IFIP newsletter

International Federation for Information Processing

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Dr. Jack L. Rosenfeld
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VIRTUAL CONFERENCES CONSIDERED BY IFIP

Last year, IFIP Working Group 6.5 on Upper Layer Protocols, Architectures, and Applications was forced to cancel a conference, primarily because of an insufficient number of high-quality papers. Nevertheless, there were enough good manuscripts that deserved publication (10 or so) to cause WG6.5 and its parent Technical Committee (TC6 on Communication Systems) to deal with the question of how to disseminate this worthwhile scientific information.

One option was a "virtual conference," by which the papers would be made available for perusal and would be discussed on the Internet. A much less ambitious alternative was simply to "publish" the papers on the Internet. Finally, the collection of papers could be published in an established paper journal.

The plan for a virtual conference was put forward and stimulated a great deal of discussion in WG6.5, TC6, and the **IFIP** Council, which considered it at its March meeting in Johannesburg, South Africa (see the article on page 4). The deliberations also involved Chapman & Hall, the **IFIP** publisher.

The Virtual Conference Process

Mr. Einar Stefferud (USA), then chairman of WG6.5, proposed the following process:

- TC6 or **IFIP** should be its own publisher for virtual conferences.
- Related papers are mounted on a WorldWide Web server in sets, so as to simulate the sets of papers presented in sessions at a real conference.
- For each set, a mailing list is created to facilitate e-mail discussion of the papers by the people who obtain copies of the set. Mailing list subscriptions are automatically created when people acquire copies of the related set of virtual session papers.
- A virtual session chair is appointed to act as a moderator and facilitator for each virtual session.
- The virtual session occurs on the Internet in the form of mailing list exchanges, with an archive to automatically accumulate the messages, for access by new recipients of the virtual session set. The e-mail archive becomes a permanent part of the virtual conference proceedings.
- When it becomes a matter of mailing list consensus that the discussion has covered the appropriate ground, the virtual session may be closed.

In support of such virtual conferences, **Mr.** Stefferud said the following:

> One of the reasons why it is important for **IFIP** to enable virtual confer-

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STATE-OF-THE-ART SEMINAR IN BANGALORE, INDIA

Specification, Verification, and Synthesis

In January, an **IFIP** project to bring a state-of-the-art seminar to a developing country, begun in 1993, finally came to fruition. As a result of the efforts of **Prof. Carlos Delgados-Kloos** (E), vice-chairman of Technical Committee 10 (Computer Systems Technology) and others, the seminar on Hardware Specification, Verification, and Synthesis was held in Bangalore, India, 10-11 January 1996, following the third Asia-Pacific Conference on Hardware Description Languages, sponsored by **IFIP** Working Group 10.5 on Design and Engineering of Electronic Systems. All the lecturers were members of WG10.5. Bangalore was an appropriate locale for these **IFIP** events, since it is becoming the high-tech capital of India, with many new companies in the information processing area. The following lectures were presented.

Prof. Luc Claesen (B) spoke on SFG-Tracing: A Practical Formal Verification Method and its Application to Behavioral Synthesis Verification. SFG-tracing is a practical formal methodology for the verification of the observable input-output behavior of lower-level implementations with respect to higher-level specifications. The formal verification of a 43 000-transistor cryptographic chip was illustrated.

Prof. Werner Damm (D) spoke on Formal Verification of VHDL-Based Hardware Designs. Today's circuit-design tools can analyze hardware designs with complexi-

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Editor:

Dr. Jack L. Rosenfeld
IBM Journal of Research and Development
T.J. Watson Research Center
P.O. Box 218
Yorktown Heights, NY 10598-0218, U.S.A.
telephone: I (914) 945-2362
facsimile: 1 (914) 945-2018
Internet: rosenj@watson.ibm.com

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IFIP Secretariat
Hofstrasse 3
A-2361 Laxenburg, Austria
telephone: +43 2236 73616
facsimile: +43 2236 736169
e-mail: ifip@ifip.or.at

CORRESPONDENTS

TC2 R.K. DeBry (USA)
TC3 B. Samways (GB)
TC6 D. Khakhar (S)
TC7 J. Doleal (CZ)
TC8 B. Glasson (AUS)
TC9 F. van Rijn (NL)
TC10 E. Dirkx (B)

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

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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, which it will forward to the *Newsletter.*

IFIP on the Internet

IFIP information (including this *Newsletter)* is available through the Internet as follows:

anonymous ftp:
ftp.ifip.or.at
www:
http://www.ifip.or.at

NEWS ABOUT FOUR IFIP CONGRESSES

Additional Keynote Speaker Is Announced for Congress '96

As usual, the **IFIP** Congresses provided a major topic of discussion in the recent Council meeting (see the article on page 4). In this case, four Congresses, from 1996 to 2002, were mentioned.

IFIP Congress '96

IFIP Congress '96, the 14th World Computer Congress, is almost upon us (2-6 September in Canberra, Australia). The inclusion of one additional keynote speaker, **Dr. Dale Spender** (AUS), was announced to the Council by **Dr. Prem Gupta (IND)** and **Prof. Egon Hörbst** (A), co-chairs of the International Program Committee (IPC).

Dr. Dale Spender

Dr. Spender is a researcher, broadcaster, public speaker, teacher, author, and editor of more than 30 books, the latest being *Natering on the Net.* **Dr. Spender** is an expert in the fields of language, communication, writing, editing, publishing, and equity. She is an international columnist and convenor of the Australian Society of Authors Technology Subcommittee.

Approximately 50 outstanding professionals will deliver invited papers, and an equal number of papers was selected from the more than 200 papers submitted for the conferences on Advanced IT Tools and Mobile Communications. Many of the submitted papers were from Australia and Japan. In addition, delegates at 100 sites around the world may participate in the third conference, Teleteaching 96, creating an exceptional "virtual conference."

An additional event of special note is the Pioneers' Day, which will feature one speaker for each decade from the 1950s through the 1980s. At the closing ceremony, the Auerbach Award, for service in support of **IFIP** in its mission, will be presented. All during the Congress, delegates will be able to visit a technical exhibition of hardware and software products and services offered by Australian and international organizations.

Satisfaction was expressed during the Council meeting for the financial support provided by commercial organizations and the Australian government. In addition, financial assistance for the attendance of delegates from developing countries, Central and Eastern Europe, and the U.S. is expected from UNESCO, the Commission of the European Communities, and the National Science Foundation of the U.S.

For further information, see the ***IFIP*** *Newsletters* of March 1996 (page 1), December 1995 (page 3), and June 1995 (page 1) or contact

IFIP'96
GPO Box 2200
Canberra, A.C.T. 2601, Australia
tel: +61 6 257 3299, fax: +61 6 257 3256
e-mail: ifip96@acs.org.au
WWW: http://www.acs.org.au/ifip96.html

Congress '98

More details about Congress '98, to be held 29 August — 6 September (new dates) in Vienna, Austria, and Budapest, Hungary, were presented by **Prof. Hörbst** (A), also IPC chair of this Congress, and **Prof. Walter Grafendorfer** (A), co-chair of the Organizing Committee (OC). (The other co-chair is **Mrs. Maria Toth (H).)** This Congress, like Congress '96, will comprise several individual conferences, with some common events. Although the Congress will not be a collection of TC conferences, greater participation by TC chairs in the planning process is sought, and all of them were invited to join the IPC. At present, the following six component conferences are planned:

Computer Security — SEC '98.

Teleteaching '98. This is a reprise of one of the conferences that is part of Congress '96. **Prof. Hörbst** believes that this will be one of the "hottest" topics in information processing for the next ten years.

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*THE **IFIP** WG9.2 NAMUR AWARD HAS BEEN GRANTED TO ALTERNEX, IBASE, AND CARLOS AFONSO*

Brazilian Activities Commended

*by Prof Jacques Berleur (B)**

The 1995 **IFIP** Namur Award, presented by the Working Group on Computers and Society (WG9.2), was granted to AlterNex, IBASE, and **Mr. Carlos Afonso** (BR) in Namur, Belgium, in January. The Award, which consists of a commemorative plate and a certificate, is made biannually for an outstanding contribution to the creation of awareness of the social implications of information technology. Its purpose is to draw attention to the need for a holistic approach to the use of information technology, in which the social implications have been taken into account. Prior recipients were **Prof. Joseph Wiezenbaum** (USA) in 1991 and **Dr. Riccardo Petrella** (Commission of the European Communities) in 1993.

AlterNex

AlterNex is an international electronic information exchange system created in Rio de Janeiro by the Brazilian Institute of Social and Economic Analyses (IBASE). Today, AlterNex has nearly 6000 direct accounts, linking users from nongovernmental organizations (NGOs) and Bulletin Board Systems (BBSs) in Brazil and dozens of other countries, mostly in Latin America. In 1995, AlterNex was the first organization to provide all basic on-line and off-line Internet services to the general public in Brazil.

AlterNex is especially oriented to individuals and the community. Environmental groups, human rights organizations, research and consultancy centers, foundations, agencies, other special interest groups, and individuals can use, via AlterNex, the resources of small BBSs in several countries, any available Internet system, and many commercial systems for an effective dialogue with partners in Brazil and abroad.

Created in 1988 as an experimental system, AlterNex started full 24-hour operation in 1989, with little more than 40 users. A major upgrade was carried out in 1992, after which the number of regular users stabilized at around 800. During 1994, the number of regular users doubled. Growth in 1995 was staggering for a small-scale Internet service — from 1700 users in January to nearly 6000 in December. Most of the new users are individuals (many of them youngsters and senior citizens). The current user distribution is 67% individuals, 20% NGOs, and the remainder from government and private companies.

IBASE

!BASE is an independent, nonprofit consultancy and research NGO founded in 1981 by a group of Brazilian expatriates social scientists, computer experts, and others. Its central goal is the promotion of democracy and the struggle against social exclusion. IBASE aims to serve the community with a strategy of democratizing information and facilitating access to it. (BASE is autonomous, independent of political parties or religious faiths.

Its mission includes promotion of issue-oriented networks (such as those related to the environment, labor unions, women's issues, human rights, and the Campaign Against Hunger), developing new information-dissemination mechanisms, and facilitating access to network infobases.

IBASE was crucial in the national Campaign Against Hunger, providing infrastructural support and information exchange services, producing and distributing a newspaper with national circulation (100 000 copies), disseminating regular bulletins via its national fax service, using its Internet expertise to disseminate information (which has helped to mobilize many Brazilians abroad), producing and disseminating video programs, and maintaining a team of facilitators and journalists.

In 1990, IBASE joined institutions in other countries with similar objectives to create the Association for Progressive Communications (APC). AlterNex makes available, in collaboration with other APC systems, more than 900 international electronic conferences on hundreds of themes, open to all AlterNex users, in which some of the most important international organizations participate. These conferences are a large repository of information and are updated, in some cases, almost every minute. It is mainly through this exclusive conferencing system that APC is today the main permanent international space for information exchange and debate among NGOs.

The most significant undertaking of IBASE to contribute towards effectively confronting the challenge of poverty and hunger in Brazil has been its leading participation in the launching of the Citizen's Action Against Misery and for Life, involving the formation of thousands of local voluntary campaign committees, in which all sectors of society participate in a creative search for local solutions to the problems of hunger, poverty, unemployment, and social injustice.

Choosing the Recipients

As a result of public announcement, the Namur Award Committee received five nominations. The Committee, whose members were chosen from and by WG9.2, studied the list and recommended a single candidate to WG9.2, which granted the Namur Award to **Mr. Carlos-Alberto Afonso,** the IBASE Director, as the representative of the community of people and the group of persons forming AlterNex. The WG9.2 choice was spelled out as follows in its public report:

> Since 1989, AlterNex, IBASE, and **Afonso** have been a beacon to networking efforts in other developing countries, and an inspiration to all. They have maintained an unrelenting commitment to social justice, sustainable social and economic development, and the principle of participatory democracy. Across Latin America, around the world, within the NGO networking movement, and in all efforts to build up sustained capacity at the grass roots level, the advice and competence of the AlterNex community is widely sought and respected....

* Chairman of Working Group 9.2 (The material describing AlterNex and IBASE was taken from the third Namur Award Lecture by Mr. Afonso.)

IFIP COUNCIL MEETS IN JOHANNESBURG

The IFIP Council met in Johannesburg, South Africa, 6-7 March, preceded by three days of meetings of the Executive Board, Technical Assembly, and various committees. The meetings were most notable for the favorable reports on finances, and the lack of controversy.

Finances

We begin this report with the good news about the state of IFIP's finances. **Mr. Aage Melbye** (DK), our treasurer, reported that the surplus of income over expenses for 1995 was 160 thousand Swiss francs (160K CHF). Factors bringing about this positive result included decreased expenses of the **IFIP** Secretariat, resulting from the move to Laxenburg, Austria, from Geneva, Switzerland, increased return on the **IFIP** investments, and increased proceeds from activities. The 1995 surplus was a surprise when one considers that the 1995 budget predicted a deficit of 100K CHF, and the treasurer estimated a surplus of only 50-100K CHF last September. This surplus resulted in total **IFIP** funds of 1462K CHF, a new record. Of this, 22% is reserved for Technical Committee (TC) funds, amounts set aside for TCs to use more or less at their discretion. The TCs with the largest funds are TC6 (100K CHF), TC10 (97K), and TC8 (49K).

A major factor affecting the expenses of the Secretariat was the decrease in mailing costs. Many of those in contact with the Secretariat have noticed the dramatically increased reliance on e-mail and the WorldWide Web for communicating with the **IFIP** community. As a result of this and other economies, the Secretariat expenses decreased from 392K CHF in 1994 to 292K in 1995, despite the additional expenses necessitated by the move to Laxenburg. Consequently, the Secretariat budget for t996 was reduced (reflecting the penalty one occasionally pays for increased efficiency). A compensatory increase in the President's reserve was made, to handle emergencies.

Notable Technical Activities

Two TCs reported plans for forming new Working Groups (WGs): one in TC3 (Education), on Information Technology in Educational Management, and three in TC6 (Communication Systems), on Intelligent Networks, on Wireless Communications, and on Communication Systems for Developing Countries. The dissolution of WG6.5 on Upper-Layer Protocols, Architectures, and Applications, which was to be effective in April, was also announced, as well as the temporary disbanding of WG10.6 on Neural Computer Systems. A new name, High Speed Networking, was given to WG6.4 (formerly Local and Metropolitan Communication Systems).

The report of TC8 (Information Systems) outlined a modification of their annual meeting structure: The executive group (officers, WG chairs, and a member at large) meets for half a day prior to the full TC8 meeting, to discuss past activity. Later, this is reported to the full meeting. As a result, a half day has been available for strategic planning. The 1995 and 1996 meetings included a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats). **Prof. Bernard Glasson** (AUS), chair of TC8, offered the following observation in his report:

> I believe that the field of Information Systems (IS) is at an interesting stage of its development. As a scientific discipline, it has reached a point where it will either grow or fragment. IS has drawn from many reference disciplines. There is sufficient critical mass for it to blossom into a substantial discipline within the domain of informatics in its own right. But the same critical mass has led to a proliferation of organisations intent on "serving" the IS research and development community, which could lead to fragmentation. [He listed several IS organizations and conferences. — Editor] As the senior servant of the IS research and development community, TC8 has to re-assess its role. ... What we hope will emerge is a strategy to take TC8 beyond the year 2000.

Prof. Luigia Carlucci-Aiello (1), the new chair of TC 12 (Artificial Intelligence), presented her two main goals: to strengthen the relationship between TC12 and other organizations in the Al area, perhaps by cooperating with them to organize events, and to work with other **IFIP** groups, e.g., to plan joint workshops and summer schools. At this time, she does not foresee organizing large conferences.

Prof. Egon Hörbst (A), chair of TC 10 (Computer Systems Technology), announced that all WG chairs have been replaced.

Mrs. Patricia Glenn (CDN), chair of the task force on Harmonization and Acceptance of International Standards for Information Technology Professionals, announced plans for a workshop on this topic during **IFIP** Congress '96 this September. This will be a working session, not for education. Invited are all General Assembly (GA) representatives, TC chairs who are interested in the topic, and other guests with a knowledge of trade agreements in this field. **Mrs. Glenn** anticipates a total attendance of over 50. A written report will be prepared.

Other noteworthy activity included the following:

- **IFIP** Congresses — from 1996 to 2002 — were considered by Council, as reported on page 2.
- WG10.5 (Design and Engineering of Electronic Systems) held a state-of-the-art seminar in India, which is described on page I.
- The Namur Award, for the creation of awareness of the social implications of information technology, was presented in January, as reported on page 3.
- WG14.3 (Foundations of System Specifications) is preparing a survey book, *Algebraic Foundations of System Specifications,* which will collect surveys and state-of-the-art reports on topics, advances, and developments in this area.
- The book *Ethics of Computing: Codes, Spaces for Discussion and Law,* by **Prof. Jacques Berleur** (B) and **Prof. Klaus Brunnstein** (D). was scheduled for publication by Chapman & Hall (C&H), the primary **IFIP** publisher, in April 1996.
- In the revitalization of WG5.8 (Product Specification and Product Documentation), the stress on standardization is increasing.
- In its preparation for the next World Conference on Computers in Education (WCCE 2001), TC3 is planning to initiate electronic conferences three years in advance, which will culminate in face-to-face meetings of the participants at the conference.
- The TC3 book *Informatics for Secondary Education: A Curriculum for Schools* is being translated by UNESCO into Chinese, French, Indonesian, Japanese, Polish, Russian, and Spanish.

Some concern was expressed over the number of **IFIP** events. In the **IFIP** database, the number of events for which **IFIP** was the full sponsor or the main cosponsor decreased from 65 in 1994 to 48 in 1995. At present, only 27 such events are listed for 1996. We still do not know whether this reflects a trend, whether it is

a temporary aberration, or whether it is the result of failures in the event-reporting process and has no significance at all. More events may yet be entered into the database for 1996.

Publications

Dr. Roger Johnson (GB), chair of the Publications Committee (PC), reported much better relations with C&H. As a result of his monthly meetings with **Mr. Mark Hammond,** representative of C&H, and regular consultation with PC members by e-mail, communication is vastly improved. Progress is being made in terms of the publisher marketing **IFIP** books, and the sales lifetime of books is better than expected. For 1995, 38 books and one CD-ROM were produced, and 30-35 are planned for 1996. The book (and CD-ROM version) producing the largest income was the proceedings of the World Conference on Computers and Education, edited by **Tinsley** and **van Weert,** and the second most successful book was *Integrated Network Management,* by **Sethi** et al. The royalties from books published in 1995 exceeded the amount guaranteed by C&H, which expects revenues to increase by 20% in 1996.

A remaining problem, however, is that some TCs are unhappy when C&H exercises the prerogative, specified in our contract, not to publish books that C&H deems unlikely to be profitable. One possible solution is for TCs to subsidize the publication of low-volume proceedings of their conferences. No new proposals regarding this issue, raised at the September 1995 GA in Calgary, Canada, were put forward in the Council. **Dr. Johnson** also reminded the Council that members of **IFIP** Member societies receive a 30% discount on all **IFIP** books published by C&H as well as a 25% reduction on all books in the information processing area published by International Thomson Publishing, the parent company of C&H. Very few individuals have taken advantage of this offer. Another issue raised by **Dr. Johnson** was a study conducted by **Mr. Howard Funk** (USA), an **IFIP** vice-president, that revealed a disappointingly small number of citations of **IFIP** publications found in the information processing literature. The cause is suspected to be poor distribution of **IFIP** books. The PC expects to study this problem further.

A plan to donate copies of new **IFIP** books to I**FIP** Member societies in developing countries was announced. The **IFIP** Secretariat will advise the societies what books are available. They will be distributed on a first-come first-served basis.

The first issue of the new journal *Education and Information Technologies*, produced by TC3, was in production and scheduled to be distributed in April. The future *of Computers in Industry*, the journal of TC5 (Computer Applications in Technology), is still undecided. Discussions are continuing with both Elsevier, the previous publisher, and C&H.

No new plans concerning electronic publication were presented at the Council meeting, despite the interest expressed by the 1995 GA; however, a closely related issue, virtual conferences, is being deliberated by TC6 An article on this can be found on page 1.

Mr. Simon Reynolds, president of the Computer Society of South Africa. welcomes Council.

Technical Assembly Discussions

At the Technical Assembly (TA), a change in procedure resulted in less discussion than usual among the TC and SG (Specialist Group) chairs concerning mutual problems. Instead, time was devoted to a number of topics of interest to all TCs and SGs: the process for TC reviews, the geographical aspect of TC activities, the role of Cognizant Officers, the appropriate number of TCs; maintaining the quality of **IFIP** products (primarily conferences and publications); and the proper role for the TA.

The **IFIP** document describing the TC review process was amended by the TA. Suggestions for improving the process included returning to the practice of including an external expert in the Review Committee (at present, the committee consists of the Cognizant Officer and the new TC chair) and assigning responsibility for studying the review report to a member of the GA.

With respect to geographical concerns, it was generally agreed that **IFIP** is best known and most active in Europe. Knowledge of **IFIP** and representation in Southeast Asia is improving, as it is in Africa. North American visibility of **IFIP** is poor, and it has been difficult to keep South American Members. Some TCs address the geographical issues by assigning different vice-presidents to different regions. The matter of permitting more than one Member society from any nation (consequently, more than one national representative on a TC) was raised as a solution to the geographical concerns. This will be discussed at the GA in September.

After a lengthy discussion, the TA decided that the position of Cognizant Officer (CO) is useless. Since TC chairs are now members of the GA and attend Council meetings, there is no longer a need for trustees to be assigned the role of representing TCs at these meetings. Furthermore, virtually no COs have been able to attend the meetings of their TCs. The Council recommended that abolition of the position of CO be considered by the September GA.

The TA also addressed the question of whether **IFIP** has too many (or too few) TCs. Problems associated with a large number of TCs include a) the large total travel expense for the chairs to attend TC, Council, and GA meetings, b) the total expense for Member societies to support national representatives on the TCs (a suggestion was made that the position of national representative be abolished and that TCs be allowed to determine their own membership), and c) the time required for the TA, GA, and Council to consider all TC reports. A means of alleviating some of these problems would be to group the TCs according to major disciplines and have the chairs of these TC groups represent the TCs in Council and GA. The opposite point of view was to permit a limitless number of (successful) TCs. A task force was created to propose how **IFIP** might manage 25 or more TCs.

The discussion of maintaining the quality of **IFIP** events was a continuation of one begun at the September 1995 TA. The proposals made in Johannesburg were primarily related to assessing the quality of **IFIP** products after the fact (e.g., examining the sales of conference proceedings and studying questionnaires completed by conference attendees). It was recognized that, at present, the primary responsibility for the quality of

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COUNCIL continued from previous page

IFIP products rests with the chairs of the TCs and International Program Committees. The problem of WGs organizing events without approval of their TC chairs or **IFIP** was discussed. Such a practice is forbidden and can lead to events of low quality. It was recognized, however, that under special circumstances, WGs or other **IFIP** bodies should be assisted in quickly organizing events. Although no plans exist for the further discussion of this topic in the TA, some feel that a process for improving the quality of **IFIP** products is essential for the future of **IFIP.**

Other Activities

Prof. Kurt Bauknecht (CH), president of **IFIP,** opened the Council meeting with the following observations:

> **IFIP** is growing into an interactive system. It is gradually becoming open and responsive to external developments and influences. We are overcoming old patterns that **IFIP** and its bodies should perform technical work in an atmosphere of a private club of IT professionals....We have come a long way in providing better services to our Members by establishing new communication and information channels via the Internet and WorldWide Web. Many new list servers and home pages were created, giving greater access to the **IFIP** products and influencing the **IFIP** decision-making process in a positive way....In outlining the challenges that are ahead of us, I should like to stress the following:
>
> • Create stronger links with our Member societies and provide extended services to the **IFIP** community.
>
> • Offer consultancy and advisory missions to Members and international organizations.
>
> • Create improved operations through simple and clear guidelines.
>
> Emphasize the need for links between events, publications, and project development.
>
> • Ensure a successful **IFIP** Congress '96 in Australia.
>
> • Stress the need for a stable financial environment for **IFIP** technical operations.
>
> • Address "hot topics" in information processing on which the GA, on behalf of the **IFIP** Members, could disseminate statements and recommendations.

Mr. Graham Morris, secretary of **IFIP,** reported that the Brazilian Computer Society, admitted to **IFIP** by the 1994 GA, has now satisfied the criteria for admission; however, the other two societies admitted at that time have not. On behalf of the Statutes and Bylaws Committee, he reported the two following proposed changes: a) the designation of secretary-elect and treasurer-elect by the GA one year before the terms of office of the secretary and treasurer are due to expire, in order to prepare for the transition (and to provide backup in case the secretary or treasurer is unable to complete the term); and b) the authorization to conduct voting by e-mail, in unusual cases. The proposals were approved by the Council and will be taken up by the GA in September. **Mr. Morris** also mentioned possible changes to the criteria for the Silver Core Award, which may be brought to the GA in Canberra. Certain inequities have been noted (e.g., both TC chairs and GA representatives must serve for 6 years). Finally, he discussed a proposal to reduce the size of the printed *Information Bulletin* and rely more upon the on-line version to convey data about **IFIP** to its workers and the outside world.

Other significant matters that were raised in the Council include the following:

• The Marketing Committee proposed a study of how well **IFIP** is serving its constituents, as reported on page 8.

• **Prof. Heinz Zemanek** (A), **IFIP** Historian, reported on the book *35 Years of* IFIP. The final deadline for contributions was to be 15 May.

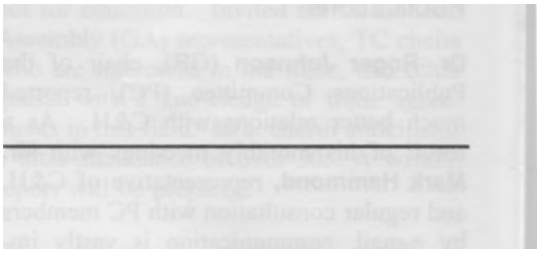
• No progress was reported in the attempt to have **IFIP** become a member of the International Council of Scientific Unions (see the article on ICSU and **IFIP** on page 10 of the December 1995 IFIP *Newsletter).*

• **Mr. Plamen Nedkov** Administration Manager of the Secretariat, and **IFIP-**UNESCO Liaison Officer, reported increased contacts with UNESCO and the expectation that significant funds would be available to support delegates to **IFIP** Congress '96 from developing countries and Eastern Europe. In addition, support from the European Commission is being sought for the same purpose.

• It was proposed that, in order to encourage developing countries to host Council and GA meetings, that **IFIP** provide financial assistance for this purpose.

• It was observed that a significantly increased number of women were present at the Council and now hold leadership roles in **IFIP: Mrs. Glenn,** a trustee, **Prof. Carlucci-Aiello,** chair of TC12, and **Mrs. Judy Hammond** (AUS), chair of TC 13 (Human—Computer Interaction).

This Council meeting was unique in that it was organized by one man, **Mr. Christopher Guy,** the South African representative to **IFIP,** and that the financial support was given by the IBM Corporation, **Mr. Guy's** employer. This extended even to the welcoming reception, which was financed by IBM and IFIP's TC I I. All in attendance were grateful for the efforts of **Mr. Guy.**



SEMINAR IN INDIA cont. from page 1

ties exceeding 2^{1000} states. This lecture provided the mathematical foundation of a state-of-the-art design tool for formally verifying VHDL-based (VHDL = logic hardware description language) hardware designs. The presentation was complemented by verification results on industrial integrated-circuit designs carried out with the design tool.

Prof. Nikil Dutt (USA) spoke on High-Level Synthesis. This lecture summarized the basic concepts and results developed for high-level synthesis using a hardware definition language as the input language. It described a design methodology that can be used to integrate high-level synthesis tools with existing design-automation methods at the logic and layout levels. The lecture also discussed the problems encountered when benchmarking different synthesis tools, and a technique for normalizing such comparisons.

Dr. Masahiro Fujita (J) spoke on Practical Techniques of Formal Verification. This lecture concentrated on two rather practical formal verification techniques: Boolean comparison and model checking. Sometimes, circuits of 10 000 gates or more can be verified by Boolean comparison in a couple of minutes. Two actual cases of model checking were reported, and several important points for its effective use checking were discussed.

Dr. P.A. Subrahmanyam (USA) spoke on Hardware-Software (Co)-Design of Embedded Systems. This lecture discussed the issues that are involved in the design of embedded systems having both hardware and software components. The steps involved in designing such systems and the technologies that are needed were discussed.

Approximately 80 participants attended, the majority coming from India. **Mr. S.D. Sherlekar** was the local organizer.

*Who's Who in **IFIP:** PROF. OTTO SPANIOL*

Prof. Dr. Otto Spaniol, the chairman of the **IFIP** Technical Committee Communication Systems (TC6), was born in 1945 in the very small village of Otzanhausen, Germany, some 50 km from Luxemburg. He studied mathematics and physics at the University of Saarbruecken from 1964 to 1968, after which he engaged in research and teaching, as an Assistant professor in the Computer Science Department of the University until 1976. Moving to Bonn, he served as Associate Professor at the University until 1981, specializing in the area of operating systems. For 3 years, he was a full Professor at the University of Frankfurt, also in operating systems, after which he moved to the Aachen University of Technology, specializing in communication systems.

Prof. Spaniol has a particular interest in interdisciplinary activities, encouraging intensive cooperation among the departments of Electrical Engineering, Mechanical Engineering, and Philosophy. His main areas of interest in research and engineering are distributed systems, modeling and evaluation of computer systems, and network management. Almost all activities are related to communication systems — in particular, high-speed networks and mobile communication. A newly developed interest is in distance learning.

He has engaged in a variety of consulting activities in Germany for ministries, industry, and other organizations, in particular the European Union in Brussels.

He is also the author of books, research articles, and encyclopedia articles, as well as the coeditor of computer science journals.

He has been a Governor of ICCC (International Council for Computer Communication) since 1992.

Within the German Computer Society (Gesellschaft fir Informatik), he is a member of many committees of different interest groups. He served as chairman of the computer networks group for 6 years.

For 8 years, the maximum possible time, he served as chairman of the computer science section of the German Research Council (Deutsche Forschungsgemeinschaft), and it is this position of which he is most proud, since this is conferred by an anonymous vote of all German computer science professors.

His affiliation with **IFIP** began in 1983, when he was named German member of TC6. He was chosen as TC6 chair in 1992. In that year, he also received the **IFIP** Silver Core Award.

In his spare time, **Prof. Spaniol** enjoys bicycling, especially with members of his department, which has won more than 50 trophies (not for speed, but for number of participants or perhaps for weight). Another source of relaxation is shortwave radio listening. Last, but not least, he is an enthusiast of satirical reviews, which he emulates with his own contributions, such as humorous lectures and a regular satirical column in a scientific(!) German-language journal, written under the pseudonym-anagram "Alois Potton." He and his wife Renate are parents of a son, Marc.

At the Council Reception in Johannesburg

Trustee Guy (ZA) welcomes participants (upper left); President Bauknecht (CH) responds (upper right); TC 12 Chair Carlucci-Aiello (1, upper center) listens, as do TC13 Chair Hammond (A US) and Trustee Glenn (CDN).

TECHNICAL COMMITTEE and SPECIALIST GROUP CHAIRMEN

TC2:	R. Kurki-Suonio	SF	95-97
TC3:	P. Bollerslev	DK	91-96
TC5:	T. Mikami	J	93-96
TC6:	0. Spaniol	D	92-97
TC7:	P. Kall	CH	95-98
TC8:	B. Glasson	AUS	96-98
TC9:	P. Jaervinen	SF	96-98
TC10:	E. Hörbst	A	93-96
TC11:	B. von Solms	ZA	94-98
TC12:	L. Carlucci-Aiello	I	96-98
TC13:	J. Hammond	AUS	95-98
SG14:	J. Gruska	SK	89-95

CONGRESSES continued from page 2

Computers Helping People with Special Needs — ICC HP '98 . This is another repeat; see the March *Newsletter,* page 9.

Intellectual Property Rights — Know-Right '98. Another repeat; see the March *Newsletter,* page 7.

Basic Research in Information Technology

Telecooperation

There will be a concerted effort to involve young participants, from secondary schools and universities. Two days of tutorials will precede the Congress as well as follow it. The calls for papers will be issued in September 1997.

Congress 2000

IFIP Congress 2000, as announced previously, will be held in Beijing, China. Chairs of the IPC and OC will be appointed soon. The Information Processing Society of Japan (IPSJ) had been the other contender for the Congress site, and **Mr. Masanori Ozeki** (J) expressed disappointment that the IPSJ proposal for a virtual two-site Congress, in which electronic means of communication would have been used to give the delegates in Tokyo and Beijing the impression that all events were occurring at a single virtual site, had not been adopted. He regretted that there had been insufficient time for negotiations between Japan and China regarding this proposal.

Congress 2002

Bids to host **IFIP** Congress 2002 will be solicited in September at the **IFIP** General Assembly.

PLAN IS FORMULATED FOR CLOSER TIES BETWEEN **IFIP** AND ITS CONSTITUENTS

Prior to the March **IFIP** Council meeting in Johannesburg, **Mrs. Pat Glenn** (CDN), the new chair of the Marketing Committee (MC), sent a document to members of the **IFIP** community in which she outlined **IFIP** and its products and services and solicited suggestions for the upcoming MC meeting.

During that meeting, the **IFIP** constituency was identified:

- Member societies (actual and prospective)
- members of Member societies
- Technical Committees, Specialist Groups, and Working Groups
- industry
- governments
- universities
- international organizations (e.g., UNESCO)
- developing countries
- **IFIP** conference attendees (actual and prospective)
- purchasers of **IFIP** publications (actual and prospective purchasers)
- the research and development community
- **IFIP** Supporters

The essential task of **IFIP** is to serve this constituency in the best way possible.

Next, the MC mission was identified: to reposition **IFIP** as *the* international information technology organization dealing with IT matters globally and locally. Finally, a plan evolved for engaging a consultant to assist in clarifying the actions to be taken in achieving that mission. The steps in the consultant's activity identified by the MC were as follows:

1. Preparation of the schedule for the project.
2. Gathering of information:
   - types of information:
     - what **IFIP** now does for its constituents
     - what **IFIP** might do for them
     - calls for papers, calls for participation, publication lists, TC reviews
   - sources of information:
     - TCs, SGs, and WGs
     - **IFIP** Secretariat
     - other bodies (e.g., Congress committees)
     - Member societies
3. Preparation by consultant of matrix stating how each **IFIP** body serves each of the IFIP constituents.
4. Transmission of this matrix, for validation, to TC chairs, committees, and General Assembly (GA) representatives.
5. Preparation by consultant of listing of what **IFIP** does or can do for each constituent and what **IFIP** wants from each constituent. (This step can be done in parallel with some of the preceding steps.)
6. Transmission of all these analyses to GA, TCs, etc. for verification.
7. "Interviews" held by consultant with appropriate people, to determine what they would like to see from **IFIP.**
8. Preparation by consultant of marketing strategy/plan proposal in time for the 1996 GA.
9. Review by Marketing Committee of proposal and interaction with consultant.
10. Approval by 1996 GA of proposal in September (consultant should be at the presentation).

The division of labor between the consultant and **IFIP** volunteers is still undecided. Volunteers familiar with **IFIP** can perform some of the tasks more effectively than an outside consultant; however, an outsider can often make more objective observations.

The MC plans to complete the task by September. It eagerly solicits suggestions from the **IFIP** community. Please communicate such suggestions to

Mrs. Patricia Glenn
c/o CIPS
430 King St. West, Suite 106
Toronto, Ontario M5V 1L5, Canada
tel: +1 (416) 593-4040, fax: +1 (416) 593-5184 ■

SYSTEM MODELLING AND OPTIMIZATION

*by Dr. Jaroslav Dolezal (CZ) **

[Although this report is no longer "news," we print it to illustrate the kinds of problems that can beset event organizers. — Editor]

The 17th **IFIP** Conference on System Modelling and Optimization took place in Prague, Czech Republic, July 10-14, 1995, organised by the Institute of Information Theory and Automation of the Academy of Sciences of the Czech Republic. The Czech Society for Cybernetics and Informatics, the new representative of the Czech Republic in **IFIP,** was a co-sponsor. As usual, the **IFIP** Technical Committee on System Modelling and Optimization (TC7) was the main sponsor. TC7 promotes theoretical and applied research in areas of system modelling and optimization. There were 185 registered participants from 37 countries.

These biannual general conferences bring together TC7 Working Groups and a wide scientific and engineering community. The topics included but were not limited to optimization theory, optimal control, mathematical programming, discrete systems, stochastic optimization, and applied modelling and optimization.

At the very last moment, Prague was selected to replace the original venue in the United States. Since the Czech Academy of Sciences is primarily an organisation representing fundamental research institutions and lacks facilities suitable for the efficient organisation of large conferences, such facilities had to be rented. Consequently, the organisers, without any other source of funding, were forced to charge a higher conference fee than at previous conferences. There was also very little possibility to subsidize participation from economically poor areas; however, Honeywell Technology Center of the United States provided funds to cover the participation of a few prominent scientists from the former Soviet Union.

In spite of the effort to avoid "no-show" authors, by requiring advanced payment of the registration fee for participants with a contribution, a nonnegligible number of authors, mainly Russian, cancelled their confirmed participation at the very last moment or simply did not arrive. Such behaviour caused additional expenses to the organisers. Also several "nonpaying" participants (not only from soft-currency

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* chair of the Conference Organizing Committee, representative of the Czech Republic in the **IFIP** General Assembly and TC7, and vice-chair of WG7.6

THE EUROPEAN COMPUTER "DRIVING LICENCE"

*by Mr. Dudley Dolan (IRL) **

In 1988, a report prepared by the Finnish Information Technology Advisory Committee concluded that "it would be beneficial for citizens to possess such facility for applying Information Technology (IT) that everyone could participate in their workplaces to the required degree..., form opinions about the use of IT in society, and benefit from the opportunities it creates."

Research was initiated into the requirements for basic computer literacy and the potential student body. As a result, the idea of a Computer Driving Licence was first mooted in 1992, and the first such Licences were issued in 1994. To date, some 11 000 Licences have been issued in Finland. Courses are given by adult education centres, summer schools, vocational colleges, training companies, and other institutions. Permission to organize examinations and award Licenses has been granted to over 200 such schools.

The aim of the examination is to direct the study of IT-users, taking the needs of working life and the private citizen into account. Those passing the examinations show that they have the basic skills in IT widely required in today's information society and are ready for multifunctional work using IT. The Licence certifies that the holder can perform basic tasks competently using a computer. The examination requires that the student passes seven elements, six of which are "hands on." The one theoretical module verifies that the student has an overall picture of IT and its significance, an understanding of the basic Information Systems in operation in the student's society, and the significance of these systems for the individual, business activity, and society. The other six modules are a "six-pack" of generally useful functions that can be performed using a computer. They consist of equipment use and data management, word processing, spreadsheets, databases, presentation and drawing, and the use of telecommunications networks (for access to e-mail, WorldWide Web pages, etc.).

It is anticipated that the introduction of a European Computer Driving Licence (ECDL) will lead to increased employment opportunities for many groups of people, including the following:

- people entering the employment market for the first time (typically, school graduates)
- people returning to the job market after a number of years absence
- unemployed people who have good levels of literacy and numeric skills but who lack the basic IT skills required to return to the workforce
- people seeking employment in other European Union countries.

The ECDL will be administered in each country by the CEPIS Member Society. (CEPIS, The Council of European Professional Informatics Societies, an Affiliate Member of **IFIP,** has 20 members in 17 European countries.) Training and accreditation centres will be approved, and the whole process will be automated to as high a degree as possible. It should be possible for a person to access the Internet and pass a test for renewal of the License without any human intervention. A goal is to establish procedures to ensure that the administrative load of running the scheme will be as light as possible.

One social aspect which the ECDL addresses from a European point of view is that it helps reduce the risk of a two-tier society of haves and have-nots, in which only a part of the population has access to the new technology, is comfortable using it, and can fully enjoy its benefits.

Finland, with a population of five million persons, has a target of issuing one million Licences. Currently, another nine countries in addition to Finland are working in a task force organized by CEPIS and exploring the possibilities of introducing the ECDL to a wider audience. The other countries involved in the task force are Austria, Denmark, France, Ireland, Italy, Norway, The Netherlands, Sweden, and the United Kingdom.

Assistance for the start-up of the project is being provided by the European Commission.

CEPIS hopes that the introduction of the ECDL will play a key role in raising awareness about the use of IT and thus raise the profile of CEPIS and its Member Societies.

*** IFIP** trustee, vice-chairman of the CEPIS ECDL task force

DR. WILLIAM C. CARTER

We regret to announce the recent death of **Dr. William C. Carter** (USA), one of the founders of the Working Group on Dependable Computing and Fault Tolerance (WG10.4). He was a totally committed member of WG10.4 and had the highest respect of all his colleagues.

SYSTEM MODELLING continued from page 8

areas) attended, which did not contribute to a balanced budget.

The proceedings, *System Modelling and Optimization,* edited by **J. Dolezal** and **J. Fidler** and published early in 1996, contain invited papers and contributions selected during the second review phase, which took place during the conference. Originally over 400 submissions were received. Since TC7's traditional publisher, Springer-Verlag, is no longer interested in publishing conference proceedings, the new **IFIP** publisher, Chapman & Hall, was contacted and showed enough flexibility to handle this case. Such a change necessitated some modifications in the usual publication process, mainly with respect to the shorter deadline for the final manuscript submission and an overall page limit. The final competition was a keen one; only one third of the presented papers could be included.

Finally, cordial thanks should be expressed to all active members of the International Program Committee, chaired by **Prof. Palle Thoft-Christensen** (DK), for the difficult task of soliciting the best contributions for this volume and to members of the local Organising Committee.

MS. HAYDEN JOINS IFIP SECRETARIAT

Participants in the March **IFIP** Council meeting in Johannesburg were pleased to meet **Ms. Dorothy Hayden,** the Administrative Assistant of the **IFIP** Secretariat in Laxenburg, Austria. Many had communicated with her by e-mail, snail-mail, facsimile, or telephone, but few had met her face to face. She joined the Secretariat last September, after employment with Avis, Bank Austria, and Brother. **Ms. Hayden,** who lives in Baden, near Vienna, enjoys hiking, biking, and tennis. Welcome to **IFIP,** Dorothy! ■

IFIP COUNCIL

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VIRTUAL CONFERENCES continued from page I

ences as proposed is that the Internet has overtaken the old way of doing things in Working Groups that hold physical meetings. Now the main work is often started and completed on mailing lists, ending with a publication on the Internet.

In our research and development environment, it is very difficult to get ahead of and stay ahead of the development curve by means of old **IFIP** physical-meeting arrangements, with expensive published books that must either be submitted as manuscripts 6 months before the conference or published 6 months after the conference. The metabolism of modern, Internet-based research and development, coupled with shortened commercial product life cycles, no longer allows us the luxury of trips to distant lands in order to meet authors face to face and spend 20 minutes discussing each of their papers. Compare this with the ability to hold a lengthy discussion in a global context, without a 20-minute limit. And consider that the discussion can be captured and included in the record of the virtual conference, for access by any interested person.

He also commented on the financial aspects, as follows:

I think we should find a way to charge nominal prices for the papers, to defray the cost of organization, and to sift out frivolous people who are unwilling tc pay a nominal price to join the session. My sense of a proper price for a set of virtual session papers is for the net revenue from publication in this mode to yield an amount roughly equal to the royalty that would have been paid to **IFIP** plus an amount to approximate the **IFIP** sponsorship fee of 5 or 10 Swiss francs per real conference attendee.

I estimate easily that the cost to virtual conference attendees is going to be drastically lower than to participants in conventional conferences, when one considers transportation, lodging, meals, and travel time.

Difficulties and Advantages

Many difficulties were considered, including the following: the lack of oral presentation, whether the virtual conference concept is likely to succeed in this case (i.e., the WG6.5 conference that was not held) and who owns the copyright to papers submitted to a conference that never took place, how revenues should be collected, what network server should be used, whether a significant number of potential conference attendees might not be able to access the virtual conference, whether papers appearing in a virtual conference will be accorded the same respect as those appearing in conventional printed proceedings, and how much is lost because virtual conference participants are unable to interact with their colleagues face to face.

On the other hand, this proposal affords the possibility of publishing — in a new medium — the ten papers from the WG6.5 conference, providing revenue to **IFIP,** and testing the future of virtual conferences as a viable means of scientific discourse.

Related Issues

Many additional capabilities exist in the world of virtual conferences. Participants can prepare reports of discussions on-line, from multiple sites. Reviews and annotations can be dynamic. The papers can contain all the features that on-line documents afford (e.g., links to other documents, animated illustrations, and audio). These are a few of the many possibilities.

The concepts involved here are not new to **IFIP.** The **IFIP** Working Group on Numerical Software publishes the proceedings of its workshops on the WorldWide Web. A proposal was put forward that **IFIP** Congress 2000 (see the article on page 2) be a "virtual congress." **In** this case, the phrase was intended to mean a conference held at more than one site simultaneously, yet appearing to the participants, through electronic communications, as if it took place at one location. The conference Teleteaching '96, part of I**HP** Congress '96, will be such a virtual conference, perhaps involving over 100 sites. Also, **Prof. Wilfried Brauer (D)** brought to the attention of Council participants the Electronic Colloquium on Computational Complexity, which uses electronic media for rapid and widespread scientific communication and discussions in the computational complexity community.

We wait to learn the outcome of the TC6 deliberations on this subject (which were taking place when this ***IFIP*** *Newsletter* was going to press) as well as the subsequent decisions of the September **IFIP** General Assembly, which is due to consider the topic when it meets in Canberra, Australia. This has the potential for revolutionizing the way scientific meetings are held, and **IFIP** should be in the forefront of such activity. ■

INTERNATIONAL CONFERENCE ON DISTRIBUTED PLATFORMS

*by Prof. Dr. Alexander Schill (D) **

From February 27 to March 1, 1996, the **IFIP/IEEE** (Institute of Electrical and Electronics Engineers) International Conference on Distributed Platforms (ICDP '96) was held in Dresden, Germany. The major topic of the Conference was software solutions for advanced client/server applications in open computer networks. The Conference attendance was quite good, with almost 350 participants from more than 15 countries. Several participants came from Eastern Europe, permitting a real international dialogue on advanced client/server technology. (In addition, there were students and others not paying the full registration fee.) Industry representation was strong, with more than 50% of the participants coming from industry.

During the first day, tutorials were given by well-known international experts on workflow management, open distributed processing, mobile computing, OSF (Open Software Foundation) DCE security (distributed computing environment), OMG (Object Management Group) CORBA (common object request broker architecture), and reengineering legacy systems.

*a chair of ICDP '96

The conference itself was opened by the prime minister of the German state of Saxony, **Prof. Dr. Kurt Biedenkopf,** who emphasized the importance and the opportunities of information and communication technology for the region and for the world. He also asked industry to support the younger generation to explore the emerging technologies, in order to establish a broad awareness in society.

Dr. Richard Soley (USA), vice-president and technical director of the OMG, delivered the keynote speech. In his talk on creating consensus for distributed computing, he emphasized the importance of standards, interoperability, and pragmatic, industry-driven solutions for open client/server systems. Other invited speakers were **Dr. Chris Horn** (IRL) and **Dr. Nigel Davies** (GB), who added other relevant topics such as examples of real-world applications and new trends and developments in the mobile computing area.

The main part of the Conference consisted of 45 presentations from research and industry. Current applications of DCE and CORBA were discussed, illustrating the current status of research and development in this field. New interoperability solutions among these platforms were also outlined, and various performance studies were presented. Of specific interest were talks on computer-supported cooperative work in distributed systems. Moreover, a look to the future made clear that much research must still be done in order to enable a seamless implementation of distributed multimedia systems using client/server standards.

The conference included two panel discussions, which touched on electronic commerce, security, mobile applications, and new application domains. Augmenting the conference was an industry presentation with about 10 different demonstrations and companies.

The primary organisers of ICDP '96 were the **IFIP** Working Group on Architecture and Protocols for Computer Networks (WG6.1), IEEE Communications Society, and Dresden University of Technology.

The conference proceedings, entitled *Distributed Platforms* and edited by **Prof. Alexander Schill, Dr. Christian Mittasch, Prof. Otto Spaniol,** and **Dr. Claudia Popien** (all from Germany), have been published by Chapman & Hall. ■

AIMS AND SCOPE OF NEW WORKING GROUP ON ARCHITECTURES FOR ENTERPRISE INTEGRATION

In September 1995, the **IFIP** Technical Assembly, meeting in Calgary, approved the formation of a new Working Group on Architectures for Enterprise Integration (WG5.12). Following are the Aims and Scope of this new WG.

AIMS

- To foster research into enterprise integration — in particular, enterprise reference architectures, enterprise engineering methodologies, enterprise modelling, and generic enterprise models.
- To identify theoretically sound and practically viable techniques for the process of change toward the integrated enterprise.

SCOPE

- Continue the evaluation of enterprise reference architecture proposals as they become available, and solicit additional proposals (life-cycle architectures, methodologies).
- Include in this evaluation the physical and functional description architectures of information systems (integration infrastructure architectures), as well as program architectures for complete enterprise life-cycle development and management.
- Develop and evaluate specifications and recommended manifestations for both of the above classes of enterprise reference architecture. Such specifications would include, for each phase of the enterprise life-cycle, the requisite
  - architectural framework
  - enterprise-modelling tools and languages (language specifications, ontological theories, computer-aided enterprise-engineering tools)
  - methodology for use (enterprise-engineering methodology)
  - generic building blocks and models (e.g., of intra- and inter-enterprise integration, agent-based integration, information infrastructure, organisational models, self-similar structures, and reusable industry-specific models)

The multi-disciplinary perspective of WG5.12 is expressed in the strategy of developing liaisons and co-sponsoring activities with other relevant Working Groups and Technical Committees of **IFIP** and other organizations that are conducting research and development in enterprise-integration technology. ■

CALLS FOR PAPERS

Fifth IFIP/IEEE Intl. Symp. on **Integrated Network Management — ISINM '97**
12-16 May 97, San Diego, CA, U.S.A.
papers due: 1 Jul 96
contact: http://www.ctr.columbia.edu/isinm97/submit.html
Or
(Americas, Australia)
Aurel A. Lazar
Department of Electrical Engineering
Columbia University
New York, NY 10027-6699, U.S.A.
e-mail: aurel@ctr.columbia.edu
or
(Europe, Asia, Africa)
Roberto Saracco
CSELT
Via Reiss Romoli 274
10148 Torino, Italy
e-mail: roberto.saracco@cselt.stet.it

Second IFIP TC6 Workshop on **Personal Wireless Communications**
10-12 Dec 96, Frankfurt am Main, Germany
papers due: 16 Aug 96
contact: Prof. Dr. Oswald Drobnik
Fachbereich Informatik (Telematik)
Johann Wolfgang Goethe-Universität
D-60054 Frankfurt am Main, Germany
tel: +49 69 798 28362, fax: +49 69 798 23340
e-Mail: pwc96@tm.informatik.uni-frankfurt.de
WWW homepage: http://www.tm.informatik.uni-frankfurt.de/pwc96/

Intl. Conf. on **Open Distributed Processing — ICODP 97**
26-30 May 97, Toronto, On., Canada
papers due: 27 Sep 96
contact: ICODP'97
Jacob Slonim
IBM Centre for Advanced Studies
844 Don Mills Road
North York, Ontario, Canada M3C 1V7
tel:+1 (416) 448-2245, fax:+l (416) 448-2859
e-mail: icodp97@vnet.ibm.com

Thirteenth **IFIP** WG10.5 Conf. on **Computer Hardware Description Languages and Their Applications — CHDL '97**
20-26 Apr 97, Toledo, Spain
papers due: I Oct 96
contact: Eduard Cerny
Université de Montréal, Dept. IRO
C.P, 6128, Succ. Centre-Ville
Montréal (Québec), Canada H3C.3J7
tel: +1 (514) 343-7472
fax: +1 (514) 343-5834
e-mail: cerny@iro.umontreal.ca

Ninth **IFIP** TC10 Intl. Conf. **VLSI'97**
26-29 Aug 97, Gramado, Brazil
papers due: 20 Feb 97
contact: Luc ClaesenNLSI'97
IMEC/Katholieke Universiteit Leuven
Kapeldreef 79
B-3001 Leuven, Belgium
tel: +32-16-281203, fax: +32-16-281501
e-mail: Claesen@imec.be

Will event organizers please note that calls for papers cannot be listed in this column until the events have been approved by **IFIP.**

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

GA	6-10 Sep 96 (Fri.–Tues.)	Canberra, Australia
Council	3-6 Mar 97	Bratislava, Slovakia
GA	(contiguous to **IFIP** Congress '98)	Vienna, Austria, or Budapest, Hungary
GA	(contiguous to **IFIP** Congress 2000)	Beijing, China

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS

TC2	13-14 Jul 96	Oxford, U.K.
WG2.1	10-14 Jun 96	Rancho Santa Fe, CA, U.S.A.
	17-22 Feb 97	Bischenberg, Alsace, France
WG2.2	Sep/Oct 96	Macao
	97	Graz, Austria
WG2.3	Jan 97	California, U.S.A.
WG2.4	3-7 Jun 96	Ameland, The Netherlands
	Jun 97	Berlin, Germany
	98	Colorado, U.S.A.
WG2.5	8-12 Jul 96	Oxford, U.K.
WG2.6	24-26 Jun 96	Antwerp, Belgium
WG2.8	23-27 Sep 97	New Paltz, NY, U.S.A.
WG2.9	Jun 96	Northwestern U.S.A.
TC3	1-2 Sep 96	Wollongong, Australia
	97	Ghent, Belgium, or The Netherlands
	Sep 98	Vienna, Austria
	99	Copenhagen, Denmark
WG5.7	6 Nov 96	Kyoto, Japan
TC6	Oct 96	Harare, Zimbabwe
	Apr 97	Cambridge, U.K.
	Sep/Oct 97	Beijing, China, or Tunisia
	Apr/May 98	Bulgaria or Denmark
	98	South Africa ?
TC7	17-20 Jun 96	Munich, Germany
	Jul 97	Detroit, MI, U.S.A.
	Jul 99	Cambridge, **U.K.**
WG7.4	Sep 96	Braunschweig, Germany
WG7.7	Jun 96	
WG8.2	Dec 96 (with ICIS)	Cleveland, OH, U.S.A.
	Dec 97 (with ICIS)	Atlanta, GA, U.S.A.
WG9.5	7 Jul 96	Brighton, U.K.
	97	Brazil
TC10	Sep 96	Canberra, Australia
WG10.4	27 Jun – 2 Jul 96	Marioka, Japan
WG I 1.3	22-24 Jul 96	Como, Italy
WG11.4	Jul 96	U.S.A.
WGI2.2	3-6 Jul 96 (with ICML96)	Bari, Italy
WGI4.3	Sep 96	Manchester, U.K.

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.

National Abbreviations Used in Newsletter

A	Austria	DK	Denmark	J	Japan
AUS	Australia	E	Spain	N	Norway
B	Belgium	GB	United Kingdom	S	Sweden
BR	Brazil	H	Hungary	SF	Finland
CDN	Canada	I	Italy	USA	U.S.A.
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D	Germany	IRL	Ireland		

ESSENTIAL READING IN EDUCATION

FROM CHAPMAN & HALL AND
THE INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING (IFIP)

Human-Computer Interaction

Interact '95

Edited by **K. Nordby** and **P. Helmersen,** both of Telenor Research, Kjeller, Norway, **D.J. Gilmore,** University of Nottingham, UK, and **S.A. Arnesen,** Telenor IT, Lillehammer, Norway

This book provides one of the best currently available overviews of human-computer interaction across different cultures, disciplines and countries. It contains the selected proceedings of Interact '95 - the Fifth International Conference on Human-Computer Interaction - arranged by the International Federation for Information Processing and held in Lillehammer, Norway, in June 1995.

Contents: Keynote addresses. Research and theory. Symposium I: Tools for working with guidelines. Symposium II: Computer-aided building of interactive application. Case studies: Application and practice. HCI: Education and training. Index of contributors. Keyword index.

246x189mm: 456pp: 100 line illus, 4 halftone illus: Jun 1995
Hb: 0-412-71790-5: £69.00

Integrating Information Technology into Education

Edited by **D. Watson,** King's College London, UK and **D. Tinsley,** IT Consultant, UK

This book takes a forward look at the issue of integration of information technology and related problems of quality. It discusses current developments in society and education influencing integration and the successes and failures in existing practice. It covers the perspective of teachers, looking at their roles and concerns and also that of the students, looking at their expectations of and behaviour in an integrated environment.

Contents: The IFIP WG 3.1 Working Conference in Barcelona. IFIP and working group 3.1. The Generalitat de Catalunya. Words of welcome. New technologies: integration into education. The computer: ally or alien? The roles and needs of mathematics teachers using IT. An action research role for teachers. Classroom ethos and the concerns of the teacher. Using evidence about teacher development to plan systematic revolution. The reality of learners' achievements with IT in the classroom. A curriculum for teachers or for leaming? The case of Cabri-geometre: learning geometry in a computer based environment. Moving schema. Developing analytical competency through informatics teaching. Integration of informatics into education. Promoting interdisciplinary and intercultural intentions through the history of informatics. Implementation of computers in Malaysian schools: problems and successes. Interpreting internal school influences on the educational integration of IT. Factors affecting the use of computers in the classroom: four case studies. Integrating IT into teaching - struggling with windmills. Effects of learners' characteristics and instructional guidance on computer assisted learning. Post-experimental phases of IT across the curriculum projects: the Spanish view. Social and political influences on the integration of informatics into Japanese education. The failure of the education system to attract girls to formal informatics studies. Learners and their expectations for an integrated informatics environment. Societal and organisational influences on integration: what about networking? Short papers. The teacher's role in a new problem-centred interdisciplinary approach. Teacher training, problems in mathematics teaching and the use of software tools. School environments and students' opinions on informatics. Animation microworlds for children as developers. How to develop "discoveries". Integration of portable computers into Australian classrooms: issues and outcomes. Developing an open learning environment with communication technologies. The British approach to the integration of IT into the curriculum. **Focus groups report**. Addresses of contributors and programme committee. Index of contributors. Keyword index.

234x156mm: 336pp: 40 line illus, 32 halftone illus: Feb 1995
Hb: 0-412-62250-5: £49.00

Education and Information Technologies

JOURNAL

Available via the Internet from 1996!

Edited by **B.Y. Samways,** Brunel University, Surrey, UK and **B. Collis,** University of Twente, The Netherlands

A refereed quarterly journal publishing papers from all sectors of education on all aspects of information technology and information systems. Subjects which are indicative of the changes in the methods of teaching and learning are addressed by the journal as well as examples of good practice and innovative ideas.

Information Technology in Educational Management

Edited by **B. Berta** and **Y. Gev,** both of Ministry of Education, Culture and Sport, Israel and M. **Telem,** Tel Aviv University, Israel

Reviews the state of the art in information technology in educational management (ITEM) with emphasis on research, approaches, methodologies, applications and tools. This book not only discusses the pedagogical and educational issues in ITEM but also covers the range of applications from class scheduling to financial support.

Contents: Preface. Issues in information technology in educational management. Implementation status - national reports. Higher education. Educational decision support systems. Specific applications. Panels and discussions - summaries. Index of contributors. Keyword index.

234x156mm: 264pp: 40 line illus: Dec 1994
Hb: 0-412-62090-1: £49.00

World Conference on Computers in Education

Edited by **D. Tinsley,** Red Cross, UK and **T. van Weert,** University of Nijmegen, The Netherlands

The conference is about using information technology in education and the teaching of informatics. The conference themes will appeal to people involved at all levels from elementary and primary through secondary to tertiary and vocational education.

234x156mm: 1168pp: 250 line illus,13 halftone illus: Jul 1995:
Hb: 0-412-62670-5: £95.00

Also available as CD-Rom: *0-412-71460-4: £95.00*

Set (CD-Rom and Book): *0-412-73650-0: £123.75*

Software Quality and Productivity

Theory, practice, education and training

Edited by M. **Lee,** City Polytechnic of Hong Kong, Hong Kong, **B.Z. Berta,** Ministry of Education, Culture and Sport, Israel, and **P. Juliff,** Deakin University, Victoria, Australia

As the world becomes increasingly dependent on the use of computers, the need for quality software which can be produced at reasonable cost increases. This IFIP proceedings brings together the work of leading researchers and practitioners who are concerned with the efficient production of quality software.

Contents: Preface. Keynote papers. Requirements, design and development methodologies. Object-oriented analysis, design and development. Software process and capability. Project management. Quality, reliability, standards. Specifications, metrics, assessment. Reusability. Integrated environments, case tools. Education and training. Index of contributors. Keyword index.

234x156mm: 416pp: 45 line illus, 5 halftone illus: Dec1994
Hb: 0-412-62960-7: £59.00

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ESSENTIAL READING FROM

CHAPMAN & HALL AND THE INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING (IFIP)

Achieving Quality in Software

Edited by **S. Bologna,** ENEA-CRE Casaccia, S. Maria di Galeria (RM), Italy and **G. Bucci,** University of Florence, Italy

Provides a state-of-the-art review of current perspectives on software quality. It covers the key topics of quality modeling, quality measurements and process improvement.

Contents: Invited paper. Process improvement. Quality practices. Software testing. Invited paper. Numerical assessment. Quality measurement. Quality modeling. Invited paper. KBS quality. Formal methods. Quality measurements. Conclusions.

Dec 1995: 234x156mm: 448pp, 100 line illus, 5 halftone illus: Hb: 0-412-63900-9: £60.00

Advanced CAD/CAM Systems

State-of-the-art and future trends in feature technology

Edited by **R. Soenen,** University of Valenciennes, France and **G. Oiling,** Chrysler Corporation, USA

A state-of-the-art review of feature techniques in CAD/CAM, outlining recent evolutions and promising research opportunities. It presents a selection of contributions of an international working conference arranged by the International Federation for Information Processing, held in Valenciennes, France, in May 1994.

Contents: Preface. Organisational aspects. Managment aspects. Representation aspects. Recognition aspects. Validation aspects. Index of contributors.

Dec 1994: 234x156mm: 288pp, 160 line illus, 1 halftone illus: Hb: 0-412-61730-7: £59.00

Environmental Software Systems

Edited by **R. Denzer,** University of Kauserslautern, Germany, **G. Schimak,** Austrian Research Centre, Austria and **D. Russell,** Penn State Great Valley, USA

The software support of environmental protection and research tasks is growing in importance and scope. This book comprises a selection of overview articles, giving insight into tasks, problems and achievements. It also includes detailed technical papers presenting practical projects and state of the art research.

Contents: Invited lectures. Environmental information systems. Modeling and simulation. Environmental management. Decision support. Distributed environmental information. Artificial intelligence applications. Environmental data visualization. Index of contributors. Keyword index.

Nov 1995: 234x156mm: 304pp, 100 line illus: Hb: 0-412-73730-2: £55.00

Advances in Formal Design Methods for CAD

Edited by **J.S. Gero,** both of Key Centre of Design Computing, University of Sydney, Australia (Associate Editor: F. Sudweeks)

This volume contains contributions which cover design methods based on evolutionary systems, generative processes, evaluation methods and analysis methods. It presents the state of the art in formal design methods for computer aided design.

Feb 1996: 234x156mm: c.320pp, 100 line illus: Hb: 0-412-72710-2: c. £55.00

Integrated Manufacturing Systems Engineering

Edited by **P. Ladet,** Laboratoire d'Automatique de Grenoble, Grenoble, France and **F.B. Vernadat,** Universite de Metz, France

This book discusses the tools and techniques for modelling, analysis, specification and integration of modern manufacturing systems. It first presents the concept of the extended enterprise as a way of inter-enterprise integration. It then focuses on enterprise engineering methods and tools to address intra-enterprise integration using a model-based approach.

Sep 1995: 234x156mm: 312pp: Hb: 0-412-72680-7: £55.00

Knowledge Intensive CAD

Edited by **T. Tomiyama,** The Graduate School of Engineering, Tokyo, Japan, **M. Mantyla,** Helsinki University of Technology, Finland and **S. Finger,** Carnegie Mellon University, Pittsburgh, USA

This book aims to clarify and elaborate the concepts of knowledge intensive design and CAD. The following topics are discussed in detail: design knowledge systemization and organization; design knowledge representation and modelling; design knowledge management techniques and tools; evaluation of potential intelligence tools and methodology for knowledge intensive CAD; and knowledge intensive design for a life cycle stage such as manufacturing, assembling, disassembling, operation, distribution, maintenance, recycling or reuse.

Knowledge Intensive CAD contains the selected proceedings of the First Workshop on Knowledge Intensive CAD, organized by the International Federation for Information Processing and held in Espoo, Finland, in September 1995.

Mar 1996: 234x156mm: c.352pp: Hb: 0-412-72910-5: £59.00

Modelling and Methodologies for Enterprise Integration

Edited by **P. Bernus,** Griffith University, Brisbane, Australia and **L. Nemes,** Commonwealth Scientific and Industrial Research Organization, Australia

This book explores the newly created discipline of enterprise integration, which is a business-oriented synthesis of many disciplines such as management science, information technology, production management and artifical intelligence. It contains articles from acclaimed theoretical experts as well as highly qualified business practitioners and consultants.

May 1996: 234x156mm: c.400pp: Hb: 0-412-75630-7: c. £59.50

Re-engineering the Enterprise

Edited by **J. Browne** and **D. O'Sullivan,** both of CIM Research Unit, University College Galway, Eire

This book brings together the work of a number of leading experts around the world, who present their ideas on the key issues that surround the area of business process re-engineering.

Each chapter in the book is a result of a presentation given at the Working Conference on Re-engineering the Enterprise, organised by the International Federation for Information Processing and held in Galway, Ireland in April 1995.

Oct 1995: 234x156mm: 352pp, 100 line illus: Hb: 0-412-64260-3: £49.50

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CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Sponsored by
Workshop on *Personal Wireless Communications*	10-12 Dec 96	Frankfurt, Germany	**IFIP** TC6
Second Intl. Symp. on *Mathematical Modelling*	5-7 Feb 97	Vienna, Austria	IMACS, TU Vienna, IFAC, **IFIP**
Work. Conf. on *Algorithmic Languages and Calculi*	17-22 Feb 97	Bischenberg, France	**IFIP** TC2
Workshop on *Microsystem Manufacturing*	Feb 97	Darmstadt, Germany	**IFIP** WG10.7
Conf. on *Optimal Control: Theory, Algorithms and Applications*	27 Feb – I Mar 97	Gainesville, FL, U.S.A.	**IFIP** TC7, WG7.2; N.S.F., U. of Fla.
Sixth Intl. Work. Conf. on *Dependable Computing for Critical Applications — DCCA-6*	5-7 Mar 97	Garmisch-Partenkirchen, Germany	**IFIP** WG10.4/TC I I et al.
Fifth Intl. Symp. on *Network Management — ISINM* '97	14-22 Apr 97 or 12-17 May 97	Baltimore, MD, U.S.A.	**IFIP** WG6.6, IEEE
Conf. on *Computer Hardware Description Languages and Applications — CHDL '97* and *VHDL Forum for CAD in Europe*	20-26 Apr 97	Toledo, Spain	**IFIP** TC10
Conf. on *Electronic Publishing*	Apr 97	Cambridge, U.K.	**IFIP** TC6, ICCC
Second Intl. Symp. on *Environmental Software Systems — ISESS '97*	28 Apr – 2 May 97	Whistler, Canada	**IFIP** TC5, Ger. Comp. Soc., Aus. Rsch. Ctr. Seibersdorf; U. of Guelph
Conf. on *Information Security: Research & Business—SEC '97*	14-16 May 97	Copenhagen, Denmark	**IFIP** TCII
Intl. Conf. on *Integrated and Sustained Industrial Production Systems*	14-16 May 97	Lisbon, Portugal	**IFIP** WG5.3, IFAC
Conf. on *Women, Work and Computerization — WWC'97*	24-27 May 97	Bonn, Germany	**IFIP** TC9
Intl. Conf. on *Open Distributed Processing — ICODP* 97	26-30 May 97	Toronto, On., Canada	**IFIP** TC6, IBM
Seventh Conf. on *High Performance Network*	May 97	Thornwood, NY, U.S.A.	**IFIP** WG6.4
Fourteenth *IMEKO World Congress*	2–h Jun 97	Tempaere/Helsinki, Fin.	IMEKO
Work. Conf. on *System Implementation Languages*	Jun 97	Berlin, Germany	**IFIP** TC2
Work. Conf. on *Visual Database Systems — VDB* 4	spring 97	California, U.S.A.	**IFIP** TC2
Work. Conf. on *Human Choice & Computers — HCC-5*	autumn 97	Cape Town, South Africa	**IFIP** TC9
INTERACT 97	14-18 Jul 97	Sydney, Australia	**IFIP** TC 13
Eighteenth Conf. on *System Modelling and Optimization*	21-24 Jul 97	Detroit, MI, U.S.A.	**IFIP** TC7, Wayne Univ.
Work. Conf. on *Capacity Building for Information Technology in Education in Developing Countries — CapBIT 97*	25-29 Aug 97	Harare, Zimbabwe	**IFIP** TC3, Comp. Soc. Zimb.
Conf. *VLSI* '97	26-29 Aug 97	Gramado, Brazil	**IFIP** TC10
Work. Conf. on *Extended Enterprise*	14-19 Sep 97	Ascona, Switzerland	**IFIP** WG5.7
European Design Automation Conference — EuroDAC '97 and *Euro VHDL'97*	Sep 97	Duesseldorf, Germany	**IFIP** TC10
Second Workshop on *ATM*	Sep 97	Canada	**IFIP** TC6
Work. Conf. on *Intelligent Networks*	Sep 97	Versailles, France	**IFIP** TC6, Telecom, TG IN, Univ. Versailles
Seventh Conf. on *Performance of DCS*	Sep 97	Lund, Sweden	**IFIP** WG6.3/7.3
Thirteenth Intl. Conf. on *Computer Communication — ICCC'97*	3rd quarter 97	Nice, France	ICCC
Workshop on *Personal Wireless Communication*	Sep/Oct 97	Chania, Greece	**IFIP** TC6
Conf. *AFRICOM '97*	Oct 97	Tunisia	**IFIP** TC6, ICCC
Workshop on *Distributed System Operation and Management — DSOM '97*	Oct 97	Gaithersburg, MD, U.S.A. or Boston, MA, U.S.A.	**IFIP** WG6.6
Conf. on *Correct Hardware Design and Verification Methods — CHARME '97*	Oct 97	Canada	**IFIP** TC10
Intl. Conf. on *Computer Application in Production Engineering—CAPE '97*	19-21 Nov 97	Chicago, IL, U.S.A	**IFIP** TC5; SME
Intl. Conf. *FORTE '97*	1997	Raleigh, NC, U.S.A.	**IFIP** WG6.I
Work. Conf. on *Programming Concepts and Methods*	Jun 98	Stony Brook, NY, U.S.A.	**IFIP** WG2.2/2.3
Work. Conf. on *Integration and CAPM*	Aug 98	Glasgow, U.K.	**IFIP** WG6.8
IFIP Congress '98 — Fifteenth World Computer Congress	29 Aug – 6 Sep 98 (new dates)	Vienna, Austria, and Budapest, Hungary	**IFIP**
IFIP Congress 2000 — Sixteenth World Computer Congress	Sep 00	Beijing, China	**IFIP**
Seventh World Conf. on *Computers in Education*	29 Jul–Aug 3 01	Copenhagen, Denmark	**IFIP** TC3, Danish Data Assn.

The **IFIP** Secretariat can furnish details of most of the events listed. Please see page 12 for a schedule of **IFIP** administrative meetings.

CALENDAR OF EVENTS

Event	Date	Location	Sponsored by
Workshop on *MIS Research*	2-4 Jun 96	Philadelphia, PA, U.S.A.	**IFIP** WG9.2
Sixth Conf. on *Information Network and Data Communication — INDC 96*	17-19 Jun 96	Trondheim, Norway	**IFIP** TC6, ICCC
Intl. Conf. on *Architectures and Design Methods for Balanced Automation Systems — BASYS '96*	17-19 Jun 96	Lisbon, Portugal	EC, **IFIP** WG5.3, IEEE CS
Third Workshop on *Stochastic Optimization: Numerical Methods and Technical Applications*	17-20 Jun 96	Neubiberg/Munich, Ger.	**IFIP** TC7, WG7.7; GAMM; UniBw Munich
Asia Pacific Conf. on *Human—Computer Interaction — APCHI '96*	26-28 Jun 96	Singapore	**IFIP** TCI3; ITI
Workshop on *Performance of Communication Systems*	Jun 96	Budapest, Hungary	**IFIP** WG6.3; IEEE
Work. Conf. on *Information and Communication Technology: Supporting Change through Teacher Education*	30 Jun — 5 July 96	Kiryat Anavim, Israel	**IFIP** TC3, WG3.1 & **5**
Thirteenth *IFAC World Congress '96*	30 Jun — 5 Jul 96	San Francisco, CA, U.S.A.	IFAC
Work. Conf. on *Education and Informatics*	1-5 Jul 96	Moscow, Russia	**IFIP** TC3/WG3.3 UNESCO
Workshop on *Virtual Worlds — Applications and Implications*	5-6 Jul 96	Brighton, U.K.	**IFIP** WG9.5, Univ. of Brighton
Work. Conf. on *Place of Information Technology in Management Education*	8-12 Jul 96	Melbourne, Australia	**IFIP** WG3.4 Deakin U.
Fourteenth *IFORS World Congress*	8-12 Jul 96	Vancouver, B.C., Canada	IFORS
Work. Conf. on *Mathematical and Scientific Computing: Quality of Numerical Software*	8-12 Jul 96	Oxford, U.K.	**IFIP** TC2, WG2.5
Fifth Intl. Conf. on *Computers Helping People with Special Needs — ICCHP'96*	17-19 Jul 96	Linz, Austria	OCG **IFIP** TC9 TCI3 et al.
Tenth Work. Conf. on *Database Security*	22-24 Jul 96	Como, Italy	**IFIP** ICI I, WG 11.3
Work. Conf. on *Implementation of Decision Support Systems*	22-25 Jul 96	London, U.K.	**IFIP** WG8.3 London Sch. of Ec.
Second Work. Conf. on *Information Technology in Educational Management for the Schools of the Future*	22-26 Jul 96	Hong Kong, Hong Kong	**IFIP** TC3,
South—East Asia Communication Conference — SEACOMM 96	27-29 Aug 96	Kuala Lumpur, Malaysia	MNCC, **IFIP** TC6
Work. Conf. on *Hardware/Software Co-Design*	29-31 Aug 96	Zakopane, Poland	**IFIP** TC10, SIG
Workshop on *Collaborative Learning*	2-5 Sep 96	Vienna, Austria, and Prague, Czech Rep.	**IFIP** TC3/WG3.6
IFIP Congress '96 — Fourteenth World Computer Congress	2-6 *Sep* 96	Canberra, Australia	**IFIP**
Intl. Symp. on *Operations Research — SOR'96*	4-6 Sep 96	Braunschweig, Germany	DGOR, GMOEOR **IFIP** WG7 4
Ninth Intl. Workshop on *Testing Communication Systems — IWTCS*	9-11 Sep 96	Darmstadt, Germany	**IFIP** TC6 WG6.I GMD
Work Conf. *Intelligent Networks 96*	11-12 Sep 96	Dallas, TX, U.S.A.	**IFIP** TC6, IEEE CS
Intl. Conf. on *Design of Information Infrastructure Systems for Manufacturing — DIISM '96*	16-18 Sep 96	Eindhoven, Netherlands	**IFIP** TC5, WG5.3/5.7; Eindhoven U.; CIMOSA
Second Workshop on *Knowledge-Intensive CAD*	16-18 Sep 96	Pittsburgh, PA, U.S.A.	**IFIP** WG5.2
European Design Automation Conf. — EuroDAC'96 and *EuroVHDL'96*	16-20 Sep 96	Geneva, Switzerland	**IFIP** TC10
Work. Conf. on *Development and Application of Computer Techniques to Environmental Studies — ENVIROSOFT '96*	18-20 Sep 96	Como, Italy	**IFIP** TC5, WG5.1 **I;** Wessex Inst. of Tech.
Intl. Work. Conf. on *Communication and Multimedia Security*	23-24 Sep 96	Essen, Germany	**IFIP** TC6, TCI I
Intl. Workshop on *Personal Wireless Communications*	end Sep 96	Chania, Greece	**IFIP** TC6 TG Wireless Netw.
Open Conf. on *Formal Description Techniques and Protocol Specification, Testing, and Verification — FORTE/PSTV'96*	8-11 Oct 96	Kaiserslautern, Germany	**IFIP** WG6.I
Intl. Conf. *CCDC 96 and AFRICOM 96*	15-17 Oct 96	Harare, Zimbabwe	ICCC, **IFIP** TC6
Fifth Intl. Workshop on *Protocols for High-Speed Networks '96*	28-30 Oct 96	Sophia Antipolis, France	**IFIP** TC6/WG6.I
Intl. Workshop on *Distributed Systems: Operation and Management — DSOM 96*	28-30 Oct 96	L'Aquila, Italy	**IFIP** WG6.6 IEEE SSGRR
Sixth Intl. Conf. on *Advances in Production Management Systems — APMS '96*	4-6 Nov 96	Kyoto, Japan	**IFIP** TC5
Conf. on *Formal Methods in Computer-Aided Design — FMCAD '96*	6-8 Nov 96	Palo Alto, CA, U.S.A.	**IFIP** TC10
Workshop on *Methodologies and Tools for Microsystem Design*	Nov 96	Karlsruhe, Germany	**IFIP** WG10.7
Workshop on *PDC '96 and CSCW '96*	Nov 96	Boston, MA, U.S.A.	**IFIP** WG9.1
Work. Conf. on *Information Systems Development, Organizational Change, and Workforce Restructuring*	autumn 96	Amsterdam, Netherlands	**IFIP** WG9.I

(continued on page 15)

IFIP Congress '96 — 14th World Computer Congress	2-6 Sep 96	Canberra, Australia	**IFIP**
IFIP Congress '98 — 15th World Computer Congress	29 Aug — 6 Sep 98 (new dates)	Vienna, Austria, and Budapest, Hungary	**IFIP**
IFIP Congress 2000 — 16th World Computer Congress	Sep 00	Beijing, China	**IFIP**

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