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International Federation for Information Processing

Editor:
Dr. Jack L. Rosenfeld

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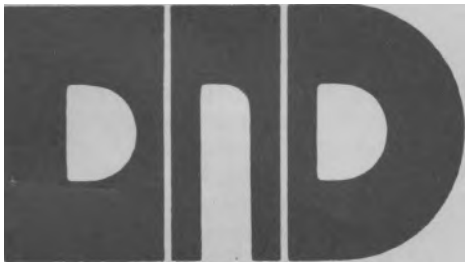
## NORWEGIAN COMPUTER SOCIETY

*by Mr. Atle Skretting**

The Norwegian Computer Society (Den Norske Dataforening) is a professional society that provides its members with opportunities for professional growth and development, as well as the ability to establish personal networks. It also represents its membership to the national authorities, publicizes the value of IT (information technology), and works for a wider engagement of IT professionals in society. Its aim is ambitious and includes almost everything concerning IT.



NCS traces its origin to 1952, when "The Punch Card Club Team," which later was named the Norwegian EDP Society, was formed. This society was application- and system-oriented, and most of its members were companies using EDP (electronic data processing) for administrative data processing. In 1960, the Norwegian Society for Electronic Information Processing was established, recruiting its members from such technical environments as universities, scientific institutions, and EDP departments of larger institutions and

• NCS Information Manager

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## *CONFERENCE ON CURRICULUM DEVELOPMENT*

*by Ute Brauer (Mt*

IFIP's Working Group 3.2 (Informatics Education at the University Level) established its new series of working conferences on curriculum development with a conference on "Teaching Advanced Subjects in the Future" in Zurich, from October 3 to 5, 1991. This event was mainly due to the work of WG3.2 chairman *Bernard Levrat* (International Program Committee chairman), *Niklaus Wirth, Kurt Bauknecht (Swiss* representative to **IFIP),** and *Helmut* Schauer (Organizing Committee chairman), all from Switzerland. There were 46 participants from 14 different countries. But more important than the quantity was the fact that nearly all the participants were well-known, highly qualified experts. Many of them had attended the first working conference of the series, at Brown University (U.S.A.) in April 1990. The Zurich conference was a true continuation of the Brown meeting, not only because of the topics presented but also because the "Brown spirit" was still alive: Questions and comments were given in a very critical and provocative style, with respect to the contents and ideas presented and also with respect to the underlying philosophy. Because of such open, deep and controversial discussions, we had indeed a working conference.

### University Products

The keynote address was given by *Franco* Mariotti, chairman of Hewlett-Packard Europe. As a person from industry being interested in "good and long-lasting products," he gave his opinion on what "the good and long-lasting products from universities" should look like: The students should have the mentality for change (because of the rapid changes in computer science), flexibility (be willing to jump into different areas), and creativity (inventiveness is teachable and trainable, although there is a perpetual conflict between inventiveness and the need for standardization in industry). The students should also be imaginative and sensitive to the customers' needs, able to work in 'several disciplines, aware of the trends in the world, and international in attitude.

As a continuation of the Brown conference, Peter *Wegner (USA)* and *Joe* Turner (USA) gave surveys and resumes for the development of curricula in computing, information systems, infor-

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t former ***IFIP*** *Newsletter* correspondent for TC3

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# *THREE NEW IFIP MEMBERS ADMITTED IN SEPTEMBER*

Last September, the IFIP General Assembly (GA), meeting in Harare, Zimbabwe, approved the admission of three new Full Members: the Malaysian National Computer Confederation, the Andorra National Center for Informatics, and the African Regional Computer Confederation. (According to the IFIP Bylaws, the actual admission of a new Member may occur when 1. a representative of the organization is present at a GA or Council meeting, 2. dues have been paid, and 3. this occurs by the GA following approval.) As a result of these admissions, IFIP will have 46 Full Members, three Corresponding Members, and eight Affiliate Members. Four of the Full Members are regional members. (The Harare GA also proposed the category of Associate Member, which will probably be approved by the September 1992 GA, meeting in Madrid. See the article in the December 1991 ***IFIP*** *Newsletter,* page 1.) We present here brief descriptions of the three new Members.

### Malaysia

MNCC, the Malaysian National Computer Confederation (Gabungan Komputer Nasional Malaysia) is the national organization for information technology (IT) professionals in Malaysia. The Malaysian Computer Society (MCS), formed in 1967, was the first computer association in Malaysia. It was a founding member of the South East Asia Regional Computer Confederation (SEARCC), a Full (regional) Member of IFIP. In October 1988, MNCC was incorporated to take over the functions of the MCS.

Over the years, MNCC has contributed significantly to Malaysian economic and national development by supporting and promoting the use of IT. As a professional body, it serves these needs through regular education and training programs, conferences, seminars, workshops, and exhibitions, providing members and others the opportunity to keep abreast of the latest developments in IT.

MNCC, with a current membership of about 800, is represented in a number of important committees at the national level and institutions of higher learning.

### Andorra

The Andorra National Center for Informatics (Centre Nacional dInformàtica d'Andorra), which has a staff of 35, was established in 1974. The following information from the Center's application for IFIP membership describes the function that CNIA performs:

> Despite the fact that Andorra is small, with a population of just over 50 000, it hosts millions of tourists each year and manages a commercial and banking turnover quite out of proportion to its population. This means that the population has to be extremely active and highly flexible and that the barriers between public and private sectors, which are so marked in larger nations, are almost nonexistent in Andorra.

> Thus it is that the CNIA, which began its life in 1974 when it was becoming clear that computers were here to stay and that the governing bodies of the country needed to use them, is not just the autonomous public body defined by its constitution. Its services, while channeled through government and autonomous public bodies, serve both the public and private sectors. For example, it computerized the National Library and trained its staff and set up a new program for the Ministry of Tourism.
>
> There is also the educational side. Andorran students receive periods of training in the CNIA over the summer each year. In 1985, the CNIA established the "Computers in School" project, destined to equip all the schools in the country with computers for pedagogical purposes.
>
> Since 1987, a branch of the CNIA has been organizing seminars to acclimatize youngsters of age 10 and above to computers and computer-based techniques. "The Fun Work Club" is a follow-up to the seminars.
>
> The CNIA has published, since 1988, a monthly computer review, *Revista d'Informàtica,* which is sent to the secondary schools in the country as well as to 1700 individual subscribers.

## Southern African Confederation

The third new Member is the African Regional Computer Confederation, ARCC, comprising the computer societies of Malawi, Zambia, and Zimbabwe and the Kenya Computer Institute. (The West African Regional Computer Society, WARCS, admitted to **IFIP** in 1988, includes Gambia, Ghana, Liberia, Nigeria, Sierra Leone, and Togo.) Since ARCC is newly formed, we have no background to report here. It is expected that soon additional countries will join ARCC.

### Changed Secretariat Phone Number

Effective 25 April 1992, the telephone number of the **IFIP** Secretariat will be [41] 328 26 49. The fax number is not affected.

# IFIP CONGRESS '92

Additional invited speakers and panels for **IFIP** Congress '92 have been announced by the International Program Committee chairman, Prof. *Wilfried Brauer (D).* (Others were printed in the December 1991 ***IFIP*** *Newsletter,* on page 2.) They are as follows:

*Software Development and Maintenance* stream —

Invited Speakers:

Steve Reiss (USA) — *Programming Environments*

Jean-Raymond Abanal (F) — *Formal Specifications*

David Turner (GB) — *Functional Programming*

*Algorithms and Efficient Computation* stream —

Invited Speakers:

Richard Karp (USA) — *On-line Algorithms Versus Off-line Algorithms: How Much Is It Worth to Know the Future?*

Kurt Mehlhorn (D) — *Algorithm Design and Software Libraries*

Tom Leighton (USA) — *Parallel Algorithms*

Silvio Micali (USA) — *Cryptography*

Panel —

*Encouraging Academic-Practitioner Collaboration,* chairman: Bernard Glasson (AUS)

This major **IFIP** event, the 12th World Computer Congress, will take place in Madrid 7-11 September. For further information, please contact

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*NCS continued from page 1*

companies. These two societies existed side by side until they merged, in 1976, into what is now the Norwegian Computer Society. **The** result is a meeting-place for professionals with a variety of backgrounds.

NCS, a member of **IFIP** since 1962, has a membership consisting of 1000 companies and institutions, and 7500 individuals (either through their companies or individually). It is organized into one administrative unit and nine local societies.

The local societies arrange many activities. Here, we find the "life blood" of NCS: working groups, where members from the different branches of NCS meet and work together, an activity dating from the 1950s. Subjects depend upon the nature of the local societies. Some are dominated by the offshore oil industry, some by educational institutions, others by the fishing industry, etc.

The Society has recently been through a reorganization, with the purpose of uniting the local societies into one homogeneous organization. The new form of organization was established in January 1992. At the same time, we took the opportunity to establish national working groups after the **IFIP** Technical Committee model. Grounded in the societies' traditions, our members have long experience with cooperation in local working groups. However, we have to be careful not to dam up the creativity of our members by establishing a formal central administration where members no longer have personal contact with each other. National working groups have obvious advantages, both for establishing personal networks and for distributing information. Up to now, the experience has been positive.

From the working groups, NCS brings its resources to another central area: courses and conferences. NCS is one of the largest organizers of conferences in Norway. The EDP trade shows of NCS are among the largest in Scandinavia. In addition, we have organized international conferences in cooperation with **IFIP,** as well as NordDATA, which takes place in Norway every 4th year, in cooperation with the other Nordic computer societies.

NCS is an established consultant to the government in matters concerning IT, and each year it produces several statements and reports. Because the Society is represented in a number of public committees, we have influence in the formation of policy concerning IT in the years ahead. At present, questions regarding taxes on network services, the introduction and development of standards, and other governmental IT policies are under study

For the future, it is of vital importance that the Society functions as a living organism, based on the members' enthusiasm, spirit of cooperation, and sense of fellowship. It is further important that it remains a meeting-place for members with varying backgrounds, so that they may grow and develop and nourish their personal networks within the IT community.

### National Abbreviations Used in Newsletter

| | | | | | |
|---|---|---|---|---|---|
| A | Austria | E | Spain | NL | The Netherlands |
| AUS | Australia | F | France | PRC | China |
| BG | Bulgaria | GB | United Kingdom | S | Sweden |
| BR | Brazil | IND | India | SF | Finland |
| CH | Switzerland | IRL | Ireland | TN | Tunisia |
| CS | Czechoslovakia | J | Japan | USA | U.S.A. |
| D | Germany | N | Norway | ZA | South Africa |
| DK | Denmark | | | ZW | Zimbabwe |

## Who's Who in IFIP: MR. MASANORI OZEKI

**IFIP** trustee *Mr. Masanori Ozeki* was born in 1924 in Nagoya, Japan. He attended the University of Tokyo and graduated in 1946 with a degree in electrical engineering.

After leaving the University, he joined the Japanese Ministry of Transportation and soon afterwards, the Japanese National Railways (JNR). There he held a number of important positions, including Director of the Electrical Department and Director of the Computer Application Department. He also served as a member of the JNR Board of Directors. During his stay at JNR, he was responsible for the introduction of a telephone crossbar switching system, the standardization of the automatic telephone exchange, and the development of the first large-scale computerized seat-reservation system in JNR.

In 1979, he joined Hitachi, Ltd., where he became General Manager of the Office Automation Division in 1982 and Executive Managing Director of Hitachi in 1983. While at Hitachi, he developed a personal CAD (Computer-Aided Design) system.

In 1987, he left Hitachi to become President of the Railway Technical Research Institute, which performs research and development related to railways. (Currently, its largest project is development of MAGLEV, the superconductive linear motor-car system.)

During his career, he has written two books and many papers. He has also served on many committees — government, industry, and professional society — as member and chairman.

He has been honored with several significant appointments, most recently to the Science Council of Japan.

Mr. *Ozeki* has been an active member of the Information Processing Society of Japan for many years, serving in a number of roles, including President (1985-1987) and Honorary Member (1989–present). He is currently Chairman of the International Relations Committee. From 1977 to 1980, he was Co-chairman of the Organizing Committee of **IFIP** Congress '80, which took place in Tokyo and Melbourne.

*Mr. Ozeki* was named Japanese representative to **IFIP** in 1987, replacing *Dr. Kaoru Ando,* and he was elected to the position of trustee in 1988. He has served on committees and as Cognizant Officer of Technical Committees. At present, he is chairman of the Admissions Committee.

He is the father of two daughters and a son. In his spare time, he enjoys singing and listening to Noh songs, the background music of classical Japanese theater.

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*CURRICULUM continued from page 1*

mation science, computer science, computer engineering, and related fields in the U.S. But the main issue of the Zurich meeting was education in different fields of informatics; therefore, we had a greater variety of subjects, compared to the Brown conference.

In the session on *architecture,* we heard about EUROCHIP, the European VLSI Design Action, which is sponsored by the commission of the European communities. The organization plans to give the means to develop and produce chips to the more than 200 European universities involved.

The necessity and value of learning by doing was also the message coming from Japan. But there, astonishingly, the availability of the most modern technology is not considered to be important for university education: Students learn engineering as the art of solving a problem with the means available. These differences in approaches were discussed intensively.

In *software engineering,* we had a discussion about teaching programming that was so intensive that extra presentations by the two main adversaries were squeezed into the very dense program. So we had the opportunity to attend a fascinating match — Nico *Habermann (USA)* versus *David* Gries (USA) — intuition and art versus formalism and logic, broad knowledge versus systematic thinking, synthesis versus analysis, treatment of problems and solutions as parts of larger ones or in connection with similar ones versus detailed individual analysis of problems to find characteristic properties leading to solutions, and software engineering versus mathematics of software development.

The *theory* section showed that mathematics and theoretical informatics play an increasingly important role by providing tools for problem solving as well as a unifying basis for the development of informatics.

*Visualisation* was presented and discussed with respect to two aspects: education for visualisation and visualisation for education. To visualise huge amounts of data in an appropriate way, it is not only necessary to master all the many informatics tools but also to know a lot from other fields, like psychology, the arts, etc., and this requires specialised education. Visualisation seems to be of great help for education, but one should be aware of the fact that the attraction of the pictures may distract from the essentials.

The role of *artificial intelligence* was discussed with controversy: Is AI an independent, fundamental discipline, a special group of methods and techniques used in informatics, or a particular way of looking at and a motivation for working on informatics problems?

The proceedings of the Zurich conference, together with those of the Brown meeting, edited by *Frank Lovis (GB),* will soon appear as a special issue of the journal *Education and Computing,* published by Elsevier Science Publishers. The next WG3.2 working conference is planned for Mexico, early in 1993.

## RESIGNATIONS FROM IFIP

We note the recent resignation from **IFIP** of these devoted workers:

Mr. *James Finch* represented Canada from 1980 to 1991. He served as trustee from 1980 to 1986 and 1987 to 1988 and as vice-president from 1988 to 1991. He was chairman of the Marketing Committee most recently.

*Dr. Peter* Kovacs served as Hungary's representative from 1984 to 1991. He was trustee from 1986 to 1987 and treasurer from 1987 to 1990.

Mr. *Hennie Leroux* was the South African representative from 1981 to 1991, serving as trustee from 1984 to 1990. He was chairman of the Marketing Committee from 1986 to 1989.

We shall miss their friendship and their hard work for **IFIP.** ■

## *GOLDSWORTHY NOW DEAN AND PROFESSOR*

A year ago, just after the **IFIP** Council meeting in Barcelona, *Ashley Goldsworthy,* **IFIP** vice-president (and president from 1986 to 1989), returned home to Australia to assume the position of Professor and Dean of the School of Business of Bond University. This represented a significant change in career for *Prof. Goldsworthy,* who has spent virtually all his professional life in business. He retired as chief executive officer and managing director of the Jennings Group in June 1990 and assumed the post of executive director of the Australian Computer Society in July 1990.

Bond University is Australia's first private university, owned jointly by Australian and Japanese corporations. It opened its doors in 1989 and now has a student body of approximately 1400 (undergraduate and graduate), with 500 in the School of Business. Its beautiful campus is situated on the Australian Gold Coast, just one hour from Brisbane, so it has not been necessary for *Prof. Goldsworthy* to relocate. The appointment of a senior businessman as a university dean represents a break in tradition in Australia, but *Prof. Goldsworthy,* with graduate and undergraduate degrees in accounting, economics, and business administration, a long-time interest in education, and 90 published papers to his credit, may not be atypical.

Not being one to let grass grow under his feet, *Prof. Goldsworthy* has also been active in Australian politics on the national level for over 10 years . In October 1990, he was elected Federal President of the Liberal party. This is not a parliamentary position, in which he has no interest, but a behind-the-scenes activity. The Liberals are currently the "opposition" party in Australia.

*Prof. Goldsworthy* has represented Australia in the **IFIP** General Assembly since 1980. We wish him success in his new position. ■

## *SCOPES AND AIMS OF NEW WORKING GROUPS*

The **IFIP** Technical Assembly, at its September meeting in Harare, Zimbabwe, approved the formation of four new Working Groups. Following are the approved Scopes and Aims of two of them (the others are provisional).

### WG10.6: Neural Computer Systems

AIMS

- To promote the exchange of information in the area of innovative neural computer systems and structure.
- To explore problem areas and solutions in the development of neural computer systems.

SCOPE

- system and component concepts, and neural system architecture
- specification and design of neural computer systems
- study of parallel systems that are well suited for neural computing
- specification and design of VLSI building blocks for neural computer systems
- design and implementation of algorithms for neurocomputing
- development of tools for the design of neural architectures

### WG11.8: Information Security Education

AIM

To promote information security education and training at the university level and in government and industry.

SCOPE

1. To establish an international resource center for the exchange of information about education and training in information security.
2. To develop model courses in information security at the university level.
3. To encourage colleges and universities to include a suitable model course in information security at the graduate and/or undergraduate level in the disciplines of computer science, information systems and public service.
4. To develop information security modules that can be integrated into a business education training program and/or introductory computer courses at the college or university level.
5. To promote an appropriate module about information security to colleges and universities, industry and government.
6. To collect, exchange and disseminate information relating to information security courses conducted by private organizations for industry.
7. To collect and periodically disseminate an annotated bibliography of information security books, feature articles, reports, and other educational media.
8. To liaise and cooperate with other interested Working Groups or Technical Committees of **IFIP.** ■

### NORBERT TEUFELHART

We note with regret the death of Dipl. Ing. Norbert Teufelhart (A), who passed away in October 1991. He was a long-time collaborator of *Prof. Heinz Zemanek (A)* (a former president of **IFIP),** helping him in the creation of the **IFIP** Working Conference format. He served on the organizing committees or as an adviser for the first five such conferences.

# IFIP TECHNICAL COMMITTEE 2: SOFTWARE: THEORY AND PRACTICE

IFIP's Technical Committee 2 (Software: Theory and Practice), the oldest existing TC in IFIP, has undergone an interesting transformation — from a small group of experts (mostly academics) dedicated to the development of a specific computer programming language to a much larger and diverse group of professionals working in a variety of fields related to computer software.

To summarize the sometimes stormy origins of TC2, we quote from *A Quarter Century of* ***IFIP*** (1986, ed. Zemanek).* Mr. *Isaac Auerbach* (USA), the first president of IFIP, wrote the following (page 81):

> In 1961, the Algol authors and/or the sponsoring associations [Algol was an early, innovative programming language. — Ed.] requested that IFIP undertake the publication and maintenance of the Algol language. Finding a Chairman for TC2 proved to be a formidable task. There were very deep feelings among the various groups within Europe about Algol's origin and maintenance. To minimize conflict, a chairman was needed who was not involved as one of the thirteen originators of the language, but who had intimate knowledge of the current evolution of the Algol language itself. Fortunately, *Dr. Heinz Zemanek* was such a man. He was a master diplomat, and for seven years he managed to stimulate significant output from the Technical Committee and Working Groups.

*Prof. Zemanek (A), who* later became president of IFIP, reported as follows (pp. 312-318):

> To make the continuation of the Algol work possible, IFIP had to create the necessary structure. After many discussions, a two-level solution was found: a Technical Committee, into which each member society, i.e., each nation, could delegate one and only one member, and a Working Group, formally reporting to the Technical Committee, where membership was personal, only based on competency and the interest to cooperate.
>
> The two bodies started work, TC2 (Programming) in Feldafing near Munich in March 1962, and WG2.1 (Algol) in Munich in August 1962. TC2 and WG2.1 fulfilled their Algol 60 duties by producing and forwarding to the International Organization for Standardization (ISO) one proposal for Algol 60 Input/Output and one proposal for an Algol 60 subset, both published in 1964. A revised Algol 60 report was passed and published in 1963. Then work on the successor language was started.
>
> WG2.1 and TC2 were both a crew of old friends and enemies who enjoyed meeting and fighting and who gained, everyone from everyone, a lot from the official and unofficial discussions.

The further evolution of TC2 was discussed by Prof. *Alexander (Sandy) Douglas* (GB),who was an IFIP vice-president (p. 284):

> TC2 on Programming was regarded as central to the interests of the IFIP General Assembly (GA) at that time. Unfortunately future development of Algol had not gone so smoothly, and the question of Algol 68 was just becoming something of a "cause célèbre," with one group willing to go ahead and standardise it and others actively opposing this. The debate reached the IFIP GA, since, in those days, technical matters tended to be discussed in a way that would be impossible with today's larger body. Moreover most members of the GA were themselves more involved with technology than they are now, and felt they had points-of-view to contribute, and did so — sometimes at length and with heat!

The Working Conference is one of the innovations of TC2, dating back to 1963. *Prof. Zemanek* described the first one (p. 315):

> On the instigation of TC2, the IFIP Council approved the first Working Conference on *Formal Language Definition Languages.* The concept was that a TC should work out a list of some 50 to 80 specialists in a field that was still new and yet developed enough for many people to work in it and to make it possible for discussions and working conferences to bring progress and consensus. In order to establish the vocabulary and to base the discussions on solid ground, there should be about 20 invited papers, distributed to the participants before or during the meeting, which constituted the essence of the proceedings.

TC2, unlike other TCs, still adheres to the working-conference format for virtually all its events. They are by invitation only, with TC2 approving the attendance list. Normally, 50-150 people participate. The lower bound is regulated by the principle that all IFIP conferences must result in publication of proceedings; fifty participants is generally a sufficient number for a small proceedings volume. On the other hand, a working conference with more than 150 people tends to be unwieldy. The TC2 working conferences are usually held in conjunction with a meeting of TC2 or one of its WGs.

TC2 does, however, hold an occasional event with a different format. For example, TC2 presents IFIP state-of-the-art seminars, which assemble a group of experts to summarize the state of the art in a particular field and present this summary in the form of a tutorial in developing countries. A collateral goal is to prepare a book that can be used as a textbook for the tutorials and as a reference. The first of these TC2 seminars, *Formal Description of Programming Concepts,* was held in Brazil in April 1989 and repeated in India in February 1992. A second state-of-the-art seminar, *Formal Program Development,* was held in Brazil in January 1992. A third is planned for Thailand in August 1992.

The traditions of TC2 are still respected, with many of its original members remaining active. For example, *Prof. Manfred Paul (D),* a former TC2 chairman, has never missed a meeting. And WG2.1 retained the name Algol until 1990 (it is now Algorithmic Languages and Calculi).

On the other hand, changes are indeed occurring in TC2. Many WG members, especially in WG2.4 and WG2.6 (described below) are now from industry. Theory and practice are considered equally important, and their interdependence is stressed. To emphasize this point, the name of TC2 was changed from "Programming" to "Software: Theory and Practice" in 1990.

The membership lists of TC2 and its eight WGs — almost 300 professionals — look like a *Who's Who in Computer Science.* We now give a brief summary of these WGs.

WG2.1 (Algorithmic Languages and Calculi), IFIP's first WG, still provides support for Algol 68; however, its orientation is theoretical, and its main aim is to explore and evalu-

* © IFIP

*continued on page 10*

# IFIP TC2

Strives to obtain a deeper understanding of programming concepts, both theoretical and practical, in order to improve the quality of the software development process. This includes the specification, design, implementation, and validation of software systems.

TC2 **Chairman: Prof. Peter Poole**
*Position:* Professor of Computer Science and Assistant Vice-Chancellor (Information Technology)
*Employer:* The Univ. of Melbourne
*Location:* Melbourne, Australia
*Interests:* software engineering, information technology strategic planning, computers in education

**TC2 Vice-Chairman: Prof. Reino Kurki-Suonio**
*Position:* Professor
*Employer:* Tampere Univ. of Technology
*Location:* Tampere, Finland
*Interests:* specification and design of distributed and reactive systems, programming languages

**TC2 Secretary: Dr. Lorraine Johnston**
*Position:* Lecturer in Computer Science
*Employer:* The Univ. of Melbourne
*Location:* Melbourne, Australia
*Interests:* software engineering, computer science education

**Working Group 2.1: Algorithmic Languages and Calculi —** Explores and evaluates new ideas in the field of programming, possibly leading to the design of new languages.

**WG2.1 Chairman: Prof. Dr. Helmut Partsch**
*Position:* Professor
*Employer:* **Dept. of Informatics, Catholic Univ.** of Nijmegen
*Location:* Nijmegen, The Netherlands
*Interests:* formal specification (theory and application), transformational program development, syntax and semantics of languages

**Working Group 2.2: Formal Description of Programming Concepts** — Explains programming concepts through the development, examination, and comparison of various formal models of those concepts.

**WG2.2 Chairman: Prof. Dr. Erich Neuhold**
*Position:* Director, GMD-IPSI
*Location:* Darmstadt, Germany
*Interests:* databases, information systems, electronic publication, object-oriented programming

**Working Group 2.3: Programming Methodology — Directs work towards increasing programmers' ability** to compose programs. This includes interests in requirements, specification, and design methods.

**WG2.3 Chairman: Prof. Cliff Jones**
*Position:* Professor of Computing Science
*Employer:* Univ. of Manchester
*Location:* Manchester, U.K.
*Interests:* formal methods of specification and design for (parallel) programs and support tools for such methods

**Working Group 2.4: System Implementation Languages —** Studies the description of software systems at all stages of development and support, with a particular focus upon pragmatic engineering aspects.

**WG2.4 Chairman: Prof. Dr. Uwe Kastens**
*Position:* Professor
*Employer:* Univ. of Paderborn
*Location:* Paderborn, Germany
*Interests:* compiler construction, programming languages, compilation tools, compilation for parallel architectures

**Working Group 2.5: Numerical Software —** Strives to improve the quality of numerical computation by promoting the development and availability of sound numerical software.

**WG2.5 Chairman: Prof. Lloyd Fosdick**
*Position:* Professor
*Employer:* Dept. of Computer Science, Univ. of Colorado
*Location:* Boulder, Colorado
*Interests:* scientific computing, numerical analysis, teaching

**Working Group 2.6: Database —** Assesses the different approaches to knowledge representation with respect to database systems.

**WG2.6 Chairman: Prof. Dr. Robert Meersman**
*Position:* Professor of Computer Science
*Employer:* Tilburg Univ.
*Location:* Tilburg, The Netherlands
*Interests:* database modeling, knowledge representation, CASE tools

**Working Group 2.7: User Interface Engineering —** Investigates the nature, concepts, and construction of user interfaces for software systems.

**WG2.7 Chairman: Prof. Dr. Claus Unger**
*Position:* Professor
*Employer:* Univ. of Hagen
*Location:* Hagen, Germany
*Interests:* intelligent user interfaces, interactive systems' architectures, multi-media interactive courseware

Working Group **2.8: Functional Programming —** Encourages the exchange of information among researchers in the design, implementation, and use of functional programming languages.

**WG2.8 Chairman: Dr. John Williams**
*Position:* Research Staff Member
*Employer:* IBM Corporation, Almaden Research Center
*Location:* San Jose, California
*Interests:* programming language design and implementation, functional programming languages

# *MEMBERS REPORT TO IFIP*

## Danish Member Organization Makes Suggestions

Each year, the **IFIP** Full Member organizations are asked to prepare a report for the General Assembly (GA) that summarizes their major activities, new initiatives, and concerns regarding **IFIP.** This year, 18 Members submitted reports. Probably the most thought-provoking report was the one from the Danish organization, prepared by its president, *Prof. Christian Gram.* Although we do not agree with all its suggestions, we print here the bulk of that report:

The Danish Federation for Information Processing (DANFIP) is an umbrella organization of Danish professional organizations interested in information processing. Its sole objective is "to represent Denmark *in* **IFIP."**

DANFIP has tried for many years to make **IFIP** more visible in the Danish information-processing community by informing its member societies about **IFIP,** but it has not been able to generate much interest outside the small group of some 25 individuals actively involved (as DANFIP representatives to **IFIP** Technical Committees [TCs] and Danish members in about one third of IFIP's Working Groups [WGs]).

In October 1991, a special conference will be held in Copenhagen for the local **IFIP** community, with key people invited from professional informatics societies, university departments in informatics, government agencies for informatics education and research, the press etc., with the purpose of informing them about **IFIP** and discussing how to attract more Danes to **IFIP** activities and events, attract more **IFIP** events to Denmark, and improve the awareness in Denmark of **IFIP** publications. [Forty-seven attended the conference, at which **IFIP's** president-elect, Prof. *Asbjørn* (N), gave an impressive presentation of **IFIP's** objectives, strengths, and weaknesses. — Ed.]

DANFIP has the following proposals for initiatives by **IFIP,** summarized from recent discussions in DANFIP:

### Competent People Essential

1. **IFIP** is, first and foremost, what the people behind **IFIP** are. Therefore, it is crucial that competent and dedicated individuals be appointed to **IFIP.** This is a major responsibility of the Full Member organizations. Another equally important responsibility is to assist the representatives in disseminating information on **IFIP** and **IFIP** achievements, a task which is facilitated by the highly appreciated ***IFIP*** *Newsletter* and other available documents. The relationship between IFIP and its Members is basically handled by the Member representatives in the GA and TCs, and they may monitor each other to some extent.

But as individuals differ, so do Member organizations. Some are stronger than others, and weak Members in some countries or regions may be a serious problem for **IFIP. IFIP** has some measures to replace weak or inactive TC members. Similar measures my not be appropriate for GA representatives or organizations, but sometimes direct contact between the **IFIP** president or some other member of the **IFIP** community and members of a Member organization's board may be useful to assess the need for a replacement for the GA representative, or of the Member organization itself.

### Regionalization

2. Another challenge for **IFIP** is the growing trend towards regionalization among the countries represented in **IFIP,** most recently made visible through the Council of European Professional Informatics Societies, CEPIS, founded by 14 of **IFIP's** Members or kindred societies. The Danish attitude is that CEPIS should primarily be a political body that may benefit its members by coordinating issues related to the European Community and its legislation, while **IFIP** is an apolitical body aimed at technical-scientific issues. But it is not evident whether this view is shared by all other joint members of both organizations.

Perhaps this might be taken as an opportunity for **IFIP** to address the old problem of the discrepancy between IFIP's member structure and the geographical structure of the global information-processing community. It may be appropriate to initiate a restructuring discussion in **IFIP,** aimed at an adjustment of **IFIP,** in particular its executive structure, to better mirror the global balance between the four major groups: North America, Europe, the Far East, and the rest of the world.

3. Recent changes may justify some simplifications of the organizational setup in **IFIP.** More specifically, the role of the Council has diminished to such an extent that it may be abolished. DANFIP would be pleased if the Council meetings in March were replaced by Executive Board meetings in Geneva. In addition, regular Executive Board meetings could be held as telemeetings in December and June.

4. DANFIP favours the existing layered structure of TCs and WGs but would prefer more dynamics to be observed, e.g., by upgrading some of the most active WGs to Specialist Groups or TCs, by closing down inactive WGs and perhaps merging some of the weaker TCs, and by using to a greater extent short term Task Forces under the most active WGs.

5. Finally, the need for exploiting potential income from event activities with open attendance seems quite evident. The concept of TC Funds may be supplemented by implementing the concept of a royalty from **IFIP** sponsorship of open events as a percentage of the registration income.

### Other Highlights

Several Members, in their reports, noted significant increases in individual membership: 20% in Zimbabwe, 15% in Finland, and 7.5% in India.

The Irish Computer Society reported a review of its operations and objectives, culminating in a mission statement that stresses (a) recognition of the professional status of individual members, (b) continuing education for members, and (c) international and national representation of the Society. AFCET, the French Member, has also reorganized, with its 83 Working Groups now reporting to 12 newly formed Technical Committees, and a Scientific Advisory Board being created.

The "Managers Club" is an interesting activity of the Information Processing Society of Israel, which was overlooked in our previous article on Member reports. For a small fee, executives from institutional members of the Society have the opportunity to attend a monthly meeting and gather around a buffet meal, listen to a talk (on a non-

*continued on page 10*

## SOCIAL CITIZENSHIP IN THE INFORMATION AGE

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

Over sixty participants, representing over twenty different nationalities (from Zaire to China to Mexico), met during the International Summer School on Social Citizenship in the Information Age, in Brighton, U.K. from 28 July to 2 August 1991. The Summer School was organised by IFIP's Working Group on Social Accountability (WG9.2). *Colin Beardon* (GB) and *Diane Whitehouse* (GB) chaired the International Programme Committee.

Several scholars led workshops on topics such as

- the concept of citizenship
- access and empowerment through information technology
- cultural diversity and informatics
- overcoming disability
- development, self-determination and information
- human-centred approaches to information systems
- information technology and the psychology of behaviour.

Participants in workshops had the opportunity to be informed about the discussions in other workshops in "speakers' corners" after the workshop sessions.

Each day culminated in a live theatre performance of the "Court of Ethics." This mock trial of a systems analyst accused of social irresponsibility was staged by participants in the Summer School. The "analyst of the week," Peter *Nilsson* (S), and the various prosecutors and court officials succeeded in getting active involvement from the "jury" (i.e., the audience). The deliberations of the jury led to lively discussions, where issues of professional responsibility were raised. Besides, this daily event was sheer fun for both actors and audience.

Practical outcomes of the week's experience include setting up a students' electronic network on the issue of citizenship and information technology. The Summer School proceedings will be edited by *Beardon* and *Whitehouse*.

Planning is now under way for a second summer school, in the Netherlands in 1993.

• ***IFIP*** *Newsletter* correspondent for TC9, and WG9.3 chairman

## *COLLABORATIVE WORK AND INFORMATION SYSTEMS*

*by Kalle Lyytinen (SF) **
*Pentti Kerola (SF)i*
*Pasi Kuvaja (SF)t*

IFIP's Technical Committee 8 (Information Systems) organized its second general Working Conference on Collaboration, Social Communications, and Information Systems (COSCIS'91) in Helsinki, August 27-29, 1991. Over 100 participants from 15 different countries attended.

The Conference dealt with the significance and impact of information technology on new, emerging forms of business organization and cooperation. Moreover, it explored how new ideas of information systems affect our visions of system design and tools.

In his opening speech, the general chairman of the Conference, *Pentti Kerola (SF),* predicted that networking and distributed computing will fundamentally shape human cooperation in the nineties. Neither time nor place will pose the main problem, since people can collaborate from different parts of the globe. Rather, problems are created by cultural, linguistic, and legal differences. These can be partially alleviated by developing appropriate support and tutoring software, which poses new challenges for multidisciplinary research. The president of the Academy of Finland, *Prof. Erik Allardt,* presented the keynote speech.

Invited speakers were *Bo Hedberg (S), Eric Clemons (USA), Pieter Weltewreden (European Community),* and Clarence *Ellis (USA). Hedberg* discussed emerging new types of assetless organizations, which he called "imaginary organizations," that do not base their wealth on material or real capital but on their ability to learn and incorporate new techniques of information and knowledge into their operations. Clemons analyzed the role of information technology in the reshaping of the securities industry. He provided several examples how information technology had changed the industry. All these led to crises and caused considerable reorganization. *Weltewreden* examined the development of electronic data interchange in Europe. He pointed out that the development of standards in this field forms an integral part of the unification policies in the European Community. *Ellis* presented a general model of electronic meetings and how research has addressed different components of this model.

The panels addressed theoretical and philosophical foundations of information systems and collaboration; politics of collaboration — the impact of computer supported cooperative work on organizational structure and power; models of computer-supported cooperative work; and social and economic transition in Central European countries — the potential of information technology.

The most controversial and interesting presentation was made by Prof. Joseph *Coguen* (GB), who divided computing research into four categories: theoretical research, hackers, dry research, and wet research. Theoretical research deals with mathematical problems in computing but is not concerned with the usability of the solutions. Hackers are just interested in playing with computers and in inventing solutions, without any consideration for their general properties. "Wet" researchers (the metaphor is from the fact that 95% of the human body is water) address the human and social issues in computing as unique problems and deny their reducibility to mathematical formulations. Dry researchers want to formalize all problems and point out the usefulness of mathematical methods in solving practical problems.

Prof. *Gordon Davis* (USA), TC8 chairman, noted in the closing speech that one recurring theme of the Conference was the problem of structure and its persistence. Many Conference papers questioned the existence of any enduring and unambiguous structure (in language or organization) on which to base computing solutions. He rightly asked if information systems research is becoming similar to physics and engineering sciences, where practical solutions depend on clear and well-articulated laws of classical Newtonian physics, whereas theoretical physics has to face and examine dynamic and ambiguous reality.

The Conference program chairs were *Ron* Lee *(USA)* and *Ronald Stamper (NL).* The organizing chair was *Kalle Lyytinen (SF).* The Conference proceedings are available from Elsevier/ North-Holland.

* Organizing Chair of COSCIS'91
t General Chair of COSCIS'91
Public Relations Officer of COSCIS'91

*TC2 SUMMARY continued from page 6*

ate new ideas in programming, possibly leading to the design of new programming languages.

WG2.2 (Formal Description of Programming Concepts) is the largest of the TC2 WGs, with 40 members from 11 countries. This WG, also very theoretical, aims at explaining programming concepts by way of developing, examining, and comparing formal models.

WG2.3 (Programming Methodology) has the practical goal of increasing the ability of programmers to compose programs. Among the issues it addresses are the relationship between formulating problems and formulating programs, reliability, adaptability, partitioning large programming tasks, and mechanized assistance for program composition.

WG2.4 (System Implementation Languages) tries to improve the evolution of system implementation languages. For many years, this WG was involved with the Ada programming language and compilers for it. Recently, however, it has turned its attention to programming environments, to help programmers construct large systems programs.

WG2.5 (Numerical Software) has a strong practical orientation, focusing on numerical computation. It is concerned, in particular, with defining necessary hardware and software features of systems for numerical computation, including programming languages, program libraries, and guidelines for documentation, testing, distribution, and maintenance.

WG2.6 (Database) has been very active in organizing working conferences about databases. Its areas of principal concern are conceptual modeling, entity-relationship modeling, database design, query languages, security, distributed databases, and knowledge-based systems.

With 12 members from 7 countries, WG2.7 (User Interface Engineering) is the smallest of the TC2 WGs. It is interested in contributing to the improvement of the user interfaces to operating systems and application systems. It has published a "reference model" for user interfaces, and much of its work involves refining, extending, and validating that model.

The newest of the WGs is WG2.8 (Functional Programming), established in 1987. It is interested in the design and implementation of functional programming languages — applicative languages used to create programs composed entirely of function calls. Such languages are important in research into proof of correctness and parallel execution.

TC2's chairman, *Prof.* Peter *Poole,* joined TC2 as the Australian representative in 1977. He has been responsible for organizing several conferences in Australia since then. He was appointed chairman in 1988 and re-appointed in 1991. Prof. Poole believes that TC2 (and **IFIP)** must interact with the world community of information processing. It is important that TC2 bring about "technology transfer" — the exchange of ideas and information about current research projects as well as the promulgation of current technology to developing countries.

He regrets that there are few members of TC2 or its WGs from developing countries. (The primary reason is the cost of attending meetings.) Although participants from developing countries may not belong to institutes or universities that perform research in TC2's areas of competence, they can benefit from their participation by gaining awareness of the direction in which computer science is heading.

What areas might TC2 enter in the future? Prof. Poole would like to see TC2 WGs established in logic programming and operating systems. Although both are already well-established areas, *Prof.* Poole believes that TC2 should become involved as the informatics community moves into the era of massively parallel computers. TC2 is waiting for a nucleus of motivated individuals to come forward, organize an event, and demonstrate that there is sufficient interest in **IFIP** to sustain activity in this area. Anyone so interested is invited to contact Prof. *Poole.* ■

# LATIN' 92

International Symposium
in Theoretical Computer Science

*by Prof. Imre Simon (BR)**

LATIN'92, an International Symposium in Theoretical Computer Science, will take place in Sào Paulo, Brazil, April 6 to 10, 1992. The main objective of LATIN'92 is to promote high quality Theoretical Computer Science research in Latin America. Further Symposia held in different Latin American countries are expected.

This first event is being sponsored by the Instituto de Matemàtica e Estatistica da Universidade de Sao Paulo, in cooperation with the **IFIP** Specialist Group on Foundations of Computer Science and several other societies, including the **IFIP** regional member CLEI (Centro Latinamericano de Estudios Informatica).

LATIN'92 will consist of 11 invited lectures and 32 contributed papers. The program was selected by an International Program Committee chaired by *Prof. Imre* Simon. The proceedings will appear before the event and will be published in the Springer-Verlag series *Lecture Notes in Computer Science.* The Symposium will be centered around the areas of automata, algorithms, complexity, and combinatorial aspects of computer science.

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Chairman of the LATIN'92 International Program Committee

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*MEMBER REPORTS cont. from p. 8*

informatics topic), and engage in informal discussion with their colleagues. This allows the Society to keep in touch with its institutional members at the same time that it maintains a high profile within decision-making circles.

Several Member organizations expressed chagrin at their inability to afford the travel expenses necessary for them to participate fully in **IFIP,** and at IFIP's inability to send enough lecturers to make them happy.

One shortcoming of these reports was that a majority concentrated on presenting statistics — lists of conferences organized, organizational structure, numbers of members, and similar facts — without describing new and unusual activities and interpreting their importance. All IFIP members are urged to prepare interesting reports that can prove informative to the GA representatives, officers of Member organizations, and others who read them. ■

# NEW IFIP PUBLICATIONS FROM NORTH-HOLLAND

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*Proceedings of the IFIP TC5IWG5 .3 International Conference on Artificial Intelligence in CIM, Leningrad, USSR, 16-18 April 1990*

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## Training: From Computer Aided Design to Computer Integrated Enterprise

*Proceedings of the IFIP TC3IWG3 .4 Working Conference, Alesund, Norway, 1-5 July 1991*

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## Women, Work and Computerization: Understanding and Overcoming Bias in Work and Education

*Proceedings of the IFIP TC9/WG 9.1 Conference, Helsinki, Finland, 31 June-2 July 1991*

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## Information Security

*Proceedings of the IFIP TC11 Seventh International Conference on Information Security: Creating Confidence in Information Processing, IFIP/Sec '91, Brighton, UK, 15-17 May 1991*

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## Local Communication Systems, II

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*Proceedings of the IFIP TC6/WG6.4 2nd International Conference, Palma, Spain, 26-28 June, 1991*

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## Governmental and Municipal Information Systems, II

*Proceedings of the Second IFIP TC8/WG8 .5 Conference on Governmental and Municipal Information Systems, Balatonfüred , Hungary, 3-6 June 1991*

*edited by* R. Traunmüller

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## Object Oriented Approach in Information Systems

*Proceedings of the IFIP TC8/WG8.1 Working Conference, Quebec City, Canada, 28-31 October 1991*

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## Support Functionality in the Office Environment

*Proceedings of the IFIP TC8/WG8.3/WG8.4 Working Conference, Canterbury, Kent, UK, 9-12 September 1991*

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**0.** Martikainen (SF)
succeeding J. Ekberg
S. Thome (F)
succeeding L. Pouzin

**WG6.1:** S. Aggarwal (USA)
M. Johnson (USA)
K. Sabnani (USA)

WG7.6: D. Franco (USA)
Y. Hamam (F)
K.S. Hindi (GB)
D. Solte (D)

**WG9.6:** R. Hackworth (NL)
K. Rennenberg (D)
B. Spruut (NL)

TC11: M. Tuset (E)
succeeding X. Iribarne-Navarro

SISTER SOCIETY OFFICER

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## ADDRESS AND OTHER CHANGES

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Director — Center for Informatics
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e-mail: lrc@sei.cmu.edu

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fax: 45 (33) 92 54 27

**TC3 vice-chairman:**
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**WG6.1 chairman: Dr.** H. Rudin
fax: 41 (01) 7103608

**WG8.1** secretary: Dr. F. van Assche
James Martin & Co.
Industriepark Haasrode
Ambachtenlaan 38
B-3001 HAASRODE, Belgium
tel: 32 (16) 290191

*continued on page 14*

# FUTURE IFIP MEETINGS

## GENERAL ASSEMBLY AND COUNCIL (and related meetings)

| | | |
|---|---|---|
| Council | 2-6 Mar 92 | Trondheim, Norway |
| GA | 11-15 Sep 92 (contiguous to **IFIP** Congress '92) | Madrid |
| GA | (contiguous to **IFIP** Congress '94) | Hamburg |
| GA | (contiguous to **IFIP** Congress '96) | Canberra, Australia |

## TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS*

| | | |
|---|---|---|
| TC2 | 14-15 Aug 92 | Ellivuori, Finland |
| WG2.1 | Sep 92 | Germany |
| WG2.2 | 2-6 Mar 92 (with State-of-the-Art Seminar) | Bombay |
| WG2.3 | 6-10 Jul 92 | New Forest, U.K. |
| | May 93 | Lake Simcoe, Canada |
| WG2.4 | 25-27 Mar 92 (with IEEE conf.) | London |
| WG2.6 | Jul 92 | Monterey, U.S.A. |
| | or Nov 92 | Melbourne |
| WG2.7 | Aug 92 (with conf.) | Ellivuori, Finland |
| WG2.8 | 31 Aug-4 Sep 92 | Oxford, U.K. |
| TC3 | 5-6 Sep 92 (before **IFIP** Congress '92) | Madrid |
| | Jan 93 | Mexico |
| | 28-29 Aug 93 | Birmingham, U.K. |
| | 26-27 Aug 94 | Hamburg |
| | 22-29 Jul 95 | Birmingham, U.K. |
| WG5.3 | 24-26 Jun 92 (with PROLAMAT conf.) | Tokyo |
| TC6 | 20-21 Mar 92 | Helsinki |
| | 24-25 Sep 92 | Nice |
| | Oct/Nov 92 | India |
| | or 5-6 Feb 93 | Capetown |
| | 15-16 Oct 93 | Sofia |
| WG6.1 | 4-8 May 92 (with conf.) | Florence |
| | or May-Jun 92 | Orlando |
| WG6.5 | 22 May 92 (with conf.) | Vancouver, Canada |
| TC8 | 5-6 Sep 92 (before **IFIP** Congress '92) | Madrid |
| WG8.1 | 13-15 Apr 92 (with conf.) | Alexandria, Egypt |
| TC9 | 5-6 Sep 92 (before **IFIP** Congress '92) | Madrid |
| WG9.6 | 7-8 Mar 92 | Brussels |
| | Oct 92 | Farnham, U.K. |
| TC 10 | 8-10 Sep 92 (with **IFIP** Congress '92) | Madrid |
| WG10.2 | 19-20 Mar 92 | Brussels |
| WG10.4 | 10-13 Jul 92 | Cape Cod, Massachusetts |
| | Feb 93 | Captiva, Florida |
| | Jun 93 | Toulouse region, France |
| WG10.5 | 22 Mar 92 | Dresden, Germany |
| | 6 Sep 92 | Hamburg |
| TC11 | 25-26 May 92 (after IFIP/SEC'92) | Singapore |

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

Will TC and WG chairmen kindly keep the Secretariat advised of the dates and locations of their future administrative meetings and also send a copy of the minutes to the Secretariat.

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*CHANGES IN IFIP cont. from p. 13*

TC9 chairman: Prof. Dr. K. Brunnstein
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WG9.2 chairman: Prof. J. Berleur
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Fac. Univ. Notre-Dame de la Paix
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tel: 32 (81) 724000, fax: 32 (81) 724003
e-mail: jbe@fun.cs.uucp
or jberleur@bnandp.51.bitnet

**WG13.1** vice-chairman:
Prof. Dr. G.C. van der Veer
Dept. of Computer Science
Vrije Universiteit
De Boelelaan 1081 A
NL-1081 HV AMSTERDAM
The Netherlands
tel: 31 (20) 5485591, fax: 31 (20) 6427705
e-mail: gerrit@vdveer.cs.vu.nl

**SG14 chairman:** Prof. J. Gruska will be in Germany until September 1993 (see address in ***IFIP*** *Bulletin* No. 23).

### CORRECTION

The following names of TC9 members were incorrect in the ***IFIP*** *Bulletin* No. 23:

L. Bloch-Rasmussen (DK)
J. Wisker (N) ■

# CALLS FOR PAPERS

Thirteenth **SIM/TIMS/ACM/WIP** Intl. Conf. on **Information** Systems
13-16 Dec 92, Dallas
papers **due:** 9 Mar 92
contact: Dr. Joyce Elam
Decision Sciences and Information Systs.
Florida International Univ.
University Park
Miami, FL 33199, U.S.A.
tel: 1 (305) 348-2719
fax:1 (305) 348-3278
e-mail: elamj@servax

Thirteenth IFORS Conf. on Operations Research — **IFORS 93**
12-16 Jul 93, Lisbon
abstracts **due:** 1 Apr 92
contact: Secretariat of IFORS 93
Faculdade de Economia
Universidade Nova de Lisboa
Travessa Estevão Pinto
1000 Lisboa, Portugal
fax: (351) (1) 387 1105

Sixth Intl. Workshop on High-Level Synthesis
4-6 Nov 92, Dana Point Resort, California
papers due: 1 Jun 92
contact: Daniel D. Gajski
Dept. of Computer Science
Univ. of California
Irvine, CA 92717, U.S.A.
tel: **1 (714)** 856-4155
fax:l (714) 856-4056
e-mail: gajski@ics.uci.edu

Fifth **IFIP** Conf. on Computer Applications **in Production and** Engineering — CAPE '94
25-27 Aug 94, Hamburg
extended abstracts due: 30 Jun 93
contact: CAPE '94
c/o Congress Centrum Hamburg
Congress Organisation
P.O. Box 30 24 80
W-2000 Hamburg 36, Germany
tel: 040 / 35 69 - 22 44
fax:040 / 35 69 - 23 43

TeleTeaching 93
20-25 Aug 93, Trondheim, Norway
papers due: 10 Oct 92
contact: TeleTeaching 93
Norwegian Computer Society

N-0503 Oslo, Norway
tel: +47 2 37 02 13
fax: +47 2 35 46 69
e-mail• teleteach@avh.unit.no ■

**Changed Secretariat Phone Number**

Effective 25 April 1992, the telephone number of the **IFIP** Secretariat will be [41] 328 26 49. The fax number is not affected.

## CALENDAR OF EVENTS

(continued from page 16)

| Event | Date | Location | Sponsored by |
|---|---|---|---|
| Third European Conf. on *VHDL Methods — EURO-VHDL'92* | 7-10 Sep 92 | Hamburg | **IFIP** WG10.5/2 Siemens AG, GI/ITG |
| ***IFIP Congress '92 — Twelfth World Computer Congress*** | ***7-11*** Sep 92 | Madrid | **IFIP** |
| Work. Conf. on *Dependable Computing for Critical Applications — DDCA 3* | 14-16 Sep 92 | Mondello, Sicily | **IFIP** WG 10.4/TC11 IEEE CS "c C on FTC, EWICS TC7 |
| Eighteenth EUROMICRO Conf. on *Software and Hardware: Specification and Design — EUROMICRO'92* | 14-17 Sep 92 | Paris | EUROMICRO |
| *ICCC '92* | 27 Sep-2 Oct 92 | Genoa | ICCC |
| Work. Conf. on *Optimization-Based Computer-Aided Modelling and Design* | 28 Sep-2 Oct 92 | Dagstuhl-Castle, Germany | **IFIP** WG7.6 |
| Workshop on *Interfaces in Industrial Systems for Production and Engineering* | Oct ? 92 | Darmstadt, Germany | **IFIP** TC5/ WG5.2/5.3/5.7/5.10 |
| Intl. Workshop on *Compiler Construction — CC'92* | 5-7 Oct 92 | Paderborn, Germany | GI/ **IFIP** WG2.4 |
| Open Conf. on *Formal Description Techniques for Distributed Systems and Protocols — FORTE '92* | 12-16 Oct 92 | Lannion, France | **IFIP** WG6.1/France Telecom, Conseil Regional, CNRS |
| Sixth Intl. Workshop on *High-Level Synthesis — HLSW* | 4-6 Nov 92 | Dana Point Resort, Cal. | ACM, IEEE/ **IFIP** WG10.2/5 |
| Intl. Work. Conf. on *Semantics Issues for Interoperating Databases — DS-5* | 16—? Nov 92 | Melbourne | **IFIP** WG2.6/La Trobe Univ. |
| Intl. Open Conf. on *CAD/CAM and Computer Graphics* | 26-28 Nov 92 | Bombay | **IFIP** WG5.10/5.2/5.3 |
| Work. Conf. on *Computational Techniques of Stochastic Programming* | Feb ? 93 | Seregelyes, Hungary | **IFIP** WG7.7/ IFAC |
| Conf. on *Feature Modelling and Recognition for CAD/CAM Systems* | Feb ? 93 | Valenciennes, France | IFIP WG5.3/ AFCET |
| Intl. Symp. on *Autonomous Decentralized Systems — ISADS '93* | 30 Mar-1 Apr 93 | Kawasaki, Japan | IEEE, IPSJ, SICE/ **IFIP** TC10, TC6, WG5.3 |
| Workshop on *Knowledge Based Hybrid Systems in Manufacturing* | Apr ? 93 | Genoa | **IFIP** WG5.3 |
| Intl. Conf. on *Human Factors in Computing Systems — INTERCHI'93* | 24-29 Apr 93 | Netherlands | ACM SIGCHI/ **IFIP** TC13 |
| Intl. Conf. on *Hardware Description Languages — CHDL'93* | 25-28 Apr 93 | Ottawa | **IFIP** WG10.2 |
| Ninth Intl. Conf. on *Computer Security — IFIP/SEC'93* | May ? 93 | Canada | **IFIP** TC11 |
| Open Conf. on *Informatics and Changes in Learning* | 7-11 Jun 93 | Gmunden, Austria | **IFIP** TC3 (WG3.1 and 3.5) |
| Work. Conf. on *Computer-based Training and Hypermedia in Vocational Education* | Jul ? 93 | Soest, Germany | **IFIP** WG3.4 |
| Sixteenth Open Conf. on *System Modelling and Optimization* | 5-9 Jul 93 | Compiegne, France | **IFIP** TC7 |
| Thirteenth Triennial IFORS Conf. on *Operations Research — IFORS '93* | 12-16 Jul 93 | Lisbon | IFORS |
| ***IFAC** World Congress '93* | 19-23 Jul 93 | Sydney | IFAC |
| *VLSI '93* | Jul ? 93 | Grenoble | **IFIP** WG10.5 |
| Work. Conf. on *Statistical Aspects of Stochastic Programming* | Jul ? 93 | Prague | **IFIP** WG7.7 |
| Intl. Conf. on *Teleteaching '93* | 20-25 Aug 93 | Trondheim, Norway | **IFIP** TC3 |
| Thirteenth IJCAII Intl. Joint Conf. on *Artificial Intelligence — IJCAII '93* | 29 Aug-3 Sep 93 | Chambery, France | IJCAII |
| Workshop on *Large Scale Stochastic Programs: Applications and Solutions* | Oct ? 93 | Yalta, Ukraine | **IFIP** WG7.7 |
| Work. Conf. on *Software Engineering Education* | Oct ? 93 | Kowloon, Hong Kong | **IFIP** WG3.4 |
| Conf. on *Network Information Processing Systems* | 12-14 Oct 93 | Sofia | **IFIP** TC6/Bulgarian Acad. of Sci. |
| Workshop on *Stochastic Methods and Global Optimization* | Mar ? 94 | Lithuania | **IFIP** WG7.7 |
| *IMACS World Congress '94* | Jul ? 94 | Atlanta, Georgia | IMACS |
| ***IFIP Congress '94 — Thirteenth World Computer Congress*** | 29 Aug-2 Sep 94 | **Hamburg** | **IFIP** |
| Workshop on *Expert Systems in Computer Integrated Manufacturing* | Sep ? 94 | Kiev, Ukraine | **IFIP** WG5.3 |
| World Conf. on *Computers in Education — WCCE '95* | 24 July—? 95 | United Kingdom | **IFIP** TC3/BCS |
| Eighth **IMIA** World Congress on *Medical Informatics — MEDINFO'95* | 10-14 Sep 95 | San Paolo, Brazil | IMIA |
| ***IFIP** Congress '96 — Fourteenth World Computer Congress* | **Sep ? 96** | **Canberra, Australia** | **IFIP** |
| Thirteenth *IFAC World Congress '96* | ? 96 | San Francisco | IFAC |

Please see page 14 for schedule of **IFIP** administrative meetings.
The **IFIP** Secretariat can furnish details of most of the events listed.

## CALENDAR OF EVENTS

| Event | Date | Location | Sponsored by |
|---|---|---|---|
| Workshop on *Synthesis, Generation and Portability of Library Blocks for ASIC Design* | 12-13 Mar 92 | Grenoble | IFIP WG10.5 |
| Fourth Intl. Conf. on *Information Networks and Data Communication — INDC '92* | 16-19 Mar 92 | Espoo, Helsinki | IFIP TC6 |
| Intl. Work. Conf. on *Social Implications of Computers in Developing Countries* | 23-25 Mar 92 | Nairobi, Kenya | IFIP WG9.4 |
| Intl. Workshop on *Application-Oriented Synthesis VLSI-ASICS* | 23-25 Mar 92 | Dresden | IFIP WG10.5 |
| Work. Conf. on *Configurable Distributed Systems — WCDS* | 25-27 Mar 92 | London | IEE/ IFIP WG6.6, WG2.4 U.S. Office of Naval Research |
| Work. Conf. on *Programming Environments for Parallel Computing* | 6-8 Apr 92 | Edinburgh | IFIP WG10.3/ BCS PPSG GI/ITG-PARS |
| Intl. Work. Conf. on *Information-Decision-Action Systems in Complex Organizations* | 6-8 Apr 92 | Oxford, U.K. | IEE/ IFIP WG8.3 |
| Intl. Symp. on *Latin American Theoretical Informatics — LATIN'92* | 6-10 Apr 92 | Sao Paulo, Brazil | Inst. de Matematica e Estatistica IFIP SGFCS, ACM, EATCS, IEEE, TCMTC, CLEI, SBC |
| Work. Conf. on *Stochastic Optimization: The State of the Art* | 12-19 Apr 92 | Havana | IFIP WG7.7/ Univ. of Havana |
| Work. Conf. on *Information System Concepts — Improving the Understanding — ISCO* | 13-15 Apr 92 | Alexandria, Egypt | IFIP WG8.l |
| First Work. Conf. on *Manufacturing in the Concurrent Engineering* | 13-15 Apr 92 | Tel Aviv | IFIP WG5.3/5.2/ SME, ITIM, IPICS, IPA CIRP |
| Intl. Conf. on *Computer Languages* | 27-30 Apr 92 | San Francisco | IEEE/ IFIP TC2 |
| Intl. Seminar on *Advanced Technologies in Production Management Systems — ATPMS '92* | 5-8 May 92 | Beijing | IFIP WG5.7/ CEAS-CIE MIAI-CMES |
| Intl. Workshop on *Hardware/Software Co-Design — CoDes* | 19-21 May 92 | Grassau, Germany | IFIP WGl0.5 |
| Seventh Symp. on *Information and Control Problems in Manufacturing — INCOM '92* | 25-28 May 92 | Toronto | IFAC/ IFIP TC5 |
| Work. Conf. on *Upper Layer Protocols, Architectures, and Applications '92* | 25-29 May 92 | Vancouver, BC, Canada | IFIP WG6.5 |
| Eighth Intl. Conf. on *Computer Security — IFIP/SEC'92* | 27-29 May 92 | Singapore | IFIP TC11 |
| Conf. on *Measurement & Modelling of Computer Systems — SIGMETRICS 92* | 1-5 Jun 92 | Newport, Rhode Island | ACM SIGMETRICS/ IFIP WG7.3 |
| Work. Conf. on *Boundary Control and Boundary Variations* | 3-5 Jun 92 | Sophie-Antipolis, France | IFIP WG7.2/ CMA-Ecole des Mines |
| Fifth Symp. on *Man-Machine Systems* | 9-11 Jun 92 | The Hague | IFAC/ IFIP WG5.2/10 |
| Work. Conf. on *The Portable Office: Microprocessor Cards as Elements of Distributed Offices* | 9-12 Jun 92 | Ottawa, Ontario | IFIP WG8.4 |
| Twenty-fourth Intl. Seminar on *Manufacturing Systems* | 11-12 Jun 92 | Copenhagen | CIRP/ IFIP TC5 |
| Work. Conf. on *The Impact of Computer Supported Technologies on Information Systems Development* | 15-17 Jun 92 | Minneapolis, Minnesota | IFIP WG8.2 |
| Intl. Open Conf. on *Theorem Provers in Circuit Design: Theory, Practice and Experience — TPCD* | 22-24 Jun 92 | Nijmegen, Netherlands | IFIP TCl0, WG10.2/ Dutch National Facility for Informatics |
| Twelfth Intl. Symp. on *Protocol Specification, Testing and Verification* | 22-25 Jun 92 | Lake Buena Vista, Florida | IFIP WG6.1 |
| Eighth Intl. Conf. on *Software for Discrete Manufacturing — PROLAMAT '92* | 24-26 Jun 92 | Tokyo | IFIP WG5.3/ IFAC JSPE IPSJ |
| Summer School on *Formal Methods for VLSI Design* | 29 Jun-3 Jul 92 | Lyngby, Denmark | IFIP WG10.5/2 |
| Intl. Workshop on *Comparison of Qualifications and Certification of Information Technology Professionals* | 8-10 Jul 92 | Singapore | IFIP WG3.4 |
| Work. Conf. on *Professional Development of IT Professionals* | 13-17 Jul 92 | Singapore | IFIP WG3.4/ Sing. Comp. Soc. |
| Fifth Work. Conf. on *Engineering for Human-Computer Interaction* | 10-14 Aug 92 | Ellivuori, Finland | IFIP WG2.7 |
| Seventh Conf. on *Dynamic Modelling of National Economies* | 18-20 Aug 92 | Beijing | IFAC/IFORS IIASA IFIP |
| Eleventh IAPR Intl. Conf. on *Pattern Recognition '92* | 30 Aug-3 Sep 92 | The Hague | IAPR |
| Second Intl. Workshop on *Field-Programmable Logic and Applications — FPL '92* | 31 Aug-2 Sep 92 | Vienna | IFIP WG10.2 |
| Seventh IMIA World Congress on *Medical Informatics — MEDINFO '92* | 6-10 Sep 92 | Geneva | IMIA |
| Intl. Conf. on *European Design Automation — EURO-DAC'92* | 7-10 Sep 92 | Hamburg | GI/ IFIP WG10.5/2, TC5, etc. |

(continued on page 15)

| | | | |
|---|---|---|---|
| IFIP Congress '92 — 12th World Computer Congress | 7-11 Sep 92 | Madrid | IFIP |
| IFIP Congress '94 — 13th World Computer Congress | 29 Aug-2 Sep 94 | Hamburg | IFIP |
| IFIP Congress '96 — 14th World Computer Congress | Sep 96 | Canberra | IFIP |

Please see page 14 for schedule of IFIP administrative meetings.
The IFIP Secretariat can furnish details of most of the events listed.