IFIP newsletter
International Federation for Information Processing

Editor:
Dr. Jack L. Rosenfeld

Distributed by
IFIP Secretariat

Vol. 10, no. 3; September 1993

INFORMATION PROCESSING SOCIETY OF JAPAN

The Information Processing Society of Japan (IPSJ) was established in April 1960 to promote information processing science in Japan by providing means for exchanging ideas and experience related to computer applications. IPSJ began with a membership of 800, but today the membership exceeds 32 000. The major activities of IPSJ are as follows:

- representing Japan in the **IFIP** General Assembly
- publishing technical journals
- holding National Conferences twice a year (conferences with more than 1000 submitted papers and approximately 3000 participants).
- holding working conferences and symposia for its Working Groups
- coordinating the Japanese National Committee for the International Standards Organization's Technical Committee for Information Systems.

The 23 Working Groups of IPSJ are as follows: Natural Language, Database Systems, Artificial Intelligence, Symbol Manipulation, Software Engineering, Computer Architecture, System Software and Operating Systems, Computer Vision, Design Automation, Distributed Processing Systems, Human Interface, Computer Graphics and Computer Aided Design, High Performance Computing, Information Systems, Programming Languages, Fundamental Infology, Computers in Education', Algorithms, Computer and Humanities, Information Media, Music and Computer, Audio Visual and Multimedia Information Processing, and Groupware.

IPSJ publishes *Transactions of IPSJ* (with all abstracts and some papers in English) and *Joho Shori,* a monthly journal.

The founding of IPSJ was initiated and accelerated by the creation of **IFIP.** Today the number of IFIP-related activities is very high. IPSJ hosted the first part of **IFIP** Congress '80 in Tokyo, with more than 2200 people from 52 countries attending (followed by the second part in Melbourne); two **IFIP** conferences will be held in Japan in 1993; *Dr. Kaoru Ando* served as the seventh **IFIP** president, from 1983 to 1986; *Mr. Masanori Ozeki* is an **IFIP** trustee; and IPSJ maintains a National Committee for **IFIP,** in order to strengthen and further active cooperation with **IFIP.**

IPSJ also co-sponsors various international conferences on software engineering, computer architecture, databases, etc. with the U.S. societies ACM and IEEE-CS.

IPSJ is very pleased to be hosting the 1993 **IFIP** General Assembly, which meets 6-9 September in Tokyo. ■

NEW ADDRESS FOR NEWSLETTER EDITOR

Please see the masthead on page 2 for the new address of the Editor of the ***IFIP*** *Newsletter.*

LECTURERS PROGRAM

IFIP has instituted the **IFIP** Lecturers Program, providing a list of volunteer lecturers on topics related to information processing to the Member societies of **IFIP** and any others who wish to avail themselves of this service. The project, under discussion for many months by the **IFIP** Marketing Committee and the Developing Countries Support Committee, was finally advanced by *Dr. Dipak Khakhar (S),* an **IFIP** trustee, following the 1992 General Assembly in Toledo, Spain. At present, *Dr. Khakhar* maintains the list of lecturers in the on-line **!HP** database (see the box on page 5) in the file named LECTURE TXT; the list is also available in hardcopy form from the **IFIP** Secretariat.

IFIP makes no warranties about the accuracy of the information nor of the availability or ability of the lecturers. Also, it is the responsibility of the host

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Published quarterly by

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Printed for **IFIP** by the courtesy of Elsevier/North-Holland.

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

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

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

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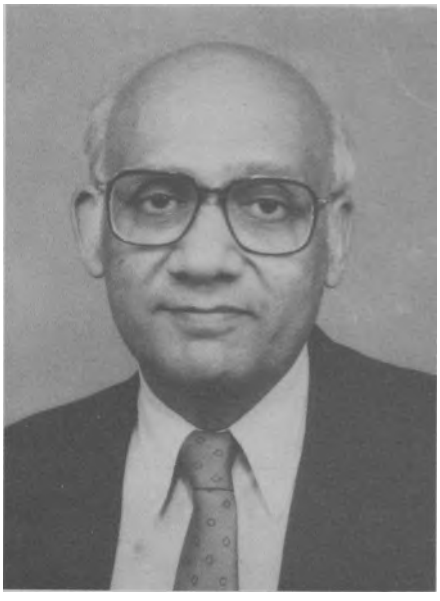
Who's Who in IFIP: DR. PREM P. GUPTA



Dr. *Prem Prakash Gupta,* chairman of the International Program Committee for **IFIP** Congress '96 (Canberra), was born in Lucknow, India. He has had a long association with **IFIP:** as president of the Computer Society of India (1976-78), he was host to the **IFIP** Council meeting in Bombay in 1978; he was chairman of the Organizing Committee for NETWORKS 80, sponsored by **IFIP's** Technical Committee on Communication Systems (TC6); and he has been an active member of TC6 and its Working Group 6.5 on Application Layer Communication Services (earlier called International Computer Message Systems). He has been especially involved with activities related to developing countries.

Dr. Gupta received his early education in India, earning a post-graduate qualification in Electrical Engineering from the Indian Institute of Science in Bangalore. He then went to England to study at the Imperial College and the Queen Mary College (University of London), receiving a Ph.D. Degree in 1960. His thesis was on Digital Computer Applications in Power Systems Engineering.

He worked in the U.K., for AEI, Ferranti Ltd., and ICL, until 1964, when he returned to India. There he worked for CDC and International Computers (India) Ltd., the Indian subsidiary of ICL.

In 1976, he was appointed by the Government of India as the first Managing Director of Computer Maintenance Corporation (CMC). He was responsible for setting up the organisation that took over the maintenance of all IBM equipment when IBM closed its Indian operations in 1978. In 1981, *Dr. Gupta* was appointed Secretary to the Government of India in the Department of Electronics, responsible for overseeing the entire electronics field, including computers; developing the industry; initiating research and development projects; and formulating and implementing policies at the national level. In 1984, he returned to CMC as its Chairman and Managing Director. He has written many papers and delivered many speeches on various aspects of computer policies, particularly relating to developing countries.

He retired in 1992 and now spends most of his time in educational and related activities. He serves on the boards of several institutes and foundations.

Dr. Gupta is very active in the International Council for Computer Communication, having just retired as its president, after a 2-year term. Previously, he was chairman of the ICCC Committee for Developing Countries. He has been especially active organising conferences in India on behalf of ICCC.

Concerning his private life, he writes, "My wife, Shanta, holder of a Master's Degree in biochemistry from Johns Hopkins University, has been a pillar of strength to me in all my activities, by ensuring that I keep my feet on the ground. **In** addition to her other abilities, she is an educator and a social worker of repute in her own right — running a school and many social organisations. Our son, Aditya, was born in London but has now settled in India, running a software development company. He, his wife, Mala, and our grandchildren, Ashwin and Anushka, are absolutely delightful. Our daughter Anshu (22) is 'reading' Chemistry at Oxford. I Love solving crosswords, and music and reading are common passions between Shanta and me. I am looking forward to her help, advice and guidance in fulfilling my role as the chairman of the International Program Committee for **IFIP** Congress '96."

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IFAC AND IFIP FORM JOINT TASK FORCE

Architectures for Integrating Manufacturing Activities and Enterprises

*by Prof. Theodore Williams (USA) **

One of the major decisions made by IFAC at its 11th Triennial Congress in Tallinn, Estonia, in August 1990, was to propose to **IFIP** that they together develop a Task Force on Architectures for Integrating Manufacturing Activities and Enterprises. [IFAC (the International Federation of Automatic Control) and **IFIP** are sister Federations in FIACC (the Five International Associations Coordinating Committee).] While these Federations had previously co-organized and co-sponsored many conferences, symposia, and workshops in the past, this was the first time they had jointly fielded a technical working group to investigate together a new technical area. IFAC was represented in this sponsorship by its Manufacturing Technology Committee and its Computers Committee. **IFIP's** Technical Committee on Computer Applications in Technology (TC5) was the **IFIP** sponsorship partner. Each Federation nominated a group of individuals for membership. *Prof. Theodore Williams (USA)* was named chairman.

The architectures studied by the Task Force are becoming very important because they provide examples, patterns, frameworks, guidelines, instructions, and other types of project-development aids to persons making systems engineering studies for all kinds of enterprise-development projects. These architectures are themselves models of the process of project development. Such architectures were initially prepared to help design computer-integrated-manufacturing (CIM) systems for the discrete-manufacturing industries. Their use is now rapidly expanding into all other types of manufacturing and, indeed, into all types of enterprises.

Available Architectures

The first mission of the Task Force was to review the available set of applicable architectures, develop a measure of the users' needs with respect to such architectures, and then evaluate a selection of the architectures with regard to their capability to fulfill the expressed needs just determined. Initially, because of the amount of available manpower, the Task Force picked three major candidate architectures for their investigation. The developers of these architectures were all represented in the Task Force membership. Later, it was found that these three architectures were a fortunate selection from among those available at the time, since, of those reviewed, they were the ones that came the closest to satisfying their users' needs. This was because they were architectures of the life history of the enterprise itself rather than being merely physical or functional descriptions of part of the system of that enterprise. At about the same time, the Task Force determined that it was this type of life-history or project-development architecture that was of the most value to the users of these systems.

Combining Architectures

Because of the newness of this field, the Task Force also found that none of the candidate architectures was complete in fulfilling all the needs of the users in planning, developing, and operating their proposed integrated enterprise systems. However, recommendations were made which would allow any one of the candidate architectures to be "completed." Also presented was a proposal to take the best parts of each candidate architecture to develop a new architecture that would be synergistically superior to any of the candidates alone. Proposals were also made to help solve the continuing problem of handling the massive amounts of detail always necessary with projects of this kind.

The Task Force has been very active since its formation in 1990. Six meetings have been held, with considerable correspondence between meetings. The Task Force presented a major report at the 12th IFAC Congress in Sydney, Australia, in July 1993 and will present the same report at the next **IFIP** TC5 Conference in Phoenix, Arizona, U.S.A., in September. A much larger technical report, edited by *Prof. Williams, will* be published jointly by IFAC and **IFIP** in book form.

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* U.S.A. representative to TC5, and member of IFAC committees on Manufacturing Technology and Computers

INTERFACES IN INDUSTRIAL SYSTEMS FOR PRODUCTION AND ENGINEERING

by Dr. Joachim Rix (D) †

Sixty-two participants attended a workshop on Interfaces in Industrial Systems for Production and Engineering held March 15-17, 1993. The Workshop, sponsored by **IFIP's** Technical Committee on Computer Applications in Technology (TC5) and its Working Groups, was held in Darmstadt, Germany. The participants came from ten different countries, mainly from Europe, but also from the U.S.A. and Japan.

The broad area covered by the workshop was well reflected by the 20 papers presented. Very different topics, but all important, were addressed, such as

- man-machine interaction
- product data technology
- information exchange
- planning tools
- cooperative work
- distributed systems.

The opening address by the invited speaker, *Dr. Nigel Shaw (GB),* entitled Interfacing Technology for Manufacturing Industry: From Islands of Automation to Continents of Standardization, gave a broad overview and a good introduction, describing the needs of industry and the requirement for standardized interfaces. The development of the ISO (International Organization for Standardization) standard STEP (Standard for the Exchange of Product Model Data) was one of the key words in many presentations. **STEP** seems to play an important role in the integration of production and engineering systems.

Prof. Jose Encarnação (D), chairman of the TC5 Working Group on Computer Graphics (WG5.10), **was** Workshop Chairman. *Dr. Ernst Schlechtendahl (D)* and *Dr. Joachim Rix (D)* were chairmen of the International Program Committee and Organizing Committee, respectively and also served as editors of the proceedings, which have been published by Elsevier/North-Holland. ■

† chairman of the Workshop Organizing Committee

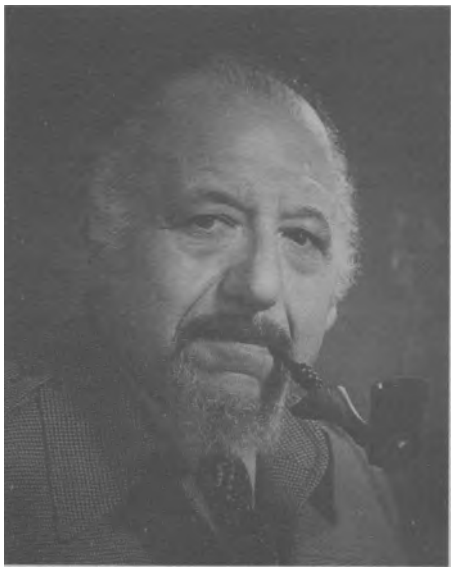
FIRST TC11 KRISTIAN BECKMAN AWARD PRESENTED TO PROF. HAROLD HIGHLAND

*by Ms. Dorothy Mills (USA) **

The Kristian Beckman Award was recently established by IFIP's Technical Committee on Security and Protection in Information Processing Systems (TC11) to commemorate the first chairman of the committee, *Mr. Kristian Beckman (S),* who was also responsible for promoting its founding in 1983. This award will be presented annually at the IFIP Security Conference, which is organized under the auspices of TC11.

The objective of the award is to publicly recognise an individual who has significantly contributed to the development of information security, especially achievements with an international perspective. The criteria for nomination require that at least part of the individual's efforts should have been made in the form of books, articles, or presentations in the field of information security.

Prof. Harold Joseph Highland (USA) was named as the first recipient, in recognition of his contribution to information security. The award was announced at the Ninth International IFIP Symposium on Computer Security, IFIP/Sec'93,



held in Deerhurst, Ontario, Canada, May 12-14.

Prof. Highland's career spans 55 years, with experience in business and industry, academia and the military. His activities include managing large research organizations, serving as a consultant, writing and publishing, teaching at universities around the world, and administering university departments. He is a prolific author, having written 26 books in the past 35 years. He has received numerous other awards for his work.

Before retiring from the State University of New York with the rank of Distinguished Professor, *Prof. Highland* conceived and created the journal *Computers & Security*, whose first issue appeared in January 1982. In 1983, it became the official journal of TC 11. *Prof. Highland* and his wife, *Prof. Esther Highland,* who was Managing Editor, continued to run the journal until 1990, when he became Editor-in-Chief Emeritus. He continues to write his column, "Random Bits & Bytes." Among his major loves is serving as chairman of the the IFIP Working Group on Information Security Education (WG11.8). *Prof. Highland* has also served as Public Information Officer of TC11 since its inception.

In addition, he is Managing Director of CompuLit's Microcomputer Security Laboratory; President of the Virus Security Institute; Associate of the Information Security Research Centre of Queensland University of Technology in Brisbane, Australia; Chairman of the Task Force on Implementation of the ACM International Plan; and on the editorial board of six professional journals.

* Legal Director of Compulit, Inc.

IFIP'S SECOND NAMUR AWARD TO DR. RICCARDO PETRELLA

by Prof. Jacques Berleur (B) t

On May 21st, 1993, IFIP's Working Group 9.2 (Social Accountability) granted its second Namur Award to *Dr. Riccardo Petrella,* head of the Forecasting and Assessment of Science and Technology (FAST) programme of the Commission of the European Communities (CEC).

The Namur Award is presented every two years in recognition of an outstanding contribution, with international impact, to the awareness of social implications of information technology. Its purpose is to draw attention to the need for a holistic approach to the use of information technology, in which the social implications have been taken into account.

As the head of FAST, *Dr. Petrella* "has pioneered studies and actions on issues related to social sciences within the CEC research and development activities, at a time when the concern for social sciences was virtually nonexistent and this type of

study neglected," according to a CEC evaluation panel. FAST has been successful in making research and development policy makers from the European Commission and its member countries aware of many challenging issues. These include new anthropocentric production systems, the increasing importance of cities for R&D, European integration and its effects on less developed regions, Community cohesion, technological and economic globalization, and scientific infrastructures for observing the social shaping of science, technology and innovation.

Dr. Petrella is a "technology assessment globetrotter": he is Visiting Professor at numerous universities and organizations throughout Europe, North America, Africa, Latin America, and Asia. He is also a prolific writer, popularizing FAST ideas and activities. He also knows that initiatives are established more effectively when encompassed by institutions. (Besides the technology assessment offices, a network of fifteen European universities is about to launch a Society, Science and Technology programme.) He is, above all, simply a friendly man.

On accepting the Award, *Dr. Petrella* delivered the second Namur Award Lecture, entitled "What achievements in the field of 'Computers and Society'? And what prospects?" It is available from the IFIP Secretariat.

t chairman of **IFIP** WG9.2

INTERACTION OF PROTOCOLS, ARCHITECTURES, AND APPLICATIONS

Increasingly, the effective use of computers depends upon smooth interworking between disparate and diverse computers that communicate with each other using a wide variety of networking technologies. Such smooth interworking, in turn, depends critically on standardized communication protocols, which are themselves dependent on clearly understood and well-specified architectures for distributed applications. As new applications are developed, new protocols are vital to the success of the applications in the world.

In order to provide an international forum for the exchange of information on the technical, economic, and social impacts and experiences with this topic, IFIP's Working Group on Application Layer Communication Services (WG6.5) is organizing an International Working Conference on Upper Layer Protocols, Architectures and Applications (ULPAA). Planned for Barcelona, Spain from 1-3 June 1994, the ULPAA conference will provide a pre-standards forum where leading researchers can discuss promising and problematic developments in the world of distributed applications. Past conferences in this series have had significant impact on the earliest stages of standards development in both the ISO (International Organization for Standardization) and Internet protocols.

Papers are solicited that will help to focus the efforts of the networking community and to point out new directions for continued progress. For further information regarding submitting manuscripts (deadline 1 November) please contact

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The 3-day conference will include 2 1/2 days of conference paper presentations combined with 1/2 day of workshops, all preceded by 2 days of tutorials (30-31 May).

DAVID T. LINDSAY

Mr. David Lindsay (GB), secretary of IFIP's Technical Committee on Security and Protection in Information Processing Systems (TC11), died suddenly in April at the age of 57. He was internationally respected as an authority and an active contributor in the field of computer security. Having worked in industry as a programmer, management consultant, computer security officer, and security consultant, he was in the process of establishing himself as an independent security consultant at the time of his death.

Mr. Lindsay served as president of the British Computer Society's Security Specialist Group and other related groups and contributed greatly to their output, including national security legislation.

He was the U.K. representative to TC11 and a key organizer and facilitator. He chaired the Organizing Committee of IFIP/SEC'91, held in Brighton, U.K., in May 1991. *Prof. William Caelli (AUS),* TC11 chairman, wrote, "David's enthusiasm for the task and continuing interest and expertise in all aspects of information security will long be remembered by his friends in TC11."

IFIP PUBLICATIONS AVAILABLE

New **IFIP** workers should be aware of the availability of the following **IFIP** publications from the **IFIP** Secretariat:

- Information Bulletin
- Statutes and Bylaws
- Standing Orders
- *What Is **IFIP?***
- **IFIP** Plan (planned events)
- WG Chairman's Handbook
- Event Approval Guidelines
- Policy on Working Conferences
- Publications Policy
- Guidelines for Editors of **IFIP** Working Conference Proceedings

On-Line IFIP Database

All readers are reminded that a database of IFIP information (including this *Newsletter)* is now available through international computer networks. Access is possible via ftp from the repository at software.watson.ibm.com and via ordinary e-mail from the listserv@ cearn (Bitnet) repository. In addition, the database can be accessed through GOPHER. An article giving details of how to access the database can be found on page 10 of the March 1993 ***IFIP*** *Newsletter.* Member societies of IFIP are urged to bring the IFIP databases to the attention of their members.

*HUMAN, ORGANIZATIONAL, AND SOCIAL DIMENSIONS OF **IS** DEVELOPMENT*

Human, Organizational, and Social Dimensions of Information Systems Development is the title of one of the latest IFIP books published by Elsevier/ North-Holland in the ***IFIP*** *Transactions* series. The editors, *Dr. David Avison (GB), Dr. Julie Kendall (USA),* and *Ms. Janice DeGross (USA),* described the contents as follows in the volume's foreword:

> This volume presents a collection of papers on the human, organizational, and social aspects of information systems development. Forty authors from a dozen countries have taken a variety of approaches to their work, including case studies, empirical research, and theory building and application. The lead article...uses a framework of emancipatory intents and projects for examining the conference papers. ... Also included in this volume are two invited papers.

The editors hope the diversity of input will consolidate the book's scope and stimulate further practical advancements in this field.

The volume is the proceedings of a working conference, *Information Systems Development: Human, Social, and Organizational Aspects,* held in Noordwijkerhout, The Netherlands, 17-19 May 1993, organized by IFIP's Working Group on The Interaction of Information Systems and the Organization (WG8.2).

WG8.5 SEEKS INTERESTED INDIVIDUALS

Planning to broaden its membership, IFIP's Working Group on Information Systems in Public Administration (WG8.5) is creating a database containing the names of guests who will be invited to join WG8.5 activities. Anyone with suggestions for additions to this list is requested to contact the WG chairman:

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Professionals and officials working in the field of Administrative Data Processing are welcome, as are researchers on relevant topics.

IFIP CONGRESS '92 PROCEEDINGS - A CORNUCOPIA OF CONTRIBUTIONS

[This article was written months ago but deferred to this issue of the ***IFIP*** *Newsletter* because of the need to print more urgent material in prior issues. Its contents still make interesting reading. — Ed.]

IFIP Congress '92, which was held in Madrid 7-11 September 1992, was notable for the high quality of the papers presented as well as the diversity of the subject matter (despite not intending to cover the entire field of information technology). The proceedings, published by Elsevier/North-Holland, contain 244 contributions, including invited and submitted papers and panel position papers. The 1742 pages are organized in three volumes, which constitute numbers A-12 to A-14 of the **IFIP** *Transactions* series. The editors and titles of the individual volumes are

- *Prof. Jan van Leeuwen (NL), Algorithms, Software, Architecture* (volume I)
- *Prof. Robert Aiken (USA), Education and Society* (volume II)
- *Prof. Friedrich Vogt (D), Personal Computers and Intelligent Systems* (volume III)

The complete set is entitled *Information Processing 92.*

The following topics received special attention in the papers: knowledge-based systems, neural networks, distributed systems, Petri nets (as an analytic tool), program validation and verification, and formal methods. Of course, most of the more common topics were covered, too. There were papers on hardware, software, algorithms, applications, education, and social issues. Some of the papers were theoretical and some applied. There were overviews and detailed, specific contributions.

The largest numbers of contributions to the proceedings came from these countries:

U.S.A.	56 papers	Netherlands	11
Germany	23	Australia	11
Japan	18	Spain	11
U.K.	17	Canada	9
France	15	Austria	7

These comprise nearly 3/4 of the total number of contributions.

In the following, we quote parts of several of the papers. These excerpts were taken from those papers with general interest to the IFIP community or some unusual aspects.

Regarding Organ Transplants

Among the papers on computer applications, we found "Analysis of Online Algorithms for Organ Allocation" (in volume I) by *Mr. Shmuel Ur, Prof. Michael Trick,* and *Prof. Daniel Sleator (USA),* which dealt with rules for allocating human organs to potential recipients, to be unusual and interesting. The authors introduced the problem as follows: *

> The models discussed in this paper are simplifications of the organ allocation problem. Simply stated, the organ allocation problem is to decide which patient should receive each organ. An organ must be used almost immediately, or else it is wasted....To quote from a flier of the United Network for Organ Sharing: "Who gets to be number 1 on the waiting list rather than 1,000? Factors affecting a patient's placement on the waiting list include medical urgency, length of time on the waiting list, distance between the patient and the transplant center and the donor and the transplant center, organ weight, and tissue matching." Every patient scores some points using this system and the patient with the most points will get the organ.
>
> One can raise the question whether this allocation policy is optimal.... We show that in order to select the patient that should receive the organ, we must look not only at each patient individually but also at the current distribution of patients.
>
> The following example shows that the current distribution of patients should be considered. Let there be ten patients with blood type *A* and a single patient of blood type *B,* all of whom are in a noncritical condition. An organ of type *O* appears (an 0-type organ can serve any type of patient, while *A* or *B* organs can serve only *A*- or B-type patients, respectively). Common sense tells us that one of the patients with blood type *A* should get the organ, because otherwise a future organ of type *B* might be wasted....

Assisting the Memory-Impaired

Another paper that dealt with a medical application was "Knowledge-Based Simulation in Memory Education" (in volume II) by *Dr. Mohand-Saïd Hacid, Dr. Christine Bonnet, and Prof. Jacques Kouloumdjian (F)* (in volume II), which described an AI application used to treat patients with memory disorders: *

The REMISSION system is an intelligent rehabilitation system used for people suffering memory problems. It is aimed at simulating everyday situations by means of graphical scenes. The system is an object- and rule-oriented simulation and animation environment that allows neuropsychologists to construct simulations.

Each session, the system asks the patient to work on scenarios. (A scenario is composed of exercises that are linked by the context — for instance, the garage, the kitchen, the garden — in which the patient will act.) The exercises fall into two categories:

- *training exercises:* The patient learns the environment by manipulating the elements of the graphical scenes. For instance, we can teach the patient the location of the objects in a room, the cupboards' contents, the layout of an apartment, and so on. In one example of this type of exercise, a cupboard opens, leaving the patient time to visualize the objects in it (bowl, pan, fork, and spoon) and then closes. The patient must then recognize the objects in the cupboard by pointing out the reproductions of the objects that appear at the bottom of the screen. If the patient succeeds, a fuller cupboard opens, and so on.
- *re-educational exercises:* The patient learns to do various tasks by using what he has previously learned. For instance, we can ask him to set the table, to tidy away plates and dishes, and so on. These exercises involve manipulating objects and/or walking (manipulating a graphic figure in a scene) and/or recognizing objects.

Thanks to its flexibility, the system supplies the neuropsychologists with access and control. They can give a personal touch, define new scenarios, exercises, and so on, thanks to a language we developed.

The system has knowledge of each patient, that is saved in the patient's profile (the status of the patient, his clinical diagnosis, his medical history, the prescribed drugs, and specific information about his memory problems). A report of the re-educational session being followed by the patient is saved in the patient's history. The re-educational strategy is adaptive. The exercises are selected for a patient according to a set of criteria including memory involved in the exercise, the exercise's level, and the patient's progress and history....

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CAI and International Cooperation

An application paper involving computer-aided instruction and international cooperation by the medium of e-mail was described by *Ms. Benita Compostela (E)* and *Dr. Henk Sligte (NL)* in "E-mail as an Educational Tool in Learning Statistics" (in volume II). The abstract is printed here: *

> The European Schools Project (ESP) is an initiative of the Center for Innovation and Co-operative Technology at the University of Amsterdam. ESP is a network of secondary schools in various countries, inside and outside of Europe, that perform collaborative distance learning projects. The projects, termed Teletrips, involve various types of learning and inquiring activities. Teletrips are collaborative learning projects, designed by teachers from partner schools for a part of the curriculum that is thought to be mutually relevant. The leading idea of a Teletrip is the combination of local research by pupils on a given topic and the exchange of research results with partner-schools, using a foreign language and electronic mail.
>
> This paper reports on some of the results of the Teletrip "Statistics in Everyday Life," in which schools in the United Kingdom, Germany, and Spain were involved. New technologies were used in two different ways. First, electronic mail was used to share information and data. Second, appropriate software, for word processing, spreadsheets, and statistical analysis, the latter specially designed for education, was used to support the local instruction in statistics.
>
> This paper was cooperatively written by the authors, using ESP's telematic facilities.

Computers in DC Universities

Several papers dealt with issues of developing countries and information technology. In their paper "Computers in the Classroom: A National Proposal" (in volume *II), Prof. Ali Mili* and *Dr. Noureddine Boudriga (TN)* described the university computing environment in Tunisia as follows: *

> Computer science curricula is the area where the lack of planning shows its worst symptoms. Individual institutions react to the problem of introducing computer courses in their curricula in an ad hoc fashion, without proper planning of programs and resources. Most typically, computer science courses are added as an afterthought to an existing curriculum (in the faculty's field of specialty). In addition, these courses are designed and taught by temporary instructors, who change from year to year, leaving a legacy of confusion and chaos....

An even gloomier picture was painted by *Dr. Abdallah Abdallah* and *Dr. Adnan Yahya (West Bank)* in "University Computer Services: A Third World Experience" (in volume II), in which they catalogued unsatisfactory conditions in a representative West Bank university as follows: *

> From the beginning of computer introduction to the university, there has been a concentration on providing computer services to the administrative sector. On the other hand, there has been an almost total neglect of academic computing....
>
> There is no computer network within the university and no resource sharing between various departments. The different units do not use compatible computers and/or compatible software packages. This leads to redundancy in data storage, violation of database integrity, and duplication of effort at different sites on the campus. Remote communications with computer facilities via telephone is not practiced.

> There exists no national computer network, and the university is not connected to any external data networks. This prevents academic and administrative staff from efficiently contacting colleagues in other universities and sharing information with them.
>
> Computers work for limited hours, and they are not used to full capacity, even during their working hours. Full systems are completely dedicated to data input/output operations.
>
> Planning for computer services is very weak. Decisions about equipment acquisition are made on the spot when a funding opportunity appears, without prior analysis and planning of the real computing needs of the institution. Purchase of new equipment is made when the old equipment is about to stop operating or after it has stopped, which results in operational difficulties during conversion periods.... Sometimes decisions concerning computer-related activities are taken without coordination with the people responsible for providing computer services....
>
> Programs that were written 10 years ago are still in use at substantial cost, despite their poor quality. Old systems are still being used and maintained, despite the fact that they have been outdated a long time ago....

Computers in Africa

A negative view of information technology in Africa was expressed by *Dr. Mayuri Odedra-Straub (SGP)* in a panel on Informatics and Development. Following is her published position paper (in volume II): *

> Information Technology (IT) is widely preached as having the power to narrow the gap between the developed and the developing countries (DCs). Yet, how many DCs, especially those in Africa, have succeeded in exploiting this developmental potential? Very few. There is extensive under-utilization of equipment and failure of computer-based projects, signs that may indicate why IT has played a small role in African development.
>
> Much of the spread of computers that has taken place has not been need-based. Hard-selling by manufacturers and vendors, the urge to keep up with the latest technology, self-interest, and pressure from computer professionals have all contributed to the spread. Africans have accepted the technology in a blindfolded manner. No policies or clear strategic buying plans exist which clearly identify the needs that are likely to bring overall benefit to the nation.
>
> Although IT has had different implications for different countries, overall there have been many negative consequences inflicted by this technology. Scarce foreign currency has been spent on equipment that is under-utilized, the dependence on MNCs [multinational companies] and expatriate personnel has been increased, and socio-cultural conflicts have been introduced. Moreover, what Africa has experienced so far is not IT transfer but "transplantation," the dumping of hardware without the necessary know-how. The acute shortage of computer professionals and lack of computer awareness at the national level have also been a major hindrance. Computers are still largely used for routine data processing, with very little decision-making based on computer output. There is still a lack of recognition of the importance of information as a resource. Little computer literacy and awareness exists at the national level.
>
> However, even if African nations had achieved the benefits of IT, this

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> would not necessarily have led to economic development nor would it have accelerated the process. This is because development is a very complicated and controversial issue. Africa is largely held back by economic and social structures, and value systems that have perpetuated underdevelopment. Technology alone is not able to change such structures. In fact, automation may be totally irrelevant to the development problems facing Africa.

(Similar concerns were expressed by a president of the Computer Society of Zimbabwe on page 3 of the December 1991 ***IFIP*** *Newsletter.)*

An Information Infrastructure

Lest we conclude that there is no hope for developing countries to employ information technology fruitfully, we quote parts of the paper "Building the Intelligent Island" (in volume III) by *Motiwalla and Yap (SGP):* *

> The development of physical infrastructures such as rails, roads, power systems, canals, and telecommunications have tremendous impact to a nation's ability to succeed. Today, there is a new infrastructure challenge. Just as the highway system is needed to facilitate movement between locations, a nationwide information infrastructure is needed to move vast quantities of data and to propel the innovative use of information.
>
> Singapore has recently embarked on a determined effort towards the development of such a pervasive information infrastructure. In this paper, we highlight the national-level planning issues examined and the research issues investigated with regard to the specific goal of making large amounts of information accessible and useful to the general public....
>
> The goal is to transform Singapore into the Intelligent Island, where an advanced national information infrastructure interconnects every home, office, school and factory. In our vision, the computer will evolve into an information appliance, combining the functions of the telephone, computer, and TV, to provide a rich array of communication modes and access to services. Text, sound, pictures, video, documents, designs, and many other forms of media will be transferred and shared through the infrastructure reaching all homes and offices....

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Education on Social Issues

Social issues related to information technology received much attention at the Congress because of the stream The Vulnerability of the Information Society, and professional ethics were treated extensively. (See also the article on the **IFIP** Code of Ethics on page 6 of the December 1992 ***IFIP*** *Newsletter.)* In their article "Integrating Social Impact and Ethics Issues Across the Computer Science Curriculum" (in volume H), *Martin and Holz (USA)* discussed how social concerns might be included in university computer science curricula in the U.S.A. The abstract follows. *

> A strategy is presented for integrating social and ethical concerns into the four-year computer science undergraduate curriculum. Concerns related to the teaching of ethics in a technical curriculum are addressed. The proposed strategy begins with a first-year Computers and Society course with a strong emphasis on ethics, followed by a series of case studies to be presented in subsequent computer science core courses, and a final social and ethical impact study to be included as part of the senior engineering project.

The ethics component of the curriculum received special attention and was discussed as follows:

> A key consideration in integrating ethics and social impact into the curriculum is to come to grips with the issue of how best to teach and incorporate ethics topics. Basic ethical values are learned in the formative years of childhood in the home, church, and school. The purpose of specific ethics education, such as computer ethics, should not be to indoctrinate the individual with new values, but to assist individuals "in clarifying and applying their ethical values as they encounter new, complex situations where it may not be obvious how ethical values may apply or where the appropriate application of one of these values may conflict with other ethical values." Students must be made to recognize that technology is not value-free, but value-laden. "Any technological decision...is a value-based decision that not only reflects a particular vision of society but also gives concrete form to it."
>
> Computer scientists and ethicists have raised serious concerns about how to teach ethics in the computer science curriculum.... One concern is that computer science faculty have little experience in teaching ethics. They "may fall into the trap of preaching a moral code of their own instead of raising questions, elaborating possible answers, and exploring justifications."...

Women IT Students

Another social issue, information technology education and women, was addressed in both the Vulnerability and the Informatics and Education streams. "Addressing the Gender Gap in Informatics Education" (in volume II) by *Martin (USA)* discussed the current dearth of women students of informatics and how to attract more women into the profession. We quote from the paper's introduction. *

> The work force in the year 2000 will require many more engineers and computer scientists. New jobs that require a highly trained, technically competent work force are being created at the same time that the engineering and informatics work force is aging. While the need for technically trained professionals is increasing, there is a diminishing interest in informatics and engineering among the traditional talent pool of white males. As a result, there has been a significant decline of students enrolling in informatics programs over the past three years. The most significant portion of the decline can be attributed to young women. This is particularly startling because informatics is a relatively new field that has been open to women since its beginning approximately twenty-five years ago. When the flood of undergraduate informatics students hit the universities from 1978 to 1985, almost half of them were women. Now interest in informatics on the part of young women has significantly declined.
>
> Numerous studies have demonstrated that preadolescent girls show superior aptitude for mathematical concepts and operations when compared to their male counterparts. Some researchers have found, however, that during early adolescence an explicit disinterest in math and science is developed in young women because of social pressures....
>
> In their well-known study "Poolhalls, Chips and Wargames," Kiesler, Sproull, and Eccles of Carnegie Mellon University examined why computers seemed to be more attractive to boys than girls. They suggested that the world of computing was more consistent with male adolescent culture than with feminine values and goals. Computing itself was neither inherently difficult nor uninteresting to girls, but computer games, educational software, and curriculum were designed using a male paradigm....
>
> A 1987 Burton study found that most female undergraduate and graduate university students in informatics experience a lack of role models, a feeling of isolation, and a reduced social support structure when corn-

pared to their male counterparts. So-called "killer" courses taught in the freshman year — courses designed to cull rather than cultivate students for the discipline — have impacted both females and minority students more adversely than white male students. Women are attracted to and learn better in a cooperative rather than a competitive environment. The typical informatics curriculum taught by predominantly male professors, many of whom are foreign and come from cultures that do not regard females as serious students, all contribute to what Sheila Widnall describes as the "chilly classroom" for female students....

The authors went on to discuss means of attracting women to the informatics profession. (Related concerns, discussed at the March 1992 **IFIP** Council meeting, were described on page 5 of the June 1992 ***IFIP*** *Newsletter.)*

Patenting AI Systems

An interesting problem has arisen with regard to patents for artificial intelligence systems, which was described by *Mr. Yannis Skulikaris (D)* in the paper "Artificial Intelligence Systems and Patents the Challenge" (in volume II). The following is taken from the introduction to the paper: *

Industrial applications of AI lead to systems that differ in essential aspects from deductive/deterministic information processing systems. Especially in the case of systems based on inductive inference and systems incorporating neural networks, it appears that a qualitative leap is established, even with regard to analytic/symbolic AI. By implementing an inductive inference (or connectionist) learning component in an AI system, not only can the tedious task of thorough problem analysis and symbolic representation be circumvented, but robustness and fault tolerance can also be achieved, both attractive factors for industrial applicability.

However, such systems prove to be problematic when it comes to patent protection, which creates a legal right of monopoly, i.e., exclusion of competitors from exploitation of a certain subject-matter. Owing to the commitment of AI to problems pertaining to human cognitive performance, such systems usually perform simulation of mental acts (for instance, learning) by means of highly complex algorithms. However, mental acts and mathematical methods are excluded from patentability, so that patent protection for such a system necessarily leads to problems.

A further problem is that, particularly in the case of inductive inference systems or neural networks, non-predictable system configuration and non-predictable functionality can emerge. In this latter case of adaptive systems, the well-defined input-to-output correspondence known from conventional information processing cannot be taken for granted any more. In such a context, where the subject-matter that has to be analysed with a view to patent protection inherently prevents complete analysis, any attempt to establish clarity and explicate functional interrelation (both primary concerns in the context of patents) will necessarily result in contradictions.

This work intends to demonstrate these problems and propose an approach to possible solutions....

IT Security

The invited paper "Perspectives in Information Technology Security" (in volume II) by *Dr. Harold Highland (USA)* contains several startling observations, a few of which we quote here: *

For more than a decade since my retirement, I have met hundreds, perhaps thousands, of computer security directors and computer security consultants in business, industry, government, and the military / intelligence agencies in all parts of the world. Computer security directors today have a difficult, and often frustrating, administrative job. Many of them are capable, knowledgeable, dedicated administrators. Yet from my viewpoint, most security directors are technical illiterates. Although comprehensive industry data are not readily available, I believe that the turn-over rate for computer security specialists is higher than for any other group of computer specialists. A Deloitte-Touche study in 1990 indicated that directors of computer information have an average tenure of three years. And a third of these did not leave voluntarily. Several years ago, it was noted that the average tenure of computer security specialists with U.S. government agencies was about seven months....

He also addressed the issue of the length of passwords:

Several years ago, I was able to compile a character-frequency list based on reports from six commercial companies in the United States. Both six- and eight-character systems were studied, involving more than 14,000 users. The report highlights showed:

- Between 2% and 12% of the users used the *maximum* number of characters.
- Between 22% and 26% used a *single character.*

Early in 1990, I secured the cooperation of three companies with nationwide facilities. They had about 50,000 users. All the companies reported that their systems would accept a single character as a password. Somewhat over 10,000, or 20% of the users, had passwords of *one character.*

Each company indicated that it was possible for the security director to set a minimum number of characters. Two directors had not known that it was possible to set a minimum. The other security directors had not taken the time to implement this option....

Electronic Data Interchange

"Security Issues in an EDI Environment" (in volume II) by *Prof. Snehamay Banerjee* and *Prof. Damodar Golhar (USA)* was another paper related to security. These quotations describe a growing risk: *

Recently, a specific type of computer-to-computer communication, namely Electronic Data Interchange (EDI), has received significant attention from the business community. It involves an automated exchange of business documents between computers. According to Hansen and Hill, "EDI is the movement of business documents electronically between or within firms in a structured, machine-retrievable data format that permits data to be transferred, without rekeying, from a business application in one location to a business application in another location." In the EDI environment, a computer can directly use the data sent by other computers in electronic form....

EDI usage is expected to grow by more than 23% in the U.S.A. and 40% in Europe during the next 2-3 years. This growth has given rise to problems that have not been faced before and are unique to this technology. The problems associated with using EDI include security issues, lack of signature or authorization for transactions, lack of audit trails, and lack of universally acceptable standards for data transmission. Considering an organization's sensitivity regarding the security-related issues, the success of future EDI implementation will depend on the effective resolution of these issues....

This manuscript focuses on communication-related risks associated with EDI that are not directly under the control of the organizations where the transactions originate.

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> Some of these risks are not even detectable by audits and cannot be controlled by the control procedures specified in such audits. However, these security risks can severely damage an organization's effectiveness in communicating with the trading partners and can jeopardize the trading partner relationships. The security risks associated with EDI communication systems can be grouped into the following categories: disclosure of messages, modification of message contents, modification of message sequence, sender masquerade, repudiation of message origin or receipt, and denial of services.

The paper also discussed different types of EDI trading-partner agreements that are currently used or under development and the roles and responsibilities of the parties involved (e.g., buyer, seller, and carrier network) under such agreements.

The Future of CAD Tools

In a panel on The CAD Tool for the Future, a position paper, "Formal Methods for Design" (in volume I) by *Prof. Gerry Musgrave (GB),* indicated that formal methods would be key components. All panelists seemed to be in agreement. Following is part of that position paper: *

> Design verification in the last decade has seen the pioneering work of the seventies established as the norm, namely verification by simulation. The next decade will see the research work in formal methods being adopted as the design technique. The complexities of systems today are stretching the computing resources to give practical simulation times, but, more importantly, they are not allowing designers the freedom to explore the design domain to enable alternatives to be evaluated. This is particularly the case at higher, more abstracted, behavioural levels. Design decisions at this level dictate the quality of the overall system design. Techniques at this level dictate whether the management of complexity is going to be achieved.
>
> Formal methods with rigorous mathematics, proofing, and multi-level abstraction promise the attributes needed to tackle the problems mentioned above and should enable the designer to get a system "right the first time" by construction. To date, these techniques have been used as a postdesign verification process. By combining these mathematical tools into a designer-oriented environment, namely a more graphical interface, and allowing all the existing and established design techniques at the lower structural levels to be accessible, it is expected that this decade will see formal design methods established.
>
> At the present time, this type of design methodology is taking off only in those areas where the present tool sets are inadequate, for example, in the safety-critical area. In the long run, the whole problem of migration to these techniques is one of education. The dilemma is that many of the present tool sets are steeped in formal mathematics, which many engineers have not experienced. At the same time, it is the experience of the design engineers that needs to be harnessed to give the necessary lateral thinking in the design environment.... Hence the tool sets of the future are going to achieve all the important aspirations of our systems designers by being able to give them the freedom to explore many aspects of the design domain without commitment to implementation. At the same time, this will give them insight to make the intuitive decisions to improve the total characteristics of their design.

The Congress International Program Committee, headed by *Prof. Wilfried Brauer (D),* deserves much credit for the quality and variety of the papers. (Further details of the Congress can be found on page 1 of the December 1992 *IFIP Newsletter.)*

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LECTURERS continued from page 1

organization to contact the prospective guest lecturer and make all arrangements directly with her or him. **(IFIP** suggests that the host offer to defray the cost of the guest lecturer's accommodations at the location of the lecture and whatever transportation costs it can afford.)

Many issues were raised during the discussions that preceded establishment of the **IFIP** Lecturers Program. What mechanisms should be used to evaluate and guarantee the quality of the lecturers? Must each lecturer be recommended by some **IFIP** Technical Committee chairman? How can the database be kept up-to-date concerning when each lecturer is available and in what part of the world? How will lecturers be added to and deleted from the list? What rules should govern the hosts' reimbursement of lecturers' expenses? Who may request **IFIP** Lecturers — only developing countries? only **IFIP** Member societies? anybody who wishes? Rather than wait until these questions and the many others that arose were answered satisfactorily, *Dr. Khakhar* and the Marketing Committee decided to proceed with the present trial program. As **IFIP** gains experience with the program, it will be refined.

At present, the list contains the names of 14 lecturers. For each lecturer, a list of lecture topics and a brief c.v. are included, as well as address information. The list of lecturers is also provided to the ICSU/TWAS/UNESCO/CSC Lectureship Program (ICSU = International Council of Scientific Unions, TWAS = Third World Academy of Sciences, CSC = Commonwealth Science Council).

To add names of lecturers to the list, delete names, or update information, one may contact

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To Organizers of **IFIP** Conferences:

Please send several copies of your Calls for Papers to the **IFIP** Secretariat, in order that the staff may be able to handle queries.

National Abbreviations Used in Newsletter

AUS	Australia	GB	United Kingdom	RP	Philippines
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BG	Bulgaria	IND	India	SF	Finland
CDN	Canada	IRL	Ireland	SGP	Singapore
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TC7: Prof. R. Nance (USA)

TC8: Prof. P. Azalov (BG)
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TC10: Mr. R. Waxman (USA)
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FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

Council	28 Feb-3 Mar 94 (tentative dates)	Brussels
GA	(contiguous to **IFIP** Congress '94)	Hamburg
GA	(contiguous to **IFIP** Congress '96)	Canberra, Australia

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS *

TC2	1-4 Jun 94 (with PROCOMET'94 conf.)	Miniato (near Pisa), Italy
WG2.I	1-4 Jun 94 (with conf.)	Varese, Italy
WG2.2	same	
WG2.3	same	
WG2.4	4-7 Oct 93	Monterey, CA, U.S.A.
WG2.5	17-20 Sep 93	Toronto, Canada
WG2.7	Sep 93	New Jersey, U.S.A.
WG2.8	mid 94	Calgary, Alberta, Canada
TC3	26-27 Aug 94	Hamburg, Germany
	22-29 Jul 95	Birmingham, U.K.
TC5	13-17 Sep 93 (with conf.)	Phoenix, AZ, U.S.A.
WG5.3	12-16 Sep 93 (with conf.)	Phoenix, AZ, U.S.A.
WG5.7	28-30 Sep 93 (with APMS'93 conf.)	Athens, Greece
WG5.10	25-26 Oct 93 (with conf.)	San Jose, CA, U.S.A.
TC6	15-16 Oct 93	Sofia, Bulgaria
	23-24 May 94	Porto Santo Island, Portugal
	4-6 Oct 94 (with SEACOMM conf.)	Malaysia
	23-26 Mar 95 (with conf.)	Durban, South Africa
TC8	8-9 May 94	Queensland, Australia
WG8.1	1-3 Sep 93 (with conf.)	Como, Italy
TC9	Aug/Sep 94	Hamburg, Germany
WG9.2	15-16 Jan 94	Namur, Belgium
	23-24 Jul 94 (provisional)	Amsterdam, the Netherlands
WG10.2	20-24 Sep 93 (with conf.)	Hamburg, Germany
WG10.4	7-8 Jan 94	San Deigo, CA, U.S.A.
	Jun 94	Austin, TX, U.S.A.
TCI3	**12-13** Sep 93	Milan, Italy

* Some meetings are scheduled in conjunction with Working Conferences, for which the conference dates are listed.

Will TC and WG chairmen kindly keep the Secretariat advised of the dates and locations of their future administrative meetings and also send a copy of the minutes to the Secretariat.

CALLS FOR PAPERS

Seventh ACM/SIGDA and IEEE/DATC Intl. Workshop on High-Level Synthesis
18-20 May 94, Niagara-on-the-Lake, Ontario, Canada
extended summary due: 24 Sep 93
contact: Debby Sullivan
High-Level Synthesis Workshop
Ottawa-Carleton Research Institute
340 March Rd., Suite 400
Kanata, Ontario K2K 2E4, Canada

Asia Pacific Information Technology in Training and Education Conference and Exhibition - APITITE 94
28 Jun - 2 Jul 94, Brisbane, Australia
extended abstracts due: 30 Sep 93
contact: Ms. Karen Foreman
APITITE 94
PO Box 1280
Milton QLD 4064, Australia
tel: (+617) 369 0477, fax: (+617) 369 1512

Seventh University of Vienna Intl. Conf. on **Modelling Techniques and Tools for Computer Performance Evaluation**
4-6 May 94, Vienna, Austria
papers due: 8 Oct 93
contact: Prof. Gunter Haring
Dept. of Applied Computer Science
Univ. of Vienna
Lenaugasse 2/8
A-1080 Vienna, Austria
fax: +43 1 408 04 50
e-mail: rodo@ani.univie.ac.at

Second **IFIP** TC6 Intl. Conf. on **Broadband Communications '94**
9-11 Mar 94, Paris, France
papers due: 15 Oct 93
contact: Prof. Samir Tohmé
TELECOM Paris
Ecole Nationale Supérieure des Telecommunications
Département Réseaux
46, rue Barrault
75634 PARIS Cedex 13, France
e-mail: bb94@res.enst.fr
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IFIP TC10/WG10.5, GI/ITG/GME Workshop on **Design of Multichip Modules**
2-4 Feb 94, Bad Toelz, Germany
abstracts due: 15 Oct 93
contact: Reimund Dachauer
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IFIP WG8.2 Work. Conf. on **Information Technology and New Emergent Forms of Organizations**
13-15 Aug 94, Ann Arbor, Michigan
papers due: 30 Oct 93
contact: Richard Baskerville
School of Management
Binghamton Univ.
Binghamton, NY 13902-6000, U.S.A.
fax: 1 (607) 777-4422
Or
Steve Smithson
London School of Economics
Houghton St.
London WC2A 2AE, U.K.

Fifth **IFIP** WG6.4 Conf. on **High Performance Networking - HPN '94**
27 Jun -1 Jul 94, Grenoble, France
papers due: 30 Oct 93
contact: Serge Fdida
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Laboratoire MASI - Institut Blaise Pascal
45, rue des Saints Peres
75006 Paris, France
tel: (33)(1) 42.86.21.36, fax: (33)(1) 42.86.22.31
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IFIP Work. Conf. on **Upper Layer Protocols, Architectures and Applications - ULPAA**
1-3 Jun 94, Barcelona
papers due: 1 Nov 93
contact: Dr. Nathaniel S. Borenstein
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ES-08071 Barcelona, Spain
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Internet: medina@ac.upc.es

Third **IFIP** WG7.6 Work. Conf. on **Optimization-Based Computer-Aided Modelling and Design**
24-26 May 94, Prague
extended abstracts due: 15 Nov 93
contact: IFIP'94 Working Conference
Institue of Information Theory and Automation
P.O.B. 18
Pod vodárenskou vezi 4
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IFIP TC6 Intl. Conf. on **Information Networks and Data Communications - INDC 94**
18-21 Apr 94, Funchal, Madeira Island, Portugal
papers due: 15 Nov 93
contact: Prof. Pedro Veiga
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Rua Alves Redol, 9
1000 Lisboa, Portugal
e-mail: pedro.veiga@inesc.pt

IFIP Work. Conf. on **Programming Concepts, Methods and Calculi**
6-10 Jun 94, San Miniato, Italy
papers due: 1 Dec 93
contact: Prof. Dr. E.-R. Olderog
FB Informatik
Univ. Oldenburg
Postfach 2503
D-2900 Oldenburg, Germany

Thirteenth World Computer Congress: **IFIP Congress '94**
28 Aug-2 Sep 94, Hamburg
papers due: 14 Jan 94
contact: IFIP '94
c/o Congress Centrum Hamburg
Congress Organisation
P.O. Box 30 24 80
W-2000 Hamburg 36, Germany
tel: +49 40/35 69-22 42, fax: +49 40/35 69-23 43
telex: +212 609

DTP WG9.3 Work. Conf. on **Home-Oriented Informatics, Telematics and Automatics: Reconstituting Oikos**
27 Jun-1 Jul 94, Copenhagen
papers due: 15 Jan 94
contact: Kresten Bjerg or Bjorn Nake
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Univ. of Copenhagen
88 Njalsgade
DK 2300 Copenhagen S, Denmark
tel: +45 31 54 18 56, fax: +45 32 96 31 38
e-mail: kresten@vax.psl.ku.dk

IFIP WG10.3 and ACM Intl. Conf. on **Parallel Architectures and Compilation Techniques - PACT '94**
24-26 Aug 94, Montreal, Canada
extended abstracts or papers due: 4 Feb 94
contact: Prof. Guang R. Gao
McGill Univ.
School of Computer Science
3480 University St.
Montreal, Canada H3A 2A7
tel: 1 (514) 398-4446, fax: 1 (514) 398-3883
e-mail: PACT94@acaps.cs.mcgill.ca

Sixth World Conf. on **Computers in Education**
23-28 Jul 95, Birmingham, **U.K.**
papers due: 31 Jul 94
contact: WCCE/95
Margaret St.
Birmingham B3 3BW, U.K.
tel: 44+(0)21-428 1258, fax: 44+(0)21-428 2246 ■

NEW ADDRESS FOR NEWSLETTER EDITOR

Please see the masthead on page 2 for the new address of the Editor of the ***IFIP*** *Newsletter.*

CHANGES IN IFIP continued from p. 13

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CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Sponsored by
Work. Conf. on *The Impact of Informatics on Society: Key Issues for Developing Countries*	21-23 Feb 94	Havana, Cuba	**IFIP** WG 9.4/ INSAC
Second Intl. Conf. on *Broadband Communication '94*	9-11 Mar 94	Paris, France	**IFIP** TC6
Work. Conf. on *The Impact of Information Technology from Practice to Curriculum*	15-18 Mar 94	Neve-Ilan, Israel	**IFIP** WG3.2, WG9.5, IPA
Conf. on *Evaluation of Production Management Methods*	21-24 Mar 94	Porto Alegre/Gramado, Brazil	**IFIP** WG5.7
Intl. Conf. on *Information Networks and Data Communications — INDC'94*	18-21 Apr 94	Funchal (Madeira Isl.), Portugal	**IFIP** TC6, API, ICCC
Intl. Conf. on *Applications in Parallel and Distributed Computing*	18-22 Apr 94	Caracas, Venezuela	**IFIP** WG10.3
Seventh Intl. Conf. on *Modelling Techniques and Tools for Computer Performance Evaluation*	4-6 May 94	Vienna, Austria	Univ. of Vienna, **IFIP** TC6, WG7.3, 10.3, 10.4, et al.
Work. Conf. on *Information Systems Integration — TC8AUS*	8-12 May 94	Gold Coast, Queensland, Australia	**IFIP** TC8 and WGs, ACS
Seventh Intl. Workshop on *High-Level Synthesis — HLSW'94*	17-20 May 94	Niagra-on-the-Lake, Ontario, Canada	ACM/SIGDA, IEEE/DATC **IFIP** WG10.5
Tenth Intl. Conf. on *Information Security —IFIP/SEC'94*	23-27 May 94	Aruba, Netherlands Antilles	**IFIP** TC 11
Work. Conf. on *Optimization-Based Computer-Aided Modelling and Design*	24-26 May 94	Prague, Czech Republic	**IFIP** WG7.6 et al.
Work. Conf. on *Upper Layer Protocols, Architectures, and Applications — ULPAA'94*	1-3 Jun 94	Barcelona, Spain	**IFIP** WG6.5
PROCOMET'94	6-10 Jun 94	San Miniato, Italy	**IFIP** TC2 WG2.2
Workshop on *Intelligent Manufacturing Systems*	22-24 Jun 94	Vienna, Austria	IFAC **IFIP** WG5.3 IFORS et al.
Work. Conf. on *Promoting A New Partnership: Children. Teachers. and Technology*	27 Jun-1 Jul 94	Philadelphia, PA, **U.S.A.**	**IFIP** TC3 WG3.5
Fifth Work. Conf. *on High Performance Networking — HPN'94*	27 Jun-1 Jul 94	Grenoble, France	**IFIP** WG6.4
Second Work. Conf. on *Reconstituting OIKOS: Home-Oriented Informatics, Telematics and Automatics — HOIT-2*	27 Jun-1 Jul 94	Copenhagen, Denmark	**IFIP** WG9.3
Conf. on *Asia Pacific Information Technology in Training and Education —*	28 Jun-2 Jul 94	Brisbane, Australia	ACS, **IFIP** TC3, et al.
Fifth Conf. on *Women, Work and Computerization — WWC5'94*	2-5 Jul 94	Manchester, U.K.	**IFIP** WG9.1 et al.
Work. Conf. on *Information Technologies in Educational Management*	4-8 Jul 94	Jerusalem, Israel	IFIP WG3.4, IPA, et al.
IMACS World Congress '94	11-15 Jul 94	Atlanta, GA, U.S.A.	IMACS
Work. Conf. on *Information Technology and New Emergent Forms of Organizations*	13-15 Aug 94	Ann Arbor, MI, U.S.A.	**IFIP** WG8.2
Eighth Work. Conf. on *Database Security*	23-26 Aug 94	Hildesheim, Germany	**IFIP** WG11.3
Intl. Work. Conf. on *Parallel Architectures and Compilation Techniques — PACT'94*	24-26 Aug 94	Montreal, Canada	**IFIP** WG10.3, ACM, SIGARCH
IFIP Congress '94 — Thirteenth World Computer Congress	**28 Aug-2 Sep 94**	**Hamburg, Germany**	**IFIP**
Work. Conf. on *Comparative Review of Information Systems Methodologies Revisited — CRIS'94*	5-7 Sep 94	Maastricht, Netherlands	**IFIP** WG8.1
Symp. on *Robot Control — SYROCO'94*	19-21 Sep 94	Capri, Italy	IFAC/ **IFIP** WG7.6, IMACS
Work. Conf. on *Expert Systems in Computer Integrated Manufacturing*	? Sep 94	Kiev, Ukraine	**IFIP** WG5.3
Second Symposium on *Artificial Intelligence in Real Time Control*	3-5 Oct 94	Valencia, Spain	IFAC IFIP WG5.4
Conf. on *South East Asia Communications '94 — SEACOMM '94*	4-6 Oct 94	Kuala Lumpur, Malasia	**IFIP** TC6
Work. Conf. on *Integrating Information on Technology into Education*	? Oct 94	Barcelona, Spain	**IFIP** WG3.1
Workshop on *Large Scale Stochastic Programs: Applications and Solutions*	? Oct 94	Jalta, Russia	**IFIP** WG7.7
Fourteenth Intl. Conf. on *Information Systems — ICIS '94*	15-17 Dec 94	Vancouver, Canada	ICIS IFIP TC8
Work. Conf. on *Change-Point Detection*	? 94	Vilnius, Lithuania	**IFIP** WG7.1
Work. Conf. on *Approximations and Applications in Stochastic Programming*	? 94	Tallinn, Estonia	IFIP WG7.7 IIASA
Workshop on *Stochastic Methods and Global Optimization*	12-15 Jun 95	Vilnius, Lithuania	**IFIP** WG7.7
World Conf. on *Computers in Education — WCCE **'95***	23-28 Jul 95	Birmingham, U.K.	**IFIP** TC3 BCS
Eighth IMIA World Congress on *Medical Informatics — MEDINFO'95*	23-28 Jul 95	Vancouver, B.C., Canada	IMIA
IFIP Congress '96 — Fourteenth World Computer Congress	**2-6 Sep 96**	**Canberra, Australia**	**IFIP**
Thirteenth ***IFAC** World Congress '96*	? 96	San Francisco, CA, U.S.A.	IFAC

Please see page 13 for schedule of IFIP administrative meetings.
The IFIP Secretariat can furnish details of most of the events listed.

CALENDAR OF EVENTS

Event	Date	Location	Sponsored by
Work. Conf. on *The Open Systems Future: Leveraging the LAN*	29 Aug-2 Sep 93	Perth, Australia	**IFIP** WG8.4/ Curtin Univ., ACS
Thirteenth IJCAII Intl. Joint Conf. on *Artificial Intelligence — IJCAII* '93	29 Aug-3 Sep 93	Chambery, France	IJCAII
Work. Conf. on *Information System Development Process — ISDP*	1-3 Sep 93	Como, Italy	**IFIP** WG8.I
Work. Conf. on *Statistical Aspects of Stochastic Programming*	4-9 Sep 93	Prague, Czech Republic	**IFIP** WG7.7
Work. Conf. on *Lessons from Learning*	6-8 Sep 93	Archamps, France, near Geneva, Switzerland	**IFIP** WG3.3, NEUROP'
Nineteenth **EUROMICRO** Conf. on *Open System Design: Hardware, Software, and Applications — EUROMICRO'93*	6-9 Sep 93	Barcelona, Spain	EUROMICRO
VLSI '93	7-10 Sep 93	Grenoble, France	**IFIP** WG10.5
Work. Conf. on *Fractals — FRACTAL 93*	7-10 Sep 93	Kingston upon Thames, **U.K.**	**IFIP**
Seventh Work. Conf. on *Database Security*	12-15 Sep 93	Lake Guntersville, AL, U.S.A.	**IFIP** WG11.3
Intl. Conf. *Towards World Class Manufacturing*	12-16 Sep 93	Phoenix, AZ, U.S.A.	**IFIP** WG5.3
Second Intl. Conf. on *Open Distributed Processing — ICODP'93*	14-17 Sep 93	Berlin, Germany	**IFIP** WG6.1, GMD-Fokus
Intl. Conf. on *on Decentralized and Distributed Systems — ICDDS'93*	15-17 Sep 93	Palma de Mallorca, Spain	**IFIP** WG10.3
Workshop on *Applications of the Reed-Muller Expansion in Circuit Design*	16-18 Sep 93	Hamburg, Germany	**IFIP** WG10.5
Conf. on *European Design Automation — EURO-DAC'93*	20-24 Sep 93	Hamburg, Germany	GI, **IFIP** WG10.2/5, et al.
Fifth Intl. Conf. on *Advances in Production Management Systems — APMS '93*	28-30 Sep 93	Athens, Greece	**IFIP** WG5.7 HMA IPM
Sixth Intl. Workshop on *Protocol Test Systems — IWPTS'93*	28-30 Sep 93	Pau, France	**IFIP** WG6.1 Univ. de Pau
Work. Conf. on *Software Engineering Education*	28 Sep-2 Oct 93	Kowloon, Hong Kong	**IFIP** WG3.4
Intl. Workshop on *Distributed Systems: Operations and Management — DSOM'93*	5-6 Oct 93	Long Branch, NJ, U.S.A.	**IFIP** WG6.6/ IEEE COMSOC CNOM
Work. Conf. on *Computer Support for Environmental Impact Assessment — CSEIA'93*	6-8 Oct 93	Como, Italy	**IFIP** WG5.11, CIRITA
Intl. Workshop on *Computer-Aided Design*	7-8 Oct 93	Cambridge, MA, U.S.A.	IEEE-CS, ACM, **IFIP** WG10.2, et al.
Work. Conf. on *Diffusion, Transfer and Implementation of Info. Technology*	11-13 Oct 93	Pittsburgh, PA, U.S.A.	**IFIP** TC8, SW. Eng. Inst., CMU
Conf. on *Network Information Processing Systems — INFONET'93*	12-14 Oct 93	Sofia, Bulgaria	**IFIP** TC6/Bulg. Acad. of Sci.
Second Intl. Conf. on *Achieving Quality in Software — AQuIS'93*	18-20 Oct 93	Venice, Italy	QUALITAL, **1E1, IFIP** WG5.4, et al.
First Intl. Conf. on *LAN Interconnection — LAN INTERCON'93*	20-22 Oct 93	Raleigh, NC, U.S.A.	**IFIP** WG6.4, TC6, WG7.3 et al.
Workshop on *Design Methodologies for Microelectronics and Signal Processing*	20-23 Oct 93	Cracow, Poland	EUROMICRO, **IFIP** WG10.2, Commission of the EC
Workshop on *Psychological and Cognitive Issues in the Visualization of Data*	25-26 Oct 93	San Jose, CA, U.S.A.	**IFIP** WG5.10
Intl. Conf. on *Application-Specific Array Processors — ASAP'93*	25-27 Oct 93	Venice, Italy	EUROMICRO, IEEE-CS, **IFIP** WG10.5, AICA, AIE
Fifth Intl. Conf. on *Data Communication Systems and Performance — High Speed Networks*	25-28 Oct 93	Raleigh, NC, U.S.A.	**IFIP** WG6.4, TC6, WG7.3, Comp. Sci. Dept. NCU
Sixth Intl. Conf. on *Formal Description Techniques — FORTE'93*	26-29 Oct 93	Boston, MA, U.S.A.	**IFIP** WG6.1, Bellcore, U. of Delaware, BNR
Intl. Workshop on *Defect and Fault Tolerance in VLSI Systems — DFT'93*	27-29 Oct 93	Venice, Italy	IEEE, EUROMICRO, **IFIP** WG10.5, AICA
Twelfth Intl. Conf. on *Computer Safety, Reliability and Security — SAFECOMP'93*	27-29 Oct 93	Poznan, Poland	EWICS **IFIP** TC7, TC5 et al.
Intl. Workshop on *The Design of Information Infrastructure Systems for Manufacturing — DIISM*	8-10 Nov 93	Tokyo, Japan	JSPE, IFAC, **IFIP** WG5.3 et al.
Thirteenth Intl. Conf. on *Information Systems — ICIS '93*	5-8 Dec 93	Orlando, FL, U.S.A.	ICIS, SIM / **IFIP** TC8
First Asia Pacific Conf. on *Hardware Description Languages, Standards and Applications — APCHDLSA '93*	6-8 Dec 93	Brisbane, Queensland, Australia	IEEE, **NIP** WG10.2/10.5
Work. Conf. on *Numerical Analysis and Optimization*	15-17 Dec 93	Rabat, Morocco	**IFIP** WG7.2
Work. Conf. on *Dependable Computing for Critical Applications — DCCA-4*	4-6 Jan 94	San Diego, CA, U.S.A.	**IFIP** WG10.4
Seminar on *Current Topics in Programming Methodology*	10-21 Jan 94	Macau	**IFIP** WG2.3 UNU/IIST
Intl. Workshop on *Stochastic Programming: Algorithms and Models*	18-20 Jan 94	Li I lehammer, Norway	**IFIP** WG 7.7/ MPS NCS
Workshop on *Design of Multichip Modules*	2-4 Feb 94	Bad Toelz, Germany	**IFIP** WG10.5 SIG of GI/ITG/GME

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IFIP Congress '94 — 13th World Computer Congress	28 Aug-2 Sep 94	Hamburg, Germany	**IFIP**
IFIP Congress '96 — 14th World Computer Congress	2-6 Sep 96	Canberra, Australia	**IFIP**

Please see page 13 for schedule of **IFIP** administrative meetings.
The **IFIP** Secretariat can furnish details of most of the events listed.