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Selections from the IFIP Congress '98 Program*

The article in the December 1998 *IFIP Newsletter* about **IFIP** Congress '98, the 15th World Computer Congress, discussed the organizational and social aspects of the Congress and summarized the plenary sessions. The present article, on the other hand, discusses the technical program and explores the wide range of topics covered. Since we did not have a staff of reporters to cover all the sessions of the seven component conferences of the Congress (up to 15 simultaneous sessions), this article contains the editor's observations on the program, made on the basis of the sessions he attended and the Congress proceedings. The papers quoted are of general interest and not too technical.

Intellectual Property Rights

One of the more interesting papers in the 2nd International Conference on Intellectual Property Rights (KnowRight '98) was *INFOethics:* UNESCO's Approach to Free Flow of Information, an invited paper by **Mr. Victor Montviloff** (UNESCO), which dealt, to a great extent, with ethical issues related to the dissemination of information electronically. It began as follows:

> One of the fundamental missions of UNESCO is to promote "the free exchange of ideas and knowledge." ...
>
> Access to, and free flow of information, protection of privacy and confidentiality, protection against violence, quality and security of data in all its forms are issues of major concern in the advancing Information Society. UNESCO concentrates its action on these aspects, with the ultimate objective of facilitating the entry of all nations into the so-called "cyberspace."

Several controversial assertions were made by **Mr. Montviloff** in his discussion of economic issues:

> Every meeting [on] the free flow of information in the digital environment ends up concentrating its attention mainly on electronic commerce, intellectual property rights and copyright. This is understandable, as they are today important challenges in the generation of economic development and cultural creativity....
>
> One notes that debates on economic issues often lay emphasis on the rights of producers of information and intermediaries in its circulation to the detriment of the rights of users. Hence, the importance of developing our understanding of the latter. Who wishes to object that the users' rights to have access to accurate, reliable public information and to be protected from violent information are basic human rights? ...

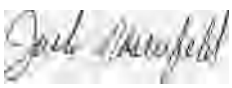
The USA is strongly campaigning for a universal declaration aiming at keeping the Internet a free exchange zone, free from all forms of taxation. But whom will it concern? Most certainly the multinationals in North America and Western Europe in marketing their products and, even worse, their ideas conceived by them and designed by them to fit their norms and values. How will it benefit a villager in an African countryside? Many countries are very reticent about such a liberalization in which they see another form of economic dominance even more pernicious than before....

We are also very conscious that [e-commerce] can easily become a new source of political and social tensions if it is handled the way commerce has always been handled —to the

continued on page 8

Newsletter Celebrates 15th Anniversary

Publication of the December 1998 *IFIP Newsletter* marked completion of the fifteenth year of this publication. We had planned to print a self-celebratory "centerfold," displaying the first pages from issues over the past 15 years; however, we couldn't make space for it in the December issue or this one. We shall be satisfied with just saying, "Happy birthday to us." Hopefully, we'll continue for a while longer and be able to celebrate our twentieth anniversary in a special way.



Editor

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

Please send announcements of conferences, workshops, and other meetings directly to the Secretariat, which prepares the Calendar of Events. Calls for papers should be sent to both the Secretariat and the *Newsletter* editor.

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

Who's Who in IFIP: Mrs. Judy Hammond

TC13 Chair

Mrs. Judy Hammond, chair of the **IFIP** Technical Committee on Human-Computer Interaction (TC13), was born in Wellington, New Zealand, and spent her childhood there. After graduating in Pure Mathematics from Victoria University of Wellington , she spent several years teaching in primary and secondary schools in New Zealand, England, and Australia. Later, she graduated from the University of New South Wales, Australia, with a Masters degree in Science and Society, bringing together her enthusiasm for education and technology to benefit society.

After several years of working as a systems analyst and programmer, she returned to academia, first working in the newly established Higher Education Research Unit at Monash University in Melbourne, Australia, and then in the School of Computing Sciences at the University of Technology, Sydney. There she developed and taught courses in programming, information systems, and social implications of computers, in one of the first computing science degree programs in Australia. From 1978 to 1979, she was a visiting scholar at The Open University in the UK, developing course materials for the first distance-education course on computer-based information systems.

Her intense interest in the impact of computers on society, particularly when implemented in organizations, has led, more recently, to her turning her attention to human-computer interaction (HCI) and the opportunities it provides for significant benefits to people and organizations. In 1990, she worked in a world-class usability laboratory in a large banking corporation. Since her return to the University of Technology, Sydney in 1991, she has created and taught HCI courses for students and IT professionals and established the first industry-standard usability laboratory in a computing science school in an Australian university. She has written numerous articles and papers — many for **IFIP** events.

Mrs. Hammond has been involved in several major state and federal government projects, mainly concerning information technology and education. From 1984 to 1986, she participated in the National Computer Education Programme to introduce Computers into Australian Schools and was director of the Information Technology in the Curriculum Programme at the Curriculum Development Centre in Canberra.

She has been an active participant in professional society matters since her joining the computing industry. She was one of the earliest members of the Australian Computer Society and has served in many major roles. As part of her ACS effort, she produced films and videos about information technology and social change — often with an educational focus — and, for two years, produced an interview series, "The Computer Programme," for a Sydney radio station. She was the second woman in the ACS to be elected to the rank of Fellow.

Mrs. Hammond has participated in **IFIP** since 1981, when she joined Working Group 3.1 and, later, WG3.4. In 1991, she became the Australian representative to TC 13. She was elected as vice-chair of TC13 in 1993 and as chair in 1995 (the first woman appointed as a TC Chair). Also, she was Conference Chair for the TC 13 INTERACT '97 conference, bringing this important international HCI conference to Australia for the first time. She received the **IFIP** Silver Core Award in September 1998.

Believing that **IFIP** should take a strong lead in ensuring that people remain the central concern when new IT systems are developed and implemented, Mrs. **Hammond** would like to see a greater world acceptance of HCI as a vital part of developing and implementing IT solutions. To this end, she is working with TC13 members to strengthen the biennial INTERACT conference series and other events, to develop the TC13 Web-based information service as a world hub for HCI information, and to establish improved link-

continued on next page

The Computer Society Of India

*by Dr. S. Ramani (IN)**

The Computer Society of India (CSI) came into being formally on 6 March 1965, upon the renaming of the All-India Computer User's Group, which had been constituted in June 1964. Since then, the Society has grown to the current membership of nearly 16,000 individuals and 500 institutions.

The Society conducts its operations through various geographical (four regions) and technical (nine divisions) groups. The divisions are Hardware, Software, Scientific Applications, Business Applications, Data Communications, IT for Rural Development, Education and Research, Data Security and Microcomputers. The principal CSI activity centres are the 62 chapters, located in cities and towns all over the country. There are also 74 branches for student members.

Activities

One of the main activities of CSI is the Annual Convention. Thirty-three Conventions have been held since 1965. The number of participants usually reaches 2000. Apart from technical sessions, tutorials and panels, a principal feature has been the Exhibition. The last Exhibition was held during CSI-98, in Delhi, drawing keen participation from Indian as well as multi-national companies. CSI has always endeavored to bring into focus problems of national importance through adoption of appropriate themes for the Conventions. CSI-98 had the theme "IT for the New Generation," focusing on students. CSI-99, to be held in Mumbai in November, will have the theme "IT India Inc.: Enabling the Information Century."

CSI also organizes a number of international conferences regularly. The most stable series of these has been the Networks conferences, which have been held every two years since 1980, with IFIP co-sponsorship. The latestst one was in Bangalore in 1998. In recent years, the International Council for Computer Communication (ICCC) has also joined as a co-sponsor. The VLDB-96 conference (Very Large Data Bases) was held in Bombay. The International Conference on Visual Computing will be held in Feb 1999, in Goa, with co-sponsorship from IFIP and the ICCC.

CSI Communications is the monthly medium of communication between CSI and its members. The journal *Computer Science and Informatics* is a quarterly, which contains reviewed articles of theoretical interest, case studies of successful applications of national relevance, and reviews of books and journals.

CSI started conducting the National Standard Test for Programming Competence in 1975. A Directorate of Education was set up in 1985, and a number of modules, such as Systems Analysis and Design, Data Communication, OS, and DBMS, are covered, in order to ensure a minimum level of professional competence, especially among those without a university background.

Student activities have been encouraged through the student branches as well as student-paper contests at the Annual Conventions. National Student Conventions have been annual events since 1985.

Through the initiatives of **Prof. Narasimhan.** the first President, CSI has been in close liaison with **IFIP** since its inception in 1965, when observers from India attended the IFIP Council meeting. Since 1974, when CSI became a member of **IFIP,** CSI has organized many **IFIP-**sponsored events and was host to the 1978 Council meeting in Bombay and the 1988 General Assembly in New Delhi.

CSI and Government Policies

The CSI has always provided an open forum for frank exchange of opinions amongst the members and also between members and the policy makers in government. CSI is represented in the working of the IT Task Force of India. CSI works with government departments on major policy matters. CSI is also closely associated with the Indian Bureau of Standards.

CSI has taken on projects beyond the normally understood roles of professional bodies. The project relating to Computers for the Blind, led by **Prof. P.V.S. Rao** (CSI President 1980-82), was the forerunner of many efforts that CSI has been involved in, as a socially conscious professional society.

The CSI Web site is at http://www.csi-india.org. E-mail can be sent to csi@bom2.vsnl.net.in or to the **IFIP** representative, **Dr. S. Ramani,** at ramani@ncst.ernet.in.

The CSI President, **Dr. R. Srinivasan,** and the CSI fraternity heartily welcome the IFIP President, **Dir. Peter Bollerslev (DK),** and the IFIP Council to India! ❑

* representative of CSI to IFIP, and IFIP trustee

ages between TC13 and IFIP Member societies.

Mrs. Hammond lives in Sydney with her husband and staunch supporter, Morrison, an educational psychologist and academic, and their two children. Her daughter works in the federal government public service while completing her university studies. Her son is studying to be a chiropractor and hopes to provide treatment for some of the participants in the 2000 Olympics in Sydney . In her leisure time, **Mrs. Hammond** likes to garden, pursue a variety of crafts, especially tapestry and lacemaking, croquet, and travel. ❑

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17th International Conference on Computer Safety, Reliability, and Security

*by Prof. Wolfgang Ehrenberger (DE)**

The 17th **IFIP** International Conference on Computer Safety, Reliability and Security, SAFECOMP '98, sponsored by the **IFIP** Working Group on Industrial Software Quality and Certification (WG5.4), was held 5-7 October 1998 in Heidelberg, Germany. SAFECOMP '98 was the latest event in a series of similar workshops, symposia and conferences held since 1979. The International Program Committee was formed mainly from the members of the European Workshop on Industrial Computer Systems, who are also members of WG5.4. The presentations of the conference focused on the application of computers in industrial safety-related systems.

Invited presentations came from **Dres Andrea Servida,** of the Commission of the European Communities, on the CEC's policy on computer dependability, from **Tony Frederickson,** (US) on the software tools and procedures of Triconex Corporation, from **Bas de Mol (NL),** on medical informatics, and from **Erwin Schoitsch (AT),** on ISA-EUNET.

The first session of the conference was chaired by **Prof. R. Lauber,** who started the SAFECOMP series years ago. Most of the papers dealt with software. The contributions were mainly on formal methods, including specification, design and verification, the focus there being on specification methods. Remarkably few papers were about probabilistic aspects. Computer hardware safety seemed to be no longer of scientific interest; only marginal parts on that topic were integrated in some papers. The necessary number of redundant channels for a control system of a particular safety integrity, however, stimulated a lively discussion.

Some of the security contributions were stimulating. One presentation dealt with the clarification of responsibilities in large safety-related software projects, which include off-the-shelf and custom-made software. The use of public key mechanisms and trust centers was suggested.

Aspects of human factors, management and medical informatics played a certain, albeit minor, role among the papers.

From the industrial contributions, it became clear that plans for using computers are widespread. In the years to come, virtually all trains and automobiles will have computers in their safety-related parts. The IEC 61508 standard will play a major role for licensing such computer systems.

The conference attracted about 75 participants, mainly from industry. Nearly half came from Germany, and many were from the other European countries. There was a remarkably high attendance from Austria and Italy.

The venue was considered very agreeable by most of those who came. It did not hurt to have a cable car as the main means of access. Even the last session was well attended.

The proceedings have been published by Springer-Verlag, Heidelberg, lncs 1516, ISBN 3-540-65110-1.

SAFECOMP '99 will be in Toulouse, France in September. ❑

* former chair of WG5.4

Allegretto IFIPiense Now on CD

The **IFIP** theme, *Allegretto IFIPiense,* received its premier performance on 31 August 1998 in the Vienna Musikverein (where the Vienna Philharmonic Orchestra performs the New Year concerts, broadcast worldwide) during the opening ceremony of the 15th World Computer Congress, **IFIP** Congress '98. Composed by **Prof. Erich Neuwirth** (AT) and arranged by **Mr. Darryl Burrows (AU),** the composition was performed by the ladies' Wiener Walzertraum orchestra.

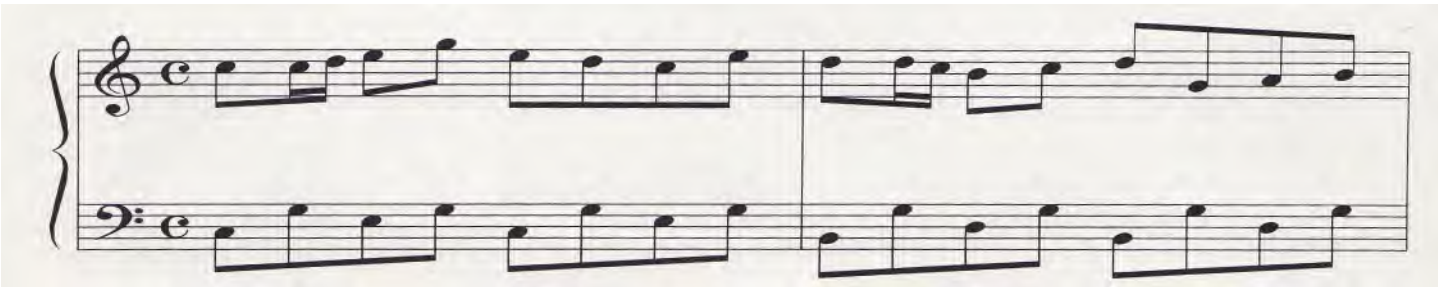
The history of the piece intimately involves information technology. **Prof. Neuwirth,** a mathematician and computer scientist at the University of Vienna (and a prize-winning author of multimedia musical software) composed a theme in the classical style. Deciding that having this theme available in different styles would be useful for the Congress, he solicited help on the Internet, and **Mr. Burrows,** a former lecturer in mathematics education, now running his own music agency in Brisbane, Australia, responded. **Mr. Burrows** created versions of the theme in pop, reggae, jazz, and rock. Perhaps the most interesting aspect of the story is that the composer and arranger never met, collaborating entirely by means of e-mail and the exchange of MIDI files (Musical Instrument Digital Interface — a standard protocol for communicating with electronic musical instruments).

The delegates at the Congress opening, however, heard only the version arranged for chamber orchestra (by **Georg Schmetterer).** The versions arranged for electronic instruments provide additional pleasure. The "pop" arrangement, for example, contains clever interpolations of themes from Handel to Haydn to a Scottish melody. These versions can be accessed on the World Wide Web at

http://sunsite.univie.ac.at/musicfun/IFIPMusic.

This site provides files in a variety of formats, including MIDI and RealVidio of the performance in the Musikverein. The scores are also available there.

By contacting gabriel@ocg.or.at, those who find the music appealing can purchase a CD (200 Austrian Schillings) containing the various versions played on a synthesizer.

Prof. Neuwirth dedicated the composition to **Prof. Heinz Zemanek (AT),** recipient of this year's **Isaac L. Auerbach** Award (see the article on page 3 of the September 1998 *IFIP Newsletter).* ❑

Political Difficulties of an IFIP Representative

*by Mrs. Ute Brauer (D)**
*and Prof. Wilfried Brauer (D)***

Following the death of **Prof. N.J. Lehmann** (see the obituary on page 6), we present this report of the difficulties he faced in his efforts to simultaneously serve both **IFIP** and his country to the best of his ability. This account is based on conversations with **Prof. Lehmann** and on a letter he wrote in 1991.

At the 1986 **IFIP** General Assembly (GA) in Dublin, the Norwegian representative made a formal motion in the name of his society to expel South Africa from **IFIP** because of its apartheid regime. There was an immediate reaction by the delegates against this motion, because of the apolitical principles of **IFIP,** and nobody seconded it. In this way, unfortunately, **Prof. Lehmann** was caught in a trap: As the representative of the German Democratic Republic (East Germany [GDR]), he was obliged to second the motion according to DDR policy; however, as a member of the GA, he did not wish to do so because, according to **IFIP** statutes, no political decisions are to be taken by **IFIP.** Thus, regardless of what he would do, **N.J. Lehmann** would violate a principle. He decided in favor of **IFIP,** knowing that this could lead to punishment at home, in the GDR.

Prof. Lehmann delayed as long as possible (as was his custom) before writing his report on the Dublin GA meeting to the GDR Ministry for Universities and Technical Colleges and only mentioned the motion. The 1986 GA meeting was his last one. His successor, after his first participation in an **IFIP** GA, came to Dresden to inform **N.J. Lehmann** that the Norwegian delegate had mentioned to him how astonished he was in Dublin that **N.J. Lehmann** had not seconded his motion. **Lehmann's** successor added that if this information were correct, he had to report this to the ministry in order not to be guilty himself.

In the spring of 1988, **Prof. Lehmann** was "invited" to Berlin to the Ministry for Universities and Technical Colleges. He was extremely nervous and under great pressure, because he knew that his being a well-known and respected person would not protect him from punishment. Indeed, he was accused, but he was allowed to defend his case orally and also in written form later. The investigations, in which the Ministry of Foreign Affairs was also involved, took a while. The final outcome was not so bad, perhaps because the GDR regime had already become somewhat weaker by that time. **Prof. Lehmann** received "only" a strong official warning. However, less than one week later, he had his first heart attack.

In memory of **Prof. N.J. Lehmann,** all **IFIP** people should take great care in all their activities and utterances, in order to keep **IFIP** an apolitical organisation. 1:1

* former TC3 correspondent
** former vice-president of **IFIP**

Farewell to Goldsworthy and Brauer

*Two Long-Time **IFIP** Contributors Retire*

In September, two **IFIP** vice-presidents with long histories of service to **IFIP** attended their last General Assembly (GA): **Mr. Ashley Goldsworthy** (AU) and **Prof. Wilfried Brauer (DE).** At the end of the GA, **Prof. Kurt Bauknecht (CH),** president of **IFIP,** thanked both with the following remarks.

Mr. Goldsworthy

Prof. Brauer

Ashley Goldsworthy has 25 years of uninterrupted and active service in **IFIP.** He first attended GA '74 in Stockholm as president of the Australian Computer Society, bidding for Congress '80. Since then, he attended all GAs and every Council meeting except one. He has been Australia's GA representative since 1980 and has grown up the **IFIP** executive hierarchy, as trustee, vice-president, president-elect, and president (1986-1989), after which he again served as vice-president.

He is the only person in **IFIP** history to act as Chairman of an Organizing Committee for two World Congresses (Melbourne and Tokyo in 1980 and Canberra in 1996). As president, he was responsible for the creation of the Technical Assembly and the establishment of Technical Committees 12, 13, and 1 (which started out as SIG14) and many Working Groups.

He was awarded the **IFIP** Silver Core in 1986.

Wilfried Brauer is an **IFIP** Silver Core holder since 1986. His IFIP work started in 1974 as member of the Technical Committee on Education (TC3). He then served as member of the International Program Committee for the 2nd World Conference on Computers in Education, in Marseilles, France, in September 1975, vice-chairman of TC3, and co-author of *A Modular Curriculum in Computer Science,* a UNESCO-**IFIP** curriculum, published by UNESCO in 1984 and translated into several languages.

He first participated in an **IFIP** GA as TC3 vice-chair in 1984; since then, he has attended all GA meetings and all Councils but one. For the period 1985-1990, he was chairman of TC3. Since 1985, he has been the representative of Gesellschaft für Informatik (GI, the German Member society) to the GA. He served as trustee, chairman of the International Program Committee for the 12th World Computer Congress (Madrid in 1992), and general chairman of the 13th **IFIP** World Computer Congress (Hamburg in 1994). He has been a vice-president since 1994 and also served as chairman of the Publications Committee and Technical Assembly.

Mr. Goldsworthy said that he was pleased to have had the possibility to work for **IFIP,** which is a truly unique organization, and he thanked his colleagues.

Prof. Brauer will continue to maintain contact with **IFIP** as a TC1 member representing GI. He expressed gratitude to his GA colleagues and the **IFIP** Secretariat for their support during his term of office. ❑

Professor N.J. Lehmann

1921-1998

Former **IFIP** vice-president **Prof. Dr.-Ing., Dr.-Ing. h.c. N. Joachim Lehmann** passed away on June 27,1998 in Dresden, Germany, at the age of 77. He was a member of the **IFIP** General Assembly from 1970 to 1986, representing the Academy of Sciences of the German Democratic Republic (GDR–East Germany). From 1973 until his retirement from **IFIP,** he chaired the Statutes and Bylaws Committee. In 1976, he was elected as a trustee and in 1980 as a vice-president. In 1976, he hosted the Council meeting in Dresden. In recognition of his activities, he was awarded the **IFIP** Silver Core in 1972. He always spoke enthusiastically about IFIP's mission and work, although he suffered personally in his endeavors to uphold **IFIP's** principles (see the article on page 5).

Prof. Lehmann was one of the best known pioneers of computing in Germany. In particular, he laid the foundations for the development of informatics in the eastern part of Germany by scientific work, by educating a large number of scientists and professionals, and by many activities in science management, locally and internationally. And lie was successful in spite of the political situation in the Socialistic block to which eastern Germany belonged until 1989.

His scientific development and professional career took place entirely in Dresden. Early in his career, he had the vision and the enthusiasm to fight for the creation of an institute for Techniques for Machine Calculation (Maschinelle Rechentechnik), which came about in 1956. He was its director until his retirement in 1986. In conjunction with this, he also created a special track for "techniques for machine calculation" within the curriculum for mathematics students at the Technische Hochschule in Dresden. Both activities resulted in that school being the foremost place for research and education in informatics in eastern Germany.

Prof. Lehmann's research and development contributions in informatics and applied mathematics are numerous and varied — from the construction of computer hardware, programming methodology, algorithm development, and numerical and symbolic computation to the theory and numerical solution of differential equations. For example, he developed, independently of other researchers in the world, a magnetic drum, which he used not only as a memory device but also as the central control unit. Based on this and other ideas by **Lehmann,** the D1, the first computer in eastern Germany, was constructed — in the first half of the 1950s. A really visionary concept was **Lehmann's** D4a computer. It was conceived, in 1959, as a desktop machine, to be used as a personal computer series, of which more than 3000 were produced in the GDR.

Prof. Lehmann's important achievements in research and development were honored in many ways, including election as an ordinary member of the Saxonian Academy of Sciences and receipt of the Konrad-Zuse Medaille of the (West) German **IFIP** Member society, the Gesellschaft für Informatik.

He is survived by his wife, Dr. Dolly Lehmann, who often joined him at **IFIP** meetings.

former TC3 correspondent, and former vice-president

National Abbreviations Used in Newsletter

(ISO Codes)

AT	Austria	DK	Denmark	MY	Malaysia
AU	Australia	FI	Finland	NL	The Netherlands
BE	Belgium	FR	France	NO	Norway
BG	Bulgaria	GB	United Kingdom	NZ	New Zealand
CA	Canada	HU	Hungary	PT	Portugal
CH	Switzerland	IE	Ireland	SE	Sweden
CL	Chile	IN	India	UA	Ukraine
CN	China	IT	Italy	US	U.S.A.
CZ	The Czech Republic	JP	Japan	ZA	South Africa
DE	Germany	LT	Lithuania		

Manchester Celebrates the 50th Anniversary of the First Stored-Program Computer

*by Prof. Hillary Kahn (GB)**
*and Dr Brian Napper (GB)**

The 21st of June 1948 saw the birth of the first stored-program electronic digital computer, at the University of Manchester. The ability to store and run any program set this machine apart from all the special-purpose computing machines that had gone before and made it a universal machine, the first computer as we all know it today.

From this Small-Scale Experimental Machine, known as SSEM, or the "Baby," a more powerful machine was designed and built — the Manchester Mark 1 — which by 1949 was being used for computation in scientific research in the University. This machine, in turn, was the basis of the Ferranti Mark 1 , arguably the world's first commercially available general-purpose computer, with the first machine delivered in February 1951.

The University and City of Manchester celebrated the 50th Anniversary of the birth of the Baby last summer, highlighted by a variety of events, including talks about the Baby, international conferences and seminars, musical entertainment, and the annual IEE MicroMouse competition.

One of the most exciting projects that was initiated for the June celebrations was the re-build of the original SSEM. The project was organized by the British Computer Society Computer Conservation Society. with sponsorship from ICL and the Department of Computer Science at the University of Manchester. The team for the SSEM Rebuild Project consisted of experienced engineers, many of whom made significant contributions in the early days of computing in Manchester. (Participants in the March 1998 **IFIP** Council meeting in Manchester had an opportunity to hear about the project.) The rebuilt machine has now been transferred to its permanent home in the Museum of Science and Industry in Manchester.

Also, a "Baby" Programming Competition was organised to find the most interesting new program written for the original computer. A documented down-loadable simulator was available, and the winner had the opportunity to run the winning program on the rebuilt Baby. ❑

* from the University of Manchester

The Youth Forum Was a Major Feature of IFIP Congress '98

A Youth Forum brought together 37 young people, ages 20-29, from 15 countries, to Vienna and Budapest to listen and be heard at **IFIP** Congress '98 (see other articles about the Congress in this *IFIP Newsletter* and the December 1998 issue). The Forum was the brainchild of **Prof. Egon Hörbst (DE),** chairman of the Congress International Program Committee, who invited **Mr. Peter Pfannes** (DE) to organize the forum. Its goal was to assemble the best and brightest young people from around the world to meet during the Congress. attend sessions, engage in dialogues with Congress delegates, deliberate the issues of Information Technology (IT) that are of importance to today's youth, and report the conclusions of these deliberations to the Congress delegates at its closing session.

The national computer societies of many countries chose the forum participants. They were not necessarily IT specialists (in fact, only 1/3 of them were students of computer science). Not all were even computer users. Most of them, however, had some tie to computer studies (e.g., students of economics). The funds needed to support their participation were provided by their countries, the computer societies, and the participants themselves, in some cases. (Sponsorship was also received from Sun Microsystems, **IFIP,** and the Austrian government.) It was observed that the publicity associated with the selection of the Youth Forum delegates around the world was valuable publicity for **IFIP** and the Congress.

The Organizer's Viewpoint

Mr. Pfannes wrote the following description of his involvement.

> When we were asked whether we would like to organise a youth component to the Fifteenth **IFIP** World Computer Congress, we said, "of course" without hesitating. Then we had to plan what we wanted to do, and, in cooperation with Austrian and Hungarian IFIP organisers, we had to find realistic ways to make our ideas come true.
>
> For all of us, that was quite some work. We had less than 6 months to put together a conference, find sponsors, recruit participants and organise all those tiny details. Wow!
>
> But thanks to our motivated organisers on all sides, this work was not in vain. And when it all finally started in Vienna on 28 August 1998, I could not quite believe that all the theoretical work was now reality. Imagine: You formulate an idea and suddenly it comes true! Perhaps one of the most moving moments of our Youth Summit was the Global Village evening, when every participant brought some food specialties of his/her country so that we could experience so many fascinating cultures.
>
> So we started our week with getting to know each other, and only then could we start committee work. It was our wish to contribute to the **IFIP** Congress. So all the delegates worked hard towards the common goal. We wanted to hear and be heard, and I think this was achieved. Many scientists came to us and discussed with our committees or simply listened to our presentations during poster sessions. And we always have to bear in mind that our Youth Summit was the first of its kind and therefore had no clear place in the **IFIP** programme and procedures. Nevertheless, we could find ways of making ourselves heard.
>
> I hope you will read our resolutions and promote the ideas contained in them or even discuss them with us via e-mail [peter.pfannes@stud.uni-muenchen.de]. At the opening ceremony of the Conference, in the beautiful Musikvereinssaal, I said that we were ready for the experiment and that we hoped the scientists were, as well. Now I can say that we made the best of it, and for us students it was an incredible experience. We learned much about Information Processing, but on the other hand we learned that it all starts with the individual. If these individuals work together they can reach almost every goal!
>
> I don't know enough ways of thanking those who gave us this opportunity and helped us to make this dream come true. Let me just say that we are ready for the experiment again, and if **IFIP** wishes, we would be more than motivated to continue this path even before the year 2000!

On the Wednesday of the Congress week, while the delegates were sailing on the Danube from Vienna to Budapest, the Youth Forum held a debate on one of the boats for all Congress participants. The question was "Does the Internet harm youth more than it helps?" (The final vote was 45 in favor of the Internet and 30 against.)

In addition to the benefit they gained from their deliberations, the Forum delegates found it valuable in other ways. The social interactions and the friends made were considered priceless by many. Working with young people from around the world and being exposed to their cultures was a revelation to many delegates. On the other hand, one delegate wrote that "being separated from one's own culture is unnerving." Some delegates from Eastern Europe had never been to Western Europe before.

Committee Reports

Four committees were formed, each of which presented its resolutions to the Congress delegates. The Committee for Political Affairs considered the question: Free flow of information — Do we need a legal framework to protect the global citizen? Their concerns were centered on the chaotic and undependable contents of the World Wide Web. Their resolutions centered on encouraging the establishment of "several physically separate dedicated [and controlled] nets (business, science, etc.)" but hoping that some of the "free and anarchic Internet" be preserved. They suggested the formation of a "Cyberpol" (analogous to Interpol) to police the Internet.

The Committee for Work and Economic Affairs dealt with the question: Necessary and inevitable changes in work life – how will they affect our lives and the global economy? They were primarily concerned with retraining workers throughout the course of their working lives. This entails having governments both gather information and implement programs. Among the more interesting suggestions were that universities "examine the impact of specialization (as opposed to standardization) on the working lives and opportunities of graduate students." They also discussed "homeworking/ teleworking" and called upon governments and trade unions "to improve legal protection given to teleworkers, including those with short-term contracts and 'one project' contracts."

The Committee for Educational Affairs discussed "the question of the promotion of lifelong learning through teleteaching and Net education." Among their concerns was that "moral and responsible use of the Internet" be taught to children in the primary grades. They also recommended that "teleteaching in the primary grades be used *only as supplemental education,"* except in special cases.

The Committee for Social Effects addressed "the question of access to and the social effects of the information society." They urged the enlargement of Internet access to "underprivileged regions" but as appropriate to the needs of the regions. They also urged "respectful and courteous" behavior on the Internet. They were especially concerned

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benefit of the rich. It is already becoming so, as the rules that are being laid down tend to please the interest groups of the "giants," as it was worded by the representatives of Bangladesh during the last session of our Executive Board. The gap between rich and poor continues to deepen. ...

Information institutions [museums, libraries, etc.] have also reasons to be cautious about electronic commerce. The richness of their collections is the "want" of many (individuals or companies) for quick profit making. Moreover, this information may be changed and manipulated without their knowledge. There are already many widely publicized cases of big businesses exploiting huge public stores of information for their markets, not giving sufficient legal guarantees to libraries, archives and museums. ...

UNESCO supports, through its INFOethics activities, a new approach. The approach is to make accessible information and works not linked to the problems of copyright, either because they are old and already largely available to the public, or because they are produced by public or academic organizations that are essentially preoccupied by a cost-effective diffusion of information of general interest. A growing number of authors and scholars are ready to diffuse their work free of charge, with the sole condition to be recognized as authors and with the guaranty of the integrity of their work; this is the concept of "copyleft."

The author also addressed issues of cultural diversity, as follows:

We all know that the Internet is now largely dominated by the English-speaking world and therefore by its culture. Nevertheless, the globalization of one language leads automatically to the homogenization and domination of one culture. The lack of cultural diversity is a critical issue, as it may lead to the loss of native cultures. The electronic networks must seek to transmit the widest possible variety of cultural viewpoints together with information that may not be commercially profitable, or may interest only minority groups. ...

[In the UNESCO Memory of the World Programme], unique and rare documents are digitized and put on the Web to ensure that they are known and accessible to the public at large — the ultimate aim of the Programme. At the same time, it serves to preserve the quality of the documents and to incite others to create Web sites that could eventually constitute a decentralized network among our Member States. ...

With regard to privacy, **Mr. Montviloff** made the following claims:

There is no privacy on the Internet. ... The European Union recently admitted that within Europe the US routinely intercepts all e-mail, telephone and fax communications....

The English-speaking network called "Echelon" illustrates dramatically what can happen. It has been revealed that the system intercepts 99.99% of all communications throughout the world, and it keeps improving. The data thus collected can be used for any purpose.

He ended by saying the following:

I wish to conclude by re-emphasizing that entering the age of globalization, we will have to have a vision of our role in the Information Society and how we can contribute to make it more fair, secure and liveable than it is now. ...

Mr. Montviloff also called attention to a UNESCO conference on Ethical, Legal and Societal Challenges of Cyberspace, held in October 1998. Papers from this conference, in English and French, can be found on the Web pages at

http://www.unesco.org/webworld/infoethics_2/index.htm

Another KnowRight '98 paper was The Ethics of Encryption and Inscription, by **Mr. Christopher Zielinski (GB),** which reviewed the ethical arguments for and against encryption. We give a few excerpts here.

This paper focuses on ethical issues related to the encryption of information. ... Information may be owned, but in a way that is distinct from material property ownership. It may be withheld from or, conversely, forced upon citizens in ways that are distinct from other forms of property. There may be a right to know — particularly information about oneself (privacy issues), but perhaps more widely about what one's government is doing (Freedom of Information aspects) and to have access to information that can help in human development ("essential" information). ...

Thus, encryption is one method for protecting intellectual property in general, and copyright information in particular. ... The ethical aspects lie in using encryption to withhold information in circumstances where the information is critical to human development....

However, before accepting this complacently as just another of those issues that separate the North from the South, we should note that there are information-poor people in both developing countries and in the industrialized West. With the gradual corralling of valuable information into encrypted environments, such traditionally high-volume but low-income classes as students throughout the world may find themselves and their libraries unable to afford the only high-quality and timely information there will be, which is electronic information.

The author also addressed the issue of tracing unauthorized users of intellectual property:

Those who create intellectual property (authors, artists, etc.) should be able to use techniques, including encryption, to protect their creations, both in order to ensure that the works are not tampered with, and in the endeavour to earn a living from their creativity. ...

Tracking can provide information about piracy, about attacks that damage the authenticity or integrity of the work, and about infringements of moral rights. The creator wants to know this as much as the user wants guarantees of an integral, authentic text. ...

There is a point where the legitimate pursuit of rights-infringers infringes the rights to privacy of those being pursued.

The first concern is that the right to track the location of specific content could be abused by authoritarian forces. In general, it is certainly an invasion of privacy to seek and gain accurate and consistent information about what an individual is reading, viewing, hearing, tasting or feeling — your senses are your private property. In the hands of a malignant State apparatus, such information could lead to severe consequences if the individual is thereby "revealed" to be outside the State-defined norms.

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with the isolation and depression that Internet use can cause in some people.

The full text of all the resolutions are on the World Wide Web and can be reached by accessing the base page at

http://www.ocg.at/ifip98

and then clicking on "Reflections on the Congress" and "Youth Summit."

Follow-up

Of course, the true success of the Forum depends upon the subsequent action taken. The participants called for concrete follow-up projects. They hoped to create projects that would shape the common future of the technologists and the young people. **Prof. Kurt Bauknecht (CH),** then president of **IFIP** called for the formation within **IFIP** of a permanent Youth Forum structure. A Youth Forum task group has been established in **IFIP,** led by Mr. **Pfannes** and under the guidance of **Dr. Walter Grafendorfer (AT),** an **IFIP** vice-president, which will look for ways to carry out the Forum resolutions and to prepare for a Forum at Congress 2000, in Beijing. ❑

The solution to this dilemma would appear to lie in systems that track only the unauthorized uses. In other words, you may look only where the work is not supposed to be, rather than where it is lawfully stored. The watermark or identifier should also be used to certify authenticity and integrity, as in a digital signature. ...

There is an avenue that provides hopes of a solution to this dichotomy, in systems that combine unencrypted content with identification information held in digital watermarks. In this scenario, the only defence against tampering or piracy is the law, and the identification information is used as evidence of origins and ownership (issues such as integrity and authenticity can also be handled this way).

This avenue, which I have termed "inscription," is currently being explored ...

People with Special Needs

A paper, entitled Adaptable, Adaptive and Extendable Information Systems for Occupation, Activation and Stimulation of People with Dementia, with a humane goal was presented in the 6th International Conference on Computers Helping People with Special Needs (ICCHP '98). Written by **Mr. Erwin Riederer** (DE) and **Prof. Richard Pieper (DE),** the paper described the use of a PC system to provide entertainment for people with dementia.

The nature of the disorder was stated as follows:

The afflicted people have a lot of difficulty in coping with everyday life because of their cognitive impairments. There are various safety problems, like injuries, falls, fire risk, wandering and getting lost. A major problem of demented persons is their inability to spend time alone, i.e., keeping themselves occupied. As the majority of them wants to stay at home, the informal carer (in most cases, a family member) often is the second victim of this disease. Supervision of the demented person, up to 24 hours a day, is a huge burden for the informal carer.

The objectives of the project were listed as follows:

- Joyful and meaningful activity for the patient
- Stimulation, support and opportunity for interaction and positive feedback
- Relief of the burden of informal care, enhancement of effectiveness of formal care
- Therapeutic, rehabilitative effects, reduction of medical treatment and wandering

The key issues addressed were:

- Can demented persons use computers to improve their quality of life?
- What features must such a system have?
- Do the concepts of adaptive, adaptable and pro-active system features enable an interaction between a person with dementia and computer?

The paper continued by describing an entertainment application in which the users see photographs (e.g., actors, paintings, flowers, and animals) with information and music.

The authors concluded as follows:

Persons with dementia can operate adapted computer applications up to a certain degree of dementia. Then they need assistance. In a number of case studies with patients in middle and even progressed states of the disease, the patients showed surprising effects, like activation and strong interest — in contrast to usual passive behaviour. ...

The domain of rehabilitation engineering should use HCI (Human-Computer Interaction) concepts, and on the other hand HCI research should recognize rehabilitation engineering as an excellent application area to tackle new problems and to develop concepts and goals to support human activities apart from the usual narrow objectives of increasing productivity and efficiency.

Another paper in the ICCHP '98 conference dealt with a distinctly different group with special needs: children with language disorders. The paper, Theory-Based Software Use in Language Intervention by **Dr. Mary Sweig Wilson** (US) and **Dr. Jeffrey Pascoe (US),** described software designed to help children "at risk for chronic language disorders." Parts of this interesting paper are quoted here.

Using language-intervention software with non-professional assistance, children with special needs in the early stages of language acquisition can make language gains comparable to those seen during individual language therapy with a speech-language pathologist. Significantly greater language development and improved communications skills have been observed when regular use of language intervention software was added to the ongoing curriculum of a special education classroom. There also is a broad consensus that language intervention, regardless of specific procedures, is far more effective when the intervention is engaging, appropriately challenging, requires active participation, and provides a legitimate reason for engaging in communicative behavior. ...

Recognition of the potential of microcomputer-based language intervention strategies inspired us to develop language intervention software that is now recognized as a valuable supplement to traditional intervention strategies used with children. ... The intensive instruction needed by children with language disorders often exceeds the amount of time and energy that parents, teachers, speech-language pathologists, and special educators can devote to this effort, especially since professional resources are at a premium under even the best of circumstances. Moreover, the problem is compounded in economically disadvantaged areas where the prevalence of language delay is so much greater. ... From this perspective, effective language intervention software can be regarded as a much-needed and cost-effective means to supplement the efforts of clinicians and educators. ...

[An important component of the system is] an Intelligent Computer Assisted Training (ICAT) system. This system will make it possible for the software to be controlled by "artificial intelligence" methodology designed to guide the efforts of parents and non-professionals who may implement language intervention plans, and thereby reduce the burden placed on those who may lack clinical or technological expertise. Our ICAT system was inspired by systems developed by the ... National Aeronautics and Space Administration (NASA)... .

During ongoing field testing, the behavior of the ICAT system in our prototype language intervention software continues to exceed our expectations. Higher functioning children are quickly able to demonstrate their verb knowledge by accurately identifying verb animations with minimal instructional support, yet at the same time they receive extra training with added instructional support for those few verbs with which they are struggling. The less dependable performance of children functioning at lower levels triggers an increase in the level of instructional support when they respond incorrectly, until they too reach an appropriate training level. Even after a single session there are clear differences in the material being presented to individual children, and the material is presented differently and appropriately for children with varied abilities.

The system, which involves attractive and entertaining multimedia presentations, was demonstrated to the session attendees. **Dr. Wilson** expressed regret that it has not been as easy to convince clinicians to use the system as had been originally thought.

IT&KNOWS

The papers in the Information Technology and KNOWledge Systems conference (IT & KNOWS) ranged from very abstract to applied. One of the more interesting papers

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from a sociological point of view — was WhaleWatch: An Intelligent Model-Based Mathematics Tutoring System by **Prof. Carole Beal (US), Mr. Joseph Beck (US), Beverly Woolf (US),** and **Prof. MaryAnne Rea-Ramirez (US),** which addressed the issues of mathematics education for women and computer-aided instruction. The problem with regard to women learning mathematics was stated as follows:

> Mathematics is a critical prerequisite for many college majors and science careers. Yet in the transition from elementary school to middle school, when mathematics concepts become more abstract, many students begin to lose confidence in their ability to do well in math. ...
>
> In the United States and in many European countries, math avoidance is especially prevalent among female students, who subsequently perform less well than their male classmates on math achievement tests. Even the most mathematically gifted girls have less math training and are less interested in science careers than their male peers. When compared with boys, girls have an unrealistic pessimism about their math abilities; that is, they come to feel that they lack ability while actually performing well. In contrast, boys tend to remain quite optimistic about their abilities through college.
>
> The gender differences in mathematics interest and concept of self can also be linked to students' experiences in math classes, in which girls receive less overall instruction, and less effective instruction. Specifically, teachers provide girls with less detailed information about how to solve problems and how to correct errors. Some researchers have found that boys receive up to eight times more instructional feedback from mathematics teachers than girls. Teachers tend to assume that girls have already done the best they can, so they are somewhat reluctant to urge a female student who has made errors. In contrast, they typically assume that boys have simply not paid attention or tried hard enough, and that boys can succeed with additional help and effort. In addition, teachers — the majority of whom are female — themselves have relatively little training in teaching mathematics and report that math is their least favorite subject to teach. Thus, teachers themselves do not provide strong role models for mathematics proficiency, nor to they convey convincingly to students that math is important and valuable to learn. The traditional form of math instruction does not convey to students how math can be used in other areas of the curriculum and in real-life tasks. Thus, it is not surprising that girls conclude that math is not worth the effort to master. By the end of elementary school, girls typically report enjoying other academic subjects, such as writing and reading, more than math, and rate math as less valuable to learn than do boys.
>
> One potential solution to the problem of math avoidance is to use intelligent model-based tutoring systems to provide more effective instruction. ... We developed a model-based intelligent tutor called WhaleWatch to teach fractions concepts....
>
> WhaleWatch was specifically designed to support the learning styles that are appealing to girls. Problems involving fractions are presented in the context of the domain of environmental biology which, of the sciences, is particularly appealing to girls. In the present version of the system, problems focus on a local endangered species, the Right Whale (hence the name, WhaleWatch).

The authors administered questionnaires and examinations to the students using WhaleWatch both before and after their lessons. They reported their success as follows:

> At pretest, the boys had higher scores than girls for both math self confidence and beliefs in the value of learning math. However, at post test, the girls' ratings had increased significantly. This result indicates that working with WhaleWatch had a positive effect on girls' attitudes about mathematics; in fact, at post test, there were no significant gender differences for either math self confidence or math value. ...
>
> The results of the present research suggest that individualized, supportive instruction provided by an intelligent model-based system can be highly effective in promoting students' interest in math and their belief that they can learn mathematics. The benefits were especially clear for students who were initially less interested in math (mostly girls), and benefits were strongest for students who interacted more with the system (those requiring more help; those who reached the most difficult level of problems).

Information Security

One fascinating paper in the 14th Annual Information Security Conference (IFIP/SEC '98) was Can Computerized Immunity Be Achieved, Based on a Biological Model? by **Mr. Buks Louwrens** (ZA) and **Prof. Basie von Solms (ZA).** It describes a futuristic technique for maintaining a secure network. The abstract reads as follows:

> Modern day network-centric computing can increasingly be viewed as a vast, extremely involved organism, of which the boundaries are not clear, and most of the constituent parts are unknown from any given viewpoint. It has already become difficult to effectively ensure the security of such vast computing systems, and it may be impossible to do so in the future with current approaches to computer security. On the other hand, nature has been successful in defending its complex biological systems from infection and damage for countless millennia by using highly specialized and evolved immune systems. It is therefore postulated that a highly effective defensive mechanism can be developed to transparently enforce an acceptable level of security in very extensive and complex computer networks and systems, by building very basic, but specialized, autonomous software agents that follow basic rules which can be deduced from biological immune systems.

The paper included "basic rules for an immune system." We list some of them here.

- Perform continuous active surveillance of all code by mobile agent patrols and find new nodes on the enterprise network system.
- Interrogate, identify and classify all code encountered as benign or harmful.
- Present the antigenic determinants (pieces of identifiable code) for identification and manufacturing of appropriate antibody agents if the appropriate receptor agents are not available.
- Communicate the presence of an antigen by signalling to other software agents and the intermediate support infrastructure.
- Apprehend the antigen by incapacitating and encapsulating it. If the antigen is unknown, or can not be dealt with locally, transport it to the intermediate support infrastructure, or if needed, to a specialized laboratory for analysis.
- Communicate the location of the antigen to other computer components (routers) so as to facilitate the routing of immune software agents to the node.

Teleteaching

The most popular of the conferences was Distance Learning, Training and Education (TELETEACHING '98), which had six simultaneous sessions at times. One of the papers from this conference, Telecommunications in Secondary Education: Lithuanian Reality and Perspectives by **Dr. Valentina Dagiene** (LT) and **Lina Markauskaite (LT),** described the status of the use of telecommunications in secondary school education in Lithuania. We quote part of the introduction here.

> Informatics is usually taught as a separate subject in Lithuania. The subject became compulsory in all secondary schools more than ten years ago. Recently, new informatics curriculum and education standards have been developed for basic comprehensive schools. Major attention is paid to the meaning and concept of CIT [Communication and Information Technologies].

The development of information skills should satisfy students' communication, self-expression and creativity needs. Information abilities should help youngsters to feel safe and take part in a rapidly changing world and to be responsible for the world community. The best way is to start enhancing children's information technology skills from the earliest grades. Lithuanian schools are poorly equipped with hardware, which is why only upper secondary school students have an opportunity to acquire CIT knowledge and develop practical skills. Nevertheless, students should be acquainted with the basic CIT concepts in earlier grades. These subjects should be covered during the lessons of various subjects and out-of-class activities.

Since the 1998 school year, informatics has been a compulsory course in the final years of basic school (9th and 10th grade). The informatics curricula of basic schools embrace four main topics: informatics, algorithms, computers, and information technology.

The informatics course covers the principal CIT themes. These topics are studied as a separate course. The integration of computers into the existing subjects is limited for the following reasons: the lack of software and hardware in schools; the lack of knowledge and insufficient training opportunities for teachers.

In 1996, more than 1,200 computers were in use in about 210 secondary schools. Only 85 schools (about 12% of all upper secondary schools) have computer labs with six or more machines. In 1995, the Ministry of Education and Science focused its attention on the policy of promoting the use of new technologies in education. This policy resulted in the announcement of a new project, "Computers for Secondary, Vocational and High Schools in Lithuania." ...

This project is the first significant contribution to the computerisation of Lithuanian schools, but it satisfies only the minimal requirements of educational institutions.

Other Thoughts

Among the more entertaining paper titles were the following:

CORBA Lacks Venom

No Place Like Home — No Boss Smarter than Me?

The Future of Knowledge

Educating the Mind without the Body

Prof. Egon Hörbst (DE) was chair of the Congress International Program Committee

The Congress proceedings are available from the Austrian Computer Society. For more information, please refer to the Web page at http://www.ocg.at/proceedingsoffer.html. ❑

Should We Continue to Hold IFIP Congresses?

*by Dr Jack Rosenfeld (US) **

Before there was an **IFIP,** there was a Congress. It was only after the first Congress, in 1959, that the founders conceived of a federation to organize Congresses, on a triennial basis. Gradually, that organization, **IFIP,** evolved into the Federation it is today, sponsoring a multitude of technical events around the world annually (68 in 1998). The attendance at the Congresses, now held biennially, has dwindled over the years, reaching a low point of 500-600 for the 1996 Congress in Canberra, but back up to 1200-1300 for the 1998 Congress in Vienna and Budapest.

At virtually every **IFIP** General Assembly (GA) and Council meeting for the past decade — or more — the issue has been raised concerning whether **IFIP** should continue to hold Congresses. After each Congress, we have said either, "This Congress was a success, so we should continue to hold them," or "This Congress was unsuccessful, but we have learned how to make the next one better." We have rarely held a reasoned debate on this matter so important for **IFIP.** In order to open a dialog before we solicit invitations to host the 18th **IFIP** World Computer Congress in 2004 (the 16th and 17th will be held in Beijing and Montreal, respectively), I present here some of the arguments in favor of and against holding **IFIP** Congresses. Although I have attempted to be evenhanded, my biases may show. The Executive Board certainly does not share my viewpoint.

In Favor

Congresses have provided substantial income to **IFIP,** useful in carrying out its other programs; however, this has been less true recently. For example, the 1996 Congress will result in income of only approximately 42 000 Swiss francs over a period of five years (one fifth was paid in 1998). This is of the order of magnitude of 10% of the annual **IFIP** expenses, every other year. The income from the 1998 Congress has yet to be determined; however, no royalties will be paid for the proceedings given to the delegates (but some may be received for post-Congress sales).

* Individual Member, editor of ***IFIP** Newsletter*

Congresses enable computer specialists to learn the latest developments in their fields.

Congress proceedings contribute to the body of scientific literature in our field.

Congresses provide an opportunity for specialists to present their work to their peers. (In one way, this opportunity has been misused. Nine percent of the authors of the papers accepted for presentation at the 1998 Congress did not attend and deliver them. This may indicate that they submitted their papers solely to get credit for publishing in the Congress proceedings.)

The quality of the programs lends credit to **IFIP.**

Congresses allow delegates to perform networking, meet friends, renew acquaintances, and reestablish contacts every two years.

They give delegates a chance to enjoy sightseeing in picturesque places. Although this is said tongue-in-cheek, the relatively low attendance at many sessions of the Vienna/Budapest Congress may indicate that delegates were out seeing the sights, while the low registration in Canberra, not a major tourist locale, may also attest to this argument.

Against

Congresses are extremely expensive in terms of

- the time expended by volunteer workers (International Program Committees, Organizing Committees, referees, **IFIP** Congress Committees, GA members, and others)
- the time spent by authors and other speakers to prepare papers
- governmental subsidies
- commercial sponsorships
- cost to participants (registration fees, travel expenses, and accommodation expenses).

The total expense may not be worth the benefits gained.

Many consider the general-purpose Congress a "dinosaur." Our discipline has expanded so greatly over the past 40 years that most specialists want to present their work at conferences attended by peers in their specialities. The recent format for the Congresses as umbrellas for a number of specialized conferences is intended to overcome this barrier. This format provides the spe-

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Call for Papers

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.** ❑

Correction

In an article about **Dr. William 011e** on page 2 of the September 1998 *IFIP Newsletter,* it should have stated that he was secretary of TC8 from 1976 to 1982. ❑

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cialist the opportunity to attend a specialized conference and, at the same time, learn about other disciplines - from keynote speakers and from sessions she or he attends in the other conferences. Economy of scale is also achieved. There are drawbacks in this approach, as well. For example, the registration fee for the Congresses has been much greater than many scientists are used to paying for individual conferences. Also, having the conferences spread over five days is a burden for some. And for those who desire a broad perspective of the entire field, the umbrella approach is unsatisfactory.

A Congress program of low quality or a badly organized Congress creates a negative image of **IFIP.** (The converse argument was given above.)

A Congress with proceedings not published by a recognized publisher, as was the case for the 1998 Congress, results in a nonarchival body of work that is not accessible to the scientific community. (The converse argument was given above.)

Members of the IFIP community who wish to contribute to this debate are encouraged to communicate their thoughts to me or their GA representatives. ❑

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.l	Jul 99	Oxford, UK
	Oct 99	Hong Kong, China
WG1.2	12 Jun 99	Bergen, Norway
	18-22 Jul 99	Magdeburg, Germany
	1-4 Nov 99	Boca Raton, FL, USA
	Nov 2000	San Jose, CA, USA
WG1.3	13-14 Sep 99	Bonas, France
WG1.6	1 Jul 99	Trento, Italy
TC2	19-20 Jun 99	Munich, Germany
WG2.2	May/Jun 99	Udine, Italy
WG2.3	Jun 99	Munich, Germany
WG2.4	Aug 99	Poland
	Sep 2000	Canada
	Jun 2001	Pisa, Italy
	Apr 2002	Paderborn, Germany
WG2.5	19-20 May 99	W. Lafayette, IN, USA
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	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	Visa del Mar, Chile
	Jul 2001	Copenhagen, Denmark
WG3.2	5 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	4 Aug 99	Irvine, CA, USA
WG3.7	27 Nov 99	Palmerston, New Zealand
	Jul 2000	New Zealand
TC5	11-12 Sep 99	Berlin. Germany
WG5.7	5 Sep 99	Berlin, Germany
TC6	23-24 Apr 99	Copenhagen, Denmark
	29-30 Aug 99	Szentendre, Hungary
	Jan 2000	Paris, France
	Aug 2000	Beijing, China
TC7	12-16 Jul 99	Cambridge, UK
WG7.5	Sep 2000	Ann Arbor, MI, USA
TC8	late Jun 99	Copenhagen, Denmark
WG8.l	20-22 Sep 99	Leiden, the Netherlands
WG8.2	23-26 May 99	St. Louis. MO, USA
	May/June 2000	Aalborg, Denmark
WG8.6	22-26 May 99	St. Louis, MO, USA
	April/May2000	Sydney, Australia
TC9	12-13 Jun 99	Stockholm, Sweden
WG9.I	14-16 Sep 99	Copenhagen, Denmark
WG9.2	3-4 Jul 99	the Netherlands or UK
WG9.3	16-17 Apr 99	Wolverhampton, UK
WG9.4	15-16 Sep 99	Kuching, Malaysia
WG9.6	13 Jun 99	Stockholm, Sweden
TCI0	30-31 Aug 99	Toulouse, France
WG10.3	Oct 99	Newport Beach, CA, USA
WG10.4	19-22 Jun 99	Lake Geneva, WI (near Chicago, IL), USA
	Jan 2000	Cape Verde
TC11	29 Sep 99	Amsterdam, the Netherlands
WG11.1	30 Sep-1 Oct 99	Amsterdam, the Netherlands
WG11.2	30 Sep-1 Oct 99	Amsterdam, the Netherlands
WG11.5	18-19 Nov 99	Amsterdam, the Netherlands
TCI3	Aug 99	Edinburgh, UK
WG13.1	Sep 99	Edinburgh, UK
WGI3.2	Sep 99	Edinburgh, UK
WG13.3	Sep 99	Edinburgh, UK
WG13.4/2.7 see WG2.7 above		
WG13.5	Sep 99	Edinburgh, UK

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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Calendar of Events

(Continued from page 16)

Event	Date	Location	Sponsored by	Org. Contact
INTERACT '99 Human Computer Interaction	29.8.-3.9.1999	Edinburgh, GB	IFIP TC13	kilgour@bcs.org.uk, http://www.bcs.org.uk/hci/i99, Fax: +44 1314513327
3rd Intl. Symposium on Environmental Software Systems	30.8.-2.9.1999	Dunedin, NZ	IFIP WG5. II, CRLE Guelph, CA; Univ.of Otago, NZ.; Aust.Research Ctr., Seibersdorf, AT	ralfdenzer@eii.hd.shuttle.de , Fax: +49 6223 970236
Forum on Design Languages	30.8.-3.9.1999	Lyon, FR	ECSI, IFIP WG10.5, VI, OVI, ITG, G1, GMM	jean.mennet@imag.fr, Fax: +33 476 428787
12th IFIP Work.Conf. on Testing of Communication Systems	1-3.9.1999	Budapest, HU	IFIP WG6.1	sarolta.dibuz@lt.cth.ericsson.se, Fax: +36 1 4377219
IFIP WG9.4 Conf. on The Social Implications of Computers in Developing Countries	15-16.9.1999	Kuching, MY	IFIP WG9.4, Univ.Malaysia Sarawak	roger@fitunimas.my, Fax: +82 672301
Work.Conf.on Information System Concepts: An Integrated Discipline Emerging	20-22.9.1999	Leiden, NL	IFIP WG8.1	alexander.venynstuart@wxs.nl, http://www.wi.leidenuniv.n1/~ven-ynst/ISCO4-f . html, Fax: +31 71 5276985
FM'99: World Congress on Formal Methods	20-24.9.1999	Toulouse, FR	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
10th IFIP WG 10.5 Work.Conf.on Correct Hardware Design and Verification Methods	229.9.1999	Bad Herrenalb , DE	IFIP WG10.5	kropf@ira.uka.de, Fax: +49 721 6083962
7th Annual Work.Conf. on Information Security Management & Small System Security	30.9.-1.10.1999	Amsterdam, NE	IFIP WG11.1/11.2, TNO	rossouw@ml.petech.ac.za, http://www.rau.ac.za/ifip, Fax: +27 41 5043313
Symposium on Agent Systems and Applications	3-6.10.1999	Palm Springs, CA, US	IEEE, IFIP TC6, USENIX	danny@acm.org , http://www.generalmagic.com/asa
IFIP TC6/WG6.I Joint Intl.Conf. on Formal Description Techniques (FORTE X11) and Protocol Specification, Testing & Verification (PSTV XIX)	5-8.10.1999	Beijing, CN	IFIP WG6.1, Natl. Natural Sc.Found.of China, Chinese Inst. of Electronics	jianping@cemet.edu.cn , Fax: +8610 62785933
Work.Conf. on Infrastructures for Virtual Enterprises	27-28.10.1999	Oporto, PT	IFIP W(15.3, Esprit Product	cam@uninova.pt, Fax: +351 1 2941253
3rd Intl.Work.Conf. on Integrity and Internal Control in Information Systems	18-19.11.1999	Amsterdam, NL	IFIP WG1I.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, CL	IFIP WG3.1, UNESCO, CONICYT, Fund. ANDES	elagos@umce.cl, Fax: +56 2 2412728
7th Intl.IFIP Conf. on Women, Work and Computerization	25-28.5.2000	Vancouver, BC, CA	IFIP WG9.1, WG on Women and Computing	ebalka@sfu.ca, Fax: +1 604 2914024
IFIP World Computer Congress 2000	21-25.8.2000	Beijing, CN	IFIP	mqzhou@public.bta.net.cn , http://www.cie-china.org/wcc2000.htm, Fax: +861 06828 3458
Work.Conf. on Software Architecture for Scientific Computing Applications	2-6.10.2000	Ottawa, CA	IFIP WG2.5	morven.gentleman@iit.nrc.ca , Fax: +I 613 9520074
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, AT	IFAC, IFIP TC5	c318@ihrtLihrt.tuwien.ac.at , Fax: +43 1 50418359

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Calendar of Events

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Minisymposium on Stochastic Optimization & Technical Appl.	13-15.4.1999	Metz, FR	IFIP WG7.7, GAMM	kurt.marti@unibw-muenchen.de, Fax: +49 89 6004 3560
3rd IFIP Workshop on Traffic Management and Synthesis of ATM Networks	26-28.4.1999	London, GB	IFIP WG6.2	j.m.griffiths@elec.qmw.ac.uk, Fax: +44 181 9810259
Symposium on Standards for Computer Graphics and Imaging	26-28.4.1999	Washington,DC, US	DISA, IFIP WG5.10, Eurographics	smith5j@ncr.disa.mil, Fax: +I 703 7353255
3rd ICCC/IFIP Conf. on Electronic Publishing '99 - Redefining the Information Chain-New Ways and Voices	10-12.5.1999	Ronneby, SE	ICCC, IFIP TC6	peter.linde@hk-r.se, http://www5.hk-r.se/elpub99.nsf, Fax: +46 45578137
IFIP WG8.2 St. Louis Working Conf.	22-25.5.1999	St.Louis, MO, US	IFIP WG8.2	mjanson@umslvma.umsl.edu, Fax: +1 314 516 6827
Intl. Workshop on Quality of Service	30.5.-4.6.1999	London, GB	IFIP WG6.1, IEEE	jon@cs.ucl.ac.uk , Fax: +44 171 3871397
4th IEEE Intl. Symposium on Requirements Engineering Conlon Communications & Networking in Education	7-11.6.1999 13-18.6.1999	Limerick, IE Aulanko, FI	IEEE, IFIP WG2.9, ACM IFIP WG3. 1/3.5, Univ.of Helsinki, Comp.Soc.of Finland, Min.of Education	kevin.ryan@ul.ie, Fax: +353 61 202561 matti.sinko@helsinki.fi, http://www.hyvan.helsinki.fi/kttk/comned99 /, Fax: +358 9 8574328
15th IMEKO World Congress	13-18.6.1999	Osaka, JP	IMEKO, IFIP,+D31 RELA, BIPM, OIML	i90415@sinet.ad.jp, Fax: +81 3 38144699
User Identification and Privacy Protection - Applications in Public Administration and Electronic Commerce	14-15.6.1999	Kista, SE	IFIP WG8.5/9.6	simone@dsv.su.se, http://www.dsv.su.se/IFIP-WG-9.6/Cfp ws85-96.htm, Fax: +46 8 7039025
Intl.Enterprise Modelling Conf.	14-16.6.1999	Verdal, NO	Aker, IFIP WG5.12, ICIMS-NOE	bjom.andersen@protck.ntnu.no, http://www.sintef.no/units/indman/delta/iemc-99, Fax: +47 73 597117
IFIP WG 11.8 First World Conf.on Information Security Education	17-19.6.1999	Kista, SE	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, FI	IFIP WG6.1	dais99@cs.helsinki.fi, http://www.cs.Helsinki.FI/events/DAIS99, Fax: +358 9 7084 4441
1st Intl. Work.Conf. on Active Networks	30.6.-2.7.1999	Berlin, DE	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, GB	IFIP TC7	m.j.d.powell@damtp.cam.ac.uk, Fax: +44 1223 337918
13th IFIP WG11.3 Work.Conf. on Database Security	26-28.7.1999	Seattle, WA, US	IFIP WG11.3	samarati@dsi.unimi.it , Fax: +39 0373 898253
Work.Conf. on Building University Electronic Educational Environments	3-6.8.1999	Irvine, CA, US	IFIP WG3.2/3.6	IF1Pconf@uci.edu, http://eec.uci.edu/program/ifipwg32/, Fax: +1 949 8242069

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

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