IFIP newsletter

International Federation for Information Processing

Editor:
Dr. Jack L. Rosenfeld
Distributed by
CHAPMAN & HALL

Vol. 13, no. 3: September 1996

*Welcome to **IFIP** Congress '96 from President Bauknecht*

The most important single event in the IFIP program of activities is the World Computer Congress, currently held every two years. So far, 14 such Congresses have been organized by IFIP. The 13th was held in Hamburg in September 1994, the 15th is scheduled to take place in Vienna and Budapest in August and September 1998 (the 8th Congress, in 1980, was also held in two countries — Japan and Australia), and the venue of Congress 2000 will be Beijing. IFIP is delighted to return to Australia, in part to express our appreciation and recognition of the contributions Australia and the other countries of the Pacific region have made to the development of information processing.

IFIP Congress '96 and its three specialized conferences are focused on the latest developments in multimedia, information highways, intelligent systems, mobile communications, and the use of computer and communication technologies in teaching and learning. The Congress format offers a unique opportunity to all participants to discuss and contribute to subject areas having a critical impact on the use and application of information technology in the future.

The organization of an IFIP Congress is not an easy task. Since 1991, when the IFIP General Assembly selected Canberra as the site for Congress '96, preparations have been under way, with contributions from many IFIP volunteers and Technical Committees, and from IFIP as a whole. We are convinced that these efforts will result in a very successful Congress.

I take this opportunity to thank everyone who has contributed to the organization of Congress '96. In particular, I express IFIP's grateful thanks to the International Program Committee and the hosting organization, the Australian Computer Society. Last, but not least. I extend IFIP's thanks to all Congress '96 participants, wishing them an enjoyable and professionally successful stay in Canberra and hoping to see many of them in Vienna and Budapest in 1998.

Prof. Kurt Bauknecht
President of IFIP

CONTENTS

Welcome from **IFIP's** President I
Computers in Developing Countries I
Plans for Future **IFIP** Congresses 2
Prof. [hey Receives Auerbach Award 3
The Australian Computer Society 3
International Cryptographic Policies **4**
Who's Who: Prof. Kurt Bauknecht 5
Nominations Sought for Namur Award 5
IT and Teacher Education 6
Who's Who: Mr. Peter Bollerslev 6
Formal Description Techniques 7
Women, Work, and Computerization 7
IFIP Book on Ethics of Computing 8

National Abbreviations ..... I I
Future **IFIP** Meetings 12
Calls for Papers 12
Calendar of Events 16

Computers in Developing Countries

In January. **Dr. Chrisanthi Avgerau** (GB) assumed the chair of the **IFIP** Working Group on Social Implications of Computers in Developing Countries (WG9.4). In recent WG9.4 Newsletters, she has addressed the challenges facing WG9.4. Because of the significant commitment of **IFIP** to developing countries, we include some of her thoughts here:

> WG9.4 is now well established, with a large membership and ongoing communication channels through our email list and the Newsletter. The three conferences we have held so far brought together academics. practitioners. and development agencies, and fostered stimulating discussions on the relationship of information technology (IT) and development. I begin my term as chairperson with the following ambitions: to find sources of funding in order to subsidize participation of people from poor countries in our international conferences; to promote recognition of the issues of IT and Development as a multidisciplinary area of academic studies and as a professional practice; and to increase the value of the WG9.4 conferences.

continued on page 11

IFIP NEWSLETTER

Editor:

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

Published quarterly by

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

CORRESPONDENTS

TC2 R.K. DeBry (USA)
TC3 B. Samways (GB)
TC6 D. Khakhar (S)
TC7 J. Dolezal (CZ)
TC8 B. Glasson (AUS)
TC9 J.A.N. Lee (USA)
TC10 E. Dirkx (B)

Printed for **IFIP** by the courtesy of Chapman & Hall. ISSN 1024-8102

Please apply to the **IFIP** Secretariat, at the address given above, for copies of the ***IFIP*** *Newsletter* and to be added to (or removed from) the mailing list.

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

The ***IFIP*** *Newsletter* may be reprinted, translated, and reproduced, in whole or in part, except for material specifically denoted as copyright protected. Reprinting in national and local information processing periodicals is encouraged. Acknowledgement to **IFIP** would be appreciated. In order to reprint material protected by copyright, apply for permission to the **IFIP** Secretariat, giving all pertinent details.

Kindly submit material for the *Newsletter* three months before the publication date.

Please send the following **IFIP** information directly to the Secretariat: announcements of conferences, workshops, and other meetings; calls for papers; appointments to committees and other positions; and changes of address. The Secretariat is the clearinghouse for all such information, which it will forward to the *Newsletter.*

IFIP on ***the*** **Internet**

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

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

*Plans Under Way for 15th and 16th **IFIP** World Computer Congresses*

IFIP Congress '98 in Vienna and Budapest

The 15th **IFIP** World Computer Congress, in 1998, marks the first time that an **IFIP** World Computer Congress will be jointly organized by the computer societies of two Central European countries: the Austrian Computer Society together with the Hungarian John von Neumann Computer Society. The event will take place in the capitals of the host countries Vienna and Budapest, well known for their style and for being cultural centers of the Central European region. They are also centers for research and development in information technology.

Keeping in mind that information technology is not a technology of the past but one of the future, the Congress organizers have entitled it "The Global Information Society on the way to the next millennium," and the major part will cover technical, legal, and social areas important for the Information Society of the future, rather than dwelling on history.

The Congress will consist of the following seven carefully selected conferences, which will give an excellent outlook of what we can expect in the future:

- SEC '98 — Security in Information Systems
- ICCHP '98 — International Conference on Computers Helping People with Special Needs
- KnowRight '98 — International Conference on Intellectual Property Rights
- Fundamentals — Basic Research in Information Technology
- Formal Basics of Artificial Intelligence
- Teleteaching '98 — Distance Learning, Training, and Education
- Telecooperation — The Global Office, Teleworking, and Communication Tools

The conferences will be organized in close cooperation with the Technical Committees and Working Groups of **IFIP** involved in these topics.

For further information, please contact

Austrian Computer Society
Wollzeile 1-3,
A-1010 Vienna, Austria
tel: +43/1/512 02 35, fax: +43/1/512 02 359
e-mail: ifip98@ocg.or.at
WWW: http://www.ocg.or.at/ifip98.html

Congress 2000 in Beijing

IFIP Congress 2000 will be held at the turn of the millennium, in September 2000, in Beijing, China — an ancient and modern city. For more information, please contact

Mr. Mengqi Zhou
Secretariat, WCC 2000
P.O.Box 165
Beijing 100036, China
fax: 86-10-68283458, tel: 86-10-68283463
e-mail: mqzhou@public.bta.net.cn
or shaz@sun.ihep.ac.cn ▪

IFIP COUNCIL

Executive Board

K. Bauknecht	President CH	95-98
A. Rolstadås	Past-Pres. N	95-96
H.L. Funk	Vice-Pres. USA	94-97
A.W. Goldsworthy	Vice-Pres. AUS	95-98
W. Brauer	Vice-Pres. D	95-98
G.R. Fairall	Vice-Pres. ZW	95-96
G.J. Morris	Secretary GB	93-96
A. Melbye	Treasurer DK	93-96

Trustees

M. Ozeki	J	93-96
D. Dolan	IRL	94-97
D. Khakhar	S	93-96
W. Grafendorfer	A	95-98
P. Glenn	C DN	94-97
M. Gottlieb	IL	95-98
R. Johnson	GB	95-98
C. Guy	ZA	95-97

TECHNICAL COMMITTEE and SPECIALIST GROUP CHAIRMEN

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

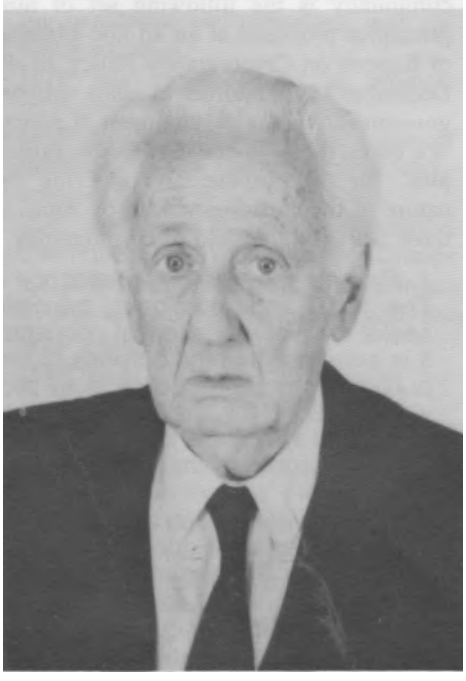
Professor Lubomir !Hey to Receive the Second Isaac L. Auerbach Award at IFIP Congress '96

The second **IFIP Isaac L. Auerbach** Award, commemorating our founding president, will be presented to **Prof. Dr. Lubomir Iliev** (BG) or his representative at the closing ceremony of **IFIP** Congress '96 in Canberra, Australia, on 6 September. The Award is presented every other year "to the individuals whose service in support of **IFIP** in its mission is deemed by their peers to be extraordinary." The recipients are nominated by Member societies of **IFIP,** and the selection is made by the **IFIP** Executive Board. A medallion and cash award are conferred.

Prof. Iliev is one of the founders of contemporary Bulgarian Mathematical Science. He played a leading role in the development of major areas of contemporary abstract mathematics: computational mathematics, software, cybernetics, mathematical modeling, numerical methods, probability theory and mathematical statistics, optimization, etc.

Academician !Hey was born in the town of Veliko Tarnovo in 1913. He graduated in Mathematics from the University of Sofia in 1934, where he received his Ph.D. in 1938. He later studied in Munich. Returning to Sofia University, he was appointed Assistant Professor of Complex Analysis in 1947 and Professor in 1952. He was also elected head of the Department of Mathematics and held the post of Vice-Rector from 1951 to 1960. He served as General Scientific Secretary of the Bulgarian Academy of Sciences from 1961 to 1968, after which he was Vice-President of that institution.

Acad. Iliev was a pioneer of Bulgarian computer science. Because of his perseverance and influence, cybernetics was officially recognized as a science in Bulgaria, and in 1961 the Bulgarian Academy of Sciences established the first computing center in Bulgaria, as part of the Institute of Mathematics at the Academy. **Acad. Iliev** was assigned the major role of first director of this center. A particularly important activity was the creation of the first Bulgarian computer. He established a team of young Bulgarian experts whose product was the first Bulgarian computer, "Vitosha."



He organized the chair of Computational Mathematics at the Faculty of Mathematics of Sofia University and proved the necessity of computer science and technology in education.

Acad. Niel/ contributed to the introduction of Bulgaria to the international computer science community. In 1955 and 1956, thanks to his efforts, Bulgaria became part of the informal cooperation of several COMMECON countries in the field of computer science. He was the first official representative of Bulgaria to **IFIP,** from 1965 to 1982, and he was President of the Bulgarian National **IFIP** Committee from 1970 to 1982. During those years, he nominated Bulgarian Technical Committee representatives to **IFIP. Acad. !Hey** also actively helped in the work of the TCs. Under his auspices and **IFIP** sponsorship, a number of workshops, symposia, and conferences were organized in Bulgaria. He was an **IFIP** vice-president from 1974 to 1977 and was awarded the **IFIP** Silver Core for his service.

Prof. Iliev is a full member of the Bulgarian Academy of Sciences, a foreign member of other European academies, and an honorary doctor of many universities. He has been a member of the governing bodies of various scientific organizations: President of the Balkan Mathematical Union (1974-77), President of the Scientific Committee of the "S. Banah" International Center in Warsaw (1972-1977), and a member of the International Institute on Applied System Analysis governing body in Vienna (1972-1975).

IFIP is pleased to confer the second Isaac L. Auerbach Award to a notable scientist who has served **IFIP** with distinction. ■

Welcome from the Australian Computer Society

The Australian Computer Society (ACS) was established in 1966 and boasts a membership of over 16,000. The principal object of the ACS is to advance professional excellence in information technology. The ACS engages in a wide range of activities, both at the branch and national levels, giving members the opportunity to participate (at reduced rates) in conferences, seminars, workshops, meetings, and other activities, enhance their knowledge, exchange information, and hear from leading figures in the information technology (IT) sector.

The ACS also conducts a certification program, which gives professional members of the Society the opportunity to test their professional knowledge against a defined benchmark and, if successful, to have their achievement recognized.

Each member receives a monthly magazine, providing information on the latest developments in IT, and the quarterly *Australian Computer Journal,* an archival journal of research papers. Members also receive the publications of their local branches. Members have access to professional-indemnity and income-protection insurance plans specially tailored to IT professionals and can join a credit card rewards program offered by a major bank.

In 1994, the ACS introduced Internet access to its members at a reasonable charge. Two major Internet service providers are available.

The ACS recognizes that one of the benefits of **IFIP** membership to ACS members is the opportunity it gives the ACS to attract professional development events; thus, the Society is looking forward to hosting the 1996 **IFIP** Congress in Canberra, as well as the **IFIP** General Assembly that will follow. ■

TC11 Strives for International Awareness of Cryptographic Policies

At its May 1996 meeting in Samos, Greece, the **IFIP** Technical Committee on Security and Protection in Information Processing Systems (TC I I) unanimously expressed the importance of promoting international awareness of cryptographic policy. This concern arose because of the current activity of the OECD (European Organization for Economic Cooperation and Development), as described in the following press release issued by the OECD in May:

OECD EXPERTS BEGIN DRAFTING CRYPTOGRAPHY GUIDELINES

Cryptography experts from OECD countries have begun drafting a proposal for OECD Cryptography Policy Guidelines that governments can use as a guide to formulate their national policies on encryption. Many governments are under pressure within their own countries to develop a national position on cryptography, which is used in computer technology to protect everything from product designs to health and tax records and global correspondence. But the needs of global technologies and applications require an international — rather than a strictly national — approach **to** policymaking. The fast-paced development of the Global Information Infrastructure adds an element of urgency.

The business community, individuals and national security and law enforcement agencies are all pressing for encryption guidelines, and the OECD will strive to reflect the legitimate interests of all these groups as it drafts Guidelines. The private sector is closely involved in drafting the Guidelines, with business representatives from the Business and Industry Advisory Committee (BIAC) participating at the meeting.

The OECD meeting, which took place on 8 May, was hosted by the US Department of State in Washington, D.C. It was held immediately after a Second Business—Government Forum on Global Cryptography Policy in Washington, D.C., on 7 May, which was co-sponsored by the OECD, the International Chamber of Commerce (ICC) and the BIAC to the OECD. Two similar conferences took place in Paris in December [1995], when OECD countries and business representatives met for the first time to discuss international cryptography policy.

The process of drafting the OECD Cryptography Policy Guidelines will continue at an experts' meeting in June and is due for completion in early 1997.

The TC11 Role

With the OECD plan in mind, TC1 1 asked its national representatives to inform their national societies about the ongoing effort and the state of the discussion. The **IFIP** Member societies should, in this way, be in a position to engage in national discussion. **Dr. Reinhard Posch** (A), vice-chairman of TC11, accepted the task of distributing information and eventually producing a summary of the state of the international discussion. Among the documents he has distributed to the TC11 community is the following set of nine principles proposed at an ad hoc Meeting of Experts on Cryptography Policy 18-19 December 1995, in order to assist national governments in the development of policy. We quote these so-called "Herron Principles" for the purpose of conveying the nature of the concerns voiced by some of those active in the field of cryptography.

1. Provide security with confidence
The first and dominant principle seeks to link two essential concepts. It is axiomatic that the purpose of any public cryptography policy is to provide security for the messages or other data which are to be protected. Whilst recognising that no security is 100 percent perfect, it is essential that any cryptographic technique that is made available for general use should meet a standard (not necessarily formal) which is generally believed to be adequate for the purpose, especially as regards the strength of the underlying algorithm, its mode of use and the associated key management. Confidence in such techniques, as well as the security that they provide, may be derived in many ways, but the well-established approach of independent third-party evaluation of products and systems, against agreed criteria and methods, appropriately certified, will encourage trust in the security services which are subsequently provided.

2. Voluntary use
The trust which Principle 1 seeks to encourage is likely to be achieved only if users of cryptographic techniques are not restricted to techniques which are provided or defined by governmental agencies. Users should be free in principle, and always subject to national law, to use whatever cryptographic techniques they choose, including those provided for general use. It is likely that greater trust will be placed in cryptographic services which are clearly perceived to be a matter of voluntary user choice rather than simply mandated by national security or law enforcement authorities.

3. Market driven
The provision of cryptographic services and the development of the associated products should be based primarily on the commercial judgment of business and industry. It is assumed that the demand for such products and services will grow and that companies will rise to the challenge to supply them. This process should form part of the normal way in which the market in Information Technology products and services is driven and not be artificially forced by either government mandate or restriction.

4. Open and non-discriminatory
The "Market Driven" provision of such services should not be limited because the specifications of the techniques, protocols or interfaces are kept secret or are available only under restrictive licensing arrangements. Equally, subject to meeting the agreed criteria, any organisation that so wishes should be able to offer the range of services without discrimination.

5. International perspective
In the Global Information Society, it is increasingly clear that the provision of solutions which are solely national in character will not be taken up by users and therefore will not contribute towards either the development of international trade in or the availability of trusted cryptographic services. Acceptable solutions will thus need to take an international perspective so that secure communications are potentially available across national borders. This principle is especially critical as a complement to the protection of essential national interests embodied in Principle 6.

6. Recognises national responsibilities
Individual Nation States have a sovereign responsibility both for their own law enforcement and the protection of national security. The wider use of cryptography is perceived by some to be potentially detrimental to these interests. Thus any provision of cryptographic services must work in sympathy with the relevant national requirements. Whilst these requirements are vital, Principle 6 also recognises that they must be placed in proper balance with the requirements of Principle 1.

7. Technically effective (perhaps feasible?)

continued on page 12

*Who's Who **in IFIP:** Professor Kurt Bauknecht*

Professor Kurt Bauknecht, president of **IFIP,** was born in Zurich and received his education there. (His photograph can be found on page 1.) The Federal Institute of Technology awarded him the B.S. and Ph.D. degrees in Electronic Engineering in 1960 and 1966, respectively. Between those years, he worked as a development engineer in the computer industry in Paris. After receiving his Ph.D. degree, he served as a Senior Research Associate at the University of Zurich, where he was appointed Associate Professor of Computer Science in 1970 and Full Professor in 1973. He is presently Director of the Departments of Computer Science and Computing Services. He served as Dean of the faculty from 1984 to 1986. Since 1971, he has also been Lecturer at the Business University of St. Gallen. In 1993, he was named honorary professor of the University of Vienna.

Prof. Bauknecht's professional interests are focused on information management and security **in** information processing.

He has been president of the Swiss Federation for Informatics, the Swiss Member society of **IFIP.** He is currently president of the Informatics Conference of Swiss Universities, a member of the Swiss Research Council, a member of the board of the Swiss Academy of Technical Science, and president of the expert committee of the Swiss Informatics Priority Research Program.

His activity in **IFIP** dates back to 1974, as the Swiss member of various Technical Committees (TC4, TC7, and TC8). Since 1985, he has served as the Swiss representative to the GA. He was elected trustee in 1990 and vice-president for technology and finances in 1992. He also chaired the Technical Assembly (TA) from 1992 to 1995.

When not engaged in professional activities, **Prof. Bauknecht** enjoys skiing, mountain climbing, and hiking. He is also a frequent visitor to opera houses around the world.

Prof. Bauknecht's Goals for IFIP

In presenting his goals for **IFIP, Prof. Bauknecht** makes the following points:

- **IFIP** should be an open society, working worldwide and interacting with national societies.
- **IFIP** has an obligation to promote technology transfer.
- **IFIP** should participate in the fusion of information and communication technologies.
- The Technical Assembly, Technical Committees (TCs), and Working Groups are at the center of **IFIP,** and their activities must be intensified. These are **IFIP's** product.
- **IFIP** must increase collaboration between TCs and Affiliate Members.
- **IFIP** should promote the improvement of electronic communication among Member societies.
- **IFIP** should both consolidate its operations and remain very innovative.
- **IFIP** should enhance the services offered by the Secretariat in Laxenburg, Austria.

In outlining the challenges facing **IFIP** to the March 1996 Council, he stressed the following actions:

- creating stronger links with our Member societies and providing extended services to the **IFIP** community
- offering consultancy and advisory missions to Members and international organizations on issues that fall within the scope of **IFIP** activities
- creating further transparency in IFIP's operations by simple and clear guidelines concerning **IFIP** activities
- emphasizing the need for links between events, publications, and project development
- continuing the stress on securing a stable financial environment for **IFIP** technical operations
- addressing "hot topics" in the information technology (IT) field on which the **IFIP** General Assembly, on behalf of its Members, should disseminate statements, press releases, and recommendations.

IFIP's Role

In his opening address to the second UNESCO Congress on Informatics and Education, which took place in Moscow in July, **Prof. Bauknecht** characterized **IFIP** as the leading, truly international, apolitical organization that encourages and assists in the development, exploitation, and application of IT for the benefit of all people. **IFIP** helps to bring together professionals at the leading edge of practice and experience and acts as a catalyst to advance the state of the art.

He also drew attention to the information server **IFIP** is building, which will greatly facilitate the internal and external **IFIP** information flow. The system will especially serve the needs of developing countries and respond to other requests for information, participation, and support. ■

Nominations Sought for the Fourth **IFIP** WG9.2 Namur Award

*by Ms. Diane Whitehouse (GB) **

The **IFIP** Working Group on Computers and Social Accountability (WG9.2) now solicits nominations for its fourth Namur Award. The Award, created in 1991, is given every two years to an individual, group, or association for their outstanding contribution, with international impact, to the awareness of the social implications of information technology. Recipients' contributions can constitute a publication, design, lecture, project, action, or some other achievement in the spirit of the Award.

The recipient receives a commemorative plate and a certificate at a special celebratory meeting of WG9.2 in Namur, Belgium, hosted by the city's dignitaries.

Former recipients are **Prof. Joseph Weizenbaum** (M.I.T., U.S.A.), **Dr. Riccardo Petrella** (head of the European FAST programme), and **Mr. Carlos-Alberto Afonso** (representative of the Alternex Community, Brazil). Details can be found on page 3 of the June 1996 ***IFIP** Newsletter.*

If you know of a person, group, or association worthy of this Award, please submit your entry promptly to

Prof. Jacques Berleur
1nstitut d'Informatique
Facultès Universitaires Notre-Dame de la Paix
Rue Grandgagnage, 21
5000 Namur, Belgium
tel: +32 81 72 49 76, fax: +32 81 72 49 67
e-mail: jberleur@info.fundp.ac.be

Entries should be received *before November 1, 1996.* The entry should include the nominee's name and details, the reasons for the nomination, and any supporting documentation, as well as the submitter's

continued on page 10

- former secretary of WG9.2

Information Technology: Supporting Change through Teacher Education

*by Mr. Brian Samways (GB) **

At the end of June, in Kiryat Anavim, west of Jerusalem, the **IFIP** Working Groups on Elementary and Secondary Education (WGs 3.1 and 3.5) held a joint conference entitled Information Technology: Supporting Change through Teacher Education. This was the first time these WGs have met in the Middle East. **David Benzie** (GB) was chair of the International Program Committee and **Yaacov Katz** (IL) of the Organizing Committee. The 70 attendees, with exclusive use of the hotel where they met, had the opportunity to discuss and question over 40 presentations from 18 different countries — from Norway to New Zealand and China to Canada. Although it was a diverse group with differing backgrounds, delegates worked successfully and "bridged the research and practitioner communities."

* TC3 secretary and ***IFIP*** *Newsletter* correspondent

Much of the discussion on teacher education revolved around the changes needed in pedagogy as well as information technology (IT) usage. With one speaker reporting that less than 10% of teachers make use of IT and another that over 70% of pupils prefer to use a computer at home rather than school, it was clear there was need for change. Much time was spent discussing professional development, the limitations of assisted hardware-purchase schemes for schools, and what role the Internet should play in education. On this last point, it was felt that many politicians and service providers are presenting unrealistic images of its use in education.

Focus Groups On Line

Of particular significance were the "focus groups," which met on several occasions throughout the week and continued the professional reports that the WGs had produced at the 1995 World Conference on Computers in Education (see the December 1995 *IFIP Newsletter).* An added variation this time was the on-line conference set up prior to the event (the list server was actually in Australia), where non-attending WG members were kept up-to-date and were able to make contributions overnight for the focus groups to include the next day. One outcome from these groups is expected to be the next publication in the WG3.1 *Guidelines for Good Practice* series of booklets.

All 43 papers are to be included in the post-conference proceedings, edited by **Don Passey** (GB) of WG3.1 and **Brian Samways** (GB) of WG3.5 and to be published by Chapman & Hall. The conference was sponsored by UNESCO, Aleph ad Taf Ltd., Computerstore Ltd., Bezek Telecom, and Bar-Ilan University.

Who's Who in IFIP: Mr. Peter Bollserslev

Mr. Peter Bollerslev, chair of the **IFIP** Technical Committee on Education (TC3), was born in Copenhagen in 1936 and has lived his entire life in Denmark, primarily in Copenhagen. After serving in the Danish army for two years, he studied education, receiving his degree in 1959. He worked as a teacher at the Experimental School in Copenhagen from 1959 to 1961 and, at the same time, as a lecturer at the Emdrupborg College of Education. He also studied psychology and mathematics at the University of Copenhagen (1957-1962). He was a lecturer at the College of Education in Aalborg from 1962 to 1980 and since 1980 has been a principal lecturer at N. Zahle College of Education in Copenhagen. **Mr. Bollerslev** served as Her Majesty's Inspector in the Danish Ministry of Education for Mathematics and Informatics in Teacher Education (1970-1987), and since 1987 he has been a General Inspector in the Ministry of Education. Since 1990, he has been the Director of the Center for Applied Informatics in Teacher Education and has participated in numerous committees on mathematics and informatics in the Ministry of Education. In 1993, he was instrumental in organizing the Seminariemes BrugerServiceCenter, which provides support for the administrative and educational use of information technologies to schools of education, physical therapy, occupational therapy, and ergonomics.

Mr. Bollerslev has worked with and prepared reports for the Organization for Economic Cooperation and Development, UNESCO, and the Nordic Council of Ministers. He is also the author or coauthor of approximately 250 textbooks in mathematics and informatics for schools and teacher education.

He has been a member of the Danish Data Association for many years and has been a very active member of its Education Committee for a long time.

He joined **IFIP** as a member of Working Group 3.1 (Informatics in Secondary Education) in the mid 1970s and was its chairman from 1985 to 1990. Since 1978, he has been the Danish representative to TC3. After having served as vice-chairman of TC3 for a couple of years, he became chairman in 1991. His term expires at the end of 1996, but he will remain with **IFIP** as the Danish member of the General Assembly, succeeding **Mr. Aage Melbye.**

The next **IFIP** World Conference on Computers in Education, WCCE 2001, will take place in July in Copenhagen, and **Mr. Bollerslev** has accepted the position of conference chairman.

Peter Bollerslev has four children from two marriages. His son, Tim, is a professor of economics at Jefferson University in Charlottesville, Virginia. His oldest daughter, Anne, is a journalist who recently worked for a radio station in San Salvador but is now back in Denmark, working for a newspaper. The middle daughter, lo, is stage-struck, eagerly trying to obtain admission to the Danish Theater School. The youngest daughter, Mette, is still at home and beginning upper secondary school. **Peter** now lives with Hanne, who is an editor of talking books for Gyldendal Publishers.

In his spare time, he likes to read, play bridge and golf, and travel. He enjoys spending his holidays in France and at his summer cottage on the small Danish island of Lase. He also loves good food

continued on opposite page

Conference on Formal Description Techniques

The IFIP Technical Committee on Communication Systems (TC6) and its Working Group on Architecture and Protocols for Computer Networks (WG6.1) announce the merging of two hitherto separate conferences, FORTE and PSTV, into a joint conference to be held 8-11 October in Kaiserslautern, Germany. FORTE/ PSTV'96 will address formal description techniques (FDTs) applicable to communication protocols and distributed systems. The conference will be a forum for the presentation of the state of the art in theory, application, tools, and industrialization of FDTs, and will provide an excellent orientation for newcomers.

The conference will offer 24 research papers, 4 industrial usage reports, 5 tutorials, and a number of tool demonstrations. Invited talks will be given by **Andre Danthine** (B), **Manfred Broy** (D), **Ed Brinksma** (NL), and **Lothar Mackert** (D). Tutorials will be held 8 October. Tool presentations will take place in parallel with the conference presentations 9-11 October. Participants will receive the final proceedings, published by Chapman & Hall, at the conference.

FORTE/PSTV'96 is being organized by the University of Kaiserslautern and sponsored by **IFIP** TC6/WG6.1. Financial supporters are Deutsche Forschungsgemeinschaft, Siemens, Deutsche Telekom, SUN Microsystems, Q-Labs, and the Stadtsparkasse Kaiserslautern.

For further information, please contact

Jan Bredereke
University of Kaiserslautern
P.O. Box 3049
D-67653 Kaiserslautern, Germany
tel: +49 631 205-3287 or 3426
fax: +49 631 205-3956
e-mail: forte.pstv96@in formati k. un i -kl.de
URL: http://www. i n format i k .uni-kl.de/aggotz/ forte. pst v96

Conference on Women, Work, and Computerization to be Held in Bonn

The **IFIP** Working Group on Computers and Work (WG9.1) announces the sixth International Conference on Women, Work, and Computerization, to be held 24-27 May next year in Bonn, Germany. This series of conferences has a tradition of interpreting the word "computerization" not just in the narrow sense of computing systems, but also in a broader sense that includes the organizational and social context in which computer systems are designed and used. WWC 97, the latest **IFIP** conference on this topic, is being organized by the Special Interest Group on Women's Work and Informatics of the German Member society of **IFIP** and is co-sponsored by the German National Research Center for Information Technology.

The theme of WWC 97 is Spinning a Web from Past to Future. Papers will discuss how different areas of society are being transformed by computer technology, with particular emphasis on changes in women's work and life and how these have come about. Such transformations include transition from women's traditional work to work based on modern technology, from communicating within personal communities to communicating within virtual communities, and from traditional job roles to new perspectives on "who does what."

The International Program Committee plans presentations of both empirical and theoretical research. International perspectives will be particularly stressed. Several different types of contributions are planned: regular papers, discussion notes, posters, tutorials, videos, and demonstrations of software. In addition, worldwide teleconferencing sessions are planned. Contributions will include the following topics:

- *Information Society, Multimedia, and Networking*

Can women's desire for interpersonal *net*working be realized by new information technology (IT)? How can multimedia and telecooperation be used successfully in order to improve women's living and working conditions? What is the impact of the transiency and changeability of electronic artifacts?

- *Creating Models and Tools*

Which aspects of feminist perspectives can be integrated into informatics? Which paradigms and metaphors have contributed to the construction of computer (software) and the theory of computer science? Do they exclude women? How should computer systems be designed to consider the requirements of women, e.g., user interfaces?

- *Labor and Living*

Technical and social/political chances for flexible time-management; what are the restrictions? No more jobs without IT-knowledge? Global division of labour: on the way to equality?

- *"Herstory"*

Has feminist criticism of IT changed women's strategies for gaining access to and influencing new technologies? Can women's influence be recognised in formative processes of informatics?

- *Philosophical and Sociological Aspects*

Is it possible to identify an attitude that is specific only to women in their use of technology? What implicit strategies in the information society can be identified that exclude women from important political, cultural, and social contexts? What happens to a gendered language in human-computer interaction and in computer-mediated communication?

WWC 97 will also provide a special opportunity for women working in computer science to meet and share experiences. Contributions written only by women will describe individuals' contributions to computer science research. (Contributions by both women and men are sought for all other Conference topics.) The authors will explain why they chose this field of work and whether there are any specifically female points of view and contributions which are relevant. They will also discuss the consequences of their work for women.

For further information, please contact

IFIP—WWC97
c/o Doris Koehler
Hamburg University Computer Centre
Schlueterstr. 70
D-20146 Hamburg, Germany
fax: +49 +40 - 4123-6270
e-mail: **IFIP** WWC97@rrz.uni-hamburg.de
URL: http://www.uni-hamburg.de/ frauen/ fi rst.htm

BOLLERSLEV continued from prior page

and wine. He enjoys cooking and has a wine cellar with several hundred bottles of excellent wines.

Mr. Bollerslev's vision with regard to **IFIP** is that the Federation will take a leading position in the future and become *the* international IT (information technology) organization which, in cooperation with UNESCO and other international organizations, will develop and disseminate information about developments and fruitful initiatives in education about IT and with IT, useful to both developed and developing countries. Such engagement will of course be of great benefit to the Member societies of **IFIP.**

IFIP Publishes Book on Ethics of Computing from an International Perspective

On 1 May, **IFIP** published *Ethics of Computing; Codes, Spaces for Discussion and Law,* edited by **Profs. Jacques Berleur** (B) and **Klaus Brunnstein** (D). The book, published through the **IFIP** publisher, Chapman & Hall (see the advertisement on page 13), views ethics from an international perspective. This represents the latest step in a project begun in 1988, when **Prof. Harold Sackman** (USA), then chairman of the **IFIP** Technical Committee on Relationship between Computers and Society (TC9), undertook to create an **IFIP** code of ethics. The work was later assumed by a task group of TC9 chaired by **Prof. Berleur,** culminating in the publication of this book. **Prof. Brunnstein** was chairman of TC9 during most of the period during which the task group worked.

Ethics of Computing represents the first attempt to confront, on a world-wide basis, the way computer associations face up to their social responsibilities in an age increasingly dominated by information and communication technology. Major chapters of the book are

- Codes of ethics, or of conduct, within **IFIP** and other computer societies — by Jacques Berleur (B) and Marie d'Udekem-Gevers (B)
- Codes of ethics: discussion paper — by Jan Holvast (NL)
- Why a discussion on ethical issues in software engineering is overdue — by Klaus Brunnstein (D)
- A brief history of professionalism and its relevance to **IFIP —** by Richard Sizer (GB)
- Policies of acceptable use at educational and research institutions — by John W. Corliss (USA)
- Integrating social, ethical and equity issues of informatics into secondary education — by Tom J. van Weert (NL)
- Ethics and systems design: the politics of social responsibility — by Andrew Clement (CDN) and Ina Wagner (A)
- Other contributions from **IFIP** Member societies and Working Groups

Approximately 40% of the book comprises the text (in English) of codes of ethics and conduct of 30 computer societies, and commentary on the major codes. In addition, the chapter by **Berleur** and **d'Udekem-Gevers** presents an analysis of the codes and guidelines, in terms of topics covered, wording, groups involved (e.g., employers, employees, students), sanctions, and many other areas. An appendix provides means of locating topics in the various codes. The book also contains an extensive bibliography, in addition to the bibliographies of the individual chapters.

We quote here some of the more interesting sections of the book. In his chapter, **Dr. Holvast** discussed general aspects of ethics. He introduced it as follows:

> At long intervals, the same question is raised: Are we (technicians, scientists, and users of technology) responsible for the problems that are caused by the introduction of technology? The answers given are not uniform, but the fact that the question is raised shows that we are beginning to realize that our technology is capable of not only constructing the world but destroying it as well. ...
>
> At this moment, this question is not only raised, but an answer is also expected. Very often, ethics are looked at with the full expectation of containing the answers. Through this, it is expected that norms in science, and solutions, be formulated as ethical codes. The same types of problems and questions are raised in relation to information technology. In this field, too, the demand for codes is increasing.
>
> In this paper, we go more deeply into detail on ethical norms and the possible solutions, such as ethical codes and codes of conduct, but specifically into the responsibilities that should be accepted in reference to a broad range of topics.

With regard to an **IFIP** code of ethics, **Dr. Holvast** commented as follows:

> For an international organization like **IFIP,** formulating a code acceptable for all Members will be an impossible task. There is clearly a certain ethical relativist thinking behind the following comment: It is impossible to formulate an ethical code for once and for all. Cultural and, especially, political differences make this impossible. Although I agree in some sense with this type of criticism, ethical relativist thinking is, in my opinion, strongly related to one of the ethical theories, consequentialism. The way in which the results (in this case, information technology) are seen depends on the cultural and political situation in various countries. In this sense, there are differences between developed and developing countries, between East and West, between democratic and less democratic societies — all of them possible Members of IFIP. This situation is even more problematic when one considers that Members of **IFIP** are not individuals but primarily national scientific or technical societies.
>
> This does not mean that **IFIP** should do nothing. It only means that it is impossible for the 1990 *Draft* ***IFIP*** *Code of Ethics* to be accepted. **IFIP** needs general principles that will be accepted by all national societies. In my view, these principles must consist of deontological [i.e., related to the theory of moral obligation — Ed.] statements. One of the statements might be the suggestion that every national society produce a national Code of Ethics, taking into account what has already been discussed by many national constituencies.

Much of the discussion in the book concerns professionalism. In his chapter, **Prof. Brunnstein** cited a number of fatal or otherwise serious incidents attributed to improper system design (aircraft crashes, autopilot malfunctions, radiation overdoses, accidental shooting of civilian aircraft, breeches of computer security). **Eur. Ing. Sizer** also concentrated on professional standards.

In concluding their comparative analysis of codes, **Berleur** and **d'Udekem-Gevers** wrote the following:

> Codes do not pretend to solve all questions, but they may help to create awareness, supplement the law, and reinforce ethical behaviour. When the role of self-regulation increases, the roles of ethics, law, and codes have to be more carefully scrutinized, but they may lean on each other. Codes offer a "framework on ethics" that may help to maintain openness and fuel the needed dialogue in the "spaces of discussion."

In the foreword, **Profs. Berleur** and **Brunnstein** wrote

> **IFIP** has opened "space for discussion," creating a Special Interest Group (SIG9.2.2 on Framework on Ethics), which will, in particular, analyze issues and conflicts that may arise in the cooperation between **IFIP** Member societies with different codes of ethics. It aims at improving understanding and formulating ethical issues. But it will also increase international cooperation which, in specific questions such as personal liberties and privacy or in the domain of security, has proven valuable in providing general guidelines now enacted into law in many countries.

SIG9.2.2 has assembled a list of contact persons from **IFIP** Member societies and other organizations, in order to fulfil its

mandate. Others who wish to participate are encouraged to contact the chairman:

Prof. Jacques Berleur
Institut d'Informatique
Facultés Universitaires Notre-Dame de la Paix
Rue Grandgagnage, 21
5000 Namur, Belgium
tel: +32 81 72 49 76, fax: +32 81 72 49 67
e-mail: jberleur@info.fundp.ac.be

The book closes with a section of **IFIP** recommendations. We quote from it extensively here:

What Can **IFIP** Do?

IFIP does not intend to provide its Member societies with precise guidelines for codes, but to advise them to consider the recommendations outlined below when writing or updating their own codes. **IFIP** cannot actually state what "ethics" the Member societies should espouse. It can, however, outline certain principles that all might want to consider and take account of in their codes.

In accordance with the diversity of histories, cultures, and social and political backgrounds of **IFIP** Member societies, **IFIP** regards it as essential that, when wanted or needed, codes of ethics or of conduct (or guidelines) should always be developed and adopted within the Member societies themselves. **IFIP** offers its expertise in assisting such developments, collecting and disseminating material about established codes, and organizing international debates on further developments.

Today, certain people who have been working for a long time on this issue think that "the rules of conduct have to reach beyond the well-structured body of computer scientists to the larger circle of computer users. We must shift from a deontology of informaticians to an objective deontology of informatics under the control of the law." From this perspective, codes are seen more as preparing for the law or specifying it than as self-regulatory instruments, and are written to address a large audience.

Main Topics of the Codes

Five main topics are developed in nearly all of the thirty codes:

Respect
This includes respect for the interests or rights of the people involved, for the prestige of the profession, for the interests or rights of the public, for the welfare and health of the public, and for the quality of life. Sometimes it also includes respect for the reputation of the computer society, for the quality of life of the people involved, for the public in general, for the environment, and for the differences of the public.

Personal (or institutional) qualities
These include conscientiousness, honesty, positive attitude, competence, and efficiency. In practice, the terms "conscientiousness" and "honesty" are frequently encountered under the expressions "acceptance of responsibility" and "integrity." Moreover, appeals to "respect for requirements or contracts or agreements" and to "conscientious work" are also frequent. Other topics relating to "conscientiousness" and "honesty" are "professionalism," "credit for work done by others," "good faith or goodwill," "concern to meet overall objectives," and the "courage of one's convictions."

With regard to "competence" and "efficiency," two other terms are very common: "professional development and training" or "limitation of work to the field of competence." Two others are also worth noting: "general competence" and "effectiveness" or "work quality."

Information privacy and data integrity
"Confidentiality" is required by nearly all the general codes of the **IFIP** societies. "Privacy in general" and "respect for property rights" are appealed to quite often. Four other topics, "no computer crime," "no information piracy or misuse," "data integrity," and "data minimization," are less frequent.

Production and flow of information
"Flow of information to involved parties or people" is required by the majority of the codes. "Information to the public" is also insisted upon. Half the set of codes call for "comprehensive information." Several codes also ask for the "production of tests, evaluations, results, or specifications" or for the "flow of information from the involved parties or people."

It should be noted that "information privacy" and "free flow of information" may become contradictory. Between the two concepts, some balance has to be found.

Attitude towards regulations
"Regulations" do not appear as a major theme. Less than half the codes require "respect for the code," "respect for the law," and "respect for IT and professional standards."

Few codes refer to "development of standards," of the "law," or of the "code itself"; some consider "sanctions" against a breach of the code. Regulation of the code itself is often taken into account outside the code, and is therefore considered in the section on procedures.

Computer-Specific Ethical Issues

Computer-specific ethical issues arise as the result of the roles of computers such as

• *repositories and processors of information* Unauthorized use of otherwise-unused computer services or of information stored in computers raises questions of appropriateness and fairness.

• *producers of new forms and types of assets* For example, computer programs are entirely new types of assets, possibly not subject to the same concepts of ownership as other assets.

• *instruments* To what degree must computer services and users of computers, data, and programs be responsible for the integrity and appropriateness of computer output?

• *symbols of intimidation and deception* The images of computers as thinking machines, absolute, infallible truth producers, and replacements of humans who err should be carefully considered.

Other computer-specific ethical issues include

- computer crime and security problems
- computer theft and piracy, and intellectual property rights
- hacking and viruses
- lack of reliability of information systems and quality problems
- data storage and privacy
- artificial intelligence and expert systems
- computerization of the workplace.

The reader of the individual codes will observe that a very small amount of text is devoted to these computer-specific issues (CSIs). For example, the code of ethics and professional conduct of an association of information-service-industry companies makes only one reference to a CSI, as follows: "Member companies should strictly abide by the law and any contracts entered into regarding intellectual property rights." Note that this item only cautions the members to obey the law. Some topics do not appear in the codes at all, e.g., computer viruses and the use of computers to disseminate socially undesirable information. Most of the concerns of the 30 codes would be expected to be addressed in the codes of any profession: respect, conscientiousness, honesty, etc. Even some CSIs are treated in a manner that might well be appropriate to other professions. For example, one

continued on next page

NAMUR AWARD continued from page 5

name, address, and contact information. All submissions, discussions, and votes relating to the Award are kept strictly confidential.

WG9.2 looks forward to receiving many noteworthy submissions, and to the pleasure of acknowledging, for the fourth time, a distinguished contribution to this particularly important field of awareness within the domain of IFIP's work.

Mr. Carlos-Alberto Afonso (right) receives the 1995 Namur certificate from Prof Jacques Berleur. WG9.2 chairman.

Mr. Carlos-Alberto Afonso unwrapping Award.

ETHICS CODES continued from p. 9

code discusses confidentiality as follows: "The information scientist should treat data, obtained within the framework of the assignment, confidentially and may only use these for the purpose for which they were given. ... It is ethically irresponsible towards people and institutions to use these data for other purposes than they were supplied for, or to treat them carelessly so that a third party could use or abuse these data." The same statement would be appropriate for codes of ethics of physicians, lawyers, or bankers, for example. Significant treatment of CSIs is difficult to find anywhere in the codes.

The recommendation section of the book continues as follows:

Broader Ethical Issues

When speaking of computer ethical issues, one cannot avoid mentioning some broader-scope issues that are real questions today and are most often examined in the literature on computers and society.

- the unequal distribution of information ("information rich/poor," the "haves" and "have-nots")
- the unequal access to the technology, including networks
- the participation in decisions that affect our lives at home and work
- the way computer technology reinforces predominant power
- the quasi-total lack of control on the networks
- the denial or restriction of access to groups and individuals who do not have the resources to participate in an increasingly market-dominated system
- the poor cultural diversity that today pervades the information, media, and communication systems
- the necessity of promoting culturally sensitive and multi-cultural issues and involving cultural minorities in the design of socially-significant information and communication systems.

Spaces for Discussion

One of the main tasks for **IFIP** will be to create "spaces for discussion." This could be done through actions such as

- submitting, through the ***IFIP*** *Newsletter,* for instance, case studies and encouraging Members to submit their responses
- making available all the up-to-date codes of **IFIP** national societies, with pointers to existing documentation for further research
- publishing "the codes that have been favourably received"
- providing some forum, under the chairmanship of the **IFIP** president, where discussion could be raised about harmonizing codes of societies, in order to prevent restrictions in one country being prejudicial to another
- participating in international fora where similar questions are treated
- assisting in the resolution of conflicts that could arise between national codes that are completely different.

Therefore, **IFIP** will collect, compare, and help disseminate knowledge on developments in the national societies. In the case of controversies, it will also advise on the resolution of problems in projects with professionals from countries that have very different codes.

IFIP hopes that its national societies will issue codes or guidelines along the lines suggested here, including a careful and flexible attitude to changing technology.•

COMPUTERS IN DCs cont. from p. I

Without being able to cover the expenses of participants from developing countries who cannot pay, our conferences cannot reach the audience they are intended to reach. Despite the frustration of poor response to fund-raising efforts, we have to continue.

An Academic Discipline

My second ambition is to raise the profile of IT and Development as a distinct field of research, teaching, and practice. Despite the increasing amount of money spent on IT and telecommunications in developing countries, few institutions recognize the need to study the process of utilizing these powerful technologies in the diverse developing world. The literature on "good practice" and expected outcomes of applying IT and networking is based almost exclusively on research in a few industrialized countries. The trend of "globalisation" is often interpreted as a pressure to developing countries to adopt the technologies and organizational practices that prevail in the corporations of industrialized countries. This runs the risk of imitating inappropriate solutions that retard rather than promote development.

WG9.4 can raise awareness that studies on IT in developing countries is not an esoteric, obscure pastime or an eccentric topic of conversation that contributes fancy rhetoric to ministerial speeches and footnotes to mainstream official reports. The issues studied in our conferences and publications merit as much attention as those concerning the business enterprises of industrialized countries.

Finally, the organization of conferences that deliver value is the most immediate of the tasks I set out. Our past conferences attracted academics, practitioners. aid agency representatives and government officials. We must continue to provide value for all these categories of participants. Therefore, we need a mixture of high-quality academic and practical sessions. It will be useful to have some sessions dedicated to academic concerns run in parallel with sessions covering practice. However, I think most sessions should continue to address a mixed audience, aiming at cross-fertilizing ideas and experiences from research and practice.

The presentation of empirical research results and analytical papers contributing arguments relevant to the theme of the conference will probably continue to be at the heart of our conferences, although I think we should try to improve their value. Case studies have proven an excellent way of communicating research and development experience and of stimulating debate, and I believe we must encourage well-thought-out presentation and analysis of cases. Moreover, I would like to introduce new types of sessions in our conferences: tutorials, invited presentations of significant projects or initiatives taken by institutions in developing countries, and poster presentations.

High-Quality Conferences

But the most important aspect of a fruitful conference is the quality of the presentations it includes. Too much emphasis on methodical rigor may stifle interesting studies, while an "anything goes" attitude can alienate participants by unconvincing "facts," interpretations, and speculations. Moreover, many of the authors of the WG9.4 conferences come from countries that do not have a well-established tradition of studies regarding technology and society. It is important that our conferences do not lose the spontaneity of expressing issues and perspectives seen valid in different parts of the world. Nevertheless, if such expressions are to be worthy of being communicated to an international audience, they must be presented in a convincing way. I believe we must make an explicit effort to improve our capacity to present convincing work in our conferences. To some extent, improving the quality — and therefore increasing the impact — of our conferences can be achieved by adopting more specific themes.

Also, the quality of our conferences can be improved if organizers and reviewers make an effort to facilitate the writing of papers. Guidelines for writing conference papers will be available on demand to authors. However, reviewers will be asked to contribute value-adding reviews for the organizers and, more importantly, for the authors.

All of these will be put to test in the organization of the next conference, which is planned to be held towards the end of 1997 on the theme of implementation and evaluation of information systems in developing countries.

The recent meeting of the **IFIP** Technical Committee on the Relationship between Computers and Society (TC9) in Israel (16-17 March) discussed the "problem" of our membership. Clearly, we are an odd group, with too many rather inactive members, and a long list of applicants for membership, without adequate plans for activities in which they can be involved. (The WG9.4 membership is currently 148, with 92 applications for membership pending.) TC9 recognized, of course, the success of our past conferences, the Newsletter, and the lively use of our electronic mailing forum. Still, no new members were approved, and we were advised to reconsider our membership.

I feel that for a group of our size as well as geographic and thematic breadth, we can do more. Of course, the nature of our members around the globe makes it difficult to organize frequent working meetings as the means of elaborating on specific areas of IT and development. But the vastness of our "catchment area" may require regional activities, and we can make use of new technology to overcome distance.

I suggest organizing three regional sub-groups: a) Americas, b) Africa, Middle East, and Europe, and c) Asia and Australia. Each of the three should set up its own activities, such as regional conferences, and projects to study topics that are meaningful in the local context. To avoid isolation, each sub-group should contribute to the "global" conferences, the plenary WG meetings (which usually take place during the global conferences), and the Newsletter.

We can also set up special-interest sub-groups (SIGs) to elaborate on particular topics. The SIGs should also contribute to the "global" events with well-thought-out reports and proposals. As for using communication technologies to overcome the barriers of distance, our group has already an excellent record doing so for the unstructured and spontaneous exchange of views, which many find particularly useful. The same technology can be used as the means for more focused, and perhaps more structured, work of a SIG. However, we do still need to allow for conventional communication channels as well, as not all members use, or want to use, new communication technology.

National Abbreviations Used in Newsletter

A	Austria	DK	Denmark	NL	The Netherlands
AUS	Australia	GB	United Kingdom	S	Sweden
B	Belgium		Italy	SF	Finland
BG	Bulgaria	IL	Israel	SK	Slovakia
CDN	Canada	IRL	Ireland	USA	U.S.A.
CH	Switzerland		Japan	ZA	South Africa
D	Germany	N	Norway	ZW	Zimbabwe

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

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

TECHNICAL COMMITTEE, SPECIALIST GROUP, AND WORKING GROUP MEETINGS

WG2. I	I7--22 Feb 97	Bischenberg, Alsace, France
WG2.2	23-27 Sep 96	Macao
	97	Graz, Austria
WG2.3	26-31 Jan 97	Napa Valley, CA, U.S.A.
	27 Sep - I Oct 97	Alsace, France
WG2.4	Jun 97	Berlin, Germany
	98	Colorado, U.S.A.
WG2.8	23-27 Sep 97	New Paltz, NY, U.S.A.
TC3	I-2 Sep 96	Wollongong, Australia
	97	Ghent, Belgium, or The Netherlands
	Sep 98	Vienna, Austria
	99	Copenhagen, Denmark
WG5.7	6 Nov 96	Kyoto, Japan
TC6	18 Oct 96	Harare, Zimbabwe
	Apr/May 97	New York, NY, U.S.A. or Cambridge, U.K.
TC7	Jul 97	Detroit, MI, U.S.A.
	Jul 99	Cambridge, U.K.
WG7.4	Sep 96	Braunschweig, Germany
WG8.2	Dec 96 (with ICIS)	Cleveland, OH, U.S.A.
	Dec 97 (with ICIS)	Atlanta, GA, U.S.A.
WG9.5	97	Brazil
TC10	Sep 96	Canberra, Australia
WGI4.3	Sep 96	Manchester, U.K.
SGI6	19 Sep 96 (with CARDIS)	Amsterdam, the Netherlands

CALLS FOR PAPERS

IFIP WG8.2 Work. Conf. on **Information Systems and Qualitative Research**
31 May -- 3 Jun 97, Philadelphia, PA, U.S.A.
papers due: I Sep 96
contact: Allen S. **Lee**
e-mail: AllenLee@Management.McGill.ca
or Jonathan Liebenau
e-mail: Liebenau@LSE.ac.uk
http://www.cba.uc.edu/faculty/leean/8-2-call.htm

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

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

Thirteenth IFIP Intl. Information Security Conf.
I4-16 May 97, Copenhagen. Denmark
papers due: I Oct 96
contact: Louise Yngstrøm
c/o Jan Carlsen
Coopers & Lybrand
P.O. Box 2709
DK-2100 Copenhagen 0, Denmark

Ninth **IFIP** TC10 Intl. Conf. **VLSI'97**
26-29 Aug 97, Gramado, Brazil
papers due: 20 Feb 97
contact: Luc Claesen/VLSI'97
IMEC/Katholieke Universiteit Leuven
Kapeldreef 79
B-300I Leuven, Belgium
tel: +32-16-281203, fax: +32-16-281501
e-mail: Claesen@imec.be

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

CRYPTOGRAPHY continued from page 4

The provision of security with confidence also implies that the various techniques, protocols and tools should actually meet the practical needs of the anticipated users. In particular, the procedures which must be executed in order to exploit the service must be technically feasible, insofar as unsophisticated users cannot be expected to have a detailed understanding of the underlying techniques and assumptions on which the service is built. Equally, national law enforcement and security authorities require that effective and timely lawful access to secret and private keys should also be technically feasible.

8. *Legally effective (perhaps acceptable?)*
It is a natural consequence of the provision of any public service that there will be occasional disputes between the parties. It is thus a prerequisite of the provision of cryptographic services that the legal consequences of their introduction are fully understood and that the resulting offerings should be legally acceptable. This particularly applies to the liability of service providers in guaranteeing the security of stored secret and private keys and the possible subsequent access to such keys by the lawful request of a third party.

9. *Permits future enhancement*
Although many techniques for providing publicly available cryptographic services have been suggested, it is generally agreed that considerable further development is required before such services will grow to meet the needs of the widest possible user community. Certainly there is not yet any published proposal which currently meets all the principles outlined above. It is thus vital that no design decisions are taken that preclude future enhancement of the proposed services. In particular, a staged approach to the introduction of cryptographic services is preferable so as to ensure that all the above eight principles are maintained in a proper balance with one another.

The preceding list of principles is among the many documents collected and disseminated by **Dr. Posch** from and to the **IFIP** community. The prime goal of the interchange of information about cryptographic policy is to enable electronic commerce and the global information infrastructure. This topic is vital, and the results should strike a balance between the needs of governments and business. Governments are starting to develop their positions. Denmark, France, Germany, and the U.K. have done this in a more or less formal way. Anyone who is interested in contributing to this dialog or receiving the documents should contact **Dr. Posch** at the following address:

Prof. Dr. Reinhard Posch
Applied Information Processing
Graz Univ. of Technology
Klosterwiesgasse 32/I
A-8010 Graz, Austria
tel: +43 316 873 5510, fax: +43 316 873 5520
e-mail: rposch@iaik.tu-graz.ac.at
http://www.iaik.tu-graz.ac.at/iaik.html

Since the OECD guidelines are scheduled to be released as early as February 1997, early communication is advised.

Ethics of Computing

Codes, spaces for discussion and law

Edited by ***J. Berleur,*** Professor, Computer Science Faculty, University of Namur, Belgium, and
K. Brunnstein, Professor, Department of Information, University of Hamburg, Germany

Ethics of Computing represents the first attempt to confront, on a world-wide basis, the way computer associations face up to their own social responsibilities in an age increasingly dominated by information and communication technology.

This major reference work deals with the codes of ethics and conduct, and related issues. It is the first book to deal with 'homogenous codes' namely, codes of national computer societies. Some thirty codes are compared and analysed in depth. To put these into perspective, there are discussion papers covering the methodological, philosophical and organizational issues.

Features of this handbook, which is based on the work of the International Federation of Information Processing (IFIP) Ethics Task Group, are: consideration and analyses of 30 codes of ethics and conduct; papers on the meaning of professionalism; education on ethical attitudes and existing policies in universities and educational institutions; clarification of the issues at stake in considering 'ethics of computing'; recommendations from IFIP Technical and General Assemblies to their member Societies to open spaces for discussion.

This is essential reading for all computer associations and their members, as well as those in business, public and government organizations at the policy making level. It will also be of considerable interest to university lecturers and students in computer science and business management departments.

Key benefits to the reader:

- *clarifies the key issues of the 'ethics of computing'*
- *first book to analyse the codes of ethics/conduct of over 30 computer societies*
- *covers the methodological, philosophical and organizational issues*

Contents: Foreword. Preface. **Promoting discussion within IFIP:** Codes of ethics within IFIP and other computer societies - *Jacques Berleur and Marie d'Udekem-Gevers.* Codes of ethics: discussion paper - *Jan Holvast.* Why a discussion on ethical issues in software engineering is overdue - *Klaus Brunnstein.* A brief history of professionalism and its relevance to IFIP - *Richard Sizer.* Policies of acceptable use at educational and research institutions - *John W Corliss.* **Codes, comments and other contributions:** IFIP national societies, codes and comments. AUS - Australia. CDN - Canada. D - Germany. GB - United Kingdom. IND - India. IRL - Ireland. I - Italy. NZ - New Zealand. SGP - Singapore. USA - United States of America. ZA - South Africa. ZW - Zimbabwe. **IFIP affiliate member societies codes:** Regional - Europe. Regional - South East Asia. **Other codes and comments:** E - Spain. GR - Greece. J - Japan. NL - The Netherlands. ROK - The Republic of Korea. USA - United States of America. International. Oaths. **Other contributions:** Suggested guidelines for codes of ethics and professional conduct in the field of computing and information technology - *The Egyptian National Committee for Information Processing.* IFIP-WG2.4: Comments on ethics of computing: information technology and responsibility - *Gonzalo Leon.* IFIP-WG3.1: Integrating social, ethical and equity issues of informatics into secondary education - *Tom J van Weed.* IFIP-WG9.1: Ethics and systems design: the politics of social responsibility - *Andrew Clement and Ina Wagner.* IFIP-WG9.1: Ethics workshop contribution (Havana 1994). **Conclusion:** Final remarks: ethics, self-regulation and democracy - *Jacques Berleur.* Recommendations regarding codes of ethics/conduct for IFIP Computer Societies - *IFIP General Assembly, Hamburg, September 6th 1994.* **Selected Bibliography. Annex:** detailed tables of the comparative study of recent codes of ethics of computer societies. **Index.**

Published by Chapman & Hall on behalf of the International Federation for Information Processing IFIP

February 1996: 234x156mm: 336 pages, 1 line illus: Hardback: 0-412-72620-3: £49.00

For more information and details about ordering please contact :

Katy Reeves, Marketing Department, Chapman & Hall, 2-6 Boundary Row, London SE1 8HN, U.K.
Tel: +44 (0) 171 865 0066 Fax: +44 (0) 171 522 9624 E-mail: katy.reeves@chall.co.uk

Details of all Chapman & Hall titles are available on the Internet:
http://www.chaphall.comichaphall.html

30% DISCOUNT.. .
Members of IFIP affiliated societies are entitled to a 30% discount on all these titles published by Chapman & Hall on behalf of the International Federation for Information Processing (IFIP).

ESSENTIAL READING FROM

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

Achieving Quality in Software

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

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

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

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

Advanced CAD/CAM Systems

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

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

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

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

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

Environmental Software Systems

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

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

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

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

Advances in Formal Design Methods for CAD

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

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

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

Integrated Manufacturing Systems Engineering

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

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

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

Knowledge Intensive CAD

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

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

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

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

Modelling and Methodologies for Enterprise Integration

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

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

July 1996: 234x156mm: 400pp: Hb: 0-412-75630-7: £65.00

Re-engineering the Enterprise

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

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

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

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

For more information and details about ordering please contact :

Katy Reeves, Marketing Department,
Chapman & Hall, 2-6 Boundary Row,
London SE1 8HN, U.K.
Tel: +44 (0) 171 865 0066
Fax: +44 (0) 171 522 9624
E-mail: katy.reeves@chall.co.uk

Details of all Chapman & Hall titles are available on the Internet:

http://www.chaphall.com/chaphall.html

30% DISCOUNT. . .

Members of IFIP affiliated societies are entitled to a 30% discount on all these titles published by Chapman & Hall on behalf of the International Federation for Information Processing (IFIP).

CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Sponsored by
Second Intl. Symp. on *Environmental Software Systems — ISESS '97*	28 Apr – 2 May 97	Whistler, Canada	**IFIP** TC5, Ger. Comp. Soc., Aus. Rsch. Ctr. Seibersdorf; U. of Guelph
Fifth Intl. Symp. on *Network Management — IS/NM '97*	12-16 May 97	San Diego, CA, U.S.A.	**IFIP** WG6.6, IEEE
Conf. on *Information Security: Research and Business — SEC '97*	14-16 May 97	Copenhagen, Denmark	**IFIP** TC11
Intl. Conf. on *Integrated and Sustained Industrial Production Systems*	14-16 May 97	Lisbon, Portugal	**IFIP** WG5.3, IFAC
Conf. on *Women, Work and Computerization — WWC'97*	24-27 May 97	Bonn, Germany	**IFIP** TC9
Intl. Conf. on *Open Distributed Processing — ICODP 97*	26-30 May 97	Toronto, On., Canada	**IFIP** TC6, IBM
Third Intl. Conf. on *Reliability, Quality and Safety of Software-Intensive Systems — ENCRESS '97*	29-30 May 97	Athens, Greece	ENCRESS/IFIP WG5.4
Work. Conf. on *Information Systems and Qualitative Research*	31 May – 3 Jun 97	Philadelphia, PA, U.S.A.	**IFIP** WG8.2
Seventh Conf. on *High Performance Network*	May 97	Thornwood, NY, U.S.A.	**IFIP** WG6.4
Fourteenth *IMEKO World Congress*	2-6 Jun 97	Tempaere/Helsinki, Fin.	IMEKO
Work. Conf. on *System Implementation Languages*	Jun 97	Berlin, Germany	I**FIP** TC2
Work. Conf. on *Visual Database Systems — VDB 4*	spring 97	California, U.S.A.	I**FIP** TC2
Work. Conf. on *Human Choice and Computers — HCC-5*	autumn 97	Cape Town, South Africa	**IFIP** TC9
INTERACT 97	14-18 Jul 97	Sydney, Australia	**IFIP** TC13
Eighteenth Conf. on *System Modelling and Optimization*	22-25 Jul 97	Detroit, **MI,** U.S.A.	**IFIP** TC7, Wayne Univ.
Work. Conf. on *Informatics as a Discipline*	10-15 Aug 97	Enschede, the Netherlands	**IFIP** WG3.2
Work. Conf. on *Capacity Building Or Information Technology in Education in Developing Countries — CapBIT 97*	25-29 Aug 97	Harare, Zimbabwe	I**FIP** TC3, Comp. Soc. Zimb.
Conf. *VLSI '97*	26-29 Aug 97	Gramado, Brazil	**IFIP** TC10
Symp. on *Robot Control*	3-5 Sep 97	Nantes, France	IFAC/IFIP TC12
Work. Conf. on *Extended Enterprise*	14-19 Sep 97	Ascona, Switzerland	**IFIP** WG5.7
European Design Automation Conference — EuroDAC '97 and *Euro VHDL'97*	Sep 97	Duesseldorf, Germany	I**FIP** TC10
Second Workshop on *ATM*	Sep 97	Canada	I**FIP** TC6
Work. Conf. on *Intelligent Networks*	Sep 97	Versailles, France	I**FIP** TC6, Telecom, TG IN, Univ. Versailles
Seventh Conf. on *Performance of DCS*	Sep 97	Lund, Sweden	**IFIP** WG6.3/7.3
Thirteenth Intl. Conf. on *Computer Communication — ICCC'97*	3rd quarter 97	Nice, France	ICCC
Workshop on *Personal Wireless Communication*	Sep/Oct 97	Chania, Greece	**IFIP** TC6
Intl. Conf. on *Computer Applications in Shipbuilding— ICCAS '97*	*13-17* Oct 97	Yokohama, Japan	Soc. of Naval Arch. of Jap., **IFIP** TC5
Work. Conf. on *Secondary School Mathematics in the World of Communication Technology*	26-31 Oct 97	Grenoble, France	**IFIP** WG3.1
Conf. *AFRICOM '97*	Oct 97	Tunisia	**IFIP** TC6, ICCC
Workshop on *Distributed System Operation and Management — DSOM '97*	Oct 97	Gaithersburg, MD, U.S.A. or Boston, MA, U.S.A.	**IFIP** WG6.6
Conf. on *Correct Hardware Design and Verification Methods —CHARME '97*	Oct 97	Canada	**IFIP** TC10
Intl. Conf. on *Computer Application in Production Engineering—CAPE '97*	5-7 Nov 97	Detroit, MI, U.S.A	I**FIP** TC5; SME
Intl. Conf. *FORTE '97*	1997	Raleigh, NC, U.S.A.	**IFIP** WG6.1
Work. Conf. on *Programming Concepts and Methods*	Jun 98	Stony Brook, NY, U.S.A.	**IFIP** WG2.2/2.3
Work. Conf. on *Integration and CAPM*	Aug 98	Glasgow, U.K.	**IFIP** WG6.8
IFIP Congress '98 — Fifteenth World Computer Congress	29 **Aug – 6 Sep 98** (new dates)	**Vienna, Austria, and Budapest, Hungary**	**IFIP**
IFIP Congress 2000 — Sixteenth World Computer Congress	Sep **2000**	**Beijing, China**	**IFIP**
Seventh World Conf. on *Computers in Education — WCCE 2001*	29 Jul–Aug 3 01	Copenhagen, Denmark	**IFIP** TC3, Danish Data Assn.

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

CALENDAR OF EVENTS

Event	Date	Location	Sponsored by
Workshop on *Collaborative Learning and Working with Telematics*	2-5 Sep 96	Vienna, Austria, and Prague, Czech Republic	**IFIP** TC3/WG3.6/ OCG/BMWVK
IFIP Congress '96 — Fourteenth World Computer Congress	**2-6 Sep** 96	**Canberra, Australia**	**IFIP**
Intl. Symp. on *Operations Research — SOR '96*	4-6 Sep 96	Braunschweig, Germany	DGOR, GMOEOR I**FIP** WG7.4
Intl. Symp. on *Computer Performance and Dependability — **IPDS** '96*	4-6 Sep 96	Urbana-Champaign, IL, U.S.A.	IEEE/IFIP WG7.3/10.4
Ninth Intl. Workshop on *Testing Communication Systems — IWTCS*	9-11 Sep 96	Darmstadt, Germany	IFIP TC6 WG6.1 GMD
Work Conf. *Intelligent Networks 96*	11-12 Sep 96	Dallas, TX, U.S.A.	IFIP TC6, IEEE **CS**
Thirteenth Workshop on *Design Or Protecting the User*	11-13 Sep 96	Buergenstock, Switzerland	IFIP WGI 1.3
Intl. Conf. on *Design of Information Infrastructure Systems Or Manufacturing — DIISM* '96	16-18 Sep 96	Eindhoven, Netherlands	IFIP TC5, WG5.3/5.7; Eindhoven U.; CIMOSA
Second Workshop on *Knowledge-Intensive CAD*	16-18 Sep 96	Pittsburgh, PA, U.S.A.	**IFIP** WG5.2
European Design Automation Conf — EuroDAC'96 and *EuroVHDL'96*	16-20 Sep 96	Geneva, Switzerland	I**FIP** TC10
Work. Conf. on *Development and Application of Computer Techniques to Environmental Studies — ENVIROSOFT '96*	18-20 Sep 96	Como, Italy	**IFIP** TC5, WG5.I I; Wessex Inst. of Tech.
Intl. Work. Conf. on *Communication and Multimedia Security*	23-24 Sep 96	Essen, Germany	**IFIP** TC6, TC II
Intl. Conf. on *Performance Theory, Measurement and Evaluation of Computers and Communication — PERFORMANCE* '96	7-11 Oct 96	Lausanne, Switzerland	**IFIP** WG7.3
Open Conf. on *Formal Description Techniques and Protocol Specification, Testing, and Verification — FORTE/PSTV'96*	8-11 Oct 96	Kaiserslautern, Germany	**IFIP** WG6.I
WG6.3 Workshop	12-15 Oct 96	Balatonfured, Hungary	**IFIP** WG6.3
Intl. Conf. *CCDC 96 and AFRICOM 96*	15-17 Oct 96	Harare, Zimbabwe	ICCC, **IFIP** TC6
Conf. on *Parallel Architectures and Compilation Techniques — PACT **'96***	21-23 **Oct** 96	Boston, MA, U.S.A.	**IFIP** WG10.3, IEEE TCCA, ACM SIGARCH
Fifteenth Intl. Conf. on *Computer Safety, Reliability and Security— SAFECOMP* '96	23-25 Oct 96	Vienna, Austria	EWICS, **IFIP** WG10.4
Fifth Intl. Workshop on *Protocols for High-Speed Networks '96*	28-30 Oct 96	Sophia Antipolis, France	I**FIP** TC6/WG6.I
Intl. Workshop on *Distributed Systems: Operation and Management — DSOM 96*	28-30 Oct 96	L'Aquila, Italy	I**FIP** WG6.6 IEEE SSGRR
Sixth Intl. Conf. on *Advances in Production Management Systems -- APMS '96*	4-6 Nov 96	Kyoto, Japan	I**FIP** TC5
Twenty-first Workshop on *Real-Time Programming*	4-b Nov 96	Gramado, Brazil	IFAC/IFIP WG2.4
Conf. on *Formal Methods in Computer-Aided Design — FMCAD '96*	6-8 Nov 96	Palo Alto, CA, U.S.A.	**IFIP** TC10
Third Intl. Conf. on *Multimedia Modelling — MMM'96*	12-15 Nov 96	Toulouse, France	**IFIP** WG5.10/ Comp. Graph. Soc.
Workshop on *Methodologies and Tools for Microsystem Design*	Nov 96	Karlsruhe, Germany	**IFIP** WG10.7
Workshop on *PDC* '96 *and CSCW '96*	Nov 96	Boston, MA, U.S.A.	**IFIP** WG9.I
Work. Conf. on *Information Systems Development, Organizational Change, and Workforce Restructuring*	autumn 96	Amsterdam, Netherlands	**IFIP** WG9.I
Workshop on *Personal Wireless Communications*	10-12 Dec 96	Frankfurt, Germany	**IFIP** TC6
Second Intl. Symp. on *Mathematical Modelling*	5-7 Feb 97	Vienna, Austria	IMACS, **TU** Vienna, IFAC, **IFIP**
Work. Conf. on *Algorithmic Languages and Calculi*	17-22 Feb 97	Bischenberg, France	I**FIP** TC2
Workshop on *Microsystem Manufacturing*	Feb 97	Darmstadt, Germany	**IFIP** WG10.7
Conf. on *Optimal Control: Theory, Algorithms and Applications*	27 Feb - I Mar 97	Gainesville, FL, U.S.A.	I**FIP** TC7, WG7.2; N.S.F., U. of Fla.
Sixth Intl. Work. Conf. on *Dependable Computing for Critical Applications - DCCA-6*	5-7 Mar 97	Garmisch-Partenki rchen, Germany	IFIP WG10.4/TC II et al.
Conf. on *Computer Hardware Description Languages and Applications — CHDL '97* and *VHDL Forum for CAD in Europe*	20-26 Apr 97	Toledo, Spain	I**FIP** TC10
Conf. on *Electronic Publishing*	Apr 97	Cambridge, U.K.	**IFIP** TC6, ICCC

(continued on page 15)

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

This calendar information is furnished to the *Newsletter* by the Secretariat. It contains only approved **IFIP** events, arranged by local Organizing Committees. I**FIP** does not assume any financial or legal liability. The Secretariat can furnish details of most of the events listed. Please see page 12 for a schedule of I**FIP** administrative meetings.