IFAC International Federation of Automatic Control
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Newsletter

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Distributed Computer Control Systems – DCCS'98

IFAC Workshop

Lake Como, Italy, 9–11 September, 1998

The DCCS'98 Workshop was the 15th in the series of IFAC Workshops on Distributed Computer Control Systems and it continued a tradition started in the 1970s of maintaining a consistently high technical standard. It followed the Workshops held in Seoul in 1997 and Toulouse in 1995.

The Workshop was sponsored by the IFAC TC on Distributed Computer Control Systems and was organized by the Department of Information Science of the Universita degli Studi di Milano on behalf of the Italian NMO of IFAC.

The aim of the Workshop was to highlight and discuss computer control systems that are required to be highly dependable and to have deterministic timing properties. Distributed architectures have the potential to meet this challenge. The advantages of distributed computer control systems include the possibility of composing large systems out of pre-tested components with small integration effort, their well-defined fault containment properties and their capacity to make effective use of mass-produced silicon chips.

During the three days of the Workshop 26 papers presented both theoretical and practice-oriented viewpoints.

Topics covered included the trade-off between services, dependability mechanisms and system-level properties in real-time communication networks and protocols, event-triggered and time-triggered protocols, models for analysing and predicting response times in distributed systems and for predicting the effect of response-time jitter on the performance of feedback control loops. The application of formal methods to the specification and development of safety-critical control software also received much attention. Distributed object methodologies and object request brokers were also highlighted as being promising approaches for the programming of large-scale, heterogeneous distributed systems. Finally, applications reported included control systems for traffic lights, jet engines, automobiles, fully-automatic trains and flexible manufacturing systems.

The Workshop provided an excellent opportunity for people from the disciplines of computer science and control engineering to meet and exchange ideas on the stimulating topic of distributed computer control systems.

Ian MacLeod
University of the Witwatersrand, IPC Chair

Flavio De Paoli
University of Milan, NOC Chair

Low Cost Automation – LCA '98

IFAC Symposium

Shenyang, China, P.R.

8–10 September, 1998

The 5th IFAC Symposium on Low Cost Automation LCA'98 was attended by 90 participants from 10 countries..

It was sponsored by the IFAC Technical Committee on Low Cost Automation and co-sponsored by the TCs on Social Impact of Automation and Developing Countries. The Symposium was organized by the Automation Research Institute of the Ministry of Metallurgical Industry and the Research Center of Automation, Northeastern University and on behalf of the Chinese Association of Automation, with the support of the National Natural Science Foundation. The aim of the LCA'98 Symposium was to bring together experts in this area to present and review the state of the art and the trends in developments of Low Cost Automation, and to exchange ideas of mutual interest as well as to promote the friendship within the IFAC family.

The International Program Committee was composed of 25 members from 22 countries. A total of 140 papers were submitted, from which a selection of 81 papers was included in the technical program. The technical sessions were organized in two parallel sessions, covering the following topics:

- Robust Control
- Process Control Application
- Robot Control
- Actuator & Drivers
- Fuzzy Control
- Manufacturing
- Control Theory
- Knowledge Based Systems
- Modeling
- Neural Network & Intelligent Control

The main lines of the Symposium were presented and discussed in the framework of three invited plenary sessions, with the following invited speakers and subjects:
Professor P. Albertos: Trends in Low Cost Automation; Professor G. Goodwin: Predicting the Performance of Soft Sensors as a Route to Low Cost Automation; Professor Chai Tian You: Object-oriented Integrated Control Technology of Complex Industrial Processes.

The general impression of the meeting was that low cost automation is an important method to increase the development of automation especially in medium- and small sized industries as well as to promote the competitive ability of these industries. Feedback from the participants indicated that the Symposium was a full success.

Chen Zhen-Yu, IPC Co-chairman

Control Applications and Ergonomics in Agriculture – CAEA'98

IFAC Workshop

Athens, Greece, 14–17 June, 1998

CAEA'98 was sponsored by the Technical Committee on Intelligent Systems in Agriculture of the CC on Life Support Systems, and was organized by the Agricultural University of Athens on behalf of the Technical Chamber of Greece, the Greek National Member Organization.

The workshop was held at the Divani Caravel Hotel near the Acropolis. The International Program Committee reviewed the 69 papers submitted in extended abstract form and selected 53, from 15 countries. In this workshop an attempt was made to fuse the disciplines involved in the requirements, specification, design and implementation of control systems for the automation of agricultural systems. The main topics of the workshop were:

Generic developments
- Emerging technologies (ANNs, genetic algorithms, fuzzy and neuro-fuzzy control)
- Sensor fusion for estimation, detection, quality assessment, interpretation
- Models and model methodology for optimal control or management

Implementation of Control and Management
- Control and management of agricultural systems, at farm or regional level
- Internet, Intranet, local nets, GIS, GPS, for farm management
- Machine automation, harvesting and robotics
- Advanced sensors and data acquisition

Ergonomics and Human Interfaces
- Labour aids, man in the loop systems and human welfare
- Safety, man-machine interfacing, human comfort
- Labour efficiency enhancements, fatigue detection

Future Prospects of Control Applications in Agriculture
- Optimal climate control by integration of plant or animal responses.
- New network techniques for control in agriculture.

During the first two days about 60 participants had the opportunity to attend 14 sessions, including a plenary and 2 invited sessions with a panel discussion.

Participants, during the opening ceremony, were addressed by Prof. Kyritsis, Rector of the Agricultural University of Athens, and Ing. Sinanis, of the Technical Chamber of Greece Council, who discussed the importance of this growing field of Agricultural Automation, with links to ingenious ancient Greek apparatuses. Prof. Panos Antzaklis, Past President of CSS-IEEE, USA, delivered the keynote speech on Emerging Control Technologies that aim to introduce higher autonomy and intelligence in systems and commented on their impact. He then described recent methodologies for hybrid and supervisory control of systems and focused on the power of discrete event systems. Prof. Peter Young, UK, reviewed modern innovative methods for the modeling of imperfectly mixed processes and presented some cases of interest for the control of the ventilation and climate in agricultural buildings. Prof. Gerrit van Straten, NL, presented the acceptance of optimal cultivation control methods in greenhouse operation. He distinguished various levels of integration and sophistication from fully integrated optimal control, through the optimal generation of setpoints, to the optimal advisory systems. He noted there is a need to bridge the gap between what is possible in theory and what will be acceptable in practice. Prof. Haruhiko Murase, Japan, elaborated on biological processes, which become the paradigm of neural network design and training, and proceeded to show that a photosynthetic algorithm is capable of reaching good solutions in combinatorial optimization problems.

Of the two invited sessions the first was on "Networking Agriculture". The panelists were selected from the corresponding sessions and were chaired by Prof Sigrimis. Themes addressed were from low-level control network technologies or infranets, such as CAN and intelligent sensors, through farm level networks and onwards to Internet possibilities, with examples of programs to educate young farmers. The chairman reviewed the themes and discussed his thoughts on distributed intranets and the establishment of Virtual Private Networks on the Internet. He pointed out that such a Virtual Agricultural Network has many possibilities, from using Knowledge Bases for control and management, to developing electronic trade as well as unifying remote sites into a virtual agricultural society. The second invited session addressed the theme of Optimization in Practice and was chaired by Prof Robert E. King, the workshop program chair. He outlined the different theoretical methods available and gave some examples of applications in analytical papers for optimization of agricultural processes, and then compared conventional hard control technologies with unconventional techniques based on Soft Computing and Computational Intelligence. A number of diverse opinions were expressed on this hot topic and the discussion triggered several other issues. Prof. Antsaklis suggested that both conventional and unconventional technologies are useful, each finding its application domain. We should let the application field do the selection in a natural process of technological evolution.

At closing the workshop, Prof. Hashimoto, the CC chairman on Life Support Systems, gave an overview of the past and upcoming related event streamlines. He also announced two special sessions, one on models and control and one on AI for agriculture, to be held during IFAC World Congress '99, Beijing, China.

Finally Prof. Sigrimis, the IPC chairman, thanked all participants for their presentations and discussions and acknowledged the support of the Technical Chamber of Greece (TEE) for the organization of the workshop. He announced that a good number of papers will be selected for publication in the COMPAG journal, and invited all attendees to participate in the third day excursion for a technical visit to Marathon and then on to ancient Delphi.

It is hoped that this workshop contributed towards bridging the gap between the control theorists and the practicing agricultural engineers so as to better comprehend the needs of the agricultural sector and the technological developments in the field. Such interdisciplinary cooperation will hopefully lead to research and developments of more efficient and balanced systems, necessary to protect the environment and improve our lives.

Nick Sigrimis, IPC Chair

Peter Groumpos, NOC chair

Robert King, Program Chair

Control in Natural Disasters

IFAC/SICE Workshop

Tokyo, Japan

21–22 September, 1998

The Workshop on Natural Disasters was held on 21-22 September, in the University of Tokyo, Japan, sponsored by the IFAC Technical Committee on Modeling and Control of Environmental Systems and the Society of Instrument and Control Engineers, Japan. This was the first IFAC Workshop in which natural disasters were discussed from the viewpoint of the control systems approach. The aim of this workshop was to exchange ideas concerning the contributions of control Science and technology to life support systems in disasters and large-scale catastrophes, such as earthquakes, focusing not only on technological but also on social and human aspects, and to establish a new discipline in the field of control. 21 papers were selected out of 24 submitted papers from 10 countries in regular sessions, and 15 papers from 3 countries in special sessions. Further, there were 2 plenary papers about disasters. The proceedings will be published by Elsevier Ltd, including 2 plenary speeches, 4 regular sessions and 3 special sessions. The session titles were: Regular sessions, " Decision Making and Risk Management", "Modeling and Data Processing", "Recovery and Rescue" , and "Control and Modeling for Earthquake Disasters". Special sessions were: "Process Operation in Natural Disasters", "Base Isolation Control of Structures Subjected to Seismic Excitation" and "Control of Wind-Induced Damages to Buildings and Structures". Moreover, two plenary talks on "Post-Earthquake Fires and Performance of Fire-Fighting Activity in the Early Stage in the 1995 Great Hanshin-Awaji Earthquake" and "Urban Disaster Reduction-Proposal for the Future" were presented by Dr. A. Sekizawa and Prof. Y. Kawata, respectively. 47 persons from 5 countries attended the workshop: Australia, Estonia, Hong Kong, Poland, U.S.A. and Japan, and had fruitful discussions for two days.

One young author, Mr. W. P. Latusek, from Poland won the financial support in the form of an international scholarship from this Workshop. Prof. Y. Sawaragi as a Past President of IFAC, Prof. Y. Hashimoto as chairman of the Coordinating Committee and Prof. K. Furuta as a Council member of IFAC attended the workshop.

Akira Sano, Editor of the preprint
Rokuya Ishii, IPC Chairman

Intelligent Manufacturing Systems – IMS'98

5th IFAC Workshop

Gramado, Brazil, 9–11 November, 1998

The Workshop on Intelligent Manufacturing Systems provides an opportunity to assess the state of the art, to present new results, and to discuss possible lines of future development. As a truly international event, it is held in different parts of the world. It was organised together with the ‚Sociedade Brasileira de Automatica - SBA' (Brazilian Automation Society), the Brazilian IFAC National Member Organisation, and the ‚Sociedade Brasileira de Computacao - SBC' (Brazilian Computer Society).

IMS'98 attracted 84 participants from 15 countries (approx. 50% from Brazil). The IPC members reviewed 79 abstracts and as result 56 papers were accepted for presentation. These contributions deal with fundamentals of IMS, such as neural networks, Petri nets, holonics, object-oriented tools, scheduling, modelling and control, as well as ‚tools' e.g. robotics, storage systems, CAD/CAM/CAE. Only in some papers real applications were presented. The program was completed by poster presentations and two invited papers.

In a panel discussion worldwide and national research networks were presented and discussed e.g. IMS-Europe, ICIMS NOE, RECOPE (a national Brazilian research network).

P. Kopacek, IPC Chair, C.E. Pereira, NOC Chair

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Offenlegung:

Das Medienwerk 'IFAC Newsletter' wird als Organ der 'International Federation of Automatic Control' (IFAC) verlegt und ist Eigentum dieser Internationalen Föderation, deren Tätigkeit der Förderung von Wissenschaft und Technik automatischer Regelung und Steuerung dient. Die Föderation hat ihren Sitz in Zürich und ist nach Schweizer Recht als gemeinnütziger Verein angemeldet. Sie verfolgt weder wirtschaftliche noch praktische Ziele.
Das Sekretariat der IFAC befindet sich seit 1978 aufgrund eines Übereinkommens mit der Österreichischen Bundesregierung mit der Österreichischen Akademie der Wissenschaften in Laxenburg.
Der 'IFAC Newsletter' erscheint sechsmal jährlich in englischer Sprache unter der Redaktion des Generalsekretärs der IFAC, Dipl.Ing.Dr. Gusztáv Hencsey. Die Zeitschrift dient der Information über die Aktivitäten der IFAC. Sie wird kostenlos an Abonnenten in 50 Länder versandt. Die Kosten werden von der IFAC aus Beiträgen der derzeit 48 Mitgliedsländer getragen.
Präsident der IFAC für 1996/99 ist Prof. Yong-Zai Lu (VR China). Vizepräsidenten sind Prof. Vladimir Kucera (CZ) und Prof. Rolf Isermann (D). Alle Funktionen werden ehrenamtlich ausgeübt.

(To our readers: To comply with the Austrian 'Media Act', every publication must contain a declaration once a year concerning ownership and purpose, as above.)

WHO IS WHO IN IFAC

Professor Wook Hyun Kwon

Professor Wook Hyun Kwon graduated with a B.Sc. and M.Sc. in Electrical Engineering from Seoul National University (SNU) Seoul Korea in 1966 and 1972 respectively. He was awarded a Ph.D. in Control from Brown University in 1975. From 1975 to 1976 he was a research associate at Brown University and from 1976 to 1977 he was an adjunct assistant professor at the University of Iowa. Since 1977, which includes a period from 1981 to 1982 when he was a visiting assistant professor at Stanford Universitv, he has been with Seoul National University.

During his career Professor Wook Hyun Kwon has published more than 60 international journal papers and approximately 120 international conference papers. In recognition of his academic and industrial achievements in Korea he was endowed with a POSCO professorship from Pohang Steel Company in 1995, and in 1997 received the National Academy of Sciences Award, which is the highest formal academic award in Korea. He is a Fellow of the Korean Academy of Science and Technology and is also a member of the National Academy of Engineering in which he serves as Chairman of the Program Committee.

Professor Wook Hyun Kwon has devoted himself to promoting control engineering in Korea. Since 1991 he has been the Director of the Engineering Research Center for Advanced Control and Instrumentation established at SNU by the Korean Science and Engineering Foundation (KOSEF). This Center won the prestigious Universitv LEAD Award of the Society of Manufacturing Engineers (SME) in U S.A. under his guidance in 1996. He was a key founder of the Korea Automatic Control Conference, now in its fourteenth year, in which about 650 persons participate every year. He was a key founder and is now President-elect of the Institute of Control Automation and Systems Engineers which is the Korean NMO of IFAC. In 1995 he was the founding Director of the Information Center for Automation Technology, established in SNU by KOSEF This Center will serve as a mirror site for the IFAC web page in Asia. He is also now Vice-President of the Korean Institute of Electrical Engineers.

He has supervised 29 Ph.D and 41 M.Sc. students some of whom have founded eight venture companies in Korea.

In IFAC he has been the Korean NMO delegate in the General Assembly and Chairman of the Technical Committee on Algorithms and Architecture for Real-time Control since 1996. At the last Council Meeting Korea was selected to be the IFAC Congress site in 2008 and Prof. Kwon will be President for the 2005-2008 period. He was the founding Vice-Chairman of the Asian Control Professors Association (ACPA) in 1996 and also a founding member of the Steering Committee of the Asian Control Conference (ASCC).

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FORTHCOMING EVENTS 1999

(the list of events of the year 2000 and beyond will be published in the next issue of the IFAC Newsletter)

Title	1999	Place	Deadline	Further Information
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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	-	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 Chine FAX: +86/10/6258 7343 e-mail: ifac99@iss03.iss.ac.cn http://www.ia.ac.cn/ifac99/ifac99.html http://www.ciccst.org.cn/ifac99**
15th IFORS WORLD CONGRESS	August 16 - 20	Beijing PRC	-	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
2nd Intl. Workshop European Scientific and Industrial Collaboration – WESIC 99	September 1 – 3	Newport UK	1 July 1999	Ms Jane John Mechatronics Research Ctr, UWCN, POB 180 Newport NP9 5XR, UK FAX: +44/1633/432342 e-mail: j.john@newport.ac.uk http://www.newport.ac.uk/mrc
16th IAARC/IFAC/IEEE Int. Symposium Robotics and Automation in Construction – ISARC 99	September 22 – 24	Madrid Spain	11 January 1999	ISARC'99 Secretariat Escuela Politécinca Superior Univ. Carlos III de Madrid, c/Butarque, 15 E-28911 Leganes (Madrid), Spain FAX: +34 91 624 94 30 e-mail: isarc99@ing.uc3m.es http://www.uc3m.es/isarc99
EFITA/IFAC Conference Information Technology in Agriculture	September 27-30	Bonn Germany	30 April 1999	Prof. Dr. Gerhard Schiefer University of Bonn Meckenheimer Allee 174 D-53115 Bonn, Germany FAX: +49/228/733431 e-mail: efita99@uni-bonn.de http://www.dainet.de/efita99
EPS/IFAC Intl. Conference Accelerators and Large Experimental Physics Control System – ICALEPCS'99	October 4 - 8	Trieste Italy	19 March 1999	ICALEPCS 99 Conference Secretariat Sincrotrone Trieste, S.S.14 – Km 163,5 Basovizza, I-34012 Trieste, Italy FAX: +39/40/3758565 e-mail: icalepcs@elettra.trieste.it http://www.elettra.trieste.it/ICALEPCS99
ISA/IFAC Conference INTERKAMA-ISA TECH	October 18 – 23	Düsseldorf Germany	1 February 1999	I S A, Ms. Susan Janke 67 Alexander Drive, POB 12277 Research Triangle Park, NC 27708 FAX: +1/919/549-8288 e-mail: info@isa.org http://www.isa.org/interkama
IFAC Workshop Multi-Agent Systems in Production	December 2 – 4	Vienna Austria	30 June 1999	Dr. Gernot Kronreif, Institute of Robotics Vienna University of Technology Floragasse 7 A, A-1010 Vienna, Austria FAX: +43/1/504 18 359 e-mail: kronreif@ihrt1.ihrt.tuwien.ac.at http://www.ihrt.tuwien.ac.at/MAS99/

East Meets West

3rd International Workshop

Palanga, Lithuania, 8–12 September, 1998

Lithuania is one of the three newly independent Baltic States with a rich history and cultural tradition. As Dr. Gediminas Serksnys, Deputy Minister of Foreign Affairs (LT), pointed out, the country is today proud of its independence and its achievements to have changed from a centrally planned economy "to a system based on the principles of market economy. But possibly the most difficult and complicated procedures were taking and are still taking place in human minds, their ways of thinking".

These introductory words set the scene for the 3rd International Workshop "East meets West" which took place at Palanga, Lithuania. The event was jointly organized by the IFAC TC on Social Impact of Automation and the NMO of Lithuania, reprensented by A. Nemura, Lithuanian Academy of Sciences. It was the first IFAC event in Lithuania after the NMO was accepted within IFAC in 1997.

54 representatives from university, industry and politics attended the workshop, 22 papers were presented on Sept. 9/10, 1998.

The main area of concern at the workshop was to analyze how the joint efforts of university, industry and politics in industrial automation and control can support the country's difficult transition into today's technological world. Almost all presentations discussed in which way either "Western" technology has been adapted to the needs of the Lithuanian industry, or how "indigeneous" research has led to new solutions to industrial problems. Lithuania is to be considered as one example standing for all these countries of the former Eastern Europe which are on the verge of rejoining Europe. Therefore other countries were also analyzed within this workshop, e.g. Slovenia. Furthermore recent developments of humanization of work and of environmental technology in the U.K. and Germany were compared with the achievements and needs of these "Eastern" countries. Three of these issues will briefly be described below.

Control of fertilizer production has particular importance because of the energy consumption and pollution risks in the production process. Kaunas University of Technology has developed and implemented its own automation and control concept based on "Western" technology but it takes specific care to guarantee the smooth transition of the plant technology to the new concept (L. Balasevicius). In a similar project, a plant for glass production (e.g. sheet glass) has been thoroughly re-designed in order to meet world market quality and productivity requirements. The concepts implemented (and still being implemented) include new technology. Furthermore they comprise the decentralisation of production leading to semi-independent workshops and departments with increased levels of self-organization (S. Kausinis).

Projects of this kind closely correspond to what the Lithuanian Government has made its core concern for industrial development. As C. Purlys described on behalf of the Lithuanian Ministry of Economy, the State budget has been shaped by the concept of a "Programmatic Management of Lithuanian Industry": Enterprises can apply for development funds through such project proposals. Emphasis is given to sustainable and qualitative development; a favourable environment for business and innovation; improvement of the quality of goods manufactured for both the domestic and international market etc.

A specific problem has been given to Lithuania – as to many other countries of the former Soviet Union – through the Ignalina Nuclear Power Plant of the Chernobyl type. It is located at the North-eastern corner of the country. It provides more than 80 % of the country's power, but it makes it difficult for Lithuania to join the European power network because its frequency cannot be controlled and stabilized in accordance with European standards (A. Nargelas). Enormous efforts have been undertaken by Sweden, Germany and the USA as J. Vilemas, S. Sidaras (LT) and J. H. Bickel (USA) reported. These efforts have aimed at improving safety standards without extending the remaining life span of the reactors which is estimated to be 10-20 years. Today the Lithuanian plant is considered to be much safer than any other of its type. Thus the controversy may currently not only be whether to switch the plant off, but also how to bring all other Eastern European plants of the same type up to the same safety standard.

Dietrich Brandt, Chairman, IPC
Saulius Kausinis, Co-Chairman, NOC

Neural Computation (NC'98)

International ICSC/IFAC Symposium

Vienna, Austria, 21–25 September, 1998

The symposium was organized by ICSC Canada/Switzerland in cooperation with the Institute of Automatic Control at the Vienna University of Technology and under the auspices of IFAC. The symposium was co-sponsored by IEEE, Siemens, OeVE and OeCG.

On Monday and Tuesday, September 21 and 22 a full-day workshop entitled "Applied Neural Computation" based on ECANSE (Environment for Computer Aided Neural Software Engineering) was organized by Monika Sturm and Walter Reinisch, Siemens PSE, Austria.

Tuesday featured a full-day tutorial by Hans Bothe, Switzerland/Germany on "Neuro Fuzzy Systems" and a half day tutorial entitled "Approximation of Functions by Feedforward Neural Networks" by Vera Kurkova, Czech Republic.

Tutorials and workshop were offered free of charge to all participants of the main conference. These events thus formed an important part of the conference; they were much appreciated and enjoyed by a large number of participants.

On Wednesday the conference was opened by the President of the Vienna University of Technology, Peter Skalicky, the dean of the faculty, Alexander Weinmann, ICSC-President Hans Ryffel and the General Chairman of NC'98, Michael Heiss from Siemens Austria.

Keynote speeches were given by Igor Aleksander on "Models of Visual Awareness in Multi-Module Neural Networks", Wolfgang Maass on "Spiking Neurons", Hans Bothe on "The Merging Senses: Neuromorphic Approaches to Auditive-Visual Signal Processing" and Ernst Haselsteiner on "Using Neural Networks in a Fingerprint Recognition System".

175 papers were presented in 5 parallel tracks. A complete list can be found at

http://www.icsc.ab.ca/09-publ.htm.

In order to motivate the authors to give enthusiastic and outstanding presentations, the best paper of each session was awarded with the "Siemens Best Presentation Award". The award presentations took place prior to the following mornings' plenary talk with the positive side effect that even after a late evening, everybody seemed to be present at the keynote speeches.

The 200 participants came from 35 countries and all 5 continents. Our main goal was for all participants to feel part of a large Neural Computation"family" during this conference - just as much for dinstinguished professors and senior scientists as for young researchers attending their first conference. We were happy to observe that we seemed to have reached this goal. Many thanks to Jeanny and Hans Ryffel from ICSC who managed the tremendous workload of NC'98 in their well known professional but also personal way - without them this success would not have been possible. Many thanks to IFAC as the co-organizing body, all the sponsors, and all who contributed to the conference.

Michael Heiss, Chair NC'98

Computer Safety, Reliability and Security SAFECOMP'98

17th International Conference

Heidelberg, Germany

5 – 7 October, 1998

The main sponsors were IFIP, EWICS and GI. Cosponsors were IFAC, GMA, OCG, ECRESS and Namur. The presentations of the conference focussed on the application of computers in industrial safety related systems.

Invited presentations came from Dres Andrea Servida from the Commission of the European Communities on the CEC's dependabililty support policy, Tony Frederickson (US) on the software tools and procedures of Triconex Corporation, Bas de Mol (NL) on medical informatics and from Erwin Schoitsch (A) on ISA-EUNET.

The first session of the conference was chaired by Pofessor R. Lauber (D), who had started the series of Safecomps years ago under IFAC sponsorship. Most of the papers dealt with software. The contributions were mainly on formal methods, including specification, design and verification. Remarkably few papers were about software and probabilistic aspects. The feeling was also that the area of computer hardware safety is no longer of scientific interest; only marginal parts on that topic were integrated in some presentations. The necessary number of redundant channels for a control system of a particular safety integrity level, however, gave rise to a controversial discussion.

The security contributions were stimulating. One presentation dealt with the clarification of responsibilities in large safety related software projects, which include bought-in software and bespoke software. Use of public key mechanisms and trust centers was suggested to guarantee autenticity.

From the industrial contributions it became clear that the plans for using computsers are widespread. In the years to come virtually no train or automobile will run without computers in its safety related parts. The standard IEC 61508 will play a major role for licensing computer systems.

The conference attracted about 75 participants, mainly from industry; the majority of attendees came from Germany, many were from the other European countries.

Wolfgang Ehrenberger, IPC chairman