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### Automatica

<http://www.elsevier.com/locate/automatica>

### Control Engineering Practice

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### Engineering Applications of Artificial Intelligence

<http://www.elsevier.com/locate/engappai>

### Journal of Process Control

<http://www.elsevier.com/locate/jprocont>

### Annual Reviews in Control

<http://www.elsevier.com/locate/arcontrol>

### Journal on Mechatronics

<http://www.elsevier.com/locate/mechatronics>

## 50th Anniversary of IFAC Present and Future of Automatic Control International Conference Heidelberg, Germany, 15 September 2006



**Join us at the Anniversary Celebration and register at:**  
<http://imperia5.vdi-online.de/imperia/md/content/gma2/452.pdf>  
 As the capacities of the townhall and the castle are limited, registrations will be considered in the order of receipt.  
 Deadline: September 5, 2006

To celebrate the 50<sup>th</sup> anniversary of IFAC a special event is planned in Heidelberg for Sept. 15, 2006, where IFAC was conceived during the „Internationale Fachtagung Regelungstechnik“ in 1956. It will take place in conjunction with the 4<sup>th</sup> IFAC Symposium on Mechatronics (Sept. 12 – 14, 2006). The event includes presentations on the past, with particular emphasis on the present and the future of automatic control in general, both from the theoretical and the application side and focuses on emerging areas as well. A panel discussion is planned to complement the lecture series, followed by a banquet. A special task force prepares several projects to document IFAC's history. The activities will be available in the World Wide Web.

The Anniversary Celebration is sponsored by the IFAC Council, the IFAC Technical Board and the IFAC Executive Board and is organized by the VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik together with the Task Force IFAC 50.

The National Organizing Committee (NOC) is chaired by Dieter Westerkamp (DE), the International Program Committee by Rolf Isermann (DE)

The venue will be the Heidelberg Convention Center – Townhall.

### Preliminary Program:

9:30. **Opening addresses**  
*Rolf Isermann, IPC-Chair, Germany*  
*Wook. Hyun Kwon, IFAC-President Korea*  
*Dirk Abel, Vice-President GMA Germany*  
*Raban von der Malsburg, Deputy Mayor of Heidelberg, Germany*

10:00 **On the history of IFAC**  
*Stephen Kahne, Embry-Riddle University, Prescott, United States of America*  
*IFAC President 1993–1996*

The history of IFAC is a story of its people and how a professional society can facilitate the world-wide dissemination of their technical contributions. The early structure of IFAC as an international scientific professional society was dictated by a realistic appraisal of the geopolitical situation in the world. That structure has evolved for half a century to remain effective in its mission of “promoting the science and technology of control in the broadest sense in all systems, whether, for example, engineering, physical, biological, social or economic, in both theory and application.” The talk will chronicle the people and events of IFAC, characterize its scientific meetings and publications, and document how thousands of like minded scientists and engineers have carried on the traditions of IFAC in an exemplary manner.

11:15 **Present developments in control theory**  
*Brian D. O. Anderson, The Australian National University, Australia*

Two precepts underpin any discussion of present developments in control theory. First, just as the state of a dynamical systems is a consequence of the past, so is this true of the ‘state’ of the control discipline, including the theoretical components. Predicting the future, a useful albeit imperfect activity, requires knowledge of the state, which is a form of summary of the past. Second, developments in control theory, as in any engineering discipline, are strongly shaped by external drivers, of economic and societal (e.g. defence, environment, health etc) character.

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In the light of these precepts, we review briefly the past history of the development of control theory, from the age of empiricism, through the industrial revolution, the first fifty years of the twentieth century, and the most recent 50 years.

This has brought us to a set of application driver challenges, many of which are centred around complex systems, such as the internet, power systems, collections of autonomous interacting agents displaying group behaviour, and the human body. A number of the theoretical and conceptual challenges of working with such systems will be exposed.

#### 12:00 **Present developments in control applications**

*Karl Johan Åström, Lund Institute of Technology, Sweden*

Applications of control are increasing dramatically. They are expanding in traditional fields like process- and motion control. Automotive control is emerging as a major application area. Control is indispensable for micro- and nano systems. Control is also making inroads in natural sciences, by becoming an essential part of new instruments such as atomic force microscopes and telescopes with adaptive optics. The fact that feedback is an essential part of all living organisms is now widely recognized and the concepts of control are beginning to give new understanding of biological systems.

The wide impact of control is due to advances in control theory, dramatic development of sensing and computing, and a well developed methodology supported by software tools. There are, however, many challenging emerging applications for which there is neither theory nor methodology. Typical examples are systems which are rich in

sensing and actuation, and systems that require autonomy, cognition and learning. There is also a growing understanding that successful applications require a combination of process knowledge with skills in control, computing and communication. The paper gives a broad perspective on the development of control applications. Implications for research, development and education are also presented as well as speculations about future development.

12:45 **Lunch**

#### 14:15 **Industrial automation: situation and trends**

*Peter Terwiesch, ABB Asea Brown Boveri Ltd., Switzerland*

- technology evolution of industrial automation systems over recent decades (including implications for suppliers and users)
- industry trends that shape today's automation requirements
- recent industrial application examples: 3-4 cases where automation including, but not limited to, advanced control enabled significant performance improvements (likely examples: rolling mill, cement/minerals, pulp&paper, power plant)
- outlook: personal perspective on further trends and barriers/opportunities for work to be done

#### 15:00 **Emerging areas in automatic control and its role for engineering**

Panel discussion (6 speakers),  
*Chair: S. L. Jämsä-Jounela, Helsinki University of Technology, Finland*

16:30 End of Anniversary Meeting

18:45 **Reception at Heidelberg Castle**

19:30 **Banquet at Heidelberg Castle**

## Heidelberg

The name stands for the world-famous Castle and a picturesque Old Town in breathtakingly beautiful surroundings. Heidelberg stands both for oldest university in today's Germany and modern research facilities, for historic streets and a lively university atmosphere, for total relaxation and beautiful walks, plus stimulating international conferences and festivals. It also stands for the longest and one of the most attractive pedestrian zones in Europe. Heidelberg is located in central Germany and is easily accessible by rail, car or by aeroplane via Frankfurt Rhein-Main Airport.

*Registration Fee:* incl. evening reception and banquet Euro 100,00

Accompanying person (spouse or companion in life only)  
Euro 70,00

Detailed and updated information as well as the **registration form** for the event is available under

<http://www.vdi.de/ifac50>.

*Hotel and Directions:* Participants are asked to book/reserve their accommodation themselves early. The tourist office "Heidelberger Kongress und Tourismus GmbH" has reserved a block of rooms for participants at the various hotels and has arranged special rates. The participants are asked to book their hotel rooms directly by visiting:

<http://germany.nethotels.com/info/heidelberg/ifac/>

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Heidelberg Castle

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## Fieldbus Systems and their Applications – FeT

### 6<sup>th</sup> IFAC Conference

Puebla, Mexico

14 – 16 November, 2005

The 2005 issue of FeT – Fieldbus Systems and their Applications Conference was held in Puebla, Mexico, thus being the first American edition. FeT'2005 was supported by a large International Program Committee with about 40 members from 15 countries, 6 of them from Europe. 34 high quality papers from 13 different countries were selected for presentation at the conference.

The conference was organized in 13 sessions with the following topics: safety, dependability and security, real-time and distributed systems, building automation, automation networks and real-time Ethernet, applications (all with 2 sessions), networked control systems, wireless networks and automotive. The sessions also allowed for comprehensive discussion of the papers.

Two keynote speeches from experts outside Europe were also organized. The first one, entitled "Bandwidth Allocation Scheme in Fieldbuses" was presented by Prof. Seung Ho Hong, from Hanyang University, Korea, and reflected the usual focus of the conference on fieldbuses. The second speech was presented by Prof. Ian F. Akyildiz, from the Georgia Institute of Technology, USA and addressed "Key Technologies for Wireless Networking in the Next Decade". The choice of this latter subject reflects the current interest of wireless communications for industrial applications.

In order to reinforce the research community that supports the FeT conferences, the steering committee has awarded diplomas to the authors with more papers published in the five first editions of the conference. Besides the challenging technical program, the conference included a nice social program with a high quality welcome reception and conference dinner. Puebla was found to be a charming historical place quite close to many Mexican historical sites. The participants could enjoy a bit of Mexico while profiting to reinforce the work and friendship ties already established within this research community.

José Alberto Fonseca

## Informal Meeting of the IFAC Officers

Laxenburg, Austria, 5 – 6 May, 2006

As has been a long-standing tradition, also this year the IFAC Officers (President W.H. Kwon, Past President V. Kucera, Vice-Presidents P. Fleming and S.L. Jämsä-Jounela, Incoming President A. Isidori and the Treasurer L. Guzzella) held an Informal Meeting at the premises of the IFAC Secretariat together with the Secretary (K. Schlacher) and the staff of the Secretariat. These meetings have taken place annually, ever since 1981. As the word „informal“ already indicates, no decisions are taken.

On the evening preceding the actual meetings, the President invites the heads of the Austrian authorities, involved in providing a home to the IFAC Secretariat as well as administrative- and technical support to the IFAC staff to a dinner. Ever since the Secretariat came to Laxenburg, it has turned into a stable centre of the administrative operation of the Federation, thus providing the required stability. This year is also the first year in the Presidency of Prof. W.H. Kwon and at the same time the 50th anniversary of IFAC and of the Austrian NMO of IFAC, and he used the opportunity of the dinner to say the following:



Prof. W.H. Kwon

„This year marks the 50<sup>th</sup> anniversary of IFAC. An occasion to highlight the historical links which have always connected IFAC with Austria. Austria was one of the original signatories of the resolution, which was the starting point for IFAC in 1956.

Over the years, the Austrian NMO has been one of the most active ones, organizing 48 IFAC events. For a long time, the Austrian Centre for Productivity was the NMO of IFAC, until the Austrian Society for Robotics took over in 2002. It speaks for continuity that the transition from one NMO to the other was very smooth and that we can welcome representatives of both here today.

Austria was not only active with respect to the key tasks of IFAC, that is, the organization of technical events, but Austria has also been instrumental in providing administrative and financial assistance to the IFAC Secretariat.

Thanks is also due to the Austrian Academy of Sciences, which has acted as employer for the Austrian staff of the Secretariat ever since it came to Austria. Beyond that, the Academy and its Computer Centre have been a tremendous source of support in establishing a computer network at the Secretariat and in providing space for the IFAC Website on its hostcomputer.

All in all, IFAC can consider itself very lucky and is very pleased and happy to have such strong support in and through Austria. It is with great confidence in the future that we thus celebrate our 50<sup>th</sup> anniversary.

Over the many years we have come to Austria in spring, most of you have become our friends. Inviting you here today thus is not only a token of our gratitude and respect, but also of the friendship that binds us together.

This is the first meeting in Austria which I chair as President of IFAC. Every Presidency ends with the IFAC Congress in the country of the President. So, we are getting ready for the next IFAC Congress in Seoul, Korea. Let me conclude by expressing a first invitation to join us in Seoul in 2008. The next two years we will have the pleasure to tell you more about the highlights of this most important IFAC event in every triennium.“



## FORTHCOMING EVENTS 2006

for a complete list of forthcoming IFAC events go to the IFAC Website at <http://www.ifac-control.org/generated/fcevents.htm>

2006  
No. 3  
June

Title	2006	Place	Further Information
Intl. Workshop Variable Structure Systems – VSS06	June 05 – 07	Alghero Italy	<a href="http://www.diee.unica.it/vss06/">http://www.diee.unica.it/vss06/</a> e-mail: <a href="mailto:vss06@diee.unica.it">vss06@diee.unica.it</a>
IFAC Conference 6th Analysis and Design of Hybrid Systems ADHS'06	June 07 – 09	Alghero Italy	<a href="http://www.diee.unica.it/adhs06/">http://www.diee.unica.it/adhs06/</a> e-mail: <a href="mailto:adhs06@diee.unica.it">adhs06@diee.unica.it</a>
2006 American Control Conference – in cooperation with IFAC –	June 14 – 16	Minneapolis MN, USA	<a href="http://www.a2c2.org/conferences/acc2006/">http://www.a2c2.org/conferences/acc2006/</a> e-mail: <a href="mailto:misawa@ceat.okstate.edu">misawa@ceat.okstate.edu</a>
IFAC Conference Improving Stability in Developing Nations through Automation – ISA'06	June 15 – 17	Prishtina UN Mission in Kosovo	<a href="http://www.ihrt.tuwien.ac.at/swiis2006/">http://www.ihrt.tuwien.ac.at/swiis2006/</a> e-mail: <a href="mailto:mwhan@ihrt.tuwien.ac.at">mwhan@ihrt.tuwien.ac.at</a>
IFAC Symposium 7th Advances in Control Education – ACE 06	June 21 – 23	Madrid Spain	<a href="http://www.dia.uned.es/ace2006/index.html">http://www.dia.uned.es/ace2006/index.html</a> e-mail: <a href="mailto:ace2006@dia.uned.es">ace2006@dia.uned.es</a>
IFAC/IEEE Symposium Power Plant and Power System Control	June 25 – 28	Kananaskis/Alberta Canada	<a href="http://ifacpps2006.org/">http://ifacpps2006.org/</a> e-mail: <a href="mailto:ifacPPS2006@ucalgary.ca">ifacPPS2006@ucalgary.ca</a>
IFAC Conference Analysis and Control of Chaotic Systems	June 28 – 30	Reims France	<a href="http://www.univ-reims.fr/chaos06">http://www.univ-reims.fr/chaos06</a> e-mail: <a href="mailto:chaos06@univ-reims.fr">chaos06@univ-reims.fr</a>



## FORTHCOMING EVENTS 2006 (ctd.)

Title	2006	Place	Further Information
IFAC Workshop Intelligent Solutions in Embedded Systems	June 30	Vienna Austria	<a href="http://clara.tuwien.ac.at/wises06/">http://clara.tuwien.ac.at/wises06/</a> e-mail: to be announced
IFAC Symposium 5 <sup>th</sup> Robust Control – ROCOND	July 05 – 07	Toulouse France	<a href="http://www.laas.fr/rocond06">http://www.laas.fr/rocond06</a> e-mail: rocond06@laas.fr
IFAC Workshop 6th Time Delay Systems – TDS06	July 10 – 12	L'Aquila Italy	<a href="http://www.diel.univaq.it/IFACTDS06">http://www.diel.univaq.it/IFACTDS06</a> e-mail: bricca@briccaevents.it
Asian Control Conference – in cooperation with IFAC	July 18 – 21	Bali Indonesia	<a href="http://www.asc2006.com">http://www.asc2006.com</a> e-mail: secretariat@asc2006.com
IFAC Workshop Lagrangian and Hamiltonian Methods for Nonlinear Control	July 19 – 21	Nagoya Japan	<a href="http://www.robot.kuass.kyoto-u.ac.jp/lhmlc06/">http://www.robot.kuass.kyoto-u.ac.jp/lhmlc06/</a> e-mail : lhmlc06@hava.nuem.nagoya-u.ac.jp
IFAC Workshop Fractional Differentiation and its Applications	July 19 – 21	Porto Portugal	<a href="http://www.gecad.isep.ipp.pt/FDA06">http://www.gecad.isep.ipp.pt/FDA06</a> e-mail: fda06@dee.isep.ipp.pt
INSTCC/IFAC Conference Informatics in Control, Automation and Robotics – ICINCO-2006	August 01 – 05	Setubal Portugal	<a href="http://www.icinco.org">http://www.icinco.org</a> e-mail: secretariat@icinco.org
IFAC Symposium Control in Transportation Systems	August 29 – 31	Delft Netherlands	<a href="http://www.rws-avv.nl/ifac-cts2006">http://www.rws-avv.nl/ifac-cts2006</a> e-mail: ifac-cts2006@avv.rws.minvenw.nl
IFAC Workshop Applications of Large Scale Industrial Systems – ALSIS'06	August 30 – 31	Helsinki, FI cruise liner	<a href="http://ntsat.oulu.fi/index.php?286">http://ntsat.oulu.fi/index.php?286</a> e-mail: office@atu.fi
IFAC Symposium Fault Detection, Supervision and Safety of Technical Processes – SAFEPROCESS	August 30 – September 1	Beijing China	<a href="http://www.au.tsinghua.edu.cn/safe/safeprocess2006/">http://www.au.tsinghua.edu.cn/safe/safeprocess2006/</a> e-mail: safeprocess2006@mail.tsinghua.edu.cn
IFAC Symposium 8 <sup>th</sup> Robot Control – SYROCO	September 06 – 08	Bologna Italy	<a href="http://www-lar.deis.unibo.it/syroco2006/">http://www-lar.deis.unibo.it/syroco2006/</a> e-mail: cmelchiorri@deis.unibo.it
IFAC Workshop Bio-Robotics III	September 09 – 10	Sapporo Japan	<a href="http://www.bpe.agr.hokudai.ac.jp/BioRoboticsIII/index.html">www.bpe.agr.hokudai.ac.jp/BioRoboticsIII/index.html</a> e-mail : tkataoka@bpe.aghokudai.ac.jp
IFAC Symposium Mechatronic Systems	September 12 – 14	Heidelberg Germany	<a href="http://www.mechatronics2006.com">http://www.mechatronics2006.com</a> e-mail: ringelmann@vdi.de
<b>IFAC 50<sup>th</sup> Anniversary Celebration Present and Future of Automatic Control</b>	<b>September 15</b>	<b>Heidelberg Germany</b>	<a href="http://www.vdi.de/ifac50">http://www.vdi.de/ifac50</a>
<b>As the capacities of the townhall and the castle are limited, registrations will be considered in the order of receipt. Deadline: September 5, 2006</b>			
IFAC Symposium 6th Modelling and Control of Biomedical Systems	September 20 – 22	Reims France	<a href="http://www.univ-reims.fr/mcbms06">http://www.univ-reims.fr/mcbms06</a> e-mail: mcbms06@univ-reims.fr
IFAC Workshop Automation in Mining, Mineral and Metal Processing	September 20 – 22	Cracow Poland	<a href="http://konferencje.polsl.pl/IFAC2006">http://konferencje.polsl.pl/IFAC2006</a> e-mail: IFAC2006@polsl.pl
IFAC Conference Manoeuvring and Control of Marine Craft MCMC-06	September 20 – 22	Lisbon Portugal	<a href="http://mcmc06.isr.ist.utl.pt">http://mcmc06.isr.ist.utl.pt</a> (to be activated) e-mail: to be announced
IFAC Workshop Discrete-Event System Design DESDes'06	September 26 – 28	Rydzyzna Poland	<a href="http://www.desdes.uz.zgora.pl/">http://www.desdes.uz.zgora.pl/</a> e-mail: DESDes@ie.uz.zgora.pl
IFAC Workshop Energy Saving Control in Plants and Buildings	October 02 – 03	Bansko Bulgaria	<a href="http://www.tu-sofia.bg/IFAC_ESC/index.html">http://www.tu-sofia.bg/IFAC_ESC/index.html</a> e-mail: esc06@tu-sofia.bg
IFAC Workshop Multi-Vehicle Systems – MVS 2006	October 02 – 03	Salvador, BA Brazil	<a href="http://www.lti.pcs.usp.br/mvs2006">http://www.lti.pcs.usp.br/mvs2006</a> e-mail: mvs06@mail.pcs.usp.br
IFAC Workshop Nonlinear Model Predictive Control for Fast Systems (NMPC_FS'06)	October 09 – 11	Grenoble France	<a href="http://www.lag.ensieg.inpg.fr/NMPC_FS06/">http://www.lag.ensieg.inpg.fr/NMPC_FS06/</a> e-mail: NMPC_FS@lag.ensieg.inpg.fr
IFAC Workshop Advanced Process Control for Semi- Conductor Manufacturing	December 04 – 05	Singapore Singapore	<a href="http://ifacsm06.nus.edu.sg/index.html">http://ifacsm06.nus.edu.sg/index.html</a> e-mail : ifacsm06@nus.edu.sg
IFAC/IIASA Workshop New Approaches of Dynamic Optimisation to Assessment of Economic and Environmental Systems	December 05 – 07	Laxenburg Austria	<a href="http://">http://</a> to be announced e-mail: to be announced