IFAC International Federation of Automatic Control
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1988
No. 3
June

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Informal Meeting of the IFAC Presidents
Laxenburg, Austria
April 21 - 22, 1988

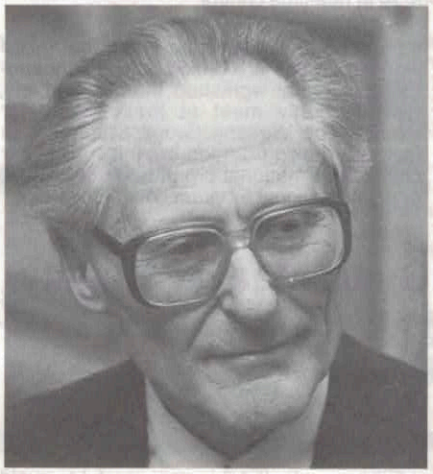
On April 21 and 22, B. Tamm, President of IFAC, M. Thoma, Past President, B.D.O. Anderson, President Elect, S. Kahne and L. Ljung, Vice-Presidents held their already traditional Informal Meeting at the IFAC Secretariat in order to prepare for the next Council- and Related Meetings to take place in Oulu, SF and Tallinn, SU this June. M. Mansour, IFAC Treasurer and G. Hencsey, IFAC Secretary also participated in this meeting. As this was the first Informal Meeting with B. Tamm as President and two new Vice-Presidents there was also some discussion on the purpose and benefits of this meeting which had deen introduced by Y. Sawaragi. All participants and in particular also S. Kahne and L. Ljung who were there the first time, found this meeting an extremely good and useful platform for discussing matters at length and in depth.

The participants in the meeting exchanged ideas on the possibility of shortening the paper selection procedure of future congresses, long-range financial policy,and the liaison with international organizations. Furthermore they used the opportunity to get an insight into the operation and work of the Secretariat.

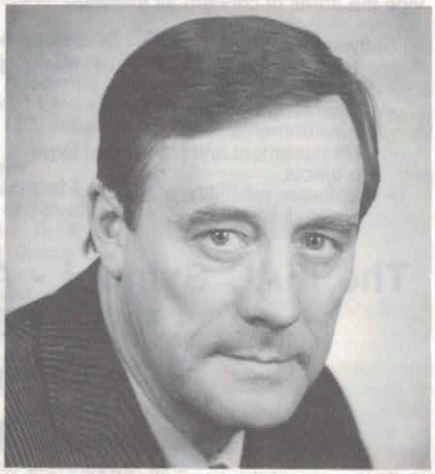
On the occasion of the 10th anniversary of the agreement between IFAC, the Austrian Ministry of Science and Research and the Austrian Academy of Sciences, the Federal Minister of Science and Research, Prof. Dr. H. Tuppy, invited the Presidents to a reception at the Ministry.

In his speech, the Minister stressed the mutual benefits of this agreement. For Austria this meant that closer connections to the international community of control engineers could be established and significant technical events organized and international knowledge be promoted and spread among Austrian users; for IFAC, having its permanent Secretariat situated in Austria, this assured stability and continuity. The IFAC President in his answering speech expressed the gratitude of IFAC to the Republic of Austria, the Austrian Academy of Sciences and other Austrian bodies for making the task of the Secretariat easier by providing them with excellent working conditions.

The reception was followed by an anniversary dinner upon invitation of the "IFAC Beirat".



Prof. Dr. H. Tuppy



Acad. B. Tamm

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Strategic Plans of IFAC Technical Committees

At the last Technical Board Meeting in Munich 1987, a decision was taken to develop strategies for the work and direction of the individual Technical Committees. In the forthcoming Newsletters some of these strategic plans will be published to give our readers a better insight into the activities of the Committees and help them keep track of the developments outlined in them.

Technical Committee on Computers - Strategic Plan for 1987 - 1990

Scope
(revised November 1987)

The Computers Committee (COMPUT) is concerned with the design and utilization of real-time computer systems in the control of continuous and discrete processes. Current areas of interest include software engineering, management of software projects, safety and reliability, system architectures, distributed computer control systems, inter-computer communications, database management and the use of artificial intelligence methodologies.

Recognizing that computers are all pervasive in control, the committee maintains strong links with other IFAC committees and also acts as a bridge to IFIP and similar bodies.

Interpretation of Scope

COMPUT is **not** an applications committee - rather it must examine aspects of computing and computers as they **impact** applications. It clearly must look at current practice and experience and, based on the perceived needs of industry, investigate, examine and promote new technological developments. In many ways one could say that its activities should be one of the research "wings" of IFAC, based, however, with its feet firmly in the industry which IFAC serves.

Pursuing these objectives it is helpful to divide the areas of concern as follows:

Software Engineering
- Tools, including specification methods
- Real-time languages
- Operating systems
- Environments
- Measurement and planning of large projects
- Software reliability and safety
- Databases for real-time control- especially distributed databases

System architecture
- Design issues
- Safety- and reliability issues
- Real-time communication aspects
- Real-time networking and network management for control applications
- Topologies/distributed systems, etc.
- Architectures for real-time control systems

Artificial intelligence in real--time control
- Fundamental issues, tools, etc.
- Expert systems - particularly in real-time
- Implementation issues
- Knowledge acquisition & representation
- Knowledge engineering in real-time systems

Implementation of Scope

Based on the Scope as interpreted above, a matrix of events has been planned ensuring that, wherever possible, each aspect is appropriately covered. It is clear that there is a need to seek new events in areas such as AI, Real-time Databases, Advanced Architectures, etc. Every effort must be made to ensure that the matrix is filled.

In pursuance of the IFAC policy on working groups it was decided that this policy could be satisfied by basing their formulation through existing, on-going workshop events. COMPUT has consistently maintained workshops in perceived areas of importance and these have therefore given rise to the establishment of working groups in the following areas:

1. Real-time programming
2. Management of software projects
3. Distributed computer control systems
4. Guidelines for CACSD software
5. AI in real-time control

It must be pointed out, however, that these working groups are based on the very successful annual workshop themes and will, typically, only meet at these particular events. The Working Group Chairmen, in fact, are drawn from the organizers - either chairmen of national organizing committees or of international program committees.

The IFAC Symbol - A Guarantee of Quality

In the course of the years the IFAC symbol has always stood for high quality and also true internationality of technical events. IFAC sponsorship and thus the right to use this symbol is granted after a thorough procedure. By it the scope of events, a truly international representation on the International Program Committee but also harmonization of dates to avoid overlaps with other IFAC events as well as free access to permit people from all over the world to participate are scrutinized. Only if all factors are in true harmony can IFAC sponsorship be given. Anybody who then wants to participate in a technical event can be certain to have his or her high expectations fulfilled. This is also the reason why IFAC is very careful to avoid any misuse of its symbol. There have been cases when NMOs and other organizations used the IFAC symbol for their national or regional events.

By its approval procedure, which is thorough, but nevertheless very unbureaucratic, IFAC maintains the high standard of its technical events. Only after the approval letter has been transmitted to the organizers by the IFAC Secretariat can the IFAC symbol be used and can thus be a guarantee for scientists all over the world that they will participate in an event meeting the highest requirements.

News from Sister Federations

IMACS World Congress

The 12th IMACS World Congress will be held in Paris, France, from July 18-21, 1988. This will be a major event in the fields of scientific computation, of modelling and simulation, of computational and applied mathematics, bringing together about 1000 scientists from all over the world.

The scientific program of the Congress will consist of plenary sessions (including invited papers), organized sessions (papers are by invitation of the session organizers), contributed papers regular sessions, contributed papers poster sessions, case study sessions, round table and panel discussions.

Topics of interest are those within the scope of IMACS, i.e.
- scientific computation
- modelling and simulation of systems
- numerical analysis

Particular attention will be given to the contributions emphasizing those new developments, both in theory and in applications, which have been made possible by the appearance of significantly more powerful computers (super, vector and parallel) and of new concepts in their architecture. This includes topics in computational and applied mathematics; the impact of artificial intelligence and expert systems and applications of computation which require super or parallel computers.

IMEKO World Congress

"Instrumentation for the 21st century" is the topical theme of IMEKO XI to take place in Houston, Texas from October 16 - 21, 1988.

One of the main purposes of the Congress will be to explore the new technologies and developments that will be shaping the field of measurement over the next several years. It will be the first time that an IMEKO Congress takes place in North America.

Scope of the Congress:
Microprocessors, fibre optics, machine vision, artificial intelligence, micro measurements and large scale integrated circuits are just a few of the many developments that will continue to impact measurement technology. The primary objective of the 1988 Congress will be to report and appraise such developments and analyze the interrelations between new hardware developments and new theoretical concepts over the whole spectrum of modern science and industry.

To help accomplish this objective there will be four types of sessions: plenary, technical, poster and round table discussions. These sessions will carefully analyze the various technologies and applications that will drive the field of measurement well into the 21st century.

IFAC wishes both Sister Federations the best of success for their respective world congresses.

IFAC

1988
No. 3
June

FORTHCOMING EVENTS

Title	1988	Place	Deadlines	Further Information
IFAC/IFIP/IEA/IFORS Conference Analysis, Design and Evaluation of Man-Machine Systems (MMS `88)	June 14-16	Oulu SF	-	B. Wahlström Technical Research Centre of Finland, El. Engg. Lab. Otakaari 7 B SF-02150 Espoo, Finland
IFIP/IFAC Conference Software for Manufacturing PROLAMAT	June 14-17	Dresden GDR	-	Prof. D. Kochan Technische Universität Dresden PROLAMAT `88 Mommsenstrasse 13 DDR-8027 Dresden, GDR
INRIA/IFAC Symposium (3rd) Differential Games and Applications	June 16-17	Sophia Antipolis F	-	P. Bernhard INRIA, Sophia Antipolis F-06565 Valbonne Cedex France
IFAC Workshop Control Application of Nonlinear Programming	June 21-25	Tbilisi USSR	-	Acad.V.A. Trapeznkov USSR National Committee of Automatic Control Profsojuznaja ul. 65 Moscow GSP 312, USSR
IFAC/IMEKO/IMACS Symposium Distributed Intelligence Systems Methodology and Applications	June 27 - July 1	Varna BG	-	DIS `88 Symposium Info. Centre "INFORMA" POB 26 BG-1592 Sofia, Bulgaria
IFAC Symposium Trends in Control and Measurement Education	July 11-13	Clyne Castle UK	-	Ms. Rosamund da Gama Institute of Measurement and Control, 87 Gower Street London, WC1 6AA, UK
IFAC Symposium Adaptive Control of Chemical Processes	August 17-19	Lyngby DK	-	Prof. M. Kümmel Denmark Technical Univ. Bldg. 229 DK 2800 Lyngby, Denmark
IFAC Workshop Robust Adaptive Control	August 22-24	Newcastle NSW, AUS	-	Prof. G.C. Goodwin Dept. of El. & Computer Engg. The University of Newcastle NSW, 2308 Australia
IFAC Symposium (4th) Computer Aided Design in Control and Engineering Systems	August 23-25	Beijing PRC	-	Prof. Chen Zhen-Yu CADCS 88 Secretariat, Application Committee of the Chinese Association of Automation P.O.Box 919, Beijing, PRC
IFAC/IFORS Symposium Identification and System Parameter Estimation	August 27-31	Beijing PRC	-	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 B	-	J. Debelle, Vice-Pres.IBRA Rue Ravenstein 3 B-1000 Brussels, Belgium
IFAC Workshop Advances in Automation for Hard Rock and Underground Mining	Sept. 12-14	Ste.Adele CDN	-	Prof.A.Piché, Dept. of Mineral Engrg, Ecole Polytechnique de Montréal C.P.6079, Succ."A", Montreal Quebec H3C 3A7, Canada
Intl. Symposium (3rd) 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 Spacecraft Autonomy: Present and Future Capabilities	Sept. 13-15	Pasadena CA, USA	-	Mr.G.E.Cunningham Pathfinder Project, Jet Propulsion Lab. Mail Stop 79-21 4800 Oak Grove Drive Pasadena, CA 91109, USA
IFAC Workshop (8th) Distributed Computer Control Systems - DCCS 88	Sept. 13-15	Vitznau CH	-	Prof. Bühler, SGA 16, Chemin de Bellerive CH-1007 Lausanne, CH

FORTHCOMING EVENTS (ctd.)

Title	1988	Place	Deadlines	Further Information
IFAC Workshop Artificial Intelligence in Real-Time Control	Sept. 21-23	Swansea UK	-	Prof. M.G. Rodd, Dept of EE University College of Swansea Singleton Park, Swansea SA2 8PP, UK
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
IFAC/IFIP Workshop Experience with the Management of Software Projects	Sept. 27-29	Sarajevo YU	*	Dr.R.Milovanovic ETF Sarajevo, Toplicka BB YU-71000 Sarajevo, Yugoslavia
IFAC Workshop (2nd) Reliability, Availability and Maintenability of Industrial Instrumentation Systems	Sept. 28-30	Bruges B	-	Dr.ir.L. Boullart Automatic Control Lab, Uni . Ghent, Grotesteenweg Noord 2 B-9710 Ghent, Belgium
IFAC/IMACS/IFIP Symposium Robot Control SYROCO 88	October 5-7	Karlsruhe FRG	-	Dr.G.Hirzinger DFVLR Oberpfaffenhofen D-8031 Wessling/FRG
IFAC Workshop Applied Measurements in Mineral and Metal Processing	October 11-14	Jo`burg ZA	-	The Organizers, SACAC Workshop c/o MINTEC, Private Bag X3015, Randburg, South Africa
IFAC Symposium (4th) Systems Analysis Applied to Management of Water Resources	October 11-13	Rabat Morocco	-	Prof.M. Najim, AMADEIA c/o Lab. d'Electronique, Fac. des Sciences, BP 1014, Rabat Morocco
RSO/CIRP/ILO/IFIP/IFAC Intl.Conference Jubilee of Innovation Choice	October 12-14	Venice Italy	-	Prof.F.Butera, President RSO Via Leopardi 1, I-20123 Milan Italy
IFAC/IFIP Symposium Safety of Computer Control Systems-SAFECOMP 88	Nov. 9-11	Fulda FRG	-	D.I.H. Wiefels, VDI/VDE-GMA P.O.Box 1139 D-4000 Düsseldorf 1, FRG

Title	1989	Place	Deadlines	Further Information
SCS/IFIP/IFAC Workshop Artificial Intelligence in Management & Economics	January 11-13	Singapore	July 1 1988	Mrs. Vicky Toh, Inst.of Systems Science, National University of Singapore Kent Ridge, Singapore 0511
IFAC Symposium Adaptive Control and Signal Processing	April 19-21	Glasgow UK	-	Ms. Rosamund da Gama The Institute of Measurement and Control, 87 Gower Street London WC1E 6AA, UK
IFAC/IFIP Workshop Real-Time Programming	May 16-19	Berlin GDR	*	Prof.G.Meyer, Research Director Dept.of Automatic Control TU Karl-Marx-Stadt, PSF 964 DDR-9001 Karl-Marx-Stadt, GDR
IFAC/IIASA/UNESCO/IEEE Workshop International Conflict Resolution Using Systems Engineering	June 5-8	Budapest H	*	Acad.T.Vamos Computer and Automation Inst., HAS, Victor Hugo u. 18 H-1132 Budapest, Hungary
IFAC/IEEE Symposium Nonlinear Control Systems Design	June 14-16	Capri I	Aug. 15 1988	Prof.S.Monaco, University of Rome "La Sapienza" Via Eudossiana 18 I-00184 Rome, Italy
IFAC/IMACS/IFIP Symposium (5th) Control of Distributed Parameter Systems	June 26-29	Perpignan F	Sept. 1 1988	A.El Jai, Lab d Automatique IMP du CNRS, Univ. de Perpignan, 50, Avenue de Villeneuve, F-66000 Perpignan France
RSO/IFAC/IEEE Conf. The Riccati Equation in Control, Systems and Signals	June 26-30	Como I	*	Prof.S. Bittanti, Dept. of Electronics, Milan Polyt. Piazza L.da Vinci I-20133 Milan, Italy
IFAC/IFORS/IFIP/(IEEE/IIASA UNIDO/SEDC/World Bank) Conf. Dynamic Modelling and Control of National Economies	June 27-29	Edinburgh UK	Sept. 1 1988	Prof.B.Rustem, Imperial College Univ.of London, 180 Queens Gate London SW7 2BZ, UK

FORTHCOMING EVENTS (ctd.)

Title	1989	Place	Deadlines	Further Information
IFAC/IFORS/IMACS/IEEE Intl. Conference Advanced Information Processing in Automatic Control	July 3-7	Nancy F	*	R. Husson, Dir. du CRAN LAUT-ENSEM, 2, rue de la Citadelle BP 850 F-54100 Nancy Cedex, France
IFAC Symposium (7th) Automatic Control in Aerospace	July 17-21	Tsukuba J	July 31 1988	Prof.T.Tanabe, Dept.of Aeronatutics FAculty of Engineering, Univ.of Tokyo, 7-3-1 Hongo Bunkyo-ku Tokyo 113, Japan
IFAC/IFORS/(IMACS) Symposium Large Scale Systems: Theory and Applications	August 29-31	Berlin GDR	Aug. 15 1988	Prof. H.Fuchs, AdW d. DDR Kurstraße 33 DDR-1986 Berlin, GDR
IFAC Symposium Automation in MIning, Mineral and Metal Processing	Sept. 4-8	Buenos Aires AG	-	Dr.J.Paiuk, c/o AADECA Av.Callao 220 1oB 1022 Buenos Aires, Argentina
IFAC/IFIP/IEA/IFORS Conference Analysis, Design and Evaluation of Man-Machine Systems, MMS 89	Sept. 12-14	Xian PRC	-	Prof.Wang Ying Luo Xian Jiaotong University Xian, Shaanxi, PRC
IFAC/IFIP/IFORS/CIRP Workshop Decisional Structures in Automated Manufacturing	Sept. 18-21	Genoa I	*	Prof.A. Villa, Dip.Tecnologia e Sistemi di Produzione Politecnico di Torino Corso Ducale degli Abruzzi 24 I-10129 Torino, Italy
IFAC Workshop (2nd) Artificial Intelligence in Real-Time Control	Sept. 19-21	Shenyang PRC	Dec. 31 1988	Prof.M.G.Rodd, Dept.of EE Univ.College of Swansea Swansea, Singleton Park Swansea SA2 8PP, UK
IFAC/IFIP/IFORS Symposium Control, Computers and Communication in Transportation	Sept. 19-21	Paris F	July 23 1988	Prof.J. Perrin RATP, 127, avenue Ledru Rollen F-75011 Paris, France
IFAC Workshop System Structure and Control: State Space and Polynomial Methods	Sept. 25-27	Prague CSSR	*	Prof.S.Kubik, CSSR Academy of Sciences, Inst. of Information Theory&Automation Pod vodarenskou vezi 4 CS-182 08 Prague, CSSR
IFAC/IFIP/IMACS/IFORS Symposium (6th) Information Control Problems in Manufacturing Technology	Sept.29 - Oct.1	Madrid E	*	Prof.E.A.Puente, Head of Systems Engrg Dept., UPM, Jose Gutierrez Abascal 2 E-28006 Madrid, Spain
IFIP/IFAC Conference Computer Applications in Production Engineering, CAPE 89	October 2-5	Tokyo J	Sept. 30 1988	Conference Secretariat CAPE 89 c/o Conference Dept.; Business Center for Academic Societies Japan, 2-40-14 Hongo Bunkyo-ku, Tokyo 113, Japan
IFAC/IFORS/IAEE Symposium Energy Systems, Management and Economics	October 25-27	Tokyo J	*	Prof.Y. Kaya Dept.of Electrical Engrg University of Tokyo Hongo 7-3-1, Bunkyo-ku Tokyo 113, Japan
IFAC Workshop Production Control in Process Industry	Oct.30- Nov. 2	Kyoto J	*	Prof.T. Takamatsu, Kyoto Univ. Japan Institute of Systems Research, 4, Yoshida-Ushino-miya Sakyo, Kyoto 606, Japan
IFAC/(IMACS)/IFIP Symposium Skill Based Automated Manufacturing	Nov. 15-17	Vienna A	Dec. 1 1988	Prof.P. Kopacek Dept. of System.Technol. and Automation, University of Linz A-4040 Linz-Auhof, Austria

Title	1990	Place	Deadlines	Further Information
XI IFAC WORLD CONGRESS	August 13-17	Tallinn USSR	*	Institute of Cybernetics Akadeemia tee 21 200108 Tallinn, USSR

automatica

The Journal of IFAC the International Federation of Automatic Control

Papers from the Next Issue - July 1988

Papers

Performance Analysis of the Segment Alignment Control System for the Ten Meter Telescope
(J.N. Aubrun, K.R. Lorell, T.W. Havas, W.C. Henninger)
On-Line Optimization of Gas Pipeline Networks
(D. Marqués, M. Morari)
Flight Control Design Using Nonlinear Inverse Dynamics
(S.H. Lane, R.F. Stengel)
Nonlinear Dynamics in Adaptive Control: Periodic and Chaotic Stabilization - Part II: Analysis
(I.M.Y. Mareels, R.R. Bitmead)
A Chebyshev Polynomial Method for Optimal Control with State Constraints
(J. Vlassenbroeck)
A Generalized Approach to q-Markov Covariance Equivalent Realizations for Discrete Systems
(A.M. King, U.B. Desai, R.E. Skelton)
Approximation of Discrete-Time LQG Compensators for Distributed Systems with Boundary Input and Unbounded Measurement
(J.S. Gibson, I.G. Rosen)
A Review of Some Recent Results on the Output Least Squares Formulation of Parameter Estimation Problems
(K. Kunisch)

Brief Papers

Experiments in Load-Adaptive Control of a Very Flexible One-Link Manipulator
(D.M. Rovner, G.F. Franklin)
Analysis and Design of a Microcomputer-Based Observer for an Induction Machine
(A. Bellini, G. Figalli, G. Ulivi)
LQG-Optimal Feedforward Regulators
(M. Sternad, T. Söderström)
Identification of Linear Periodically Time-Varying Systems Using White Noise Test Inputs
(A.D. Sams, V.Z. Marmarelis)
On Model Order Estimation for Partially Observed Markov Chains
(R.G. Whiting, E.E. Pickett)

Book Reviews

Cybernetics: A New Management Tool by Dr. Barry Clemson
(S. Humble)
Algebraic and Geometric Methods in Nonlinear Control Theory by M. Fliess and M. Hazewinke (Editors)
(D. Bell)
Automation Production Systems and Computer Integrated Manufacturing by M.P. Groover
(T. Vamos)

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IFAC Journal AUTOMATICA Special Issue Identification and System Parameter Estimation November 1989

CALL FOR PAPERS

From time to time the IFAC Journal "Automatica" publishes a Special Issue devoted to a particular topic within the journal's field of interest. The next special issue now being planned will have "Identification and System Parameter Estimation" as its theme. This topic is particularly timely in view of the very large number of papers submitted to the 8th IFAC/IFORS Symposium "Identification and System Parameter Estimation" to be held in Beijing, People's Republic of China, August 27-31, 1988.

The special issue will have as a special Guest Editor, Professor Pieter Eykhoff, who will join the Editor of Automatica who regularly covers this field, Professor Patrick Parks.

The two Editors now wish to make this "Call for Papers". Papers on applications of identification and system parameter estimation are particularly welcome. Papers already accepted for the IFAC/IFORS Symposium in Beijing will be surveyed by the Editors and selected authors will be invited to submit modified versions of their papers for further review and possible publication in the Special Issue of Automatica.

"Regular" and "brief" papers are welcome. They should be prepared in the usual way as described in the "Information for Contributors to Automatica" which is printed inside the back cover of any issue of the journal. All papers, including those selected from the IFAC/IFORS Symposium in Beijing, will be subject to the customary review procedure. This usually takes about 4 months from the date of receipt of the paper. As usual, 5 copies of the paper should be sent to

Professor P.C. Parks
Mathematics Group
School of Defence Management
Royal Military College of Science
Shrivenham, Swindon, SN6 8LA, UK

1 copy, with a copy of correspondence to Professor Parks, should be sent as usual to

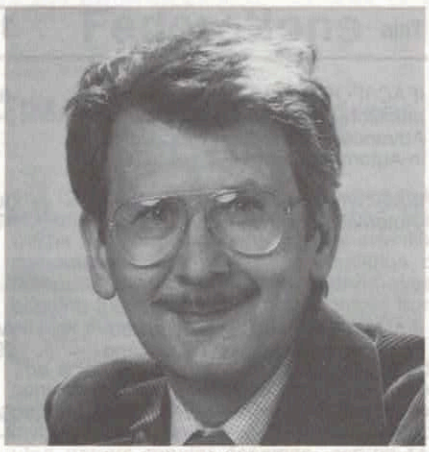
Dr. G.S Axelby
Editor-in-Chief of "Automatica"
211 Coronet Drive
North Linthicum, MD 21090, USA

and an additional 7th copy should be sent to the Guest Editor
Professor P. Eykhoff
University of Technology
POB 513
NL-5600 MB Eindhoven, -The Netherlands

The Editors of the Special Issue on "Identification and System Parameter Estimation" hope to keep to the following timetable:
Deadline for submitted papers, including papers selected from Beijing:
31 October, 1988
Decision on acceptance for the Special Issue
28 February, 1989
Deadline for submission of final version of accepted papers
18 April, 1989
Publication date of the Special Issue
November 1989

If there is a surplus of accepted papers for the Special Issue, some of these papers will be deferred and published as soon as possible in later regular issues of "Automatica". This policy will also apply to promising papers which require revision and re-review, and so miss the Special Issue deadline of 18 April 1989.

WHO IS WHO IN IFAC



Prof. László Nemes
Chairman of TC on Manufacturing Technology

Dr. László Nemes was born in Szeged, Hungary in 1937. After studies at the technical high school in Szeged where he received an electrotechnician's certificate he studied at the Technical University of Heavy Industry in Miskolc. Majoring in Manufacturing Technology he graduated with an M.Sc in Mechanical Engineering. He completed his postgraduate studies at the Technical University Budapest with a diploma in Control Engineering. In 1981 he became a Candidate of Science of the Hungarian Academy of Sciences with his main field of study in Computer Applications in Manufacturing.

From 1964 to1972 Dr. Nemes worked as Research Engineer first at the Hungarian Machine Tool Works and then at the Institute for Electrical Automation. In this capacity he designed NC systems. From 1969 to 1972 he was Head of the Research Group for Computer Numerical Control Systems at the Computer and Automation Institute of the Hungarian Academy of Sciences. From 1972 to 1974 Dr. Nemes held a Research Fellowship at the Tokyo Institute of Technology where he developed a recognition system for industrial robots. Back in Budapest he was appointed Head of the Department of Control Systems for Manufacturing at the Computer and Automation Institute of the Hungarian Academy of Sciences. From 1980 to 1987 he was Head of the Division of Mechanical Engineering of the above institute dealing with the planning and managing research and development in the field of computer integrated manufacturing. At present, Dr. Nemes is working at CSIRO, Division of Manufacturing Technology in Victoria, Australia.

His professional experience includes among others the direction and supervision of research and development activities in the following areas:

Control systems for flexible manufacturing;
Computer networks for factory automation;
Structured design and analysis techniques;
Computer-aided design systems;
Diagnosis and inspection in flexible manufacturing. Development of sensors and recognition procedures for tool breakage, tool wear and machine failure. Increasing machining accoracy by active compensation;
Visual recognition of shapes of objects for increased flexibility in production, for quality control and for assembling. Recognition of textures for biological, medical and industrial purposes;
Study of social effects of automation. New work-organization structures for high-tech.

Dr. Nemes is member of various scientific bodies. His present position in IFAC is Chairman of the Technical Committee on Manu-