10th IFAC World Congress in Munich

A milestone in IFAC's 30 year history

Opening Ceremony of the IFAC World Congress

A. Jaumann
Bavarian Minister of Economy and Transport

K. Heinzenog
Mayor of the city of Munich

followed with particular interest. D. Ernst (FRG) and B. Phillipson (UK) demonstrated the latest developments in industrial applications of automation; S. Narita (J) devoted his lecture to the ever more important role of information technology in systems control; the state of the art in theory and application of discontinuous control systems was presented by V. Utkin (SU); E. Gotzein (FRG) analysed the control challenges of spacecraft, stations and platforms while a survey on tele-robotics was given by T. B. Sheridan (USA). Additional information for the congress participants was provided by permanent video demonstrations on applied control techniques and the book exhibitions of Pergamon Books Ltd and the VDI-Verlag GmbH.

The 15 technical visits organised by our hosts gave the congress participants an excellent opportunity to visit the leading R&D laboratories and industrial plants of the Federal Republic of Germany to get acquainted with the latest developments in control applications and High Tech.

At the Closing Session of the Congress, L. Ljung, the incoming IFAC Vice-President and Technical Board Chairman stated: "The first impression is rather breathtaking: So much to choose among and so little time. That may perhaps sound discouraging, but it really reflects the strength of the IFAC Congress: To encompass the whole broad field of automatic control and bring together the world's leading scientists, engineers and students of this field in a truly international event. I believe it is worth while to stress the social aspects of this. Among the many technical meetings that are arranged in our community by IFAC and by many other..."
national and international organizations, only the IFAC Congress is a place where you can meet everyone, where industrial and academic representatives can interact in a fruitful way over a broad spectrum of topics."

Boris Tamm, incoming IFAC President, in his closing speech, praised the good organization and warm hospitality of the Munich Congress and thanked for the hard and excellent work accomplished by H. Wiefels and his team.

Before and during the Congress week, meetings of the IFAC General Assembly, the Council and other IFAC bodies took place. More details on the technical program of the Congress, its evaluation as well as the meetings and the decisions taken on these occasions can be found in this and forthcoming issues of the IFAC Newsletter.

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**New Personalities Come in to Serve IFAC with New Ideas**

At the Closing Ceremony of the Congress, M. Thoma, IFAC President from 1984–1987, expressed his warmest thanks to all members of the Council, the IFAC Secretariat, the IFAC Boards and Committees, who had all supported him during the last three "unforgettable and rewarding years."

In his address M. Thoma stated:

"Ten outstanding personalities have served as IFAC presidents up to now. I consider it one of the greatest honours of my professional career that the chance was given to me to lead our truly international federation. Besides, the excellent consensus in basic professional matters, the pleasant human relations made it rather easy to carry the load."

M. Thoma handed the formal attributes of his office — gavel and seal — to his successor B. Tamm and pointed out:

"I consider the three-year rotation principle an excellent rule because new personalities come in to serve IFAC with new ideas. This is especially needed in our rapidly developing field. IFAC must be kept dynamic."

Taking over the presidency B. Tamm said:

"Over the past 3 years the first violin was played by our outgoing and Immediate Past President, Prof. Manfred Thoma, who not only succeeded in maintaining IFAC's high standard but also had new ideas. Our tradition has developed towards stimulating young scientists, excellent lecturers and education in our field of activity. Because of Prof. Thoma's outstanding contributions to our federation which were based on a broad professional and cultural background, IFAC is at present in a good technical, organizational and financial shape. IFAC is very lucky to have had Prof. Thoma as President for the last period."

At the end of the closing session a film of Tallinn, the venue of the 11th IFAC World Congress in 1980, was shown and everybody was invited to come to the Estonian capital.  

**IFAC General Assembly**

**New NMOs, New Officers**

At its statutory General Assembly, held in Munich, FRG on July 27, 1987, the representatives of the National Member Organizations unanimously voted in favour of two organizations that had applied for IFAC membership:

- The Korean Association of Automatic Control
  - Seoul National University
  - Dept. of Control and Instrumentation Engineering
  - 55-1 Shinrim-Dong, Kwanak-Ku, Seoul, Korea
  - Kuwait Society of Engineers
  - Strasse
  - POB 4047 (Safat), Kuwait

Furthermore the General Assembly adopted some minor amendments to the IFAC Constitution and By-Laws.

A unanimous vote was also cast in favour of the new officers and Council members. The slate of candidates had been proposed by the Elections Committee for the 1987–1990 period. The following persons will hold positions in IFAC during the next triennium:

**COUNCIL**

**President**

B. Tamm (SU)

**President-Elect**

B. D. O. Anderson (AUS)

**Vice-President (Technical Board)**

L. Ljung (S)

**Vice-President (Executive Board)**

S. Kahnhe (USA)

**Immediate Past President**

M. Thoma (D)

**Treasurer**

M. Mansour (CH)

**Ordinary Members**

H. Akashi (J)

A. van Cauwenbergh (B)

J. A. Fossard (F)

G. Guardabassi (I)

V. Kubera (CZ)

P. Larsen (DK)

L. Lazarov (BG)

Yong-Zai Lu (PRC)

G. Hencsey (H)

**SECRETARY**

L. Ljung (S)

R. Gellie (AUS)

R. Isermann (D)

A. H. Levis (USA)

L. Martensson (S)

**CHAIRMEN OF TECHNICAL COMMITTEES**

S. Kahnhe (USA)

M. Thoma (D)

M. Mansour (CH)

G. Hencsey (H)

J. D. N. van Wyk (ZA)

J. Gertler (USA)

B. D. O. Anderson (AUS)

**TECHNICAL BOARD**

**Chairman**

**Vice-Chairmen**

**Members**

**EXECUTIVE BOARD**

**Chairman**

ex officio (Immediate Past President)

ex officio (Treasurer)

ex officio (Secretary)

ex officio (Chairman Policy Comm.)

ex officio (Chairman Publ. Comm.)

ex officio (Chairman Adm. & Fin. Comm.)
Presentation of IFAC Awards

Professor K. J. Åström
Awarded the Quazza Medal

In the opening ceremony of the 10th IFAC World Congress, the President of IFAC, M. Thoma, presented the Giorgio Quazza Medal to Karl-Johan Åström. He is the third holder of this award, after Prof. J. F. Coates and Prof. Z. Tsypkin. K. J. Åström had been proposed by the Quazza Medal Selection Committee on the basis of his outstanding contributions to automatic control as a scientist and engineer. His activities in the fields of stochastic control, computer control, and computer-aided control engineering are well known throughout the control community. It is in particular the application of modern theoretical methods to practical and industrial problems that characterizes his work. Moreover, he is recognized for his education leadership in control. The rare ability to combine in an excellent way theory and practice has, among other factors, been the reason for his several visiting appointments in the USA and in a number of European countries.

At present K. J. Åström is holder of the Chair of Automatic Control at the Lund Institute of Technology where he was responsible for building up the new department. His outstanding contributions have been recognized through a number of other awards as well. Among them are the Automatica Prize Paper Award in 1984 and the Rufus Oldenburger Medal of the American Society of Mechanical Engineers in 1996.

Professor Åström has served IFAC in a number of functions. He was Vice-Chairman of the Theory and the Advisory Committee and an ordinary Council member from 1981 — 1987.

Automatica Prize Paper Award

As already at the 9th Congress, the Chairman of the Selection Committee, Professor Pieter Eykhoff, stressed how difficult it was to select the most prizeworthy papers out of the great number of contributions of high standing. This had been the reason not only to select the prizewinners but also to give honorable citations to some papers.

The following papers were rated prizeworthy based on the facts mentioned with each paper:

D. W. Clarke
Self-Tuning Control of Nonminimum-Phase Systems

“This paper reports on very essential developments of adaptive systems. It is considered to be of high quality and innovation. It has deep relevance to the profession. The presentation and organization are excellent.”

J. C. Willems
From Time Series to Linear Systems
part 1 — Finite Dimensional Linear Time Invariant Systems
vol. 22, no. 6, pp. 675 — 694 (1986)
vol. 23, no. 1, pp. 87 — 115 (1987)

“These papers present a fresh theoretical view of systems modeling in a fundamental, precise and elegant way. The first part condenses everything that has been learned about systems theory in the last twenty years in a most beautiful way. In the second and third part innovative ideas in identification are presented and worked out. They are considered to be the best theoretical papers that have been published anywhere during the past three years.”

W. Leonhard
Microcomputer Control of High Dynamic Performance AC Drives — A Survey

“This paper reports on real control engineering achievements in an important field. It has high relevance to the profession and society. It contains many new aspects. Its organization and presentation is excellent.”

Modelling, Estimation and Control in the Relief of Post-Operative Pain
Automatica, vol. 21, no. 4, pp. 343 — 360 (1985)

“This paper is considered to be of great interest. It testifies the fact that tools, developed for modelling and model-based control, might also work in the context of medical applications and thus, eventually, benefit everyone.”

The following papers received an honorable citation:

V. Peterka
Predictor-Based Self-Tuning Control

“This is considered to be an essential step in the development of self-tuning control. Besides its present value it is also reminiscent of the pioneer function in adaptive control that the author developed in the late sixties.”

J. M. Jover
T. Kailath
A Parallel Architecture for Kalman Filter Measurement Update and Parameter Estimation

“This paper is considered to have provided outstanding contributions to the fundamental issues in algorithms and architectures of Kalman filters for VSLI implementations. It enables the achievement of a magnitude of improvements in the real-time speed and performance of such a filter.”

IFAC Congress Young Author Prize

At the closing ceremony of the Congress, the chairman of the selection committee, Prof. S. Kajne, Vice-President of IFAC (Executive Board) announced the prize-winning paper and authors out of the 6 finalist papers which had been selected previously. The members of the selection committee had closely followed the presentation of each of the candidate papers. The prize-winning paper had been singled out during the Congress.

H. Kasahara
H. Fujii
M. Iwata
Parallel Processing of Robot Simulation Session 8.2 — 5

presentation of the Automatica Prize Paper Award.

From left to right: M. Thoma, O. Jacobs, J. C. Willems, D. W. Clarke.
William E. Miller and Tibor Vamos
Appointed Lifetime Advisors

At the opening ceremony President M. Thoma appointed T. Vamos and W. E. Miller lifetime Advisors of IFAC and presented to them the “Advisor’s Seal” of the Federation. Academician T. Vamos had been President of IFAC from 1981—1984. His activities in IFAC date back to 1959 since which time he has always held important positions in IFAC. Due to his personality and far-sightedness he not only maintained the high standard of the Federation but added many new dimensions to it as well. Mr. Miller has been active in IFAC since the first World Congress in Moscow in 1960. Coming from industry his contributions to the Federation stressed the applications side and practical aspects of automatic control. He served the Federation as Vice-President from 1981 until 1987.

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The other finalists were:

R. Stelter
Two Stage Singular Perturbation Model Reduction for Gas Transmission Networks

J. P. Keller
D. Bonvin
Selection of Inputs for the Purpose of Model Reduction and Controller Design

A. M. Walczyna
Static and Dynamic Properties of a Current Controlled Doubly-Fed Induction Machine

Guo Gang
Spacecraft Attitude Real-Time Determination System Based on Multiprocessor Distributed Architecture

S. Noid
Fault Detection in AC Drives by Process Parameter Estimation

IFAC Congress Control Education Textbook Prize

Also at the Closing Ceremony the Control Education Textbook Prize was awarded for the first time to the following authors:

G. Goodwin
K. S. Sin
Adaptive Filtering, Prediction and Control Prentice Hall, 1984

We have just learned the sad news that Professor Ole A. Solheim passed away on August 19, 1987. His untimely death came just two weeks after he had been elected chairman of the IFAC TC on Terminology whose vice-chairman he had previously. His contribution to IFAC will be greatly missed by his friends and colleagues in the IFAC community. He will be remembered as one who helped further the communication between and among control engineers speaking different languages in different parts of the world.

On August 17, 1987, Mr. Maurice Remillieux, Secretary General of the Union of International Technical Associations, of which IFAC is a member, died suddenly and unexpectedly.

Photographs in this issue by:
W. Weitzel

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<th>Deadlines</th>
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<tr>
<td>IFAC/IMEKO/IMACS Symposium</td>
<td>Venice</td>
<td>April 6—8</td>
<td>Prof. C. Cobelli, Istituto di Elettrotecnica e di Elettronica, University of Padova, Via Gradenigo 6/a, I-35131 Padova, Italy</td>
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<tr>
<td>IFAC/FIP Symposium Software for Computer Control</td>
<td>Johannesburg</td>
<td>April 26—28</td>
<td>Prof. I. M. Macleod, Dept. of Electrical Engineering, University of Witwatersrand, 1 Jam Smuts Ave, Johannesburg 2001, ZA</td>
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<tr>
<td>IFAC/FIP Workshop (15th) Real Time Programming</td>
<td>Valencia</td>
<td>May 25—27</td>
<td>Prof. J. A. de la Puente, Dept. de Sistemas, Informaticos y Comput, Universidad Politecnico POB 22012 E-46071 Valencia, Spain</td>
</tr>
<tr>
<td>FIP/FAC Conference Hardware and Software for Real-Time Process Control</td>
<td>Warsaw</td>
<td>May 30—June 1</td>
<td>Prof. J. Zielinski, Institute of Atomic Energy PL-05-400 Otwock/Swierk, Poland</td>
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<tr>
<td>IUTAM/IFAC Symposium Dynamics of Controlled Mechanical Systems</td>
<td>Zurich</td>
<td>May 30—June 3</td>
<td>Prof. M. Mansour, Institute of Automation ETH Zurich, CH-8092 Zurich, Switzerland</td>
</tr>
<tr>
<td>INRIA/IFAC (8th) Conference Analysis and Optimization of Systems</td>
<td>Antibes</td>
<td>June 8—10</td>
<td>Ms. Thi. Bricheteau, INRIA, B.P. 105 Domaine de Voluceau F-78153 Le Chesnay, France</td>
</tr>
<tr>
<td>IFAC Workshop Model Based Process Control</td>
<td>Atlanta, GA</td>
<td>June 13—14</td>
<td>Prof. Y. Arkun, Dept. of Chemical Engineering, Georgia Institute of Technology, Atlanta, GA 30332, USA</td>
</tr>
<tr>
<td>IFIP/IFAC Conference Software for Manufacturing PROLAMAT</td>
<td>Dresden</td>
<td>June 14—17</td>
<td>Prof. D. Kochan, Technische Universitat Dresden Sektion Fertigungstechnik und Werkzeugmaschinen PROLAMAT '88 Mommensstrasse 13, DDR-8027 Dresden, GDR</td>
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<tr>
<td>IFAC Workshop Control Application of Nonlinear Programming</td>
<td>Tbilisi</td>
<td>June 21—25</td>
<td>Acad. V. A. Traspeznikov, USSR National Committee of Automatic Control, Moscow GSP 312, USSR</td>
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<td>IFAC/IMEKO/IMACS Symposium Distributed Intelligence Systems: Methodology and Applications</td>
<td>Varna</td>
<td>June 27—July 1</td>
<td>DIS '88 Symposium Information Centre &quot;INFORMA&quot;, POB 26 BG-1592 Sofia, Bulgaria</td>
</tr>
<tr>
<td>IFAC Symposium Trends in Control and Measurement Education</td>
<td>Clyne Castle</td>
<td>July 11—13</td>
<td>Ms. Rosamund da Gama, The Institute of Measurement and Control 87 Gower Street, London WC1E6AA, UK</td>
</tr>
<tr>
<td>IFAC Symposium Adaptive Control of Chemical Processes</td>
<td>Lyngby</td>
<td>August 17—19</td>
<td>Prof. M. Kummel, Denmark Technical University Institute for Kemiteknik, Bldg 229 DK-2800 Lyngby, Denmark</td>
</tr>
<tr>
<td>IFAC Workshop Robust Adaptive Control</td>
<td>Newcastle</td>
<td>August 22—24</td>
<td>Prof. G. C. Goodwin, Dept. of Electrical &amp; Computer Engrg The University of Newcastle, N.S.W. 2308, Australia</td>
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<tr>
<td>4th IFAC Symposium Computer Aided Design in Control and Engineering Systems</td>
<td>Beijing</td>
<td>August 23—25</td>
<td>Prof. Chen Zhen-Yu, CACDS '88 Secretariat Application Committee of the Chinese Association of Automation P.O. Box 919, Beijing, PRC</td>
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* deadline not yet known
## FORTHCOMING EVENTS (ctd.)

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<th>Title</th>
<th>1988</th>
<th>Place</th>
<th>Deadlines</th>
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| IFAC/iFORS Symposium Identification and System Parameter Estimation | August | Beijing | — | Prof. Chen Han-Fu  
Institute of Systems Science Academia Sinica  
Beijing, 10080, PRC |
| IFAC Symposium Power Systems: Modelling and Control Applications | Sept. 5-8 | Brussels | Belgium | — | J. Debelle, Vice President of IBRA  
Rue Ravenstein 3  
B-1000 Brussels, Belgium |
| 3rd Intl. Symposium Systems Analysis and Simulation | Sept. 12-16 | Berlin | GDR | — | Prof. Dr. A. Sydow  
ZKI der AdW der DDR  
Kurstrasse 33  
DDR-1086 Berlin, GDR |
| IFAC Workshop Present and Future Capabilities | Sept. 15-15 | Pasadena | CA, USA | — | Mr. G. E. Cunningham  
Pathfinder Project, Jet Propulsion Lab.  
Mail Stop 79-21, 4800 Oak Grove Drive  
Pasadena, CA 91109, USA |
16 Chemin de Bellerive  
CH-1007 Lausanne, Switzerland |
| SCI/iFAC Symposium Modelling and Control of Biotechnological Processes | Sept. 25-28 | Cambridge | UK | — | UKACC  
The Institute of Measurement and Control  
87 Gower Street, London WC1E 6AA, UK |
1987 | Dr. ir. L. Boulart  
Automatic Control Lab. University of Gent  
Grotesteegweg Noord 2  
B-9710 Gent, Belgium |
| IFAC/IMACS/FIP Symposium Robot Control SYROCO ‘88 | October | Karlsruhe | FRG | Nov. 30, 1987  
1987 | Dr. G. Hirzinger  
DFVLR Oberpaffenhofen  
D-8031 Wessling/Oberbayern, FRG |
c/o Laboratoire Electronique  
Faculté des Sciences  
BP 1014, Rabat, Morocco |
1987 | D. I. H. Wieels  
VDI/VDE-GMA, Graf-Recke Str. 84  
P.O. Box 1139  
D-4000 Düsseldorf 1, FRG |

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<th>Title</th>
<th>1989</th>
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| IFAC Symposium Adaptive Control and Signal Processing | April | Glasgow | UK | Nov. 16, 1987  
1987 | Ms. Rosamund da Gama  
The Institute of Measurement and Control  
87 Gower Street, London WC1E 6AA, UK |
| IFAC/IMACS/FIP Symposium (5th) Control of Distributed Parameter Systems | June | Perpignan | France | — | A. El Jai  
Lab. d’Automatique IMP du CNRS  
Univ. de Perpignan,  
50 Avenue de Villeneuve, F-66000 Perpignan, France |
| IFAC/IFORS/IMACS Symposium Large Scale Systems: Theory and Applications | August | Berlin | GDR | — | Prof. H. Fuchs  
Academy of Sciences of the GDR  
Kurstrasse 33, D-1086 Berlin, GDR |
| IFAC Symposium Automation in Mining, Mineral and Metal Processing | Sept. 4-8 | Buenos Aires | Argentina | — | Prof. J. Paluk  
c/o ADECA, Venezuela 634 9° P.Off 39  
1095 Buenos Aires, Argentina |
Xian Jiaotong University  
Xian, Shaanxi, PRC |

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<th>Title</th>
<th>1990</th>
<th>Place</th>
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<th>Further Information</th>
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| IFAC WORLD CONGRESS | August | Tallinn | USSR | January, 1989  
1989 | Institute of Cybernetics  
Akadeemia tee 21  
20018 Tallinn, USSR |

* deadline not yet known