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International Federation for Information Processing
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A "VIRTUAL" TELETEACHING CONFERENCE WILL HIGHLIGHT IFIP CONGRESS '96

Conference Will "Practice What It Preaches"

One of the three specialized conferences that will make up **IFIP** Congress '96 is Teleteaching '96, the fifth in a series of conferences run by the **IFIP** Technical Committee on Education (TC3). The first was held in Bangkok in 1988. Teleteaching refers to the use of computers and communications technologies in teaching and learning. The conference will address the use of these technologies across all sectors of education (elementary, secondary, university, and industry) and will have particular relevance for those involved in open learning and distance education. Major issues addressed at the Teleteaching conference will be ethics, multimedia, developing countries, and the use of information technology in teaching all subjects.

The conference itself will *practice what it preaches* and make use of teleteaching technologies — e.g., video conferencing, c-mail, direct television broadcast, and interactive television. It is anticipated that approximately 200 delegates will participate on-site in Canberra: however, the major thrust of Teleteaching '96 will be a "virtual" conference. Thousands, including students as well as educators, will participate from their desktops or from local access points around the world. In order to accommodate international contributors, communication lines will be open 24 hours a day during the Congress. It is planned that teams in countries around the world will hold video conferences prior to the Congress **and** that their results will be presented and interpreted at the actual Congress.

There will be no call for papers. Well-known and controversial experts will be invited to participate via the use of the technologies that they promote. Keynotes will not be lectures but facilitated events, such as discussion forums, debates, and networking projects. The publication

continued on page 8

*New **IFIP** headquarters in Laxenburg Austria (at right. first floor)*

Integrating IT into Education

*by Dr. Bernard Cornu (F)**

From October 17 to 21, 1994, the I**FIP** Working Group on Informatics Education at the Secondary Level (WG3.1) held a working conference in Barcelona, Catalonia, Spain. This conference, entitled Integrating Information Technology into Education. was the result of a partnership between **IFIP** and the Department of Education of the Generalitat de Catalunya, based on shared interests in the development and integration of information technology into education. Nearly 150 professionals from 29 countries met in Barcelona for five concentrated days. The Conference programme was built around seven themes:

• chairman of **WG3.I**

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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.*

On-Line IFIP Databases

Databases of **IFIP** information (including this *Newsletter)* are available through international computer networks. Access is possible as follows:

BITNET:
listserv@cear n
listserv%cearn.bitnet@cunyvm.cuny.edu
ftp:
software.watson.ibm.com/pub/ifip
gophers:
ietf.cnri.reston.va.us
gopher.micro.umn.edu (under "International Organizations")
www:
http://www.dit.upm.es/~cdk/org/i tip

Details of how to access the databases can be obtained from the Secretariat.

IFIP COUNCIL MEETS IN NEW YORK

In a meeting that was notable for its lack of controversy and major new issues, the **IFIP** Council convened in New York 8-9 March, preceded by three days of Technical Assembly and other meetings. The major points discussed at the meetings were technical activities, **IFIP** Congresses (see the articles on pages 1 and 8), finances (see page 10), publishing (page 10), and the move of the Secretariat.

Dr. Robert Aiken, chairman of FOCUS (Federation On Computing in the United States), the U.S. Member of **IFIP,** welcomed Council. In his opening remarks, *Prof. Asbjørn Rolstadås (N),* **IFIP's** president, noted the significance of the meeting: the first meeting since the Secretariat had moved to Laxenburg, Austria, and the first meeting involving Chapman & Hall as the new **IFIP** publisher.

Technical Activities

The technical activities of **IFIP** are flourishing; we list the highlights here:

• The new chairman of the Technical Committee on Software: Theory and Practice (TC2), *Prof. Reino Kurki-Suonio (SF),* reported that although TC2 does not hold a large number of conferences, many seminal ideas of long-term value have been developed in its Working Groups (WGs).

• *Dir. Peter Bollerslev (DK),* chairman of TC3 on Education, noted that over 2000 registrants are expected for the World Conference on Computers in Education (compared with attendance of less than 1200 at the two most recent **IFIP** Congresses), which will be held in July in Birmingham, England. He also reported considerable cooperation with Unesco: *A Modular Curriculum in Computer Science,* a document of over 100 pages, was produced by a working group of TC3 and printed and distributed by Unesco; plans call for another curriculum created by TC3, *Secondary School Informatics Curriculum*, to be translated into French, Spanish, and Chinese; and TC3 has provided Unesco with a list of **IFIP** experts in education, at Unesco's request.

• The report of TC5 on Computer Applications in Technology noted that meetings of its WG chairmen are being held by fax and e-mail. The most recent such "meeting" spanned the period 6 January through 28 February. Many other groups within **IFIP** are also holding electronic meetings.

• *Prof. Otto Spaniol (D),* chairman of TC6 on Communication Systems, reported that the TC is moving toward holding "more and more, smaller and smaller conferences."

• The report of TC8 on Information Systems asked the Technical Assembly whether TC8 should create a new WG on Informatics in International Business Enterprises. (The key word in the title is *International*, since the WG will concentrate on multinational companies.) The TA approved. (An article about this activity is on page 6.)

• *Prof. Klaus Brunnstein (D),* chairman of TC9 on Relationship between Comput-

During Council meeting (from left to right): Mr. Melbye ***(DK).*** *Mr. Morris (GB), Prof Rolstadås (N), Prof Bauknecht (CH), and Prof Goldsworthy (AUS)*

ers and Society, announced that the book ***IFIP** Handbook on Codes of Ethics* is nearly ready for publication by the **IFIP** publisher; a copy will be sent to every Member society. He also stated that WG9.5 on Social Implications of Artificial Intelligence Systems plans to expand its scope and change its title to Artifacts, Virtual Reality, and Social Implications.

• The chairman of TC10 on Computer Systems Technology, *Prof. Egon Hörbst (A),* announced that the TC will sponsor a state-of-the-art seminar organized by *Prof. Carlos Delgado Kloos (E),* vice-chairman of the TC. *Prof. Hörbst* also reported that WGs 10.2 (System Description and Design Tools) and 10.5 (Very Large Scale Integration) have merged; the merged group, designated WG10.2, will be called Design and Engineering of Electronic Systems.

• The report of TC11 on Security and Protection in Information Processing Systems indicated that the TC is in the midst of significant reorganization. It was noted that the program for the TC 11 conference IFIP/SEC'95, which was held in May 1995 in Cape Town, contained a welcome from South African President *Nelson Mandela.*

• *Prof. Brian Shackel (GB),* chairman of TC 13 on Human—Computer Interaction, mentioned the TC's Activities Planning Panel, which uses the experience of the Panel members to help inexperienced organizers of TC13 events do an effective job. We hope to print an article describing the Panel in a future ***IFIP** Newsletter.*

• The Specialist Group on Foundations of Computer Science (SG14) proposed the acceptance of a new WG, which the Technical Assembly (TA) approved: WG14.4 on Computational Learning Theory (see the article on page 6). It is expected that in September the General Assembly will approve the transformation of SG14 into a TC.

• *Dr. Miroslav M. Novak (GB),* chairman of the SG on Fractals and Chaos (SG15), requested that the SG be transformed into a TC, with an expanded scope to include the study of various aspects of complex natural processes. The new TC would be called Nonlinear Dynamical Systems. The TA approved and will recommend that the September GA transform SG15 into a TC.

• The Smart Card Task Force reported that the **IFIP** conference Smart Card and Advanced Application (CARDIS) was held in October 1994, with more than 60 people in attendance; a second CARDIS will be held in 1996. The scope will be expanded to include "nomadic objects." The TA voted to convert the Task Force into a provisional SG.

• *Mrs. Patricia Glenn (CDN),* chairman of the Task Force on Harmonization and Acceptance of International Standards for Information Technology Professionals, reported its progress to the TA (see the article on page 9).

One discussion at the TA and Council concerned the decrease in the number of events sponsored by **IFIP** bodies. The numbers of events listed in the **IFIP** calendar were 88 held in 1993, 87 in 1994, and 59 scheduled for 1995. It was unclear whether these numbers represented a real, dramatic decline in the number of events or are a result of bookkeeping problems (the Secretariat in Laxenburg has not yet been able to assume the event-management task, and the Geneva Secretariat could not handle it during the transition period). We observe that only 67 1994 events were listed in the calendar at this time in 1994. At the Vienna Council meeting in 1993, it was asked whether **IFIP** is holding too many events and whether the Federation should be engaging in other sorts of activities (e.g., standards, tutorials). *Prof. Kurt Bauknecht (CH),* chairman of the TA, promised a major discussion of this matter at a subsequent TA meeting.

Secretariat Move

The move of the **IFIP** Secretariat from Geneva to Laxenburg went smoothly and at much lower expense than expected, because of the efforts of *Mme. Gwyneth Roberts,* Administrative Manager of the Geneva Secretariat, *Mr. Plamen Nedkov,* Administration Manager of the Laxenburg Secretariat, *Mr. Graham Morris (GB),* **IFIP** secretary, and *Mr. Aage Melbye (DK),* **IFIP** treasurer and Consultant to **IFIP.** *Mr. Nedkov* described the new premises (which even have conference rooms for small **IFIP** meetings) to the Council; *Mr. Melbye* discussed some of the hardships encountered in Austria (including the problems associated with acquiring a telephone connection); and *Mr. Morris* told of the successes achieved by *Mme. Roberts* in avoiding penalties for cancelling leases on office and storage space in Geneva.

Council discussed whether the official location of **IFIP** should remain in Switzerland (perhaps to be moved from Geneva to Zurich), whether the official **IFIP** currency should remain the Swiss franc, and whether **IFIP** should retain its current bankers in Geneva and London.

Other Matters

Dr. Dipak Khakhar (S), an **IFIP** trustee, announced that he had completed the ***IFIP** Membership Directory*, which gives address information, primary officers, goals, membership (categories and numbers), major activities, publications, and affiliations for almost all **IFIP** Member societies, Corresponding Members, and Affiliate Members. Copies of the *Directory* have been sent to all Members. Additional copies may be requested from the **IFIP** Secretariat. The *Directory* can also be obtained from the **IFIP** databases (the file is named "members"); see the masthead on page 2 for instructions on accessing the databases.

Dr. Robert Aiken of FOCUS welcomes Council.

A lively discussion took place in the Technical Assembly regarding one of the TCs that ignores the provision of the **IFIP** bylaws that limits the terms of WG chairs and vice-chairs to six years, a provision designed to encourage the continual development of new leadership. The same TC also will not pay to **IFIP** the sponsorship fee required for all events held under the aegis of **IFIP,** using the **IFIP** logo. The TC also will not keep its Cognizant Officer informed of TC activities. This

continued on page 4

IFIP COUNCIL

Executive Board			
A. Rolstadås	President	N	92-95
K. Bauknecht	Pres.-Elect	CH	94-95
H.L. Funk	Vice-Pres.	USA	94-97
A.W. Goldsworthy	Vice-Pres.	AUS	92-95
W. Brauer	Vice-Pres.	D	94-95
G.J. Morris	Secretary	GB	93-96
A. Melbye	Treasurer	DK	93-96
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M. Tienari		SF	92-95
D. Dolan		IRL	94-97
G.R. Fairall		ZW	94-97
D. Khakhar		S	93-96
W. Grafendorfer		A	93-95
P. Glenn		CDN	94-97
M. Gottlieb		IL	94-95

COUNCIL continued from page 3

TC also asks concessions from **IFIP** regarding the cost of conference proceedings. Other TC chairs argued that it is the obligation of any TC that benefits by its affiliation with **IFIP** to adhere to the **IFIP** rules. Also, the other TCs felt that they were, in a sense, financing the operations of the TC under discussion.

The ***IFIP*** *Newsletter* Editor reported on the improved appearance of the *Newsletter* as a result of a redesign of the page-one masthead and a change in paper by the new printer, the **IFIP** publisher Chapman & Hall. The layout is still done by the Editor, as before, although he seeks suggestions for improvement. C&H is mailing the *Newsletter* to its recipients, a task that was formerly performed by the Secretariat, now at a lower cost to **IFIP.** It has been suggested that *Newsletter* articles be available by e-mail as soon as they are finished, rather than being available only when a complete *Newsletter* issue is ready; the Editor is seriously considering how to best implement this suggestion.

A letter from *Acad. Blagovest Sendov,* the past president of **IFIP,** was read to Council members. He is now Chairman of the National Assembly of the Republic of Bulgaria. Although his duties kept him away from the **IFIP** Council meeting, he remains Bulgaria's representative to **IFIP.**

A plan to initiate a new class of member, "**IFIP** Supporter," was instituted at the March 1994 Council in Brussels (see page 5 of the December 1994 *Newsletter),* and in his report to the 1995 Council, *President Rolstadås* wrote, "To really save our economy, there is only one alternative left, the **IFIP** Supporters. The Marketing Committee...has prepared a proposal for sponsorship." At the 1995 Council, however, the Marketing Committee decided to drop the idea. Nevertheless, because substantial donations of computer equipment to **IFIP** were received recently (see the article on page 5), the donors will be designated Supporters and appropriately recognized.

The importance of **IFIP** membership in the International Council of Scientific Unions (ICSU) was discussed at the September 1994 GA in Hamburg (see page 6 of the December *Newsletter);* however, the Executive Board decided to move slowly in this direction, perhaps first cooperating with ICSU on joint projects.

The desirability of having an electronic edition of the ***IFIP*** *Information Bulletin* available to **IFIP** workers and perhaps to others was discussed extensively. In particular, many people would like access to address information for all **IFIP** workers (not only GA members and TC and WG officers, which can be found in the printed *Bulletin).* Two major problems prevent this from being done: concerns over privacy, and the present inability of the Secretariat to handle the task. The hardcopy *Bulletin* will be updated and distributed soon.

It was announced that Unesco supported attendance from developing countries at **IFIP** events in 1994. In addition to the cooperation described above for TC3, financial assistance was received for the work of the Developing Countries Support Committee, and some funding has been received for TC13 and SG14. Limited support will be coming in 1995.

Dr. Roger Johnson (GB), in behalf of the Council of European Professional Informatics Societies (CEPIS), an Affiliate Member of **IFIP,** expressed their gratitude for all of **IFIP's** assistance while CEPIS has been getting under way. In particular, he presented to *Mr. Melbye,* who is also a member of the CEPIS Council, a certificate of appreciation (see the article on page 5). *Dr. Johnson,* also reported that CEPIS is conducting an experiment in Norway with a "driver's license" program for all computer users. *President Rolstadås* expressed the desire to organize joint events with CEPIS.

Mme. Roberts receiving gift from **IFIP,** *presented by President Rolstadås*

At the close of the Council, *President Rolstadås* spoke of the deep gratitude we all owe to *Mme. Roberts* for her dedicated service to **IFIP** over the past 20 years. She will be sorely missed.

The Council was adjourned, with many thanks to the hosts. ■

*CEPIS AND **IFIP***

We print the following from a press release issued in March by the Council of European Professional Informatics Societies (CEPIS), because it clearly expresses our mutual desire for fruitful cooperation:

CEPIS JOINS **IFIP**

CEPIS has become an Affiliate Member of **IFIP,** and the CEPIS President was warmly welcomed by the **IFIP** General Assembly Members when the membership was confirmed at a meeting of **IFIP** in Hamburg [last September]. CEPIS Vice-President *Dr. Roger Johnson* [who is also the United Kingdom representative to **IFIP]** will attend the March 1995 **IFIP** Council Meeting in New York.

CEPIS and **IFIP** have 16 common members, and Affiliate Membership will ensure that the two bodies can work in close harmony for the benefit of the members of their member societies. There will be liaison regarding future activities, and there will be a mechanism to avoid competing events and conflicting dates for conferences. ■

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.

CORRECTION

The following Aim of Working Group 6.2 corrects the version printed on page 9 of the March 1995 ***IFIP*** *Newsletter:*

To identify and study current issues related to the development of broadband communication networks and applications, e.g., broadband networks based on the ATM (Asynchronous Transfer Mode) technology. ■

MELBYE HONORED BY CEPIS

Mr. Melbye (left) receives certificate from Dr. Johnson.

Mr. Aage Melbye (DK), IFIP's treasurer, was honored by the Council of European Professional Informatics Societies (CEPIS), an Affiliate Member of **IFIP.** At the March **IFIP** Council meeting in New York, *Dr. Roger Johnson,* who is vice-president of CEPIS as well as the representative of the U.K. to **IFIP,** presented a certificate from CEPIS to *Mr. Melbye* in gratitude for all the assistance given by **IFIP** — especially by *Mr. Melbye* in drawing up the CEPIS statutes and bylaws (modeled after those of **IFIP)** and in many other ways. The certificate reads as follows:

> Presented to Aage Melbye in appreciation of his valuable work as Vice-President. By resolution of the Council of European Professional Informatics Societies.
>
> *Jaakko Kivinen*
> President ■

VALUED SUPPORT FOR **IFIP**

*by Mr. Graham Morris (GB) **

Over the years, **IFIP** has received help and support in many forms from companies and organizations, world-wide. While we have always expressed our gratitude for such generosity, we have not had a formal mechanism for recording that gratitude publicly. At its meeting in New York, the **IFIP** Council (see the article on page 2) agreed to recognise as **IFIP** Supporters in the *Newsletter* and *Information Bulletin* those who provide us during the year with significant material or financial support.

For 1995, we are pleased to acknowledge with gratitude the following companies that have generously provided us with significant amounts of data processing equipment for the new offices of the **IFIP** Secretariat in Laxenburg, Austria:

Compaq Computer AG
(Austria and Switzerland)
Digital Equipment Data Systems AG
(Austria)
NEC Corporation
Sun Microsystems AG
(Switzerland)

We are grateful to these corporations for their generous support. Publication of brief descriptions of their activities is planned as soon as possible. ■

* IFIP secretary

Socializing in New York before the Council Begins

K. Brunnstein (D), K. Bauknecht (CH), and C. Guy (ZA)

J. Rosenfeld (USA), N. Tomii (J), and M. Ozeki (J)

W. and U. Brauer

INFORMATICS IN INTERNATIONAL BUSINESS ENTERPRISES

*New **IFIP** Activity Proposed*

*by Dr. Edward Roche (USA) **

[In his written report to the **IFIP** Technical Assembly in March, *Prof. Gordon Davis (USA),* chairman of the Technical Committee on Information Systems (TC8), solicited the advice of the TA as to whether to create a Working Group (WG) on Informatics in International Business Enterprises. A position paper, part of which is printed here, was submitted to promote such an **IFIP** activity. The TA supported the creation of a new WG to work in this area. — Editor]

Business enterprises today are the product of evolution reaching back to foundations in pre-industrial Europe. Even before steel and mining, trading firms from Venice, Genoa, Antwerp, Amsterdam, Castille, and England were putting in place the earliest trade routes and systems of interconnection, which in many cases still exist today. The expanding routes of international trade found in the Aegean and Mediterranean were echoed in the North by the Hanseatic League, with trade from Russia to England through Scandinavia and Northern Germany.

The emergence of the nation state during the breakdown of the Austro—Hungarian empire and World War I further reinforced the uniqueness of international business enterprises. The inter-war period produced the highest tariffs to international trade ever experienced, which forced firms to operate separate, autonomous units in different countries because it was impossible to conduct trade across borders as they had done in the past. Governments organized monopolies and oligopolies in response to market uncertainty and the need to focus complex and large accumulations of human and physical capital. Management of the international firm started to separate from ownership in some cases as the scale and scope of operations continued to grow. Development of telegraph and telephone, supplementing the impact of canals and railroads, further enhanced the capabilities of large enterprises to accelerate the flow of information necessary to make accurate decisions and plan operations.

At the beginning of the computer age, in the 1960s, the international business enterprise was a giant, multi-functional, multi-unit, and even multi-industrial structure run in a decentralized fashion, with a multi-division management organization at the core of operations. This type of complex organization, supplemented today by computer-to-computer communications, operates on a scale and scope never seen before. Not only do international business enterprises operate in virtually every corner of the world, producing much of the world's goods and services, and controlling more than 75% of international trade, but they also cooperate with each other in a variety of forms, including joint ventures and other contractual arrangements.

Structures Change Rapidly

These giant structures change rapidly, so they might be thought of as being organisms, with flows of information through computer communications networks serving as nervous systems. Constantly shifting patterns of industrial alliances, mergers, acquisitions, divestitures, accelerating product life cycles driven by technological developments, as well as opening up of new markets as different nation states change their economic orientations guarantee an essential instability in international business. This sets the stage for application of information technology.

In order to support these organizational structures in the multinational corporation, most firms rely on an inter-linked network of mainframe computers radiating from headquarters, with smaller mid-sized systems in regional offices and data centers, followed by minicomputers in smaller subsidiary locations. Some large firms have several hundred data centers and operate in more than 100 countries. A few large data centers, called "super centers," are supported in the field by many smaller "feeder" centers. In a rough approximation of the Weberian hierarchy, computer technology is linked across international borders to serve as the communication and control system of the enterprise.

The proposed WG will study information processing and telecommunication infrastructures in international business enterprises, to understand their scale and scope, how they are used in business decision making and strategy, and how new technologies and other factors cause them to change. ■

• chair of organizing group for proposed WG

AIMS AND SCOPE OF WG14.4

The IFIP Technical Assembly, meeting in New York in March, approved the formation of a new Working Group (WG14.4) in the Specialist Group on Foundations of Computer Science (SG14). Following are the Aims and Scope of this WG.

Computational Learning Theory

AIMS: To promote the field of computational learning theory and to establish close cooperation between existing groups working in geographically separated areas. To support steps helping to bridge theory and applications.

SCOPE:

- Computational and complexity-theoretic aspects of learning
- Investigations of formal models of learning
- The teacher/learner and other learning paradigms
- Neural networks and learning
- Kolomogorov complexity approach to learning
- Application of the computational and complexity approach to learning to the design of learning systems ■

EDUCATION CONF. continued from p. I

- current developments in society and education influencing education
- teachers, their roles and concerns
- learners, their expectation of and behaviour in an integrated environment
- developments and concerns in the curriculum
- successes and failures in existing practices
- organisation and management of integrated environments
- identification of social and political influences

Twenty-three authors were invited to present papers on these themes, which formed the core of the Conference discussion. In his keynote paper, *Dr. Bernard Cornu (F),* chairman of the Conference International Program Committee, marked out the territory for debate by examining the notion of integration and outlining the shift still required to take us from a juxtaposition between IT and the curriculum to full integration — when IT will become "invisible" because it will no longer be special. From here, the discussion considered the roles of teachers and whether their identification with their subject specialties inhibited integration; research was presented on the pedagogic risks teachers have to take when using IT and how IT may challenge their fundamental practices.

Two fascinating papers on the potential of the dynamic graphical environment for teaching geometry were followed by a classic division of opinion on the role of informatics itself within the curriculum, with views polarised between the essential role of algorithmics in logical thinking for all, and a new form of information literacy based on modelling, communications, and teamwork, with informatics as an elected, specialised study only.

A series of papers from widely different parts of the globe reported on the state of integration in schools today. All identified major problems that inhibited integration, including limited access to the technology and poor internal management understanding. Universally, the pedagogic intention of the teacher was a key factor. These studies, which focussed on schools, were then placed in a broader context by an examination of two national policies. Both Spanish and Japanese government projects have had variable success and are now placing much emphasis on the role of communication technologies. Such national concerns for integration were finally placed in another perspective by papers that highlighted the inequities that have become associated with IT in schools, both with respect to gender and social class. Indeed, a telling point was made in the last paper, when *Prof. Alison Griffith (USA)* asked how we could hope to achieve the integration sought by *Dr. Cornu* when we are living in a world that itself has severe problems of integration within society.

These main paper sessions were not the only activity in the Conference; short papers were presented on the main themes, and a most successful series of workshops and demonstrations was held. But two further activities were a key part of the Conference and gave it a special flavour.

Focus Groups

First, all the participants were divided into focus groups in which they discussed a series of questions related to the Conference themes. At the end of the Conference, their deliberations were reported for incorporation in the Conference proceedings; they also provided the basis of a lively 90-minute debate in the final session of the Conference. It is fair to say that rarely has a closing session been so well attended, most of the time being taken by debate from the floor.

Second, a Catalunyan multimedia presentation one morning was a superb example of the potential of this medium; it also served to remind the attendees of the strength of local national feeling and the excellent hospitality that we received in Barcelona, arranged by the Organizing Committee, chaired by *Mr. Ruiz i Tarrago (E).*

WG3.1 believes that its working conferences have a particular character that promotes international cooperation among qualified, motivated professionals. The forthcoming proceedings, to be published by Chapman & Hall this year, will be a reflection of the work of the Conference, and a major contribution to the furtherance of international debate. ■

chairman of SGI5

CONFERENCE ON FRACTAL GEOMETRY IN NATURE

*by Dr. Miroslav M. Novak (GB) **

The 3rd International Working Conference on Fractals in the Natural and Applied Sciences, FRACTAL 95, was held 7-10 February 1995 in Marseille, France. It was hosted by the Centre International de Rencontres Mathématiques (CIRM) and supported by **IFIP,** CIRM, and the International Science Foundation. The FRACTAL conference series is sponsored by the **IFIP** Specialist Group on Fractals and Chaos (SG15). As with its predecessor conferences, FRACTAL 95 explored fractal geometry, which is ideally suited to the description of many natural phenomena, in a multitude of disciplines.

With 54 participants from 21 countries, the Conference was very successful. Practically everyone presented a paper. All the papers were refereed by the International Program Committee, maintaining particularly high scientific standards. The Conference was officially opened by the chairman, *Dr. Miroslav M. Novak (GB),* and the director of CIRM, *Prof. Jean-Paul Brasselet.* Then, the scene was set by the first invited speaker, *Prof. Shlomo Havlin (IL),* with his presentation "Fractals in Biology."

The discipline coverage was broad, reflecting the wide utility of fractal tools. Apart from the expected areas of physics, mathematics, and chemistry, the presentations included biology, medicine, computer science, and others. The flavour of the Conference can be gleaned from some of the topics presented: absorption of fractal clusters, transport phenomena on fractals, fracture, fractal properties of the magnetization process, fluctuations in manic and depressive behaviours, fractals in quantum mechanics, dielectric breakdown, tumour identifications, PET (positron emission tomography) scans, signal analysis, growth processes, wavelets, Iterated Function Systems, L-systems, and classification of writings.

Prof. Otto Rössler (D) closed the Conference with a riveting talk on "Attractors with Flares," linking fractals with chaotic dynamics.

Full abstracts of papers accepted for presentation are available in the **IFIP** databases (see instructions in the masthead on page 2); Conference preprints were distributed to the delegates upon registration; and the formal Conference proceedings, edited by *Dr. Novak,* will be published in the second quarter of 1995 by Chapman & Hall.

The sequel to FRACTAL 95 is currently in the planning stages. Requests for information should be sent to

Dr. M. M. Novak
School of Physics
Kingston University
Kingston-upon-Thames
Surrey KT 1 2EE, U.K.
e-mail: novak@kingston.ac.uk ■

CONGRESS '96 continued from page 1

from Teleteaching '96 will not be printed; instead, a CD-ROM will capture the essence of the conference as it evolves.

Some activities, such as international educational projects between schools, will begin early in 1996 and culminate at Teleteaching '96.

Wills Chairs Teleteaching '96

Prof. Egon Hörbst (A), co-chairman of the International Program Committee (IPC) of **IFIP** Congress '96, described the three-conference Congress at the March **IFIP** Council in New York. He urged all those who can contribute to Teleteaching '96 to contact the program committee chairman:

Assoc. Professor Sandra Wills
Educational Media Services
University of Wollongong
Northfields Avenue
Wollongong, NSW 2522, Australia
tel: +61-42-214-544, fax: +61-42-258-312
e-mail: s.wills@uow.edu.au

Prof. Wills was chairman of "the world's first paperless conference" (Interactive Multimedia in University Education), which was held in July 1994 in Melbourne (see the March 1995 ***IFIP*** *Newsletter,* page 1).

By the end of the Council meeting, representatives of the following **IFIP** Members had agreed to set up teams for video conferences in their countries: Austria, Canada, Denmark, Germany, Japan, Norway, South Africa, Sweden, Switzerland, U.K., U.S.A., and Zimbabwe. It is the hope of the IPC that additional Member societies will soon contact *Prof. Wills* to offer their contributions.

Two Other Conferences

The other two conferences that make up **IFIP** Congress '96 are Mobile Communication (with subtopics Mobile Technology — Tools and Applications, and Trusting in Technology — Authentication and Security) and Advanced Information Technology Tools (with subtopics Innovative Applications in the Public Sector, and Innovative Applications on the Horizon). More details on these conferences will be given in a future *Newsletter.*

Prof. Ashley Goldsworthy (AUS), chairman of the Congress Organizing Committee, pointed out that the Congress will take place 2-6 September 1996 in Canberra. The first day will be devoted to tutorials, with the Congress itself occupying four days, a half day less than prior

continued on page 9

CONGRESSES DEBATED AT COUNCIL MEETING

Should They Be More Frequent, Less Frequent, or Abandoned Altogether?

As usual, the topic of **IFIP** Congresses received a great deal of attention at the March Council meeting in New York (see the article on page 2). At one extreme, critics contend that general-purpose conferences in the information processing field are no longer viable and that **IFIP** should discontinue the Congresses completely; on the other hand, supporters believe that the Congresses are central to **IFIP.** *Prof. Egon Hörbst (A),* co-chairman of the International Program Committee of **IFIP** Congress '96, in Canberra, Australia, wrote, "If there is a doubt whether a federation should hold a congress, then there is a doubt whether that federation is needed." In his report to the Council, *Prof. Asbjørn Rolstadås (N),* **IFIP's** president, wrote the following:

> We are in a process of changing the format of the Congress to make it more attractive. Hamburg was a first attempt; Canberra will be the second. It is imperative that we succeed in this. We have only a few chances to prove our prestige and place in the market. If we fail, the **IFIP** flagship, the Congress, is dead. I urge every one of you to contribute to the success of the Congress in Canberra. This is not "the Congress of the Australians." It is the Congress of our Member societies. It is your duty and privilege to make sure this Congress is a success in your country. It is essential for the survival of the international scientific and professional cooperation in information technology and informatics. Do your job and don't rely on others to do it for you in your country. A successful Congress will help restore the **IFIP** economy, but will also help maintain a reputation of excellence.

Long Discussions

A great deal of time is spent in this debate at **IFIP** meetings. During the five days of Council meetings in New York, the future of Congresses was discussed in the Marketing and Publications Committees, the Technical Assembly, and the Council (at least two times). Some argue that if the supervision of Congresses were left to the Congress Committee, hundreds of man-hours of discussion would be saved and the Congresses would be just as good.

Among the questions discussed in New York were the following:

- Should the frequency of Congresses be changed to once a year, or back to once every three years?
- Is the planning time for the program too long?
- Should the Congresses be umbrellas for relatively independent conferences, as Congress '96 is planned to be?
- Should a market research study be conducted?
- Should a professional organizer of international conferences be hired to manage the Congresses?
- How should proceeds be divided among the organizations concerned?
- To what extent should "**IFIP** Congress" be retained as the title, or "brand name"?
- How can the Congresses be effectively marketed?

Mr. Christopher Guy (ZA), chairman of the Congress Committee, had prepared a discussion outline on the future of Congresses, which will be further developed for presentation to the Calgary General Assembly in September. He would appreciate any further input that will help to make this paper as complete as possible.

The following additional matters concerning **IFIP** Congresses were also raised at the Council meetings:

- **IFIP** will receive the minimum amount guaranteed by the organizers of **IFIP** Congress '94 in Hamburg; some of it has already been paid to **IFIP.**
- The "white papers" containing the "action agenda" for Congress '94 (see the article on page 8 of the March 1995 ***IFIP*** *Newsletter)* were not presented to the **IFIP** Technical Assembly in March, as had been planned. It is hoped that they will be distributed to Technical Committee chairmen and other interested parties in the near future.
- The deadline for bids to host Congress 2000 was extended to 15 May. In the September ***IFIP*** *Newsletter,* we shall report what Member societies made bids.
- The logo for **IFIP** Congress '98, to be held in Vienna and Budapest, was displayed to Council attendees in March (see the article on page 9). ■

INTERNATIONAL STANDARDS FOR QUALIFICATIONS OF IT PROFESSIONALS

At the Hamburg **IFIP** Technical Assembly (TA) last September, *Mrs. Patricia Glenn (CDN)* urged that **IFIP** become involved in standards for the qualifications of information processing professionals. In this era of international treaties promoting free trade and free movement of workers from one country to another, the establishment of standards for the qualifications of professionals is very important. In response to her recommendation, the TA created a task force on Harmonization and Acceptance of International Standards for IT Professionals.

Following are the Aims and Work Plan of this group:

AIMS

- to develop harmonized international standards for the qualifications of information technology professionals
- to gain international acceptance of these standards

WORK PLAN

- Obtain professional IT standards from **IFIP** Member societies.
- Review and compare
  - criteria
  - process
  - recertification criteria or professional development
  - relationship to codes of ethics
- Evaluate existing standards.
- Develop acceptable international IT professional standards.
- Develop programme for international acceptance.

At the March TA meeting in New York, *Mrs. Glenn* reported that she and *Mr. Dudley Dolan* ***(IRL)*** had solicited information from **IFIP** Member societies and had received a reasonable amount of data. Additional information was promised by TA members. A further report from the task force is expected in September at the Calgary TA.

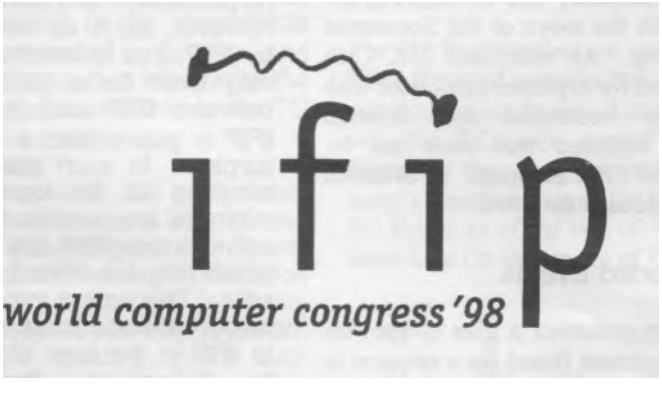
LOGO FOR IFIP CONGRESS '98

*by Dr. Walter Grafendorfer (A) **

As part of the marketing activities for the 15th **IFIP** World Computer Congress, to be held August 1998 in Vienna and Budapest, a logo was created, the result of a competition organized in 1994 by the Austrian Computer Society and the Hungarian John v. Neumann Computer Society. Graphic artists, designers, and students of academies of art in Austria and Hungary were invited to take part in this competition. The first prize was a Compaq Pentium workstation, provided by the sponsor, Compaq Computer, Austria. The presentation of the logo award took place at the Austrian Computer Society 15 December 1994.

Out of more than 100 proposals submitted, a jury consisting of experts from Austria and Hungary chose that of 22-year-old *Christine Zmölnig,* a student at the Academy of Arts in Vienna. The line at the top of the logo not only symbolizes the river Danube connecting the cities of Vienna and Budapest, but also incorporates elements of "communication" (electromagnetic waves) and "networking."

* co-chair of the **IFIP** Congress '98 Organizing Committee



CONGRESS '96 continued from page 8

Congresses. The Congress will comprise the three conferences and common activities (opening and closing ceremonies, trade exhibition, and social events). Delegates to one conference will be welcome to attend sessions of the other two. For further information please contact

Secretariat, **IFIP** Congress '96
c/o Australian Convention and Travel Services
G.P.O. Box 2200
Canberra, ACT 2601, Australia
tel: +61 6 257 3299, fax: +61 6 257 3256
e-mail: ifip96@act.acs.org.au
http://acsli nk.net.au/~tomw/i fip96br.htm I

The future of IFIP's Congresses was discussed at the March Council meeting. A summary of the deliberations can be found on page 8.

COPIES OF *IFIP NEWSLETTER* FOR MEMBERS OF MEMBER SOCIETIES

Some representatives of **IFIP** Member societies have inquired about the possibility of acquiring copies of the ***IFIP*** *Newsletter* for members of their societies. **IFIP** will gladly provide such copies, at the cost of the shipping and additional printing. For further information, please contact Mr. Plamen Nedkov, Administration Manager of the **IFIP** Secretariat (address in the masthead on page 2). Alternatively, Member societies are welcome to reprint all or parts of the *Newsletter* from the electronic versions available in the **IFIP** databases (see database description in the masthead). At present, no photographs or drawings are available in the electronic versions.

PUBLICATION MATTERS DISCUSSED AT COUNCIL

IFIP Is Pleased with New Publisher

At the New York **IFIP** Council meeting (see the article on page 2), general satisfaction was expressed with the new **IFIP** publisher, Chapman & Hall (C&H). Six books had already been published in March, and another 27 are in progress. The C&H representative, *Mr. Mark Hammond*, expressed the attitude that our alliance should be a "win-win" arrangement, in which what is good for **IFIP** is good for C&H, and vice versa.

Because of reorganization within International Thomson Publishing, the parent company of C&H, members of a majority of **IFIP** Member societies around the world are now entitled to a 25% discount off all Thomson titles. (Books published by C&H are available to all Member members at a 25% discount, and **IFIP** titles at a 30% discount.)

Publication Guidelines

The Publications Committee and the publisher have reached agreement on the following basic policy with regard to **IFIP** books published by C&H:

There will be three categories of **IFIP** books:

Conference proceedings printed before the conference: Manuscripts, in final form, will be due three months before the delivery date. Bulk sales at a large discount (with royalties to **IFIP)** will be made to the conference organizers.

Conference proceedings printed after the event: These are typically restricted to working conferences and workshops, where a very strict selection policy is used to restrict the book to less than 400 pages (and a minimum size of 200 pages). In exceptional cases, other proceedings may be published after the event, if the book can appear no later than five months after the event (and the manuscript be delivered six weeks after the event).

*Authored books (**IFIP** authors):* Royalties are divided between **IFIP** and the authors.

Issues concerning bulk sales of proceedings to event organizers were raised in the report of the **IFIP** Technical Committee on Communication Systems (TC6): "Organizers must place a firm order well before the event is held, and the cost per book depends upon the number ordered. Both factors make it difficult for organizers to decide how many copies of the proceedings to order." On the other hand, C&H is instituting a "10% returns policy" to encourage organizers to order early.

In another aspect of publications, the TC on Education (TC3) announced that it will institute a new journal, published by C&H, entitled *Education and Information Technologies.* Publication will commence in 1996.

Electronic Publishing

Electronic publishing (delivery of entire publications or parts of them from publisher to reader) was also mentioned at the Council. At the March 1994 Council meeting in Brussels, a committee was formed to investigate all aspects of this subject, since **IFIP** is the one international federation concerned with the technologies that support electronic publishing and is eager to disseminate its publications as widely as possible, as well as to maintain the income received from these publications. Unfortunately, the committee has taken no action since that time. Some argued that **IFIP** should be the leader, at the forefront of this work; **IFIP's** president, *Prof. Asbjørn Rolstadås (N),* said, "At least **IFIP** should not be the very last." ■

IFIP FINANCES

The state of **IFIP** finances received careful attention at the New York **IFIP** Council meeting in March (see the article on page 2). *Mr. Aage Melbye (DK),* **IFIP's** treasurer announced the result for 1994: a loss of 63K CHF (63 000 Swiss francs). This loss was much smaller than the estimate given in September at the Hamburg General Assembly (200K). Fortunately, the last-minute arrival of significant payments relating to activities in 1994 reduced that number.

Great satisfaction was expressed over the receipt of back dues from Russia and Portugal, which implies that those Members can now resume their full participation in **IFIP.**

There was additional cause for satisfaction, because expenses were 23% below the budgeted amount. On the other hand, concern was expressed over the loss on **IFIP's** investments in 1994 (approximately /2%); however, in prior years the return had been reasonable. Another problem area was proceeds from Technical Committee (TC) events, which were only 67K CHF — far below the amount called for in the budget (118K). This was, nevertheless, an improvement over the 35K received in 1993.

The budget for 1995 calls for a deficit of 75K CHF, primarily due to expenses associated with the move of the Secretariat to Laxenburg. An additional 25K CHF was approved for expenses associated with moving the Secretariat and deferred Secretariat expenses that were not included in the 1994 accounts. A balanced budget is intended for 1996.

TC-Supported Events

Mr. Melbye presented a plan to the Activity Management Board for a revision to the current procedures for supporting events sponsored by **IFIP's** TCs. Following are salient points from his memorandum:

...organizing an event...is a project that — depending upon the type of event and the number of participants — may have considerable financial implications. Proper control of these implications is usually performed by the organizer, through appointed representatives with knowledge of local procedures for doing business. For national events, this is normally no problem. For international events, however, such as those sponsored by **IFIP,** this is not the case. There may even be a conflict of interest between **IFIP** and the organizer if **IFIP** is guaranteed a fraction of any surplus. In such cases, it may be tempting for the local organizer to minimize any surplus by charging for services provided, the justification for which may be difficult for **IFIP** to assess. This was a major argument in favour of introducing the contribution to **IFIP** in the form of a sponsorship fee, defined as a fixed amount per participant per day, thus a variable expense item.

continued on page I1

FREEMAN RECEIVES IAPR AWARD

We are pleased to report that *Prof. Herbert Freeman (USA),* who was formerly a very active **IFIP** worker, was the 1994 recipient of the King Sun Fu Award of the International Association for Pattern Recognition (IAPR), an Affiliate Member of **IFIP.** *Prof. Freeman* served **IFIP** in many capacities: most notably, as chairman of the International Program Committee for **IFIP** Congress '74 and as member of the Activities Planning Committee for many years. He initiated efforts to develop the Affiliate Member category for **IFIP** and arranged for IAPR to become the first Affiliate Member. He subsequently served as representative of IAPR to **IFIP** from 1976 to 1986. The following excerpt is taken from the *IAPR Newsletter.*

The King Sun Fu Award is given every other year to an individual, in recognition of a technical contribution of far-reaching significance and impact on the field of Pattern Recognition or its closely allied fields. One of the most commonly used tools in shape description, encoding, and recognition, namely that of chain code (often called the *Freeman* chain code), was proposed by *Prof. Freeman* in 1959. He has also made significant pioneering contributions to the representation and analysis of line drawings.

He has published more than 120 papers and has supervised more than 36 Ph.D. theses! More recently, he has been working on recognition and pose determination of **3-D** objects, using the "characteristic-view" approach, automated cartographic name placement (automatically placing the names for area, line, and point features on geographic maps), and off-line cursive hand-writing recognition in applications involving severely constrained vocabularies. Apart from his professional activities with **IAPR, IEEE, IFIP,** and other professional organizations, he has served (and still serves) on the editorial boards of many prestigious journals.

We congratulate *Prof. Freeman* on this recognition of his outstanding achievements. ■

FIACC HAS BEEN DISBANDED

FIACC, the Five International Associations Coordinating Committee, was disbanded in 1994. It was founded in 1969 in Paris to coordinate the activities of and promote cooperation among its members, all international scientific federations:

International Association for Mathematics and Computers in Simulation (IMACS)
International Federation of Automatic Control (IFAC)
IFIP
International Federation of Operational Research Societies (IFORS)
International Measurement Confederation (IMEKO)

Unesco provided financial and moral support.

For many years, the presidents of the member Federations met annually to consider mutual problems and coordinate their activities, especially conferences. Joint conferences resulted in the broadening of contacts between scientists working in interdisciplinary areas and led to more effective international and interdisciplinary cooperation. The exchange of event calendars among the Federations enabled better planning and the reduction of conflicts in dates of related events. In recent years, however, FIACC became less active, and presidents of the Federations no longer attended the meetings.

Despite the dissolution of FIACC, the five Federations plan to continue their cooperation. There is now an especially close tie between IFAC and **IFIP,** since both have secretariats in Laxenburg, Austria. ■

FINANCES continued from page 10

However, we also acknowledge that there may be cases in which the local organizer is prepared to share a surplus with **IFIP** if **IFIP,** in turn, is prepared to share a loss. We recommend that such arrangements be left to the discretion of the responsible **IFIP** TC, represented by its chair, and should be restricted in relation to the TC Fund balance available to the TC involved.

For smaller events, like workshops, it may be possible for a TC...to take the role of Main Organizer. Therefore, we recommend the introduction of a two-layered structure for financial event support from **IFIP.** In addition to the existing event support,...we recommend a second type of event support under the authority of *each TC with a positive TC Fund balance,* controlled by a special budget approved by the TC, within general guidelines approved by the General Assembly....

Essentially, the new type of support permits a TC to use part of its TC Fund to support events.

TC Funds

The TC Funds reflect, to some extent, the TCs' financial contributions to **IFIP,** minus their expenditures. Larger Funds provide the TCs with greater flexibility in managing their own activities. The Treasurer's report contained the balances in the TC Funds as of the end of 1994. We list them here (in thousands of CHF):

TC2	11	TC10	81
TC3	0	TC11	10
TC5	14	TC12	0
TC6	75	TC13	12
TC7	1	SG14	0
TC8	42	SG15	0
TC9	0		

■

*Ms. Wilma Mendel (A), Administrative Assistant in the **IFIP** Secretariat*

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

GA	6-10 Sep 95 (Wed.—Sun.)	Calgary, Canada
Council	3-7 Mar 96 (Sun.—Thurs.)	South Africa
GA	(contiguous to **IFIP** Congress '96)	Canberra, Australia
GA	(contiguous to **IFIP** Congress '98)	Vienna, Austria, or Budapest, Hungary

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS

TC2	18-19 Aug 95 (following EHCI'95)	Grand Targhee, WY, U.S.A.
WG2.1	23-27 Oct 95	Ulm, Germany
	June 96	Western U.S.A.
WG2.2	13-17 Jun 95	Amsterdam, The Netherlands
WG2.3	24-28 Jul 95	Ithaca, NY, U.S.A.
WG2.4	6-9 Jun 95	Ligonier, PA, U.S.A.
	Apr 96	The Netherlands
	97	North America
TC3	22, 29-30 Jul 95 (with WCCE'95)	Birmingham, U.K.
	Aug—Sep 96	Canberra, Australia
WG3.6	29 Jul 95 (during WCCE'95)	Birmingham, U.K.
WG5.11	Nov—Dec 95 (with **IFIP/IFAC** conf.)	Queensland, Australia
TC6	15-16 Sep 95	Palma, Spain
	26-27 Apr 96	Montreal, Canada
	6-7 Sep 96	Australia
TC7	17 Jul 95 (with TC7 conf.)	Prague, Czech Republic
TC8	24-25 Aug 95	Trondheim, Norway
	12-13 Apr 96	Tucson, AZ, U.S.A.
WG8.2	7 Dec 95	Cambridge, U.K.
	Dec 96 (with ICIS)	Cleveland, OH, U.S.A.
	Dec 97 (with ICIS)	Atlanta, GA, U.S.A.
TC9	19-20 Aug 95	Copenhagen, Denmark
WG9.2	Jan 96	Namur, Belgium
WG10.2	95 (with conf.)	U.S.A.
WG10.4	Jun 95	California, U.S.A.
TC 12	Sep 95	Wroclaw, Poland
TC 13	25 Jun 95 (during INTERACT'95)	Lillehammer, Norway

This information is furnished to the *Newsletter* by the Secretariat. 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. Some meetings are scheduled in conjunction with Working Conferences, for which the conference dates are listed.

CALLS FOR PAPERS

Intl. Work. Conf. on **Intelligent Networks — IN'95**
30-31 Aug 95, Copenhagen, Denmark
papers due: 9 Jun 95
contact: Center for Tele-Information
Technical University of Denmark
Elektrovej, Building 371
DK-2800 Lyngby, Denmark
tel: +45 4587 1577, fax: +45 4596 3171
URL: http://www.tdr.dk/

Twelfth **IFIP** TC11 Intl. Open Conf. on **Information Systems Security: Facing the Information Society of the 21st Century — IFIP/SEC'96**
21-24 May 96, Island of Samos, Greece
papers due: 15 Jul 95
contact: Prof. Sokratis Katsikas
Univ. of the Aegean, Research Unit
30 Voulgaroktonou St.
Athens, GR-11472, GREECE
tel: +30-1-6442727, *fax:* +30-1-6448428
e-mail: sec96@aegean.ariadne-t.gr ■

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?
- **IFIP** Plan (planned events)
- WG Chairman's Handbook
- Event Approval Guidelines
- Policy on Working Conferences
- Publications Policy
- Guidelines for Editors of **IFIP** Working Conference Proceedings

National Abbreviations Used in Newsletter

A	Austria	E	Spain	N	Norway
AUS	Australia	F	France	S	Sweden
CDN	Canada	GB	United Kingdom	SF	Finland
CH	Switzerland	IL	Israel	USA	U.S.A.
D	Germany	IRL	Ireland	ZA	South Africa
DK	Denmark		Japan	ZW	Zimbabwe

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. Kali	CH	95-98
TC8:	G.B. Davis	USA	89-95
TC9:	K. Brunnstein	D	89-95
TC 10:	E. HOrbst	A	93-96
TC11:	B. von Solms	ZA	94-95
TC 12:	R.A. Meersman	NL	89-95
TC 13:	B. Shackel	GB	89-95
SG14:	J. Gruska	SK	89-95
SGI5:	M. Novak	GB	93-96

The International Federation for Information Processing (IFIP) and Chapman & Hall are proud to announce that from January 1995, Chapman & Hall will be the principal publisher for the Federation. Below, you will find details of the first books to appear as a result of this collaboration.

Advanced CAD/CAM Systems
State-of-the-art and future trends in feature technology
R Soenen and G Oiling
1994: c.288pp: 160 line illus, 1 halftone illus: Hb: 0-412-61730-7: £55.00

Balanced Automation Systems
L Camarinha-Matos and H Afsarmanesh
July 1995: c.448pp: 100 line illus: Hb: 0-412-72200-3: c.£60.00

Benchmarking: Theory and Practice
A Rolstadås
January 1995: 408pp: 150 line illus: Hb: 0-412-62680-2: £49.99

Computer Applications in Production Engineering
Proceedings of CAPE '95
Q Sun, Z Tang and Y Zhang
May 1995: 912pp: 150 line illus,10 halftone illus: Hb: 0-412-70770-5: £95.00

Computer Networks, Architecture and Applications
R V Raghavan and B N Jain
March 1995: c.384pp: 100 line illus: Hb: 0-412-71190-7: £65.00

Database Applications Semantics
R Meersman and L Mark
January 1996: c.352pp: Hb: 0-412-72600-9: c.£55.00

Electronic Design Automation Frameworks
F Rammig
June 1995: c.272pp: 100 line illus: Hb: 0-412-71010-2: c.£50.00

Ethics of Computing
Codes, spaces for discussion and law
J Berleur and K Brunnstein
September 1995: c.336pp: 1 line illus: Hb:0-412-72620-3: c.£35.00

Formal Description Techniques VII
D Hogrefe and S Leue
March 1995: c.544pp: 150 line illus: Hb: 0-412-64450-9: £65.00

Fractals in the Applied Sciences
M M Novak
September 1995: c.448pp: 25 line illus, 20 halftone illus: c.£65.00

Human-Computer Interaction
Interact '95
June 1995: c.450pp: 100 line illus, 4 halftone illus: Hb: 0-412-71790-5: c.£75.00

Information Security - the Next Decade
J H P Eloff and S H von SoIms
May 1995: 640pp: 50 line illus: Hb: 0-412-64020-1: £69.00

Information Systems Concepts
E Falkenberg
July 1995: c.320pp: Hb: 0-412-63950-5: c.£50.00

Information Systems Development for Decentralized Organization
A Solvberg
July 1995: c.288pp: Hb:0-412-64000-7: c.£50.00

Information Technology in Educational Management
B Barta, Y Gev and M Telem
December 1994: 264pp: 40 line illus: Hb: 0-412-62090-1: £45.00

Integrated Manufacturing Systems Engineering
F Vernadat
August 1995: c.352: Hb: 0-412-72680-7: c.£55.00

Integrated Network Management IV
A S Sethi, Y Raynaud and F Faure-Vincent
May 1995: 744pp: 200 line illus: Hb: 0-412-71570-8: £75.00

Integrating Information Technology into Education
D Watson and D Tinsley, Red Cross, UK
February 1995: 336pp: 40 line illus, 32 halftone illus: Hb: 0-412-62250-5: £49.00

Intelligent Networks
O Martikainen, J Harju and **T Karttunen**
May 1995: 304pp: 120 line illus: Hb: 0-412-71730-1: c.£50.00

Local and Metropolitan Communication Systems
T Hasegawa, Y Takahashi, G Pujolle and **H Takagi,**
June 1995: c.460pp: 100 line illus : Hb: 0-412-71170-2: £65.00

Logic and Architecture Synthesis
July 1995: c.370: 100 line illus: Hb: 0-412-72690-4: c.£49.50

Open Distributed Processing
K Raymond and **L Armstrong**
July 1995: c.640pp: 100 line illus: Hb: 0-412-71150-8: c.£60.00

Performance Modelling and Evaluation of ATM Networks - Volume 1
D Kouvatsos
July 1995: c.600pp: 100 line illus: Hb: 0-412-71140-0: c.£79.00

Protocol Specification, Testing and Verification XIV
S T Vuong and **S T Chanson**
November 1994: 416pp: 145 line illus: Hb: 0-412-63640-9: £50.00

Protocol Test Systems
T Mizuno, T Higashino and **N Shiratori**
June 1995: c.368pp: 100 line illus: Hb: 0-412-71160-5: £55.00

Protocols for High Speed Networks IV
G Neufeld and **M Ito**
March 1995: c.384pp: 150 line illus: Hb: 0-412-71180-X: £50.00

Re-engineering the Enterprise
J Browne
September 1995: c.320pp: 4 line illus: Hb: 0-412-64260-3: c.£45.00

Reliability and Optimization of Structural Systems
R Rackwitz, G Augusti and **A Borri**
May 1995: c.324pp: 150 line illus: Hb: 0-412-63630-1: £50.00

Simulation Games and Learning in Production Management
J 0 Riis
May 1995: c.208pp: 50 line illus: Hb: 0-412-72100-7: £49.00

Software Quality and Productivity
Theory, practice, education and training
M Lee, B Z Barta and **P Juliff**
December 1994: 416pp: 45 line illus, 5 halftone illus: Hb: 0-412-62960-7: £56.00

System Modelling and Optimization
J Dolezal
February 1996: c.960pp: Hb: 0-412-71880-4: c.£85.00

World Conference on Computers in Education
D Tinsley and **T van Weert**
July 1995: c.960pp: Hb: 0-412-62670-5: c.£95.00: CD-ROM: 0-412-71460-4: c.£79.00

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❑ Cellulose

Editor: John C. Roberts, UMIST, Manchester, UK.

Cellulose will contain research and review papers relating to scientific progress in the field of cellulose, especially the chemistry, biochemistry, physics and materials science of cellulose and its derivatives.
ISSN: 0969-0239, Volume 1 (1994), 4 issues

❑ European Journal of Emergency Medicine

Editor: Herman Delooz, Universitaire Ziekenhuizen Leuven, Belgium.

The European Journal of Emergency Medicine will offer original papers on all aspects of acute injury and sudden illness, including anaethesiology, cardiology, disaster medicine, intensive care, internal medicine, orthopaedics, paediatrics, toxicology and trauma care.
ISSN: 0969-9546, Volume 1 (1994), 4 issues

❑ Collaborative Computing

Editors: Steve Benford, University of Nottingham, UK. Tom Rodden, Lancaster University, UK. Simon Kaplan, University of Illinois at Urbana-Champaign, USA. Hiroshi Ishii, NTT Human Interface Laboratories, Japan.

Collaborative Computing is a new international quarterly journal which covers the areas of group work, collaborative systems, telecommunications, computing and distributed systems.
ISSN: 0968-2082, Volume 1 (1994), 4 issues

❑ Applied Economics Letters

Editor: Maurice H.Peston, UK.

Applied Economics Letters, a new monthly companion journal to *Applied Economics* and *Applied Financial Economics,* will publish short accounts of new and original research ***within two months of receipt. All letters will be reviewed by the Editor, a member of the Editorial Board or another suitable authority.***
ISSN: 1350-5851, Volume 1 (1994), 12 issues

❑ Microcirculation

Official Journal of the Microcirculatory Society Inc.
Editor: Mary E. Gerritsen, Miles Inc, USA.

Microcirculation will feature original contributions on microcirculation, addressed at the intact animal, organ, cellular or molecular level. Papers will describe applications of the methods of physiology, biophysics, bioengineering, genetics, cell biology, biochemistry and molecular biology to the field.
ISSN: 1350-4916, Volume 1 (1994), 4 issues

❑ Reviews in Medical Microbiology

Editor: Rosamund J Williams, Lepetit Research Center, Italy.

Reviews in Medical Microbiology is a quarterly international review journal which gives a balanced coverage of all disciplines of medical microbiology , drawing upon the most recent knowledge in this field.
ISSN: 0954-139X, Volume 5 (1994), 4 *issues*
Previously Published by Churchill Livingstone

❑ Object-Oriented Systems

Editor-in-Chief: Russel Winder, University College London, UK.

Object-Oriented Systems will publish research and experience papers on all aspects of object-orientation. The journal will foster communication among those working in object technology, and will provide a source of quality refereed material for perpetual reference.
ISSN: 0969-9767, Volume 1 (1994), 4 Issues

❑ Applied Mathematical Finance

Editors: Paul Wilmott, Imperial College London, UK. Jeff N Dewynne, University of Southampton, UK.

Applied Mathematical Finance will encourage the confident use of applied mathematics and mathematical modelling in finance. The journal will promote communication between finance practitioners, academics and applied mathematicians, welcoming both theoretical and empirical research.
ISSN: 1350-486X, Volume 1 (1994), 2 issues, 4 issues from 1995

1995

❑ Tumor Targeting

Editor: Agamemnon Epenetos, Hammersmith Hospital, London, UK.
ISSN to be confirmed, Volume 1 (1995), 4 Issues

❑ European Journal of Finance

Managing Editors: Christopher Adcock and Eve Hicks, Kingston University Business School, UK.
ISSN to be confirmed, Volume 1 (1995), 4 *Issues*

1993

❑ Aquaculture International

Editor-in-Chief: Michael G. Poxton, Heriot-Watt University, Edinburgh, UK.
ISSN: 0967-6120, Volume 2 (1994), 4 Issues

❑ Children's Environments

Editors: Roger A. Hart, The City University of New York, USA. Sheridan Bartlett, University of Massachusetts, USA. Louise Chawla, Kentucky State University, USA.
ISSN: 0886-0505, Volume 11 (1994), 4 *Issues*

❑ Journal of Programming Languages

Editors: Des Watson, University of Sussex, UK, Jeanne Ferrante, IBM TJ Watson Research Center, New York, USA.
ISSN: 0963-9306, Volume 2 (1994), 4 Issues

❑ MAGMA

Magnetic Resonance Materials: Physics - Biology - Medicine
Editors-in-Chief: Axel Haase, University of Wurzburg, Germany. Dieter Matthaei, University of Gottingen, Germany.
ISSN: 0968-5243, Volume 2 (1994), 4 *Issues*

❑ International Play Journal

Editor-in-Chief: Bob Hughes, UK.
ISSN: 0965-2531, Volume 2 (1994), 3 Issues

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CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Sponsored by
Eighth Symp. on *Information Control Problems in Manufacturing — INCOM'95*	4-8 Oct 95	Beijing, China	IFAC IMACS !FORS ISPE **IFIP**
Intl. Conf. on *Computer Safety, Reliability and Security — SAFECOMP'95*	11-13 Oct 95	Belgirate, Italy	**IFIP** WG5.4 EWICS TC7 et al.
Work. Conf. on *Diffusion and Adoption of Information Technology*	14-17 Oct 95	Oslo, Norway	**IFIP** WG8.6
Sixth Intl. Workshop on *Distributed Systems: Operations and Management — DSOM'95*	16-18 Oct 95	Ottawa, Canada	**IFIP** WG6.6 IEEE CNOM
Eighth Open Conf. on *Formal Description Techniques on Distributed Systems and Communication Protocols — FORTE '95*	17-20 Oct 95	Montreal, Quebec, Canada	**IFIP** WG6.l
First Workshop on *Knowledge-Intensive CAD — KIC-1*	Oct 95	Helsinki, Finland	**IFIP** WG5.2
Work. Conf. on *Models and Methodologies for Enterprise Integration — El '95*	8-11 Nov 95	Heron Island, Queensland, Australia	**IFIP** TC5 (SIG on Architectures for Enterprise Integration)
Intl. Work. Conf. on *Upper Layer Protocols, Architectures and Applications — ULPAA '95*	6-8 Dec 95	Sydney, Australia	**IFIP** TC6 WG6.5 et al.
Work. Conf. on *Information Technology and Changes in Organizational Work*	7-9 Dec 95	Cambridge, U.K.	**IFIP** WG8.2
Intl. Workshop on *Stochastic Optimization*	17-19 Jan 96	Tucson, **AZ, U.S.A.**	**IFIP** WG7.7
Third Intl. Conf. on *Achieving Quality in Software — AQuIS'96*	24-26 Jan 96	Florence, Italy	**IFIP** WG5.4
Intl. Conf. on *Distributed Platforms — ICDP'96*	27 Feb – I Mar 96	Dresden, Germany	**IFIP** WG6.I RWTH Aachen et al.
Work. Conf. on *International Office of the Future: Design Options and Solution Strategies*	9-11 Apr 96	Tucson, AZ, U.S.A.	**IFIP** WG8.4 U. of Arizona
Work. Conf. on *Impact of Information Technology from Practice to Curriculum*	Apr 96	Neve-Ilan, Israel	**IFIP** WG3.2 WG9.5 et al.
Work. Conf. on *Broadband Communications '96 — BB'96*	23-25 Apr 96	Montreal, Canada	**IFIP** WG 6.2 IEEE-CS
Intl. Conf. on *Nonlinear Problems in Aviation and Aerospace*	**9-11** May 96	Daytona Beach, FL, U.S.A.	Intl. Fed. of Non-Linear Analysts **IFIP** WG7.2
Work. Conf. on *Domain Analysis and Modelling for Interactive Systems*	9-12 May 96	Geneva, Switzerland	**IFIP** WG 13.2 WG8.1
Twelfth Intl. Open Conf. on *Information Systems Security: Facing the Information Society of the 21st Century — **IFIP/SEC'96***	21-24 May 96	Island of Samos, Greece	**IFIP** TC 11 Greek Comp. Soc. Cyprus Comp. Soc.
Thirteenth *IFAC World Congress '96*	30 Jun – 5 Jul 96	San Francisco, CA, U.S.A.	IFAC
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	!FORS
IFIP Congress '96 — Fourteenth World Computer Congress	***2-6* Sep 96**	**Canberra, Australia**	**IFIP**
Open Conf. on *Formal Description Techniques and Protocol Specification, Testing, and Verification — FORTE/PSTV'96*	24-27 Sep 96	Kaiserslautern, Germany	**IFIP** WG6.1
Work. Conf. on *Mathematical and Scientific Computing: Quality of Numerical Software*	96	Oxford, U.K.	**IFIP** WG2.5
Fourteenth ***IMEKO** World Congress*	2-6 Jun 97	Tempaere/Helsinki, Fin.	IMEKO
IFIP Congress '98 — Fifteenth World Computer Congress	**23-29 Aug 98**	**Vienna, Austria, and Budapest, Hungary**	**IFIP**

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

CALENDAR OF EVENTS

Event	Date	Location	Sponsored by
Workshop on *Algorithms & Architecture for Real Time Control — AARTC'95*	31 May – 2 Jun 95	Ostend, Belgium	IFAC **IFIP** WG5.4
Workshop on *Stochastic Methods and Global Optimization*	12-15 Jun 95	Vilnius, Lithuania	**IFIP** WG7.7
Workshop on *Formal Design Methods for Computer-Aided Design*	12-15 Jun 95	Berkeley, CA, U.S.A.	**IFIP** WG5.2
Intl. Symp. on *Environmental Software Systems — ISESS'95*	13-15 Jun 95	Malvern, PA, U.S.A.	**IFIP** WG5.11 et al.
Fifteenth Intl. Symp. on *Protocol Specification, Testing, and Verification — PSTV'95*	13-16 Jun 95	Warsaw, Poland	**IFIP** TC6/WG6.I
Fifth Intl. Conf. on *Human-Computer Interaction — INTERACT'95*	25-29 Jun 95	Lillehammer, Norway	**IFIP** TC13 NCS
Symp. on *Modelling and Control of National and Regional Economics*	2-5 Jul 95	Gold Coast, Queensland, Australia	IFAC IE **IFIP** WG7.6
Third Workshop on *Performance Modelling and Evaluation of ATM Networks*	3-5 Jul 95	Bradford, U.K.	**IFIP** TC6 WG6.4&6.3 et al.
Seventeenth Conf. on *System Modelling and Optimization*	10-14 Jul 95	Prague, Czech Republic	**IFIP** TC7 IFAC IFORS CSCI
Work. Conf. on *Modeling and Optimization of Distributed Parameter Systems with Applications to Engineering*	17-21 Jul 95	Warsaw, Poland	**IFIP** TC7/WG7.2 PAS
World Conf. on *Computers in Education — WCCE '95*	23-28 Jul 95	Birmingham, U.K.	**IFIP** TC3 Aston Univ.
Eighth I**MIA** World Congress on *Medical Informatics — MEDINFO'95*	23-27 Jul 95	Vancouver, B.C., Canada	IMIA
Intl. Conf. on *Architectures and Design Methods for Balanced Automation Systems — BASYS'95*	24-26 Jul 95	Victoria, ES, Brazil	IEEE ECLA **IFIP** WG5.3
Ninth Work. Conf. on *Database Security*	13-15 Aug 95	Rensselaerville, NY, U.S.A.	**IFIP** WGI 1.3
Workshop on *Artifacts, Virtual Reality and Social Implications*	14-15 Aug 95	Aarhus, Denmark	**IFIP** WG9.5
Work. Conf. on *Engineering for Human-Computer Interaction — EHCI'95*	14-18 Aug 95	Grand Targham, WY, U.S.A.	**IFIP** WG2.7/I3.4
Workshop on *Information Systems Development for Decentralized Organizations*	21-23 Aug 95	Trondheim, Norway	**IFIP** WG8.I et al.
Intl. Conf. on *Intellectual Property Rights for Specialized Information, Knowledge, and New Technologies — KnowRight'95*	21-25 Aug 95	Vienna, Austria	Austrian Comp. Soc. **IFIP** et *al.*
Eighth Intl. Conf. on *Very Large Scale Integration — VLSI '95*	29 Aug – I Sep 95	Makuhari, Chiba, Japan	**IFIP** WG 10.5
Intl. Conf. on *Computer Hardware Description Languages and Their Applications — CHDL '95*	29 Aug I Sep 95	Makuhari, Chiba, Japan	**IFIP** WG 10.2/10.5 et al.
Work. Conf. on *Intelligent Networks — IN'95*	30-31 Aug 95	Copenhagen, Denmark	**IFIP** TC6 TeleDanmark Rsch.
Intl. Workshop on *Protocol Test Systems — IWPTS'95*	4-6 Sep 95	Evry, France	**IFIP** TC6
Work. Conf. on *Managing Concurrent Manufacturing to Improve Industrial Performance*	I I-15 Sep 95	Seattle, WA, U.S.A.	**IFIP** WG5.7
Sixth Conf. on *High Performance Networks — HPN'95*	*I* 1-15 Sep 95	Palma de Mallorca, Spain	**IFIP** WG6.4
Work. Conf. on *Communications and Multimedia Security*	20-21 Sep 95	Graz, Austria	**IFIP** TC6 TC11 Austrian Comp. Soc.
Joint Intl. Conf.: *Modelling Techniques and Tools for Computer Performance* and *Measuring, Modelling, and Evaluating Computing and Communication — PT'95/MMB'95*	20-22 Sep 95	Heidelberg, Germany	GI **IFIP** WG7.3 et al.
Fifth Work. Conf. on *Dependable Computing for Critical Applications — DCCA-5*	27-29 Sep 95	Urbana, IL, U.S.A.	**IFIP** WG10.4, TCI I IEE TC-FTC EWICS U. III.

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IFIP Congress '96 — 14th World Computer Congress	2-6 Sep 96	Canberra, Australia	**IFIP**
IFIP Congress '98 — 15th World Computer Congress	23-29 Aug 98	Vienna, Austria and Budapest, Hungary	**IFIP**

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