



1984  
No. 6  
Dec

# International Federation of Automatic Control

Secretariat: Schloßplatz 12, A-2361 Laxenburg, Austria — Phone (02236) 71447, Telex 79248 ifac a

# Newsletter

## Contents:

The IFAC Banners

\*

IFAC Workshop  
on Reconfigurable  
Spacecraft Systems

\*

SWISS — Supplemental Ways  
for Improving International  
Stability

\*

IFAC Congratulates  
William E. Miller

\*

Forthcoming Events

\*

UNESCO-Coupons

\*

To Our Readers

\*

News from NMO's

\*

10th IMEKO World Congress

\*

New Publications

\*

Who is Who in IFAC



*Seasons  
Greetings  
to all our Readers*

## The IFAC Banners

At each IFAC Congress it is the custom to display all the banners which symbolize the IFAC symbols, dates, and locations associated with each of the previous IFAC Congresses. They constitute an impressive display. At each closing ceremony, the host country unfolds a new banner, as gift to the next Congress host, to identify the location, symbol, and time associated with the next congress.

This tradition had its origin with the Fifth IFAC Congress held in Boston/Cambridge, Massachusetts, USA, in 1975. It was the suggestion of Dr. Nathan Cohn who was Chairman of the U.S. National Organizing Committee that a banner be made for the Sixth IFAC Congress and that other banners, all of the same size, representing the previous congresses also be prepared with the appropriate IFAC logo, location and date also indicated. Colors for these prior banners were developed in conjunction with the advice and technical assistance of leading persons from each of the prior congresses involved. The actual fabrication and purchase of the prior banners was done with funds from the 1975 Congress U.S. National Organizing Committee under the direction of its Chairman Nathan Cohn. Subsequent IFAC Congress banners have been prepared by each Congress NMO Organizing Committee with advice on color and logo from, and as a gift to, the NMO for the next Congress.

Although most people are inclined to think of these banners as IFAC Banners, in the minds of many they reflect the IFAC spirit of international amity, cooperation and family that was envisioned by Nathan Cohn in 1975.

Harold Chestnut,  
IFAC Advisor

**This Newsletter may be reproduced in whole or in part. We encourage reprinting in national and local automatic control periodicals. Acknowledgement to IFAC would be appreciated.**

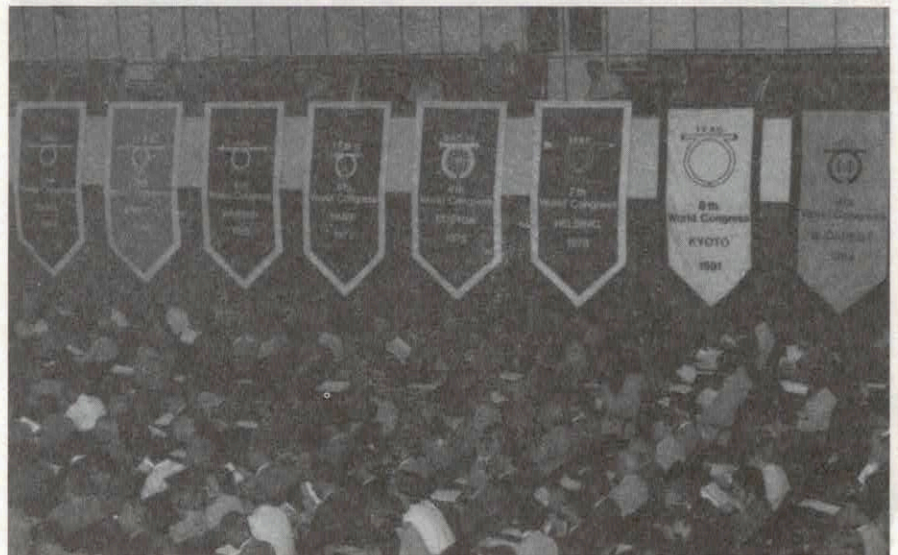
## Impressum:

Medieninhaber und Herausgeber:  
International Federation of Automatic Control (IFAC), Genf  
Schloßplatz 12, A-2361 Laxenburg

Verlagsort und Redaktion:  
Dipl.-Ing. Fred Margulies  
Schloßplatz 12, A-2361 Laxenburg

Hersteller:  
Artur Schefczik & Sohn  
Breite Gasse 14; A-1070 Wien

Editor: Prof. Dipl.-Ing. Fred Margulies  
Layout: Margaret A. Gottfried  
published bimonthly





# IFAC Workshop on Reconfigurable Spacecraft Systems, Autonomous and Non-Autonomous

(11—13 September 1984, Cambridge, Massachusetts, USA)

## Location, purpose

This Workshop, sponsored by the Technical Committee on space, Dr. Marc J. Pelegrin, Chairman, and held in the main presentation room of The Charles Stark Draper Laboratory, was convened for the purpose of exchanging experiences, techniques and ideas on space mission recovery in flight. Fifty-four participants from nine countries discussed freely their experiences in system reconfiguration — post-launch data analysis leading to ad hoc system redesign and ground-commanded or in-flight modification of spacecraft software or hardware systems. The Workshop was planned to follow the first Workshop that specifically addressed maximizing space mission data return in the face of difficulties, held at the Laboratory in 1980.

## Program

The first session of the Workshop featured the keynote address by Col. S. M. McElroy, U.S. Air Force Space Division, based on flight experience gained in the Defense Meteorological Satellite Systems Program. Subsequent sessions covered in-flight system reconfiguration, reconfigurable spacecraft system designs and techniques, and reconfigurable subsystems. Examples were drawn from the TDRS, IRAS, MARECS-A, SOLAR MAX, EXOSAT, INSAT-1, GALILEO, SPACE TELESCOPE, ASTRO-C, SS-TDMA programs and others.

## Participants

The Workshop was attended by 54 people from the following countries: USA (25), FRG

(6), Japan (6), France (5), The Netherlands (4), UK (3), Canada (2), China (2), Italy (1).

20 of the 54 participants were presenters and co-authors, and 6 were session chairmen.

Of the 15 members of the International Program Committee, 9 attended the Workshop and chaired sessions.

## Preprints, Proceedings

To encourage participation and discussion, the Committee required no preparation of a written paper beyond the extended summary needed for selection. Each participant was invited to bring to the meeting copies of the visual aids to be used in his presentation for the participants. Additional copies were made as requested.

No proceedings are planned to be published.

## Evaluation

Judging from the comments of participants, the Workshop was very successful in providing an international forum for those engaged in space system operation and design. Quite a number of lively discussions followed the presentations as participants compared experiences. Much of the discussion centered on the degree of automatic reconfiguration to be incorporated in the presence of cost and weight restraints together with reliability limitations.

John W. Hursh, Organizer  
The Charles Stark Draper Laboratory, Inc.  
Cambridge, Mass., USA

## SWIIS —

### Supplemental Ways for Improving International Stability

Our objective is to increase the likelihood of the people of the world living at peace by improving the stability among nations. SWIIS is a concept and an organisation. A series of activities are being carried out across disciplines in several countries.

**Concept** — There are activities of a non-military nature that could and should be done in time of peace to reduce the likelihood of wars occurring.

The people supporting the SWIIS idea with their time, thought, and efforts are convinced that significant long-term improvements in national security are possible through non-military methods.

**Organisation** — The SWIIS Foundation, Inc. (SFI) is a non-profit, tax exempt, educational, scientific, and research organisation. SFI was established to facilitate the receipt of funds for the purpose of providing support for various SWIIS related activities.

The present emphasis of SWIIS is to organise committees in on-going organisations, to write papers, present talks, develop new ideas of how to improve international stability. Examples of these include:

**IFAC SWIIS Working Group** of 30 people from 15 countries who are interested in developing an improved understanding of systems techniques suitable for SWIIS.

**IEEE Committee on International Stability** of the Systems Man and Cybernetics Society. Members of the IEEE SMC make up this committee.

**1983 IFAC SWIIS Workshop** was held on September 13—15 at Laxenburg, Austria, and provided an opportunity for an international exchange of ideas and plans for improving international stability. This meeting was jointly sponsored with other organisations including IFSR.

**1984 IFAC SWIIS Symposium in Budapest** in July 1984 on the occasion of the 9th IFAC Congress.

#### Examples of Ways for Improving International Stability

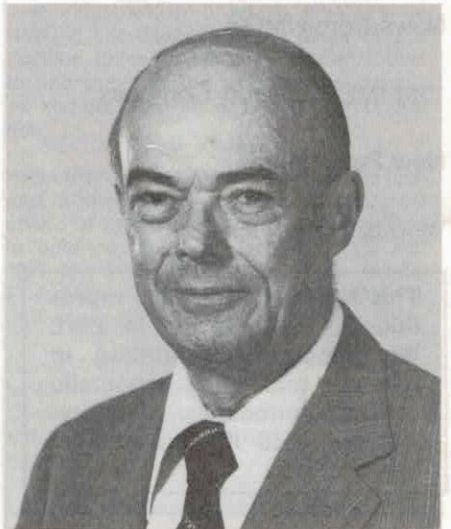
1. Study the peace process from an international and an interdisciplinary point of view. Compare from various national viewpoints the relations between nations leading towards or away from peace.
2. Educate people at all age levels in the nature of peace, national interdependence, and the underlying causes of war. Strengthen peace education programs and make them a part of the on-going education process.
3. Develop stronger international functional ties in such areas of human needs as food, water, energy, housing, education, etc.
4. Develop stronger international regional ties designed to meet human needs. Use existing and new stabilization organisations to deal with natural emergencies as well as international disputes.
5. Establish more effective means for conflict resolution in settling international disputes.
6. Coordinate SWIIS activities to permit synergism on international and interdisciplinary efforts.
7. Develop a cooperative security system (CSS) as an experimental prototype for improving the stability among nations.

Your contribution towards our aims may be to conceive and develop ideas, identify opportunities for projects to be undertaken and people who can help, and, last not least, to provide contributions of money to SFI to fund worthwhile activities in universities, institutes, and other qualified organisations.

For further information please contact:

Harold Chestnut, President  
SWIIS Foundation, INC.  
1226 Waverly Place, Schenectady, NY 12308

## IFAC Congratulates



### William E. Miller named Fellow of the Instrument Society of America

IFAC takes great pleasure in announcing that W. E. Miller, the Vice-President of IFAC, and Chairman of the Executive Board has been elected to the distinguished grade of fellow by the Instrument Society of America. Congratulations and best wishes are herewith extended on behalf of the IFAC family.



## Unesco Coupons

## To Our Readers

### What is the purpose of Unesco Coupons?

In many countries the shortage of foreign currency hinders the importation of books, publications and scientific material.

In some of these countries, Unesco Coupons, whose value is expressed in United States dollars, are sold for national currency to educators, research workers and students who use them to pay for their foreign purchases.

Here are some examples of material that can be purchased with Unesco Coupons:

As a general rule, all publications, films and material intended for educational, scientific or cultural purposes can be purchased with Unesco Coupons.

**Publications:** books, school textbooks, periodicals, medical or scientific journals, maps, copies of courses, reproductions of works of art, sheet music.

**Materials: Audio-visual material:** films and prints, filmstrips, colour slides, movie projectors, raw film, screens, records, record-players, tape-recorders, tapes, photographic material, developing material, film, radio and television sets.

**School material:** Exercise books, paper, ink, pencils, india-rubbers, rulers, paints, typewriters, demonstration apparatus, drawing tables, musical instruments.

**Scientific material:** optical instruments and equipment, laboratory equipment and instruments, chemical products, electrical and acoustical measuring instruments, analytical and clinical testing apparatus, electrical and electrotechnical equipment, hand and machine tools, meteorological, geodetical and topographical instruments.

Unesco Coupons can also be used to pay subscriptions to educational, scientific or cultural institutions, and university registration fees and copyright dues.

### Where and how can Unesco Coupons be purchased?

**In every user country there is a body responsible for the sale of the Coupons; as a rule, this is the National Commission for Unesco. This agency supplies information on request, concerning the purchase of the Coupons.**

In cases where it has only a limited allocation of Coupons, the agency decides on an order of priority for the various requests received.

### How does one use Unesco Coupons?

Users pay for the Coupons in national currency at the official United Nations rate of exchange on the day of purchase. National distributing bodies may add a surcharge to cover handling costs, but this may not exceed 5 percent of the value of the Coupons.

Coupon users should send the supplier their order with the Coupons corresponding to the price of the material, including where necessary, the cost of insurance and postage.

Many publishers, booksellers and firms which produce educational, scientific and

cultural material will accept Unesco Coupons in payment. The distributing bodies can give users some explanations about this.

Coupon users placing orders with firms unfamiliar with the Unesco Coupons Programme sometimes experience difficulty in getting them honoured. When this happens, they can request assistance from the Coupons Office in the Unesco Secretariat; the Office will then inform the supplier of the conditions governing the redemption of Coupons and will try to facilitate settlement.

Unesco cannot intervene in the actual commercial transaction between user and supplier. It is therefore up to the users themselves in their correspondence with suppliers to explain exactly what they want in the way of goods, date of delivery, packaging, insurance and method of dispatch. It is likewise their responsibility to address any complaints direct to suppliers or transporters.

## A Christmas Present to the IFAC Family

The new edition of the IFAC Information Brochure can be obtained from the Secretariat in Laxenburg.

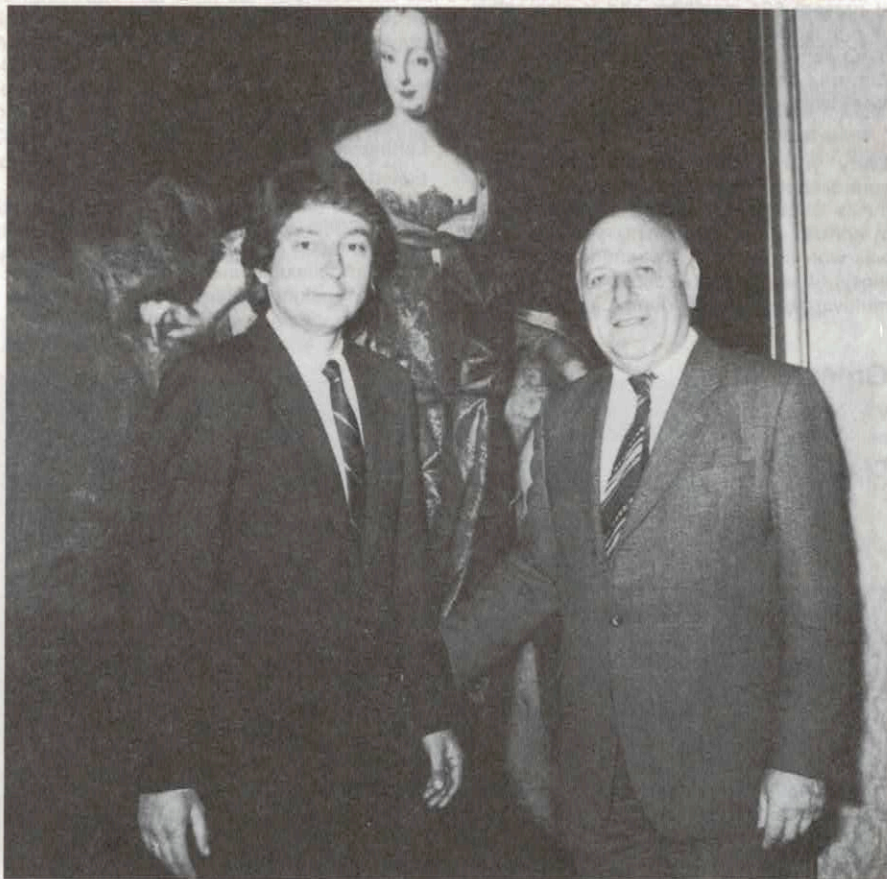
When I was relieved from my duties as Honorary Secretary of IFAC after the Budapest Congress, I agreed to continue editing the IFAC Newsletter for a short transitional period.

This period has now come to an end. Both Gusztáv Hencsey and I feel that the Newsletter should and could return now into the editorial care of the Secretariat. As from January 1985 Gusztáv will become "Newsletter Editor", having already participated in the editorial work of the last few months.

Nearly five years ago, in January 1980, the IFAC Newsletter for the first time was published in its present shape. After many years in which publication had been accomplished in a rather difficult cooperation between Prof. Kümmel, the editor, in Denmark, the IFAC Secretariat, then in Helsinki, and Pergamon Press doing the printing and mailing in Britain, the complete process was now concentrated in Laxenburg and will remain here in future too. Gusztáv intends to continue in the same mode and I wholeheartedly wish him the best of success.

Saying good-bye to our readers I would like to thank all of you for your support and cooperation which, I am confident, you will extend to Gusztáv on an even greater scale. I can only hope that reading the Newsletter gave you as much pleasure as it gave me editing it.

Best wishes  
Fred Margulies



The Mayor of Laxenburg, Dr. Herbert Rauch-Höphfner, welcomes the new IFAC Secretary, Gusztáv Hencsey, at his first visit in the City Hall.



## News from NMO's

### Netherlands

On the 6th of November 1984 the department of control engineering of the Royal Association of Engineers in the Netherlands held its annual meeting in Utrecht.

During this meeting Mr. C. van Straaten was leaving the board of the department after 8 years serving as treasurer. In his place Mr. F. A. Stevens was nominated. For the next year the board will consist of the following members:

Prof. F. J. Kylstra, chairman  
F. A. Stevens, treasurer  
H. Radstake, secretary  
Prof. R. P. Offereins, vice-chairman  
A. W. J. van der Hoeven, programme-secretary  
E. T. van Ravenzwaaij, international relations  
N. D. L. Verstoep, training and education.

The programme of activities presented for the next months comprises:

10 January 1985

Control engineers day, to be presented at the Delft University of Technology

16 January 1985

Lecture about flexible automation

13 March 1985

Process computer day in Antwerp, Belgium

24 April 1985

Excursion to Océ van der Grinten, Venlo, manufacturing and research.

The department of control engineering has at present 624 members and is also active in publishing (Journal A) and sponsoring IFAC activities (Symposium Modelling and Control of Biotechnological Processes, Noordwijkerhout, December 11-13, 1985).

Every year the department presents the control engineering prize for the best master's thesis of the year among Dutch students in control engineering. This year the prize was won by H. A. C. Swaanenburg, for his thesis titled: "Practical aspects of industrial multivariable process identification".

### Greece

We have been informed that Greece has settled its account with IFAC. We are thus very pleased to be able to welcome the Greek NMO back within the IFAC family.

It is with deep regret that we have to inform you of the untimely death of the Secretary General of IMACS,

Prof. Paul Van Remoortere

who passed away on October 6, 1984.

His contribution to IFAC's sister federation IMACS has played a large role in the good relationship between the FIACC organizations.

Our sympathy is with his family and the IMACS Association.

April 1985:

## X. IMEKO World Congress

The General Council of the International Measurement Confederation (IMEKO) has finalized the programme for the 10th IMEKO World Congress to be held in April 1985 in Prague (Czechoslovakia).

In response to the Call for Papers issued by the International Measurement Confederation, consisting at this time of Member Organizations from 27 countries, a total of 501 Congress papers have been received from 31 countries. Upon the recommendation of the International Paper Selection Board the Council accepted 211 papers to be presented at section meetings and further 51 papers for poster presentations. 12 round table discussions will complement the Congress Programme, the majority of them will be organized by the Technical Committees.

Prominent scientists have been invited as plenary lecturers on keynote subjects, e.g. the impact of new developments in measurement science on production efficiency and robotics, on life sciences, on the conservation of the environment and on material saving. New devices and systems for technical diagnostics will also play a significant role in the Programme. Over 100 papers will contain material for discussion on these highly topical subjects having considerable appeal to the general public.

For further details refer to:

IMEKO-Secretariat  
P. O. Box 457  
H-1371 Budapest 5, Hungary

## New Publications

### Artificial Intelligence

Proceedings of the IFAC Symposium, Leningrad, USSR, 4-6 October 1983

Edited by V. M. Ponomaryov, Leningrad, USSR

Major areas covered include: Knowledge representation and industrial expert systems, robot and flexible manufacturing systems, decision-making systems in computer-aided planning, design and control. Hardware techniques and implementation of artificial intelligence.

Published by Pergamon Press.

576 pp

US \$ 125.00

### LONGMAN presents: Engineering Research Centres

A world directory of organisations and programmes.

Consultant editors:

T. Archbold, J. C. Laidlaw, J. McKechnie

Engineering Research Centres is a new reference work which is unique in its comprehensive coverage of the programmes and staff of over 5,000 engineering research and development establishments, including official laboratories, industrial research centres and educational establishments with r & d activity throughout the world.

700 pp approx.

£ 135.00

## WHO IS WHO IN IFAC



Lena Mårtensson  
Chairman TC on Social Effects  
of Automation

Mrs. Lena Mårtensson, born in 1944 in Malmö, Sweden, is married and has two sons. Educated at the University of Stockholm in sociology, pedagogics and psychology she was awarded her M.Sc. in psychology and her certificate as a psychologist in 1969.

For the following two years she was employed by Standard Telephones & Cables Ltd., a daughter company of ITT, in Basildon, Essex (UK) as an industrial psychologist. In 1971 she began to work for the Royal Institute of Technology in Stockholm at the Laboratory of Industrial Ergonomics. Here she became a "pioneer" in dealing with the social effects of automation in industry, mainly doing research and development with respect to work environment. Lena Mårtensson and her engineer colleagues took part in planning new industries in order to create good working conditions from the beginning. In addition, follow-up studies were undertaken to find out how the work places actually worked out after one or two years in operation.

Apart from her activities in Sweden she took part in international studies comparing the effects of automation on working conditions in different countries. Between 1973 and 1976 she was the secretary of the Nordic Ergonomics Society, associated with the International Ergonomics Association, IEA.

During 1982-1984 she was one of the secretaries of the Computers and Electronics Commission, giving advice to the Ministry of Industry and Computerization in Swedish Industry.

Lena Mårtensson is now with the Department of Work Science at the Royal Institute of Technology in Stockholm doing research on the human aspects of robotics and other forms of flexible automation.

The list of her publications contains some seventy titles of books, scientific reports and articles in Swedish and English.

Lena has been a member of the IFAC Technical Committee on Social Effects of Automation since 1975, actively participating in the work of the Committee and in several IPCs preparing IFAC events. In 1981 she became vice-chairman for the 1984/1987 period.



# FORTHCOMING EVENTS

Title	1985	Place	Deadlines	Further Information
IFAC/IFORS/IFIP Workshop Artificial Intelligence Pattern Recognition in Economics and Management	March 12—14	Zurich, CH	—	Prof. L. F. Pau Battelle Institute 7, Route de Drize CH-1227 Carouge Switzerland
6th IFAC Workshop Distributed Computer Control Systems	May 20—22	San Francisco, CA, USA	—	Dr. G. J. Suski Lawrence Livermore National Laboratory P.O. Box 5508 Livermore, CA 94550, USA
IFIP/IFAC Conference Programming Languages for Machine Tools (PROLAMAT)	June 11—13	Paris, F	—	AF CET 156, Bd. Pereire F-75017 Paris, France
IFAC Workshop Control Application of Nonlinear Programming and Optimization	June 11—14	Capri, I	—	Prof. G. Di Pillo Dipartimento di Informatica e Sistemistica Universita di Roma „La Sapienza“ Via Eudossiana 18 I-00184 Rome, Italy
IFAC Workshop Model Error Concepts and Compensation	June 17—18	Boston, MA, USA	—	Prof. R. E. Skelton Purdue University Aeronautics & Astronautics 331 Grissom Hall West Lafayette, IN 47907, USA
IFAC/ISAGA Workshop Simulation and Games	June 24—26	Alma-Ata, SU	—	Acad. V. A. Trapeznikov Institute of Control Sciences Profsojuznaja 65 Moscow 117342, USSR
IFIP/IFAC Symposium Automation for Safety in Shipping and Offshore Petroleum Operations — ASSOPO '85	June 25—27	Trondheim, N	—	The Norwegian Society of Automatic Control Kronprinsens gt. 17 Oslo 2, Norway
IFAC Symposium Automatic Control in Space	June 25—29	Toulouse, F	—	Prof. M. Pelegrin CERT Complexe Aérospatial de Lespinet 2, Avenue Edouard Belin BP 4025 F-31055 Toulouse Cedex France
7th IFAC/IFORS Symposium Identification and System Parameter Estimation	July 3—7	York, UK	—	Prof. H. A. Barker University College of Swansea Dept. of Electrical and Electronic Engineering Singleton Park Swansea SA2 8PP, UK
IFAC Symposium Automation for Mineral Resource Development	July 9—11	Brisbane, AUS	—	Prof. Alban J. Lynch Julius Kruttschnitt Mineral Research Centre University of Queensland Isles Road, Indooroopilly, QLD 4068 Australia
IFAC Symposium Planning and Operation of Electric Energy Systems	July 22—25	Rio de Janeiro, BR	—	T. E. DyLiacco Consultant 651 Radford Drive Cleveland, OH 44143 USA
3rd IFAC/IFIP Symposium Computer Aided Design in Control and Engineering Systems	July 31— Aug. 2	Copenhagen, DK	—	Prof. P. M. Larsen Electric Power Engineering Building 325 DK 2800 Lyngby, Denmark

(ctd. next page)

# FORTHCOMING EVENTS (ctd.)

Title	1985	Place	Deadlines	Further Information
IFAC/IFORS Conference Control Science and Technology for Development	August 20—22	Beijing, PRC	—	Prof. Yan Xiaojun Research Institute of Automation for Machine-Building Industry De Sheng Men Wai Beijing, China
2nd IMACS/IFAC/WGMA Intl. Symposium Systems Analysis and Simulation	Aug. 26—31 1985	Berlin GDR	—	Organizing Committee 2nd Intern. Symposium on Systems Analysis and Simulation Central Institute of Cybernetics and Information Processes of the Academy of Sciences of the GDR P.O.B. 1298 DDR-1086 Berlin
2nd IFAC/IFIP/IFORS/IEA Conference Analysis, Design and Evaluation of Man-Machine Systems	Sept. 10—12	Varese, I	—	Prof. Dr. Ing. Gunnar Johannsen Laboratory for Man-Machine Systems (FB 15) University of Kassel (GhK) P.O. Box 10 13 80, D-3500 Kassel, FRG
7th IFAC/IFIP/IMACS Symposium Digital Computer Application to Process Control	Sept. 17—20	Vienna, A	—	Dr. P. Kopacek Ö P W Z Postfach 131 1014 Vienna, Austria
IFAC Workshop (SWIIS) Co-operation for Handling World Complexity — Systems Approach	Sept. 24—26	London, UK	not yet known	Prof. M. Seaman City University Dept. of Systems Science London EC1V OHB, UK
4th IFAC Workshop Safety of Computer Control Systems (SAFECOMP '85)	Oct. 1—3 1985	Como I	—	Dr. E. DeAgostino Senior Research Engineer ENEA — Dip. Reattori Termici, CRE-Casaccia Via Anguillarese 301 I-00060 Rome, Italy
IFAC/IFORS Symposium Systems Analysis Applied Water and Related Land Resources	Oct. 2—4	Lisbon, Portugal	—	Prof. Luis Valadares Tavares APDIO Av. Rovisco Pais 1000 Lisbon, Portugal
13th IFAC/IFIP Workshop Real Time Programming	Oct. 7—8	West Lafayette, Ind., USA	—	Prof. T. J. Williams Purdue Laboratory for Applied Industrial Control 334 Potter Center, Purdue Univ., West Lafayette, Ind. 47907, USA
IFAC Workshop Adaptive Control in Chemical Processes	Oct. 21—22 1985	Frankfurt FRG	not yet known	H. Wiefels VDI/VDE GMR P.O. Box 1139 D-4000 Düsseldorf 1, FRG
IFAC Symposium Robot Control	Nov. 6—8	Barcelona, E	—	Secretariat of SYROCO '85 Institute de Cibernètica Diagonal, 647 E-080828 Barcelona, Spain
IFAC Workshop Automatic Control in Petroleum, Petrochemical and Desalination Industries	Nov. 18—20 1985	Kuwait	not yet known	Dr. Jaafar Assiri c/o Dr. Samir Kotob TED/ASD Kuwait Institute for Scientific Research P.O. Box 24885, Safat, Kuwait
IFAC Symposium Modelling and Control of Biotechnological Processes	Dec. 11—13	Noordwijker- hout, NL	—	Prof. Dr. A. Johnson Lab. voor Fysische Technologie Prins Bernhardlaan G 2628 BW Delft The Netherlands