IFIP newsletter
International Federation for Information Processing

Editor:
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PLANS FOR IFIP CONGRESS '92 ARE ANNOUNCED

Brauer Is International Program Committee Chairman

IFIP's Council heard plans from the chairmen of the International Program Committee (IPC) and the Organizing Committee (OC) for **IFIP** Congress '92 at the Council meeting in Jerusalem in March. The Congress will take place 7-11 September 1992 in Madrid.

The organization of the program, as presented by IPC chairman Prof. *Wilfried Brauer (D),* contained several departures from the usual **IFIP** Congresses. For example, 10-minute poster presentations will be included in the program, along with invited and contributed papers and panel sessions. There will be four streams of topics lasting for the five days of the Congress, as well as two 21/2-day subconferences and three 1-day seminars and workshops. The proceedings will be printed as a multi-volume set.

The details of these plans will be given in the September ***IFIP Newsletter.*** Aspects of the OC report are found on page 6 of this issue.

Prof. Dr. Wilfried Brauer, chairman of the IPC for Congress '92, chairman of **IFIP's** Technical Committee on Education (TC3), and representative of West Germany in the General Assembly, was born in Berlin in 1937. He studied mathematics, physics, and philosophy from 1956 to 1961 at the Free University of Berlin. During this time, he also worked in industrial laboratories. He wrote his master's thesis on Turing machines and Markov algorithms while working as a computer operator, programmer, and applied mathematician at the nuclear research center of North-Rhine, in Westphalia.

Prof. Dr. Wilfried Brauer

From 1964 to 1971, he worked in Bonn as a university assistant and at the West German national research and development center for mathematics and data processing. In Bonn, he concentrated on pure mathematics — algebra, in particular — and wrote his Ph.D. thesis on inverse limits of finite groups. His research interests later shifted to the algebraic and topological theory of finite and infinite automata.

In the summer of 1967, *Prof. Brauer* gave a course on the theory of algorithms and recursive functions, from which the graduate curriculum in computer science was started at Bonn University, and in 1970 he presented the first undergraduate course in informatics, which formed the basis of the informatics curriculum in Bonn.

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INFORMATION NETWORK AND DATA COMMUNICATION

In March, IFIP's Technical Committee on Data Communication (TC6) sponsored the third International Conference on Information Network and Data Communication (INDC'90). One hundred sixty professionals from fourteen countries attended this major event, which took place in Lillehammer, Norway 26-29 March.

The Conference was hosted by the Norwegian Computer Society and organized jointly by TC6 and the Computer Societies of Norway and Sweden. Prof. *Frank Eliassen (N)* was chairman of the International Program Committee, and *Mr. Nils Bull (N)* was chairman of the Organizing Committee.

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In April 1971, he became the first full Professor of Informatics at the University of Hamburg. Although his main research interest continued to be automata and formal language theory, he increasingly initiated research in artificial intelligence (mainly natural language processing), Petri nets, and the theory and methodology of programming. He served as head of the Department of Informatics several times.

Since September 1985, he has been Professor of Informatics at the Technical University of Munich. His research interests are now centered on specification, design and analysis methods for nonsequential systems — in particular, Petri nets and related models —, formalism and methods of parallel processing, and artificial intelligence, including artificial neural nets.

Prof. *Brauer* has written a text book and two monographs, published more than fifty scientific papers, as well as many articles and reports, and edited ten books. He is the editor of several technical journals and has served on the editorial boards of various publications.

He is also concerned with problems of informatics in education. In addition to his work on TC3, he was chairman of the Technical Committee on Education of the West German Informatics Society (GI) from 1972 to 1976, served on many other committees, organized several conferences, and wrote a number of papers on this subject.

He has also been involved in many other professional society activities. He has served as vice-president (1975-77) and president (1977-79) of GI. He has been vice-president of the European Association for Theoretical Computer Science since 1985 and has been chairman or member of a large number of technical committees and conference program committees.

In **IFIP,** *Prof. Brauer* has been a member of TC3 since 1974 and its chairman since 1985. He has represented West Germany in the **IFIP** General Assembly (GA) since 1985 and served on several committees.

Most of us in **IFIP** who have worked with Prof. *Brauer* have met his wife Ute, who has been an active participant in TC3 activities and served as a very effective *IFIP Newsletter* correspondent for TC3. The two of them are avid tourists and opera buffs. In his college days, Prof. *Brauer* even performed on the Berlin Opera stage, as the third spear-carrier from the left in *Nabucco,* as a moving tree in *König Hirsch,* and in other, similar roles.

HOW TO DESIGN BUG-FREE CHIPS

*by Prof. Luc Claesen (B) **

From 12 to 16 November 1989, the Interuniversity Micro Electronics Center in Leuven, Belgium organized an International Workshop on "Applied Formal Methods for Correct VLSI Design." The Workshop was organized in cooperation with **IFIP's** Working Groups on System Description and Design Tools (WG10.2) and Very Large Scale Integration (WG10.5). This intensive forum, which focused on novel techniques to design integrated circuits so that they are guaranteed to be correct, was attended by 180 industry and university participants from 18 different countries in America, Asia and Europe.

Functional and behavioral verification of correctness is the bottleneck in current VLSI design systems. For economic reasons, designs of VLSI must be completely validated before manufacturing. Current VLSI validation is done mainly through extensive simulation. The emerging alternative is based on formal design and verification methods that guarantee correctness.

Emphasis on Applied Methods

The emphasis in the Workshop was on "applied" methods: methods that have been applied to realistic design problems, methods that have a potential future application to large VLSI design, methods that are implemented in software prototypes.

A number of papers addressed "guided synthesis" methods, which complement very well the current research in automatic synthesis for those applications where a lot of designer ingenuity is still required and cannot be replaced in an automatic way at present.

Also, good progress was demonstrated in the automatic verification of transformations between register transfer level (RTL) specifications and gate level implementations.

In order to be able to compare and illustrate specific aspects of formal design systems, a set of benchmarks for formal verification and design between RTL specification and hardware implementation had been made available to interested participants. Several papers related their work to the distributed benchmark design.

A second class of applications consisted of a number of benchmarks for tautology-checkers, which are often available in formal verification systems. In the session on tautology-checking benchmarks, which was chaired by *Prof. Randy Bryant* (USA), eight different programs were compared for their basic algorithms, performance and efficiency on the same applications.

Organized Demonstrations

In this conference, special attention was given to demonstrations of CAD tools and prototype tools that illustrate recent research results. Each demonstration session had a number of prepared demonstrations, together with a short introduction to the demonstration on posters and/or transparencies. The participants **were** divided into groups and were able to visit all the demonstrations in a synchronized way. Twenty-five demonstrations were presented in these sessions. "Organized demonstrations" in special sessions is probably a new idea for conferences and required more involvement and preparation by the presenters, but this concept was received very well by the participants.

The proceedings of this workshop, edited by *L. Claesen,* was just published by Elsevier/North-Holland as a two-volume set. The first volume, *Formal VLSI Specification and Synthesis,* concentrates on specification formalisms and constructive design methods that guarantee the correctness of what is being designed. The papers focus either on transformation or guided synthesis design methods that start from a specification and transform the specification into implementations in a correct way.

Formal VLSI Correctness Verification is the second volume. This highlights the methodologies for verifying the correctness of design implementations in the bottom-up way. Abstraction levels from transistor level to sequential machines and register transfer level are presented. A specific chapter is dedicated to tautology-checking benchmarks and efficiency comparisons.

* Chairman of International Program Committee for Workshop on Applied Formal Methods for VLSI Design

LAST CALL FOR WCCE'90

*by Ute Brauer (D) **

IFIP's Technical Committee on Education (TC3) will hold its fifth World Conference on Computers in Education in Sydney, Australia July 9-13. Nearly 1500 registrants are expected for this major **IFIP** event. Three hundred fifty papers will be presented of nearly 600 submitted.

Apart from more common topics, like secondary and university education, the conference deals with some special topics, like the following.

TELETEACHING (one of the mini-conferences within WCCE'90): The recent advances in telecommunication technology offer a wide range of opportunities for teleteaching in industrialized as well as in developing countries. Some of the questions to be discussed are:

• Will schools still be necessary?

• What should be the role and the attitude of the teacher with respect to teleteaching?

• How can teleteaching technology, programs, and materials be adapted to the cultures and civilizations of different countries?

• What kind of teaching material can be used internationally?

PRIMARY EDUCATION (one of the streams of WCCE'90): Computers have an important impact on the daily lives of youngsters.

• Must we have computers in elementary schools?

• How should computers be used?
  - as toys?
  - as tools for subconscious learning while playing?
  - as strict teachers that force the students to learn each topic before they may proceed to the next?
  - as teachers who make no mistakes?

• What should be learned with the help of a computer?

• Does the use of computers change the content of education?

• How does the way of learning, practicing and examining change?

VOCATIONAL TRAINING (one of the streams of WCCE'90): Adults also have to be trained. They don't want general education, but they do want special, selected topics, according to their needs as end users or computing professionals.

• Is vocational training the responsibility of business enterprises only?

• How should vocational training be standardized, with generally accepted certificates?

• How far can sector-specific vocational training be independent of cultural situations?

Do you want answers to these questions, or to raise your own questions? Please come to WCCE'90 in Sydney! There, you will find not only people with whom you can discuss your interest, **but** also actively participating youngsters and the latest technology.

Details of WCCE'90 were printed in the June 1989 ***IFIP*** *Newsletter*, on page 2. For further information, please contact

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* TC3 correspondent for the ***IFIP*** *Newsletter*

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Participants in WG10.2/10.5 Workshop (see article on page 2)

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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; and changes of address. The Secretariat is the clearinghouse for all such information; it will forward it to the *Newsletter.*

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In his welcome to the delegates, Prof. *Eliassen* stated that data communication technology has played a major role in the development of information systems during the 1980s, and that it seems clear that it will play no less a role in the development of information systems in the decade to come. He said,

> Information systems are important corporate resources, recognized at the highest level of corporate management. In order to make better use of extremely rapid technical development, we must have cooperating open information systems together with appropriate communication structures. The application of standards for networking and for information exchange and access is mandatory for reaching such a goal. The challenge for managers of corporate information systems is to apply these new technologies for cost effectiveness and resource management.

The main theme of the Conference was the application of open standards to corporate information systems. In the opening session, Prof. *Andre Danthine* ***(B)*** reviewed and evaluated the Open Systems Interconnection (OSI) reference model in light of new network technologies that have appeared after its publication. Although the model has demonstrated robustness, through its ability to absorb new technologies with only minor modifications, Prof. *Danthine* concluded that the time has come to revisit the model, its services, and its protocols, in order to better support the requirement for low response time in recently developed distributed systems.

Intelligent Networks

One of the papers that contained material of interest to the general informatics audience was delivered at a plenary session by *Dr. Harold Anderson (USA).* Entitled "Achieving the Intelligent Network Objectives of the 1990s via Integrating Heterogeneous Distributed Systems," the paper discussed the concept of Intelligent Networks. Excerpts from the paper follow. *

> Over the past thirty-five years, telecommunications enterprises around the world have made major investments in their business information systems (BIS), (circuit-switched) service control systems (SCS) and network management systems (NMS). The results have been dramatic: new services, greatly improved existing telephone services, major productivity improvements and significant reductions in network operations cost.
>
> Today, telecommunications planners see even more promising opportunities in the 1990s to offer new services and improve the management and control of their businesses because of the computer and communications technology advances expected during this decade. But to really capitalize on the full potential of these advances will require distributed systems that support all the major applications needed to run all daily business and network activities. The telecommunications planner's challenge is that each of the three major application systems (BIS, SCS and NMS) has its applications and data distributed over a separate computer network that is evolving to meet its own distributed systems requirements.

Distributed Systems

> A distributed system represents the next logical progression of computer networking. It not only masks the network's physical implementation and topology from all system users, but also masks the very existence of a network. Transparent distributed processing is the hallmark of a distributed system. Therefore, we will review the separately evolving communication services supporting the distributed processing requirements of BIS, SCS and NMS. Then we consider telecommunications network plans for the 1990s that are causing the distributed systems requirement for an **Intelligent Network (IN) distributed system** that integrates the operations of the **BIS,** SCS, and NMS and facilitates data sharing and distributed processing. We conclude with a discussion of three approaches to developing the IN distributed system.

The author then described each of the application systems. He continued as follows.

> The systems discussed above are being greatly influenced by the telecommunications network plans of the 1990s. Foremost is the digitalization of the telecommunications network, which was planned back in the 1960s and will be completed early in the next century. The Integrated Services Digital Network (ISDN) was conceived as a consequence of digitalization and initially emphasized integrated digital transmission rather than integrated services. Implementing **ISDN has resulted in** extensive coordinated modifications to the **BIS, SCS and** NMS. New, integrated voice/data applications are being planned for ISDN to provide enhanced telephony services. The success of ISDN will depend in part on the speed of development and implementation of these services, their cost and how well the three systems can be interworked.

"Seamless" Systems

> The objectives of the IN are to enable a telecommunications enterprise to quickly create new services, get them rapidly installed and in use, to share network management responsibility with customers, and to greatly reduce network operations costs. This requires the interworking of the BIS, SCS and NMS. Ideally, the goal is **to** integrate these three heterogeneous systems into a "seamless" distributed system that provides a single system's image to every type of system user. This presents us with a major problem to solve. Each of the three system's communications services is different and is at a different stage of development in supporting distributed processing.

Dr. *Anderson* continued with descriptions of the "gateway," "common function," and "single systems" approaches to integrating the BIS, SCS and NMS into a distributed system. He concluded as follows

> Integrating heterogeneous systems that are functionally enriched is technically challenging. It will take years to accomplish, and that is why it is important to have a distributed systems architecture guiding the conversion and migration to the Intelligent Network distributed system. The techniques for interfacing the IN distributed system to the "embedded base" that will be around for years will have to be dealt with.

The bulk of the papers presented during the conference showed that the OSI reference model has had a major impact on system design. In the closing session, Prof. *Peter Linington (GB)* presented requirements for extending the scope of OSI beyond the pure interconnection aspects of distributed systems. These have led to the initiation within the International Organization for Standardization (ISO) of a project to develop a new reference model for Open Distributed Processing **(ODP), which is** to build upon the successful OSI work to create a framework to support the newer requirements. *Prof. Linington* concluded that although the work on the ODP reference model is still in progress, it seems likely that **ODP** will have at least as large an impact on system design in the 1990s as OSI had in the 1980s.

Proceedings of the Conference, edited by *Prof. Eliassen* and Dr. *Dipak Khakhar* (S), will be published in August 1990 by Elsevier/North-Holland.■

* IFIP

IPA Chairman Hanani welcomes Pres. Sendov and Council

Israeli Foreign Minister Arens (right), Israeli GA rep. Gottlieb (left), and Pres. Sendov examine IFIP Newsletter

Former Israeli GA rep. Raviv greets Council

IFIP COUNCIL MEETS

This Year in Jerusalem

The IFIP Council, which convened in Jerusalem in March, was notable more for the culmination of previous efforts than for major new initiatives. The highlights of this Council meeting were discussions of

- IFIP's expanding technical activities
- the treasurer's report, indicating an improved financial situation
- new Activity Management Board (AMB) mechanisms for monitoring IFIP events
- the publications contract

The Council meeting was opened by IFIP's president *Acad. Blagovest Sendov (BG),* who noted that he attended his first IFIP meeting in Jerusalem 24 years ago. Dr. *Micha Hanani,* chairman of the Executive Board of the Information Processing Association of Israel (IPA), welcomed the Council to Israel.

As usual, the Council meeting, which took place 7-9 March, was preceded by two days of meetings of the Technical Assembly (TA), AMB, and other committees and bodies.

A report from the newly formed provisional Specialist Group (SG) on Foundations of Computer Science was presented by its chairman, Prof. *Jozef* Gruska (CS), indicating that its first meeting will be held in July. IFIP's TC on Programming (TC2) reiterated its concern that some of TC2's Working Groups (WGs) might be moved to the new SG, but *Prof. Gruska* assured those present that this would not be the case. Some overlap of activity and cooperative work, in fact, could be beneficial.

An article on this Specialist Group can be found on page 9.

Reports were received from all but one of the Technical Committees (TCs) and indicated that IFIP remains technically vital. New activities were approved or acknowledged by the TA. A Task Group on Computer Criminal Law was authorized, which will eventually recommend the type of activity in this area that should be organized. It is likely to be a joint effort of the TCs on Relationship between Computers and Society (TC9) and Security and Protection in Information Processing Systems (TC11)). TC9 announced its intention to form a Working Group on Informatics in Ecology and Information

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Opening the Council meeting: (from left) V.-P. Melbye, Sec. Fourot. Pres. Sendov, V.-P. Morris, V.-P. Finch, and Rolstadås

The Council deliberates

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Ecology. This WG will deal both with applications of informatics to the human environment and with the information environment. Scope and Aims for this WG will be presented to the next TA. The newly created TC on Artificial Intelligence (TC12) announced its intention to establish three WGs: WG12.1 on Knowledge Representation and Reasoning, WG12.2 on Machine Learning, and WG12.3 on Problem Solving.

The following interesting topics were considered during the discussion of technical activities. Dr. *Ronald Uhlig* (USA), chairman of TC6 on Data Communication, described a successful technique TC6 uses for joint sponsorship of an annual event it holds in cooperation with the Institute of Electrical and Electronics Engineers (IEEE). Each organization takes full responsibility for the organization of the event in alternate years and receives full financial benefits or losses in the years it takes responsibility. Prof. *Wilfried Brauer* **(D),** chairman of TC3 on Education, noted the success of TC3 in raising funds by soliciting international corporate patrons for some events. He also suggested that **IFIP** assist the sponsors of large events to prepare formal contracts, like those **IFIP** signs for Congresses, with the local organizers of the events. Although **IFIP's** practice has been to give TCs as much freedom as possible in organizing its events, this suggestion will be investigated by the AMB. *Prof. Brauer* also noted that TC3 will cooperate with the organizers of the International Olympiads in Informatics. Some TC3 members, however, disapproved of the competitive nature of the event.

In its report, TC5 on Computer Applications in Technology proposed an amendment to the **IFIP** By-Laws that calls for removal of an inactive TC member after two years of nonparticipation. This matter probably will be presented to the General Assembly (GA) in September.

A great deal of time was spent in discussion of **IFIP's** contracts with its publishers. At the time this article is being written, the situation is very uncertain. We shall print an article in the September *Newsletter* to describe what has taken place.

IFIP Congress '92

The reports of the International Program Committee (IPC) and Organizing Committee (OC) chairmen of **IFIP** Congress '92 were presented. See the article on page 1 for information about the IPC's plans. The report of the OC was presented by its chairperson, *Mrs. Rosa Alonso* ***(E).*** During discussion of the Congress budget, President *Sendov* said, **"IFIP** Congresses are like marriage: before the wedding, everything is wonderful; afterwards, difficulties with the budget arise." One problematic point was the registration fee. Council insisted that the average fee be no higher than $430 U.S. The Finance Committee will work with the OC to prepare a budget that is likely to be accepted by the GA in September. The OC reported that it was planning to have an exhibit in conjunction with the Congress, but not to make a profit. A new date, 7-11 September, was set for the Congress, because of a conflict associated with the previous date. The lecture hall capacity was increased from that in the OC's original plan.

The World Conference on Computers in Education '90 was also considered; it is discussed in an article on page 3.

IFIP's Role as Leader

A substantial amount of time was spent during the TA on the topic of how **IFIP** can maintain its role as the leading international informatics organization. *Dr. Hanani,* who is also secretary of TC8 (Information Systems), presented an invited position paper, in which he urged **IFIP** to provide more services for members of Member societies, disseminate information about IFIP's work more widely, provide leadership toward an open world community, and hold Congresses more frequently. This led to a wide-ranging discussion.

During the TA, the TC chairmen reported on the composition of the memberships of their TCs and WGs. It became clear that more effort should be expended to increase the participation by developing countries, which is especially difficult because of the burden those countries have in paying the transportation costs of their TC representatives and WG members. In some cases, more North American and Middle European participation is desirable. The number of women in TCs and WGs is also very small (except for a subgroup of WG9.1 on Women and Work, which has no male members). In many cases, academic representation is high, with few members from industry or government.

The opinion was expressed at the TA that some of the TC and WG Scopes and Aims (S&As) are poorly written and contain jargon that is unintelligible to all but workers in the field. This reflects unfavorably on **IFIP.** As a result, the TA established a task force, with **IFIP** vice-president Mr. *Graham* Morris (GB) as chairman, to edit the existing S&As (but to make no substantive changes). In the future, new or revised S&As should be submitted to the task force before they are presented to the TA for approval.

Treasurer's Report Encouraging

The treasurer's report was more encouraging than it has been in recent years. The unaudited figures for 1989 show a surplus of 66 000 Sfr. When 40 000 Sfr allocated to the TC funds (discussed below) are deducted, the surplus is reduced to 26 000 Sfr. The budget for 1990 predicts a loss of 20 000 Sfr (42 000 Sfr. after TC funds are allocated). The total assets of **IFIP** at the end of 1989 were slightly more than **1** million Sfr. The improved numbers were due in part to very frugal management of the Secretariat and larger proceeds from activities than expected. On the darker side of the financial picture were an increase in the amount of unpaid dues and a lingering unpaid debt from the organizers of **IFIP** Congress '86. The overall picture now appears even better, after adjustments approved by Council. Council was pleased to learn the preliminary figures for **IFIP** Congress '89, which indicated that **IFIP's** share of the surplus should be approximately $150 000. This item does not appear on the current accounts. The Congress Organizing Committee and *Prof.* Stephen *Yau (USA),* its chairman, were praised for their hard work and care to minimize costs in order to maximize the surplus.

The procedures related to TC funds had been refined by the Finance Committee and were presented to the Council by *Mr. Aage* Melbye (DK), Finance Committee chairman and **IFIP** vice-president. The 1989 Council had decided to establish these funds to permit TCs that are financially successful to retain control of some of their net financial contributions to **IFIP** and use these funds to subsidize their own activities. The principle of the TC funds was accepted by the 1989 GA. Approximately 40 000 Sfr. will be allocated among six of the TCs as a result of their 1989 net financial contributions. Unspent money in the funds may be carried forward from year to year. More details of the TC funds can be found on page 9 of the June 1989 ***IFIP*** *Newsletter.*

With regret, Council learned that Yugoslavia's membership in **IFIP** has been terminated because of failure to pay its dues.

Mr. Melbye, who is also Activity Management Board (AMB) chairman, presented the report of the AMB Task Force on administrative support for **IFIP** activities. This has resulted in new procedures for keeping track of **IFIP** events. The report is discussed in an article on page 8.

IFIP Press Officer

The Marketing Committee engaged in a brainstorming exercise during their meetings preceding the Council meeting. One proposal made by the Committee was the establishment of the position of the IFIP Press Officer. The need for such a position was especially felt after the 1989 GA in San Francisco passed a resolution concerning computer viruses (see the article on page 1 of the December 1989 *IFIP Newsletter)* but little publicity was given to the resolution. Until the GA takes further action concerning the Press Officer, *Mr. James Finch* (CON), Marketing Committee chairman and **IFIP** vice-president, will act as Press Officer.

A draft version of revised IFIP Statutes and By-Laws, which incorporate the many changes in **IFIP's** structure during the past two years, was distributed to the Council. It will be presented to the GA for its approval in September.

Prof. *Dr. Heinz Zemanek (A),* chairman of the **IFIP** Commission for the History of **IFIP** and Information Processing and Honorary Member of **IFIP,** tendered his resignation as chairman of the Commission. He expressed frustration with the slow progress in gathering information and the possibility that a planned conference on the History of Computing in Europe will not take place. "The less you care for your history, the more you lose your identity," he said.

Non-current **IFIP** books that have been donated by Elsevier/North-Holland will be sent by the Developing Countries Support Committee (DCSC) for distribution at IFIP conferences in developing countries. Some shipments are already on their way to the **IFIP** representatives involved (but they may take a while to reach their destinations).

It should be noted that the attendance by TC chairmen at Council (5 present of 11) was the smallest in recent years. It is recognized that meeting twice a year for five days each, at Council and GA, is a significant burden on the TC chairmen (as well as on other Council participants). Nevertheless, the time spent is invaluable to **IFIP** and the TCs in establishing the direction of IFIP, coordinating technical activities, and resolving problems. One new TC chairman originally doubted the value of these meetings but was converted to this favorable point of view. It was especially regrettable that the chairmen of the two TCs newly chartered by the 1989 GA were unable to attend the Council meeting.

Acad. Sendov adjourned the Council meeting with many thanks to *Mr.* Moshe *Gottlieb,* General Manager of the IPA and Israel's representative to **IFIP,** and *Dr. Hanani* for the very efficient administrative support to the meetings and for the generous hospitality provided by the hosts.

HCC4: INFORMATION TECHNOLOGY ASSESSMENT

*by Felix van Rijn **

The fourth **IFIP** Conference on Human Choice and Computers (HCC4) will be held July 8-12 in Dublin. The Conference is focussing upon Information Technology Assessment (ITA). Sponsored by the Technical Committee on Relationship between Computers and Society (TC9), it will be organized by the Irish Computer Society. Co-chairpersons of the International Programme Committee are *Richard Sizer,* outgoing chairman of the Working Group on Social Accountability (WG9.2) and *Riccardo Petrella,* head of the Forecasting and Assessment of Science and Technology (FAST) programme of the Commission of the European Communities.

HCC4 will examine existing working methods and tools for **ITA,** evaluate the best courses of action for the future, and disseminate new knowledge of all disciplines concerned with making valid judgements regarding the impact of IT. Over 150 proposals were submitted in response to the call for papers. In order to provide a balanced programme and ample opportunities for the attendees to meet and to work together, the International Programme Committee limited the number of selected solicited papers to about 50. They will be presented and discussed in parallel working sessions following four tracks. The working sessions will alternate with plenary keynote addresses and panel sessions.

The Conference will open with introductory addresses by *John Drumm,* Conference Chairperson and Irish delegate to TC9, *Michael Smith,* Irish Minister for Science and Technology, *Klaus Brunnstein,* TC9 Chair, and *Dudley Dolan,* President of the Irish Computer Society.

Keynote addresses will be given by Joseph *Weizenbaum (MIT), Umberto* Colombo *(ESF, ESA), Rolf Linkhor* (STOA) and *Michel Carpentier* (CEC).

At the closing plenary session, there will be reports by the working groups, with their conclusions and recommendations for the forthcoming years, and general conclusions by the programme chairs.

Key-note speakers, panel sessions and working papers constitute the ingredients of a "scientific gourmet banquet." All who are concerned with the assessment of information and communication technology are invited to join the feast.

For further information, please contact

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

TECHNICAL COMMITTEE CHAIRMEN

TC2:	P.C. Poole	AUS 89-92
TC3:	W.A. Brauer	87-90
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HELP IS ON ITS WAY FOR EVENT SPONSORS AND ORGANIZERS

Standard Nomenclature Introduced

Culminating more than a year of thought and effort, the Activity Management Board (AMB) Task Force on Administrative Support for **IFIP** Events presented its final report to the Council at its March meeting in Jerusalem. The report describes a system of officers, procedures, and forms that will serve to assist sponsors and organizers of **IFIP** events and help **IFIP** keep track of its events and the funds associated with them. The major components of the system are

- Activity Secretary
- Contract Officer
- AMB
- Event Request Form and other documentation
- procedures involving the sponsors and organizers of events and all of the above components

This system should be a great help to organizers and sponsors of **IFIP** events. It gives them a single person to contact within **IFIP** (the Activity Secretary). **It** provides them with a single form (Event Request Form) on which to organize all the pertinent information about their events — especially the structured, itemized budget information. It establishes an individual (the Contract Officer) to help with unusual agreements with organizers or publishers. It provides documents that guide the organizers (e.g., the Working Group Chairmen's Handbook, described in an article on page 9.) It establishes a database which event planners can use to avoid conflicts in dates and to cooperate by sponsoring joint events. That database is also used for listing events in the 6-Year Plan and the ***IFIP*** *Newsletter,* providing publicity for events. The database also will enable the Secretariat to answer inquiries about events.

From **IFIP's** point of view, the system will also enable the AMB to have better information on loans and grants. This is essential, since **IFIP** has limited resources, and limits exist on the total outstanding loans and grants.

Why Belong to IFIP?

These advantages of the system help answer the questions occasionally raised: Why should a Technical Committee (TC) or Working Group (WG) remain in IFIP once it has become well established? Why not become independent and keep all royalties and event surpluses? Along with the assistance that is offered by **IFIP** to event organizers come the benefits of belonging to a multi-discipline international organization. It is true that surpluses from events go into the **IFIP** treasury (except for TC Funds, which are directly controlled by the TCs — see the discussion on page 6). However, **IFIP** funds are used to support events that have deficits and could not be held otherwise, such as seminars in developing countries and conferences by fledgling activities. Support for the Secretariat is also essential.

By monitoring the events that **IFIP** sponsors, the AMB attempts to ensure they meet **IFIP's** standards. **IFIP** wants potential participants in events bearing the **IFIP** logo to know that they will be attending conferences of high quality. This certification also may be valuable to the event organizers.

History

The process that has culminated in the new system began almost two years ago, when Mr. *Ashley Goldsworthy (AUS),* then president of **IFIP,** received a complaint that some WG members did not feel that they belonged to the **IFIP** community. He asked *Prof. Asbjørn Rolstadås (N),* an **IFIP** vice-president, to investigate this problem. The latter surveyed the WG chairmen by questionnaire and concluded, among other things, that the WGs needed centralized administrative help from **IFIP** in organizing events. The 1989 **IFIP** Council formed the AMB Task Force, chaired by Prof. Rolstadås, to develop new procedures. As a result of a successor task force's report to the 1989 General Assembly in San Francisco, an Activity Secretary, *Dr.* Peter *Falster (DK),* and a Contract Officer, Mr. *Plamen* Nedkov (BG), were appointed. (See page 13 of the March 1990 ***IFIP*** *Newsletter.)* Now, the new procedures are being implemented, the event database is being expanded, and the new forms are being used.

Standardized Nomenclature

One important aspect of the report is the standardized nomenclature it introduces. We present it here, in abridged form, in order that **IFIP** workers may start using it as soon as possible.

Event Categories

Congress is a special category reserved for the **IFIP** Congresses. These events are characterized by general scope, professional purpose, very large (normally more than 1000) and open participation, a mix of invited and submitted, refereed contributions, and published proceedings.

Conference is a general category for events with special scope, professional purpose, large (normally more than 100) and open participation, a mix of invited and submitted, refereed contributions, and published proceedings.

Working Conference is a general category for events dealing with a particular subject area, with professional purpose, small (normally less than 100) and restricted participation, and normally with refereed contributions, intended for publication as preprints or proceedings.

Workshop is a general category for events dealing with a particular subject area, with professional purpose, small and restricted participation, and normally with unrefereed contributions, not intended for publication.

Seminar is a general category for events characterized by narrow scope, educational purpose, small and normally restricted participation, and contributions that may be intended for publication.

Sponsors and Organizers

Sponsor has the technical responsibility for the event and holds the copyright to all technical contributions. **If** several organizations share this responsibility, each is labeled *Joint Sponsor.* **If** an organization has only minor influence on the technical program, such an organization is labeled *Co-Sponsor.*

(Limited financial support from **IFIP** may be available for some events when **IFIP** is Full or Joint Sponsor, but normally not for co-sponsored events.)

Organizer has the financial and organizational responsibility for the event. If several organizations share this responsibility, they must agree between them how the sharing is made, usually by specifying a task assignment and a potential loss and surplus share for each. One of the organizers must be agreed as and labeled *Main Organizer,* carrying all responsibility on behalf of all organizers, at least towards **IFIP;** the other organizers are labeled *Co-Organizers*

For some events, the organizers may invite public or private organizations and enterprises to support the event by offering financial contributions. Such organizations are labeled *Supporters* or *Patrons.*

The various documents and forms are being distributed to TC and WG chair-

continued on page 9

IFIP SPECIALIST GROUP ON FOUNDATIONS OF COMPUTER SCIENCE

*by Prof. Jozef Gruska (CS) **

At the **IFIP** General Assembly (GA) meeting in San Francisco last September, a decision was made to establish a Provisional Specialist Group on Foundations of Computer Science (SGFCS). The goal of this Specialist Group is to initiate steps necessary for the proper organization and development of Theoretical Computer Science on a world scale within **IFIP.**

The decision of the GA confirmed the decision to create SGFCS taken at the **IFIP** Technical Assembly meeting earlier in the week. At that meeting, chaired by **IFIP** president *Acad. Blagovest* Sendov (BG), an interesting and tough discussion took place on the necessity and the possibilities for creating adequate space within **IFIP** for Theoretical Computer Science (TCS) development. This point was placed on the agenda of the meeting by BI. Sendov, following the initiative of *Prof. Wilfried Brauer (D).* Representatives of TCS from various countries were invited to participate in that **IFIP** Technical Assembly meeting.

The views presented at the discussion varied from strong support of the proposal to the idea that TCS — especially those areas of TCS that are not at all related to current activities of **IFIP's** Technical Committee on Programming (TC2) — should form only a Working Group within TC2. Various worries were also expressed that the creation of a special body for TCS could damage TC2, an argument that some others found hard to accept.

Overall Role and Goals

The discussion also touched on the overall role and goals of TCS. Some felt that the role of TCS is mainly to support the design and understanding of information processing (especially programming) tools and applications; therefore, TCS should have no special body within **IFIP,** and TCS people should be distributed and attached to those methodologies, products and applications-oriented **IFIP** Technical Committees that are supported by particular areas of TCS. Others felt that TCS has already developed into a fundamental science that has a deeper goal in understanding and developing information processing worlds and, therefore, strongly needs independent development and concentration on the production of basic knowledge.

The creation of SGFCS also reflects the fact that **IFIP** has recognized a need for restructuring and a need for moving more in the direction of science than it has so far. Preoccupation of **IFIP** with engineering, application, management and business issues clearly needs a change.

As one of the participants in San Francisco's **IFIP** Technical Assembly meeting, I have been asked to chair SGFCS in its initial phase. One of the first steps to be taken is to work out in more detail the overall philosophy and strategy and to suggest the organizational framework for TCS within **IFIP.** One of the basic ideas here is that SGFCS should try to unify various TCS organizations and actions in such a way that everybody gains.

The Scopes and Aims of the SGFCS were printed in the March 1990 ***IFIP Newsletter,*** on page 7.

Basic Philosophy

The main philosophical and strategic ideas behind this proposal for the development of TCS within IFIP are the following:

a. Information processing may be expected to be the main driving force of progress in science, technology and in society in general for the future "informatization era," in a similar way that energy processing has been for the "industrialization era."

b. From efforts to improve the design and use of computers as revolutionary information processing tools, TCS has emerged as a new (fundamental) science to form the scientific basis of information processing.

c. With respect to the aforementioned global and long-term goals of information processing and of TCS, one should take into consideration that both areas seem to be currently in the early stages of their development; therefore, a very broad view of information technology should be taken in order to set up goals and aims of TCS activities.

d. Because of the increasing role of science in society, scientific organizations should play more active roles, influencing and supporting strategically and systematically their own developments as well as their visibility and impacts on society and its policy makers.

e. In TCS, various methodologies are used, including experiments.

f. TCS as a fundamental science should develop in close cooperation with other sciences, especially mathematics and physics, and special care should be taken in the future to ensure these interactions. ■

* chairman of Provisional **IFIP** Specialist Group on Theoretical Foundations of Computer Science

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WORKING GROUP CHAIRMEN'S HANDBOOK NOW AVAILABLE

The Working Group Chairmen's Handbook is now available. It contains a summary of information about **IFIP** that is invaluable to new Working Group and Technical Committee chairmen, as well as to other **IFIP** workers. The Handbook was prepared by Prof. Asbjørn Rolstadås (N), Technical Assembly chairman and **IFIP** vice-president, to fill a long-felt need for a condensation of rules, procedures, and other information that WG chairmen need to know.

The Handbook is one consequence of an investigation by Prof. Rolstadàs of communication within **IFIP.** (See the article on page 8 of the June 1989 ***IFIP Newsletter.)*** Another outcome of the investigation is the task force on administrative support of **IFIP** events. (See the article on page 8 of this issue.)

Copies of the Handbook have been sent to all WG and TC chairmen. Additional copies are available from the **IFIP** Secretariat. ■

HELP FOR EVENT SPONSORS continued from page 8

men. It is essential that Event Request Forms be submitted for all events, even when **IFIP** has no explicit financial obligations. There may be, in fact, implicit financial liabilities. Also, the information is necessary for scheduling other events and providing publicity. For further information, one may contact Activity Secretary *Falster.*

Many thanks are due to the members of the AMB Task Force for a thorough and dedicated job. ■

IFIP IS SOLICITING BIDS FOR CONGRESS '96

IFIP Congress '89 was held just recently, plans for Congress '92 in Madrid are well underway (see the article on page 1), the site for Congress '94 has been selected (Hamburg), and the Site Evaluation Committee (SEC) is soliciting bids for Congress '96.

In May, the SEC sent letters to **IFIP** Members, inviting them to consider bidding for **IFIP** Congress '96 — the 14th World Computer Congress. The following cautionary message is taken from the SEC's letter.

> The Congresses are the centerpieces of **IFIP's** technical activities. **IFIP** devotes considerable attention to the Congresses. Much time is spent discussing the Congresses at Council and General Assembly (GA) meetings. And that is just a small part of the effort. The International Program Committees, composed of experts in their fields, devote days to planning the programs' structures, soliciting contributions, inviting panelists and speakers, reviewing papers, and organizing the final programs. The Congresses are international events and are supported by **IFIP** Member societies around the world, several of which have committees that expend a great deal of effort and money to support Congresses held in other countries.
>
> We have a duty to give our Congress delegates well organized Congresses, with programs of the highest quality. Considering the amount of effort and money invested in a Congress, it must be considered to be a failure if the attendance is small.
>
> Therefore, bidding for a Congress is not to be taken lightly. It is incumbent upon the prospective hosts to prepare realistic, careful projections of all pertinent aspects of the Congress, including the budget, availability of facilities on the specified dates, adequacy of the facilities, details of exhibits, accommodations for delegates, transportation, and many other aspects of the event. Honesty is essential. (For example, an over-optimistic budget may bring financial ruin upon the prospective host.)
>
> **IFIP** expects to see the same description of the Congress (budget, facilities, etc.) after the bid is awarded as was presented to the GA before it selected the site.

A draft of the newly revised *Congress Guidelines* was presented to the **IFIP** Council at its March meeting in Jerusalem. Prof. *Angel Alvarez-Rodriguez (E),* chairman of the Congress Guidelines Committee (CGC) as well as the SEC, reported, "It is the feeling of the CGC that the new version of the *Congress Guidelines* could eventually become a publication, not only for the benefit of **IFIP,** but for the Informatics community at large. However, major work needs to be done to reach this goal."

IFIP Members should express their intentions to bid for Congress '96 at the time of the 1990 GA; formal proposals are due by 1 February 1991; and the selection will be made by the 1991 GA in Zimbabwe.

HUMAN JOBS AND COMPUTER INTERFACES

IFIP's Working Group on Computers and Work (WG9.1), together with the Finnish Information Processing Association and the University of Tampere, announces an international conference on Human Jobs and Computer Interfaces, to be held 26-28 June 1991 in Tampere, Finland.

As the use of computers grows, the number of users as well as the range and diversity of computer-based jobs are increasing. This conference addresses the issue of the relationship between computer interfaces and human jobs. As understanding of this topic is still at a pre-theoretical level, theoretical contributions will be especially welcome. At the same time, the Conference encourages empirical research.

Submissions to the Conference should address the topic of human jobs as well as computer interfaces, but they need not all argue in favor of this connection. Contributions may be grounded primarily in one of these fields but should, in some way, apply to the other. Papers will be judged on quality and relevance to the topic of the Conference. Details for submitting papers can be found in the Calls for Papers column on page 14.

The Conference will run from Wednesday through Friday, with tutorials by four distinguished speakers the preceding two days (24-25 June 1991).

The International Program Committee is headed by *Markku Nurminen (SF),* and *Pertti Jarvinen (SF)* is chairman of the Organizing Committee.

The fourth **IFIP** conference on Women, Work and Computerization will take place at the same site 29 June-1 July, immediately after this conference.

NEWS FROM AFFILIATE AND SISTER SOCIETIES

Ten Years of WHO—IMIA Cooperation

by Dr. Salah Mandil
(Director ISS, WHO, Geneva)

Since the late 1970's, **WHO** [the World Health Organization] has co-sponsored and actively contributed to a number of IMIA [the International Medical Informatics Association, *an* Affiliate Member of **IFIP]** events and to the activities of IMIA working groups. Such cooperation has directly and indirectly influenced the activities of the IMIA working groups and the triennial MEDINFOs [IMIA Congresses]. The outcome and, in many cases, the plain objective of such cooperation have been many:

1) To evolve and broaden the scope of IMIA's work to encompass the health sector as a whole and not merely the medical field. Informatics in "community and public health" are examples of recent IMIA work.

2) To encourage the presentation of "applications" of existing knowledge and give these as important an emphasis as there is for "research."

3) To become truly international — by making it possible for more and more scientific contributions and participants to come from countries of differing levels of industrial development and geography.

Despite the remarkably humble financial budget **it** has, IMIA has achieved great success in all the above directions. In my opinion, the near future will witness a continuation, even an intensification, of these trends.

Specialized IFORS Conferences

At an IFORS [International Federation of Operational Research Societies, a sister society of **IFIP]** Administrative Committee Meeting held in 1989, it was decided to organize, on a regular basis, international *specialized conferences* on promising O.R. topics. The First IFORS Specialized Conference on Decision Support Systems (IFORS—SPC 1) will be held in Bruges, Belgium in 1991. It is hoped that SPC 1 will be followed in 1992 by an SPC 2.

continued on page 13

NEW IFIP PUBLICATIONS FROM NORTH-HOLLAND

Protocol Specification, Testing, and Verification, IX
(Proceedings of the IFIP WG6.1 Ninth International Symposium, Enschede, The Netherlands, June 1989)
edited by **E. Brinksma, G. Scollo** *and* **C.A. Vissers**
1990 418 pages
Price: US $105.25/Dfl. 200.00
ISBN 0-444-88343-6

VLSI Design Methods
Volume I: Formal VLSI Specification and Synthesis
Volume II: Formal VLSI Correctness Verification
(Proceedings of the IFIP WG10.2/WG10.5 International Workshop on Applied Formal Methods for Correct VLSI Design)
edited by **L.J.M. Claesen**
Volume I: 1990 xvi + 414 pages
Price: US $89.75/Dfl. 175.00
ISBN 0-444-88372-X
Volume II: 1990 xvi + 430 pages
Price: US $89.75/Dfl. 175.00
ISBN 0-444-88688-5
Set Price: US $143.50/Dfl. 280.00
Set ISBN 0-444-88689-3

Computer Hardware Description Languages
and their Applications
(Proceedings of the IFIP WG10.2 Ninth International Symposium, Washington, D.C., USA, June 1989)
edited by **J.A. Darringer** *and* **F.J. Rammig**
1990 xii + 362 pages
Price: US $92.00/Dfl. 175.00
ISBN **0-444-88411-4**

Declarative Systems
(Proceedings of the IFIP TC 10/WG 10.1 Workshop on Concepts and Characteristics of Declarative Systems, Budapest, Hungary, October 1988)
edited by **G. David, R.T. Boute** *and* **B.D. Shriver**
1990 viii + 324 pages
Price: US $87.25/Dfl. 170.00
ISBN 0-444-88431-9

Protocol Test Systems
(Proceedings of the IFIP TC6 Second International Workshop, organized by GMD-FOKUS and IBM-ENC, Berlin, FRG, October 1989)
edited by **J. de Meer, L. Mackert** *and* **W. Effelsberg**
1990 x + 372 pages
Price: US $94.75/Dfl. 185.00
ISBN 0-444-88563-3

Desktop Information Technology
(Proceedings of the IFIP WG8.2 Working Conference on Desktop Information Technology and Organizational Worklife in the 1990's, Ithaca, NY, USA, June 1989)
edited by **K.M. Kaiser** *and H.***J. Oppelland**
1990 xvi + 408 pages
Price: US $94.75/Dfl. 185.00
ISBN 0-444-88657-5

VLSI 89
(Proceedings **of** the IFIP TC10/WG10.5 International Conference on Very Large Scale Integration, Munich, FRG, August 1989)
edited by **G. Musgrave** *and* **U. Lauther**
1990 xiv + 516 pages
Price: US $118.50/Dfl. 225.00
ISBN 0-444-88344-4

Computers in Education
(Proceedings of the IFIP TC3 Fifth World Conference (WCCE 90), Sydney, Australia, July 1990)
edited by **A. McDougall** *and* **C. Dowling**
1990 xxiv + 1090 pages
Price: US $151.25/Dfl. 295.00
ISBN 0-444-88750-4

Protocols for High-Speed Networks
(Selected and Revised Papers from the IFIP WG6.1/WG6.4 International Workshop, Zurich, Switzerland, May 1989)
edited by **H. Rudin** *and* **R. Williamson**
1989 xii + 324 pages
Price: US $86.75/Dfl. 165.00
ISBN 0-444-88536-6

Database Security, III
Status and Prospects
(Results of the IFIP WG **11.3** Workshop, Monterey, CA, USA, September 1989)
edited by **D.L. Spooner** *and C.* **Landwehr**
1990 410 pages
Price: US $94.75/Dfl. 185.00
ISBN 0-444-88701-6

Stochastic Analysis of Computer and Communication Systems
edited by **H. Takagi**
1990 x + 862 pages
Price: US $115.50/Dfl. 225.00
ISBN 0-444-88479-3

Concepts and Characteristics of Knowledge-Based Systems
(Selected and Reviewed Papers from the IFIP TC10 WG10.1 Workshop, Mt. Fuji, Japan, November 1987)
edited by **M. Tokoro, Y. Anzai** *and A.* **Yonezawa**
1989 xiv + 512 pages
Price: US $110.50/Dfl. 210.00
ISBN 0-444-88328-2

Formal Description Techniques II
(Proceedings of the IFIP TC6 WG6.1 Second International Conference on Formal Description Techniques for Distributed Systems and Communication Protocols (FORTE '89), Vancouver, B.C. Canada, December 1989)
edited by **S.T. Vuong**
1990 xiv + 550 pages
Price: US $115.50/Dfl. 225.00
ISBN 0-444-88544-7

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JUNE 90
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THREE TC2 WORKING GROUPS MET IN POLAND

*by Dr. Janusz Zalewski (PL) **

Recently, three Working Groups of IFIP's Technical Committee on Programming (TC2) held their meetings in Poland: WG2.2 on Formal Description of Programming Concepts, which met in June 1988 in Warsaw; WG2.3 on Programming Methodology, which met in Zaborow, near Warsaw, in June 1989; and WG2.4 on System Implementation Languages, which had its recent meeting September 18-22, 1989, in Pultusk.

The latest meeting, chaired by WG2.4 chairman *Prof. William Waite (USA),* was especially successful in attendance. It assembled 35 experts in System Implementation Languages from 14 countries. In particular, the participation of new observers from Middle Europe was welcome, because it allowed IFIP's ideas to spread through this region and worldwide.

The twenty-three papers presented kept the participants quite busy all week. The majority of the talks concentrated on Compilers and Environments with Tools, although there was a variety of other topics (Concurrency, Computer Architecture, Language Design, ADA, Runtime Systems, Formal Aspects, and User Interfaces).

The meeting took place in a newly refurbished medieval castle, called Polonia Home. A castle makes a really nice environment for scientific meetings like this.

The institutional support for all these meetings was provided by the Polish Information Processing Society, which is a nonprofit organization of professionals in the field of information processing. The Society is open to national and international cooperation with other bodies in all fields of common interest and concern.

* member of WG2.4 and co-host of recent WG2.4 meeting

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)
- WG Chairmen's Handbook

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

GA	3-7 Sep 90	Buenos Aires
Council	4-8 Mar 91	Barcelona
GA	2-6 Sep 91	Harare, Zimbabwe
GA	before or after **IFIP** Congress '92	Madrid

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS*

TC2	27-28 Aug 90	Sofia
	Jun 91	Australia
WG2.1	Dec 90	Brussels, Munich, or Amsterdam
	Jan 91	tentatively, Europe
WG2.3	Jan 91	Catalina Island, California
WG2.5	mid Sep 91 (with Working Conf.)	Karlsruhe, F.R.G.
WG 2.6	Jul 90 (with Working Conf.)	Windermere, U.K.
TC3	8, 12, 13 Jul 90 (before and after WCCE '90)	Sydney
WG3.4	(during WCCE '90)	Sydney
TC5	19 Aug 90 (during APMS conf.)	Espoo, Finland
	21-22 Jan 91	Rome
WG5.4	15-19 Sep 90 (during Working Conf.)	Munich
WG5.7	20-22 Aug 90 (during APMS Conf.)	Espoo, Finland
	2nd week of Nov 91	
TC6	Sep or Oct 90 (with Comnet 90)	Brazil
	or Nov 90	New Delhi
	24-25 May 91 (with Africom 91)	Tunis
	early Nov 91 (with Comtap 91)	Sydney
	Mar or Apr 92 (with SEARCC—SEACOM 92)	India (under study)
	Sep or Oct 92	Madrid (under study)
	Mar or Apr 93 (with Datacom)	Johannesburg (under study)
TC8	9-10 Jun 90 (after WG8.1 conf. WHISAD 90)	Vienna
WG8.2	Dec 90 (with WG8.2 conf. ICIS 90)	Copenhagen
WG8.3	18-21 Jun 90 (with conf.)	Budapest
WG8.4	24-26 Sep 90 (with conf.)	Heraklion (Crete)
WG8.5	3rd quarter 90 (with conf.)	Austria (may not be held)
TC9	13-14 Jul 90 (after HCC4 conf.)	Dublin
WG9.2	7-8 Jul 90 (prior to HCC4 conf.)	Dublin
WG10.4	29 Jun 29-2 Jul 90	Ambleside, Cumbia, U.K.
	22-24 Feb 91 (with conf. on DCCA)	Tucson, Arizona
	Jun 91	Montreal region
WG10.5	24 Jun 90	Orlando, Florida
	27 Nov 90	St. Paul de Vence, France
TC 12	tentatively, Sep 90	Europe
	or 3rd week of Aug	Sydney
TC 13	26 Aug 90 (prior to Interact 90)	Cambridge, U.K.

* 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.

National Abbreviations Used in Newsletter

A	Austria	F	France	P	Portugal
AUS	Australia	GB	United Kingdom	PL	Poland
B	Belgium		Hungary	S	Sweden
BG	Bulgaria		Italy	SEARCC	South East Asia Regional Computer Confederation
CDN	Canada	IND	India	SF	Finland
CS	Czechoslovakia	IRL	Ireland	USA	U.S.A.
D	Fed. Rep. of Germany	J	Japan	ZA	South Africa
DK	Denmark	N	Norway		
E	Spain	NL	The Netherlands		

AFFILIATE NEWS cont. from p. 10

Advertisements in IFAC Announcements

At a recent IFAC Council meeting, there was some discussion on how to keep the registration fee for IFAC-sponsored events as low as possible. To assist organizers of IFAC events in this task, it was decided that suitable advertisements, preferably from the automatic control field or travel agencies, may be placed in all announcements and the preprints of the event. The advertisements should not distract from or interfere with the legibility of the information concerning the event; they should, moreover, be in good taste and not unfavorable to IFAC's image.

The latest *IFIP Information Bulletin* (no. 22) has just been printed and is now being mailed.

NEW APPOINTMENTS

TC AND WG OFFICERS

WG2.7 vice-chairman: Prof. J.L. Bass
Software Engineering Institute
Carnegie-Mellon Univ.
Pittsburgh, PA 15213, U.S.A.
tel: 1 (412) 268-6763, fax: 1 (412) 268-5758
(succeeding C. Gramm)

WG5.3 vice-chairman: Prof. R. Soenen
Institute of Science and Technics Valenscienne Univ. (I.S.T.V.)
F-59326 Valenciennes Cedex, France
tel: 33 (27) 141 167, fax: 33 (27) 294 358
telex: UNIVHC 810 270 F
(succeeding Dr. L. Nemes)

WG5.3 secretary: Dr. T. Kjellberg
The Royal Institute of Technology
Dept. of Manufacturing Systems
Research Lab on Computer Systems in Design and Manufacturing
Brinellv 81
S-10044 Stockholm, Sweden
tel: 46 (0) 879 09069, fax: 46 (0) 820 2227
(succeeding Mr. McWaters)

WG5.9 chairman: Dr. F. Robson
The Royal Agriculture College
Cirencester, GLS 76JS, England
(succeeding Dr. E. Warman)

WG8.3 vice-chairman: Mr. G. Widmeyer
Univ. of Southern California
School of Business Administration
Los Angeles, CA 90089-1421, U.S.A.
tel: 1 (213) 743-2446
(succeeding Dr. R. Lee)

WG8.5 vice-chairmen: Mr. B.K. Brussard
Ministry of the Interior/
Delft Univ. of Technology
P.O Box
NL-20011 The Hague, The Netherlands
and
Mr. J.L. King
Public Policy Research Organization
Univ. of California
Irvine, CA 92717, U.S.A.

TC9 vice-chairman: Prof. A. Clement
Faculty of Library and Information Science
Univ. of Toronto
140 St. George St.
Toronto, Ontario, Canada M5S IA 1
tel: 1 (416) 978 3111, fax: 1 (416) 978 5762
(succeeding D. Millin)

TC9 secretary: Prof. P. Jaervinen
Tampere Univ.
PL 607
SF-33101 Tampere, Finland
tel: 358 (31) 156111 (Univ.)
358 (31) 156777 (office direct)
358 (31) 220160 (home)
fax:358 (31) 156070, e-mail: pj@ohdake.uta.fi

WG9.2 chairman: Prof. J. Berleur
(formerly vice-chairman, succeeding **R.** Sizer)

WG9.2 secretary: Ms. D. Whitehouse
106B Lexham Gardens
London W8 6JQ, U.K.
tel: 44 (1) 373 8271
(succeeding P. Nilsson)

To Organizers **of IFIP** Conferences:
Please send several copies of your Calls for Papers to the **IFIP** Secretariat, in order that the staff may be able to handle queries.

WG9.5 chairman: Dr. D. Millin
Consultant Information Systems and Computer Applications in Education
7 Qarqum St.
47247 Ramat Hasharon, Israel
tel: 972 (3) 5492198, fax: 972 (3) 5403490

TCIO vice-chairman: Prof. Dr. C.D. Kloos
E.I.S. Ingenieros de Telecom.
Paraninfo ciudad Universidad
E-28040 Madrid, Spain

TCIO secretary: Prof. R.N. Ibbett
Dept. of Computer Science
Univ. of Edinburgh
James Clerk Maxwell Bldg.
Mayfield Road
Edinburgh, EH9 **3JZ,** U.K.
tel: 44 (031) 667 1081, fax: 44 (031) 662 4712
(succeeding Dr. B.W. Arden)

NEW TC MEMBERS

TC5: Dr. V. Thomson (CDN)
TC8: Prof. T. Yamamoto (J)
(succeeding S. Hanada)
TC9: Dr. A. Dina (I)
(succeeding Prof. Ciborra)
Ing. L.B. Rasmussen (DK)
(succeeding J. Kjaer)
TC12: Mr. S. Arff (N)
Prof. S. Doshita (J)
Prof. J. Cuena (E)

ADDRESS AND OTHER CHANGES

MEMBER SOCIETY

Associazione Italiana per l'informatica ed it Calcolo Automatico (A.I.C.A.)
c/o FAST
Piazzale Rodolfo Morandi 2
1-20121 Milan. Italy

AFFILIATE MEMBER

European **Association for Microprocessing and Microprogramming (EUROMICRO)**
P.O. Box 2346
NL-7301 EA Apeldoorn, The Netherlands
tel: 31 (55) 55 73 72, fax: 31 (55) 55 73 93

OFFICERS

GA **representative of Canada and vice-president:**
Mr. James Finch, fax: 1 (416) 363 1019

TC6 chairman: Dr. R.P. Uhlig
Northern Telecom World Trade
885 East Collins Blvd.
Richardson, TX 75081, **U.S.A.**

WG6.6 co-chairman: Ms. Kim Kappel
School of Information and Computer Sciences
Georgia Institute of Technology
Atlanta, GA 30332, U.S.A.
tel: 1 (404) 853-9383 (office)
1 (404) 351-4397 (home)
fax:1 (404) 894-3188
e-mail: kappel@prism.gatech.edu

WG8.2 secretary: Dr. K. Lyytinen
tel: 368 (41) 603025, fax: 368 (41) 603611

WG8.4 vice-chairman: Dr. C. Ellis
MCC Inc.
3500 Balcones Center Dr.
Austin, TX 78759, U.S.A.
tel: 1 (512) 338-3384, fax: 1 (512) 338-3899
e-mail: ellis@MCC.COM.internet

CORRECTIONS

These are the correct spellings of names given in the Changes column of the March ***IFIP*** *Newsletter:*

WG3.3 member: R. Aiken (USA)
TC5 member: Prof. E. Ageman (S) ■

CALLS FOR PAPERS

Second WG6.1/6.4 Workshop on Protocols **for High-Speed Networks**
27-29 Nov 90, Palo Alto, California
papers due: 15 Jun 90
contact: Marjory Johnson, Chairperson
RIACS, Mail Stop 230-5
NASA Ames Research Center
Moffett Field, CA 94035, U.S.A.
e-mail: mjj@riacs.edu
tel: 1 (415) 694-6363, fax: 1 (415) 961-8467

TC5/WG5.10 Working Conf. on Modeling **in Computer Graphics**
8-12 Apr 91, Tokyo
papers due: 30 Jun 90
contact: Tosiyasu L. Kunii, Program Chairperson
IFIP TC5/WG5.10 Working Conference
Dept. of Information Science
Faculty of Science, the Univ. of Tokyo
7-3-1 Hongo, Bunkyo-ku
Tokyo 113, Japan
e-mail: b39756@tansei.cc.u-tokyo.ac.jp
tel: +81-3-816-1783, fax: +81-3-818-4706

TC8 Working Conf. on Collaborative **Work, Social Communications and Information Systems-COSCIS'91**
27-29 Aug 91, Helsinki
papers due: 1 Oct 90
contact: Prof. Ronald Stamper
Dept. of Information Management
Univ. of Twente
PO Box 217
7500 AE Enschede, The Netherlands
tel: 31 (53) 894 038, fax: 31 (53) 357 456
telex: 44200 THTES NL
e-mail (Bitnet): stamper@henut5
or
Prof. Ron Lee
Dept. of Management Science and Info. Systs.
CBA 5.202
Univ. of Texas, Austin
Austin, TX 78712-1175, U.S.A.
tel: **1 (512)** 471-5252, fax: 1 (512) 471-3034
telex: 650 171 6540 MCI
e-mail (Arpanet):leer@emx.utexas.edu
(Bitnet): BGZL414@UTA308 I

WG8.3/8.4 Working Conf. on **Support Functionality in the Office Environment**
9-12 Sep 91, Canterbury, England
papers due: 1 Nov 90
contact: Prof. Dr. H.G. Sol
Delft Univ. of Technology
Dept. of Information Systems
P.O. Box 356
2600 AJ Delft, The Netherlands

WG5.3 Intl. Conf. on Information Technology **in Advanced Manufacturing Systems-ITAMS '91**
17-19 Sep 91, Nanjing, Jiangsu, P.R.C.
papers due: 15 Nov 90
contact: Prof. DENG Ziqiong
The Machine Building Dept.
East China Institute of Technology
Nanjing, Jiangsu 210014, P.R. China
tel: (025) 432333, ext. 605 (office), ext. 996 (home)
fax: (025) 431622, telex: 34128 EEINJ CN

WG9.1 Working Conf. on Human Jobs and Computer **Interfaces**
26-28 Jun 91, Tampere, Finland
papers due: 15 Nov 90
contact: Pertti Järvinen
Univ. of Tampere
Dept. of Computer Science
P.O. Box 607
SF-33101 Tampere, Finland
tel: (358)-31-15677, fax (int.): (358)-31-134473
telex: 22263 tayk sf, e-mail: pj@ohdake.uta.fi ■

CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Organized by
Work. Conf. on *Constructing Programs from Specifications*	13-16 May 91	San Francisco	TC2 WG2.1
Seventh Intl. Conf. on *Information Security — IFIP/SEC '91*	15-17 May 91	Brighton, U.K.	TC11
AFRICOM '91 / CCDC '91	21-23 May 91	Tunis	TC6 ICCC
Workshop on *Computer Software Structures Integrating AI /K BS Systems*	29-30 May 91	Bergen, Norway	IFAC **IFIP** NFA
Eleventh Work. Conf. on *Protocol Specification, Testing and Verification*	9-12 Jun 91	Stockholm	TC6 WG6.1 SICS
Work. Conf. on *Approximations and Applications in Stochastic Programming*	17-21 Jun 91	Tallinn, Estonia	TC7 WG7.7 et al.
Work. Conf. on *Human Jobs and Computer Interfaces*	26-28 Jun 91	Tampere, Finland	TC9 WG9.1
Work. Conf. on *Change-Point Detection*	Jun 91	Vilnius, U.S.S.R.	TC7 WG7.1
Workshop on *Hybrid Expert System in Manufacturing*	Jun 91	Genoa, Italy	TC5 WG5.3 CAD/CAM Bolzano
Work. Conf. on *Training — from CAD to CIM*	8-12 Jul 91	Aalesund, Norway	TC3 WG3.4
Fifth Symp. on *Computer-Aided Design in Control and Engineering Systems*	15-17 Jul 91	Swansea, U.K.	IFAC **IFIP**
Thirteenth IMACS World Cong. on *Computation and Applied Mathematics*	22-26 Jul 91	Dublin	IMACS
Seminar on *Social Citizenship in the Information Age*	28 Jul-2 Aug 91	Brighton, U.K.	TC9 WG9.2
Work. Conf. on *The Teacher and Computing: Why, What, How and When?*	Jul 91	Norway	TC3 WG3.5
Work. Conf. on *Impacts of Informatics on the Organization of Education*	5 Aug 91	Santa Barbara, California	TC3 WG3.1
Twelfth Intl. Conf. on *Artificial Intelligence — IJCAII '91*	18-23 Aug 91	Sydney	**IJCAII**
Work. Conf. on *Collaborative Work, Social Communication and Information Systems Theories, Methods, Tools and Impacts*	27-29 Aug 91	Helsinki	TC8 FIPA
VLSI '91	Aug 91	Edinburgh	TC10 WG10.5
Fifteenth Intl. Conf. on *System Modelling and Optimization*	2-6 Sep 91	Zurich	TC7 IFAC IFORS et al.
Seventeenth Intl. Conf. *VLDB '91*	3-6 Sep 91	Barcelona	VLDB
Workshop on *Supporting Functionality in the Office Environment*	9-12 Sep 91	Canterbury	TC8 WG8.3 WG8.4
Computer Application in Production and Engineering — CAPE '91	10-12 Sep 91	Bordeaux	TC5
Intl. Conf. *on Information Technology in Advanced Manufacturing Systems — ITAMS '91*	17-19 Sep 91	Nanjing, Jiangsu, P.R.C.	TC5 WG5.3/Met. Cut. Soc. Chi.
Work. Conf. on *Programming Environments for High-Level Scientific Problem-Solving*	23-27 Sep 91	Karlsruhe, F.R.G.	TC2 WG2.5
Work. Conf. on *Shaping Organizations and Shaping Technology*	Sep 91	Gold Coast, Australia	TC9 ACS
Purdue Intl. Workshop on *Industrial Computer Systems*	21-24 Oct 91	West Lafayette, Indiana	Purdue TC5 WG5.4
Work. Conf. on *Production Management of Complex One-of-a-Kind Production*	12-14 Nov 91	Bremen, F.R.G.	TC5 WG5.7
Work. Conf. on *Process Planning for Complex Machining with Al Methods*	27-29 Nov 91	Dresden, G.D.R.	TC5 WG5.3
Workshop on *Intelligent CAD*	91	Israel	TC5 WG5.2
Intl. Conf. on *Computers in the Automation of Shipyard Operations and Ship Design — ICCAS '9/*	91	Rio de Janiero	TC5 WG5.6
Work. Conf. on *Programming Environments for Concurrent Systems*	91		TC10 WG10.3
Work. Conf. on *Stochastic Programming: Stability and Numerical Methods*	Mar 92	Wendisch-Rietz, G.D.R.	TC7 WG7.7 Humboldt Univ.
Purdue Intl. Workshop on *Industrial Computer Systems*	6-9 Apr 92	West Lafayette, Indiana	Purdue TC5 WG5.4
Work. Conf. on *Stochastic Optimization: The State of the Art*	Apr 92	Havana	TC7 WG7.7 U. of Habana
Eighth Intl. Conf. on *Computer Security — IFIP/SEC '92*	May 92	Singapore	TC11
Seventh Symp. on *Dynamic Modelling of National Economies*	18-20 Aug 92	Beijing	IFAC **IFORS IFIP** IIASA
Seventh World Cong. on *Medical Informatics — MEDINFO '92*	6-10 Sep 92	Geneva	IMIA
IFIP Congress '92 — 12th World Computer Congress	**7-11** Sep 92	**Madrid**	**IFIP**
ICCC '92	27 Sep-2 Oct 92	Genoa, Italy	ICCC
Work. Conf. on *Computational Techniques of Stochastic Programming*	Sep 92	Seregelyes, Hungary	TC7 WG7.7 MTA SZTAKI
Eighth Conf. on *Software for Discrete Manufacturing — PROLAMAT*	92	Japan	TC5 WG5.3 IFAC
Workshop on *Geometric Modelling*	92	Budapest	TC5
Eleventh Intl. Conf. on *Pattern Recognition*	92	The Netherlands	IAPR
Intl. Conf. on *Feature Modelling and Recognition for CAD/CAM Systems*	Feb 93	France	TC5 WG5.3 AFCET/Micado
Ninth Intl. Conf. on *Computer Security — IFIP/ SEC '93*	May 93	Tokyo	TC 11
Thirteenth Intl. Conf. on *Artificial Intelligence — IJCAII '93*	29 Aug-3 Sep 93	Chambery, France	IJCAII
Work. Conf. on *Statistical Aspects of Stochastic Programming*	Aug 93	Prague	TC7 WG7.7
VLSI '93	Aug 93	Grenoble	TC10 WG10.5
Twelfth *IFAC World Congress*	93	Sydney	IFAC
IFIP Congress '94 — 13th World Computer Congress	29 Aug-2 Sep 94	**Hamburg**	**IFIP**
Intl. Workshop on *Expert Systems in Computer Integrated Manufacturing*	94	Kiev	TC5 WG5.3/Acad. of Sci. of Uk.
Sixth World Conf. on *Computers in Education — WCCE '95*	Jul 95	U.K.	**IFIP** TC3 BCS
Thirteenth ***IFAC World Congress***	96	San Francisco	IFAC

Please see page 13 for schedule of **IFIP** administrative meetings.

The **IFIP** Secretariat can furnish details of most of the events listed.

CALENDAR OF EVENTS

Event	Date	Location	Organized by
Work. Conf. on *Human Factors in Information Systems Analysis and Design — WHISAD '90*	5-7 Jun 90	Schaerding, Austria	TC8 WG8.1
First Work. Conf. on *Fractals in the Fundamental and Applied Sciences — FRACTAL '90*	6-8 Jun 90	Lisbon	Task Group on Fractals
First Workshop on *Design for Manufacturing*	13-15 Jun 90	Enschede, Netherlands	TC5 WG5.2
Tenth Work. Conf. on *Protocol Specification, Testing and Verification*	13-15 Jun 90	Ottawa	TC6 WG6.1
Third Workshop on *Geometric Modelling in CAD*	16-21 Jun 90	Rensselaerville, N.Y.	TC5 WG5.2
Tenth Intl. Conf. on *Pattern Recognition*	17-21 Jun 90	Atlantic City	IAPR
Work. Conf. on *Environments for Supporting Decision Processes*	18-21 Jun 90	Budapest	TC8 WG8.3
Fourth Intl. Conf. bn *Data Communication Networks and Their Performance*	18-22 Jun 90	Barcelona	ATI **IFIP** IEEE ACM ITC
Work. Conf. on *Formal Methods for VLSI Design*	24-30 Jun 90	Lyngby, Denmark	TC10 WG10.5
Twelfth *(FORS Conference*	25-29 Jun 90	Athens	IFORS
Eighteenth Workshop on *Reliable Computing and Fault Tolerance*	Jun 90	Newcastle, U.K.	TC10 WG10.4
Work. Conf. on *Object-Oriented Databases: Analysis, Design and Construction*	2-6 Jul 90	Windermere, U.K.	TC2 WG2.6
Intl. Conf. on *Economics and Artificial Intelligence — CECOIA II*	2-6 Jul 90	Paris	AFCET IFORS TC5 IFAC
Open Conf. on *Information Technology Assessment — HCC4*	9-12 Jul 90	Dublin	TC9 CEC (FAST pgm.)/ICS
Fifth World Conf. on *Computers in Education — WCCE '90*	9-13 Jul 90	Sydney	TC3 ACS et al.
Intl. Conf. on *Advanced Research on Computers in Education*	18-20 Jul 90	Tokyo	**IFIP** TC3 WCCE (post)
Eleventh IFAC World Congress: *Automatic Control in the Service of Mankind*	13-17 Aug 90	Tallinn, U.S.S.R.	IFAC
Open Intl. Conf. on *Advances in Production Management Systems — APMS '90*	20-22 Aug 90	Helsinki	TC5 WG5.7
Workshop on *Computer-Intensive Methods in Simulation and Stochastic Optimization*	23-26 Aug 90	Vienna	TC7 WG7.7 U. of Vienna/IIASA
Sixteenth Symp. on *Microprocessing and Microprogramming — EUROMICRO '90*	27-30 Aug 90	Amsterdam	EUROMICRO
Intl. Conf. on *Human-Computer Interaction — INTERACT '90*	27-31 Aug 90	Cambridge, U.K.	TC13 et al.
Sixteenth Intl. Conf. *VLDB '90*	Aug 90	Gold Coast, Australia	VLDB
Fourteenth Intl. Symp. on *Computer Performance Modelling, Measurement and Evaluation*	12-14 Sep 90	Edinburgh	TC7 WG7.3/BCS Perf. Eng. SG
Work. Conf. on *Approving Software Products*	17-19 Sep 90	Munich	TC5 WG5.4
Workshop on *LAN Management*	18-19 Sep 90	Canterbury, U.K.	TC6 WG6.4A
Work. Conf. on *Multi-user Interfaces and Applications*	24-26 Sep 90	Heraklion, Greece	TC8 WG8.4 ACM
Work. Conf. on *Low Quality Information*	24-26 Sep 90	Spa, Belgium	TC 12
Work. Conf. on *Network Security and Management*	26-28 Sep 90	Zurich	TC6 WG6.6
Seventh Work. Conf. on *Stochastic Systems and Optimization*	Sep 90	London	TC7 WG7.1
Intl. Symp. on *Message Handling Systems and Application Layer Communication Protocols*	3-5 Oct 90	Zurich	TC6 WG6.5
Intl. Conf. on *Information Technology Harmonizing with Society — INFO JAPAN '90*	1-5 Oct 90	Tokyo	!PSI IFIP IPSC IEEE/ACM
Purdue Intl. Workshop on *Industrial Computer Systems*	8-11 Oct 90	West Lafayette, Indiana	Purdue TC5 WG5.4
Intl. Conf. *TELEMATICA '90*	12-14 Oct 90	Porto Alegre, RS, Brazil	TC6 SUCESU-RS/TC6
Fifth Jerusalem Conf. on *Information Technology — JCIT*	22-25 Oct 90	Jerusalem	IPAI **IFIP**
Work. Conf. on *Formal Product Information*	23-25 Oct 90	Amsterdam	TC5 WG5.2/3/6/7/8
Symp. on *Safety, Security and Reliability Related Computers for the 1990s — SAFECOMP '90*	30 Oct-2 Nov 90	Gatwick Airport, U.K.	IFAC **IFIP** TC5 WG5.4 et al.
First Work. Conf. on *History of Computing in Europe*	Oct 90	Budapest	**IFIP** Hist. Comm./J. vN. Soc.
Open Conf. *FORTE '90*	5-8 Nov 90	Madrid	TC6 WG6.1/Tech. U. of Madrid
ICCC '90 — Technology for Mass Applications	5-8 Nov 90	New Delhi	ICCC
Regional Conf. on *Harnessing Information Technology for Developing Africa*	12 Nov 90	Zimbabwe	TC6 TC5 TC3 CSZ
Second Conf. on *CAD/CAM and Technology Transfer to Latin America*	19-24 Nov 90	Havana	TC5
Second Workshop on *Protocols for High-Speed Networks*	27-29 Nov 90	Palo Alto, California	TC6 WG6.1 WG6.4
Work. Conf. *The Information Systems Research Arena of the 90s: Challenges, Perceptions, and Alternative Approaches*	14-16 Dec 90	Copenhagen	TC8 WG8.2
Intl. Conf. on *Information Systems — ICIS '90*	16-19 Dec 90	Copenhagen	SIM TIMS ACM **IFIP** TC8
Symp. on *Intelligent Tuning and Adaptive Control*	15-17 Jan 91	Singapore	IFAC IEEE **IFIP** IMEKO
Fifth Workshop on *High-Level Synthesis*	3-6 Mar 91	Buhlerhohe, F.R.G.	TC10 WG10.5/U. of Karlsruhe
Second Symp. on *Integrated Network Management '91*	1-5 Apr 91	Arlington, Virginia	TC6 WG6.6 IEEE
Open Conf. on *Modelling in Computer Graphics*	8-12 Apr 91	Tokyo	TC5 WG5.10/U. of Tokyo
Purdue Intl. Workshop on *Industrial Computer Systems*	15-18 Apr 91	West Lafayette, Indiana	Purdue TC5 WG5.4
Intl. Symp. on *Computer Hardware Description Languages and Their Applications — CHDL '91*	22-24 Apr 91	Marseille	TC10 WG10.2
Workshop on *CAD/CAM Interfaces in Mechanical Engineering*	2-4 May 91	Darmstadt, F.R.G.	TC5 WG5.2 WG5.3 WG5.10

(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**

Please see page 13 for schedule of **IFIP** administrative meetings.
The **IFIP** Secretariat can furnish details of most of the events listed.