IFIP newsletter
International Federation for Information Processing

Editor:
Dr. Jack L. Rosenfeld

Distributed by
IFIP Secretariat

Vol. 5, no.2, June 1988

COMPUTERS AND THE LAW

IFIP's Technical Committee on the Relationship Between Computers and Society (TC9) held a Conference on Computers and the Law 8-10 February in Santa Monica. Mr. J.J. *Bloom*-Becker (USA) was program chairman, and *Mr. Michael Krieger* (USA) served as conference chairman.

Approximately 150 people attended, many of them lawyers, to discuss a variety of fascinating relationships between computers and the law: the use of computers in the practice of law and the prosecution of crime, crimes committed with the assistance of computers or against computers, laws applicable to the sale, export, and use of computers, patents and copyrights on computer-related products, legal liability for damage caused by computers, problems of litigating cases involving complex technology, and several other topics.

Tutorial sessions presenting technology to the lawyers and law to the technologists built a bridge between lawyers and computer professionals.

Two of the papers that were presented are quoted here, both for their general interest and to illustrate the scope of the Conference.

Computer Crime

Mr. *Bloom* Becker presented a paper, *The Spread of Computer Crime,* which discussed: who are the computer criminals, who are caught and convicted, what prosecutors are doing with regard to computer crimes, what companies should be doing to prevent it, and what

continued on page 5

IFIP'S FINANCIAL SITUATION ASSESSED

Council Reduces 1988 Expenditures

The IFIP Council, meeting in Auckland in March, slashed the previously authorized expenditures for 1988 by over 20%. The effect of this is to reduce the expected deficit from 178 000 Sfr. to 36 000.

This action was motivated by the deficits IFIP sustained during the past two years. The net losses in 1986 and 1987 were 83 000 Sfr. and 51 000, respectively. When monies set aside for a contingency fund and unspent amounts from development funds and other adjustments are added, the nominal deficits are 164 000 and 150 000, respectively. This unhealthy situation was noted by the 1987 General Assembly (GA) in September, and those present were asked to adjust their individual budgets for 1988, in order to achieve a more healthy balance. Despite this, the budget approved by the GA showed a deficit of 178 000 Sfr.

Because IFIP has net assets of approximately 700 000 Sfr., it can operate for a limited time with deficit budgets and still survive. Deficits, of course, reduce the amount of the assets as well as the income those assets generate and eventually deplete the assets entirely.

Acting treasurer Mr. *Owen Dalton* (IRL) pointed out that part of the deficits could be attributed to a significant loss in currency exchange, the move of the IFIP Secretariat to improved facilities, and the decision to add a full-time employee to the staff.

The large deficit was treated as a matter of concern by the Executive Board. In January, IFIP president *Mr. Ashley Goldsworthy* (AUS) wrote a letter to all appropriate parties, asking them to further reduce their 1988 budgets by raising revenues and/or reducing expenses. On the basis of the responses to that request and other input, *Mr. Dalton* prepared a revised budget, which was approved by the Council in March. Those responsible for IFIP activities must now adhere to the new budget. Should the new figures preclude an IFIP unit from holding an important event, the organizers may be able to get help from the President's Reserve Fund, IFIP Development Fund, or the Developing Countries Support Committee Development Fund.

In order to defer spending the 29 000 Sfr. that it costs to produce and mail the ***IFIP*** *Information Bulletin,* Council decided to delay the next issue until 1989.

Little can be done to increase many categories of income. Membership

continued on page 4

CONTENTS

Computers and the Law 1
IFIP's Financial Situation Assessed 1
Al Specialist Group Planned 2
Council Meets in Auckland 3
Member Societies Report Activities 6
Revised Scopes and Aims 7
TC3 to Celebrate 25th Anniversary 7
News From Technical Committees ... 8
New Activity in Fractals 9
News from DCSC 9
Information Systems Concepts 9
VLSI Summer School 10
Site Selection for Congress '94 10
New IFIP Publications 10
Future **IFIP** Meetings 10
Calls for Papers 11
Changes in **IFIP** **11**
National Abbreviations 11
Calendar of Events 12

IFIP COUNCIL

Executive Board

A.W. Goldsworthy	Pres. AUS	86-89
G. Glaser	Vice-Pres. USA	85-88
BI.H. Sendov	Vice-Pres. BG	87-90
G.J. Morris	Vice-Pres. GB	86-89
A. Melbye	Vice-Pres. DK	86-89
J. Fourot	Secretary F	87-90
P. Kovacs	Treasurer H	87-90

Trustees

P.-X. Guo	PRC	85-88
G. Sacerdoti	I	86-89
H.W. Leroux	ZA	87-90
L. Penedo	P	86-89
A.A. Verrijn-Stuart	NL	85-88
R. lau	SEARCC	86-89
A. Balasubrahmanian	IND	87-90
J.H. Finch	CDN	87-88

IFIP NEWSLETTER

Editor:

Dr. Jack L. Rosenfeld
IBM Corporation
Thomas J. Watson Research Center
P.O. Box 704
Yorktown Heights, NY 10598, U.S.A.
tel. 1 (914) 789-7633
telex: 9102400632 ibm yorktown labs
or 137456 ibmresrch ykhg
facsimile: 1 (914) 789-7455
CSNET: ROSENJ@IBM.COM
BITNET: ROSENJ@YKTVMH

Assistant:
Mrs. Doris Engel

Published quarterly by-
IFIP Secretariat
16 Place Longemalle
CH-1204 Geneva, Switzerland
tel. 41 (22) 28 26 49
facsimile: 41 (22) 81 23 22
telex: 428 472 ifip ch

CORRESPONDENTS

TC2 R.K. DeBry
TC3 U. Brauer
TC5 L.H. Fransson
TC6 D. Khakhar
TC9 F. van Rijn

Printed for IFIP by the courtesy of North-Holland Publishing Co.

Please apply to the **IFIP** Secretariat, at the address given above, for copies of the ***IFIP*** *Newsletter* and to be added to (or removed from) the mailing list.

The Secretariat can also answer inquiries about **IFIP.**

The ***IFIP*** *Newsletter* may be reprinted, translated, and reproduced, in whole or in part, except for material specifically denoted as copyright protected. Reprinting in national and local information processing periodicals is encouraged. Acknowledgement to **IFIP** would be appreciated. In order to reprint material protected by copyright, apply for permission to the **IFIP** Secretariat, giving all pertinent details.

Kindly submit material for the *Newsletter* three months before the publication date.

Please send the following **IFIP** information directly to the Secretariat: announcements of conferences, workshops, and other meetings; calls for papers; appointments to committees and other positions; changes of address; and new publications. The Secretariat is the clearinghouse for all such information; it will forward it to the *Newsletter.*

ARTIFICIAL INTELLIGENCE SPECIALIST GROUP PLANNED

At the March 1987 meeting of the IFIP Council in Singapore, **IFIP** trustee *Prof. Alex Verrijn-Stuart* (NL) proposed that IFIP form a group to pursue technical work in the area of artificial intelligence (AI). Various aspects of AI are already covered by several of IFIP's Working Groups (WGs) and by the International Joint Conference on Artificial Intelligence, Inc. (IJCAII), which is an Affiliate Member of **IFIP**. Also, IFIP has organized conferences relating to AI. Nevertheless, there is no single **IFIP** group that treats AI directly. As a result of Prof. *Verrijn-Stuart's* proposal, the Activity Development Board (ADB) formed a Task Group to study this matter.

At the 1987 General Assembly (GA) in Budapest, the ADB decided to establish a provisional Specialist Group (SG) on AI. Prof. *Verrijn-Stuart* was instructed to request the organizers of this SG, Prof. *Laurent* Siklossy (NL) and Prof. *Dr. Robert Meersman* (NL), chairman of the WG on Database (WG2.6), to solicit the cooperation of IJCAII, WGs, and Full Members of **IFIP** interested in AI, as well as the International Association for Pattern Recognition (IAPR), another **IFIP** Affiliate Member.

At the 1988 Council meeting in Auckland (see the article on page 3), *Prof. Verrijn-Stuart* presented a written report by *Prof. Meersman* that gave detailed plans for the SG. The following is taken from that report.

Prof. Meersman first expressed concern over any disruption that the SG might cause:

> A straightforward reorganisation that would regroup the AI interests, which are distributed within IFIP, into a single, new TC-like organisation risks dangerously depleting the resources of the WGs that have invested so much in this new area of research. Also, this risks making insufficient use of the possibilities created by our affiliation with IJCAII. One should not forget that probably the most dynamic WGs are the ones that are investigating applications of AI to begin with, and many researchers are already publishing through, e.g., IJCAII.

New Group's Charter

He then described the SG:

a. Charter—

To take stock of on-going research and of research areas within AI and its applications, both within and outside of **IFIP**

To contact and *enlist the help of knowledgeable experts,* of such stature that they would be able to attract a group of active and representative researchers in this field to this organisation; to set up a work program centered initially around a few important subfields of AI

To ensure the *cooperation with ongoing activities* within **IFIP** and possibly IJCAII; to conduct a series of working and organisational meetings, leading to the organisation of a major **IFIP** working conference in this area

All of the above-mentioned activities should be realised within a period of 18 months, starting in March 1988.

b. Composition—

The initial group should be fairly small, about 8-10 people, more or less properly balanced among the geographical areas where most of the relevant research is concentrated. Above all, these people should commit their time and efforts for an extended period to elicit future collaboration of representative researchers in this field. I propose to organize this SG around six major areas of research, not necessarily orthogonal to each other:

knowledge representation
machine learning
(natural) language understanding systems
cognition and perception
problem solving
expert and knowledge-based systems

Participants

I *[Prof. Meersman]* have informally contacted several people on the idea of such a SG, and the response has (so far!) been unanimously positive. I am fairly confident that a successful group of about 10 experts can be formed to act as a kernel for a program committee for the "founding" **IFIP** Working Conference to be planned for June 1989.

I propose to organise it as an "old-style" **IFIP** WC, with only invited speakers and attendees. Participation should be limited to about 60 peer experts, who would either present invited lectures or participate in panel discussions. The organisation of such a conference could be well on its way by June 1988, with a solicitation for papers issued in the fall of this year.

The ADB and Council accepted this proposal, with the understanding that *Prof. Meersman* would write **IFIP** GA members to ask for their nominations for participants in the founding group.

Prof. *Meersman* has indicated that *Low Quality Information* will be the title of the Conference; Prof. *Siklossy* has agreed to organize the program. ■

COUNCIL MEETS IN AUCKLAND

The IFIP Council met in Auckland 2-3 March, preceded by meetings of the Activity Development Board (ADB) and several IFIP committees. The major issues addressed were the professional activities of IFIP's Technical Committees (TCs) and Working Groups (WGs), IFIP's unsatisfactory financial situation, and plans for IFIP Congresses '89, '92, and '94.

As usual, the bulk of the discussion concerned the work of the TCs and WGs. A WG on Information Systems in Public Administration is being organized, and the IFIP General Assembly (GA) will probably be asked to approve this activity when it meets in New Delhi in September. The ADB approved plans for a Task Group on Fractals, which should be under way soon. (See the article on page 9.) Also, the ADB endorsed plans for a Specialist Group on Artificial Intelligence. (See the article on page 2.)

State-of-the-Art Seminars

Council paid particular attention to two State-of-the-Art Seminars being prepared by the TC on Programming (TC2) and planned to be held in developing countries later this year and next. A Seminar on *Database Principles and Practice* will be held in Pune, India, probably 5-17 December, with lectures given by eight members of the WG on Database (WG2.6). The second seminar, on *Formal Description of Programming Concepts*, is planned for Iguazu Falls, on the boarder between Brazil and Argentina, in April 1989; lectures will be presented by seven members of WG2.2 (which has the same title as the Seminar). Lecture notes are being prepared, which will evolve into textbooks. IFIP is eager that these Seminars be successfully presented and repeated in other countries (at reduced cost). Prospects are good that the textbooks will be useful tools. At the moment, there are problems in coordinating the work of the lecturers, local organizers, Publications Committee, and TC2 officers, which the ADB is addressing. The status of the Seminars will be reported in future issues of the ***IFIP*** *Newsletter.*

Council discussed difficulties experienced by the TC on Security and Protection in Information Processing Systems (TC11) in its attempt to organize a conference in the U.S.A. in 1989. Problems of the International Medical Informatics Association of **IFIP** (IMIA) were also aired. Reports of disappointing financial results of the professionally successful conference MEDINFO '86 and the fact that IMIA has not submitted its budget to **IFIP** generated concern. Council discussed how to promote more effective cooperation with IMIA.

In addition to **IFIP's** technical activities, those of its Affiliate Members (AMs) were discussed. Discussion began a few months ago concerning how the relationship between IFIP and its AMs might be strengthened, and a change in **IFIP's** structure designed to promote closer ties was proposed. (See the article on page 8 of the December 1987 ***IFIP*** *Newsletter.)* This discussion was continued at the Council meeting, and further deliberation is planned for the GA in September.

New Zealand Computer Society president Mr. Philip Parnell (right) greets IFIP president Mr. Ashley Goldsworthy.

The financial situation of **IFIP** was probed, in depth, by the Council. Among the steps taken was a significant reduction in the budgeted expenditures for most **IFIP** activities in 1988. (A full description can be found in the article on page 1.)

Plans for **IFIP's** major events for the general computer science community, the **IFIP** Congresses, were reported to Council. **IFIP** Congress '89 will be held in San Francisco in August 1989. Its International Program Committee chairman, *Dr. Nerve Gallaire* (D), proposed a list of invited speakers, responders, and panelists. These will be printed in the September issue of the ***IFIP*** *Newsletter.* *Prof. Stephen Yau* (USA), Organizing Committee chairman, reported that the attendance is expected to exceed 2500, but the budget has been designed so that a surplus will result from more than 1600 registrants.

Prof. Giampio *Bracchi* (I), chairman of the TC on Information Systems (TC8), said that TC8 would like to hold a World Congress on Information Systems in conjunction with **IFIP** Congress '92 (the 12th World Computer Congress, in Madrid). *Dr. Ronald Uhlig* (USA), chairman of the TC on Data Communication (TC6), supported this concept and said that TC6 would consider holding a World Congress on Data Communication at that time. If this principle were extended, the **IFIP** Congress might comprise 4 to 6 Congresses organized by the individual TCs, with some additional invited papers and panels of a general nature. Papers about new technologies might also be presented. This approach to **IFIP** Congresses would overcome some of the difficulties experienced by large, general-purpose computer conferences in recent years. **IFIP** Congress '89 is moving in this direction, by covering a limited number of areas rather than all of information processing. (See the article on page 5 of the December 1987 ***IFIP*** *Newsletter.)* **IFIP** trustee *Mr. Robert lau* (SEARCC) reported that the most recent South East Asia Regional Computer Confederation conference was a similar union of mini-conferences and proved to be very successful.

Selection of the site for Congress '94, which will be chosen by the 1989 GA, was also considered by Council. This matter is summarized in the article on page 10. ADB chairman Mr. George Glaser (USA) pointed out to the ADB that an American organization is holding a "World Congress on Computing," which some people might confuse with **IFIP's** World Computer Congress. Steps have been taken in the U.S.A. to protect **IFIP's** ownership of the name "World Computer Congress."

Technical activities and organizational aspects of the Developing Countries Support Committee (DCSC) were also discussed by the Council. These are described in the article on page 9.

continued on page 4

OUNCIL MEETING cont. from p. 3

Mr. Hennie Leroux (ZA), chairman of the Marketing Committee, presented its report to Council. The report proposed that **IFIP** hire an Independent Outside Subcontractor to manage **IFIP's** relationship with its publishers. The Council engaged in a lengthy discussion with representatives of the North-Holland Publishing Co., during which the services North-Holland provides to **IFIP** and those additional services **IFIP** would like were enumerated, along with the concessions **IFIP** gives and those North-Holland would like. This analysis may be used in negotiating agreements with other publishers. **(IFIP** made new concessions, including the right for North-Holland to use one page of the ***IFIP*** *Newsletter* to promote **IFIP** books and the permission for them to include a general advertising flyer with the *Newsletter.* This will probably begin with the next issue of the *Newsletter.)*

Council Attendees Give Talks

This Council meeting in Auckland reminded those in attendance of the difficulties borne by New Zealanders and people from other similarly remote locations in attending meetings in Europe or North America. Because of the problem in raising money to travel to Auckland and for other reasons, only two TC chairmen, *Bracchi* and *Uhlig,* attended the meeting. *Prof.* Peter Poole (AUS) represented TC2's chairman. However, all but one member of the Council were present.

On the other hand, the Council meeting brought several information processing specialists to a nation that was eager to hear them speak, and the "Kiwis" made the best of this opportunity. TC6 Chairman *Uhlig* and trustee *Mr. James Finch* (CDN) were the primary speakers at a New Zealand Computer Society (NZCS) seminar held the day following the Council meeting. Trustee *Mr. Luis Penedo* (P) and ***IFIP*** *Newsletter* editor *Dr. Jack Rosenfeld* (USA) presented lectures to the Computer Science faculty of the University of Auckland. Vice-President Glaser, Trustees *Iau* and *Finch,* and Publications Officer *Dr. Karen Duncan* (USA) gave talks at NZCS meetings around the country.

At the close of the Council meeting, President Goldsworthy thanked NZCS president *Mr. Philip Parnell* and his colleagues for the warm New Zealand welcome, the kind hospitality, and the fine arrangements for the meeting. ■

IFIP's FINANCES cont. from page 1

dues, royalties, and interest from investments are relatively stable. (The Finance Committee, however, was instructed to determine whether an emergency increase of the 1989 dues would be advisable. This might be proposed to the 1988 GA in September.) One area in which an increase of income may be achieved is **IFIP** events. The organizers of workshops, conferences, and other activities have been asked to adjust their income (from registration fees) and their expenses in order to achieve a surplus of at least 5000 Sfr. from each event. It is realized, of course, that some events (e.g., seminars in developing countries) will, on occasion, be run with the expectation that there will be a deficit.

Grants and Loans

In addition to concerns about the immediate balance sheet, the Council studied ways to improve the management of funds. *Prof. Alex Verrijn-Stuart* (NL), chairman of the Finance Committee, presented its recommendations concerning IFIP's policy on loans and grants for **IFIP** events. The revised policy, approved by the Council, contains these provisions:

1. Events will be categorized according to whether or not they should be expected to result in a surplus.
2. Before any event is approved, a realistic budget must be presented, including all costs and income expected. Included in this will be an allocation of the administrative portion of the Technical Committee's (TC's) budget. A formula based on the TC's modus operandi will be used to arrive at this figure.
3. An event categorized as being expected to result in a surplus will be approved only if the budget indicates such a surplus.
4. These actions will be monitored by the Treasurer and reported annually. Reviews of TCs will take note of their financial management.

An ad hoc committee, chaired by *Prof. Verrijn-Stuart,* was appointed by Activity Development Board chairman *Mr.* George *Glaser* (USA), to prepare a plan for implementing these recommendations.

New Figures

The revised budget items are as follows:

INCOME	
Membership Dues	221 000
Royalties	170 000
Interest	35 000
Surpluses and Additional Income	30 000
Total	456 000
EXPENDITURE	
Officers	15 000
Admin. Secretariat	324 000
Technical Committees	45 000
TC-related Expenses	26 000
Grants	40 000
Other Committees	42 000
Total	492 000
OPERATING RESULT	(36 000) ■

IFIP PUBLICATIONS AVAILABLE

New **IFIP** workers should be aware of the availability of the following **IFIP** publications from the **IFIP** Secretariat:

- Information Bulletin
- Statutes and Bylaws
- Standing Orders
- *What Is IFIP?*
- 6-Year Plan (list of planned **IFIP** events)

Participants at IFIP Council meeting in Auckland

COMPUTERS & LAW cont. from p. 1

they should do after it occurs. Following are selections from that paper*.

With the exception of three small states, all states of the U.S.A. have computer crime laws, and the federal government has two significant computer crime laws.

Basically, the laws say a couple of obvious and important things:

1. It's a crime to steal using a computer.

2. It's a crime to do damage to a computer or computer system.

A number of significant variants appear in the laws:

1. Trespass—A number of laws say that if you get access to data or programs in a computer system and you know your access is not authorized, it is a crime, whether you harm anything or not. This is an electronic version of traditional trespass laws. These laws tend to have low penalties, reflecting the lack of harm involved.

2. Denial of use—Keeping others from the use of a computer system is another act some laws punish.

3. "Trafficking" in access codes—Publishing information that will enable others to commit a computer crime is another new type of crime found in the new federal law and in Texas' recent enactment.

There are also privacy laws. As a practical matter, the privacy laws are less significant to potential victims than computer crime laws, since the latter will cover deletion, changing, or stealing of information.

Fears over the loss of our privacy have accompanied computer development for the last two decades. We have had hearings and laws passed in the United States, and even more of both in Europe. Yet, 56% of the American public now believes that computers are a threat to privacy. What does this mean to those of us responsible for the development of the computer industry? If people think computers are a threat to privacy, are they going to support computer use, or at best sullenly accept computers as a necessary evil? If we could convince people more that computers are being used in their own interest, they would be more supportive of the development of computing. This should be the result of laws prohibiting violations of privacy by computer use.

Few Prosecutions

However, few computer crimes are prosecuted, because of:

1. victims' inability to detect computer crime

2. reluctance of victims to report computer crime

3. widespread doubt that the criminal law system is equipped to deal with computer crime

Most of those who have studied computer crime accept that these factors keep most computer crimes from coming to light. They refer to the reported cases as "the tip of the iceberg." A minority, mainly those interested in keeping the "reputation" of computers or programmers unsullied, argue there is no iceberg.

The major management problem where computer security is concerned is motivating all of those involved in computer operations to care about security. If they do not care, they will not do it. A major case was recently broken by a sixty year old teller who thought a signature looked funny. Those kinds of employees are getting rarer and rarer. The person who doesn't know or care what is going on is getting more common. This is a serious security problem.

Finally, ethics are not only morally desirable, but a real cost-effective and productive part of the solution to computer security strategy. Promoting ethics among computer workers increases teamwork as well as security.

Mr. BloomBecker concluded as follows:

The problems of computer crime are real. Neither technology nor law is adequate to provide solutions for these problems. The biggest threat to the growth of computing is people thinking that the dangers are greater than the benefits. Today, most people would probably say our privacy is violated all over the place, computer systems are inhuman, but our economic, intellectual and social lives are better than they were before we had computers. So, on balance, we continue to expand our reliance on computers. But that could change. If there were a cybernetic Three-Mile Island, there could be at least a brake on new purchases, if not a mass neo-Luddite revolution. That's the reason it is important to keep a consciousness about computer crime and a commitment to continually improve the levels of computer security.

Paying for Damage by AI Systems

Another paper, *Artificial Intelligence and Certain Resulting Legal Issues* by Ms. Susan *Nycum* (USA) and Mr. *Ivan Fong* (USA), discussed a problem that will become more and more significant as progress is made in Artificial Intelligence (AI)—namely, who is responsible to pay for damage or injury caused by AI systems, and who should reap the rewards of AI systems' creations. The following discussion was included in that paper j.

The general issue of liability for injury caused by AI machines may be resolved when liability is clearly traceable to humans. That is, although immediate human action may not have been the cause of the injury, and although the human action may not have been negligent, some class of human action will still be liable under traditional tort theories.

Injury caused by an expert system can be traced to programmers, users, distributors or manufacturers. For example, an expert system that monitors patients in an intensive care unit and provides diagnostic and therapeutic suggestions can fail and cause injury due to any combination of four sources of error: errors in the program; errors in the knowledge base; unintended use or failure to use or undue reliance by the user; and hardware failures. Programming errors are familiar sources of computing failures. An example of the second type of error would be an erroneous inference rule that was built into the expert system and escaped testing. A more difficult issue arises in determining the reasonableness of a physician's reliance on the expert system, especially in light of increasing medical complexity and expert system sophistication. Finally, as with all mechanical, electronic and electrical appliances, hardware failure due to a manufacturing or other defect is always possible.

Although current technology in the field is lacking, researchers regard the development of a general-purpose AI machine that is virtually indistinguishable from humans in their behavior as a distinct possibility. A future legal issue arises when a court chooses to decide whether an AI machine falls within the legal definition of "personhood." Elevating AI machines to the legal status of personhood would invalidate the previously suggested rationale for human control over technology, for then the technology would merge with the entity doing the controlling. Though of little practical concern today, these issues have future importance.

Profits from AI Systems' Creations

Another aspect of AI systems concerns program-generating computers and computers that are programmed to write poetry, prose, and music. These systems raise interesting legal questions concerning the ownership and protection of these works.

Typically, in today's advanced systems, a user will direct the computer system by describing the problem to be solved or style of composition desired. The computer system then, in a

t © S. Nycum and I. Fong

* J.J. BloomBecker

continued on page 6

IFIP MEMBER SOCIETIES REPORT VARIED ACTIVITIES

Nineteen of IFIP's Full Members prepared reports for the 1987 General Assembly (GA), illustrating a great range of interesting activity. These reports were prepared in response to the request of the 1985 GA for such annual reports, in order that Members might learn about each other's accomplishments, problems, and concerns. The reports delivered to the 1986 GA were summarized in the December 1986 ***IFIP*** *Newsletter* (page 3).

This article includes some of the more interesting activities and statements from the 1987 reports.

The Spanish Computer Society, which will be host for IFIP Congress '92, in Madrid, reported that the 1987 Convención Informática Latina contained several topics aimed at providing computer support for the 1992 Olympics, to be held in Barcelona.

The Computer Society of South Africa (CSSA) reported on another Olympics: its annual Computer Olympiad for high school students. The first round consisted of a two-hour "hands-on" programming test. Then, the top 14 of the 2000 entrants were brought together for the final round—designing and programming a school library system. Contestants were given one 10-hour day to do this on the computers of their choice. All finalists won cash prizes, and computers were donated to the winners' schools.

Another CSSA project supports black schools in Natal. The project provides a database of inexpensive educational resources, electronic publishing facilities to create low-cost alternative text books, and a Computers in Education library to evaluate and develop educational software and hardware and train teachers in their use.

Helping the Disabled

The CSSA supports an organization called Interface, which provides computer-based assistance to disabled people. One of its present projects is the establishment of a sheltered employment center in Cape Town to provide data capture facilities on a commercial basis, and in so doing provide meaningful employment to severely disabled people. The CSSA notes that IFIP is not presently active in the area of computers for the disabled and strongly suggests that such work be undertaken. It expresses willingness to participate in any such activity.

The Computer Society of India is also engaged in helping the handicapped. It has a project on Computer Education for the Handicapped, as well as a program for development of career opportunities for the blind in the field of computer utilization.

Of the many Member societies that advise their national governments, the New Zealand Computer Society seems to be one of the most active. It has provided guidance concerning national policy on science and technology, a code of conduct for providers of electronic fund transfers at points of sale, and copyrights of computer software. In addition, the Society invited representatives of smaller South Pacific countries to attend its annual Conference, where IFIP representatives were present to offer them support.

The French Member is establishing a message switching and communication system based on the French Telecom Minital system, which will be available soon to all members of AFCET Working Groups.

Cooperation within Regions

Cooperation within a geographical region was reported by the Argentine Member, in the form of a summer school on informatics, organized jointly by the governments of Argentina and Brazil. Approximately 500 students attended. Two joint research and development projects were established during the meeting.

A very positive report was received from the Portuguese Member, which reported that it has 4000 members and that it recently purchased additional space for its headquarters to cope with a strong increase in activity and involvement, mainly from its younger members.

The South East Asia Regional Computer Confederation (SEARCC) described a new format to its annual regional conference. SEARCC 88 will be devoted to only 4 or 5 main issues, resulting in mini-conferences running in parallel. SEARCC officers feel that such a format will be much more valuable to the delegates than the general conference topics, which have been the mainstay of previous SEARCC conferences. They believe that the days of generalized conferences are already over. (Plans for the 11th World Computer Congress, to be held in San Francisco in September 1989, reflect this point of view. There will be 11 tracks on topics of great interest, with the papers in each track compressed within a 2½-day period, making Congress '89 several interconnected conferences in one. See the article on page 5 of the December 1987 ***IFIP*** *Newsletter.)*

The other IFIP regional member, the Latin America Center for Informatics (CLEI), also holds annual Conferences, which do not compete with national or specialized conferences in its region. Each CLEI Conference is a reinforcement of a local event, bringing authors and public from the other Latin American countries, and providing opportunities for the discussion of such matters as national informatics policies and the social impacts of computers, as well as technical subjects.

Members' Concerns

Among the concerns voiced by the Members in their reports were the lack of visibility of IFIP, the high cost to developing country Members (and more remote ones) of participating in meetings of Technical Committees and Working Groups, and the high cost of making IFIP publications available to computer professionals in developing countries. Several of these countries expressed gratitude for IFIP support. Two further suggestions were that IFIP prepare a condensed annual report of its activities, which could be reprinted in the publications of the Member societies; and that IFIP do more to attract the participation of East European computer professionals.

COMPUTERS & LAW cont. from p. 5

series of runs with the user's guidance, will produce a program that will function as desired.

In general, ownership of the resulting program is traceable to humans. A court deciding the issue would apportion ownership between the owner of the AI software copyright and the user (problem-specifier) using traditional copyright analysis. At the current stage of development of the technology, the user normally will be the sole author, even though he has taken advantage of some computerized aids in the process. Even in the case where the computer system acts quasi-independently, a court should trace the ownership to the humans at the source of the resulting work. The challenge will be to keep the methodology of the creation of the work clear in the court's mind.

The 1987 **IFIP** General Assembly (GA), meeting in Budapest in September (see the article on page **1** of the December 1987 ***IFIP*** *Newsletter),* approved the following revised Scopes and Aims for Technical Committees (TCs) and Working Groups (WGs), as well as charters of other bodies. (Scopes and Aims of new WGs were printed on page 6 of the March ***IFIP*** *Newsletter.)*

REVISED SCOPES AND AIMS

WG2.7: Computer System User Interfaces
(formerly called Operating System Interfaces)

SCOPE

To investigate the nature and concepts of the user interfaces to operating systems and application systems, and to contribute to the improvement of such interfaces.

AIMS

1. To refine and validate the published reference model [published in 1986] for user interfaces to operating systems.
To extend the reference model, especially in the areas of customisation, distribution, sharing of resources, and help.

2. To combine knowledge of operating systems and of aspects of user behaviour in the development of user interfaces to application systems.

3. To stimulate the exchange of information on user interface design and modelling.

TC6: Data Communication

AIMS

1. To promote the international exchange of information related to data communication.

2. To bridge gaps existing between users, telecommunication administrations, and computer and equipment manufacturers.

3. To establish working contacts with international bodies concerned with data communication, such as CCITT, CEPT, ISO, ECMA, and IEEE.

SCOPE

The Scope of its work includes all aspects of data communication such as research on and design, manufacture and operation of products, systems, concepts, and architectures related to information exchange.

Some examples of areas of specific interest are

- Work fostering the development of standards
- Signal processing
- Formal protocol specification and verification techniques
- National and international communication networks
- Local communication networks
- Integrated services digital networks
- Network management
- Distributed computing and information interchange between databases within a network of computers
- Application of communication systems in office, development and manufacturing areas
- Communications tools and communication services
- Promotion of existing and innovative data communication concepts, both in developing countries and in developed countries.

TC I 0: Computer Systems Technology
(formerly called Digital Systems Design)

AIMS

The aims of the committee are the promotion of the state of the art and the coordination of information exchange on concepts, methodologies, and tools in all stages in the life cycle of computer systems.

SCOPE

The scope includes

1. System and component concepts, architecture and organization
2. Specification, design and verification methodologies of computer systems
3. Logical design and fabrication of components and systems
4. Evaluation of the parameters of computer systems and components
5. Reliability
6. Assessment of emerging technologies
7. Application specific computer systems and components, including peripherals

REVISED CHARTERS

Statutes and Bylaws Committee

The Statutes and Bylaws Committee is responsible for all operations concerning the **IFIP** Statutes and Bylaws and the **IFIP** Standing Orders.

These include:

- advice and assistance to ensure that all **IFIP** operations conform with the **IFIP** Statutes and Bylaws;
- the preparation of Standing Orders—covering operational procedures, finances, reports, documents, etc.—for the administrative assistance of all Chairmen of Technical Committees, Working Groups, Standing and Ad Hoc Committees.

With the assistance of the **IFIP** Secretariat, SBC issues revised editions of the Statutes and Bylaws and the Standing Orders when appropriate. In co-operation with other Standing Committees, SBC is responsible for ensuring that all **IFIP** activities are set up and carried out in accordance with the aims of **IFIP.** SBC therefore evaluates projects and proposals and recommends necessary amendments to the **IFIP** Statutes and Bylaws and the **IFIP** Standing Orders. SBC is also responsible for reviewing Bylaws for **IFIP** Special Interest Groups.

Recommendations regarding changes to the **IFIP** Statutes and Bylaws and SIG Bylaws must be submitted to the General Assembly for Approval.

Amendments to the **IFIP** Standing Orders must be submitted for approval to the **IFIP** Council.

Long Range Planning Committee

The following charter was presented to the General Assembly:

The **IFIP** Long Range Planning Committee (LRPC) is an advisory committee whose purpose is to provide advice and recommendations to help assure that **IFIP** is responsive to changes in Information Processing, both technological and organizational. As an advisory body, the Committee is not directly involved in the day-to-day activities of the Federation.

The Committee has the following procedural aims and objectives:

1. To assess, at approximately 3 to 5 year intervals, the span of **IFIP's** technical activities. As appropriate, the assessment may include or supplement the work of ADB.

2. To examine and evaluate the direction and conduct of IFIP's professional activities.

3. To assess trends in conference organization and topics, publications, and other activities.

4. To work with other **IFIP** committees, when requested, to assist in their long-range plans.

5. To be a source of assistance to the **IFIP** Executive Board.

6. To assist in enlisting participation by former senior **IFIP** officers for special assignments as defined by the Executive Board.

7. To help define changes in **IFIP** direction or organization, in response to changes in the field of Information Processing.

Membership of the Long Range Planning Committee should include, but is not limited to, the following:

1. Former IFIP senior officers.
2. At least one current Vice President.
3. Ex-officio membership by the **IFIP** President.

The Chairman of LRPC need not be a current GA member but should be available to attend the General Assembly meetings.

Membership in LRPC should change, but on an evolutionary basis, so that the Committee has the ability to make recommendations with a long range perspective.

Activity Development Board

Paragraph 7 of the charter was revised to read as follows:

7. To approve activities proposed by TCs, WGs and other **IFIP** bodies. This includes the authority to approve loans or grants within limits set from time to time by the GA. The ADB may not give its approval for any activity which is expected to result in a deficit.

All such decisions by ADB may be taken on appeal to the General Assembly by the chairman of the body involved.

Developing Countries Support Committee

The charter of the DCSC as printed on page 4 of the June 1987 *IFIP Newsletter was approved by the* GA.

TC3 TO CELEBRATE 25TH ANNIVERSARY

IFIP's Technical Committee on Education (TC3) announces that it will hold its 25th anniversary celebration during the European Conference on Computers in Education (ECCE 88). A session of ECCE 88, at 9:00 a.m. on 26 July, will be devoted to presentations on major achievements of TC3. All past, present, and future members of TC3 and it Working Groups (WGs), as well as anyone interested in the work of TC3, are invited to attend. There will also be a dinner on 25 July, for all present and former members of TC3 and its WGs, to celebrate the anniversary. ECCE 88 takes place 25-29 July in Lausanne.

For further information, contact

Prof. Dr. Wilfried Brauer
Institut für Informatik
Technische Universitat Munchen
Postfach 20 24 20
D-8000 Munich 2, Federal Republic of Germany
tel. 49 (89) 21052401/2
telex (0) 522854 tumue d
fax. 49 (89) 2800529

NEWS FROM IFIP TECHNICAL COMMITTEES

TC5

(Comp. Applications in Technology)

The designated chairman of a new WG on Computer Graphics (WG5.10), *Prof. José Encarnacao* (D), is actively recruiting members for the WG. An initial meeting was held 11 March in Brussels. Further, short organizational meetings are planned for the rest of this year, in order to create a schedule for 1989-1991. The decision to create an IFIP WG on Computer Graphics was made by the 1987 General Assembly (GA) last August. (See the article about the GA meeting on page 1 of the December 1987 ***IFIP*** *Newsletter* and the Scopes and Aims of WG5.10 on page 6 of the March 1988 *Newsletter.)*

As a result of the new WG on Computer Graphics, the WG on Computer-Aided Design (WG5.2) has considered how best to refocus its activities. WG5.2 plans to concentrate on

- geometric and product modelling
- intelligent CAD systems (including expert systems and knowledge engineering)
- interfaces to manufacturing and production management
- social implications

The chairman of the WG on Computers in Agriculture (WG5.9), *Dr. Ernest Warman* (GB), reported the difficulties involved in organizing such a group:

> The establishment of the group has taken slightly longer than expected, due to the relative isolation of workers in this area. Because there are virtually no major conferences and international events in this area, lines of communication are somewhat sparse. This group is, thus, going to fulfill a valuable service by establishing many contacts.
>
> The initial work has been undertaken by post and telephone in order to establish possible conference and seminar subjects. The first key feature that emerged from the telephone and postal responses (100%) was the need for meetings to be directed toward two audiences—the developing nations and the developed nations, the target being one meeting of each type per year.
>
> A working conference, to be held next January in Harare, Zimbabwe, is planned as a five-day event, including visits to agricultural research stations. The key issues will be methodologies of transferring information to developing nations and the training needs.
>
> One problem that is to be addressed is the obtaining of funds for travel purposes. Agricultural research establishments are more depressed than most others with respect to funds.

TC9

(Relationship between Computers and Society)

*by drs. Felix van Rijn (NL) **

About sixty participants convened in Tel Aviv December 14-16 for the First International Working Conference (WC) on Social Implications of Robotics and Advanced Industrial Automation. The main characteristics of this WC were the intense discussions and the cultural confrontation. The proceedings of this WC are expected to be published by North-Holland later this year.

The third WC on Women, Work and Computers took place in Amsterdam April 27-29. The first, plenary day was followed by a two day workshop for which over 30 working papers were accepted. The topics for the working groups were: Challenge of Organizational Change, Patterns of Access and Opportunities in the Labour Market, Strategies for System Development, Training: New Opportunities for Women? and Empowering Strategies for Women. A report from this WC will be published in the next ***IFIP*** *Newsletter.*

The January meeting of the Working Group on Social Accountability (WG 9.2) in Namur, Belgium was mainly devoted to discussions of a WC to be held in June 1988, where a textbook about social accountability of computing and telecommunication will be given its final shape. The book will contain the 'state of the art,' a survey of research, literature and points of view, and comments by outstanding professionals in the field. Publication in 1988 or early 1989 is expected.

The diverse Task Forces are progressing very well. In particular, the Task Force on Home-Oriented Informatics and Telematics is about to result in a new WG. The book *Concerning Home Telematics* (published by North-Holland) appeared in March. It contains the proceedings of the WC on Social Implications of Home Interactive Telematics (HIT) held in June 87. It deals with topics like planning, control and assessment, experiences with videotex, social implications of the infrastructure (ISDN and possible alternatives), HIT and human communications, HIT and home and urban environment, new services and tele-education, the position of consumers, and telework.

TC9 intends to be manifestly visible at the 11th **IFIP** World Computer Congress in San Francisco in 1989. A proposal for a substantial contribution by TC9 has been made to the Programme Committee. The fact that Computers and Society is one of the eleven tracks of the Congress programme means a break-through and a recognition of the importance of the social accountability of computing professionals.

TC9's own international presentation, the Fourth Conference on Human Choice and Computers (HCC 4) in 1990 is getting its contours. As Information Technology Assessment will be a main topic in this conference, we are very pleased with the participation of FAST (the Forecasting and Assessment of Science and Technology programme of the Commission of the European Communities) in setting up this conference. In this *Newsletter,* you will be kept informed about the progress.

Also, see the article on page 1 concerning TC9's conference on Computers and the Law.

* ***IFIP*** *Newsletter* correspondent

TC6

(Data Communication)

TC6 is considering the establishment of an award for achievements in both technical and application areas of computer communication.

A suggestion was made that an alternate delegate be appointed from each country that belongs to TC6, in order to improve attendance at meetings.

The president of the Computer Society of Zimbabwe suggested that TC6 members be willing to give lectures or tutorials in developing countries.

TC2

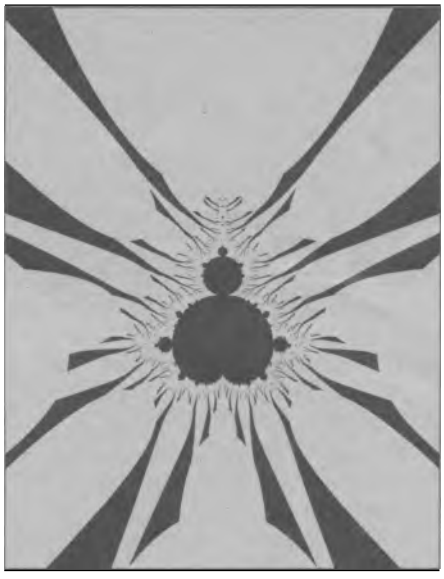
(Programming)

TC2 asked its Working Group 2.1 to consider adopting a new name, since its present name (ALGOL) no longer represents the current activities or scope of the Group. The TC requested that WG2.1 propose a new name and scope to the next TC meeting, which will be held in January 1989 in Grenoble.

Some members of TC2 suggested that there be some technical content to TC meetings. They suggested that it would be useful and interesting to have a couple of presentations on WG activities at each TC meeting. This would mean that some of the administrative content of the meeting would have to be streamlined, or an additional session would be necessary.

NEW ACTIVITY IN FRACTALS

The Activity Development Board, meeting in March before the **IFIP** Council meeting, approved the formation of an **IFIP** Task Group on Fractals. The fractal, a term coined by Dr. *Benoit Mandelbrot* (USA), is a mathematical entity that possesses certain properties, including self-similarity and fractional dimension (concepts we are not prepared to describe here). Fractals have been used to model a great diversity of phenomena, from economic systems to geographical objects. One of the most recent and spectacular applications deals with image compression techniques, which permit, in certain cases, a compression ratio of 1:10 000 to be achieved. This exploding field of fractals was considered to be appropriate for **IFIP** activity.



This Task Group plans to hold the first **IFIP** International Conference on Fractals in March 1990 in Lisbon and, depending upon the outcome of the Conference, may request **IFIP** to form a Working Group or Special Interest Group to continue activity in this area.

Prof. J. Marques Henriques (P) has agreed to serve as chairman of the Task Group and as the Organizing Committee chairman for the Conference. The International Program Committee chairman for the Conference will be *Prof. Heinz - Otto Peitgen* (USA). ■

NEWS FROM DCSC

The Developing Countries Support Committee (DCSC) of **IFIP** held a productive meeting in Auckland, just preceding the Council meeting in March. (See the article on page 3.)

Among the more interesting topics discussed were the evolution of the African Regional Computer Confederation (ARCC). Because of the "awesome" size of the African continent and the lack of good communication facilities in some countries, it now seems more appropriate to have at least four smaller regional groups rather than a single ARCC to coordinate most of the computer activities in Africa. **IFIP** may eventually receive applications for membership from some of these regional organizations.

The European region of the DCSC is now enlarging its boundaries. A Mediterranean confederation seems appropriate, consisting of the developing countries of southern Europe, northern Africa, and the Middle East. The first regional DCSC meeting for this area is planned for early June 1988 in Crete.

Representatives of the Fiji Computer Society and the New Zealand Computer Society reported that computer societies of Oceania were joining to form a regional group and that **IFIP** might soon receive an application for membership from this group.

IFIP Books Distributed

DCSC chairman *Mr. Luis* Penedo (P) reported that he was taking steps to distribute to developing countries about nine tons of surplus **IFIP** books which were a gift from the North-Holland Publishing Co. The Portuguese Computer Society was in the process of taking an inventory of the books, dividing them appropriately, and shipping them to the coordinators for the DCSC regions, to be distributed to libraries and computer professionals in those regions. Thanks were expressed to North-Holland.

A progress report was presented concerning the State-of-the-Art seminars in *Database Principles* and *Formal Description of Programming Concepts* to be conducted by the Technical Committee on Programming (TC2) in India and Argentina, respectively. More information about these can be found in the article about the Council meeting, on page 3.

INFORMATION SYSTEMS CONCEPTS

*by Prof. Alex Verrijn-Stuart (NL) **

There is a growing concern within **IFIP's** Working Group on Design and Evaluation of Information Systems (WG8.1) that too many fuzzy and ill-defined concepts are used in the information systems area. Communication is observed to be severely distorted and hampered. These problems result from the absence of a commonly accepted conceptual reference and terminology for defining or explaining existing and new concepts for information systems.

At the initiative of Profs. *E. Falkenberg* (NL) and P. *Lindgreen* (DK), WG8.1 established a new Task Group called FRISCO (Framework of Information System Concepts), whose aim is to find solutions to these problems. As a first activity, a conference will be held in Namur, Belgium 18-20 October 1989, under the title *An In-Depth Analysis of Information Systems Concepts.* The aim of the conference is to establish a forum for an in-depth discussion of the conceptual foundations of information systems. The roots of the different views and approaches will be investigated to determine whether the divergence is of a conceptually substantive nature, or only a matter of terminology.

The proceedings of the conference will be useful to improve the understanding of the conceptual foundations of information systems, both for the information systems community in general and for the Task Group itself.

For different kinds of information systems, different systems of concepts might be convenient to use. However, instead of establishing different systems of concepts for each kind, it is proposed to try to establish only one. This should serve as a common and convenient basis for most kinds of information systems. From this basis, specialised systems of concepts for special kinds of information systems should be derivable.

In practice, the approach naturally involves study, debate, and conferences like the forthcoming one in Namur, all leading to what might be called a "minimal set of orthogonal information systems concepts." It is the intention of the Task Group to produce a final report towards the end of 1990 or the beginning of 1991. ■

* representative of The Netherlands to the GA and to the Technical Committee on Information Systems (TC8), and **IFIP** trustee

VLSI SUMMER SCHOOL

IFIP's Working Group on Very Large Scale Integration (WG10.5) and the Technical Committee on Computer Systems Technology (TC10) are sponsoring the second biennial summer school on VLSI. The Summer School on Innovations in VLSI Architectures and Design Strategies will be held in Os, Norway (near Bergen) 24 July-5 August. Internationally renowned lecturers will give tutorials on the state of the art of VLSI design strategies, software tools, special purpose VLSI algorithms and architectures, and systems implementations.

For further information, contact

Astrid Bye
VLSI Summer School '88
The Norwegian Institute of Technology,
Dept. of Continuing Education
N-7034 Trondheim, Norway
telex: 55637 nth ad n

NEW IFIP PUBLICATIONS*

CONFERENCE PROCEEDINGS

Geometric Modeling for CAD Applications
Selected and expanded papers from the **IFIP** WG5.2 Working Conf.
Rensselaerville, NY, U.S.A., May 86
Wozny, McLaughlin, Encarnacao, Eds.

Remote Education and Informatics: Teleteaching
Procs. of the **IFIP** TC3 Intl. Conf.
Budapest, Oct 86
Lovis, Ed.

Message Handling Systems, State of the Art and Future Directions
Procs. of the **IFIP** TC6/WG6.5 Working Conf.
Munich, Apr 87
Speth, Ed.

Concerning Home Telematics
Procs. of the **IFIP** TC9 Conf. on Social Implications of Home Interactive Telematics
Amsterdam, Jun 87
van Rijn, Williams, Eds.

Office Knowledge: Representation, Management, and Utilization
Selected full papers based on contributions to the **IFIP** TC8/WG8.4 Intl. Workshop
Toronto, Aug 87
Lamersdorf, Ed.

Distributed Processing
Procs of the **IFIP** WG10.3 Conf.
Amsterdam, Oct 87
Barton, Dagless, Reijns, Eds.

Organizational Decision Support Systems
Procs. of the **IFIP** WG8.3 Working Conf.
Lake Como, Italy, Jun 88
Lee, McCosh, Migliarese, Eds.

Standards in Information Technology and Industrial Control
Contributions from the **IFIP** Working Group 5.4
Malagardis, Williams, Eds.

JOURNALS

Computers in Industry, The International Journal of **IFIP** TC5 — six issues per year

Computers and Security, The International Journal of **IFIP TC11** — four issues per year ■

** published by Elsevier/North-Holland in 1988*

SITE SELECTION FOR CONGRESS '94

Because the 1987 **IFIP** General Assembly (GA) decided to hold the World Computer Congresses every two years (on a trial basis, beginning in 1992), the schedule for the process of selecting sites of the Congress has been revised. *Mr. James Finch* (CDN), chairman of the Site Evaluation Committee (SEC), announced the dates for the selection process for **IFIP** Congress '94, the 13th World Computer Congress:

Apr 88: A letter of invitation sent to all **IFIP** Members, asking them to consider organizing the Congress.
GA 88: A formal call will be issued for interested **IFIP** Members to declare their intent.
1 Feb 89: Deadline for submission of formal proposals to the SEC
Jul 89: Evaluation report by the SEC to **IFIP** Members
GA 89: Decision by the GA (5 years prior to Congress)

Mr. Finch reported further, as follows:

> The procedure followed for the selection of the 1992 site, whereby the SEC prepared a written summary for **IFIP** Members on the relative merits of the proposed sites, seemed to work fairly well.
>
> However, I wonder whether it might not be more effective and more fair to the bidders if the SEC were not required to recommend one specific site to the GA. As I see it, the GA members have shown great ability to select the site of their choice independently of the SEC's recommendation. The GA, having made selections on the last two occasions contrary to the SEC's recommendations, now faces the possibility that the recommendation by the SEC will be a condemnation rather than an affirmation—a situation that would be grossly unfair. Therefore, for the next site selection, at least, it is suggested that the members of the next SEC, together with the President, consider this possibility.

IFIP president *Mr. Ashley Goldsworthy* (AUS) changed the name of the SEC from "Site *Selection* Committee" to "Site *Evaluation* Committee" for just the reason given above. ■

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

General Assembly	5-9 Sep 88	New Delhi
5 Sep: a.m.:	Publications Comm. with TC chairmen, Developing Countries Support Comm.	
p.m.:	Publications Comm., TC chairmen's forum, Executive Board	
evening:	Marketing Comm.	
6 Sep: all day:	Activity Development Board	
7 Sep: a.m.:	Council (brief meeting) followed by General Assembly	
p.m.:	General Assembly	
8 Sep: a.m.:	General Assembly	
9 Sep: all day:	General Assembly	
Council	week of 27 Feb 89	Geneva
GA	Aug or Sep 89	San Francisco

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS*

TC2	Jan 89	Grenoble
WG2.2	20-24 Jun 88	Warsaw
	1st quarter 89	San Francisco area
WG2.3	15-19 Aug 88	Pittsburgh
WG2.7	Sep 88	Kyoto
	1st quarter 89	U.K.
	Sep 89	Napa Valley, CA, U.S.A.
TC3	21-23 Jul 88	Lausanne
WG3.1	24-29 Jul 88	Lausanne
TC5	13 Jun 88	Dresden
WG5.3	17 Jun 88	Dresden
TC6	7-8 Oct 88	Bali
	Mar 89	Belgium, Israel, or Germany
	Sep 89	U.S.A.
	May 90	Budapest
	Sep 90	Spain
TC7	26 Sep 88	London
TC8	23-24 Sep 88	London
	end of Aug 89	San Francisco
WG8.4	Aug 88	Linz, Austria
TC9	4-5 Jun 88	Namur, Belgium
WG10.2	12 Jun 88	Anaheim, CA, U.S.A.
WG10.5	10 Aug 88	Munich
WG11.1	second half of 88	Europe

* Some meetings are scheduled in conjunction with Working Conferences, for which the conference dates are listed.

IMIA

General Meeting	12-15 Sep 88	Geneva

CALLS FOR PAPERS

WG5.4 International ESONE Conference on VMEbus in Research
11-13 Oct 88, Zurich
papers due: 15 Jun 88
contact: Dr. Chris Eck
CERN, DD-Division
CH-1211, Geneva 23, Switzerland
tel. 41 (22) 834260, telex: 419000 CER CH
fax. 41 (22) 837155, uucp ...!mcvax!cernvax!cec

WG2.6 Working Conf. on Visual Database Systs.
3-7 Apr 89, Tokyo
papers due: 15 Jun 88
contact: Prof. Dr. Tosiyasu L. Kunii
c/o Dept. of Information Science
Faculty of Science, University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan
tel. (03) 812-2111, ext. 4116
telex: UTYOINFO J34853, fax. (03) 818-1073
BitNet: TU$KUNII@JPNSUT00
(last 2 characters are zeroes)
Junet: b39756%tansei.cc.u-tokyo.junet
@relay.cs.net
or
Prof. Dr. R.A. Meersman
c/o INFOLAB, Tilburg University
P.O. Box 90153
5000 Le Tilburg, The Netherlands
tel. (+31) 13 66 3020, telex: 52426 kub
BitNet: MEERSMAN@HTIKUB5

IFIP/IFAC/IFORS 2nd Intl. Workshop on Artificial Intelligence in Economics and Management
11-13 Jan 89, Singapore
abstracts due: 1 Jul 88
contact: Mrs. Vicky TOH
Institute of Systems Science
National Univ. of Singapore, Kent Ridge
Singapore 0511, Republic of Singapore

WG5.3 Working Conference on Modeling and Simulation for Optimization of Manufacturing Systems Design and Application
8-10 Nov 89, Tempe, AZ, U.S.A.
abstracts due: 1 Aug 88
contact: D.L. Shunk
Director, Center for Automated Eng. and Robotics
Arizona State Univ., Tempe, AZ 85287, U.S.A.

IFIP/ICCC International Conference Integrated Services Digital Networks (ISDN) in Europe
25-27 Apr 89, The Hague
papers due: 15 Sep 88
contact: Secretariat, ISDN in Europe
Ms. Marijke Newman-van Aalderen
IBM Nederland N.V., Johan Huizingalaan 265
1066 AP Amsterdam, The Netherlands

TC5 Third Intl. Conf. on Computer Applications in Production and Engineering—CAPE'89
2-5 Oct 89, Tokyo
abstracts due: 30 Sep 88
contact: Conference Secretariat-CAPE'89
c/o Conference Department
Business Center for Academic Societies Japan
2-40-14, Hongo Bunkyo-ku, Tokyo 133, Japan
tel. 03-817-5831, fax: 03-817-5836 Int'l
telex: 0 2722268 BCJSP J

9th Intl. Symp. on Computer Hardware Description Langs. and Their Applications—CHDL 89
19-21 Jun 89, Washington
abstracts due: 31 Oct 88
contact: Prof. Dr. Franz J. Rammig
Universitat Paderborn, Warburger Str. 100
D-4790 Paderborn, Federal Republic of Germany

11th World Computer Cong.—IFIP Congress '89
28 Aug-1 Sep 89, San Francisco
papers due: 1 Nov 88
contact: Dr. Hervé Gallaire
ECRC, Arabellastrasse 17
D-8000 Munich 81, Federal Republic of Germany
tel. 49-89-92 69 91 00, telex: 5216910
fax. 49-89-92 69 91 70
e-mail: mcvax!unido!ecrcvax!ifip

CHANGES IN IFIP

NEW APPOINTMENTS

GA MEMBERS

Representative for CLEI: Mr. J. Pino
Dpto. Cs. de la Computacion
Universidad de Chile
Casilla 2777, Santiago, Chile
tel. 56 (2) 927 36
(succeeding Prof. J. Vidart)

Representative for Brazil
Successor for Mr. R.J. Cioglia to be appointed

TC AND WG OFFICERS

WG2.1 Chairman: Prof. Dr. H. Partsch
Dept. of Informatics
Catholic University of Nijmegen
NL-6525 ED Nijmegen, The Netherlands
(succeeding Dr. P.R. King)

WG2.3 Vice-Chairman: Mr. M. Woodger
10 Ottways Lane
Ashtead, Surrey KT21 2NZ, United Kingdom
tel. 44 (3722) 72250
(succeeding Prof. J.J. Horning)

WG6.1 Chairman: Dr. H. Rudin
IBM Research Lab., Saumerstrasse 4
CH-8803 Ruschlikon, Switzerland
(succeeding Dr. C. Sunshine)

TC AND WG MEMBERS

TC2: Da-Yun Shao (PRC)
WG2.1: J.M. Boyle (USA)
B. Willer (D)
WG2.2:
E. Astesiano (I) N. Jones (DK)
B. Best (D) B. Hailpern (USA)
L. Cardelli (USA) F. Kroger (D)
WG2.3:
W. Hoyer (D) P. Rovner (USA)
J. Rohrich (D)
WG2.5 P.W. Gaffney (N)
WG2.8:
S. Abramsky (GB) R. Bird (GB)
Arvind (USA) C. Boehm (I)
L. Augustsson (S) W. Burton (USA)
J. Backus (USA) L. Cardelli (USA)

Sixth World Congress on Medical Informatics-MEDINFO 89
16-20 Oct 89, Beijing
papers due: 10 Jan 89
contact:
Phil. R. Manning, M.D.
Chairman, Sci. Prog. Comm. MEDINFO 89
USC School of Medicine
1975 Zonal Ave., KAM 317
Los Angeles, CA 90033, U.S.A.
tel. (213) 342-9370, Bitnet: Manning at USCVM

TC10/WG10.5 International Conference on Very Large Scale Integration—VLSI 89
16-18 Aug 89, Munich
papers due: 15 Jan 89
contact: (for Europe and Africa)
Prof. G. Musgrave
Brunel University
Uxbridge, Middx UB8 3PH, United Kingdom
or (for The Americas)
Prof. Carlo H. Sequin
Dept. of Elec. Eng. and Computer Sciences
Univ. of Calif., Berkeley, CA 94720, U.S.A. ■

WG2.8 (continued):
C. Clack (GB) J.-P. Jouannaud (F)
G. Cousineau (F) R.B. Kieburtz (USA)
J. Darlington (GB) D.B. MacQueen (USA)
J. Dennis (USA) J.C. Mitchell (USA)
J. Fairbairn (GB) S.L. Peyton-Jones (GB)
M.-C. Gaudel (F) M.J. Plasmeijer (NL)
A.N. Habermann (USA) M. Sheeran (GB)
P. Henderson (GB) P. Wadler (GB)
P.R. Hudak (USA) I. Watson (GB)
J. Hughs (GB) D.S. Wise (USA)
T. Johnsson (S)
WG5.3: G. Halevi (IL)
WG5.7: G. Renchu (PRC)
WG5.9:
P.G. Annicchiarico (I) D. Peccoud (F)
G. Biro (El) R. Ravera Chion (I)
M. Kaul (GB) F. Robson (GB)
H.N. Mahabala (IND) R. Simons (NL)
S. Pabis (PL) D. Wilson (NZ)
WG7.5: D.M. Frangopol (USA)
S. Garribba (F)
TC8: M. Sherwood-Smith (IRL)
WG9.1:
V.Brannigan (USA) A. Heigel (USA)
A. Clementpriv (CDN) P. Jarvinen (SF)
J. Fenessy (USA) I. Wagner (A)
R. Goetze (USA)
TCIO: C.-W. He (PRC)
TC11: J. Vogel (DDR)
WG11.5: W. Tiejian (PRC)

ADDRESS AND OTHER CHANGES

GA Representative for Egypt: Dr. A.E. Sarhan should be contacted at this address:
Egyptian Computer Society
P.O. Box 9009, Nasr City
Cairo, The Arab Republic of Egypt

GA Representative for Greece: Mr. N. Dimitriadis
Action Group Ltd.
Management & Computer Consultants
59 El. Venizelou Str.
17671 Kallithea, Athens, Greece
tel. 30 (I) 9588307-8

Member society of Finland
Finnish Information Processing Association
Tulkinkuja 3, SF-02600 Helsinki, Finland

Member society of Japan
Information Processing Society of Japan
Hoshina Bldg.
2-4-2 Azabudai, Minatoku
Tokyo 106, Japan

GA Representative for the United States/ IFIP Vice-President: Mr. Glaser
fax. 1 (415) 949-4555

GA Representative for France/IFIP Secretary: Mr. Fourot
tel. 33 (1) 40650383 (home)
33 (1) 45029090, ext. 9413 (office)

GA Representative of The Netherlands/ IFIP Trustee: Prof. Verrijn-Stuart
please delete name of road—rest of address remains the same

Mrs. Stephanie Smit (North-Holland)
Elsevier Science Publishers B.V., North-Holland
Mathematics and Computer Science Section
P.O. Box 103
NL-1000 AC Amsterdam, The Netherlands
tel. 31 (20) 5862481, telex: 10704
fax. 31 (20) 5862580 ■

NATIONAL ABBREVIATIONS USED IN NEWSLETTER

A Austria
AUS Australia
BG Bulgaria
CDN Canada
CLEI Centro Latinoamericano de Estudios en Informatica
D Fed. Rep. of Germany
DDR German Demo. Rep.
DK Denmark
F France
GB United Kingdom
H Hungary
I Italy
IL Israel
IND India
IRL Ireland
N Norway
NL The Netherlands
NZ New Zealand
P Portugal
PL Poland
PRC China
S Sweden
SEARCC South East Asia Regional Computer Confederation
SF Finland
USA U.S.A.
ZA South Africa

CALENDAR OF EVENTS

Event	Date	Location	Organized by
Work. Conf. on *Hardware and Software for Real-Time Process Control*	30 May-1 Jun 88	Warsaw	TC5/WG5.4/IFAC
Work. Conf. on *Landscapes for an Information Society*	6-8 Jun 88	Namur, Belgium	TC9/WG9.2
Eighth Intl. Symp. on *Protocol Specification, Testing, and Verification*	7-10 Jun 88	Atlantic City	WG6.1/AT&T-BL
Third Intl. Conf. on *Analysis, Design and Evaluation of Man-Machine Systems-MMS 88*	14-16 Jun 88	Oulu, Finland	IFAC/IFIP/ IFORS/IEA
Seventh Intl. Conf. on *Software for Manufacturing-PROLAMAT 88*	14-17 Jun 88	Dresden, G.D.R.	WG5.3/IFAC
Work. Conf. on *Organizational Decision Support Systems*	20-22 Jun 88	Como, Italy	TC8/WG8.3
Work. Conf. *on Control of Bounderies and Stabilization*	20-23 Jun 88	Clerm.-Ferr., France	TC7/WG7.2
Work. Conf. on *Computer in Nursing*	22-27 Jun 88	Dublin	IMIA/WG8
Work. Conf. on *Stochastic Processes and Their Use on PC*	27-30 Jun 88	Debrecen, Hungary	TC7/WG7.1
Intl. Symp. on *Distributed Intelligence Systems Methods and Applications*	27 Jun-I Jul 88	Varna, Bulgaria	IFAC/IMACS/TC6 & 8
Work. Conf. on *Methodological Approaches to Medical Technology Assessment*	Jun 88	Montpellier, France	IMIA
Fourteenth Workshop on *Reliable Computing and Fault Tolerance*	Jun 88	Japan	TC10/WG 10.4
Workshop on *The Fusion of Hardware Design and Verification*	4-6 Jul 88	Glasgow	TC10/WG10.2
Work. Conf. on *The Role of Artificial Intelligence in Databases and Info. Systs.*	4-8 Jul 88	Guangzhou, China	TC2 & 8/WG2.6 & 8.1
Work. Conf. on *Inverse Problems in Control Theory*	10-16 Jul 88	Vienna	TC7/WG7.2
Summer School on *Innovations in VLSI Architectures and Design Strategies*	24 Jul-5 Aug 88	Trondheim, Norway	TC10/WG10.5/NTNF
European Conf. on *Computers in Education-ECCE'88*	25-29 Jul 88	Lausanne	TC3/SCS
Intl. Workshop on *Human Factors of Info. Systs. Analysis & Design-WHISAD 88*	28-29 Jul 88	London	WG8.1
Work. Conf. *on Computer-Aided Testing on Analog-Digital VLSI Circuits*	8-9 Aug 88	Lengries, F.R.G.	TC10/WG10.5
Workshop on *Physical Design of Sea of Gates VLSI*	11-12 Aug 88	Lengries, F.R.G.	TC10/WG 10.5
Work. Conf. *on Office Information Systems: The Design Process*	15-17 Aug 88	Linz, Austria	TC8/WG8.4/ACS
Work. Conf. on *Distributed Digital Control in Process and Power Industry*	16-19 Aug 88	Bombay	TC7/IFAC/IEEE/IETE
Work. Conf. on *Mathematical Software for Asynchronous Computation*	22-26 Aug 88	Palo Alto	TC2/WG2.5
Intl. Conf. on *CAD/CAM and Technology Transfer to Latin America: Application of Computers to Engineering Design, Manufac. & Mgt. in Latin American Countries*	22-26 Aug 88	Mexico City	TC5/WG5.7
Work. Conf. on *Knowledge-Based Production Management Systems*	23-25 Aug 88	Galway, Ireland	WG5.7
Fourteenth Intl. Conf. on *Very Large Data Bases*	29 Aug-1 Sep 88	Los Angeles	VLDB/IFIP
Work. Conf. *on Management Aspects of Information System Development*	Aug 88	Noordwijkerhout, NL	TC8/WG8.2
Work. Conf. *on Stochastic Systems: Filtering and Optimization*	12 Sep 88	Warsaw	TC7/WG7.1
Work. Conf. *on Computerized Natural Medical Language Processing for Knowledge Representation*	12-15 Sep 88	Geneva	IMIA/WG6
Sixth Intl. Cong. on *Computer Applications in the Automation of Shipyard Operation and Ship Design-ICCAS'88*	13-16 Sep 88	Shanghai	CSNAME/IFIP/ WG5.6/IFAC
Conf. on *Modelling Techniques and Tools for Computer Performance Evaluation*	15-17 Sep 88	Mallorca	IFIP/ACM/IEEE/AFCET
Work. Conf. on *Geometric Modelling*	18-22 Sep 88	New York	TC5/WG5.2
Work. Conf. on *Computerized Assistance during the Systems Life Cycle*	19-22 Sep 88	London	WG8.1
Work. Conf. on *Design Methodologies for VLSI and Computer Architectures*	19-23 Sep 88	Pisa	TC10
Work. Conf. on *Reliability and Optimization of Structural Systems*	26-28 Sep 88	London	TC7/WG7.5
Work. Conf. on *Knowledge Based Systems on Test and Diagnosis*	27-29 Sep 88	Grenoble	TC10/WG10.5
Workshop on *Experience with the Management of Software Projects*	27-29 Sep 88	Sarajevo, Yugoslavia	IFAC/TC5
Work. Conf. on *Medical Informatics in Primary Care*	Sep 88	Oxford, England	IMIA
Seminar on *Formal Description of Programming Concepts*	Sep 88	Buenos Aires	TC2/WG2.2/DCSC
Work. Conf. on *Issues of Design, Development, Distribution and Evaluation of Courseware: Planning and Design of Computer-Aided Teaching*	Sep 88	Jerusalem	TC3
Work. Conf. on *Message Systems*	Sep 88	Irvine, CA, U.S.A.	WG6.5
State-of-the-Art Seminar on *Database Principles and Practice*	Sep 88	Bombay	TC2/WG2.6
Intl. Workshop on *Industrial Computer Systems*	3-6 Oct 88	W. Lafayette, IN, U.S. A.	Purdue/TC5/WG5.4
Symp. on *Robot Control-SYROCO'88*	5-7 Oct 88	Karlsruhe, F.R.G.	IFAC/IMACS/IFIP
Fourth Symp. on *System Analysis Applied to Management of Water Resources*	11-13 Oct 88	Rabat	IFAC/IFIP/IFORS/IAHR
Intl. Conf. on *VMEbus In Research*	11-13 Oct 88	Zurich	ESONE/CERN/IFIP/ECA
Work. Conf. on *Recent Advances in Communication and Control Systems*	19-22 Oct 88	Louisiana, U.S.A.	TC7
Work. Conf. on *Impact of Information Systems in Developing Countries*	24-26 Oct 88	New Delhi	TC9/TC8/CSI
Workshop *on Techniques and Algorithmic Complexity of Simulation*	Oct 88	Udine, Italy	TC 10/WG 10.2
Work. Conf. on *Safety-Related Comps. in an Expanding Market-SAFECOMP '88*	9-11 Nov 88	Fulda, F.R.G.	IFAC/IFIP/TC5/WG5.4
Workshop *on Concepts and Characteristics of Declarative-Based Environments*	Nov 88	Budapest	TC10/WG10.1
Work. Conf. on *Data Semantics-DS-3*	88 ?	Beijing	WG2.6
Work. Conf. *SEACOMM'88*	88 ?	Singapore	TC6/SEARCC
Second Intl. Workshop on *Artificial Intelligence in Economics and Management*	11-13 Jan 89	Singapore	ISS/IFIP/IFAC/SEARCC
Work. Conf. on *Shaping Organizations for Optimal Human Use of Info. Technology*	21-23 Feb 89	Sydney, Australia	TC9/ACS
Fifteenth Workshop on *Reliable Computing and Fault Tolerance*	Feb 89	??	TC10/WG10.4
Conf. on *Data Communication*	Mar 89	Israel	TC6
Work. Conf. on *Visual Database Systems*	3-7 Apr 89	Tokyo	TC2/WG2.6
Intl. Workshop on *Industrial Computer Systems*	17-20 Apr 89	W. Lafayette, IN, U.S.A.	Purdue/TC5/WG5.4
Intl. Conf. on *Integrated Services Data Networks-ISDN'89*	25-27 Apr 89	The Hague	TC6/ICCC
Work. Conf. *on Distributed Computing*	Apr 89		TC10/WG10.3
Work. Conf. on *Medical Informatics: Educational Issues and Trends*	Apr 89	Victoria, Canada	IMIA
Work. Conf. on *Design, Implementation and Opn. of Databases for Production Mgt.*	10-12 May 89	Barcelona	TC5/WG5.7
Sixteenth Workshop on *Real-Time Programming*	16-19 May 89	Berlin, G.D.R.	IFAC/IFIP
Intl. Symp. on *Integrated Network Management*	22-24 May 89'	Boston	TC6/WG6.6
Work. Conf. on *The Information Systems Research Arena in the Nineties*	May 89	Ithaca, NY, U.S.A.	TC8/WG8.2
Ninth Work. Conf. on *Protocol Specification. Testing and Verification*	May 89	Belgium or Netherlands	TC6/WG6.1
Intl. Symp. on *Urban Data Management*	May 89	Lisbon	UDMS/TC8
Work. Conf. on *Educational Software at Secondary Level to be Used in and out of School*	18-22 Jun 89	Reykjavik	TC3/WG3.1
Ninth Intl. Symp. on *Computer Hardware Description Languages and Their Applications-CHDL 89*	19-21 Jun 89	Washington	TC10/WG10.2

IFIP Congress '89-11th World Computer Congress	28 Aug-1 Sep 89	San Francisco	IFIP
IFIP Congress '92-12th World Computer Congress	31 Aug-4 Sep 92	Madrid	IFIP

Please see page 10 for schedule of IFIP administrative meetings.
The **IFIP** Secretariat can furnish details of most of the events listed here.