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International Federation of Automatic Control

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Modelling and Control for Participatory Planning and Managing Water Systems IFAC Workshop

Venice, Italy, September 29 – October 1, 2004

In many parts of the world, water demand is increasing while, at the same time, the availability and quality of water resources are decreasing, mainly due to human activities in connection with the growing world population, ongoing urbanization, industrialization and the intensification of agriculture. This development is often associated with general reductions in environmental quality and it endangers sustainable development. Integrated approaches are urgently required to identify and analyze such unfavourable and undesired developments and so allow for sustainable systems to be designed that integrate human society within its natural environment, for the benefit of both. It is generally agreed that *Integrated Water Resources Management (IWRM)* plays a crucial role in this context and that a participatory approach would help to better control and accelerate the integration, make the decision process more transparent and comparable across various river basins and scales, and increase confidence in an integrated, model-based, planning process. Notwithstanding the popularity raised by the IWRM paradigm in the last decade, there are still only a few applications in the real world, thus engendering a growing scepticism about the real potential of this attractive approach.

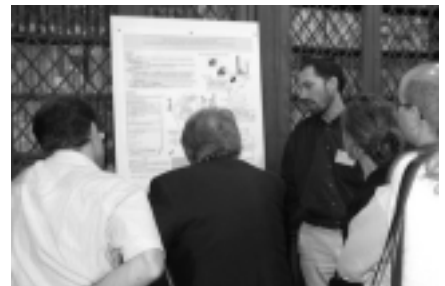
In order to respond to the demand for more research and development studies on IWRM, the IFAC Technical Committee 8.3 on *Modeling and Control of Environmental Systems* organized a Workshop on: *Modeling and Control for Planning and Managing Water Systems* that was held in Venice from the 29th September to the 1st October 2004. The objective of the Workshop was twofold: first, to present the state of the art of modeling and control techniques applied to water reservoir systems; and second, to foster an integrated and participatory approach. The particular framework of the workshop, as described below, clearly reflected this mindset. In order to emphasize the role of modeling and control methodologies as different stages of an integrated, multi-objective approach to planning and management, within a participatory decision-making perspective, the themes of the three days were:

- 1st day: Modeling (e.g. "Parsimonious modeling and its advantage to policy design", "Neural Networks", "Bayesian Belief Networks", "Data Mining", "Mechanistic Models", "Bounding Approach")
- 2nd day: Managing: control (e.g. "SDP" "Neural Network Control", "Fuzzy Control", "Robust Control", "Genetic Programming")

and DSS (e.g. "Decision Support Systems (DSS) for policy design");

- 3rd day: Planning: participatory decision-making and DSS.

Each theme/day was introduced by an invited paper, presented over approximately 90 minutes. This was followed by two sessions, each involving two papers with a total duration of approximately 120 minutes, that addressed pure theoretical aspects and/or case studies. The other accepted papers were presented through an afternoon poster session followed by discussions.



Poster Session

After the workshop, the articles selected for oral presentation will be gathered to form a thematic book, entitled *Topics on Planning and Managing Water Systems*

It is planned to include in this book a synthesis of the many discussions at the Workshop, since these represented not only different, interesting views on the topics dealt with in the papers, but they also emphasised their synergy.

In order to facilitate the discussion, the texts of the accepted papers were (and still are) available on the workshop's web site http://www.elet.polimi.it/IFAC_TC_Environment/Venice2004

For a couple of months before the workshop, the proceedings were distributed in electronic form (CD). All the participants were enthusiastic about the particular structure of the Workshop and the presentations. Last, but not least, everyone enjoyed the wonderful venue and warm hospitality offered by the host Institution: the *Instituto Veneto di Scienze Lettere ed Arti*, to whom everyone concerned would like to offer warm appreciation.

Rodolfo Soncini-Sessa, IPC

**Management and Control
of Production and
Logistics – MCPL '2004.
3rd IFAC/IEEE/ACCA
Conference.
Santiago, Chile
3 – 5 November 2004**

The 3rd IFAC/IEEE/ACCA Conference on Management and Control of Production and Logistics – “MCPL2004” was held from 3 to 5 of November 2004 at the Universidad de Las Americas in Santiago of Chile. This third event of MCPL was organized by ACCA, IEEE Chilean Chapter on Control, Robotics and Cybernetics, IFAC and its Technical Committees (Large Scale Complex Systems, Manufacturing Plant Control, Manufacturing Modeling, Management and Control, Components and Instruments, Robotics, Cost Oriented Automation), and the Universidad de Las Américas. It was supported by Sofofa Chile, Apec Chile, the Embassade Française and the Chilean Government.

Thus, the event has come back to Latin America, where the first Conference of this series had been organized. This third event strengthened the results of the previous Conferences by pointing to the main efforts in the same principal areas: Factory automation including robotics, flexible manufacturing system and supply chain, modelling, control and management methods and finally information and decision support system including also multi-agent approach. Note the various case studies to help the transfer and the application of the new scientific results.

The technical program reflected the strong interest in the areas mentioned. The 62 accepted papers selected by the International Program Committee, were presented in Technical Sessions where new ideas, critical comments, and the beginning of cooperation leading to future projects were discussed. The papers came from Argentina, Austria, Brazil, Belarus, Chile, Cameroon, England, France, Germany, Poland, Romania, Slovakia, and Spain. The papers were organized in 16 Sessions called FMS & Plant Control, Application/Case study, Supply-Chain Management, Diagnosis & Reliability, Management Techniques Based on Agents and Evolution, SME Network & Information Support System, Factory Automation & Robotics, Modelling and Control Tools, Planning & Scheduling, Discrete Event & Petri Nets. The IPC proposed 26 papers to be published in some of the IFAC Journals.

The keynote speakers at the plenary sessions were: Dr. François Vernadat from France, Dr. Florin Filip from Romania, Dr. Shimon Nof from the USA and Dr. Philippe Dupont, from France. Together with Jorge Yutronic, Dr. Zdenek Binder organised a Round Table to discuss productivity.

Similarly to the previous MCPL Conferences, this last meeting, with its variety of topics, diversity and interrelation of disciplines and broad viewpoints of the participants, contributed towards furthering and simplifying the exchange process and creating lasting relationships and the synergy necessary for cooperation and future partnerships.

We would like to express our gratitude to all contributors for their efforts as well as to those who helped prepare and complete this event, especially to the IPC and NOC members and co-sponsoring organisations.

Gastón Lefranc, Zdenek Binder
Co-IPC Chairs

**Automatic Systems for Building the Infrastructure in
Developing Countries - Regional and Global Aspects
IFAC Workshop**

Bansko, Bulgaria, October 3 - 5, 2004

The Forth IFAC Workshop on Automatic System for Building the Infrastructure in Developing Countries DECOM-TT 2004 was held in Bansko, Bulgaria, from 3 – 5 October 2004. The Workshop was sponsored by IFAC TC on Developing Countries with the support of Plovdiv-BT Bulgartabac, Festo Production, Information and Communication Technologies Development Agency, MTC, Sofia. A specific feature of DECOM-TT 2004 is that it was largely co-sponsored by another eight IFAC Technical Committees (TC), whose activities are relevant to topics of DECOM-TT.

The series of IFAC Workshops on Technology Transfer in Developing Countries (DECOM-TT) began in Pretoria, Republic of South Africa in 2000. The second WS of DECOM-TT 2001 was in Ohrid, Republic of Macedonia. The last one, DECOM-TT2003, was conducted in Istanbul, Republic of Turkey.

The aim of the 4th IFAC Workshop in this series was to act as an international forum for researchers and practitioners both in academia and industry, to present their latest research and ideas in the fields of

- Modeling, Simulation and Identification
- Decision Making and Optimization
- Advanced Control
- Intelligent Systems
- Information and Communication Technologies
- Control and Management in Transportation Systems- Control and Management of Power and Water Systems
- Production, Automation and Robotics
- Bio- and Medical System Control
- Environmental Aspects of Production Systems

The Program and Preprints of DECOM-TT 04 contain papers of authors from 16 countries: Austria, Germany, France, Greece, Italy, Sweden, Republic of Macedonia, Romania, Turkey, Russia, Latvia, Switzerland, Finland, Serbia and MN, USA, Bulgaria. Following a careful review process, the International Program Committee, made up of 70 renowned scientists from all over the world, approved 58 papers out of 70 which had been submitted. They cover a big part of the topics, requested in the announcement and call for contributions. The emphasis of this fourth edition of DECOM-TT were regional and global aspects of implementation of automatic control and system theory for building the infrastructure in developing-as well as small countries. About two thirds of the accepted papers concern infrastructural problems: to achieve more sustainable transport infrastructure by developing advanced road traffic control strategies; to involve new control and management approaches in power and water distribution systems; to apply system and control theory in communication and computing networks for effective search, data exchange and load dispatching; to integrate technological and environmental aspects in production systems; to modify existing and create new methods for decision making and optimization for complex systems.

Plenary papers were presented by Prof. P. Kopacek, Austria: Education for Automation in Developing Countries

Prof. H. Erbe, Germany: Remote Learning of Mechatronics
Prof. G. Dimirovski, Macedonia: Optimizing Supervision and Control for Industrial Furnaces: Predictive Control Based Design



Prof. G. Dimirovski

Prof. M. Papageorgiou, Greece: Overview of Road Traffic Control Strategies
Prof. V. Mauro and G. Franco, Italy: Using Transport Telematics to Help Developing Countries Achieve a More Sustainable Transport Infrastructure
Prof. Y. Popkov, Russia: Macrosystem Models of Flows in Communication-Computing Networks (Grid Technology)
Prof. I. Dumitrache, Romania : A DES-Supported Agent-Based Control Architecture for Flexible Manufacturing Systems

DECOM-TT 04 has real chances to fulfill the aims of this series of IFAC Workshops because all papers elaborate on rather timely problems of IFAC fields of expertise, which have significant impact on the emerging industrial, environmental and economic problems in developing countries, including national, regional and global aspects. All this was complemented by active discussions, exchange of ideas, opinions and experience during the plenary and technical sessions as well as informal personal contacts among researchers, engineers from industry and managers.

The participants expressed great appreciation for the organization of the event, including also the opportunity to experience part of the cultural and historical Bulgarian heritage. They made sight-seeing tours in Sofia and Bansko and visited museums, historical places, art galleries as well the famous tourist center of Bansko, at the foot of Pirin mountain. More information and pictures from DECOM04 can be seen at: <http://hsi.iccs.bas.bg/decom04>

Acad. Vasil Sgurev, IPC Co-chair
Prof. Georgi Dimirovski, IPC Co-chair
Prof. Mincho Hadjiski, NOC Chair



FORTHCOMING EVENTS

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Title	2005	Place	Further Information
EDS/IEEE/IFAC Conference 13th Solid-State Sensor and Actuators - Transducers05	June 5 – 9	Seoul Korea	e-mail: info@transducers05.org http://www.transducers05.org
American Control Conference - in co-operation with IFAC -	June 8 – 10	Portland OR, USA	http://www.ee.washington.edu/conf/acc2005/ e-mail: SJayasuriya@mengr.tamu.edu
16TH IFAC WORLD CONGRESS	JULY 4 – 8	PRAGUE CZ	http://www.ifac.cz
CACHE/IFAC Conference Foundation of Systems Biology in Engg. - FOSBE2005	August 7 – 10	St.Barbara, CA USA	http://www.fosbe.org e-mail: craven@fosbe.org
ICINCO/IFAC Conference (2 nd) Informatics in Control, Automation and Robotics	September 14 – 17	Barcelona Spain	http://www.incinco.org secretariat@icinco.org
EWICS Intl. Conference 24 th Computer Safety, Reliability and Security – SAFECOMP2005	Sept. 28 – 30	Fredrikstad Norway	http://www.safecomp.org e-mail: safecomp2005@hrp.no
IFAC Conference Fieldbus Systems and their Applications – FeT2005	November 14 – 15	Puebla Mexico	http://www.fet2005.cs.buap.mx e-mail: fet2005@cs.buap.mx
Title	2006	Place	Further Information
IFAC Symposium Mathematical Modelling – 5 th MATHMOD	February 08 – 10	Vienna Austria	http://simtech.tuwien.ac.at/MATHMOD/ email: inge.troch@tuwien.ac.at
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 Symposium Advanced Control of Chemical Proceses - ADCHEM 2006	April 2 – 5	Gramado Brazil	http://www.enq.ufrgs.br/adchem2006 e-mail: luciane@enq.ufrgs.br
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 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
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 Conference 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 5 th Robust Control – ROCOND	July 05 – 07	Toulouse France	http://www.laas.fr/rocond06 e-mail: rocond06@laas.fr
Asian Control Conference - in cooperation with IFAC	July 18 – 21	Bali Indonesia	http://www.ascc2006.com e-mail: secretariat@ascc2006.com
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 Fault Detection, Supervision and Safety of Technical Processes – SAFEPROCESS	August 30 - September 1	Beijing China	http://www.au.tsinghua.edu.cn/safe/safeprocess2006/ e-mail: safeproess2006@mail.tsinghua.edu.cn
IFAC Symposium 8 th Robot Control – SYROCO	September 6 - 8	Bologna Italy	http://www-lar.deis.unibo.it/syroco2006/ e-mail: cmelchiorri@deis.unibo.it

FORTHCOMING EVENTS (ctd.)

IFAC Symposium Mechatronics Systems	September 12 – 14	Wiesloch Germany	http://www.mechatronics2006.com e-mail: ringelmann@vdi.de
IFAC 50th Anniversary Celebration Present and Future of Automatic Control	September 15	Heidelberg Germany	
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:// to be announced 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 Nonlinear Control Systems	August 22 – 24	Pretoria South Africa	http:// www.nolcos2007.org.za e-mail: noc@nolcos2007.org.za
Title	2008	Place	Further Information
17th IFAC WORLD CONGRESS	July 6 – 11	Seoul Korea	http://www.ifac2008.org e-mail: Secretariat@ifac2008.org

Programmable Devices and Systems (PDS'04)

IFAC Workshop

Cracow, Poland, 18 – 19 November, 2004

IFAC Journals

The Tables of Contents of the IFAC Journals can be found respectively at

Automatica

<http://www.elsevier.com/wps/find/journaldescription.librarians/270/description>

Please note the Table of Contents given in this issue of the Newsletter of the Special Issue of Automatica on Data Based Modelling and System Identification

Control Engineering Practice

<http://www.elsevier.com/wps/find/journaldescription.librarians/123/description>

Engineering Applications of Artificial Intelligence

<http://www.elsevier.com/wps/find/journaldescription.librarians/975/description>

Journal of Process Control

<http://www.elsevier.com/wps/find/journaldescription.librarians/30445/description>

Annual Reviews in Control

<http://www.elsevier.com/wps/find/journaldescription.librarians/429/description>

The IFAC Workshop on Programmable Devices and Systems PDS'04 was convened at the Hotel European in Cracow on November 18 and 19, 2004. It was already the 7th event on this subject. The first PDS was organized by the Institute of electronics of the Silesian University of Technology in cooperation with the Higher Mining School VSB Technical University of Ostrawa in Gliwice in 1995. Since then, the events have been alternately organized in Gliwice and in Ostrawa, thus giving an example of the scientific cooperation of regions at the Polish-Czech border area. For the first time last year it was decided to move the conference venue to Cracow, in order to attract a wider group of scientists from all over the world.



informal exchange of opinions

Cracow is very attractive from a tourist point of view and is ideally connected to the world thanks to its international airport.

The PDS Workshop was sponsored by two Technical Committees
TC 3.1 on Computers for Control
TC 4.1 on Components and Instruments
In addition, the Workshop was supported by the Computer Society Chapter, IEEE Poland Section.

The main objectives of the Workshop were:

Creation of a forum to present the latest findings, exchange of experience in the PDS area and formulation of development trends in this discipline of electronics by the interaction of industry, research centres and technical universities.

The PDS'04 in particular covered the following topics with respect to programmable systems:

- Industrial programmable computers
- Field programmable logic
- Microprocessor systems and single-chip microcomputers
- Digital signal processing
- Communication

The website of the event is located at <http://pds2004.ielc.polsl.gliwice.pl/>. The Workshop organization, registration of participants, reviewing of papers, etc. Was all performed electronically, via internet and e-mail.

Out of 110 papers submitted for reviewing, 91 were accepted and presented during the 10 regular sessions and one poster session.

The papers will be published in the PDS2004 IFAC Workshop Proceedings.

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