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International Federation for Information Processing

Editor:
Dr. Jack L. Rosenfeld

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MESSAGE TO PARTICIPANTS IN THE 12TH WORLD COMPUTER CONGRESS

The latest of the twelve IFIP Congresses coincides with the 500th anniversary of one of the discoveries of the New World. Hardly by chance, the venue of the Congress is charming Madrid, where many celebrations will commemorate an event that leads us back half a millennium in history.

This Congress is a turning point in IFIP's tradition of organizing its Congresses on a three-year basis. Future Congresses will be held every two years: the 13th is scheduled for 1994 in Hamburg, Germany and the 14th in Canberra, Australia.

In the last three years, our world has undergone sweeping changes. This period, falling between the 11th and the 12th IFIP Computer Congresses, will have a very special place in mankind's history, not only for its political developments, but also for the enormous progress in data-processing, which is being demonstrated in Madrid.

The significant influence of the IFIP Technical Committees and Working Groups on the structure and contents of Congress '92 made it possible for hundreds of IFIP specialists, both academics and practitioners, to consider this Congress as their own creation. At the Congress there will be many others who will come in touch with IFIP for the first time. Naturally, our hope is that they will be able to identify IFIP as their own international professional organization.

At a time when many human activities rely on the use of computers, the organization of a World Computer Congress is not an ordinary endeavor. Thanks to the outstanding professionalism and rich experience of the Congress's International Program Committee, participants will have a variety of choices to explore the many tracks and trends in the domain of data-processing.

Finally, I would like to wish the Congress participants a most fruitful and enjoyable stay in Spain. I am convinced that at this most important of IFIP's events, you will meet old friends and make many new ones.

Academician Blagovest Sendov
IFIP President

IFIP WORKSHOP ON CONFIGURABLE DISTRIBUTED SYSTEMS

Joint Working-Group Event Held in London

*by Dr. Morris Sloman (GB) **

Approximately 100 people attended an IFIP Workshop on Configurable Distributed Systems that was held 25-27 March 1992 in London. About 65% of the participants were from the U.K., the rest coming from Europe, U.S.A., Canada, South Africa, Israel, and Japan.

The Workshop was concerned with methods, tools, and techniques for configuring and managing software for dis-

* chairman of the Workshop Organizing Committee and member of WG6.6

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Who's Who in IFIP: PROF. MARTTI TIENARI

Prof. *Martti Tienari,* an **IFIP** trustee, was born in Pernio, Finland in 1935. He holds a Ph.D. degree (1962) in mathematics from the University of Helsinki.

From 1960 to 1967, he worked for the electronics division of a Finnish electrical manufacturer that was entering the fields of electronics and computing. This group later evolved, after a corporate merger, into a separate computer company. Since 1967, Prof. *Tienari* has held a professorship in the Department of Computer Science of the University of Helsinki. He was appointed chairman of the newly founded department, in 1967 and has served as chairman ever since. The department celebrates its 25th anniversary this September.

During his career, *Prof. Tienari* has worked in several different fields. His Ph.D. dissertation was in pure mathematics (quasiconformal mappings). He learned about computing through practical work in industry, being involved with various technical and scientific computing applications. At the time he left industry for academia, he was the manager of his company's computing service center. In the beginning, his scientific work in computing was in numerical mathematics, especially in the analysis of roundoff errors, and scientific computing. Later on, in the 1970s, he began to study general software issues and established a successful research team in Helsinki working on programming-language design and compiler writing. A further new field became the focus of his work in the 1980s, when he established educational and research activities in distributed systems and data-communication protocols in his department. His latest publications concern the theory of concurrency.

He has also been active outside his Computer Science Department. From 1971 to 1978, he was the Dean of Faculty of Science, and, from 1971 to 1992, the chairman of the Computing Board at the University of Helsinki. From 1981 to 1982, he chaired the Association of University Professors in Finland; from 1985 to 1987, he was the chairman of the Finnish Society of Computer Science. He is a member of the Finnish Academy of Science and Letters, as well as the Finnish Academy of Technical Sciences. He has also been active in Nordic cooperation, as a member of the editorial board of the scientific journal *BIT* since 1972 and a member of the governing board of the Nordic University Network NORDUNET from 1985 to 1992.

Prof. Tienari was appointed as Finland's representative to the **IFIP** General Assembly in 1987 and was elected to be a trustee in 1989. He is currently a member of the **IFIP** Publications Committee as well as the Activity Management Board. He is also the cognizant officer for TC2 (Software: Theory and Practice) and TC12 (Artificial Intelligence).

He is the father of two grown sons. He and his wife Maire enjoy music and literature. In the summer, they spend a good deal of their time and energy in the family's seaside summer house for an outdoor life of boating, fishing, etc. ■

National Abbreviations Used in Newsletter

AUS	Australia	E	Spain	KEN	Kenya
B	Belgium	F	France	N	Norway
BG	Bulgaria	GB	United Kingdom	NL	The Netherlands
CDN	Canada	I	Italy	S	Sweden
CH	Switzerland	IND	India	SF	Finland
CS	Czechoslovakia	IRL	Ireland	USA	U.S.A.
D	Germany	J	Japan	ZW	Zimbabwe
DK	Denmark				

SOCIAL IMPLICATIONS OF COMPUTERS IN DEVELOPING COUNTRIES

WG9.4 Conference Held in Kenya

*by Prof. Subhash Bhatnagar (IND) **

IFIP's Working Group on Social Implications of Computers in Developing Countries (WG9.4) organized a conference with the same name in Nairobi, Kenya from 23 to 25 March 1992. Although the conference was attended by 50 participants from 20 countries, there was some disappointment with the low level of participation from neighbouring countries in East Africa. Participants were evenly distributed between developing and industrialized countries. Thirty-five papers were accepted by the International Program Committee from seventy submitted papers, and most of the selected papers were presented in the conference, organized in the following six plenary sessions:

- Social Implications of Information Technology (IT)
- Strategies and Policies of IT Development
- Human Resources Development
- Frameworks and Methodologies
- Impact of IT Applications
- Health Informatics

Each paper presentation was followed by a lively discussion. The following key concerns and issues emerged from the conference.

Low impact of Information Technology: The current impact of IT in developing countries is low because much of its use is in routine data processing applications in enterprises. Significant areas of social concern, such as education, family planning, and poverty alleviation, are not major users of IT, nor are government departments, in general.

Appropriate IT for developing countries: Discussions were held concerning what is appropriate IT for developing countries. It was felt that the perceived need, available resources, and cost-effectiveness of any technology make the technology appropriate or inappropriate. Therefore, applications of technology must be driven by a need that is felt locally rather than forced by external agents. There are wide variations amongst developing countries in terms of access to technology. The technology of some of the applications in developing countries may well be very sophisticated. Each country must make its own decisions about the kind of uses to which IT can be put, rather than blindly borrowing ideas from developed countries.

Useful approaches/methodologies: A variety of simple and complex applications, ranging from PC-based applications in small hospitals to on-line operational systems spanning several cities and even countries, were described. Most participants were concerned about the approaches and methodologies used in the design of large systems. Such systems tended to ignore basic social realities and were developed almost entirely in a top-down, centralised manner. In some of the case studies, applications developed centrally ran into implementation problems in the field.

It was evident that very simplistic approaches can hardly be useful for situations involving complexities of human behaviour and unpredictable performance of the physical components of the system. On the other hand, complex methodologies will be shunned by designers because of the large overheads involved and the low perceived utility. The practitioners felt that in difficult environments in developing countries, where realities can change quickly, it is difficult to do extensive planning. Every opportunity must be grabbed to move the implementation forward. Even the merit of a decentralized approach cannot be blindly recommended for every situation. Perhaps a balanced approach, where an application serves the information needs of a central authority as well as local operatives, must be taken. Local operatives must be involved in the system design.

Creating an open society: There was some discussion of the role of information in creating an open society. In countries in which corruption has become a way of life, it was argued that IT can help in creating a culture of open information. Citizens, media, and public agencies must have easy access to information (particularly large amounts of information collected by the government) unless it invades the privacy of citizens. IT can facilitate such access. Analysis of information on the quality of social services and inequity in access to services must be made public through media. Such exposure will counterbalance the almost unlimited power that most public bureaucracies exercise. The use of computers to make the admission process in a large university in Africa more open and transparent was highlighted in one of the case presentations.

Influencing government policies and actions: In the final session, there was some soul-searching in terms of the role that IT professionals are playing in influencing the course of IT use in developing countries. Whereas a few professionals felt rather helpless vis-a-vis the powerful bureaucracies in their countries, most participants argued that they could influence government policy and actions through training, education, and popular writing. The Conference thus ended on a hopeful note.

The Conference was opened by the Deputy Permanent Secretary of the Kenyan Ministry of Science and Technology. The International Program Committee was chaired by Dr. ***Mayuri Odedra (KEN),*** and the Organizing Committee was chaired by ***Mr. George Okado (KEN).*** Some financial support to the Conference was provided by the Commonwealth Secretariat. The proceedings of the Conference will be published in October by Tata-McGraw-Hill Publishing Company, New Delhi, and edited by Prof. ***Subhash Bhatnagar*** (IND) and ***Dr. Odedra.***

In a review during a WG9.4 meeting following the Conference, most participants rated the Conference as highly successful.

* chairman of WG9.4

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IFIP TECHNICAL COMMITTEE 8: INFORMATION SYSTEMS

IFIP's Technical Committee on Information Systems (TC8) comprises a large community of scholars grappling with complex, multifaceted problems, both theoretical and applied, that are often nearly impossible to define or specify. In the words of Prof. ***Börje Langefors*** (S), the first chairman of TC8, "Information Systems (IS) serve to provide the different functions within an organization with information necessary for rational decisions." Although simple, this description is a broad goal rather than a well-defined scope. Says ***Prof. Alex Verrijn-Stuart (NL),*** the second chairman of TC8, "For want of agreement of what constitutes an IS, there is no central, unified set of theorems, although many theoretical contributions have been made." Thus, IS specialists work in a field for which the goal is understood but the issues are constantly changing.

The heritage of IS in IFIP lies in the world of databases. As applications and theory in this area grew in the 1960s, so did awareness of the importance of an enterprise's (organization's) data. It was recognized that such data would be more valuable for advancing the goals of the enterprise if the information were viewed in its totality rather than as a collection of individual components. ***Langefors*** was one of the first to use the phrase "information system" in relation to the complete activity of gathering, processing, and storing data in order to create information useful to an enterprise.

In the 1970s, a group of IFIP participants, mostly from the Working Group on Database (WG2.6), decided that it was time to extend the IFIP activity on understanding and structuring databases to activity concerned with the *use* of databases by enterprises. ***Prof. Langefors*** was involved in these discussions and proposed (to the surprise of many in WG2.6) a new Technical Committee to tackle these problems. Ultimately, TC8 was founded in 1975.

The first TC8 working conference was held jointly with IFIP's TC3 (Education) in 1977, with the goal of developing a model university curriculum in IS. Not only was a curriculum developed, but the nature of IS was further explored.

Shortly after the founding of TC8, its first two WGs were created: WG8.1 on Design and Evaluation of Information Systems (1976) and WG8.2 on Interaction of Information Systems and the Organization (1977). The former deals primarily with the formal, theoretical aspects of IS, while the latter stresses the relationship of IS and the social and organizational aspects of enterprises.

One major effort of WG8.1 is the Comparative Review of Information Systems Design Methodologies (CRIS), an initiative of ***Dr. T.W. (Bill) Olle*** (GB), which has extended over more than a decade. Its motivation is to compare the large number of methodologies for the design of IS and their often conflicting claims. The CRIS group initially set out to discover what methodologies existed and to compare them in terms of their application to one specific design problem (organizing an IFIP working conference). The first CRIS conference, held in May 1982, resulted in the book *Information Systems Design Methodologies: A Comparative Review* (still in print and with more copies sold than any other IFIP conference proceedings), which described thirteen characteristic methodologies and how they would be applied to the test problem. Subsequent CRIS conferences added methodologies and discussed additional aspects.

Also, a WG8.1 task force named Framework of Information System Concepts (FRISCO) has discussed the conceptual foundations of IS and the different approaches to it, and has organized conferences on this topic. Having published an interim report in 1991, the task force plans to arrive at a comprehensive document that may be of use to students, teachers, practitioners, and researchers.

WG8.2 continued to discuss the difficult problems caused by introducing IS into organizations. They also questioned the nature of IS research based on traditional methods. The research issue was clearly described by ***Prof. Enid Mumford (GB),*** a past chairman of WG8.2, who wrote the following:

> There are two opinions on methods of Information Systems research. Some wish to strictly adhere to methods of research developed within the natural sciences, and see these methods as the sole source of valid results. But there are also those who advocate other methods, such as the investigation of personal experience, values, attitudes, distortions, etc. This group believes that no amount of "scientific" research can assist the understanding of how computerized information systems are related to the human action that is involved in their development and use. This understanding is required not just by specialists, but also by people affected by information systems.

To highlight its attitude toward "scientific" research, WG8.2 named its 1984 colloquium (in Manchester, U.K.) Information Systems Research Methods — A Doubtful Science.

While this debate over methodologies took place, additional activities related to IS applications were occurring in TC8, and new WGs were being formed. WG8.3 on Decision Support Systems was chartered in 1981 to develop approaches for enabling decision-makers to make enlightened, effective decisions using IS technology. Its initial activities were directed toward individual decision-makers, but it has evolved to study systems that support group decision-making and negotiation.

WG8.4 on Office Information Systems was founded in 1986. It studies means of providing assistance to professional workers in an office environment in which communication is an essential element. The emphasis is on "co-working," which leads to various organizational models, in which activities such as "computer-supported cooperative work" and subjects like "groupware" and "the portable office" are debated.

The WG on Information Systems in Public Administration (WG8.5), founded in 1988, deals with IS at all levels of public administration, from local agencies to international organizations. Although governments have most of the IS needs of other enterprises, WG8.5 stresses the relationship between IS and the individual citizen, and it concerns itself with broad social goals.

Clearly, there is a great deal of overlap and cooperation among the TC8 WGs. In addition to the open conferences sponsored by TC8, conferences sponsored jointly by TC8 WGs are held. Furthermore, TC8 promotes regional and international cooperation. For example, it is a co-sponsor of the International Conference on Information Systems (ICIS), a major international conference of IS academics.

During the evolution of TC8, the chairmen have provided direction — geographic as well as technical and administrative. ***Prof. Verrijn-Stuart,*** who succeeded ***Prof. Langefors,*** was instrumental in developing the organizational structure of TC8 and in forming new WGs. The earliest strength of TC8 was in Great Britain, Scandinavia, and The Netherlands.

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IFIP TC8

Deals with all aspects of systems that use information technology to support and coordinate organizational activities: the planning of information systems, as well as the analysis, design, modification, utilization, evaluation, and management. Of special interest are the interdependencies between information technology and organizational structure and the management of information in organizations.

TC8 Chairman: Prof. Gordon B. Davis
Position: Honeywell Professor of Management Information Systems
Employer: Carlson School of Management, University of Minnesota
Location: Minneapolis
Interests: management of IS, conceptual foundations for IS, future of IS function and IS academic discipline, productivity in the management of knowledge work

TC8 Secretary: Dr. Michael Hanani
Position: Head of Information Systems and Computing Division
Employer: Bromine Compounds, Ltd.
Location: Beer-Sheva, Israel
Interests: MIS, systems analysis

Working Group 8.1: Design and Evaluation of Information Systems Identifies concepts and develops theories relevant to the planning, analysis, design, and evaluation of information systems. Also develops languages, techniques, tools, and methodologies for the design of information systems.

WG8.1 Chairman: Professor Antoni Olive
Position: Professor
Employer: Universitat Politecnica de Catalunya
Location: Barcelona
Interests: research and teaching in information systems design and databases

Working Group 8.2: Interaction of Information Systems and the Organization Promotes research in the social aspects of information systems development. Also explores research methodologies related to the interaction of information systems, organizations, and society.

WG8.2 Chair.: Prof. Kenneth E. Kendall
Position: Professor
Employer: Rutgers University
Location: Camden, New Jersey
Interests: research in systems analysis and design — in particular, creating and validating new methodologies for systems development

Working Group 8.3: Decision Support Systems Develops approaches for applying information systems technology to increase the effectiveness of decision-makers. Is especially concerned with practical implementations of decision-support systems.

WG8.3 Chair.: Prof. Dr. Henk G. Sol
Position: Chairman of Systems Engineering Dept., Professor of Systems Engineering and Information Systems
Employer: Delft University of Technology
Location: Delft, The Netherlands

Working Group 8.4: Office Information Systems Studies and develops information systems for office work, to support human activities in organizations. Develops concepts and formalisms, furthers design methodology, contributes to tool building, and evaluates designs and systems.

WG8.4 Chairman: Prof. Douglas R. Vogel
Position: Associate Professor of MIS
Employer: Karl Eller School of Business and Public Administration, University of Arizona
Location: Tucson, Arizona
Interests: research, teaching, application of group support systems and executive support systems

Working Group 8.5: Information Systems in Public Administration Studies information systems in public administration at all levels of government — from international to local. Focuses on using information systems to provide services to citizens and to further social goals.

WG8.5 Chairman (acting): Professor Dr.
Position: Professor of Applied Informatics
Employer: Johannes Kepler University
Location: Linz, Austria
Interests: system analysis, CSCW, informatics in public administration

OPPOSING MALICIOUS COMPUTER GAMES

Austrian Computer Society Resolution

Several months ago, the Austrian Computer Society (the Austrian member of **IFIP)** passed the following resolution. In March 1992, it was distributed to the **IFIP** Council at its meeting in Trondheim, Norway. The Society intends to propose to the **IFIP** General Assembly, which meets in Toledo, Spain 12-16 September following **IFIP** Congress '92, that it adopt the resolution.

Proscription of Inhumane, Malicious, Demeaning Computer Games

Computer games are among the most frequently used computer programs — especially by children. Such programs are capable of significantly encouraging the development of children: for example, by training the mind, encouraging logical thinking, stimulating flexibility, and broadening foreign-language vocabularies.

Unfortunately, **we** have recently observed a strong tendency to inhumane and malicious programs that demean humans: brutal war games, pornographic games, and games containing National Socialistic themes (especially themes of racial hatred). It is alarming to note the lack of responsibility and human respect among those who produce, distribute, and play such games.

The Austrian Computer Society, as the umbrella organisation of all the institutions and societies in Austria interested in information processing, feels responsible to point out these dangers and to condemn the distribution and use of such games. The Austrian Computer Society requests all people to proscribe and prevent the production, distribution, and use of such computer games.

There are many computer games that are not only entertaining but beneficial for the development of children: e.g., games for developing alertness and some adventure games that challenge the player to think logically and enable the player to learn a foreign language while playing. We appeal to everybody to buy or give only computer games that respect human dignity. ■

WG 7. 7 HOLDS TWO EVENTS

*by Prof. Peter Ka11 (CH)**

Stochastic Programming Workshop near Berlin

It has certainly been observed by other **IFIP** working groups that the realization of events planned a long time ago may become random processes these days, depending on their geographic location, because of political changes. Therefore, **IFIP's** Working Group on Stochastic Optimization (WG7.7) is grateful to be able to report on a very intensive and successful workshop on Stochastic Programming: Stability, Numerical Methods and Applications, organized jointly with Gesellschaft für Angewandte Mathematik und Mechanik (GAMM). The workshop took place March 23-27 at Gosen, near Berlin.

Discussions centered around subjects such as modelling optimization problems under uncertainty, stability and asymptotic analysis of stochastic programs, numerical methods (including implementation and testing), and applications of stochastic programs in finance, transportation, and power dispatch. Related topics, such as probability metrics and stability of stochastic models, numerical methods for smooth and nonsmooth optimization, parametric optimization, and random number generation, were also covered.

The 34 papers presented were, in general, of very high quality, and the following contributions — to mention just a few — seem to be of interest beyond the special field of WG7.7 (as their authors are well known beyond our community):

- Z. Artstein: *On information structures in stochastic optimization*
- S.D. Flåm: *Penalty and barrier methods in stochastic programming*
- B. Kummer: *On Newton's method for nonsmooth functions*
- R. Lepp: *Projection and discretization — is the difference essential?*
- F.V. Louveaux: *Exact solution of the probabilistic TSP*
- H. Niederreiter: *Pseudorandom numbers for simulation methods*
- R.T. Rockafellar: *Scenario networks in multistage stochastic programming*
- L. Stougie: *A particular use of empirical process theory in stochastic two-stage programming*
- S. Vogel: *Stochastic stability concepts — approximation via kernel estimators*
- S.W. Wallace: *O-D matrix estimators using ideas from stochastic programming*

The success of this workshop was due to the perfect work of the local Organizing Committee, chaired by *Dr. Werner* Romisch (who also chaired the International Program Committee), generously supported by GAMM, Humboldt University, and Volkswagen-Stiftung.

State-of-the-Art Seminar in Havana

Whereas the event described above satisfied the first part of WG7.7's aims, "to foster...international cooperation among scientists working in stochastic optimization," we had in mind the second part, "to spread information about the achievements of the field when planning a state-of-the-art seminar jointly organized with Universidad de la Habana. Stochastic Optimization: The State-of-the Art was held April 12-19 in Havana. The main intention of this event was to acquaint colleagues working in deterministic optimization in Central and Latin America with the achievements, possibilities, and challenging research problems of stochastic programming. This was arranged in tutorials presented by leading experts covering the following topics:

- Approximation of stochastic programs with recourse (J.
- Multistage models including applications to portfolio management (M.A.H. Dempster)
- Probabilistic constrained programming (J. Mayer)
- Stability/sensitivity in stochastic programming (W. Römisch)
- Applications of (integer) stochastic programming (F. Louveaux)

In addition, there were several contributed papers on subjects such as model management for stochastic programming, optimization of Markov processes, and statistical approaches.

The local organizing committee, chaired by *Dr. Carlos Bouza* (who also chaired the International Program Committee), deserves our thanks for having achieved such a smoothly running meeting, despite obvious difficulties.

Our next workshop, organized jointly with Daimler Benz AG and Digital Equipment GmbH, concerned Statistical Methods for Management Decision Processes. It took place June 24-26 in Nuertingen, Germany. It served our aim of spreading information about our field "into areas of possible applications," as well as helping us get more detailed knowledge about the nature of problems that arise in certain industrial enterprises and improving contacts with those faced with these real-life problems. ■

* chairman of WG7.7, vice-chairman of TC7, and TC7 correspondent for the ***MP*** *Newsletter*

SCOPE AND AIMS OF NEW WORKING GROUP

The March 1992 IFIP Technical Assembly, meeting in Trondheim, Norway, approved the formation of a new Working Group of the Technical Committee on Human-Computer Interaction (TC13). Following are the Scope and Aims of this new WG.

WG13.2 Methodology for User-Centered System Design

AIMS

The principal objective of the Working Group will be to foster research, disseminate information, and promote good practice in the methodical application of Human-Computer Interaction (HCI) to software engineering.

This objective decomposes into two subgoals:

- to encourage research and development of HCI principles, methods, and techniques, and their application in software engineering.
- to encourage research into human action within the system-development process and to promote knowledge transfer from such studies into software-engineering practice

SCOPE

The above aims will be met by organizing meetings on selected research themes, forming task groups to address special issues in methodology, and disseminating information via publications, workshops, and conferences.

The following summary of topics will be elaborated in initial meetings with founding members of the Working Group:

- evaluation and synthesis of HCI specification and design methods
- implications of cognitive psychology for the design of human-computer interfaces
- evaluation and study of different approaches to design delivery: cognitive models, design rationales, task artifact cycles, engineering principles, development methods
- methods and techniques of human factors in software engineering as practiced in industrial environments
- human behavior in software development, i.e., cognitive studies of software engineering
- cooperative work techniques applied to software development

(WG13.2 plans to form relationships with other IFIP groups with interests in methodology — especially WG8.1 and WG2.7.) ■

TC11 NOW ON INTERNET

Since the beginning of September, IFIP's Technical Committee on Security and Protection in Information Processing Systems (TC11) has been accessible by e-mail through Internet. All facilities will be made available for interested parties. In addition to news about TC 11 and its working groups, there will be a regular news digest on various computer- and communications-security topics. Regular conference announcements will be posted, as well as calls for papers and similar information. The Internet site has been made available through the help and sponsorship of IT Security Alliance BV, The Netherlands, and run through its offices. The site is monitored and operated by *Dr. F. Bertil* Fortrie, representative for the Netherlands in TC 11.

To obtain further information, please 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.

DISTRIBUTED SYSTEMS continued from page 1

tributed applications. The software configuration of a distributed system is usually performed by creating instances of software components, binding the components together, and mapping the components into a hardware configuration. A particular focus of the Workshop was the support that is required for the modification and evolution of these systems by reconfiguration. Reconfiguration is required to recover from failures and permit the systems to evolve to include new functionality or new technology. Large systems require dynamic reconfiguration to support dynamic change without shutting down the complete system.

The Workshop was sponsored by IFIP's Working Groups on System Implementation Languages (WG2.4) and Network Management for Communication Networks (WG6.6) and organized by the Computing and Control Division of the IEE and the Department of Computing, Imperial College, London. Financial support was provided by the U.S. Institute for Educational Services and the U.S. Office of Naval Research, Europe. *Dr. Jeff Kramer* (GB) was chairman of the International Program Committee, and *Dr.* Morris *Sloman* (GB) chaired the Organizing Committee.

The keynote paper on Automatic Reconfiguration in the Presence of Failure was presented by *Prof. Flaviu Cristian* (USA). This described the implementation of an availability manager to automatically reconfigure the servers implementing fault tolerant applications such as air traffic control. A number of other papers also addressed the issue of reconfiguration for fault tolerance.

Three papers in the session on application design presented various approaches to the design of reconfigurable systems and the criteria for decomposition for distribution. There were two sessions on configuration languages, which led to interesting discussions on the pros and cons of declarative vs. procedural approaches and whether the configuration language should be separate from or be an extension of the component programming language.

A key point covered in the session on dynamic configuration was the issue of how to perform reconfiguration so that an application can maintain consistency and preserve state information during reconfiguration. This raised questions of how to determine "safe" reconfiguration states and to what extent a component has to be aware of the fact that it is being reconfigured.

A session was devoted to the issues of load balancing and process allocation for both parallel and distributed systems. The final session, on management of distributed systems, covered configuration in a large-scale environment with heterogeneous computer systems. An interesting paper was presented on configuration using a trading service that locates servers based on a service specification.

continued on page 14

IFIP Member Society Holds Landmark Conference

The first conference on "Freedom of Information: Towards Open Government in the New Democracies" was held in Budapest 5-7 May 1992. Organized by the John von Neumann Society (the IFIP member society from Hungary) and Riley Information Services, Inc. of Toronto, it was co-sponsored by the Hungarian Ministries of the Interior and of Justice, with the cooperation of the Council of Europe.

Approximately 120 attended, the majority coming from Hungarian government ministries, while other delegates came from Czechoslovakia, Yugoslavia, Romania, Albania, Bulgaria, Ukraine, Latvia, and Poland. The expenses of these other delegates were paid by the Council of Europe and the Soros Foundation of Hungary. Speakers were from the U.S., Canada, Sweden, Portugal, Scotland, and Germany.

The aims of the Conference were stated as follows in the Conference announcement:

> Hungary has introduced a draft bill on the protection of personal information and on the access to data of public interest. This bill combines the right of citizens to their own personal information and to all types of general documents held by government ministries and agencies. The latter right is also known as freedom of information (F01). There are currently dozens of FOI laws, at the federal and state/provincial levels, around the world. Hungary is the first of the new democracies in Central and Eastern Europe to move in such a rapid direction towards opening the files to its citizenry.
>
> To mark the occasion of this breakthrough and share experiences with experts from jurisdictions that have such laws, we are convening the first international conference on FOI to be held in the new democracies.

Mr. Tom *Riley (CDN)* summarized the Conference in a report from which the following excerpts are taken:

> The Conference was officially opened by Dr. *István Balsai,* the Hungarian Minister of Justice, who spoke about the necessity for the Hungarian government to change the existing situation, not only in regard to FOI law, but human rights in general. In the past two years, the Parliament has passed over 200 bills, driven by the necessity to radically change the existing regulatory environment.
>
> It was noted that the John von Neumann Society expressed support for such laws as much as a decade ago, with the drafting by two of its members of proposed data-protection and FOI laws.
>
> *Dr. Ferenc Hovarth,* Director of the Hungarian Office for the Population Register, which is undergoing severe restructuring in order to protect the privacy of the Hungarian population, outlined for the audience the long history of the system of registering the population, including foreign residents. He pointed to the dramatic effect of a Constitutional Court decision in March 1991 that ruled the Personal Identification Number (PIN) illegal.

> Although skepticism was expressed about the possibilities of FOI legislation becoming a reality in Hungary, interviews with the leadership within government made it clear that access to government information, not just data protection, will become a reality in Hungary within the next few months. Though the first piece of legislation will simply enunciate the principles of access to information, it is a beginning.
>
> While the title of the Conference was "Freedom of Information," there was, in fact, as much (if not more) discussion of data protection, prompting one wit to observe that we were actually getting two conferences in one. Reasons for the emphasis on data protection are (1) Hungary is a member of the Council of Europe and has signed the Convention on Data Protection; (2) there is now a desire amongst many people to be able to see information about themselves that has been accumulated by the government in past decades; and (3) the data protection proposals in the bill before Parliament have extensive administrative requirements, including the setting up of a registration system cataloguing all the files.
>
> One delegate from Czechoslovakia, who had been imprisoned by the previous Communist regime for inquiring about information from Russia regarding an impending nuclear plant, said that he had never in his life attended an event where there was such a free flow of ideas. He sometimes felt as if he were in a dream and was afraid that he might wake up at any moment. This emotional response reflected the mood of many of the Eastern and Central European delegates, experiencing a conference of this type for the first time. Their consensus was that the free flow of information brought by the introduction of the computer and the fax. in their part of the world had brought on a climate of change that led to the collapse of Communism and the rise of democracy.

Mr. Riley continued with a summary of the various speakers' reports: the Council of Europe's activities in data protection and FOI; the problems posed for data protection by new developments in information technology; the long history of FOI and privacy in Sweden; the North American experience with FOI legislation; the significance of FOI legislation for the files of the East German secret police; the conflict between FOI and privacy; the evolution of requests for FOI data; the need to develop administrative structures to cope with FOI requests; the Portuguese FOI component to its human rights legislation; and the trends in the Baltic states. He concluded as follows:

> The Conference was closed by Dr. *Peter* Boros, Hungarian Minister of Internal Affairs, who made the point that Hungary has many issues to deal with in the area of information questions. Not the least of these is the role of business information under FOI laws when the present state companies become privatized.
>
> Delegates from the Eastern and Central European countries decided that a similar meeting should be held in 1993 in Sofia, with Riley Information Services again the coordinating organizational body. ■

IFIP HUMOR

Lest it be thought that IFIP activities are all work and no play and that IFIP participants are a group of old, stodgy professors, we present excerpts from a banquet speech delivered by *Prof.* Dr. *Otto Spaniol* (D), chairman of IFIP's Technical Committee on Communication Systems (TC6). It was presented at the International Conference on Open Distributed Processing (ODP) in Berlin, organized by TC6 in October 1991. We were not present at the Conference, but we can imagine the amused reaction of the attendees. Prof. *Spaniol* introduced his talk as follows:

> Every one of you knows what "IFIP" means. Thus, you know very well that IFIP is particularly active in organizing conferences on so-called hot topics (the reason for that is very simple: speaking about something is easier than doing anything).
>
> Moreover, IFIP has Technical Committees that consist of national delegates who agree or disagree that another conference should be held. In most cases, they agree, since that creates another possibility for travelling to interesting places. As a consequence, national delegates appear on an enormous number of programme committees. It is quite obvious that their participation is a virtual instead of a real one, since no one can really be active on 35 committees or so at the same time. All of that has become a tradition.
>
> But, in the preparation of this ODP workshop, a rather strange effect was observed for the very first time. It began very normally: Every national delegate was on the programme committee list. However, some weeks later, we received a letter from the committee chairman, which was extremely friendly (by syntax) and at the same time very clear (by semantics). The semantics of that letter was basically as follows: "You are foolish. Why do you insist on being a member of every committee? It is well known that you don't have any understanding of ODP. So, why don't you give other people a chance to become famous? You could do this by leaving the committee..." I was one of the recipients of this letter. I felt guilty and immediately agreed to leave the committee. Indeed, the 34 remaining committees are more than enough.
>
> Why do I tell you all of this? Because, interestingly enough, I was subsequently invited to give the banquet speech. I don't know whether it was revenge or a reward for leaving the programme committee.
>
> It has to be stated that the title of this talk, ODP: Yet *Another Viewpoint,* is a real understatement, since I'll present not just one more viewpoint but four!

Prof. *Spaniol* began the main part of his talk by discussing the past, present, and future of ODP. In discussing the past, he observed that open systems, distributed systems, and processing systems have all existed in the past — but not all together. At present, he stated, we have open distributed systems with little processing capacity. As for the future, he predicted that we shall have open distributed processing systems by the year 2010, "but certainly not before the end of this decade."

He described three approaches to ODP: the scientific, monopolistic, and committee approaches. The following are part of his joking at the expense of fellow scientists:

> If you ask three scientists about the best possible system, you'll get four different answers and five incompatible proofs for the correctness of the answers (providing all three of the scientists understand you). The scientist will construct a model and make some abstractions. He or she will do the abstractions such that two requirements are fulfilled: first, the abstractions must fit the desired outcomes (i.e., the scientist prefers to prove rather than to disprove his predicted effects). The second necessity is that the final model may be evaluated by techniques that are available and understood by the scientist. The intersection of techniques that are "known from the literature" and are at the same time "understandable by the scientist" may be a very, very small subset of techniques.
>
> What will be the consequence of those procedures? Scientists will have different and conflicting views. That's a natural characterisation of a scientist. Even worse, every scientist will produce a new and improved version every year (in order to present it at the next conference). Thus, there will be no stabilisation at all and no possibility for standardisation. That's inherent in the scientific system, and we can't change that, even if we try.

Prof. Spaniol had even more stinging remarks for the "monopolistic" and "committee" approaches. He went on to discuss different viewpoints of ODP, observing that ***a*** viewpoint is like a photograph but, "A photo will be much like a bikini: it shows you a lot of things, but some of the more interesting aspects will remain hidden."

TC8 SUMMARY continued from page 4

Prof. Giampio Bracchi (I), the third chairman, added not only geographic scope but connections to the community of researchers into very large databases. His successor and the current chairman, ***Prof. Gordon Davis (USA),*** is one of the founders of the first graduate program and research center in IS in North America. He has provided leadership in extending North American and Pacific-***rim*** participation in TC8.

Prof. Davis waxes enthusiastic when discussing the influence of IS in the world. He points out three degrees of change brought about by IS. First, IS can improve the efficiency of performing a task without changing the basic way it is performed (e.g., check processing by banks). Next, IS can change expectations about the quality of work (word processing is the example he uses). Finally, IS may change the nature of a task itself in ways not anticipated (e.g., the ability of telephone-order-entry personnel to interact with customers and provide new services).

A unique aspect of the TC8 field of endeavor is that IS practitioners are both designers and users of information systems. (They are users in the sense that today's program-development environments, used to develop complex systems, are information systems themselves.) Prof. *Davis* believes that TC8 can play a pivotal role in IFIP, since this dual capacity of IS enables it to relate to virtually all the IFIP areas of activity.

He also feels that the international composition of TC8 is a great asset. Only such an organization can bring together a truly international body of renowned experts — from industrialized and nonindustrialized countries, from academia and industry — to tackle the problems of IS.

COURT OF ETHICS

A "Court of Ethics" was held during the 1991 **IFIP** International Summer School on Social Citizenship in the Information Age. (See the March 1992 ***IFIP** Newsletter,* page 9.) The Court was a play written by *Mr. Graham Tritt (CH)* and performed by participants in the Summer School. The playwright describes his play as follows:

> It seems currently necessary to raise the level of ethical consciousness of our technological engineers. Software developers would like to be granted the status (and rewards) of being regarded as professionals yet often are not ready to accept the concomitant responsibilities. Portrayed in the play are a few common problems of computer development that can lead to ethical quandaries. The scene is a courtroom where a software developer faces ethical charges before a jury of his technical peers [participants in the Summer School].

For the purpose of the Summer School, the play was divided into four parts, each performed a different evening of the School. Discussions among the actors and audience were held after each part. The result was significant involvement of actors and audience — and lots of fun.

We present a few parts of the play: *

Clerk: Hear ye! Hear ye! This is the Court of the Council for Professional Ethics, a body of the Association of Computing Engineers. We are gathered here today, April 1, 2000, to consider charges against a manager of software development. Defendant is the software project manager for the software house SOHO that was contracted by the Novomation Corporation. This company is represented by the first prosecutor. Defendant produced a voice control and guidance system that was an essential component of a self-propelled vacuum cleaner. It wasn't long before children learned how to tell it to move around, and they were holding dangerous slalom races in parking lots. Another problem occurred in an apartment where the radio had been left playing. When the owners returned from holiday, the vacuum cleaner had destroyed the place. The Consumer Protection Society is represented by the second prosecutor. The State is represented by the third prosecutor.

Prosecutor I: I represent Novomation, who contracted software and hardware development and integration to SOHO. I will prove that defendant failed his responsibility as an engineer in two ways. He should have determined what the software had to do, regardless of what Novomation told him. Secondly, he is guilty of bad management.

Judge: How do you plead?

Defendant: Not guilty on both charges, your honor.

[A dialog between Prosecutor I and the defendant ensued, concerning the quality of Novomation specifications and how they were repeatedly changed. The prosecutor concluded as follows.]

Prosecutor I: When a builder builds a building, he *must* stand by his objections if the architect makes mistakes. Don't you feel that you didn't do what's right as an engineer?

Defendant: We did what was asked.

Prosecutor I: I rest my case on the first charge.

Judge: Clerk, what are the facts concerning the charge of bad management please?

Clerk: The informal cost estimates of the feasibility study were *double* when the contract was signed. Halfway through the project, the development team had to be *tripled.* One week before the first deadline, a *three month delay* was announced. Finally, it *took four times as long* and *cost five times as much* as expected. The documentation was never finished.

Judge: Defendant, what have you got to say to that?

Defendant: For a software project, that's normal ...

Prosecutor I: You mean we should accept it? Did Novomation expect it?

Defendant: I guess not. But they put up with it.

Prosecutor I: Why did all this happen?

Defendant: As we said, they kept changing the specs. And it was harder than we thought. We ran into a lot of problems that we hadn't expected.

Prosecutor I: But the facts show that you could not estimate the work required. That is the first proof of bad management. How do you plead?

Defendant: I guess we have to admit to that.

Prosecutor I: Second, you could not report your progress accurately, or rather your lack of progress. You withheld information!

Defendant: But we didn't have the information to give!

Prosecutor I: Then that's bad management all around. I rest my case.

Judge: The second prosecutor represents COPS, the Consumer Protection Society. They have brought a class action suit on behalf of users of the voice-controlled vacuum cleaner. Prosecutor, please state your charges.

Prosecutor II: The developer did not fulfill his responsibilities to the end user. The product does not operate correctly. Average users cannot understand the instruction guide. So many problems have occurred, it is obvious that the thing was not tested properly.

[Prosecutor II questioned the defendant about "misuse" of the vacuum cleaner by children, to which the defendant replied that it was not intended for use by children. The prosecutor also pointed out dangerous bugs, which were "fixed" by inserting a warning notice in the manual instructing the housewife to turn off the cleaner in case of problems. Finally, Prosecutor III charged the defendant with subversive conduct. He concluded as follows.]

Prosecutor III: It is the duty of the State to protect law and order. We ask the jury if we can put this dangerous developer away where he can do no more harm. We can move him into research!

.....

For copies of the play and information about its performances, one may contact

Mr. Graham D. Tritt
Postbox 495
3000 Berne 25, Switzerland
e-mail: gt@brine.ch ■

* © Graham Tritt

WG9.4 PROCEEDINGS PUBLISHED

The following two proceedings of workshops and conferences of IFIP's Working Group on Social Implications of Computers in Developing Countries (WG9.4) have been published recently by Tata-McGraw-Hill, New Delhi:

Information Technology Manpower: Key Issues for Developing Countries
and
Social Implications of Information Technology in Developing Countries

One may purchase copies by sending a check for $25 U.S., or the equivalent, for each book (including air mail). Checks should be payable to **"IFIP** WG 9.4" and sent to

Prof. S.C. Bhatnagar
Indian Institute of Management
Ahmedabad 380015, INDIA ■

NEW IFIP PUBLICATIONS FROM NORTH-HOLLAND

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Proceedings of the IFIP TC2/WG2.6 Second Working Conference, Budapest, Hungary, 30 September - 3 October 1991

edited by E. Knuth *and* L.M. Wegner

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Decision Support Systems: Experiences and Expectations

Proceedings of the IFIP TC8/WG 8.3 Working Conference, Fontainebleau, France, 30 June-3 July 1992

edited by T. Jelassi, M.R. Klein *and* W.M. Mayon-White

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Theorem Provers in Circuit Design

Proceedings of the IFIP TC10/WG 10.2 International Conference on Theorem Provers in Circuit Design: Theory, Practice and Experience, Nijmegen, The Netherlands, 22-24 June 1992

edited by V. Stavridou, T.F. Melham *and* R.T. Boute

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Programming Environments for Parallel Computing

Proceedings of the IFIP WG10.3 Workshop, Edinburgh, UK, 6-8 April 1992

edited by N. Topham, R. Ibbett and T. Bemmerl

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Proceedings of the IFIP 12th World Computer Congress, Madrid, Spain, 7-11 September 1992 (in 3 volumes)

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Proceedings of the IFIP TC5/WG 5.3 Eighth International PROLAMAT Conference, Tokyo, Japan, 24-26 June 1992

edited by G.J. Oiling *and* F. Kimura

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Proceedings of the IFIP TC5/WG5.6 Seventh International Conference (ICCAS 91), Rio de Janero, Brazil, 10-13 September 1991

edited by C. Baraúna Vieira, **P.** Martins *and* C. Kuo

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Performance of Distributed Systems and Integrated Communication Networks

Proceedings of the IFIP WG 7.3 International Conference, Kyoto, Japan, 10-12 September 1991

edited by T. Hasegawa, H. Takagi *and* Y. Takahashi

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Information Network and Data Communication, IV

Proceedings of the IFIP TC6 International Conference, Espoo, Finland, 16-19 March 1992

edited by C. Tienari *and* D. Khakhar

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papers due: 20 Sep 92
contact: Bianca Falcidieno
Istituto per la Matematica Applicata
C.N.R.
Via L.B. Alberti, 4
16132 Genova, ITALY
e-mail• falcidieno@image.ge.cnr.it
fax: +39-10-517801
tel: +39-10-515510/517639

Ninth Intl. Symp. on Computer Security
12-14 May 93, Toronto
papers due: 1 Oct 92
contact: Mr. Graham Dougall, Co-Chairman
IFIP/SEC'93 Program Committee
c/o Concord-Eracom Computer Ltd.
7370 Bramalea Road, Unit 18
Mississauga, Ontario, Canada L5S 1N6

WG9.6 Work. Conf. on Security and Control of IT in Society
12-17 Aug 93, Stockholm/St. Petersburg
paper summaries due: 1 Oct 92
contact: Martin Wasik
Faculty of Law
Manchester Univ.
Manchester M13 9PL, United Kingdom
tel: 061-275 3594
fax:061-275 3579

IFIP Symp. on Hardware Description Languages and Their Applications — CHDL'93
26-28 Apr 93, Ottawa
papers due: 9 Oct 92
contact: Ottawa-Carleton Research Institute
340 March Road, Suite 400
Ottawa, ON, Canada K2K 2E4
tel: 1 (613) 592-8160, fax: 592-8163

TeleTeaching **93**
20-25 Aug 93, Trondheim, Norway
papers due: 10 Oct 92
contact: TeleTeaching 93
Norwegian Computer Society
P.O. Box 6714 Rodeløkka
N-0503 Oslo, Norway
tel: +47 2 37 02 13, fax: 35 46 69
e-mail: teleteach@avh.unit.no

Sixteenth **IFIP** Conf. on System Modelling and Optimization
5-9 Jul 93, Compiègne, France
extended abstracts due: 15 Oct 92
contact: INRIA - Rocquencourt
Bureau Cours/Colloque
IFIP 93
Domaine de Voluceau
BP 105
78153 Le Chesnay Cedex, France
tel: 33 (1) 39 63 56 00
fax:33 (1) 39 63 56 38
e-mail: symposia@inria.fr

Nineteenth **EUROMICRO** Conference
6-9 Sep 93, Barcelona
papers due: 30 Jan 93
contact: Ferenc Vajda
KFKI Research Institute for Measurement and Computing Techniques
P.O. Box 49
1525 Budapest, Hungary
tel. and fax: + (36-1) 169-5532 ■

IFIP INFORMATION NOW AVAILABLE ONLINE

*by Mr. Howard Funk (USA)**

The IFIP Marketing Committee is pleased to announce that **IFIP** information is now available online. The **IFIP** calendar and the ***IFIP*** *Newsletter* are available via anonymous ftp from software.watson.ibm.com in the directory /pub/ifip/. The file index.txt describes what is available. Any **IFIP** Technical Committee, Working Group, or other committee that wishes to place material in this repository is encouraged to send it to me at

hlfunk@watson.ibm.com

Please provide information about this service to members of your organizations. ■

* **IFIP** Marketing Committee chairman and **IFIP** vice-president

REQUEST FROM IFIP PRESS OFFICER

IFIP General Assembly representatives are reminded of the following request issued in April by **IFIP's** Press Officer:

> Will you please send me the names, addresses, and any other relevant information on the editors (or their designates) of your societies' journals. Other relevant information includes telephone numbers, fax. numbers, and electronic mail addresses. Your editors are the people whom we wish to make the recipients of all important **IFIP** news. If **IFIP** is to achieve appropriate recognition for its initiatives and accomplishments from its member countries, these countries ***must*** be made aware of what **IFIP** is doing on their behalf.
>
> Please comply with this simple request as promptly as possible. Once the communications network between these individuals and me has been established, it is our hope that an interchange of information can be developed. Then, even if **IFIP** could not publish ***all*** the information received from the contributing editors, at least it could act as a sort of clearing-house, linking interested participants.
>
> I look forward to your early response, in the hope that we can initiate this vital communications flow without delay.

IFIP EVENTS WITH UNUSUAL SETTINGS

Two announcements for **IFIP** events caught our attention recently. We'd be happy to attend them — regardless of their content — because of their locations.

Sponsored by the **IFIP** Working Group on Computer Security Law (WG9.6), a working conference on Security and Control of Information Technology in Society, will be held in August 1993 aboard the Baltic Line Conference Ship M/S Ilich. Delegates will board the ship in Stockholm on Thursday August 12. The opening session will be held Thursday evening, followed by dinner as the ship departs for St. Petersburg. Friday will be a full working day, using conference room facilities on board. On Saturday the conference will assemble in St. Petersburg and will include meetings with Russian representatives. Sunday will be a leisure day in St. Petersburg. The ship departs St. Petersburg on Monday, which will be a full working day, arriving at Stockholm Tuesday morning.

The second event was the 12th International Symposium on Protocol Specification, Testing and Verification, sponsored by the **IFIP** Working Group on Architecture and Protocols for Computer Networks (WG6.1), which took place this past June near Orlando, Florida. Following the closing session, a "behind-the-scenes" tour of Walt Disney World took place: a 3½-hour visit beneath the Magic Kingdom ® Park. The tour included the tunnel system, which is a vital infrastructure for the smooth operation of the park; the world's largest working wardrobe, where thousands of park employees or "cast members" (e.g., Mickey Mouse) prepare for their roles; show rehearsal rooms and parade float storage and maintenance at the Production Center; the Community Wastewater Treatment Facility, where water-purifying properties of aquatic plants are tested; the sites of the energy plant, manufacturing, food processing, and laundry at the North Service Area; and much more. ■

Please send information to

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CHANGES IN IFIP

NEW APPOINTMENTS

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TC5: Mr. ir. W. Loeve (NL)
(succeeding Mr. J. Vlietstra)
TC12: Mr. R. Stanton (AUS)

Because the next edition of the ***IFIP** Bulletin* will be distributed in October, names of new WG members are not included in this issue of the *Newsletter.*

ADDRESS AND OTHER CHANGES

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FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

GA	12-16 Sep 92 (following **IFIP** Congress '92)	Toledo, Spain
Council	1-5 Mar 93	Vienna
GA	(contiguous to **IFIP** Congress '94)	Hamburg
GA	(contiguous to **IFIP** Congress '96)	Canberra, Australia

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS*

WG2.1	14-17 Sep 92	Augsburg, Germany
WG2.2	May/Jun 93	Ontario
WG2.3	5-9 Jul 93	Lake Simcoe, Canada
WG2.6	Nov 92 (with work. conf.)	Melbourne
WG2.8	31 Aug-4 Sep 92	Oxford, U.K.
TC3	5-6 Sep 92 (before **IFIP** Congress '92)	Madrid
	28-29 Jan 93	Mexico
	28-29 Aug 93	Birmingham, U.K.
	26-27 Aug 94	Hamburg
	22-29 Jul 95	Birmingham, U.K.
WG3.1	2-3 Sep 92 (before **IFIP** Congress '92)	Madrid
WG5.7	probably Sep 93 (with APMS'93 conf.)	Greece
TC6	30-31 Oct 92 (with Networks '92)	Trivandrum, India
	5-6 Apr 93	Versailles
	15-16 Oct 93	Sofia
	Mar or May 94	Lisbon
	Oct 94	South Africa
	2nd quarter 95	U.S.A.
WG6.1	May—Jun 93	Liége, Belgium
TC7	17 Dec 92	Compiegne, France
TC8	5-6 Sep 92 (before **IFIP** Congress '92)	Madrid
TC9	5-6 Sep 92 (before **IFIP** Congress '92)	Madrid
WG9.2	16-17 Jan 93	Namur, Belgium
WG9.6	23-25 Oct 92	Farnham, U.K.
	5-7 Mar 93	Hamburg
TC10	8-10 Sep 92 (with **IFIP** Congress '92)	Madrid
WG10.2	18-19 Nov 92 (with IMEC conf.)	Leuven, Belgium
WG 10.4	Feb 93	Captiva, Florida
	Jun 93	Toulouse region, France
WG10.5	6 Sep 92 (before EURO-DAC'92 conf.)	Hamburg
	6 Apr 93	Grenoble

* 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.

DISTRIBUTED SYSTEMS continued from page 7

The Workshop ended with a panel discussion on the issues raised during the 3 days of presentations of interesting papers and intensive discussions!

The Workshop was considered a great success, as indicated by an attendance rate of about 90% for all sessions! In about 2 years, there is likely be a follow-on conference in the U.S.A.

The proceedings, published by the IEE, can be obtained from

IEE Publications Sales Office
Michael Faraday House
Six Hills Way, Stevenage
Herts SG1 2AY, United Kingdom
fax: + 44 438 313465 ■

CALENDAR OF EVENTS

(continued from page 16)

Event	Date	Location	Sponsored by
Intl. Conf. on *Hardware Description Languages and Their Applications — CHDL'93*	26-28 Apr 93	Ottawa	**IFIP** WG10.2
Ninth Intl. Conf. on *Computer Security — IFIP/SEC'93*	12-14 May 93	Toronto	**IFIP TC11**
Intl. Conf. on *CAD/CAM, Robotics and Factories of the Future*	17-19 May 93	St. Petersburg, Russia	ISPE, **IFIP** WG5.3
Intl. Conf. on *Industrial Engineering and Production Managament — IEPM'92*	2-4 Jun 93	Mons, Belgium	FUCAM/INRIA, **IFIP** WG5.7
Open Conf. on *Informatics and Changes in Learning*	7-11 Jun 93	Gmunden, Austria	**IFIP** TC3 (WG3.1 and 3.5)
First Work. Conf. on *Development and Implementation of Computer-Based Information and Communication Networks — NetWORKing*	16-18 Jun 93	Vienna	IFIP WG9.1
Work. Conf. on *Geometric Modelling in Computer Graphics — GMCG*	28 Jun-2 Jul 93	Genoa, Italy	IFIP WG5.10, CNR
Sixteenth Open Conf. on *System Modelling and Optimization*	5-9 Jul 93	Compiegne, France	**IFIP** TC7
Thirteenth Triennial **IFORS** Conf. on *Operations Research — IFORS '93*	12-16 Jul 93	Lisbon	IFORS
Workshop on *Formal Design Methods for Computer-Aided Design*	16-19 Jun 93	Tallin, Estonia	**IFIP** WG5.2
IFAC World Congress '93	19-23 Jul 93	Sydney	IFAC
Work. Conf. on *Computer-Based Training and Hypermedia in Vocational Education*	? Jul 93	Soest, Germany	**IFIP** WG3.4
Work. Conf. on *Security and Control of IT in Society*	12-17 Aug 93	Stockholm	**IFIP** WG9.6
Intl. Conf. on *Teleteaching '93*	20-25 Aug 93	Trondheim, Norway	**IFIP** TC3, ICDE
Third Intl. Conf. *CAD — Graphics '93*	23-26 Aug 93	Beijing	CCF, **IFIP** WG5.10
Thirteenth **IJCAII** Intl. Joint Conf. on *Artificial Intelligence — IJCAII '93*	29 Aug-3 Sep 93	Chambery, France	IJCAII
Work. Conf. on *Statistical Aspects of Stochastic Programming*	4-9 Sep 93	Prague	**IFIP** WG7.7
Nineteenth **EUROMICRO** Conf. on *Open System Design: Hardware, Software, and Applications — EUROMICRO'93*	6-9 Sep 93	Barcelona	EUROMICRO
VLSI '93	7-10 Sep 93	Grenoble	IFIP WG10.5
Work. Conf. on *Computer Support for Environmental Impact Assessment — CSEIA'93*	? Sep 93	Como, Italy	IFIP WG5.11, CIRITA
Intl. Conf. on *Open Distributed Processing — ICODP2*	? Sep 93	Berlin	**IFIP** TC6, GMD-Fokus
Fourth Workshop on *Geometric Modelling*	26 Sep-1 Oct 93	Rensellaerville, New York	**IFIP** WG5.2
Conf. on *Network Information Processing Systems — INFONET'93*	11-14 Oct 93	Sofia	**IFIP** TC6/Bulgarian Acad. of Sci.
Workshop on *Large Scale Stochastic Programs: Applications and Solutions*	? Oct 93	Yalta, Ukraine	**IFIP** WG7.7
Work. Conf. on *Software Engineering Education*	? Oct 93	Kowloon, Hong Kong	**IFIP** WG3.4
Seventh Work. Conf. on *Database Security*	31 Oct—? 93	Huntsville, Alabama	**IFIP** WG11.3
Work. Conf. on *Numerical Analysis and Optimization*	15-17 Dec 93	Rabat, Morocco	**IFIP** WG7.2
Workshop on *Stochastic Methods and Global Optimization*	? Mar 94	Palanga/Trakai, Lithuania	**IFIP** WG7.7
IMACS World Congress '94	? Jul 94	Atlanta, Georgia	IMACS
IFIP Congress '94 — Thirteenth World Computer Congress	29 Aug-2 Sep 94	Hamburg	**IFIP**
Workshop on *Expert Systems in Computer Integrated Manufacturing*	? Sep 94	Kiev, Ukraine	**IFIP** WG5.3
Work. Conf. on *Integrating Information on Technology into Education*	? Oct 94	Spain	**IFIP** WG3.1
Eighth Work. Conf. on *Database Security*	31 Oct—? 94	Hamburg	**IFIP** WG11.3
World Conf. on *Computers in Education — WCCE '95*	24—? Jul 95	United Kingdom	**IFIP** TC3/BCS
Eighth **IMIA** World Congress on *Medical Informatics — MEDINFO'95*	10-14 Sep 95	San Paolo, Brazil	**IMIA**
IFIP Congress '96 — Fourteenth World Computer Congress	? Sep 96	Canberra, Australia	**IFIP**
Thirteenth *IFAC World Congress '96*	? 96	San Francisco	IFAC

Please see page 14 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
Intl. Workshop on *Hardward-Software Codesign*	30 Aug-2 Sep 92	Estes Park, Colorado	**IFIP** WG10.2
Eleventh **IAPR** Intl. Conf. on *Pattern Recognition '92*	30 Aug-3 Sep 92	The Hague	IAPR
Second Intl. Workshop on *Field-Programmable Logic and Applications — FPL '92*	31 Aug-2 Sep 92	Vienna	**IFIP** WG10.2
***VLDB** 1992*	31 Aug—? 92	Vancouver, Canada	VLDB Endowment
Seventh **IMIA** World Congress on *Medical Informatics — MEDINFO '92*	6-10 Sep 92	Geneva	IMIA
Fourth Symp. on *Continuous Algorithms and Complexity*	7-9 Sep 92	Madrid	**IFIP** WG14.1
Intl. Conf. on *European Design Automation — EURO-DAC'92*	*7-10* Sep 92	Hamburg	GI/ **IFIP** WG10.5/2, TC5, etc.
Third European Conf. on *VHDL Methods — EURO-VHDL'92*	7-10 Sep 92	Hamburg	**IFIP** WG10.5/2 Siemens AG, GI/ITG
***IFIP** Congress '92 — Twelfth World Computer Congress*	**7-11 Sep 92**	**Madrid**	
Work. Conf. on *Dependable Computing for Critical Applications — DDCA 3*	14-16 Sep 92	Mondello, Sicily	**IFIP** WG 10.4/TC11 IEEE CS TC on FTC, EWICS TC7
Eighteenth **EUROMICRO** Conf. on *Software and Hardware: Specification and Design — EUROMICRO'92*	**14-17** Sep 92	Paris	EUROMICRO
Workshop on *Higher Order Logic Theorem Proving and Its Applications — HOL'92*	21-24 Sep 92	Leuven, Belgium	**IFIP** WG10.2
COMPSTAT 1992	*?* Sep 92	Neuchatel, Switzerland	**IASC**
ICCC '92	27 Sep-2 Oct 92	Genoa	ICCC
Work. Conf. on *Optimization-Based Computer-Aided Modelling and Design*	28 Sep-2 Oct 92	Dagstuhl-Castle, Germany	**IFIP** WG7.6
Intl. Workshop on *Compiler Construction — CC'92*	5-7 Oct 92	Paderborn, Germany	GI/ **IFIP** WG2.4
Fifth Open Conf. on *Formal Description Techniques for Distributed Systems and Protocols — FORTE '92*	5-8 Oct 92	Lannion, France	**IFIP** WG6.1/France Telecom, Conseil Regional, CNRS
Open Conf. *Networks '92*	27-29 Oct 92	Trivandrum, India	**IFIP** TC6, CSI
Sixth Intl. Workshop on *High-Level Synthesis — HLSW*	4-6 Nov 92	Dana Point Resort, Cal.	ACM, IEEE/ **IFIP** WG10.2/5
Work. Conf. on *Semantics of Interoperable Database Systems — DS-5*	16-20 Nov 92	Lourne, Victoria, Australia	**IFIP** WG2.6/La Trobe Univ.
Fourth Open Conf. on *High-Performance Networking — HPN 92*	16-18 Dec 92	Liege, Belgium	**IFIP** WG6.4
Work. Conf. on *Control of Partial Differential Equations*	4-9 Jan 93	Trento, Italy	**IFIP** WG7.2, CIRM
First Work. Conf. on *Architectures and Compilation Techniques for Fine- and Medium-Grain Parallelism*	20-22 Jan 93	Orlando, Florida	**IFIP** WG10.3
Intl. Conf. on *Computer Graphics Interaction, Design, Modelling and Visualization — ICCG'93*	22-26 Feb 93	Bombay	**IFIP** WG5.10/5.2/5.3
Conf. on *Design Automation and ASIC Design — EDAC-EUROASIC*	22-26 Feb 93	Paris	**IFIP** WG10.2
Conf. on *Feature Modelling and Recognition for CAD/CAM Systems*	*?* Feb 93	Valenciennes, France	**IFIP** WG5.3/ AFCET
Work. Conf. on *Computational Techniques of Stochastic Programming*	9-13 Mar 93	Visegrad, Hungary	**IFIP** WG7.7/ IFAC
Workshop on *Interfaces in Industrial Systems for Production and Engineering — ISPE'93*	15-17 Mar 93	Darmstadt, Germany	IFIP TC5/ WG5.2/5.3/5.7/5.10
Fifth Work. Conf. on *Reliability and Optimization of Structural Systems*	24-26 Mar 93	Takamatsu-Shi, Japan	IFIP WG7.5
Work. Conf. on *CAD Developments for Accelerated Manufacturing and Marketing*	29-30 Mar 93	Haifa	**IFIP** WG5.2
Workshop on *Applications of the Reed-Muller Expansion in Circuit Design*	30-31 Mar 93	Tuebingen, Germany	**IFIP** WG10.5
Intl. Symp. on *Autonomous Decentralized Systems — ISADS '93*	30 Mar-1 Apr 93	Kawasaki, Japan	IEEE, IPSJ, SICE/ **IFIP** TC10, TC6, WG5.3
First Intl. Work. Conf. on *Health Informatics in Africa — HELINA '93*	19-23 Apr 93	Ile-Ife, Nigeria	IMIA, **IFIP** WG9.4
Work. Conf. on *Knowledge Based Hybrid Systems Engineering and Manufacturing — KNOWHSEM'93*	20-22 Apr 93	Budapest	**DTP** WG5.3/IFAC
Intl. Conf. on *Human Factors in Computing Systems — INTERCHI'93*	24-29 Apr 93	Amsterdam	ACM SIGCHI/ **IFIP** TC13

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IFIP Congress '92 — 12th World Computer Congress	7-11 Sep 92	Madrid	
IFIP Congress '94 — 13th World Computer Congress	29 Aug-2 Sep 94	Hamburg	**IFIP**
IFIP Congress '96 — 14th World Computer Congress	? Sep 96	Canberra	

Please see page 14 for schedule of **IFIP** administrative meetings.
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