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Everyone Enjoyed **IFIP** Congress '98

A Nontechnical View

It is a pleasure to report that virtually everyone we spoke to enjoyed IFIP Congress '98, which took place in three locations: in Vienna on 31 August and 1 September (Monday and Tuesday), on Danube boats between Vienna and Budapest on 2 September. and in Budapest on 3 and 4 September. The organizers were successful in making the Congress a delight for all. Some 1232 delegates and 300 accompanying persons, from 71 countries, attended —slightly more than the attendance at the Hamburg Congress in '94 and the Dublin Congress in '86 but less than the Congresses in San Francisco (1600 in '89), Paris (2300 in '83), and Tokyo/Melbourne (2300/1800 in '80). The largest numbers of delegates came from the following countries:

Hungary	118	China	57
Austria	115	Finland	55
Germany	96	Japan	52
US	80	UK	52

It was good to see a healthy representation from eastern European countries. Over half of the delegates registered via the Internet. Furthermore, the majority of the papers were available in advance on the Web. (After their registration fees had been paid, delegates received, via e-mail, passwords to use in order to access the proceedings.) It was gratifying to see the Congress organizers use our technology so effectively.

The day before the Congress opening and the day after the closing were occupied by tutorials, workshops, and seminars. Unfortunately, some of the tutorials and seminars had to be cancelled in advance, because of insufficient interest, and some of those held were sparsely attended. This was in spite of the extremely low tuition fees charged to Congress registrants.

The attendance was just fine, however, at a welcoming party the eve of the Congress opening, at the Vienna University of Technology, where all the technical sessions were held.

Opening Ceremony

The opening ceremony was held in the Vienna Musikverein, familiar to many of us because of the New Year's concerts broadcast worldwide from there. The organizers had taken just about everyone's needs into account. For example, for the benefit of the

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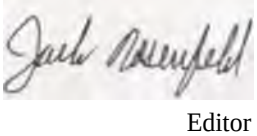
Happy Holidays

At this time of holidays and the new year, we send greetings to all our readers and friends, wishing you joyful holidays and a year of peace, health, and happiness.



Editor

ACM and IEEE-CS Admitted as Full Members

After more than a year of deliberation and negotiations, the September **IFIP** General Assembly (GA), meeting in Budapest, approved the admission of the Computer Society of the Institute of Electrical and Electronics Engineers (IEEE-CS) and the Association for Computing Machinery (ACM) as Full Members, to succeed the current Full Member from the US, (the Federation on Computing in the US — FOCUS, which is jointly supported by the ACM and IEEE-CS). This required an amendment of an **IFIP** statute, which now reads as follows (the italicized portions constitute the amendment):

> In each country, a national scientific or technical society...may become a Full Member, with the restriction that there *shall normally* be only one Full Member for any country and that it will be representative of activities in the field of Information Processing. *In very exceptional circumstances, the GA may approve the admission of more than one Full Member from the USA, providing that*

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Three Decades of Computing in Mathematics Education

*by David Tinsley (GB) **

The IFIP Working Group on Informatics Education at the Secondary Education Level (WG3.1) of the IFIP Technical Committee on Education (TC3) announces the publication earlier this year of *Information and Communication Technologies in School Mathematics* by Chapman and Hall, London. Edited by **David Tinsley** (GB) and **David Johnson** (GB), this book is the proceedings of the third conference organised by WG3.1 specifically focussing on the use of computers and IT in mathematics education. The conference took place last year in Grenoble; the prior ones were held in 1977 and 1987. Mathematics educators were some of the prime movers in the formation of WG3.1. over 30 years ago, and while the activities of this WG now cover a range of subjects and concerns about secondary education, the mathematics-education work is as strong as ever.

The International Program Committee for the Grenoble conference was chaired by **Bernard Hodgson** (CDN). The 91 participants heard and discussed 23 published main papers and 26 short papers, of which 9 were also included in the book of the Conference. Ten of the participants had been at the first Conference in Varna twenty years before; this gave an important perspective to recent developments, which have often relied on more powerful computing facilities rather than new concepts. There was a feeling of envy among the 'old stagers' that modern graphics and software tools were not available to their research efforts two decades ago.

Fortunately, a mature debate is now possible about the most appropriate ways in which learners can benefit from computing in the classroom and in private study at home, with further stimulation provided by the ease of communication between learners through the Internet. The Conference provided an opportunity to explore perspectives across 30 years of activity, from those issues which are still current to a whole range of new, interesting developments. A theme appeared constantly in 1977, 1987, and 1997: the evolution of the curriculum to take on a more pupil-centred view, with the computer emerging as a personal tool for developing an understanding of mathematics. The evolution of mathematics software gives new possibilities for mathematics teachers, and new opportunities appear with Internet and networks. The role of the teacher has changed a great deal during these thirty years and remains a central concern. Although many questions about learning have been answered, much still remains open!

The Conference book is a unique record of the latest research and practice within the world of secondary mathematics. It will be of interest to all those responsible for the management and delivery of the curriculum in secondary schools as well as those who wish to read sound common sense about the application of new information and communications technologies within education. LI

* member of WG3.l

Activities of Working Group on Computer-Aided Design

*by Mr. Jakob Vlietstra (USA)***

This article reports on the past, current and future activities of the **IFIP** Working Group on Computer-Aided Design (WG5.2) of the Technical Committee on Computer Applications in Technology (TC5). Over the years, the membership of WG5.2 has naturally grouped itself into three general interest areas, with each group organizing a series of workshops or working conferences (tracks).

1. The Geometric Modeling track began around 1984, with a small, informal workshop in the UK. No publications resulted from this activity of a handful of people. The first workshop that resulted in formal, published proceedings was the May 1986 workshop in Rensselaerville, NY, USA. Three additional Rensselaerville workshops followed, from 1988 to 1992, each with its proceedings published. **Prof. Mike Wozny** (USA) organized these workshops.

This series was the start of a biennial workshop track that continues to this day. The next in the series, organized by **Prof. Fumihiko Kimura** (J), will be held in December 1998 in Tokyo, Japan.

TC5 correspondent to the *Newsletter*

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*Awards to **IFIP** Volunteers*

During its September meeting in Budapest, the **IFIP** General Assembly (GA) honored its volunteers with two categories of awards: 65 Silver Core Awards and 8 Outstanding Service Awards (OSAs). The former is conferred on those who have served **IFIP** as GA members, committee officers, members of **IFIP** Congress program committees, and editors of proceedings of **IFIP** conferences. The required length of service varies with the role. The president of **IFIP** may also propose individuals who have given exceptional service to **IFIP.** (Those readers who have entered the field of information processing in recent years may not realize that the **IFIP** logo represents a magnetic core — a toroidal memory device that was once the most common type of computer memory — and its wires, with a globe superimposed. The Award, first established in 1974, was named after this symbol of the computer technology of that time.) So far, 381 Silver Cores have been awarded. This year's recipients are

E. Altman	D. Avison
R. Baskerville	S.C. Bhatnagar
W. Bibel	P.G. Bots
B.K. Brussaard	Z. Bubnicki
H.C. Bunt	R. de Caluwe
J.M. Carroll	A. Casaca
G. Cockton	B. Cornu
J. Cuena	G. Davies
C. Delgado-Kloos	E. Dirkx
A. Edwards	E. Eloranta
D.W. Etherington	P. Flach
C. Gergely	C. Girault
B. Glasson	J. Gonzales-Abascal
P. Gorny	J. Hammond
T. Hewett	J. Hoekstra
V.B. Iversen	J.L. King
T. Kjellberg	R. Koblo
M. Korpela	D. Kouvatsos
R. Kurki-Suonio	J. Lee
K. Lyytinen	0. Martikainen
S. Nakai	E.R. Olderog
G. Papp	R. Posch
J. Preece	R. Puigjaner
S.V. Raghavan	R. Soenen
S. von Solms	S. Spaccapietra
T.J. Stonham	A. Sutcliffe
E. Sutherland	N. Terashima
D. Tinsley	M. Toth
J.F. Traub	G.C. van der Veer
D. Vogel	A.G. Werschulz
G. White	J. Wibe
J.C. Wortmann	L. Yngstrom
W. Zimmer	

The OSA, established in 1988, is given for services rendered to **IFIP** by Technical Committee and Working Group members, on recommendation of TC chairmen and approval by the Internal Awards Committee. Eligible for nomination are individuals not normally eligible for the Silver Core Award. So far, 57 OSAs have been awarded. This year's recipients are

TC3: B. Collis
B.Z. Barta
TC8: S. Brinkkemper
H.E. Nissen
P. Humphreys
TC9: S. Munari
TC11 : D. Batchelor
TC13: L. Oestreicher

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hearing impaired attending the Congress, a signer worked at all plenary sessions. We admired both her ability to work throughout lengthy sessions and the charm she exuded. The music (how could we not have music in the Musikverein!) was provided by the 12-woman Wiener Walzertraum orchestra. Among the selections they played was *Alegretto IFIPiense*, composed especially for the Congress (to be described in a future ***IFIP** Newsletter).* In addition, they played Strauss music, including the *Radetzky March,* to which the delegates clapped, just as the New Year's concertgoers do.

Prof. Günter Haring (A) was moderator, first introducing **Prof. Kurt Bauknecht** (CH), president of **IFIP,** who welcomed the delegates to the center of Europe. He pointed out that **IFIP** is a federation of national computer societies that, irrespective of politics, economics, or social differences, work together for the good of the information technology profession and society at large. He mentioned the 12 Technical Committees and 76 Working Groups that are the "capital of **IFIP.**" **Prof. Egon Hörbst** (D), chair of the Congress International Program Committee, then pointed out that over 200 scientists had worked for two years to make the Congress happen. He expressed gratitude to the two Organizing Committees, formed by the Austrian Computer Society and the John von Neumann Computer Society of Hungary for their excellent support. He noted that the Congress program was a compromise between a general congress and conferences for specialists. Next, **Mr. Peter Pfannes** (D), the organizer of the Youth Forum, informed the delegates that 37 young people from 13 countries had assembled in order to interact with the Congress participants, attend technical sessions, debate issues of interest to today's youth, and report their views at the Congress closing session. An article on the Youth Forum will be published in a future *Newsletter.* **Prof. Dezsö Sima,** President of the von Neumann Society, then addressed the delegates (the president of the Austrian Computer Society addressed the opening of the Congress in Budapest). **Prof. Sima** expressed the hope that although too many cooks may spoil the broth, the two "cooks" of this Congress had prepared "two bowls of delicious soup for you."

Dr. Caspar Einem, the Austrian Minister for Science and Transport, delivered the opening speech. He compared the evolution of information technology and the Internet to the evolution of printed books. At first, they were used only by the elite (the church leadership / computer scientists), but eventually they were available to the masses. He also cautioned us not to blame the Internet for its misuse (e.g., pornography) any more than we blame the technology of book printing for *Mein Kampf or Das Kapital.* Just as the content of printed books changed 15th-century society, so will the content found on the Internet change our society. He did point out that quality control is missing; therefore, consumers of information must be trained to evaluate its quality. He warned of the danger of evolving into two classes of society — the computer literate and the computer illiterate (which may be considered to be the illiteracy of the 21st century). Information, he asserted, should be a civil right for all — but not necessarily free to all. He pointed out that technology may be the means by which developing countries can overcome the gap between themselves and developed countries. Computer technology may also prove to be a great help to the disadvantaged. Finally, he declared the Congress officially open.

Next, **President Bauknecht** presented the Isaac Auerbach Award, honoring the founder of **IFIP,** to **Prof. Heinz Zemanek** (A), who has been active in IFIP for 40 years (see the article on page 3 of the September ***IFIP** Newsletter).* **Prof. Zemanek** declared that the award touched his heart and had special value to him since he viewed himself as a disciple of **Mr. Auerbach.** He presented his viewpoint that the role of a volunteer, like him-

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self, in IFIP is to give as much as possible to the organization and let whatever personal benefits might accrue happen as they may. He said that the true purpose of **IFIP** is to weave the "web" of interpersonal relationships that we all experience.

President Bauknecht then presented a special award to **Dr. William 011e** (GB), the only person to attend all I5 **IFIP** Congresses. (See the article on page 2 of the September *Newsletter.)*

Dr. 01le, with certificate.

Dr. Gordon Moore (USA), Chairman Emeritus of Intel Corp., the first of the four Congress keynote speakers, then delivered an entertaining, informative, and fascinating "multimedia" presentation. First he presented some statistics concerning the growth of the semiconductor industry. There are 300-400 million computers in the world today, and the sales of computers may pass those of television sets before long. Computers have been the force driving the semiconductor industry. The revenue of that industry was approximately $I50 billion US in I997. The price of a single transistor is falling dramatically; it is now approximately "2.5 microbucks," and the price of transistors in DRAMs is an order of magnitude less. The number of transistors manufactured annually equals the number of ants in the world. He said that the minimum feature size on chips continues to decrease, now being smaller than the wavelength of light, with 20 million transistors to be found on chips very soon. **Dr. Moore** used technology to demonstrate the points he was making. (Incidentally, this was the first time a computer had been installed on the stage of the Musikverein.) A wireless, infrared connection was used between a video camera in the auditorium and **Dr. Moore's** PC. The audience could observe and hear a conversation over an ISDN connection between him and his colleagues in Santa Clara, California (at 3 a.m. California time!). Part of the demonstration allowed the audience to beam microscope. Next, a Web page was created dynamically, sent to a Web master, and installed as he spoke. Another demonstration of what one could do with greater speed and capacity on a PC concerned a trip to a virtual shop for women's clothing, during which the user could see how selected garments would look on her — even how they would move as she would dance or engage in sports, for example.

Technical Sessions and Social Program

The full technical program began after the close of the opening session. It included seven independent conferences:

- 6th International Conference on Computers Helping People with Special Needs (ICCHP '98)
- Information Technology and Knowledge Systems (IT&KNOWS)
- Fundamentals: Foundations of Computer Science
- 2nd International Conference on Intellectual Property Rights (KnowRight '98)
- 14th International Information Security Conference (SEC '98)
- Telecooperation: the Global Office, Teleworking, and Communication Tools
- Distance Learning, Training, and Education (Teleteaching '98)

(We plan to print an article about the Congress contents in a future issue of the *Newsletter.)* Small technical exhibitions were located at the Congress venues in Vienna and Budapest.

Early in the Information Security Conference, the **IFIP** Kristian Beckman Award was presented to **Mr. Richard Sizer** (GB). See the article on page 7 ofthe September *Newsletter.*

Mr. Sizer (right) receives Beckman Award from President Bauknecht and Prof Basie von Solms.

Monday evening, all Congress participants were invited to dinner in the Vienna City Hall, where approximately I000 delegates and accompanying persons were seated at tables in a single room. The sight was spectacular! After a few speeches (unfortunately, the Lord Mayor was unable to attend his reception), the delegates heard songs by the chorus in which **Dr. Walter Grafendorfer** (A), co-chair of the Congress Organizing Committee, and his wife, Maria, sing. Dinner and dancing followed.

The plenary session Tuesday morning featured **Prof.Yunhe Pan** (PRC), who discussed The Information Highway in China. He stated that there are a half million computers on the Internet in China and over a million users of the Internet. Ultimately, it is planned to have 50 million students on the net. He went on to discuss the background of network computing in China and the present status.

Tuesday evening, the Council of European Professional Informatics Societies (CEPIS), an Affiliate Member of **IFIP,** hosted a reception at the University, to celebrate its tenth anniversary. This was followed by dinner at a Viennese wine tavern, an "optional" event. Delegates were forced to meet the challenge of late-night social activities followed by full technical programs in the mornings.

Moving from Vienna to Budapest

On Wednesday, the Congress organizers managed to transport over I000 delegates and accompanying persons between the Congress venues, afford them the opportunity to enjoy the scenery and participate in a number of meetings (primarily **IFIP** Working Groups and Technical Committees), and settle them in their hotels that evening, in order to resume the Congress program Thursday morning. The solution was as follows. The delegates assembled at the Vienna West train station in the morning and boarded a reserved, I000-passenger, I6-car train. Some had elected to travel separately. As usual, the indefatigable **Maria Toth** (H), the other co-chair of the Organizing Committee, was present — on the platform to straighten out any last-minute problems. She and the entire Congress staff (most wearing orange vests with "Ask me" printed on the back) were always present and always smiling. After a two-hour train ride, the passengers disembarked at Komáro… , Hungary, on the bank of the Danube, where 20 trucks were waiting to take the delegates' luggage to the 26 hotels in Budapest housing them. Each delegate had been assigned a train carriage according to her or his hotel, and the truck for each hotel was waiting next to where the carriage stopped. Once the luggage had been disposed of, the delegates walked to the river bank, where refreshment tents had been erected. While the delegates were relaxing, a marching band arrived and played for the participants. This was followed by a welcoming speech by the mayor of Komárom

and others. (Unfortunately, conditions made it very difficult for them to be heard.) Soon, the delegates boarded three boats lashed together side-by-side for the remainder of the trip to Budapest. Most of the participants simply enjoyed the scenery of the "Danube bend" and the perfect weather (the organizers had raincoats available in case of inclement weather), but others attended meetings or listened to a jazz band on one of the boats. Upon arrival in Budapest, the delegates enjoyed the spectacle of lights on all the major buildings and bridges. As the boats sailed into the center of town, lasers flashed on and off, and "Welcome IFIP '98" was flashed by a laser onto the facades of the buildings of the Budapest University of Technology, where the technical sessions would be held. All the while, **Mrs. Toth** was describing the buildings to those on the deck of the boat on which she was riding. Buses were waiting to take delegates to their hotels, where they were reunited with their luggage.

Opening Session in Budapest

The opening of the second half of the Congress, moderated by **Prof.Tibor Vámos (H),** took place in the beautiful Vigszinház Theater in Budapest. During the ceremony, the flag of the country from which each speaker came was lowered from the bank of flags above the stage as she or he talked, and a large-screen image of the speaker's face was visible to the audience. Music was provided on a cimbalom, a stringed instrument played by striking the strings with hammers held by the musician.

Opening ceremony in Budapest.

Messages from the president and prime minister of Hungary were read, and welcoming speeches were given by **President Bauknecht, Dr. Veith Risak,** president of the Austrian Computer Society, and three officials of the Hungarian government. **Mr. Kalman Katona,** Minister for Transport, Communication, and Water Management, pointed out to the audience the famous Hungarians who had made major contributions to information processing after emigrating to the US — from John von Neumann to Andrew Grove. **Mrs.Toth** thanked the sponsors for their financial help in organizing the Congress. The Main Sponsors were

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The Congress was viewed to be so important that a commemorative postage stamp and first day cover were issued in Hungary, and a telephone card was issued in Austria.

Dr. George Metakides (GR), Director of the European Program for Research and Development in Information Technology, the keynote speaker for this session, spoke of how media, communications, and computing are converging into a "single digital space" and how the "global society" is becoming a "networked society." Furthermore, he called for a regulatory framework for the digital space.

That evening, delegates and accompanying persons attended a "Hungarian evening" in Budapest, where they had a taste of the local food, wine, dancing, and music. During the audience-participation part of the program, the delegates saw a different "side" of **President Bauknecht** and **Prof. Sima** than they were used to. To help ensure that all delegates were taken to the correct hotels following the entertainment, the amazing **Mrs. Toth** boarded one of the buses and stood for most of the trip (despite a broken leg), directing the driver to the various hotels on its route.

At the keynote session on Friday morning, **Prof. Andries van Dam** (USA) spoke on Frontiers in User-Computer Interaction. In addition to the exciting video he showed, he had much to say about the future of the human-computer interface. He talked about today's WIMP interface (windows, icons, menus, and point and click) and what more we can expect. Even managers and faculty members, he said, can now use computers, with the help of WIMP interfaces. There are limits, however, to this interface. It doesn't use all the human senses. Two-hand input is the most significant change we can make. The future user interface will permit multiple users, recognize gestures, speech, and sketches, and perform body-part tracking, thus "liberating us from the tyranny of the desktop." Wearable computers are definitely in our future, he opined. The ultimate user interface will behave like an aide-de-camp or butler. Unfortunately, the effort placed on improving bandwidth for computing, data, and communication has not extended to human-computer interaction (HCI). Although there has been an exponential growth in computer and communication power, the level of HCI power has been relatively constant. It is hoped that some of the increased computing power will be used to make it easier to communicate with computers. He pointed out that many of the advances in HCI have come from video games and not from computer science laboratories.

Pioneer Day

Among the sessions that followed the plenary keynote session was a "Pioneer Day," organized by **Mr. Gyõzõ Kovács,** vice-president of the Hungarian host society and the founder of the **IFIP** Working Group on Distance Learning, during which computer pioneers, primarily Hungarian, gave talks. Unfortunately, because of little advance notice or other reasons, the attendance was low. Early in the Pioneer Day program, there were more pioneers in the audience than other delegates. **Prof. Zemanek** introduced his talk with his view of the importance of computer history. He said that it belongs in engineering education and that copying is the main function of an engineer — but you have to know what to copy and you have to add something original. The body of the talk concerned the Mailüfterl (May Breeze) computer, whose development he had led. Completed in 1958, it was the first computer with only semiconductor elements and demonstrated that the transistor was a viable computer component. An interesting exhibition on The History of Hungarian Computers and Peripherals (1958-1990) was held in conjunction with the Pioneers Day, at the site of the Congress in Budapest.

The Congress Ends

The closing ceremony began with the report from the Youth Forum (to be described in a future *Newsletter).* Next, **Chairman Hörbst** pointed out that the attendance at Congress technical sessions had been "reasonably good," in spite of the attractions of Vienna and Budapest. (Other observers found some sessions sparsely attended.) Speakers who had not come to deliver their papers ("no-shows") were a problem: 30 out of the 350 speakers of the Congress (9%) fell in this

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Hungarian first day cover

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category, 2/3 of them in the Distance Learning Conference. Apparently, the policy of requiring speakers to pay their registration fees before the paper could be printed in the proceedings had not deterred these individuals. No-shows are not fair to the delegates and make difficulties for the session chairs and the other speakers. **Prof. Hörbst** encouraged the delegates to convince their colleagues that no-shows should be strongly discouraged. (Also see the article on page 11 of the March 1997 ***IFIP*** *Newsletter.)*

Prof. Benjamin Wah (USA), chair of the International Program Committee for **IFIP** Congress 2000, in Beijing, then presented plans for that Congress. The organizers hope to have an attendance of 2000 people. In addition to the seven component conferences, there are plans for product exhibits, research demonstrations, a Chinese-student competition, a best-paper award, technical visits, a youth forum, and other activities. For further information, one may visit the Congress Web pages at
http://www.wcc2000.org.

Finally, **President Bauknecht** thanked all involved in preparing and carrying out the Congress. He was impressed with the quality of the scientific activities; some were good, and some very good. He too decried the no-shows. He expressed his determination to embrace the Youth Forum concept in the **IFIP** community.

The Congress banquet was held that evening in the Ludwig Museum of the Royal Palace. In addition to a delicious meal, the participants enjoyed Budapest's version of the "three tenors," who were amusing as well as vocally talented. It was an elegant way to end a very enjoyable Congress.

The Congress proceedings were prepared and printed by the Austrian Computer Society, in individual books for the seven conferences comprising the Congress. **In** addition, a CD-ROM containing all the papers printed in the individual proceedings was produced. Copies are available from the Austrian Computer Society. Details and an online order form can be found on the WorldWide Web at
http://www.ocg.or.at/ifip98.html.
Color photographs of the Congress are also at that address. ❑

Delegates boarding Danube boats at Koumárom.

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2. The Intelligent CAD workshops, originally organized by **Prof. HiroYoshikawa** (J) in the early 1980s, evolved into the present track on Knowledge-Intensive CAD. These workshops address the situation that current CAD systems do not explicitly incorporate product and design-process knowledge in design tools and design-object models. Between 1987 and 1989, WG5.2 organized a series of three workshops on "Intelligent CAD," which were followed by a working conference on the same subject in 1991.

To more fully address the above issue, a new series of workshops was begun in 1995. These workshops extended the concept of intelligent CAD to the concept of "knowledge-intensive engineering." The concept advocates the incorporation of intensive life-cycle-knowledge regarding products and design processes in the center of the CAD architecture. The concept focuses on the systematic use and sharing of knowledge across the life-cycle stages and organizational boundaries. The first workshop, held in Finland in 1995, focused on exploring the concept of knowledge-intensive design as a part of knowledge-intensive-engineering activities. The second workshop, held 1996 in the USA, examined architectures and methodologies for "knowledge-intensive CAD," based on the results of the first workshop. The third workshop on knowledge-intensive CAD will focus on prototype knowledge-intensive-engineering systems, experiences gained from their application, and future directions of research. It will be held 1– 4 December 1998 in Tokyo.

3. The third track is Formal Design Methods, organized under the leadership of **Prof. John Gero** (AUS). The purpose of this workshop series is to discuss and evaluate new formal design methods. The increasing availability and use of the Internet and the World-Wide Web has opened up the opportunity for designers to collaborate with each other in ways not possible previously. Designers can now work on the same design at different geographic locations, either synchronously or asynchronously. Computer-mediated collaboration requires a fresh look at the role of formal approaches to design and the place of CAD in the design process. This workshop series examines the formal aspects of collaborative CAD, with the goal of developing a better understanding of the impact of computer-mediated collaboration in CAD and of defining research directions for this area. The first workshop in this series was held in Tallinn, Estonia, in 1993, the second in Mexico City, Mexico, in 1995, and the third in 1997 in Sydney, Australia.

By means of strategic planning, WG5.2 plans to continue to identify new and emerging research topics in computer-based geometric modeling and design areas — perhaps extending to other, broader topics — and develop core memberships in those topics. ❑

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G. J. Morri s	Secretary	GB 96-99
D. Khakhar	Treasurer	S 96-99
	and Treasurer-elect	98-99

Trustees

R. Johnson	GB 98-01
	and Secretary-elect 98-99
R. Reis	BR 96-99
X. Yan	PRC 96-99
T. Miura	J 98-01
M. Masduki	MAL 98-01
C. Gergely	H 98-00
S. Ramani	IND 98-00
K. Boyanov	BG 98-00

Budapest General Assembly Decides Major Issues

The IFIP General Assembly (GA) met in Budapest 5-8 September (including committee meetings and other related meetings) and took several major actions, including the decision to admit two societies from the US as Full Members, the renewal of the publication contract with Kluwer Academic Publishers, and the selection of the site of the Congress in 2002. In addition, other Congresses — past and future — were discussed; new officers were elected, as were Honorary Members; a new society was admitted as a Full Member, and a Member was replaced; and policy statements on cryptology and security were accepted. Of course, the usual reports on technical and administrative activities were received and acted upon.

Prof. Dezsö Sima, President of the John von Neumann Computer Society, welcomed the GA to Budapest. Also, **Dr. Walter Grafendorfer,** an **IFIP** vice-president, welcomed the delegates, in his role as general manager of the Austrian Computer Society, co-host of **IFIP's** 15th World Computer Congress, just concluded in Budapest (see the article on page 1). The representatives of 30 of the 38 voting Member societies of **IFIP** attended (the remaining 5 of the 43 Full Members have lost their vote because of failure to pay dues). Also, all the Technical Committee (TC) chairs were present.

Technical Work

At the time of the GA, 68 technical events were planned for 1998. This is a good number when one considers that several TCs devoted a substantial part of their efforts toward this year's Congress.

At the March Council meeting in Manchester, **Mr. Plamen Nedkov (IFIP** Executive Director), in his role as IFIP-UNESCO Liaison Officer, reported on a request by UNESCO that **IFIP** carry out a project to "Elaborate a complete modular framework for training in informatics, covering the undergraduate and postgraduate programmes and courses to be provided..." The responsibility was assigned to the TC on Education (TC3), which appointed **Dr. Tom van Weert** (NL) as project leader. UNESCO is funding the activity with $18 000 (US), and additional funding is possible. The project might even assume an ongoing character. UNESCO representatives have also encouraged **IFIP** to involve other TCs in the activity. **Mr. Brian Samways** (GB), the TC3 chair, will act as the coordinator for such TC participation. Plans called for delivery of the first draft of the framework to UNESCO by the middle of November 1998.

The Technical Assembly established new Working Groups: WG 1.6 on Term Rewriting and WG12.6 on Intelligent Information Management (see the September *IFIP Newsletter,* pages 2 and 7, respectively). Final approval was also granted for the formation of WG13.5 on Human Error, Safety, and System Development.

The **IFIP** TC on Communication Systems (TC6) is starting a task group on Electronic Commerce, which will be concerned with communication protocols and information exchange mechanisms for electronic commerce. It will also study the impact of electronic interactions on human, social, and cultural aspects of trade and commerce.

The project on Harmonisation of Professional Standards continues, with an initial document expected in October 1998.

The TC Forum (an unofficial [i.e., not specified in **IFIP** statutes or bylaws] working meeting of TC chairs, which has become an integral part of GA and Council meetings) recommended to the GA that an event-support activity be created in the Secretariat, for a minimum of two years. Its purpose would be to help event organizers carry out their jobs by providing knowledge of the event-organization process and the continuity that is so helpful to people organizing **IFIP** events. In addition, it could help market these events. One TC chair pointed out that the work entailed in organizing a formal event is perceived to be so much more than that required for a workshop that organizers now decide to hold workshops, even though larger events would be more appropriate. The TC Forum proposed that an additional employee be hired for the Secretariat (bringing the staff to three) to undertake this activity. Such an individual might also provide continuity for **IFIP** Congresses and seek other events that could be sponsored by IFIP. The TC Forum and **Mr. Nedkov** were requested to prepare a job charter for the new individual, to be subsequently considered by the Executive Board.

The TC Forum also raised the issue of liability for injury or damage at **IFIP** events. The event organizers are responsible, according to **IFIP** policy. If insurance is necessary, they should provide for it in their budgets. Because insurance is very much a local or national matter, **IFIP** could not undertake to insure all events. It was also suggested that **IFIP** establish a contingency fund.

In addition, the Forum requested that some way be devised for sharing the income from **IFIP** Congresses with the TCs that organized the individual conferences of which the Congress was composed.

Several WGs reported difficulties in attracting people from industry to participate in their activities. In an effort to bridge the differences between theory and practice, TC2 on Software: Theory and Practice organized a recent conference so that each morning began with a talk by someone from industry. They turned out to be among the best talks at the conference.

WGs also reported significant declines in attendance at working conferences. This may reflect the large number of international conferences being held these days or a decreasing need for scientists to get together face to face.

The TC on Security and Protection in Information Processing Systems (TC II) presented policy statements on Information Security Assessment and Certification and on Cryptography, which were approved by the GA. See the article on page 10.

continued on page 8

GA continued from page 7

Some disagreement had previously been voiced with the IFIP policy of not restricting membership in WGs to members of IFIP Member societies, the argument being that appointment of members to WGs should be a privilege of Membership in IFIP. The general consensus of the GA was to leave that policy unchanged, allowing WGs to be composed of the best technical people to be found, regardless of nationality. A related topic was whether IFIP events should be restricted to nations that are Members of IFIP. There was a greater divergence of opinion on this issue, and no restriction was imposed.

It seemed to one observer that during this GA, less discussion than usual concerned new technical initiatives. Perhaps less time is available for discussion of these matters, or perhaps the TC chairs now choose to report only on administrative matters. It remains to be seen whether this is a long-term trend.

Publications

At the March meeting of the IFIP Council in Manchester, UK, it was announced that the IFIP publisher at that time (Thomson Science Publishers, printing under the Chapman & Hall [C&H] imprint) had been purchased by Wolters Kluwer, a large publisher, which already published approximately 400 conference proceedings annually and 650 journals. All members of the C&H staff who had worked with IFIP were discharged, and there was concern as to how Kluwer would fulfill its contract with IFIP. The concern was accentuated by the fact that the contract between IFIP and the publisher called for both parties to decide by the end of June 1998 whether to renew the present contract, which expires at the end of 1999. An IFIP committee quickly investigated alternative publishers and concluded that it would be best to renew the contract with Kluwer. The publisher also favored a renewal. The new contract, which has exactly the same terms as the current one, will expire at the end of 2004. Soon, Kluwer is expected to hire an editor to handle IFIP books full time.

Some of the TC chairs reported problems encountered with Kluwer. For example, unlike our previous publishers, Kluwer requires the editors of conference proceedings to provide completely camera-ready copy, including page numbers and headers. Also, the delay between the submission of the copy and the printing of the books (up to 15 weeks) has been unsatisfactory for some of the TCs.

On the other hand, the publisher's representative, Mr. **Scott Delman** (USA), reported that some manuscripts have been delivered to Kluwer late and some have had many more pages than the numbers agreed upon. It is assumed that many of these difficulties will be ironed out shortly.

At present, Kluwer is not considering electronic publication of IFIP proceedings, although it will be publishing all 650 of its journals electronically by the end of the year.

As of August, 24 **IFIP** books had been published in 1998, and four more are scheduled for publication by the end of the year. Because of the transition between publishers, it has been difficult to get information about sales and royalty income from the publisher; however, there is no reason to believe that the results will be unsatisfactory.

IFIP Congresses

Four Congresses were discussed at the GA. First, an agreement was reached between **IFIP** and the Australian Computer Society regarding the 100 000 Swiss francs (100K CHF) still owed to **IFIP** for Congress '96. The Society agreed to pay 50K Australian dollars (Ca. 42K CHF) over a period of five years. The Society reported having lost 150K Australian dollars (ca. 125K CHF) **in** sponsoring the Congress.

Mrs. Toth, President Bauknecht, and Dr. Grafendorfer with check.

Dr. Walter Grafendorfer (A) and **Mrs. Maria Toth** (H), co-chairs of the 1998 Congress Organizing Committee, presented an oversized check for 90 000 CHF to **President Bauknecht.** Of that, 50K was repayment of a loan made to the organizers by **IFIP,** and 40K CHF was the minimum payment specified in the contract. **IFIP** had spent approximately 20K CHF to support Congress attendance by 27 participants from 15 developing countries. A grant from the European Union (52K CHF) was provided to support 63 participants from Eastern European countries and countries with emerging economies from the Mediterranean area. Unfortunately, UNESCO failed to provide any similar support. One concern about the Congress had to do with the proceedings, which were printed by the Austrian Computer Society as individual books for the seven conferences comprising the Congress. In addition, a CD-ROM containing all the papers printed in the individual proceedings was produced and distributed to the delegates. **IFIP** will not receive royalties from those proceedings; however, royalties will be received for any post-Congress sales. Also, there may be no archival value to the proceedings unless they are acquired by major libraries. An unanswered question, referred to the Publications Committee, is what can be done to enable future researchers to access papers from the Congress?

The GA also heard presentations from the organizers of Congress 2000, which will take place in Beijing. Little change had been made to the plans announced previously (see page 7 of the June ***IFIP** Newsletter).* **Prof. Reinhard Posch** (A) and **Prof.Yang Fuqing** (PRC) were named as vice-chairs of the International Program Committee.

Finally, the GA awarded the contract to host Congress 2002 in Montreal to the Canadian Information Processing Society (CIPS), the Canadian Member society of **IFIP,** and to the Federation de l'Informatique du Québec. (The two societies will merge soon.) This bid won by one vote (the deciding vote was cast by **President Bauknecht)** over the invitation by the Information Processing Association of Israel to hold the Congress in Jerusalem. **Mr. George Boynton,** the CIPS representative to **IFIP,** was appointed as chair of the Congress Organizing Committee.

Membership

A substantial amount of time was devoted to the debate concerning the admission of two US societies, IEEE-CS and ACM, as Full Members. A summary of this matter can be found on page 1.

The GA also admitted the Slovenian Society Informatica as a Full Member (an article about the Society is planned for a future *Newsletter).* It was noted that the National Academy of Sciences of Armenia (admitted in 1995) has now fulfilled all entry requirements and is a Full Member. The Academy of Sciences of Belarus (admitted in 1994), not yet having fulfilled the requirements, will

have the offer of Membership withdrawn at the end of 1998. Having voting rights suspended for failure to pay dues are Albania, Ireland, and Russia. Facing expulsion at the end of 1998 are Greece and Tunisia.

The French Member society (AFCET) was dissolved during the past year. An effort has been made by two French TC chairs **(Dr. Jean-Claude Laprie** and **Prof. Guy Doumeingts)** to identify a French IT society to take its place. The conclusion was reached that la Societe des Electriciens et des Electroniciens (SEE) would be the appropriate society. The GA approved SEE as a Full Member.

Finally, the GA named **Acad. Blagovest Sendov** (BG) and **Mr. Aage Melbye** (DK) as Honorary Members, in recognition of their leadership of and service to **IFIP. Prof. Sendov's** participation in **IFIP** began in 1965, and he served as president from 1989 to 1992. **Mr. Melbye's** service to **IFIP** began in 1978, culminating in the position of treasurer from 1990 to 1996. Both gentlemen have also had other roles in **IFIP** over the years. **Mr. Melbye's election as** Honorary Member marks the first time that anyone other than a past president has been so chosen.

Dr. Jack Rosenfeld (USA) was elected to a second term as Individual Member, in recognition of his 15 years of service as editor of the ***IFIP*** *Newsletter* and his other **IFIP** activities.

Other Matters

As previously reported, 1997 was a good year financially, with a surplus of 243 CHF. A surplus of approximately 200K CHF is estimated for 1998. Although a substantial part of **IFIP's** funds have now been invested in financial instruments with respectable rates of return (2: 9%), the net result has not been good, owing to stock market changes. Plans are under way to move **IFIP** funds from banks in the UK and Austria into the investment portfolio. Also, the basic **IFIP** currency may be changed from the Swiss franc to the Euro some time soon.

In his report to the GA, **Executive Director Nedkov** said that the Secretariat staff, which he refers to as "The Delivery Company," because of its function of delivering services, is "motivated and performance-driven, which is essential for an organization with worldwide operations and only two full-time employees." Everyone in IFIP recognizes the excellent job done by the Secretariat.

Mr. Ashley Goldsworthy (AUS), a vice-president, reported that the president had written all Member societies to identify the three most important issues that **IFIP** should address. Seven Members responded, and **Mr. Goldsworthy** distilled their comments into a Strategic Planning Action Agenda:

1. Institute a program to more actively involve participation from industry.
2. Improve visibility of **IFIP** in the US and US participation in **IFIP.**
3. Provide more assistance to developing countries to improve their technical competence.
4. Promote closer cooperation between **IFIP** and other appropriate organizations, including Members and national governments.

Mr. Graham Morris (GB), the **IFIP** secretary, reported on the annual reports of the Member societies. Perhaps the most striking item was the number of societies sponsoring some sort of computer drivers license. (See the June 1996 ***IFIP*** *Newsletter,* page 9.) **Mr. Dudley Dolan,** the Irish representative to **IFIP,** gave a presentation about the European Computer Driving License program during one session of the Congress. Apparently this program can be very lucrative for the sponsoring organizations.

Some discussion at the GA concerned the failure of some committee chairs to perform their jobs satisfactorily. (One chair was heard to comment during his committee's meeting that all those present had their own jobs at home and couldn't be expected to do **IFIP** work too. He has since been replaced.) **Secretary Morris** drew attention to a working paper he had prepared, entitled "Effective Committee Work," which had been commissioned and discussed by the Executive Board. It reflected concern about the lack of activity by some committees between Council and GA meetings and stressed the vital role and responsibility of chairmen for this work. The first and most significant item is, "No one should stand for election as trustee or officer or accept the chairmanship of a committee unless prepared to accept and discharge the responsibilities of those offices and attend every GA and Council meeting." The remaining items are common-sense statements of the responsibilities of such officers. The president-elect gave newly appointed committee chairmen the responsibility to choose the members of their committees.

The following individuals were elected by the GA to three-year terms, unless otherwise indicated:

Vice-president:
Prof. Robert Aiken (USA)
Mr. José Granado (P)

Secretary-elect:
Dr. Roger Johnson (GB, one year)

Treasurer-elect:
Prof. Dipak Khakhar (S, one year)

Trustee:
Dr. Roger Johnson (GB)
Mr. Mohd Masduki (MAL)
Mr. Csaba Gergely (H, two-year **term)**
Dr. S. Ramani (IND, two-year term)
Mr. T. **Miura (J)**
Prof. Kiril Boyanov (BG, two years)

Closing the GA

Before adjournment, new chairs of committees and other bodies were appointed by **Dir. Peter Bollerslev** (DK), president-elect, who assumed the presidency after the GA:

Technical Assembly: Prof. Kurt Bauknecht (CH)
Activity Management Board: Prof Robert Aiken (USA)
Marketing Comm.: Dr. Walter Grafendorfer (A)
Publications Comm.: Dr. Roger Johnson (GB)
Statutes and Bylaws Comm.: Prof. Pierre Bobillier (CH)
Developing Countries Support Comm.: Prof. Dipak Khakhar (S)
Finance Comm.: Mr. Jose Granado (P)
Internal Awards Comm.: Mr. Graham Morris (GB)
Nominations Comm. for Officers: Mr. Morris
Nominations Comm. for Trustees: Dr. Johnson

All the appointees are officers, past officers, or officers-elect. Note that a past-president will chair the TA.

President Bauknecht called attention to the fact that **Mr. Goldsworthy** and **Prof. Brauer** were attending their last GAs and thanked both of them for their service to **IFIP** (an article about them will be printed in a future *Newsletter).*

Prof. Pertti Jaervinen (SF) is also retiring, after long service to **IFIP,** most recently as chair of the TC on Relationship between Computers and Society. We give him a big vote of thanks for a job well done.

President-elect Bollerslev then took the opportunity to recognize the accomplishments of **President Bauknecht:** the financial situation is good, the administration has never been better, and **IFIP** is visible and has a good reputation. **President Bauknecht was a hard worker for IFIP,** he noted, always ready to meet with people, at any time of day or night; even physical injury couldn't stop him. Gifts of a digital camera and a mountain bike were presented.

continued on page 10

Information Security Assessment and Certification

The September **IFIP** General Assembly (GA), meeting in Budapest, approved the following statement presented to it by the Technical Committee on Security and Protection in Information Processing Systems (TC11):

IFIP Statement on Information Security Assessment and Certification

i) In keeping with the global move to electronic commerce, the information security status of IT systems and the information security management of such systems should be assessed against specified standards related to information security management.

ii) Those performing such assessments should themselves be accredited according to specified certification standards.

iii) Members of **IFIP** should be instrumental in ensuring that such standards, for systems and individuals, be harmonized on an international level.

IFIP Member societies are encouraged to use this statement as appropriate and state that it is an **IFIP** policy statement.

IC 11 is organizing a workshop in 1999 to address these issues. For more information, please contact **Prof. Jan Eloff** at eloff@rkw.rau.ac.za.

In addition to this policy statement, the **IFIP** Policy on Cryptography, printed on page 6 of the March ***IFIP*** *Newsletter*, was approved by the GA.

GA continued from page 9

President-elect Bollerslev promised to devote all his effort to his new responsibility and devote time to keep **IFIP's** profile high, hopefully for the benefit of the Member societies.

The GA was adjourned, with many thanks to the Hungarian hosts for excellent organization, kindness, and support.

State of the Art in Programming Methodology Taught by WG2.3 in South Africa

*by Dr. Carroll Morgan (GB) **

Since 1992, a biennial Workshop on Formal and Applied Computer Science (WOFACS) has been held at the University of Cape Town, South Africa, during the July winter vacation. It is organised by the University's Laboratory for Formal Aspects and Complexity in Computer Science, a research group in the Department of Mathematics and Applied Mathematics, under the supervision of **Prof. Chris Brink,** head of the department. At each of the events, a number of distinguished academics offer short courses of 10 lectures, each on a particular topic within a general theme. These WOFACS events have become known throughout southern Africa and have, over the years, attracted increasing numbers of participants, particularly postgraduate students. One attraction of WOFACS is that students can be evaluated on the courses they attend, and such evaluation can, by arrangement with their home departments, count for credit towards their degrees. In that way, WOFACS provides a human resource development service available to all southern African universities. In keeping with the tradition of such events, there are no course fees: except for a fairly modest registration charge, WOFACS is a free service to the community.

The 1998 WOFACS, held 6-17 July in Cape Town, was presented as a "state-of-the-art" workshop in collaboration with the **IFIP** Working Group on Programming Methodology (WG2.3). The speakers were drawn from the WG, and the overall theme was that of the WG. A substantial proportion of the funding was provided by the United Nations University International Institute for Software Development (UNU/IIST). That support was used to give financial assistance to participants from previously disadvantaged communities in South Africa and from other African countries. More than 60 participants registered — from Angola, Cameroon, the Congo, Gabon, Malawi, and Uganda, as well as from a number of South African universities.

* vice-chair of WG2.3

The event was a success, both as a successor to a similar WG2.3 course (two weeks in Macau in 1994) and in the context of the WOFACS winter school series. Indeed, our hosts considered it the most successful such event for them so far, continuing a growth pattern and giving a healthy prognosis for future developments there. WG2.3 is currently planning further workshops.

The Speakers and Topics

Following is the list of the speakers and their topics:

Dines Bjørner (Technical University of Denmark): Domains and requirements; software architectures and program organisation.

David Gries (Cornell University, USA): Logic as a Tool.

Michael Jackson (Imperial College, London, UK): Problem frames and principles of description.

Jay Misra (University of Texas at Austin, USA): Towards an applied theory of concurrency.

Carroll Morgan (Oxford University, UK): Predicate transformers and probabilistic programs.

Each of the speakers made available a "course reader" of his material, typically of 50 pages, which was printed and bound before the event and handed out to participants upon registration. As has been the case in the past, it is planned to publish a proceedings volume of WOFACS 98 as a special edition of the *South African Computer Journal*, containing an edited version of the presentation of each of the speakers.

More details can be found at the following Web site:

http://faccslab.mth.uct.ac.za/meetings/wofacs98

National Abbreviations Used in Newsletter

A	Austria	F	France	NL	The Netherlands
AUS	Australia	GB or UK	United Kingdom	P	Portugal
B	Belgium	GR	Greece	PRC	China
BG	Bulgaria	H	Hungary	RCH	Chile
BR	Brazil	I	Italy	S	Sweden
CH	Switzerland	IND	India	SF or FIN	Finland
CZ	The Czech Republic	IRL	Ireland	USA	U.S.A.
D	Germany	J	Japan	ZA	South Africa
DK	Denmark	MAL	Malaysia		

ACM & IEEE-CS continued from page I

> *1) each such Full Member shall satisfy the entry requirements stated above and*
>
> *2) such Full Members shall mutually support each other's membership applications.*
>
> *Such Full Members shall enjoy the same rights and obligations as other Full Members.*

History

The principle of one Member per nation was inherent in the original structure of **IFIP.** In his "Personal Recollections on the Origin of **IFIP"** published in *A Quarter Century of* ***IFIP*** (ed. Zemanek), Mr. Isaac Auerbach (USA), the founder of the Federation, wrote the following:

> We [founders] agreed that the federation would be a society of societies, and would not have individual members so as not to compete with national professional societies. Furthermore, the federation would have only one national technical society per country as a member, and certain Eastern European countries could register their National Academy of Sciences as the representative. The rationale for this decision was that one society for each country would keep the voting balanced and controlled.

Dr. Richard Tanaka (USA), a former president of **IFIP,** recalls **Mr. Auerbach** telling him that at the time of the founding of **IFIP** (1959), the US was by far the dominant power in information processing, so that in order to avoid making **IFIP** a predominantly American federation, the UN model of one vote per national society was chosen.

Nonetheless, the desirability of permitting multiple Full Members from one country was raised a while ago for a variety of reasons, including providing a means for allowing the computer professionals of a nation to be represented by a second society that is active and vital when the original **IFIP** Member society is inactive. Under the current statutes, once an organization has been admitted to Full Membership, it cannot be replaced, even if another society is or becomes the most important society in the country. This may result in a situation that is bad for the country and bad for **IFIP.** (For this reason, it behooves the Admissions Committee to carefully check to determine whether a society applying for Full Membership is the best candidate from the country.)

IFIP Member societies were asked in 1997 by **Prof. Kurt Bauknecht** (CH), then the **IFIP** president, whether they were in favor of multiple memberships. The replies were split about 50-50.

International Professional Societies

At the September 1997 GA in Canela, Brazil, **Dr. Bruce Shriver** (USA), chair of FOCUS, proposed the creation of a new category of membership: the International Professional Society. Such an organization would have a significant number of its members in multiple countries, provide its services in many countries, and have significant international representation on its governing boards. Both the IEEE-CS and ACM satisfy these criteria.

At the subsequent Council meeting, in Manchester, UK, last March, it was announced that the IEEE-CS would withdraw from FOCUS, leaving the ACM as its sole member. The majority of Council members were in favor of the admission of the ACM and IEEE-CS as Full Members of **IFIP** but uncertain whether the creation of a new category of membership was the way to do it, since these two societies were likely to be the only ones to qualify as IPSs.

This year, **Prof. Bauknecht** again wrote each Member society to ask, "...irrespective of whether you may or may not be in favor of more than one Full Member [from] your country, it would be very helpful to have your view on admitting both ACM and IEEE Computer Society as Full Members for the US." Eight out of thirteen replies were completely in favor, and an additional two were positive if the US were limited to one vote. If this had been representative of the entire GA, there would not have been enough votes (75%) to amend the statues to permit the admission of both societies, each with a vote.

At the Budapest GA

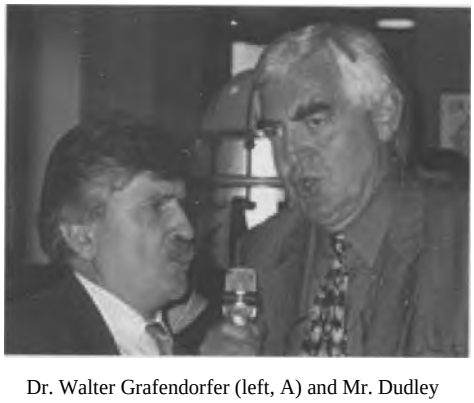
Dr. Doris Carver, president of the IEEE-CS, and **Dr. Michael Elliott,** its executive director, went to Budapest to discuss this matter with the Executive Board and the GA. **Dr. Carver** pointed out that her Society's non-US membership is expected to exceed 50% before long. She stressed the importance of considering the Society as an international society and not one with a US label. (She said that the ACM had a similar viewpoint.) Having the US label "would not be acceptable," she said.

It was made known by **Prof. Bauknecht** and **Prof. Robert Aiken,** the FOCUS representative to **IFIP,** that if the IEEE-CS and ACM were not admitted as Full Members, FOCUS would be dissolved at the end of 1998, which would leave no US Membership in **IFIP.** If, however, the two societies were admitted without being identified as US societies, FOCUS could — if **IFIP** wished so — be continued for an additional year until another US society could be found with the interest and resources (e.g., funds for dues and to support the travel of GA and Technical Committee representatives to **IFIP** meetings) to assume Full Membership in **IFIP.**

During the GA debate, it was stressed that the Full Members of **IFIP** are societies — not nations — and that GA representatives represent their societies' members rather than their countries. A question arose concerning who would represent US computer professionals in **IFIP** if the ACM and IEEE-CS viewed themselves as international societies with international memberships. A concern was voiced that if the US were no longer represented in **IFIP,** our activities "would be impoverished."

After very tortuous deliberations (at one point, it was even proposed that a vote be "recommitted"), the amendment quoted above was passed, with the required 75% vote. The GA also approved Full Membership for the two US societies, effective 1 January 1999, with the understanding that FOCUS will be dissolved at the end of 1998. Although this does not resolve all the issues raised, it does take a first step in that direction.

When this *Newsletter* went to print, both US societies had expressed their intention to apply for Full Membership effective 1 January 1999 and appoint GA and TC representatives. **Prof. Aiken** was likely to be the GA representative of the ACM and retain his office of **IFIP** vice-president.



Dr. Walter Grafendorfer (left, A) and Mr. Dudley Dolan (IRL) singing "Happy Birthday" for the 10th anniversary of CEPIS.

Calls for Papers

Twenty-fourth IFAC/IFIP Workshop on Real-Time Programming and the third International Workshop on Active and Real-Time Database Systems
13 May-2 June 1999, Schloss Dagstuhl, Saarland, Germany
papers due: 18 Dec 98
contact: Alceu Heinke Frigeri
Fern Universitaet
FB Elektrotechnik (LG IT)
D-58084 Hagen, Germany
tel: +49(2331)987 4527
fax: +49(2331)987 375
e-mail: Alceu.Frigeri@FernUni-Hagen.de

Seventh **IFIP** TC13 Conf. on **Human-Computer Interaction — INTERACT '99 (incorporating HCI '99)**
30 Aug-3 Sep 99, Edinburgh, Scotland, UK
papers due: 25 Jan 99
contact: M. Angela Sasse
University College London
tel: +44 (0) 171 380 7212
fax: +44 (0) 171 387 1397
e-mail: a.sasse@cs.ucl.ac.uk

Fifteenth **World Computer Congress (IFIP Congress 2000)**
21 –25 Aug 2000, Beijing, China
papers due: 16 Jan 2000
contact: Li Xiaoming
Dept. of Computer Science and Technology
Peking University
Beijing 100871, China
tel: +86-10-62756231
fax: +86-10-62751792

Will event organizers please send calls for papers to both the **IFIP** Secretariat and the *Newsletter* editor. Note that calls cannot be listed in this column until the events have been approved by **IFIP.** |-|

TECHNICAL COMMITTEE CHAIRMEN

ICI:	G. Ausiello	I	97-99
TC2:	R. Kurki-Suonio	FIN	97-00
TC3:	B. Samways	GB	97-99
TC5:	G. Doumeingts	F	96-99
TC6:	A. Casaca	P	98-01
TC7:	P. Kall	CH	98-01
TC8:	B. Glasson	AUS	98-01
TC9:	P. Jaervinen	FIN	96-98
TC l0:	J.-C. Laprie	F	96-99
TCI I:	B. von Solms	ZA	94-98
TC12:	B. Neumann	D	97-00
TC13:	J. Hammond	AUS	98-01

Future IFIP Meetings

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

Council	28 Feb — 4 Mar 99 (Sun.—Thurs.)	Goa, India
GA	5-9 Sep 99 (Sun.—Thurs.)	Kuala Lumpur (Cyberjaya), Malaysia
Council	5-9 Mar 2000	(decision pending)
GA	24-29 Aug 2000	Beijing, China

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS

TC1	May 99	Atlanta, GA, USA
WG1.1	Jul 99	Oxford, UK
	Oct 99	Hong Kong, China
WG1.3	13-14 Sep 99	Bonas, France
WG1.5	Dec 98	Santiago, Chile
TC2	Aug 99	Poland
WG2.2	May/Jun 99	Udine, Italy
WG2.3	Jun 99	Munich, Germany
WG2.4	Jan 99	Cape Town, South Africa
	Aug 99	Poland
	Sep 2000	Canada
	Jun 2001	Pisa, Italy
	Apr 2002	Paderbom, Germany
WG2.5	19-20 May 99	W. Lafayette, IN, USA
WG2.6	4-5 Jan 99	Rotorua, New Zealand
WG2.7/13.4	13-15 May 99	Pittsburgh, PA, USA
	Sep 99	Edinburgh, UK
WG2.8	7-12 Mar 99	Recife, Brazil
	Sep 99	France
WG2.9	Jan 99	Florida, USA
	Oct/Nov 99	Brazil
TC3	1-2 Aug 99	Irvine, CA, USA
	24-25 Nov 2000	Copenhagen, Denmark
	28 Jul & 3-4 Aug 2001	Copenhagen, Denmark
WG3.1	14 Jun 99	Haemeenlinna, Finland
	Apr 2000	Vifia del Mar, Chile
	Jul 2001	Copenhagen, Denmark
WG3.2	3-6 Aug 99	Irvine, CA, USA
	Aug 2000	Magnetic Island, Australia
WG3.3	21 Jul 99	Le Mans, France
WG3.4	Jul/Aug 99	Baltimore, MD, USA
	2000	Sunderland, UK
WG3.5	17 Jun 99	Haemeenlinna, Finland
	Aug 2000	Beijing, China
WG3.6	5 Aug 99	Irvine, CA, USA
WG3.7	Jul 2000	New Zealand
TC6	23-24 Apr 99	Copenhagen, Denmark
	29-30 Aug 99	Szentendre, Hungary
TC7	12-16 Jul 99	Cambridge, UK
WG7.5	Sep 2000	Ann Arbor, MI, USA
TC8	late Jun 99	Copenhagen, Denmark
WG8.1	20-22 Sep 99	Leiden, the Netherlands
WG8.2	10-12 Dec 98	Helsinki, Finland
	23-25 May 99	St. Louis, MO, USA
	May/June 2000	Aalborg, Denmark
WG8.6	10-12 Dec 98	Helsinki, Finland
	22-26 May 99	St. Louis, MO, USA
	April/May2000	Sydney, Australia
TC9	24-25 Apr 99	Malaysia
WG9.2	16-17 Jan 99	Namur, Belgium
WG9.3	16-17 Apr 99	Wolverhampton, UK
TCI0	30-31 Aug 99	Toulouse, France
WG I 0.3	Oct 99	Newport Beach, CA, USA
WG10.4	11-15 Jan 99	Oahu, HI, USA
	19-22 Jun 99	Lake Geneva, WI (near Chicago, IL), USA
	Jan 2000	Cape Verde
WG10.7	1-3 Dec 98	Potsdam, Germany
TC I 1	29 Sep 99	Amsterdam, the Netherlands
WG11.1 & 2	30 Sep-1 Oct 99	Amsterdam, the Netherlands
WG11.5	18-19 Nov 99	Amsterdam, the Netherlands
TCI3	Feb 99	San Sebastian, Spain
	Sep 99	Edinburgh, UK
WG13.1, 2, 3, & 5	Sep 99	Edinburgh, UK
WG13.4/2.7	see WG2.7 above	

This information is furnished to the *Newsletter* by the Secretariat. Will TC and WG chairs 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. ❑

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High Performance Networking

New!

edited by **Harmen R. van As**
Vienna University of Technology, Austria

High Performance Networking is a state-of-the-art book that deals with issues relating to the fast-paced evolution of public, corporate and residential networks. It focuses on the practical and experimental aspects of high performance networks and introduces novel approaches and concepts aimed at improving the performance, usability, interoperability and scalability of such systems. Among others, the topics covered include:

Java applets and applications;
distributed virtual environments;
new internet streaming protocols;
web telecollaboration tools;
Internet, Intranet;
real-time services like multimedia;
quality of service; mobility.

High Performance Networking comprises the proceedings of the Eighth International Conference on High Performance Networking, sponsored by the International Federation for Information Processing (IFIP), and was held at Vienna University of Technology, Vienna, Austria, in September 1998.

Contents and Contributors

Preface. Committees. Reviewers. **Part One: Broadband Internet Access;** *H. Leopold, H. Koraitim, S. Tohmé, M. Berrado, A. Brajal, J.C. Yee.* **Part Two: Multimedia Multicast;** *N. Kausar, J. Crowcroft, T. Hardjono, N. Doraswamy, B. Cain, T. Alrabiah, T.F. Znati.* **Part Three: Scalable Multicast;** *A. Youssef, H. Abdel-Wahab, K. Maly, L. Blazevic, E.Gauthier, R. El-Marakby, D. Hutchison.* **Part Four: ATM Infrastructure;** *J.L. Marzo, J. Domingo-Pascual, R. Fabregat, J. Solé-Pareta, I.Lievens, T. Cattrysse, P. Demeester, A.L. Schmidt, I. Iiadis, P. Droz,M. Baldi, D. Bergamasco, S. Gai, D. Malagrinó, J. Vila-Sallent.* **Part Five: Next Generation Internet;** *F. Baumgartner, T. Braun, P.Habegger, C. Castelluccia, D.C. Lee, S.F. Midkiff.* **Part Six: QoS in the Internet;** *D.G. Waddington, D. Hutchison, P.P. White, J. Crowcroft, Z.Wang, B. Nandy, N. Seddigh, A.S.J Chapman, J. Hadi Salim.* **Part Seven: IP/ATM Networks;** *J.-M. Robinet, Y. Au, A. Banerjea, P.Castelli, L. Guida, M. Molina, C. Song, R. Wilder, T. Dwight, C. Malcher Bastos, M. Stanton.* **Part Eight: Internet Applications;** *P.Bussotti, F. Pirri, S. Olbrich, H. Pralle, B. Li, X. Deng, M. Golin, K. Sohraby, L. Henckel, J. Kuthan.* **Part Nine: Internet Networking;** *G. Howard, J. Wechta, A. Eberlein, F. Halsall, J. Martin, A. Nilsson.* **Part Ten: Flow and Congestion Control;** *C.M. Pazos, M. Gerla, A.A.Awadallah, C. Rai, M. Frank, P. Martini, J. Karvo, M. Ilvesmäki.* **Part Eleven: QoS Routing and Scheduling;** *D. Cavendish, M. Gerla, J. Schiller, C. Xu, J.W. Wong, G.S. Kuo, P. Ko, Ch.Z. Patrikakis, S.E. Polykalas, S.S. Venieris. Index of Contributors.*

Kluwer Academic Publishers, Boston
International Federation for Information Processing
October 1998, 720 pp. Hardbound, ISBN 0-412-84660-8
NLG 440.00 / USD 195.00 / GBP 132.75

Formal Description Techniques and Protocol Specification, Testing and Verification

New!

edited by **Stan Budkowski, Ana Cavalli**
Institut National des Télécommunications France
and **Elie Najm**
Ecole Nationale Supérieure des Télécommunications, France

Formal Description Techniques and Protocol Specification, Testing and Verification addresses formal description techniques (FDTs) applicable to distributed systems and communication protocols. It aims to present the state of the art in theory, application, tools and industrialization of FDTs. Among the important features presented are: FDT-based system and protocol engineering; FDT-application to distributed systems; Protocol engineering; Practical experience and case studies.

This volume comprises the proceedings of the Joint International Conference on Formal Description Techniques for Distributed Systems and Communication Protocols and Protocol Specification, Testing and Verification, sponsored by the International Federation for Information Processing, held in November 1998, Paris, France, and is suitable as a secondary text for a graduate-level course on Distributed Systems or Communications, and as a reference for researchers and practitioners in industry.

Kluwer Academic Publishers, Boston
International Federation for Information Processing
October 1998, 488 pp. Hardbound, ISBN 0-412-84760-4
NLG 450.00 / USD 200.00 / GBP 136.00

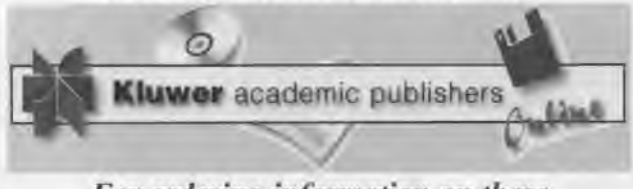
Protocol Test Systems VIII

edited by **Ana Cavalli** and **Stan Budkowski**
Institut National des Télécommunications, Evry, France

Contents

Preface. Program Committee. List of Referees. Testing methods. Test environments. Theoretical framework. Algorithms and languages. Testgeneration. Testability. Test generation 2. Industrial Applications. Distributed testing and performance. Test management. Index.

Kluwer Academic Publishers, Boston
International Federation for Information Processing
January 1996, 464 pp. Hardbound, ISBN 0-412-78110-7
NLG 370.00 / USD 180.50 / GBP 101.95



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Cooperative Knowledge Processing for Engineering Design

New!

edited by **Arthur B. Baskin,** *Intelligent Information Technologies, Inc., Urbana, IL, USA*
George Kovacs, *Computer & Automation Research Institute, Budapest, Hungary*
Gianni Jacucci, *University of Trento, Italy*

Meta-cognitive knowledge and networks are identified as the key resources enabling engineering teams to work effectively and to reduce engineering time and this book illustrates how computer support can aid cooperative work within the context of practical methodologies and examples.

The fields covered in the book include:
State-of-the-art research in cooperative learning tools; Practical examples and methodologies illustrating the implementation of cooperative networks; and An interdisciplinary approach to team engineering.

This valuable new book is sponsored by the International Federation for Information Processing (IFIP) and will be essential reading for researchers, engineers, technical managers involved in the development of advanced applications for engineering and manufacturing, and software design and engineering.

Contents and Contributors
Foreword. Preface. A. System Level Problems – Meeting Our Customer's Needs; *A.B. Baskin.* B. Cooperating Knowledge Sources; *A.B. Baskin.* C. Collaborative Knowledge Processing; *A.B. Baskin.* C1. Knowledge Capture Helps to Get It Right the First Time. C2. Time to Market Can be Reduced by Reusing Successful Solutions. C3. Simulations Embody Knowledge and Support Sharing. D. Web of Shared Understanding; *A.B. Baskin.* D1. Sharing Understanding Needs Communication Across the Web. D2. Shared Understanding Needs Semantic Relationships in the Web. D3. Sharing Understanding Requires Persistence of the Web. E. Engineering Problem Solving; *A.B. Baskin.* E1. Co-operative Problem Solving Tools Form Single User Tools. E2. Intrinsically Collaborative Support Tools. E3. Intrinsically Collaborative Products and Processes.

Kluwer Academic Publishers, Boston
International Federation for Information Processing
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Designing Effective and Usable Multimedia Systems

New!

edited by **Alistair Sutcliffe,** *School of Informatics, City University, UK*
Peter Johnson, *Dept. of Computer Science, Queen Mary Westfield College, UK*
Jürgen Ziegler, *Fraunhofer Institute IAO, Stuttgart, Germany*

Designing Effective and Usable Multimedia Systems presents research and development and industrial experience of usability engineering for multimedia user interfaces. The book discusses the methods, tools and guidelines for multimedia use and implementation.

This volume contains the proceedings of the International Working Conference on Designing Effective and usable Multimedia Systems, sponsored by the International Federation for Information Processing (IFIP), held in Stuttgart, Germany, in September 1998. It is essential reading for computer scientists, software developers, information systems managers and human scientists, especially those working in the applied disciplines such as human factors and interface design.

Contents and Contributors
Preface. 1. Multimedia Design: From Tools for Skilled Designers to Intelligent Multimedia Design Systems; *M. Wilson.* Part One: Methods, Models and Tools. 2. A Framework for Hypermedia Design and Usability Evaluation; *F. Garzotto, et al.* 3. Modeling of Hypermedia Applications with HyDev; *P. Pauen, et al.* 4. Design Support for Hypermedia Documents; *M. Apperley, R. Hunt.* 5. Developing Multimedia Principles from Design Features; *F. Nemetz, P. Johnson.* 6. Media Transformations for the Representation and Communication of Multimedia Production Activities; *S. Morris.* Part Two: Supporting Multimedia Design. 7. Finding the 'Right' Image: Visualizing Relationships among persons, Images and Impressions; *K. Nakakoji, et al.* 8. Structuring Multimedia Data to Facilitate Decision Making and Reflection in Product Design; *S. Phillips, J.T. McDonnell.* 9. Creating the Multimedia Project Experience Database; *J.-W. van Aalst, C. van der Mast.* 10. BUILD-IT: A Brick-based integral Solution Supporting Multidisciplinary Design Tasks; *M. Fjeld, et al.* 11. Combining Alternatives in the Multimedia presentation of Decision Support Information for Real-Time Control; *G. Herzog, et al.* 12. So Many users – So Many Perspectives; *B. Schonhage, et al.* 13. Developing a Multimedia Product for the World Wide Web; *L. Lisle, et al.* 14. A Feasibility Study for a Mobile Multimedia Tourist Guide; *H. Eirund, G. Schreiber.* 15. Design and Empirical Testing of a Checklist for the Evaluation of Multimedia Software for Children; *S. Duda.* 16. Performance Evaluation of Input Devices in Virtual Environments; *A. Roessler, V. Grantz.*

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NLG 320.00 / USD 140.00 / GBP 95.25

Calendar of Events

(Continued from page 16)

Event	Date	Location	Sponsored by	Org. Contact
1st Intl. Work.Conf. on Active Networks	30.6.-2.7.1999	Berlin, D	IFIP TC6	covaci@fokus.gmd.de, http://www.fokus.gmd.de/cc/ima/ iwan99, Fax: +49 30 34638171"
19th IFIP Conference on System Modelling & Optimization	12-16.7.1999	Cambridge, UK	IFIP TC7	m.j.d.powell@damtp.cam.ac.uk, Fax: +44 1223 337918
Intl. Conf. on Building University Electronic Educational Environments	3-6.8.1999	Irvine, CA, USA	IFIP WG3.2	IFIPconf@uci.edu, http://eee.uci.edu/program/ifipwg32 Fax: +1 714 8242069
INTERACT '99 - Human Computer Interaction	29.8.-3.9.1999	Edinburgh, UK	IFIP TC13	kilgour@bcs.org.uk, http://www.bcs.org.uk/hci/i99, Fax: +44 1314513327
12th IFIP Work.Conf. on Testing of Communication Systems	1-3.9.1999	Budapest, H	IFIP WG6.1	sarolta.dibuz@lt.eth.ericsson.se, Fax: +36 1 4377219
"Work.Conf.on Information System Concepts: An Integrated Discipline Emerging"	20-22.9.1999	Leiden, NL	IFIP WG8.I	alexander.verrynstuart@wxs.nl, http:// www.wi.leidenuniv.nl/~verrynst/ISCO4-f. html Fax: +31 71 5276985
FM'99: World Congress on Formal Methods	20-24.9.1999	Toulouse, F	FME, IFIP WG2.3, ACM,AMAST,FACS/BCS	db@it.dtu.dk, http://www.it.dtu.dk/-db/fm99/FM99Main/ FM99Main.html, Fax: +45 45884530"
7th Annual Work.Conf. on Information SecurityManagement & Small Systems Security"	30.9.-1.10.1999	Amsterdam, NL	IFIP WG I I.1/11.2, TNO	rossouw@ml.petech.ac.za, Fax: +27 41 5043313
IFIP TC6/WG6.1 Joint Intl.Conf.on Formal Description Techniques (FORTE XII) and Protocol Specification, Testing & Verification (PSTV XIX)"	5-8.10.1999	Beijing, PRC	IFIP WG6.1, National Natural Science Foundation of China. Chinese Inst.of Electronics	jianping@cernet.edu.cn, Fax: +8610 62785933
3rd Intl.Work.Conf. on Integrity and Internal Control in Information Systems	18-19.11.1999	Amsterdam, NL	IFIP WG11.5	strous@iaehv.nl, Fax: +31 492 548636
Work.Conf. Chile 2000-the bookmark of the School of the Future	10-14.4.2000	Vina del Mar, RCH	IFIP WG3.1, UNESCO, CONICYT, Fund. ANDES	Fax: +56 2 2392228
IFIP World Computer Congress 2000	21-25.8.2000	Beijing, PRC	IFIP	mqzhou@public.bta.net.cn. http://www.cie-china.org/ wcc2000.htm, Fax: +861 06828 3458
7th IFIP World Computer Conf. on Computers in Education	29.7.-3.8.2001	Copenhagen, DK	IFIP TC3	tf@sek.ddf.dk, Fax: +45 33 931580
Symposium on Information Control Problems in Manufacturing Technologies	24-26.9.2001	Vienna, A	IFIP TC5, IFAC	e318@ihrtlihrt.tuwien.ac.at, Fax: +43 I 50418359

A schedule of administrative meetings can be found elsewhere in this Newsletter

Calendar of Events

Event	Date	Location	Sponsored by	Org. Contact
3rd IFIP WG5.2 Work.Conf.on Knowledge Intensive CAD	1-4.12.1998	Tokyo, J	IFIP WG5.2, JSPE	tanaka@jspe.or.jp, Fax: +81 3 33670994
6th IFIP Work. Conf.on Geometric Modelling: Fundamentals and Applications	7-9.12.1998	Tokyo, J	IFIP WG5.2, JSPE	tanaka@jspe.or.jp, Fax: +81 3 33670994
3rd Intl.Work.Conf.on Diffusion, Transfer and Implementation of Information Technology	10-13.12.1998	Helsinki, FIN	Bootstrap, IFIP WG8.2/8.6, BOOTSTRAP Institute, Univ.of Oulu, Ericsson Finland, European Commission	kuvaja@rieska.oulu.fi, Fax: +358 8 5531890
Intl.Conf.on Formal Methods for Open Object-based Distributed Systems	15-18.2.1999	Florence, I	EU-DGXIII, IFIP WG6.1, EU-DGXIII, CNR-Italy	fantechi@dsi.dsi.unifi.it, Fax: +39 55 4796363
1st Work.Conf. on Software Architecture	22-24.2.1999	San Antonio, TX, USA	IFIP TC2	clements@sei.cmu.edu, Fax: +1 412 2685758
Intl.Conf.on Visual Computing	23-26.2.1999	Goa, IND	IFIP WG5.10, CSI, ICCC	mudur@saathi.ncst.ernet.in, Fax: +91 226210139
Minisymposium on Stochastic Optimization & Technical Appl.	13-15.4.1999	Metz, F	IFIP WG7.7, GAMM	kurt.marti@unibw-muenchen.de, Fax: +49 89 6004 3560
3rd ICCC/IFIP Conf.on Electronic Publishing '99 - Redefining the Information Chain-New Ways and Voices	10-12.5.1999	Ronneby, S	ICCC, IFIP TC6	peter.linde@hk-r.se, http://www5.hk-r.se/elpuh99.nsf, Fax: +46 45578137
IFIP WG8.2 St. Louis Working Conf.	22-25.5.1999	St.Louis, MO, USA	IFIP WG8.2	mjanson@umslvma.umsl.edu. Fax: +1 314 516 6827
Intl.Workshop on Quality of Service	30.5.-4.6.1999	London, UK	IFIP WG6.1, IEEE	jon@cs.ucl.ac.uk, Fax: +44 171 3871397
4th IEEE Intl. Symposium on Requirements Engineering	7- 11.6.1999	Limerick, IRL	IEEE, IFIP WG2.9, ACM	kevin.ryan@ul.ie, Fax: +353 61 202561
15th IMEKO World Congress	13-18.6.1999	Osaka, J	IMEKO, IFIP, RELA, BIPM, OIML	i90415@sinet.ad.jp, Fax: +81 3 38144699
Conf.on Communications & Networking in Education	13-18.6.1999	Aulanko, FIN	IFIP WG3.1/3.5, Univ.of Helsinki, Comp.Soc. of Finland, Min.of Education	matti.sinko@helsinki.fi, http://www.hyvan.helsinki.fi/kttk/comned99/Fax: +358 9 8574328
Workshop on User Identification and Privacy Protection	14-15.6.1999	Kista, S	IFIP WG8.5/WG9.6	gq@univie.ac.at, Fax:+43 1 4277 38449
Intl. Enterprise Modelling Conference 1999	14-16.6.1999	Verdal, N	Aker, IFIP WG5.12, ICIMS-NOE	bjorn.andersen@protek.ntnu.no, Fax:+47 73 597117
IFIP WG I 1.8 First World Conf.on Information Security Education	17-19.6.1999	Kista, S	IFIP WG11.8, Stockholm Univ., Royal Inst.of Techn.	louise@dsv.su.se, Fax: +46 8 7039025
Intl. Work.Conf. on Distributed Applications & Interoperable Systems	28-30.6.1999	Helsinki, FIN	IFIP WG6.1	dais99@cs.helsinki.fi, http://www.cs.Helsinki.F1/events/ DAIS99Fax: +358 9 7084 4.441

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IFIP Congress 2000 - 16th World Computer Congress	21-25.8.2000	Beijing, PRC	IFIP

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