IFIP newsletter
International Federation for Information Processing

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6-YEAR PLAN PUBLISHED

IFIP's Activity Planning Committee recently published the 6-year plan for 1984-1990, which lists IFIP Congress '86 and 110 other conferences (working, general, regional, open, and international), symposia (general and international), seminars, meetings, and workshops that are planned by IFIP, its 9 Technical Committees (TCs), the International Medical Informatics Association, and the IFIP Committee: Informatics for Development.

The largest number of activities (22) is planned by TC5 (Computer Applications in Technology). France and the USA are the most popular locations, followed closely by the UK, Denmark, and Hungary. ■

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PLANS FOR IFIP CONGRESS '86 UNDER WAY

NEW FORMAT SOUGHT

The 10th World Computer Congress (IFIP Congress '86) will convene in Dublin, Ireland from September 1-5, 1986. Mr. Dudley Dolan (Ireland) is chairman of the Organizing Committee. The Irish Computer Society will serve as host for the Congress. The site will be Trinity College, which occupies a site of some 37 acres in the center of Dublin.

The Congress exhibition, a major display of computer systems and services, will take place at the Royal Dublin Society Exhibition Centre in conjunction with the Irish Business Equipment Trade Association.

Since the triennial Congress is IFIP's major technical event, it is important that its program be carefully constructed and as generally appealing as possible. Prof. Frank Sumner (UK) is chairman of the Congress Review Committee, which is hearing all points of view concerning the structure of the programs for IFIP Congresses.

Recent IFIP Congresses have faced the difficulties of other general computer conferences: attendance is falling off because more conferences are competing for the same attendees, and the best papers are being submitted to conferences for specialists where authors can meet more colleagues interested in similar topics. Furthermore, IFIP attempts to have speakers from all parts of the world, cover a broad spectrum of topics, provide a high quality program, and appeal to a large audience—both from theoretical and applications communities. Obviously, it is very difficult to meet all these goals.

It has been noted at recent Congresses that attendance at invited speaker and panel sessions has grown, while attendance at sessions of submitted papers has fallen off. It has also been increasingly difficult to get the highest quality papers submitted.

Among the suggestions that have been put forward are to omit submitted papers; solicit papers from people

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DOV CHEVION

*by Isaac L. Auerbach **

Dov Chevion, one of IFIP's most active contributors and an outstanding organizer of countless IFIP activities, died on October 5, 1983. His sage counsel and endless source of ideas and friendship will be missed by those of us who had the pleasure of working with and knowing him.

Dov was born on April 17, 1916 in Lodz, Poland. In 1935 he emmigrated to Palestine. He attended Hebrew University, where he studied philosophy, mathematics and physics. He was the recipient of three prizes as the Best Student at Hebrew University. His student days were interrupted by World War II, during which he served in the British Army. He became active in the computer industry in the late 1950s. Dov and Aaron Gertz were responsible for founding and developing the Center for Office Mechanization, (MALAM), for the Israeli government, which he directed from 1964 to 1982, when he retired.

Israel's Information Processing Association became a member of IFIP in January 1964, and Dov was its first representative. He served until 1978, when he was elected an individual member for a three-year term. He was elected a trustee from 1965-67, 1970-73, and 1973-76, and he served as a vice-president of IFIP from 1967-70.

In the field of Computer Education, Dov was instrumental in charting new activities and providing outstanding organizational ability. He was a member of IFIP Technical Committee 3 (Education) from 1971-79 and chairman of Working Group 3.1 (Informatics Education at the Secondary Education Level) from 1966-68. Dov was a personal contributor as well as an active IFIP proponent and supporter of each of the World Conferences on Computers in Education and was chairman from 1973 of the Steering Committee for the Second World Conference on Computers in Education, which took place in 1975. In addition, he organized, participated in, and led Israeli lecture teams on computer education to many countries in Central and South America. In recognition of his singular contribution, he was appointed Honorary Professor of Computer Science by the University of Sao Paulo, Brazil.

As the chairman of the Future Policy Committee from 1967-69 and a member from 1979-81, he helped focus attention on the development of IFIP as the most important international federation in the computer field.

He also served as a member of the following IFIP committees:

Tenth Anniversary Committee	1969-70
Statutes and Bylaws Committee	1969-81
IFIP Committee for International Liaison	1969-83
Education Policy Committee	1973-74
Activities Planning Committee	1975-81
Committee for Liaison with SEARCC	1976-77

Dov was the recipient of the Silver Core Award for services rendered to IFIP, in Stockholm in 1974.

In 1977, Dov was named chairman of a task group to investigate governmental and municipal data processing. This resulted in the first IFIP Conference on *The Impact of New Technologies on Information Systems in Public Administration in the 80s* in Vienna, Austria in February, 1983. At this conference, Dov presented a paper entitled "International Cooperation as a Vehicle of Information Technology in Public Administration."

Dov returned home from the conference to undergo major surgery in March. When I visited with him in June, he was very weak but still wanted to talk about IFIP affairs and his old friends. Just before his death, he received an award by the Information Processing Association of Israel, (IPA), for his lifelong efforts in the development of computing in Israel. He died in October, after a very debilitating illness. We shall all miss his dedication, inspired hard work, and wisdom. He is survived by his devoted wife of forty-three years, Hilda, a daughter, Jael Hanani, a son, Dan, and three grandchildren.

* Mr. Auerbach, the founder of IFIP, was IFIP's first President and is an Honorary Member.

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known to be making interesting contributions in information processing, these papers to be refereed; include a greater fraction of invited talks and panels; hear more viewpoints on single topics, perhaps by having invited talks followed by second speakers with different opinions; limit panels to fewer people and encourage debate; suggest that speakers write good, substantive technical papers to appear in the Proceedings but deliver oral presentations better able to be understood by a general audience; encourage all authors to include some material in their printed papers that can be understood by all and that indicates the relevance of the paper; help speakers present more understandable papers; include more applications-oriented papers, especially in banking and other commercial industries; omit papers from well-established fields; reduce the time between submission of papers and publicatin of the Proceedings; involve the IFIP Technical Committees more in preparing the program; and hold several specialist conferences concurrently under the umbrella of IFIP Congress.

With the effort expended in planning the program for IFIP Congress '86, Program Committee Prof. Dines

come up with an excellent program.

For further information, write IFIP '86, 44 Northumberland Road, Dublin 4, Ireland. ■

WORKSHOP ON CMOS FOR VLSI

IFIP Working Group 10.5 on VLSI (WG10.5) sponsored a two-day workshop *CMOS for VLSI* in Edinburgh, Scotland in July, 1983. CMOS (complementary metal-oxide semiconductor) technology is contending increasingly with NMOS and bipolar technologies because of its low power consumption and ease of circuit design. Dr. David Rees (UK) organized the workshop, and WG10.5 chairman Prof. Sidney Michaelson (UK) acted as the workshop chairman. Some sixty attendees heard the program of 18 formal contributions. No proceedings were produced, in order to promote free and frank discussion. Also, ample opportunity was provided for the participants to discuss topics of mutual interest outside the formal sessions.

The workshop covered most aspects of CMOS. The first day consisted mainly of topics in the area of CMOS fabrication technology. Keynote speaker Dr. V. Leo Rideout (USA) surveyed the present status and future trends, with a primary focus on logic arrays. The consensus of the speakers was that CMOS will become the predominant technology in the near future. One of the difficulties of CMOS technology is that there are many variants, each with its own particular design rules. No standardization has yet emerged. Possible approaches were discussed at the workshop.

The second day was concerned more with the design aspects of CMOS. The achievement of fabricating 20 000 gates in one array was described. Another speaker discussed a microprocessor containing only 5 000 devices but operating at a very fast clock rate of 18 MHz and comparing very favorably with commercially available microprocessors. ■

EUROMICRO 83

EUROMICRO 83 was the ninth in a series of annual symposia organized by the European Association for Microprocessing and Microprogramming, an IFIP affiliate member. It took place in Madrid, Spain September 13-16, 1983. The program consisted of two tutorials; a scientific program with 47 papers, 18 short notes, and a panel on "Office Communication"; an industrial program; and an exhibition. Two hundred thirty attended.

EUROMICRO 83 also served as host for the Euromouse competition finals. Thirteen microprocessor-controlled mice competed against the clock to find their way through a maze. The mice were self-contained and self-powered and did not receive any assistance from outside. The winners were Manu/Telu (Finland), MIcrosaurus (Finland), and Knownaim (Great Britain).

EUROMICRO 84 will be held in Copenhagen, Denmark August 28-30, 1984. ■

IASC REPORTS ACTIVITIES

Activities of the International Association for Statistical Computing (IASC), an affiliate member of IFIP, were reported at the IFIP General Assembly meeting in Sept., 1983 by Prof. Jarle Brosveet (Norway). The new officers for 1983-85 are Prof. S. Nordbotten (Norway) president, Dr. K. Neumann (GDR) president-elect, Prof. N. Victor (FRG) and Dr. A. Klas (Czechoslovakia) vice-presidents, Asst. Prof. J. Brosveet (Norway) scientific secretary, Dr. J. M. Steinberg (USA) treasurer.

IASC organized six sessions on statistical computing at the 44th session of the International Statistical Institute, held in Madrid, Spain in Sept., 1983. It is making plans for the 6th Symposium on Computational Statistics-COMPSTAT '84, to be held in Prague, Czechoslovakia in August. The new periodical *Statistical Software Newsletter* appeared in Dec., 1982. ■

ARTICLE ON TC2 PUBLISHED

IFIP has just published *The Art and Science of Programming,* the sixth in a series describing the technical work of IFIP undertaken by its Technical Committees (TCs) and Special Interest Group. It describes the activities of TC2, which is concerned with programming.

Earlier articles discussed education, data communication, digital systems design, information systems, and medical informatics. The author of all six, working on behalf of IFIP, is a well-respected British journalist, Mr. Kenneth Owen.

Copies of the article are available from the IFIP Secretariat. ■

FAULT-TOLERANT COMPUTING

IFIP Working Group 10.4 on Reliable Computing and Fault-Tolerance was co-sponsor of FTCS-13, the 13th Annual International Symposium on Fault-Tolerant Computing, along with the IEEE Computer Society Fault-Tolerant Technical Committee (USA) and other groups. The symposium took place in June in Milan, Italy, attracting over 300 participants from 22 countries. In general, the FTCS tends to be a research meeting: approximately 2/3 of the 76 papers delivered came from universities. Over 60% of the attendees, however, were from industry.

Although the well-established areas of testing, evaluation, measurement, circuit design, and telephone switching systems were represented in the program, FTCS-13 was notable for new topics covered. These included sessions on software reliability evaluation, fault-tolerant software, robust planning (of software), on-line monitoring of systems, synchronization protocols, and interconnection networks.

Even the venerable areas of fault-tolerant research are moving from the early assumptions that circuits fail by being stuck at 0 or 1 to more complex premises. The degradation of speed due to error checking circuitry is being assessed. Systems are being evaluated on a combination of throughput and availability rather than simply availability. This is based upon the realization that degraded performance of a fault-tolerant system should be taken into account in evaluating the system. FTCS-13 succeeded in highlighting new areas of research as well as expanding old ones. ■

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FACING SECURITY ISSUES

PARKER ADDRESSES IFIP/SEC'83

Many computer professionals shudder at the thought of their handiwork being used to design weapons, maintain police records, and perform other functions that they consider to be evil (although many others consider these activities perfectly proper). Now we must concern ourselves with security, another distasteful aspect of data processing, which threatens to turn our ivory towers to watchtowers. Despite the fact that some of us may consider this topic unpleasant, we must all face it squarely, to avert disaster.

Human Controls for Information Security was the title of Mr. Donn Parker's invited paper before IFIP/Sec'83. (See the article about IFIP's activity in security in the November, 1983 *IFIP Newsletter.)* Parker (USA), a noted expert on computer crime, stated, "Technical controls that safeguard assets by technical means, such as password access control, frequently reduce performance and are resisted unless the people required to use them are willing to cooperate. Human controls—personnel procedures or requirements for safeguarding assets and tehnical controls—also condition and constrain people. Information security will be successful only when the people constrained by security controls accept the need for security and support it." Following are passages selected from Parker's paper dealing with this troublesome topic (contained in *Security, IFIP/SEC'83,* V. Fäk ed., published by North-Holland Publishing Co.). *

Every information processing organization requires an array of generally used security controls known as the baseline of security. Such controls need no justification for their selection and use, because their need is self-evident, and they have become generally accepted in computer and information security. Several human controls, including hiring and termination practices and an enforced code of conduct, are candidates for baseline security. These are essential if such baseline technical controls as password access, electronic door locks, fire suppression and detection devices, and data verification are to be effective.

Human Controls

In considering the functions of security—avoidance, deterrence, prevention, detection, recovery, and correction—technical controls principally serve prevention, detection, and recovery and, secondarily, deterrence. Human controls principally serve the functions of avoidance, deterrence, and correction. Human controls can be easily broken and in some respects have a negative work factor for violation. That is, no effort is required to break them; a reduction in effort is all that is required to make them ineffective. For example, effort is required to violate password access control; whereas lack of effort to adhere to a code of conduct will violate a human control.

Human controls are difficult for computer security officers to develop and apply. Because these officers are usually technically trained, they are not always well prepared to deal with human constraints and problems. When confronted with a vulnerability, computer security officers will first seek technological controls. For example, suppression of piggyback passage through an electronically locked door is usually achieved by installing an electronic turnstile or man trap. An alternative and sometimes better solution is to impose human controls, in this case, strict prohibition rules supported by training and briefing sessions and enforced sanctions for violations. Considering cost effectiveness and other factors, the human control alternative may be more desirable in many situations.

Human controls require the cooperation of management and sometimes of personnel departments. Obtaining this cooperation may be difficult, but if the security of an organization is paramount, cooperation is essential. For example, computer security officers must have access to the personnel records of most employees, yet security officers are often not thought of as part of management, and allowing them access to personnel records can be strongly resisted. To defend their organization, security officers must know who the computer criminals are, and frequently they are trusted employees and managers. Therefore, they must be aware of personnel vulnerabilities as well as any other vulnerabilities.

Parker goes on to discuss information security policy, employee hiring and termination procedures, background investigation, employees' security performance evaluation, code of conduct, informants, and secure work assignments. It is not cheerful reading. To be told that in some work environments our colleagues may not be trustworthy and that we ourselves may be subject to scrutiny is depressing, to say the least. For example:

Unpleasant Issues

Employee Hiring and Termination Procedures. *The security aspects of hiring and terminating employees who handle and are responsible for processing sensitive information are important because of the ease with which information can be modified, disclosed, destroyed, or misused. Hiring requires full disclosure to the prospective employee of security requirements and his position of trust. Termination requires a debriefing to explain ex-employee responsibilities and retrieve all items such as keys, terminals and documents. Termination with cause requires removal from a position of trust immediately upon notification of the employee, followed by leave with pay when necessary. Association between a terminated employee and other employees after termination notice should be discouraged. All necessary precautions, such as changing of all computer access passwords, should be taken upon loss of an employee entrusted with confidential information.*

Informants. *An information security officer should make use of informants in high trust work areas. Paid informants should be used only under sufficiently severe conditions to warrant them and only by security officers trained in and experienced with their use. However, informal cultivation of associations with appropriate employees for the purpose of obtaining intelligence information is extremely valuable. Industrial security officers have generally found use of informants the single most powerful method of detection and prevention of business losses. Nevertheless, the discovery by employees, especially professionals, of a paid informant in their midst can be devastating. Informants can be untrustworthy and cause more harm than their use was meant to solve.*

Secure Work Assignments. *Work assignments of employees in positions of trust should be made with security as a significant objective. Duties should be assigned to minimize the likelihood of one employee acting alone to engage in a criminal activity without detection. This practice is called separation of duties. Dual control is another practice*

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* *IFIP*

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often called the maker, checker, signer concept: one person performs a job task, another verifies the correctness of the work, and a third party takes responsibility for the total task and is held accountable for it. Another practice is job rotation to occasionally shift employees from one job to another as a means of stopping or possibly increasing the likelihood of discovery of ongoing frauds or conspiracies. Many computer technology jobs require significant training and specialization making job rotation unproductive and costly, at least in the short run. On the other hand computer technology jobs tend to be narrowly defined and of limited scope making separation of duties more easily achieved.

Whether or not we enjoy hearing these recommendations, they do serve to make us aware of a serious problem. ■

TC9 PLANS UNIQUE CONFERENCE

HCC3 Scheduled for 1985

A unique conference that is expected to have a major international impact is planned by IFIP Technical Committee 9 (TC9), which concerns itself with the relationship between computers and society. The Human Choice and Computers Conference (HCC3) will be held in Stockholm next year. It will focus its attention on reports from individual nations on the policies of both government and the private sector in those nations towards the social consequences of computers, and it will make comparisons of policies among the countries. The proceedings produced following HCC3 should form an invaluable reference book for international agencies and help guide individual governments in formulating their own policies.

TC9 plans to present a summary of this report at IFIP Congress '86.

HCC3 is the third Human Choice and Computers conference, the previous two having been held in Vienna in 1974 and 1979, with support from the Austrian government. Proceedings were published by North-Holland Publishing Co.

TC9 is moving forward under the leadership of newly elected Chairman Dr. Harold Sackman (USA) and Vice-Chairman Dr. Bernard Levrat (Switzerland). This follows a difficult time when the previous chairman resigned due to ill health. Vice-Chairman Prof. Fred Margulies (Austria) managed the affairs of TC9 until the new officers were appointed last September.

Sackman pointed out that TC9 is unusual in IFIP for the broad, diverse group to which it appeals: computer professionals, management, labor, and social scientists, among others. The social effects of computers that TC9 examines include restructuring of the economy (e.g., the decline in blue collar employment and the rise in employment in information services), privacy issues, education, the quality of working life, and effects on individuals. ■

COMPUTER MESSAGING FOR DEVELOPING NATIONS

WG6.5 Subgroup is Active

A subgroup on Messaging for Developing Nations was instituted by IFIP Working Group 6.5 (WG6.5) in 1981 and has been active ever since. The three co-chairmen of this subgroup—Dr. Farouk Kamoun (Tunisia), Dr. S. Ramani (India), and Prof. Liane Tarouco (Brazil)—are located on the continents where the needs are greatest.

In a recent conversation with the IFIP Newsletter editor, Prof. Tarouco discussed the problems of computer messaging that are peculiar to developing nations. They include the need to keep the user interface simple to help the naive user, the diversity of local conditions that must be accommodated (e.g., language and telephone systems), and the high cost of communication (due both to low geographical density of users and to low usage of communication systems). In fact, the incremental cost of adding a user is expected to remain high indefinitely.

Because of the high communication cost, it is believed that automatic access to remote databases is not feasible. This implies that a user wishing to acquire information known to be at a remote location would have to send a message requesting that information to a user at the remote location, and the recipient would retrieve the information and send it back to the inquirer in the form of a normal message.

Dr. Ronald Uhlig (Canada), chairman of WG6.5 (International Computer Message Systems), is concerned with messaging for developing countries. He described some aspects of the problem at a Working Conference on Regional Computer Cooperation in Developing Countries, held in September in Stockholm, Sweden, sponsored by the IFIP Committee: Informatics for Development (ICID). Proceedings of the workshop will be published by Elsevier Science Publishers (North-Holland) early this year *(Regional Computer Cooperation in Developing Countries,* Dr. Robert Kalman, editor). Dr. Uhlig will address these same issues at AFRICOM 84, the First African Conference on Computer Communications, sponsored by IFIP's Technical Committee 6 (Data Communication) in Tunis, Tunisia, 21-23 May, 1984. Following are excerpts from Uhlig's presentation. *

Electronic messaging systems have become an important mechanism for human to human communications within the developed nations and they have broad applicability to the problems of developing nations as well. The concept is as follows. An individual who wishes to communicate with another individual connects to a computer-system. He enters the message into the computer sys-

* © IFIP

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IAPR REPORTS YEAR'S ACTIVITIES

The International Association for Pattern Recognition (IAPR), an affiliate member of IFIP, was represented at the recent IFIP General Assembly meeting by Dr. Herbert Freeman (USA). Highlights of the past year's activities reported by Freeman included the addition of 4 national pattern recognition societies, bringing IAPR's membership to 19; sponsorship of a new journal *Pattern Recognition Letters* for quick publication of new results in abbreviated form, published by Elsevier Science Publishers (North-Holland); convocation of the 3rd Scandinavian Conference on Image Analysis; planning for the 7th International Conference on Pattern Recognition, to be held in Montreal July 30 to August 2, 1984; and election of a new slate of officers: Prof. J.-C. Simon (France) president, Prof. T. Kohonen (Finland) 1st vice-president, Prof. N. Nagao (Japan) 2nd vice-president, Dr. P. Devijver (Belgium) secretary, Prof. H. Freeman (USA) treasurer. ■

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tem from a computer terminal, and he then disconnects. At a later time, the addressee connects to the same computer system. He asks if there are any messages for him. When he learns that there are messages waiting, he instructs the computer to send the messages to his display terminal.

This simple concept has been greatly expanded since it was first introduced in the U.S. ARPANET in the early 1970's. One of the simpler extensions was to allow multiple addresses. The message need only be entered once but the same electronic copy can be sent to many persons at the same time. A major extension is connected with networking of computers. This allows messages to be sent to individuals who use a computer system other than the system used by the sender.

WG6.5 Charter

In 1979 the General Assembly of IFIP formed WG6.5 with the following statement of aims and scope:

"Computer Mediated Messaging is a rapidly emerging service area. Messages may be processed, stored and transmitted between users potentially within the jurisdiction of separate carriers, computer systems. and/or computer networks. Technical, economic and political issues need to be resolved in order for a viable international computer message service to develop. This WG will concentrate on standards for data structures, addressing, and higher level protocols to effect international computer mediated message services. Such a service could impact existing international postal and communication agreements, and economics of the world-wide communication system. Results of the work will be made available to individuals and organizations concerned, such as users, manufacturers, common carriers, PTTs, International Organization for Standards, and the International Telegraph and Telephone Consultative Committee (CCITT)."

The application of messaging technology to the special needs of developing nations has been an important subject for IFIP WG6.5 since its inception. Two different kinds of applications are the subject of numerous discussions.

One application is the use of electronic messaging between research institutions in developing nations and developed nations. Travel funds are severely limited for researchers in developing nations. This makes it difficult for them to maintain frequent contact with their colleagues in developed countries. Experience in the ARPANET Project had shown that, while electronic messaging could not substitute for all travel, it was a significant aid in maintaining daily (and often more frequent) discussion among widely separated researchers who were working together.

The second application area which has been discussed within WG6.5 involves introducing messaging technology directly into the domestic communications infrastructure of developing nations. Although an analysis showed there could be circumstances where application of electronic messaging technology to internal domestic communications could be quite attractive, most such applications would require a significant capital investment. Perhaps it is for this reason that most interest within WG6.5 has focussed on the use of electronic messaging among research institutions.

Satellite for Messaging

One of the most ambitious projects which has been proposed involves placing a host computer with memory for storage of text messages into a small satellite. The satellite is to be launched into a low level (300-5000 km) equatorial orbit. Depending upon the altitude, the satellite would be visible from 9 to 50 minutes of each of its revolutions of 90 to 175 minutes. This would make it accessible to most developing nations.

Text messages can be prepared "off-line" at any time and held until the satellite is visible. If a message was addressed to a location visible to the satellite it could be beamed down immediately. Otherwise, it would be held until it reached a point in its orbit where it was visible to the receiving station and then beamed down.

Because the satellite would not contain the complex circuitry of a geosynchronous satellite designed to handle the high bandwidths associated with video transmission, the cost would be dramatically less. One estimate indicates that a few million dollars would suffice to build and launch such a satellite.

This could provide a link which would allow frequent low cost communication of text messages and text conferencing among researchers at virtually any research institute located in a developing country, and between them and their colleagues in many developed countries.

If the financial resources can be found to launch such a project, additional obstacles will have to be overcome. Such a system would provide international text communications. These communications are normally regulated. Mechanisms would have to be found to safeguard such communications against unauthorized use, and to fit in with international agreements on text communications.

Activity in Latin America

Latin American activity of the subgroup on Messaging for Developing Nations began with a workshop held in October, 1982 in Rio de Janeiro, Brazil, which concentrated on developing a program of action for Latin America. The workshop decided that the best way to initiate a program was to institute a pilot project using electronic messaging on a data network as a research tool.

The messaging system to be used has been developed on a computer at a federal university in the state of Rio Grande do Sul, Brazil. Initially, this network is to be accessed by researchers at other universities and research institutes throughout the state, using micro computers coupled to the public voice network.

Services to be offered in addition to electronic messaging include computer conferences, data base access, telesoftware courses and games. As soon as possible, the project is to be extended to universities and research institutes outside of the state and eventually to other Latin American countries.

At the moment, work is underway to implement a subset of a user agent [a CCITT standards concept, referring to message preparation and reading] on a microcomputer system, to interact with a message transfer system [another CCITT concept] running in the host. The user agent/message transfer agent concept has developed from a mail/messaging model, originally proposed in WG6.5 and now enhanced by the Special Rapporteur Group on Message Handling Systems of CCITT Study Group VII. A series of draft recommendations on Message Handling Systems has been developed within CCITT Study Group VII and will be presented to the 1984 CCITT Plenary Session. If adopted, these recommendations will considerably enhance the ability to interconnect dissimilar electronic message systems. By following the draft recommendations, the Latin American pilot project will result in a system which will be able to communicate with other message systems around the world. ■

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CHANGES IN IFIP

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CALLS FOR PAPERS

Workshop on Hardware-Supported Implementation of Concurrent Languages in Distributed Systems
sponsors: IFIP WG 10.3
Mar 26.28 1984, Bristol, U.K.
papers due: Mar 1 1984
contact: Professor G. Reijns, Technische Hogeschool, P.O. Box 5031, 2600 GA Delft, The Netherlands

European Conference on Electronic Design Automation, EDA 84
sponsors: IEE, BCS, EUREL, loP, IERE, IMechE and IFIP
Mar 26-30 1984, University of Warwick, UK
contact: Conference Services, IEE , Savoy Place, London WC2R OBL, UK

Joint International Symposium Information Systems
sponsors: Australian Computer Society & IFIP TC 8
Apr 9-11 1984, Sydney, Australia
Contact: Mr. D.R. Jeffery, Dept. of Information Systems, University of N.S.W., P.O. Box 1, Kensington, New South Wales, 2033, Australia

Workshop on Understanding the Design Process
sponsor: IFIP WG 8.1
Apr 24-25 1984, London, UK
contact: Dr. Roland Traunmüller , Institut für Informatik, Universitit Linz, A4040 Linz, Austria

Conference on Programming Languages for Machine Tools, PROLAMAT
sponsors: IFIP/IFAC
Jun I 1-13 1984, Paris, France
papers due: May I 1984
contact: AFCET' 156 Bd. Pereire, F-75017 Paris, France

Tenth Symposium on Microprocessing and Microprogramming, EUROMICRO 84
Aug 28-30 1984, Copenhagen, Denmark
scientific papers due: Feb 15 1984
Final version: May 6 1984
contact: Bjørn Myrhaug, Tandberg Data A/S, P.O. Box 9, Korsvoll, Oslo 9, Norway
short notes due: Jun 1 1984
contact: Derek Wilson, Polytechnic of Central London, 115 New Cavendish Str. London WI M 8JS, UK
industrial papers summary due: May 20 1984
contact: Robin Gurden, Industrial Seminars Ltd., Convex House, 43 Dudley Rd., Tunbridge Wells, Kent TN1 I LE, UK

IFIP/SEC'84 Second International Congress and Exhibition on Computer Security
sponsor: IFIP TC II
Sep 10-12 1984, Toronto, Ontario, Canada
papers due: Feb 29 1984
contact: IFIP/SEC'84, International Security Congress 1984 Inc., 160 Duncan Mill Road, Don Mills, Ontario, Canada M3B 1Z5

Working Conference on Knowledge Engineering in Computer-Aided Design
sponsor: IFIP WG 5.2
Sep I 7-20 1984, Budapest, Hungary
papers due: Feb 24 1984
contact: Prof. John S. Gero, Dept. of Architectural Science, University of Sydney, Sydney, N.S.W. 2006, Australia

Workshop: The Benevolent Bureaucracy: Can Information and Communication Technology be Used to Promote it?
sponsor: IFIP WG 9.2
Sep 1984, Jouy-en-Josas (Paris), France
contact: Richard Sizer, 26 Avenue Road, Farnboiough Hants, GUI 47B, UK

International Symposium on Network in Office Automation
sponsor: IFIP TC 6
Sep 25-30 1984, Sofia, Bulgaria
abstract due: Dec 15 1983
contact: Symposium Secretariat IFIP'84, Institute of Mathematics with Computer Center, P.O. Box 373, Sofia, Bulgaria

International Symposium on Networks 84
sponsors: Computer Society of India and IFIP TC 6
Oct 23-25 1984, Madras, India
contact: Prof. H.N. Mahabala, Computer Centre, Indian Institute of Technology, Madras 600 036, India

Workshop on Artificial Intelligence Pattern Recognition in Economics and Management
sponsors: IFAC/IFORS/IFIP
Mar 12-14 1985, Zurich, Switzerland
contact: Prof. L.F. Pau, Batelle Institute, 7, Route de Drize, CH-1227 Carouge, Switzerland

Working Conference on Theoretical and Formal Aspects of Information Systems 1985, TFAIS 85
sponsor: IFIP WG 8.1
Apr 16-18, 1985, Sitges, Spain
papers due: Jul 1 1984
contact: Prof. Janis Bubenko, Jr., SYSLAB, Dept. of Information Processing and Computer Science, Univ. of Stockholm, S-106 91 Stockholm, Sweden

IMEKO'85 10th World Congress: New Measurement Technology To Serve Mankind
sponsors: IFAC/IFIP/OIML/EOQC
Apr 22-26 1985, Prague, Czechoslovakia
contact: IMEKO World Congress Secretariat, House of Technology, Gorkého nám . 23, 112 82 Prague I, Czechoslovakia

WCCE/85 - World Conference on Computers in Education
sponsors: IFIP TC 3 and AFIPS
Jul 29 - Aug 2 1985, Norfolk, VA, USA
papers due: Aug 1 1984
contact: John McGregor, Computer Science Dept., Christopher Newport College, Newport News, VA 23606, USA

Symposium on Automation for Safety in Shipping and Offshore Petroleum Operations - ASSOPO '85
sponsors: IFIP/IFAC
Jun 25-27 1985, Trondheim, Norway
contact: The Norwegian Society of Automatic Control, Kroonprinsens gt. 17, Oslo 2, Norway

3rd Symposium on Computer Aided Design in Control and Engineering Systems
sponsors: IFAC/IFIP
Jul 31-Aug 2 1985, Copenhagen, Denmark
contact: Prof. P.M. Larsen, Electric Power Engineering, Bulding 325, DK-2800 Lyngby, Denmark

2nd Conference on Analysis, Design and Evaluation of Man-Machine Systems
sponsors: IFAC/IFIP/IFORS/IEA
Sep 1985, Stresa, Italy
contact: Prof. Dr. log. Gunnar Johannsen, Laboratory for Man-Machine Systems (FB 15), University of Kassel (GhK), P.O. Box 10 13 80, D-3500 Kassel, FRG

7th Symposium on Digital Computer Application to Process Control
sponsors: IFAC/IFIP/IMACS
Sep 17-20 1985, Vienna, Austria
contact: Dr. P. Kopacek, OPWZ, Postfach 131, A-1014 Vienna, Austria

NEW IFIP PUBLICATIONS*

CONFERENCE PROCEEDINGS

Advances in Production Management Systems, Proceedings of the IFIP WG 5.7 Working Conference, APMS '82, Bordeaux, France, Aug 1982, (G. Doumeingts, W.A. Carter, Eds.)

Informatics Education for all Students at University Level. Proceedings of the IFIP WG 3.2 Working Conference, Delft, The Netherlands, Jun/Jul 1983, (F.B. Lovis, E.D. Tagg, Eds.)

Informatics in Elementary Education, Proceedings of the IFIP WG 3.1 Working Conference, Malente, FRG, Jul 1983, (3.D. Tinsley, E.D. Tagg, Eds.)

VLSI 83, VLSI Design of Digital Systems, Proceedings of the IFIP 10/K 10.5 International Conference, Trondheim, Norway, Aug 1983, (F. Anceau, E.J. Aas, Eds.)

JOURNALS

Computers in Industry, *The* International Journal of IFIP TC 5- four issues per year

information & Management, The International Journal of Information Systems Applications-six issues per year

Microprocessing and Microprogramming, The Euromicro Journal-ten issues per year

Computer Networks, The official Journal of the International Council for Computer Communication-six issues per year

Computers & Security, The International Journal of **IFIP** TC 11-four issues pet **year**

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Event	Dates	Location	Organized by
Working Conference on *Stochastic Differential Systems*	12-17 Mar 84	Marseilles, France	WG 7.1
2nd Working Conference on *Computer Application in Food Production and Agricultural Engineering*	19-22 Mar 84	New Delhi, India	TC 5/CSI/ICID
General Conference on *Performance of Computer Communication Systems*	21-23 Mar 84	Zurich, Switzerland	WG 7.3 & TC 6, et al.
Working Conference on *Modelling for the Development of the Third World, National, Regional and Global*	Mar 84	Latin America	TC 7
Workshop on *Hardware Supported Implementation of Concurrent Languages in Distributed Systems*	26-28 Mar 84	Bristol, UK	WG 10.3
European Conference on *Electronic Design Automation EDA'84*	26-30 Mar 84	Warwick, UK	IFIP co-sponsor
Joint International Symposium, *Information Systems*	9-11 Apr 84	Sydney, Australia	ACS, TC 8
Workshop on *Understanding the Design Process*	24-25 Apr 84	London, UK	WG 8.1
Working Conference on *Protocol Specification, Testing and Verification*	Apr/May 84	N.Y., USA	WG 6.1
Working Conference on *Computer-Based Message Services*	1-4 May 84	Nottingham, UK	WG 6.5
Working Conference on *The Role of Programming in Teaching Informatics*	7-11 May 84	Paris, France	TC 3
Working Conference on *Impact of Informatics on Vocational Education*	14-18 May 84	Jerusalem, Israel	WG 3.4/IPAI
1st African Conference on *Computer Communications AFRICOM'84*	21-23 May 84	Tunisia	TC 6/CNI
Working Conference on *Security Management/Office Automation Security*	24-25 May 84	Amsterdam Netherlands	TC11
Working Conference on *Personal Control and Information Systems*	28-30 May 84	Vienna, Austria	WG 9.1
Working Conference on *Industrial Robotics in Discrete Manufacturing*	6-8 Jun 84	Como, Italy	WG 5.3/IFAC
Conference on *Programming Languages for Machine Tools, PROLAMAT*	11-13 Jun 84	Paris, France	IFIP/IFAC
International Symposium on *The Semantics of Data Types*	27-29 Jun 84	Sophia-Antipolis W.R. Antibes, France	WG 2.2 (co-sponsor)
14th International Symposium on *Fault Tolerant Computing*	Jun 84	Orlando, Florida, USA	WG 10.4/IEEE
Working Conference on *Interconnected High Performance Personal Computer Systems*	2-4 Jul 84	Tromso, Norway	TC 6
Working Conference on *Knowledge Representation for Decision Support Systems*	24-26 Jul 84	Durham, UK	WG 8.3
Working Conference on *Informatics and Teacher Training*	25-29 Jul 84	Birmingham, UK	WG 3.1
7th International Conference on *Pattern Recognition*	30 Jul-2Aug 84	Montreal, Canada	IAPR, et al.
Open Conference *VLSI 84*	18-21 Aug 84	California, USA	WG 10.5
International Symposium on *Spatial Data Handling*	20-24 Aug 84	Zurich, Switzerland	IAPR/IFIP
6th Symposium on *Computational Statistics - COMPSTAT 1984*	27-31 Aug 84	Prague, CSSR	IASC
Working Conference on *Recent Advances in System Modelling and Optimisation*	27 Aug-1 Sep 84	Santiago, Chile	WG 7.1
Tenth Symposium on *Micro processing and Microprogramming EUROMICRO 84*	28-30 Aug 84	Copenhagen, Denmark	EUROMICRO
Working Conference on *Modelling of Production Management Systems*	29-31 Aug 84	Copenhagen, DK	WG 5.7
Conference on *Human Factors in Computer Systems, Human-Computer Interaction - INTERACT 84*	3-7 Sep 84	London, UK	IFIP/IFAC IFORS/IEA
2nd International Conference on *Computer Security*	10-12 Sep 84	Toronto, Canada	TC 11
Working Conference on *New Generation Computer Architecture*	17-19 Sep 84	Manchester, UK	WG 10.3
Working Conference on *Knowledge Engineering in Computer-Aided Design*	17-20 Sep 84	Budapest, Hungary	WG 5.2
Working Conference on *System Programming Languages Experiences and Assessment*	17-21 Sep 84	Canterbury, UK	WG 2.4/IFORS
International Conference on *Women, Work and Computerization*	17-21 Sep 84	Riva del Sole, Italy	WG 9.1
Conference *SEARCC'84*	24-28 Sep 84	Hong Kong	SEARCC
Symposium on *Network in Office Automation*	25-30 Sep 84	Sofia, Bulgaria	TC 6
Working Conference on *Security and Authentication in OSI Architecture*	Sep 84		TC 6/NBS
Working Conference on *Stochastic Differential Systems*	Sep 84	Baku, USSR	WG 7.1
Working Conference on *Stochastic Differential Systems*	Sep 84	Visegrad, Hungary	WG 7.1/Hung. Acd. of Sci.
Workshop on *The Benevolent Bureaucracy*	Sep 84	Jouy-en-Josas, France	WG 9.2
Working Conference on *Functional Programming Languages and Computer Architecture*	Sep 84	Nancy, France	TC 10/TC2
Working Conference on *The Role of Informatics in Health Data-Coding and Classification System*	Sep 84	Ottawa, Canada	IMIA
Symposium *Networks 84*	23-25 Oct 84	Madras, India	TC 6
Conference *ICCC 84*	30 Oct-3 Nov 84	Sydney, Australia.	ICCC
Working Conference on *The Role of Informatics in the Reconstruction of Health Care Systems*	Oct 84	Brindisi, Italy	IMIA
Working Conference on *Stochastic Modelling and Filtering*	10-15 Dec 84	Rome, Italy	WG 7.1
10th Anniversary Symposium, *Performance 84*	19-21 Dec 84	Paris, France	WG 7.3