 4 - 8	Trieste Italy	*	ICALEPCS 99 Conference Secretariat Sincrotrone Trieste, S.S.14 – Km 163,5 Basovizza, I-34012 Trieste, Italy e-mail: icalepcs@elettra.trieste.it FAX: +39/40/3758565

Title	2000	Place	Deadline	Further Information
IMACS/IFAC Symposium 3rd Mathematical Modelling – MATHMOD 2000	Feb. 2 - 4	Vienna Austria	15 May 1999	Prof. Inge Troch, Vienna University of Techn. Wiedner Hauptstr.8 - 10, 1040 Vienna, Austria e-mail: inge.troch@tuwien.ac.at FAX: +43/1/586 29 59 http://simtech.tuwien.ac.at/3rdMATHMOD

FORTHCOMING EVENTS (ctd.)

Title	2000	Place	Deadline	Further Information
IFAC/(IMEKO) Symposium Modelling and Control in Biomedical Systems – BIOMED 2000	March 30 - April 1	Karlsburg Germany	1 June 1999	Dr. Eckhard Salzsieder Institute of Diabetes "Gerhard Katsch" Greifswalder Str. 11 e D-17495 Karlsburg, Germany FAX: +49 38355 68444 e-mail: diab@rz.uni-greifswald.de http://www.diabetes-karlsburg.de
IFAC/CIGRE Symposium Power Plants and Power Systems	May 24 - 26	Brussel Belgium	June 1999	Ir. Jacques Debelle c/o Belgian Federation IBRA/BIRA Ravensteinstreet 3 B-1000 Brussels, Belgium FAX: +32 2 511 7004
IFAC Symposium (9th) Control in Transportation Systems	June 13 – 15	Braunschweig Germany	17 Sept. 1999	Prof. E. Schnieder Inst. f. Regelungs- und Automatisierungs-technik, Langer Kamp 8 D-38106 Braunschweig, Germany Fax: +49/531/391 5197 e-mail: transp-system2000@tu-bs.de http://www.ifra.ing.tu-bs.de/ifac/
IFAC Symposium Fault Detection, Supervision and Safety for Technical Processes – SAFEPROCESS 2000	June 14 – 16	Budapest Hungary	15 Oct. 1999	Prof. Andras Edelmayer Computer and Automation Institute, H A S Kende u. 13 – 17, H-1111 Budapest, Hungary FAX: +361/166 7503 e-mail: edelmayer@sztaki.hu http://sztaki.hu/conferences/safeprocess
IFAC Symposium (7th) Automated Systems Based on Human Skill – Joint Design of Technology and Organization	June 15 – 17	Aachen Germany	1 Jan. 2000	Dr. Dietrich Brandt, RWTH HDZ/IMA Dennewartstrasse 27 D-52068 Aachen, Germany FAX: +49/241/966622 e-mail: brandt@hdz-ima.rwth-aachen.de
IFAC Conference Control System Design	June 18 – 20	Bratislava Slovak Rep.	31 July 1999	Prof. Stefan Kozak, Ilkovicova 3 SK-81219 Bratislava FAX: 42/7/65429734 e-mail: kozak@kasr.elf.stuba.sk
IFAC Symposium Robust Control Design – ROCOND 2000	June 21 – 23	Prague Czech Rep.	Sept. 1999	Dr. Michael Sebek Institute of Information Theory and Automation CZ-18208 Prague, Czech Rep. FAX: +420/2/6884554 e-mail: msebek@utia.cas.cz
IFAC Symposium 12th System Identification – SYSID 2000	June 21 – 23	Santa Barbara CA, USA	1 Sept. 1999	SYSID 2000 Secretariat Dept. of El.& Comp. Engineering University of California Santa Barbara, CA, 93106, USA FAX: +1/805/893 3262 e-mail: sysid20000@ece.ucsb.edu http://www.ece.ucsb.edu/cfcec/SYSID2000
IFAC Workshop Control Application of Optimization	July 3 – 6	St. Petersburg Russia	1 Jan. 2000	Prof. D. Ovsyannikov St. Petersburg State University Fac. of Applied Maths. and Control Processes Bibliotechnaya pl. 2, Petrodvorets St. Petersburg 198904, Russia FAX: +7/812/428 7189 e-mail: Dmitri.Ovsyannikov@pobox.spbu.ru
IFAC Conference Modelling and Control in Agriculture Horticulture and Post-Harvest Processing – AGRICONTROL 2000	July 10 - 12	Wageningen Netherlands	1 Dec. 1999	Prof. Gerrit van Straten Wageningen Agricultural University t.a.v. Congresbureau, Costerweg 50 NL6701 BH Wageningen, Netherlands FAX: +31/317/483 331 e-mail: gerrit.vanstraten@user.aenf.wau.nl http: www.aenf.wau.nl/conf2000
IFAC Symposium (4th) Intelligent Components and Instruments for Control Application – SICICA 2000	Sept. 13 - 15	Buenos Aires Argentina	July 1999	Eng. Jonas Paiuk, Av. Callao 220 1o B 1022 Buenos Aires, Argentina FAX: +54/1/374-3700 e-mail: system@aadeca.satlink.net
IFAC Conference Mechatronic Systems	Sept. 18 – 20	Darmstadt Germany	30 November 1999	Prof. Rolf Isermann TU Darmstadt, Inst. of Automatic Control Landgraf Georg Str. 4 D-64283 Darmstadt, Germany FAX: +49/6151/293445 e-mail: RIsermann@iat.tu-darmstadt.de
IFAC/IEEE Symposium (5th) Advances in Control Education ACE – 2000	Dec. 17 - 19	Gold Coast Australia	January 2000	Dr. Ljubo Vlacic School of Microelectronic Engg. Griffith University Nathan, Qld. 4111, Australia FAX: +61/7/3875 5384 e-mail: L.Vlacic@me.gu.edu.au

*** deadline not yet known**

– deadline past