Contents:

CAN IFAC CONTRIBUTE TO INTERNATIONAL STABILITY

by Harold Chestnut, Former President of IFAC

At the recent meeting of the IFAC Executive Council in Cleveland, Harold Chestnut, IFAC's first President, who held this office during the period of 1957/58 and has been active in IFAC ever since, presented a paper on "Supplemental Ways for Improving International Stability", suggesting that a Working Group be formed to explore and identify possibilities of IFAC contributing towards this goal. The EC agreed that this proposal be further investigated by the IFAC-Committee on Systems Engineering (SECOM).

The Newsletter takes pleasure in publishing the main ideas of Hal's paper, inviting reader's comments.

Inprovements in science and technology in the last 40 years have brought about changes of tremendous magnitude and scope. Mankind's opportunities for construction and destruction have increased markedly. With the evolution of new skills, new materials and new systems, much can be done that was heretofore impossible.

Money, manpower and intellect have been increasingly devoted to a defense orientation which requires that each nation (or groups of nations) must be prepared militaristically to defend itself against almost any possible future attack. Currently the nations of the world are spending more than one billion dollars a day for such military defense purposes. There is no doubt that some reasonable level of national defense is necessary, but it is not clear that by having more military armaments a country is more secure or able to operate stably with other countries.

Recent participation on my part in the IIASA/IFAC Symposium on the Modelling of Large Scale Energy Systems has brought to my attention again 1) the importance of looking at the world as a system and 2) the strong dependence of many nations on the continued flow of energy and information across international borders. Further, the existence of many thousands of nuclear warheads having missile or airborne means of delivery has brought about an increasing need to explore ways for insuring some higher measure of international stability. A need exists for seeking supplemental ways for improving international security beyond the dominant defense oriented means which are currently in effect.

It is worthwhile from a public service point of view for IFAC to offer the skill and training of engineers and scientists associated with IFAC to explore, with interested people from other disciplines, possible supplemental ways for improving international stability.

Since in a number of cases members of IFAC related organizations have a good knowledge of the nature of possible disturbances to the international system, as well as possible means for lessening their effects, it would appear that the formation of a working group in the area of "Supplemental Ways for improving International Stability" (SWIIS) to the IFAC Systems Engineering Committee might provide a useful output of ideas as to possible ways for improving the current capabilities and reducing the risks due to international instabilities.

The aims of this Working Group (SWIIS) would be accomplished by various fact finding, data gathering, problem definition, and suggestion-making activities which should be reported back to IFAC and other appropriate and interested organizations.

Some day, somewhere, some people are going to find a way or ways of enabling people throughout the world to live without war among and between the major nations. We who are alive today probably have a better chance than any people on earth so far to make this possible. We can visit one another with the aid of transportation, we can communicate with one another, without actually being transported; many of us are better educated than have been people in the past; and many people from different countries have worked together successfully on worthwhile common projects.

In short, we have an unparalleled opportunity if we would just take advantage of this chance. Let us work to find a way to organize to accomplish this long-sought goal of peace among nations. As people have learned to fly, to go to the moon, to communicate instantly over thousands of miles, to eradicate some deadly sickness; let us learn to live with greatly reduced likelihood of catastrophic war between the nations of the world.

WHAT GOES IN IFAC

THE SWISS FEDERATION OF AUTOMATIC CONTROL
DIE SCHWEIZERISCHE GESELLSCHAFT FÜR AUTOMATIK (SGA)
L'ASSOCIATION SUISSE POUR L'AUTOMATIQUE (ASSPA)

The SGA/ASSPA was founded in 1956 under the presidency of Prof. Ed. Gerecke (the third president of IFAC). The scientific secretary since then has been Dr. M. Cuénod (the honorary treasurer of IFAC). The president now is Prof. M. Mansour of the ETH in Zürich and the vice-president is Prof. P. A. Bobillier in Geneva (president of IFIP).

The areas of interest of the SGA/ASSPA are:

— The techniques of measurement and instrumentation

— Modelling and identification of technical and nontechnical systems. Simulation techniques

— Control theory and its applications to the different disciplines

— Information processing hardware and software

The activities of the SGA/ASSPA include:

— Sponsoring national conferences each year on different topics in theory and applications, sometimes together with other societies like the Swiss Society of Electrical Engineers (SEV/ASE) and the Swiss Society of Operations Research.

— Organising international conferences sponsored by international organisations like IFAC, IFIP and IMACS (AICA), e.g. the 2nd IFAC Congress, Basle 1963; the 5th AICA Congress, Lausanne 1967; the 4th IFAC/IFIP International Conference on Digital Computer Applications to Process Control, Zürich 1974; the 1st IFAC Symposium on Computer Aided Design of Control Systems, Zürich 1981; and the 3rd World Conference on Computer Education, Lausanne 1981.

— Organising courses on different topics mainly for members.

— Publishing a Bulletin with information and scientific articles. In 1981 a pure SGA/ASSPA periodical shall appear.

— Representing Switzerland in four international societies namely: IFAC, IFIP, IMECO, IMACS, European Federation of Chemical Engineers.

The representation of IFIP shall be transferred to the new Swiss Federation of Informatics of which the SGA/ASSPA is a member. The SGA/ASSPA has about 750 individual members and about 110 collective members.

Belonging to the SGA/ASSPA are two active regional sections, one in Geneva and the other in Jura. These two sections have their own local activities which are directed to the specific interests of the members.

The SGA/ASSPA is also one of the member societies of the Swiss Academy of Science.

The Swiss Federation of Automatic Control is very much interested to intensify its cooperation with IFAC and its NMO's. We think that the field of Automatic Control will have an impact on human life for many years to come. Only through international cooperation the problems facing humanity can be solved.

M. Mansour

*

EDCOM — IFAC Committee on Education

This Committee met in Berlin (GDR), September 1, 1980 to discuss its activities. The chairman, Prof. P. M. Larsen, reported on the new draft of the IFAC constitution and invited committee members to read and to comment on it.

By the date of the Berlin meeting EDCOM had sponsored or cosponsored two Symposia, with another Symposium and one Workshop then forthcoming. For the Kyoto Congress (August 1981) one Special Interest Session and two Round Table Discussions have been prepared.

Another interesting item on the agenda referred to the idea of organising an "Orientation Training Course on System Engineering". The course is planned for a duration of five days and the aim is to introduce the basic concepts of System Engineering to scientific and technical specialists employed in basic system design. The committee felt however that many details will have to be considered before the plan will be ready to be submitted to the IFAC Advisory Committee.

A second revised version of the IFAC Report on Continuing Education has been completed and will be available after printing, presumably before the end of 1980.

(For further information please contact the chairman Prof. P. M. Larsen)

*

EMSCOM — the IFAC Committee on Economic and Management Systems

This Committee held a meeting in June 1980 in Warsaw (Poland) on the occasion of the 3rd IFAC/IFORS Conference on Dynamic Modelling and Control of National Economies.

The Committee presently has 58 members from 26 countries. It has established three Working Groups, dealing respectively with

1. Dynamic Modelling and Control of National Economies
2. Management Planning and Control in Industrial Organisations
3. Hardware, Software and Orgware Integration.

WG 1 is publishing a newsletter ("nonperiodic") to keep members informed and to provide a forum for exchange.

In 1980 the committee has been engaged in three Symposia and two Workshops as either sponsor or consponsor. Reports say that all these events were carried through to satisfaction with respect both to attendance and contents.

In addition, preparations are proceeding for an active and visible participation of the committee in the VIIIth IFAC World Congress in Kyoto next year.

Planning for 1982 and 1983 has also started some time ago and was discussed at the meeting in Warsaw.

(For further information please contact the chairman Dr. Jaakko Kivinen)

IFAC at INTERKAMA
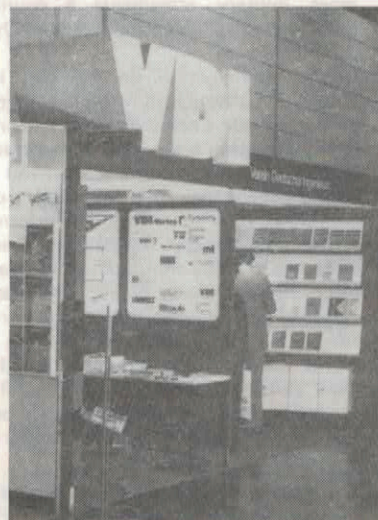
VDI/VDE-Gesellschaft
Meß- und Regelungstechnik (GMR)

Nationale Mitgliedsorganisation in

International Federation of Automatic Control	International Measurement Confederation
IFAC	**IMEKO**
Mitgliedsorganisationen in 40 Ländern, 14 Technische Komitees	Mitgliedsorganisationen in 28 Ländern, 14 Technische Komitees
8. Weltkongreß	9. Weltkongreß
Control Science and Technology for the Progress of Society	Meßtechnik im technologischen und methodischen Wandel
24.–28. August 1981, Kyoto – Japan	24.–28. Mai 1982, Berlin ICC

A display of IFAC activities and IFAC publications was presented to the more than 100.000 visitors of INTERKAMA, the International Exhibition for Instrumentation and Automation in Düsseldorf by our German NMO, the VDI/VDE Gesellschaft für Meß- und Regelungstechnik.

FORTHCOMING EVENTS

IFAC CONGRESS VIII

1981
AUGUST 24 – 28

KYOTO, JAPAN

Programme Committee Met

The second meeting of the International Programme Committee for the IFAC Congress '81 took place in Düsseldorf, October 16 and 17. The Chairman, Professor Akashi, repeated that nearly 750 papers had been submitted, which will now undergo review procedure by the Technical Committees concerned. The first impression was that the great majority of the papers is of very high quality, so that the selection will be very difficult. The Japanese Organizing Committee will make every effort to increase the number of technical sessions to be held in parallel, so that more papers can be accomodated.

The committee further agreed that eight survey papers will be presented in plenary sessions and that decisions to hold round table discussions may be postponed until immediately before the congress.

The third (and last) meeting of the IPC is scheduled to take place in Laxenburg (Austria) on January 30 and 31, 1981.

Though it's November still, Christmas is just round the corner, so:

Seasons Greetings
to all our readers,
to IFAC and the IFAC family

1981 IFAC/IFIP Workshop on Real Time Programming, (Kyoto, Japan, August 31 – September 2, 1981)

Organised by:
National Committee of Automatic Control, Science Council of Japan

Co-sponsored by:
IFIP.

Scope:
In the real time application areas, distributed processing systems are widely used to improve system reliability, expandability and easy-to-use. Meanwhile, software engineering approach is necessary to improve system productivity, maintenability and reliability. In this workshop, dicussion will focus on this topics.

Language:
English, no simultaneous translation available.

For further information please contact:
Dr. Takeo Miura
General Manager
Systems Development Lab., Hitachi Ltd.
1099 Ohzenji, Tama-ku, Kawasaki 215
Japan

3rd IFAC Workshop on Distributed Computer Control Systems (DCCS) (August 15-17 1981, Beijing, China)

Sponsored by IFAC TC on Computers
Cosponsored by IFAC TC on Education

Organizer:

Computer Application Committee
Chinese Association of Automation
Research Institute of Electronic Technic Application

Scope:

Exchange and discussion of technologies for distributed Computer Control Systems (Theory, Devices and Equipment, Software etc.) and their application achievements in laboratory use as well as in production, control in steel, petroleum, chemical, electrical power and light industries, etc.

Six copies of up to 500 word abstracts should be submitted by March 15, 1981, to

Prof. Liu Shi-hua
c/o Computer Application
Committee, Chinese Association of
Automation, Research Institute of
Electronic Technic Application
P.O. Box 927
Beijing, China

4th International Time Series Meeting, ITSM, (Valencia, Spain June 22 – 26, 1981

This conference will feature both invited and contributed papers and the proceedings are to be published.

Further information from:
Oliver Anderson, ITSM Spain
9 Ingham Grove, Lenton Gardens
Nottingham NG7 2LQ, England

automatica

The Journal of IFAC the International Federation of Automatic Control

Special Issue – January 1981

This is the first special issue of Automatica and it is appropriate that it should feature system identification, a branch of control engineering wich has matured from a mathematical and experimental background to the point when it is being successfully applied in a wide variety of control systems.

Guest Editor is Professor Rolf Isermann, who is internationally known for his work in developing and applying system identification methods to model and control industrial processes.

This issue of Automatica — the largest which has yet been published—is partitioned into two parts: Identification Methods and Identification Applications. Contributions are based on invited and submitted papers of the 5th IFAC Symposium on Identification and System Parameter Estimation in Darmstadt, September 1979, and have been revised and generally expanded for this issue.

The first part — on identification methods — starts with several survey papers, followed by papers on special identification methods. The second part — identification applications — begins with contributions to the identification of technical systems. Further papers deal with the application of identification methods to nontechnical systems, such as biological and economic systems. Finally two papers focus attention on the combination of identification and control methods to develop adaptive control systems.

The contributions of this Special Issue demonstrate that process identification has reached a state where it can be successfully applied to technical and nontechnical systems. The identification methods for linear single input/single output systems can be applied straightforwardly both in open or closed loops. However, identification methods for linear multivariable systems and nonlinear systems have to be further developed, unified and compared. Identification methods are mostly used to design control systems. Other promising applications are the prediction of signals, on-line optimization, system monitoring and failure detection, and specially designed digital adaptive control. Therefore system identification is increasingly becoming an important basis for the application of modern control methods.

Orders for this Special Issue should be sent to Pergamon Press Ltd., Headington Hill Hall, Oxford 64881, England, at the earliest convenience. Subscribers to Automatica will receive it as a part of their subscription.

NEW JOURNALS

Computers in Industry
An International Journal of Experience and Practice on Computer Applications in Industrial and Technological Processes

The contents of the journal are to focus on the use of computer and computing techniques in the realisation of products, industrial services and commodities.

Consequently, it will contain contributions relevant to such interest spheres or disciplines as:

- Computer aided design and manufacturing
- Production planning and control
- Real-time applications and computer graphics
- Algorithmic solutions to problems in technological processes
- Process control and material management
- Measurement, test and quality control
- Factory and laboratory automation.

Realization and implementation means serving to rationalise in these areas through industrial standards and management techniques are also within the scope of Computers in Industry. Specific attention will be devoted to addressing interfacing and/or polydiscipline solutions in which the realization of the end product has been executed and controlled in an integrated manner.

The secondary objective of the journal is to specifically bridge the gap of relative technological "illiteracy" between different industrial orientation and operation sectors e.g.:

- Electronic and mechanical engineering
- Shipping, shipbuilding and off-shore operations
- Mining and agriculture
- Aero-space and automative industries
- Civil engineering, architecture, construction and building operations
- Chemical, pulp, paper and textile industries
- Food and energy suppliers
- Transportation and distribution industries.

Computers in Industry is the official journal of IFIP TC 5 (Technical Committee for Computer Applications in Technology).

Computers in Industry will be published in volumes of four issues.

China Science and Technology Abstracts

This journal will be published in English bimonthly and each issue will contain about two hundred abstracts selected from the papers published in the famous scientific journals of China. Through this journal you will have an outline of the latest development of science and technology in China.

The first issue, which was published in July 1980, included a comprehensive index of Chinese scientific literatures of 1979.

*

IEEE Control Systems Magazine

The IEEE Control Systems Society will begin in 1981 publication of a new periodical called IEEE Control Systems Magazine. In addition to the material currently in the IEEE Control Systems Society Newsletter, the magazine will feature technical articles, design tools, society news and much more. Technical contributions are sought related to applications of control theory and technology, but other technical and non-technical contributions appealing to the members of the Society will be most welcome.

You are cordially invited to make a contribution in the form of a technical or non-technical article, letter, comment, suggestions, etc. for the new IEEE Control Systems Magazine.
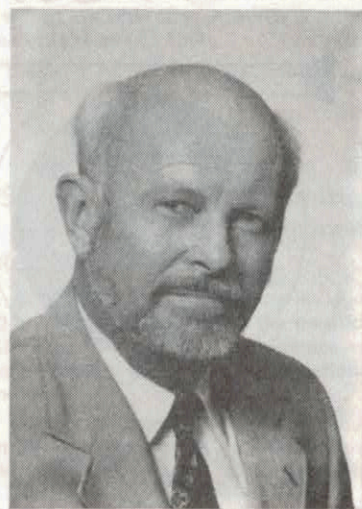
WHO IS WHO IN IFAC

Uolevi Luoto
Immediate Past President of IFAC

Uolevi Luoto, IFAC President during the period of 1975/78, has steered our federation through a rather difficult time span. During his term of office the IFAC Secretariat moved from Düsseldorf to Helsinki, to be transferred to Austria three years later. In between the VIIth World Congress took place in Helsinki, the one publisher scheme was established, new members to IFAC were recruited and activities in the various fields of our committees were increased. But Uolevi managed all this with calmness, humour and efficiency.

Born in 1919, he studied at Helsinki University of Technology, where he took his degrees in 1945 and 1952 respectively. He started his professional carreer as a senior research officer at the National Physical Research Laboratory in Pretoria, Republic of South Africa. He was head of the Industrial Instrumentation and Control Division of EKONO Oy, Helsinki, from 1956 - 1966, and managing director of Oy Finnatom Ab, Helsinki, from 1966 - 1975. From 1975 - 1980 he served EKONO Oy as an executive consultant to become vice president of the marketing section in 1980.

His major professional experience lies in the field of instrumentation and automatic control in industry and power generation, radioactive tracer techniques in industry and in the coordination of the nuclear industry in Finland.

He has been a member of the European Chemical Federation in the Working Group on Automation from 1957 - 67 and chairman from 1965 - 67. He has been an executive committee member of FORATOM from 1965 — 1975; a steering committee member since 1975; first vice-president from 1978 - 1979 and president from 1979 - 80. The World Environment and Resources Council (WERC) has seen him as a governing board member since 1976.

Before becoming president of IFAC, he served our federation as vice-chairman of the TC on Applications from 1963 - 1966 and as its chairman from 1966 - 1969. He was a member of the Executive Council from 1969 - 1972 and first vice-president from 1972 - 1975.