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International Federation for Information Processing

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GENERAL ASSEMBLY HAS PRODUCTIVE SESSION IN BUDAPEST

The IFIP General Assembly (GA) met 2-4 September in Budapest and had one of its most productive sessions in recent years. The GA took a step towards a major restructuring of IFIP; it expressed support for a proposal to put IFIP on a more sound financial basis by hiring independent contractors to manage IFIP's publications and marketing; it elected new officers; it selected Madrid as the site of the 1992 12th World Computer Congress; it decided to hold IFIP Congresses every 2 years, beginning in 1992; it approved Zimbabwe and Singapore as Full Members; and it authorized major international awards for outstanding achievement in information processing, as well as a new award for service to IFIP.

In addition, the GA discussed and approved many new activities of IFIP's Technical Committees (TCs) and Working Groups (WGs); approved plans for State-of-the-Art seminars in programming; considered new categories of IFIP Personal Member and Corporate Member; and took steps to improve IFIP's finances. Preceding the GA meeting were meetings of the Executive Board, Council, Activity Development Board (ADB), and a variety of IFIP committees. The schedule was so busy, and so many new topics were discussed, that a representative who dozed off because of jet lag would surely have missed something significant.

The Hungarian Deputy Minister of the Central Statistical Office, *Mr. Lajos Pesti,* welcomed the GA, at its opening session, and spoke of the importance of information processing to Hungary. Dr. *Bálint Dömölky* , president of the John von Neumann Computer Society, also greeted the representatives to the GA. *Prof. Gy. Striker (H),* Honorary Secretary of the Five International Associations Coordinating Committee (FIACC), added his words of welcome.

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NATIONAL ISSUES ON COMPUTERS IN EDUCATION

TC3 Workshop Held in Bombay

*by Prof. B. Nag (IND) **

National Issues on Computers in Education was the subject of a Workshop organized by IFIP's Technical Committee on Education (TC3), the Computer Society of India, and the Indian Institute of Technology, Bombay. The aim of the Workshop, held in Bombay 16-18 March, was to produce a "working document" that would contain specific conclusions and recommendations on the effective exploitation of computers in education. The Workshop was not concerned with Computer Science education per se but with computer science and informatics in the broader context of all education, i.e.,

* TC3 member from India

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

GA MEETING continued from page 1

IFIP's president, *Mr. Ashley Goldsworthy* (AUS), in his first annual report, expressed the goals he would like IFIP to achieve: enhanced visibility and stature, broadened geographical impact, especially in developing countries, and improved organizational structure. Among other items, he reported a 20% increase in the number of IFIP events over the previous year.

One of the first items of business was the election of officers (by a voting procedure so complicated that it should have been explained by a flowchart). IFIP vice-president *Acad. Blagovest Sendov* (BG) and secretary Mr. *Jacques* Fourot (F) were reelected, and trustee *Dr. Peter Kovács* (H) was elected treasurer. (IFIP's former treasurer, Mr. *Owen Dalton* (IRL), will act as treasurer through 1987.) Trustee *Mr. Hennie Leroux* (ZA) was reelected, and Maj. *Gen A. Balasubrahmanian* (IND) was elected trustee. *Mr. James Finch* (CDN) was also elected trustee to complete Dr. Kovacs' term, which had one year to run.

Congresses Discussed

Another major ballot was held to determine the site of the 12th World Computer Congress, IFIP Congress '92. The selection process was complex. It began with presentations by the GA representatives of the four contesting hosts: the Netherlands, Bulgaria, Spain, and the South East Asia Regional Computer Confederation (SEARCC); was followed by the announcement of the choice of the Site Selection Committee (Sofia); and culminated in a multi-phase vote by the GA, which selected Madrid. This process stretched over the 3-day GA meeting. All four contenders were generally considered to be fully capable of providing excellent sites for the Congress. The *IFIP Newsletter* will carry further reports about the plans for Congress '92 in Madrid, as they are formulated.

Three other Congresses were discussed by the GA: '86, '89, and '94. The final report by the Organizing Committee (OC) of Congress '86 was accompanied by two financial decisions by the GA: first, to release the OC from the amount it had guaranteed to pay IFIP, and second, to permit the OC to defer repayment of a loan from IFIP (in fact, part of the loan that had already been repaid will be returned temporarily to the OC by **IFIP).** Plans for Congress '89 were presented by the OC and International Program Committee chairmen (see the article on page 5). Finally, the GA decided to hold the Congresses biennially from 1992 to 1998 on an experimental basis. The decision to change the Congress schedule from triennial to biennial was reached (1) because a triennial Congress seems inappropriate in a field changing as rapidly as that of information processing, (2) to afford the unsuccessful bidders for the site of Congress '92 an opportunity to repeat their bids sooner than three years from now, and (3) to increase **IFIP** revenues. A proposal to hold regional Congresses annually was also discussed briefly.

Technical Work

As usual, the major part of the discussion at the ADB and GA meetings concerned the work of **IFIP's** TCs. Several new WGs were approved by the GA: Functional Programming (WG 2.8), Distance Learning (WG3.6), Computer Graphics (WG5.10), and Multiparty Transaction Security (WG11.6). (Their Scopes and Aims will be printed in the next ***IFIP*** *Newsletter.)* All but two TC chairmen were present in Budapest.

Among the more unusual items discussed were the State-of-the-Art Seminars (see page 1 of the June 1987 *IFIP Newsletter)* planned by TC2 on Software, the establishment of a WG on Computer Graphics by TC5 on Computer Applications in Technology (the GA decided to defer the application by the Computer Graphic Society for Affiliate Membership), the expansion of the scope of TC6 on Data Communication to encompass all of digital communication, efforts made by TC8 on Information Systems to involve the business and industrial sectors to a greater extent, and the incorporation of new, emerging hardware technologies in the work of TC 10 on Computer Systems Technology (formerly called Digital Systems Design).

In addition, the GA voted to establish a Specialist Group on Artificial Intelligence (AI). Trustee *Prof. dr. Alex Verrijn-Stuart* (NL) was charged with insuring that the potential leaders contact **IFIP's** Affiliate Members (AMs) International Joint Conference on Artificial Intelligence and International Association for Pattern Recognition and **IFIP** WGs and Full Members that have an interest in AI, to solicit their cooperation. Preliminary agreement was reached between **IFIP** and AM International Council for Computer Communication to hold a jointly sponsored con-

Terence on Integrated Services Data Networks, with equal financial liabilities and benefits.

Other reports related to IFIP's technical work were also heard. Developing Countries Support Committee (DCSC) chairman Mr. *Luis Penedo* (P) told of a workshop on VLSI to be held in Lisbon in September 1987 and repeated in other countries. He also described the DCSC's decentralized organization on a regional basis, which enables it to hold regional meetings, thus reducing travel expenses, and to make plans for IFIP activities on a regional basis. The International Medical Informatics Association of IFIP (IMIA) reported that MEDINFO '86 was very successful and that IMIA is now on a sound financial footing. Mr. Fourot, chairman of the IFIP Unesco Liaison Committee, reported that cooperation with Unesco continues; in 1987, Unesco will pay $12 000 (U.S.) to help support IFIP events that will be held in 1988 and 1989.

The ADB and GA, in addition to considering current technical activities, discussed at length a proposal to strengthen IFIP's technical work by modifying IFIP's structure. A committee, headed by *Acad.* Sendov, was appointed to refine the original proposal. Action by the 1988 GA is expected. (See the article on page 8 for a further discussion.)

Financial Concerns

The state of IFIP finances came in for extensive discussion when then treasurer *Mr. Dalton* reported that IFIP experienced a net loss of 127 000 Sfr. in 1986, is expected to sustain a similar loss in 1987, and a loss of more than 200 000 Sfr. in 1988. When considering these numbers, one must realize that the 1986 and 1987 figures include amounts of approximately 45 000 Sfr. set aside for a "contingency fund." In addition, the 1986 expenditures included unusual expenses involved in moving the Secretariat to its new quarters and purchasing office furniture.

The Finance Committee (FC) chairman, *Prof. Verrijn-Stuart,* encouraged IFIP bodies to prepare more realistic budgets. Typically, the amounts requested in the budget in the past have been significantly higher than the amounts actually spent. This has made it very difficult to make realistic plans for IFIP. The treasurer and chairmen of the FC and TCs will work to establish more effective procedures for budgeting.

Another way in which IFIP's finances may change is if IFIP offers services for a fee to its AMs (and other professional organizations). Among the services proposed are maintaining calendars of worldwide meetings, providing mailing lists, managing publications, providing editorial services, and providing administrative services. *Mr.* Leroux, chairman of the Marketing Committee, presented its proposal to engage independent outside subcontractors to perform certain publishing and marketing tasks (including some of those just mentioned with regard to Affiliate Members) for IFIP, with the expectation that this would increase IFIP revenues. Further investigation followed by Executive Board action is expected (see page 5).

President Goldsworthy (left) and then Treasurer Dalton enjoying a social evening during the week of the GA in Budapest.

Other Matters

The External Awards Committee, headed by *Acad.* Sendov, unveiled details of two major international awards—for fundamental achievements and application-oriented achievements in information processing—to be presented during each IFIP Congress, beginning in 1992. An article about these awards will appear in the next issue of the ***IFIP*** *Newsletter.* Also, a proposal for new categories of Personal and Corporate Membership in IFIP was presented by Mr. *Goldsworthy.* Details of this plan, too, will be in the next ***IFIP*** *Newsletter.*

Two new national computer societies were approved for admission to IFIP: the Computer Society of Zimbabwe (CSZ) and the Singapore Computer Society (SCS). Information about the CSZ will be printed in the next ***IFIP*** *Newsletter,* and information about the SCS can be found in the article on page 8 of the March 1987 ***IFIP*** *Newsletter.* Singapore and Zimbabwe will become Full Members of IFIP when they send representatives to a GA meeting and pay their dues.

Several matters related to publications were discussed. The publication of ***IFIP*** *Bibliography 1960-1985* was noted (see page 7). This book, published by North-Holland, lists the contents of all the books that IFIP published in its first 25 years, with several useful indexes. Complimentary copies will be sent to all Full Members. The Publications Committee presented a "discussion draft" of a Publications Policy document. An interesting experiment was approved, in which the Computer Society of India will reprint selected papers from IFIP publications (at least one year old) in a special quarterly. This will make IFIP's technical output more readily available to Indian information processing professionals. Royalties will be reduced by the publisher, and profits will remain in India, to support IFIP work there.

Individuals Honored

The services of several IFIP participants were recognized at the GA meeting. Honorary Membership was conferred on Prof. *Pierre Bobillier* (CH) by Mr. *Goldsworthy* (see page 7). As *Mr. Dalton* stepped down from the office of treasurer, his service to IFIP was noted by Mr. Goldsworthy. Past-president *Dr. Kaoru Ando's* (J) retirement as representative of Japan was acknowledged, with regret.

News of the deaths of IFIP contributors Profs. *József Hatvany* (H) and *Peter Reichertz* (D) was received with sadness (see page 10).

After a very productive week of meetings, the GA was adjourned Friday evening, with many thanks to the John von Neumann Computer Society for providing superb facilities, magnificent assistance, and warm hospitality in Budapest.

National Abbreviations Used in Newsletter

A	Austria	GB	United Kingdom	P	Portugal
AUS	Australia	H	Hungary	PL	Poland
BG	Bulgaria	I	Italy	PRC	China
CDN	Canada	IND	India	SEARCC	South East Asia Regional Computer Confederation
CH	Switzerland	IRL	Ireland	USA	U.S.A.
D	Fed. Rep. of Germany	J	Japan	ZA	South Africa
DK	Denmark	NL	The Netherlands		
F	France				

Many aspects of *Office Knowledge: Representation, Management, and Utilization* were addressed at a workshop with that title held 17-19 August in Toronto by IFIP's Working Group on Office Systems (WG8.4). This research area draws from and extends techniques in the areas of artificial intelligence, database management systems, programming languages, and communication systems. The Workshop program consisted of invited presentations from key researchers in the area as well as contributed presentations. Seventy-five participants attended.

IFIP trustee and WG8.4 chairman *Prof. Dr. Alex Verrijn-Stuart* (NL) was Workshop Chairman, *Dr. Winfried Lamersdorf* (D), Program Chairman, and Prof. *Fred* Lochovsky (CDN), Organizing Chairman. The three chairmen also functioned as the International Program Committee.

We quote here from two of the papers, to illustrate the diversity of topics considered by the Workshop.

The first, by *Prof. Carson* Woo (CDN) and Organizing Chairman *Lochovsky*, discussed an office system model that might be helpful in visualizing the logical units in an organization where communication activity might occur. The model also demonstrates how an intelligent communication tool, which the authors call an "agent object," can be integrated with existing tools for supporting office work. The paper, *Viewing Communication as a Problem Solving Activity: An Enrichment Towards Supporting Cooperative Office Work,* began with an example of the difficulties associated with extracting needed information in an office setting. *

Office Communication

The vice-president (VP) of Company X, a very large organization, approved a budget last year for some office workers to buy a personal computer (PC). However, he has forgotten which division has this PC, and he is interested in knowing whether the use of it (after a year) actually reduced the cost of running the division or not.

After some hard work, the VP finds the person who bought the PC. His name is John, and he is the supervisor of the wiring operation division. However, after John bought the PC, Peter (the supervisor of the assembly operation division) borrowed it because he had more urgent need for a PC, and he never returned it. Therefore, to answer the VP's question, John has to refer him to Peter.

Peter is a very busy man, and he does not have enough time to do his work properly. For this reason, Mary was hired by him to be his assistant. In particular, Mary is now in charge of the expense accounts.

To clean up the mess of the expense accounts, Mary attached all the receipts to a memo and circulated them to all office workers in the division for identification. When the VP phones up Mary, the data needed to compute the answer to his question (i.e., the receipts) is not with her but with someone else in the division. Since the data is flowing among different office workers, it is not guaranteed that, after visiting all of them and only asking a simple question such as *do you have the information?* the data can' be found. Mary needs to perform some intelligent communication. For example, she can start with the office worker to whom she handed the memo, and if he does not have the receipts, she will ask him to, whom he handed the memo, and repeat this process until the receipts are found.

Research data show that office workers, in particular managers and professionals, spend the majority of their time (about 70-80%) in office communication. More importantly, we feel that the above mentioned type of office communication happens a lot in medium and large organizations. Therefore, to support cooperative office work effectively, we need to provide intelligent communication tools in an office system.

The authors went on to describe an intelligent communication tool and how it could provide assistance in gathering the information required in the previous example.

Improving Office Meetings

A totally different topic was considered in another interesting paper, *NICK: Intelligent Computer Supported Cooperative Work* by *Dr. Clarence Ellis* (USA). He discussed office meetings and how information processing technology can be used to facilitate them. Parts of the paper are reprinted here. *

The thrust of this project is to perform interdisciplinary research into the analysis of content, structure, and protocols of meetings. Also to perform research into the possibilities of improving meetings via modern technology. A long term thrust of this effort is to produce an automated meeting agent which uses knowledge from multiple sources to enhance the meeting interactions.

A special interest within our group is the software design meeting. We have observed that much of the work of requirements specification, design, and implementation of software systems involves meetings. As software projects get larger in size, the percentage of time spent on communication grows rapidly with respect to actual implementation time. On large software projects, more time is spent communicating than coding. Given these observations, it behooves a research effort which attempts to aid large software systems development to consider aiding the communication function.

Electronic Facilities

Our electronic meeting facilities initially consist of

- Personal computers, keyboards, and private display screens provided to each meeting participant.
- A local area network connecting the personal computers within the meeting room. This net also provides immediate access as needed to information that is *not in* the meeting room, but accessible through the electronic network.
- Group work surfaces visible to all participants with software to display output from the facilitation system to keep members attuned to the meeting results and progress.
- Software to display agenda information, provide meaningful communication among participants, and permit entry of information into the group memory.
- Two subchannels among participants, one for group process information, and a second for registration of the emotional state of the group.
- Meeting statistics capture and processing facilities to help quantify some aspects of meeting effectiveness.

The paper concluded with these remarks.

The pieces and thrusts which we have discussed are building toward a collective whole which is epitomized by the notion of an active meeting agent which is not necessarily human. Thus, we envision analyses of information derived during the meeting used to enhance the meeting in real time. The agent will be able to tap the various capture facilities and the various real-time analysis facilities and make alter-

continued on page 5

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IFIP CONGRESS '89 PLANS DISCUSSED

11th World Computer Congress

Plans for the 11th World Computer Congress **(IFIP** Congress '89) were aired by International Program Committee (IPC) chairman Dr. Nerve *Gallaire* (D) and Organizing Committee chairman Dr. Stephen *Yau* (USA) at the meeting of the **IFIP** General Assembly in Budapest in September (see the article on page 1). The highlight of these plans was the list of technical topics to be emphasized, each to be presented in depth and constituting a 2½-day conference in itself.

The Congress will be held in San Francisco 28 August-1 September 1989 and will be preceded by a 2-day tutorial program. The slogan of the Congress is *Better Tools for Professionals.* The Congress will report on the scientific and technical progress that has been achieved during the past few years and the tools available to all classes of professional users of computers to put information processing in the hands of the users, and it will indicate what further progress can be expected and in what directions. The fast developing technical and scientific topics to be emphasized are as follows (with names and nationalities of IPC members responsible):

Fundamental Tools (J. Gruska, CS)
Languages and Operating Systsems (G. Kahn, F)
Communication and Distributed Systs. (0. Spaniol, D)
Knowledge Based Systems (J. Mylopoulos, CDN)
Software Engineering (M. Dowson, GB)
Supercomputing (M. Tokoro, J)

OFFICE SYSTS. cont. from page 4

ations and suggestions concerning the meeting protocol and concerning the meeting content. We envision the agent to be an expert at meeting facilitation, or, alternatively, it can be an expert in the domain of information stored in the meeting database.

An impromptu panel session, held at the end of the Workshop, addressed the question, "What is it that makes office information different from other kinds of information?" As one might expect, the debate was lively but inconclusive. Prof. *Lochovsky* summarized the Workshop conclusions as follows: "Office knowledge is *unique* in its complexity, in the need to adopt paradigms not used in artificial intelligence, and in its close intertwining with the human component , in organizations."

In addition, the following domains, in which these techniques are most important, will be covered:

VLSI-CAD Tools (M. Barbacci, USA)
Office Automation (W. Curtis, USA)
Factory Automation (G. Giralt, F)
Education (D.H. Wolbers, NL)
Computers and Society (L. Penedo, P)
(D. Bjørner (DK) and S. Yau (USA) arc members of the IPC, ex officio.)

Each of the 11 tracks, featuring a fast-moving area, will be presented with all its papers extending over a 2½-day program, making **IFIP** Congress '89 several interconnected conferences in one.

The Congress will also seek to have presentations from the major information technology programs started in the early 1980s around the world: the Japanese 5G and Sigma, the U.S. Software Initiative and MCC, the European ESPRIT, the U.K. Alvey, the U.S.S.R. START, etc. The IPC will organize special sessions highlighting some of these projects.

The total program will consist of approximately 35 invited speakers with a responder for each, 120 other papers, and 25 panels. Poster sessions will also be organized. Proposals for panels are sought.

To supplement the major part of the program initiated by the IPC, IFIP's Technical Committees and Working Groups (WGs) have been asked to contribute sessions. Several WGs have already expressed interest, and others are considering organizing working conferences just before or after the Congress.

The IPC held its first meeting in Munich 17 September, and the Call for Papers was issued early in November. Papers must be submitted by 1 November 1988. To receive a Call for Papers or for other information, one may contact

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MARKETING PROPOSAL MADE TO GA

The **IFIP** General Assembly (GA), at its meeting in Budapest (see the article on page 1), took a first step toward revising the way **IFIP** handles its arrangements with publishers, runs conferences, and manages other affairs. The action was in response to a proposal presented by **IFIP** trustee Mr. *Hennie Leroux* (ZA), chairman of the Marketing Committee (MC), to the GA in September.

The proposal is an evolution of a plan described by Mr. *Leroux* to the **IFIP** Council in March 1987 (see the section *Marketing Committee Proposal* on page 2 of the June 1987 ***IFIP*** *Newsletter).* The earlier plan suggested that a corporation be formed to market **IFIP** "products" (publications, seminars, and other intellectual property). This would disseminate **IFIP's** technical work better, as well as increase IFIP's revenue. The corporation was to be a partnership between **IFIP** and an external organization with marketing and management skills. The present proposal, discussed by the 1987 GA, does not involve changing the legal charter of **IFIP** but attempts to achieve improved marketing by contracting with various agents for different areas of **IFIP** activity.

In order to better carry out **IFIP** publication and marketing objectives, it was proposed that suitable organizations be appointed to subcontract day-to-day functions, acting as "preferred **IFIP** agents."

IFIP's current relationship with a number of key publishers is an example of "preferred **IFIP** agents," and it is now the intention to extend this model into other potential services covered under **IFIP** marketing and publishing objectives.

It was pointed out in the proposal that such subcontracting would be performed on a product-by-product basis at the lowest possible cost to IFIP. Subcontracts would be for a defined period (e.g., 1 to 3 years) and would be supervised by a committee consisting of the president, vice-president for external activities, treasurer, chairman of the Publications Committee, and chairman of the Marketing Committee.

Mr. Leroux proposed to investigate what tasks should be performed and who might perform them. The GA saw no objection to the investigation and voted to allow the Executive Board to make the decision whether to hire a subcontractor or subcontractors.

IFIP OUTSTANDING SERVICE AWARD

For TC and WG Members

Rules for awarding **IFIP** Outstanding Service Awards were approved by the IFIP General Assembly (GA) at its meeting in Budapest last September (see the article on page 1). Previously, the only internal award granted by **IFIP** was the Silver Core. Eligibility was restricted to GA members, Technical Committee (TC) or Working Group (WG) officers, Special Interest Group (SIG) directors, and members of International Program Committees (IPCs) and Organizing Committees (OCs) for major **IFIP** events (a few exceptions have been made). Other **IFIP** participants who organized **IFIP** events, edited **IFIP** books, or contributed to the work of TCs and WGs but were not officers were not awarded the Silver Core.

In order to remedy this situation, the 1986 GA voted to establish a second **IFIP** award for major contributions to **IFIP's** TCs and WGs. The Internal Awards Committee was charged with preparing the rules to govern eligibility and the procedures for granting the new award. Its chairman, **IFIP** secretary *Mr. Jacques Fourot* (F), presented its recommendations to the 1987 GA, which accepted them. The text of that report is printed here:

1. The distinction for services rendered to **IFIP** by TC and WG members is the "**IFIP** Outstanding Service Award."

2. It shall be granted by the GA, on recommendation of the TC chairmen, after approval by the Internal Awards Committee.

3. Eligible for nomination are TC and WG members not normally eligible for the Silver Core award. The TC chairmen will submit their nominations in accordance with the selection criteria listed below; these criteria are not binding and are given primarily as general guidelines. The Internal Awards Committee, working in agreement with the TC chairmen, will ensure that the nominations list does not exceed 20 names per year.

4. Selection criteria:

• Active role played at TC or WG level, for instance
- initiatives taken and work done to improve the image and the effectiveness of the TC or WG
- proposals made and actions taken to expand the activities to new innovative domains

• Leading role played in the organization of technical events (conference, symposium, seminar, etc..), for instance as OC or IPC chairman, or as member of the local support organization

• Actions undertaken to benefit Developing Countries (DCs), for instance, organization of **IFIP** events in DCs; help given to DC delegates to attend events, training courses, etc.; transfer of products, know-how, documentation, etc.to DCs

• Cooperation with other learned societies, sister federations, or international organizations, to enhance the activities, image or influence of **IFIP**

• Duration of service within the TC or WG and active participation in **IFIP** meetings and activities.

5. Each recipient of the Outstanding Service Award will receive a certificate.

The first Outstanding Service Awards will be conferred by the 1988 GA. ■

COMPUTERS IN ED. cont. from p. 1

"learning with computers" rather than "learning about computers."

The Workshop followed a TC3 meeting in Bombay, the first time since the early 70s that TC3 has met outside Europe and the U.S.A.

The Organizing Committee was headed by *Prof. B. Nag* (IND), and Prof. Josef *Isaac* (IND) was Program Coordinator. *Prof. Wilfried Brauer* (D), TC3 chairman, and *Maj. Gen. A. Balasubrahmanian,* representative of India to the **IFIP** General Assembly, delivered remarks at the opening session.

Sixty participants from 23 countries convened to discuss problems related to effectively integrating computers into education. All agreed that major support for professional training should have the highest priority. While historically there has been emphasis on the acquisition of hardware and software, the major problem now facing all nations is a lack of adequately trained teachers. Unless this problem is solved, we shall never realize the tremendous potential which the computer provides for giving teachers a tool to improve the quality of education.

The major conclusions and recommendations of the workshop are summarized here:

• "Learning-with-Computers" offers a very powerful tool for educators, and all efforts must be made to harness the potential of computers and informatics in education. Further, this technology enforces a deeper appreciation of educational pedagogy.

• Unless backed by well-planned short and long term projects at the National level, the full potential of this educational technology cannot be exploited. Considerations of hardware/software costs should be subservient to educational objectives.

• The all-pervasive nature of computer/informatics necessitates awareness and literacy programmes and the exploitation of computer-based technologies in both formal and non-formal educational sectors.

• Computers and informatics should play a supportive role in all educational areas, and the basic principles and methodologies of algorithmic and systems-oriented thinking should be inculcated in traditional/new teaching systems in all disciplines and areas of learning and teaching.

• The computer's versatility makes it an ideal tool for special education requirements, such as educational aids for the handicapped and for the mentally retarded. Also, computers can offer multilingual support facilities, widening the sphere of effectiveness into rural areas and breaking down cultural barriers.

• Computer-based-education offers excellent scope for exploiting the "multiplier effect" of good teachers and can be an effective tool in distance educational systems. This educational technology could therefore have a more encompassing role to play in the developing world.

• The key to exploiting computer-based technologies lies in effective teacher training. Teachers have to be trained to:
a. accept and adopt computer/informatics-oriented techniques and methodologies into their own teaching and/or
b. teach relevant computer science topics and techniques to make students more competent in their own disciplines.

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BOBILLIER ELECTED HONORARY MEMBER

Service to IFIP Cited

On 4 September, *Prof. Pierre Bobillier* (CH) was awarded Honorary Membership in **IFIP.** The presentation was made during the **IFIP** General Assembly (GA) meeting in Budapest by **IFIP's** president, *Mr. Ashley* Goldsworthy (AUS). *Prof. Bobillier* served **IFIP** as representative of Switzerland ('68–'85), secretary ('69–'75), trustee ('75–'76), president-elect ('76–'77), president ('77–'83), past-president ('83–'84), and member of various committees. His tenure as president was the longest in **IFIP** history.

IFIP's statutes state, "On rare occasions, Honorary Membership may be awarded to a person who has earned exceptional merit in furthering the aims and interests of the Federation. Honorary Membership shall be conferred for life....a two-thirds majority [vote in the GA] of all Full Members shall be required." The other Honorary Members of **IFIP** are *Mr. Isaac Auerbach* (USA), *Prof. Dr. Heinz Zemanek* (A), and *Dr. Richard Tanaka* (USA), all of whom are previous presidents.

In his reminiscences of **IFIP** people in *A Quarter Century of* ***IFIP*** **,* Prof. *Leon Lukaszewicz* (PL) paid tribute to *Prof. Bobillier* as follows:

> Pierre did not dominate our sessions —his weapons were tact and civility, a gift for winning people over and a way of subtly suggesting to the Assembly solutions which we accepted, in the belief that we thought them out ourselves.... Who has made the affairs of **IFIP** run so smoothly in recent years, just as if they were rolling on rails laid by an invisible hand? Puzzling over this question, I have finally realized that the solution lay in the painstaking, everyday work of our secretariat and, in particular, in the extraordinary abilities of Pierre.

Mr. Goldsworthy, in his tribute to past presidents of **IFIP,** delivered at the 25th Anniversary Symposium in Munich (see the September 1985 *IFIP Newsletter),* summarized *Prof. Bobillier's* accomplishments in these words:

> During his 6 years as president, the **IFIP** family was increased by the admission of 10 Full members (including 1 Regional Member representing six new countries) and 5 Affiliate Members.

* Ed. H. Zemanek, published by North-Holland in 1986, © **IFIP**

Prof. Bobillier (left) receiving congratulations from President Goldsworthy during GA meeting.

In 1978, the **IFIP** Committee: Informatics for Development [now called Developing Countries Support Committee] was established. Many activities were then organised, sponsored or suggested in or for developing countries.

In 1979, **IFIP's** Technical Committee on Health Care and Biomedical Research (TC4) became the International Medical Informatics Association (IMIA), thus receiving more independence and freedom in its structure and development. A TC on *Security and Protection in Information Processing Systems* (TC 11) was established.

Publications continued to increase and now reach about 20 books per year. Two journals were started by TCs: *Computers and Industry* by TC5 in 1979 and *Computers and Security* by TC11 in 1983. *Computer Compacts* was started in 1982, and a series of State of the Art Reports will be created by **IFIP** TCs according to a decision taken by the GA in 1983. In order to better inform the outside world on **IFIP,** the Public Information Committee continued the production of the *IFIP Information Bulletin* and produced several new documents: *What is IFIP?, IFIP News,* a series of articles on **IFIP** TCs, a slide presentation on **IFIP,** and the *IFIP Newsletter.*

Many major conferences were held during these 6 years: EUROIFIP 79 (the first **IFIP** Regional Conference, planned to provide an **IFIP** event in Europe to fill the six-year span between Congresses in Europe), **IFIP** Congresses '80 and '83 in Tokyo/ Melbourne (a single event during two successive weeks) and Paris, respectively, World Conferences on Medical Informatics (MEDINFO 80 and 83), and the World Conference on Computers in Education (WCCE 81).

In addition, major international conferences were organized in 1983 for the first time:

- *International Conference on Governmental and Municipal Data Processing*
- *CAPE 83, International Conference on Computer Applications in Industry,* established by TC5 as a triennial series
- *IFIP Sec'83, International Conference on Computer Security,* which laid the base for the establishment of TC11

The September 1984 *IFIP Newsletter* contained a brief curriculum vitae of *Prof. Bobillier* in an article on page 1. He still works for IBM Switzerland in Geneva and continues his teaching at the Swiss Federal Institute of Technology in Lausanne.

We thank and congratulate *Prof. Bobillier.* ■

IFIP
PUBLICATIONS AVAILABLE

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

- Information Bulletin
- Statutes and Bylaws
- Standing Orders
- *What* ***Is IFIP?***
- 6-Year Plan (list of planned **IFIP** events)
- articles about Technical Committees

IFIP BIBLIOGRAPHY PUBLISHED

The North-Holland Publishing Company has just published *Bibliography 1960-198S,* which lists and categorizes all of the published papers presented at **IFIP** conferences and Congresses, as well as other papers published by **IFIP** in its first 25 years. The *Bibliography* describes a comprehensive family of papers in the field of computer science; it can be seen as a monument to the volunteers who organized the events, composed the programs, and prepared and edited the papers.

Several indexes list papers according to different categories, enabling the reader to readily locate his or her source of interest. A complimentary copy of the *Bibliography* is being sent to each Full Member society of **IFIP.** Copies may be ordered from North-Holland at $95 U.S. or Dfl. 225. **IFIP** participants receive a 25% discount. ■

GENERAL ASSEMBLY CONSIDERS RESTRUCTURED IFIP

Action Scheduled for 1988 GA

AT its September meeting in Budapest (see the article on page 1), the **IFIP** General Assembly (GA) voted to develop further details of a proposal that would ultimately result in a restructuring of **IFIP.**

As the world of information processing has changed, so has **IFIP.** The predecessor of **IFIP** was a committee formed to organize the first World Computer Congress. **IFIP** was then created in 1960 to organize successor, triennial Congresses. Shortly afterward, **IFIP** established Technical Committees (TCs) and Working Groups (WGs). New ones were created, and one was discontinued. The categories of Special Interest Group (SIG) and Affiliate Member (AM) were introduced. The relative importance of the TC work increased compared to the Congresses. An Activity Planning Committee (APC) was formed to coordinate **IFIP's** technical work. All along, the structure of **IFIP** has been changing.

The 1983 GA felt that **IFIP** was not sufficiently rapid in incorporating new areas of interest into its technical work and that the relationship with the AMs was not as close and productive as possible, so the GA formed a Task Group on Restructuring. As a result of the Task Group's recommendations, the 1985 GA created the category of Specialist Group (and Specialist Group Committee) and changed the APC to an Activity Development Board. The ADB's membership includes TC chairmen and AM representatives, in order to give the technical bodies a greater role in **IFIP** affairs and to provide a forum for discussion of common problems of these bodies.

The first ADB meeting took place in March 1986. Since then, only one Specialist Group has been formed (Artificial Intelligence, initiated at the Budapest GA meeting), and it is generally conceded that the ADB has not effectively fulfilled its long-range planning responsibilities. Furthermore, the relationship with AMs has not improved. There is some concern that **IFIP** may not be maintaining its role as the preeminent international body in information processing.

One of the goals that **IFIP** president *Mr. Ashley Goldsworthy* (AUS) has set for his administration is to implement a restructuring of **IFIP** which will enable it to act as an umbrella organization in the field of informatics and to attract under its sphere of influence the growing body of discrete and specialist organizations that are springing up as the complexity of the field increases.

These concerns prompted Mr. *Goldsworthy* to convene a meeting of the Executive Board and representatives of **IFIP's** AMs preceding the 1987 GA meeting, to discuss the relationship between **IFIP** and its AMs. This was a continuation of a dialog that began some time ago (see page 9 of the June 1987 ***IFIP*** *Newsletter).* Two AMs participated: the International Association for Pattern Recognition (IAPR) and the International Council for Computer Communication. At this meeting, a preliminary proposal was put forth that would improve IFIP's responsiveness to changes in technology. The plan was discussed subsequently and refined at the meeting of the ADB. The TC chairmen then met to propose amendments to the plan, which were incorporated into the presentation made to the GA.

The Proposal

The restructuring proposal calls for the establishment of a new **IFIP** *body*. At one point in the discussions, this was called the "Technical Assembly" (analogous to "General Assembly"), but the name was not decided upon. Following is the text of the proposal, which is subject to GA review:

1. IFIP should be the leader in international informatics and should change its present operations and structure in order to remain the world leader.

2. The name of the *body* is to be "Technical Assembly."

3. The *body* will concentrate on strategic long-range technical planning, associated policy formulation, and **IFIP** promotion. The *body* is *not* involved in technical event management. Policy recommendations of the *body* are authorized by the GA. [subject to formal approval by the GA—Ed.]

4. Membership will comprise TC chairmen, AM representatives, SIG and Specialist Group chairmen, the **IFIP** president, and any other members the *body* itself selects. The *body* should aggressively seek out and encourage highly desirable organizations to join the **IFIP** umbrella as AMs. Rules for screening and accepting AMs need to be developed by the *body*. AM representatives are to be recommended by the AMs and appointed by the **IFIP** president under due consideration of the needs of the AMs. AMs may not outnumber TCs and SIGs. AMs have the option of becoming **IFIP** SIGs. AMs are encouraged to appoint a voting member to each TC in which they have an interest.

5. All members of the *body* should have a vote in the *body*, with no non-voting members.

6. An **IFIP** vice-president will be appointed chairman of the *body*.

7. The charter of the *body* will consist of the following items from the charter of the ADB (and will be subject to change as the need arises):

- to constantly review the aims, structure, and thrust of **IFIP,** with the aim of recommending to the GA changes as appropriate to improve the continuing relevance of **IFIP**
- to review proposals for **IFIP** participation in new areas of activity, with a view to recommending to the relevant authority appropriate action to be taken, including the establishment of new TCs and WGs
- to monitor, in conjunction with the relevant chairman and Cognizant Officer, all planned activities of TCs, WGs, SIGs and other groups and committees established by the GA to ensure that they conform to **IFIP** objectives
- to approve activities proposed by TCs WGs or other **IFIP** bodies. This includes the authority to approve loans or grants within limits set from time to time by the GA. The *body* may not give its approval for any activity which is expected to result in a deficit. Any such decisions by the *body* may be taken on appeal to the GA by the chairman of the requesting organization.
- to promote the effective interfacing of AMs' activities where this contributes to the mutual benefit of the AM and **IFIP,** as well as the information processing community at large
- the chairman of the *body* is responsible, at his discretion, for the disbursement of monies at the request of TC chairmen, task groups, and other relevant groups from the **IFIP** Development Fund. The Fund is to be used to support new initiatives and to stimulate existing projects.

8. The ADB will become an Activity Management Board with a much smaller membership (say 3 each from GA and the *body).*

9. The *body* will be responsible for budget allocation and funding amongst its members.

10. Non-TC members will pay membership dues.

11. TC and AM technical personnel should interact freely and cooperatively, including holding joint events. The work of AMs may overlap significantly

with that of existing TCs, just as those of TCs now overlap each other.

12. The *body's* functions, not necessarily its structure, should be initiated now, not later.

The TC chairmen also requested that a forum for TC chairmen be established at every GA and Council meeting, with adequate time set aside.

Further Explanation

Mr. Goldsworthy made the following statements in explanation of the proposal:

> The proposal is *not* a major change but a further development of the evolution from APC to ADB to the new *body*.
>
> The role of GA members has not changed. The fundamental supremacy of the GA is not affected. National membership remains the basis of **IFIP** control. The GA controls the overall budget of the *body*.
>
> The GA would establish rules for membership in the *body*, and the *body* would admit new members according to the rules.
>
> The **IFIP** Council will become a much more effective management vehicle.
>
> National member societies' roles in their own countries would be strengthened by **IFIP** becoming an umbrella organization.

Arguments Favoring Proposal

IFIP vice-president *Acad. Blagovest Sendov* (BG) summarized the arguments in favor of the restructuring proposal as follows:

> Information processing is a field so immense (like science and the humanities) that it is difficult to see how one federation can cover everything. **IFIP** must create facilities to bring together and coordinate the world's activities in information processing.
>
> **IFIP** must keep the old tradition of a Federation that performs real work in information processing, with its TCs and WGs, but it must improve drastically its other part that deals with other organizations. One way to do this is to have a specialist organization body which, with the GA (member nations), will concentrate on all information processing problems. The body will bring together the most important organizations working in information processing. The strength of the body dealing with technical problems will be of great benefit to **IFIP** and its member societies.
>
> **IFIP** won't dominate, but it has an obligation to try to coordinate the field of information processing on an international scale. Such a change will affect the type of Congresses **IFIP** holds and solve many of its problems.
>
> We can look to the International Council of Scientific Unions (ICSU) as an example. ICSU, an old, prestigious body, has two parts: national members, paying membership fees, and scientific union members. It has concrete, interdisciplinary programs, educational programs, and other programs. ICSU coordinates all scientific meetings. It has powerful committees (e.g., one for the free circulation of scientists). ICSU has its own press.
>
> The scientific unions that belong to ICSU need it for coordination and financing. ICSU receives income from national members and from outside, and it draws from its scientific union members to organize large programs. ICSU represents the world's scientists, defends their rights, and attempts to assure them free circulation. It assists the third world by supplying books and by other means. Although ICSU doesn't hold its own congresses, it has congress guidelines to which the individual scientific unions adhere.
>
> We can learn a lot from ICSU with regard to the relationship between national members and scientific unions in its General Assembly. The national members have the right to decide what concerns them, and the technical representatives have the right to decide technical directions.
>
> The world needs an ICSU-like organization in information processing. I would like **IFIP** to be like ICSU, an organization with great prestige. We don't have to copy ICSU. But **IFIP** should make its TCs and WGs stronger, in order to strengthen our major programs, and we should attract more AMs and do for our AMs what ICSU does for its scientific unions.
>
> Another, similar organization is the International Social Science Council (ISSC). We need a non-governmental body in information processing at the same level as ICSU and ISSC. Information processing is so broad and touches so many people that it is now time for **IFIP** to step up to this role.

The GA voted unanimously to support the proposal as a "statement of intent." The president named a committee, with *Acad.* Sendov as chairman, to refine the proposal, work out the details, and prepare a paper that will be sent to Full Members. It will be discussed further at the Council meeting in March 1988, and a decision will probably be made at the GA in September. Furthermore, steps will be taken soon to implement the sense of the plan and that part of it whose implementation does not require GA approval. ■

NEWS FROM TC9

*by Drs. Felix van Rijn (NL) **

The Technical Committee on the Relationship between Computers and Society (TC9) held its annual meeting 28-29 June 1987 in Amsterdam, immediately after the Working Conference (WC) on Social Implications of Home Interactive Telematics (see page 7 of the September 1987 ***IFIP*** *Newsletter).*

The following conclusions reached and actions taken by a Task Force on long range planning may be of interest to the **IFIP** community:

• The relationship between computers and culture has been included in the objectives of TC9.

• The importance of the impact of computers and information technology (IT) upon society is widely recognised but, even within **IFIP,** scarcely taken into account.

• TC9 members, as individuals, have fruitful contacts with international organisations like IFAC, IFORS, CEC (FAST), Unesco, et cetera. TC9 will undertake initiatives to cooperate with any related organisation.

Main activities of WG9.1 (Computers and Work) are WCs on Social Implications of Robotics (Dec 87), Women, Work, and Computers III (Apr 88), and Opportunities and Risks of AI Systems (Jul 89).

A textbook on the relationship between information science and society is in preparation by WG9.2 (Social Accountability).

A WC on Computers and the Law is planned for February 1988, and a WC on Computers in Developing Nations, held jointly with TC8, will take place in November 1988.

* TC9 correspondent

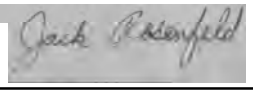
continued on page 10

FROM THE EDITOR

Dear Reader,

Because the Budapest General Assembly took many actions that should be reported to the **IFIP** community, much space in this issue is devoted to those GA actions, and there are fewer reports than usual about IFIP's technical meetings. Please pardon us for deferring some articles to the March issue, when more typical coverage will resume.

While we have your attention, we wish to thank you for your support and encouragement over the past four years, since the rebirth of the ***IFIP*** *Newsletter.*



CHANGES IN IFIP

TC AND WG ACTIONS

New Titles
TC10 Computer Systems Technology
(was Digital Systems Design)
WG2.7 Computer System User Interfaces
(was Operating System Interfaces)
WG 11.2 Office Automation Security
(was Office Automation)

New **Working Groups**
WG2.8 Functional Programming
WG3.6 Distance Learning
WG5.10 Computer Graphics

NEW FULL MEMBERS

The Computer Society of Zimbabwe
P.O. Box 8385
Causeway
Harare, Zimbabwe

Singapore Computer Society
NCB Building
Science Park Road
Singapore 0511

NEW APPOINTMENTS

GA MEMBER

Mr. M. Ozeki
Railway Technical Research Institute
2-8-38 Hikari-cho
Kokubunji-shi
Tokyo 185, Japan
(succeeding K. Ando)

TC AND WG OFFICERS

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P.O. Box 88
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TC10 Secretary
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Rochester, NY 14627, U.S.A.

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and
Mr. H. Santo
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WG7.4 Chairman
M. Padberg (USA)

WG7.4 Secretary
A. Sassano (1)

WG8.4 Secretary
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WG9.1 Vice-Chairman
Dr. Ulrich Briefs
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RESIGNATION

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GA **Representative of IAPR (Affiliate Member)**
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CSIRO Division of Manufacturing Technology
Locked Bag no. 9
Preston, Vic., Australia

WG9.2 Secretary
Dr. P. Nilsson
The Swedish National Audit Bureau
Box 34105
S-100 26 Stockholm, Sweden

Because of space limitations, the list of new committee members will not appear until the March issue of the ***IFIP*** *Newsletter.*

PROF. JOZSEF HATVANY

IFIP notes with sadness the recent death of *Prof. Dr. József Hatvany* **(H).** For six years he served as chairman of the **IFIP** Working Group on Discrete Manufacturing (WG5.3). He was chairman and member of many International Program Committees and delivered over 20 invited keynote and survey papers at international conferences. In 1977 he received the **IFIP** Silver Core award.

Prof. *Hatvany* was born in Hungary in 1926, was educated primarily in Great Britain, and studied physics at Trinity College, Cambridge. In 1947 he returned to Hungary. He published 169 scientific papers, primarily in the design and implementation of CAD/CAM systems, worked in institutions around the world, and received numerous awards.

NEWS FROM TC9 cont. from page 9

At the WC on Social Implications of Home Interactive Telematics, over 20 participants expressed their interest in taking part in a WG on *Home-Oriented Telematics.*

The fourth conference on Human Choice and Computers, TC9's main public event, will take place in 1990 in Dublin. It will focus upon IT assessment as a tool for social policy. For advance information, contact

John Drumm
214 Grace Park Heights
Drumcondra
Dublin9, Ireland

It is the conviction of TC9 that all computer scientists and information technologists should be aware of the social implications of the applications of IT. The *IFIP Newsletter* has been chosen as the medium to inform the *IFIP community* about TC9's activities.

COMPUTERS IN ED. cont. from p. 6

• Computer-based national and regional education testing and information services should be set up to support educational planning and implementation efforts.

Copies of the detailed report may be obtained from

Prof. B. Nag, Director
Indian Institute of Technology
Powai, Bombay 400 076, India

PROF. PETER REICHERTZ

In August, *Prof.* Peter *Reichertz* **(D)** passed away. He was one of the founders of IFIP's Technical Committee 4, the predecessor of the International Medical Informatics Association of **IFIP** (IMIA). Prof. *Reichertz* was the Federal Republic of Germany's representative to IMIA and played a major role on several of its committees.

FUTURE IFIP MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

Council	29 Feb-3 Mar 88	Auckland, New Zealand

29 Feb a.m.: Developing Countries Support Comm., Publications Comm. with TC chairmen
p.m.: Executive Board, Publications Comm. (continued), TC chairmen's forum
late p.m.: Marketing Comm.
1 Mar: Activity Development Board
2-3 Mar: Council

GA	week of 5 Sep 88	New Delhi
Council	week of 6 Mar 89	Geneva
GA	week of 21 Aug 89	San Francisco

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS*

WG2. I	Jan or Mar 88	Rome
WG2.7	Mar 88	Munich
	Sep 88	Kyoto
	2nd quarter 89	U.K.
	Sep 89	Napa Valley, U.S.A.
TC3	21-23 Jul 88	Lausanne
WG3.1	24-29 Jul 88	Lausanne
TC5	13 Jun 88	Dresden
TC6	12-13 May 88	Sofia, Bulgaria
	7-8 Oct 88	Bali, Indonesia
	Mar 89	Israel, Belgium, or Germany
	Sep 89	U.S.A.
	May 90	Budapest
	Sep 90	Spain
TC7	26 Sep 88	London
TC8	27-28 Feb 88	Sydney, Australia
	Apr 89	Brussels
TC9	4-5 Jun 88	Namur, Belgium

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

IMIA

Board Meeting	May 88	Singapore
General Meeting	Sep 88	Geneva

CALLS FOR PAPERS

IFAC-IFIP International Symposium on **Safety Related Computers in an Expanding Market-SAFECOMP 88**
9-11 Nov 88, Fulda, Fed. Rep. of Germany
abstracts due: 15 Dec 87
contact: VDI/VDE-Gesellschaft Mess-und Automatisierungstechnik (GMA)
P.O. Box 1139
D-4000 Dusseldorf 1, Fed. Rep. of Germany
tel. -211/6214 (1)-224/ -215
telex: 8586525
fax: -211/6214-575

WG5.7 Working Conference on **Knowledge Based Production Management Systems**
23-25 Aug 88, Galway, Ireland
abstracts due: 15 Dec 87
contact: Mr. William Kelly
CIM Research Unit
Dept. of Industrial Engineering
University College, Galway
Galway, Ireland
tel. 353-91-24411
telex: 50023 UCGEI
fax: 353-91-25700

IFAC-WG5.4 Workshop on **Real-Time Programming**
25-27 May 88, Valencia
abstracts due: 1 Jan 88
contact: WRTP'88
Grupo de Automática e Informática Industrial DSIC/DISCA
Universidad Politécnica de Valencia
P.O. Box 22012
E-46071 Valencia, Spain
tel. +34 6 3604041
telex: 62808 upva e

WG6. I Eighth International Symposium on **Protocol Specification, Testing, and Verification**
7-10 Jun 88, Atlantic City
papers due: 15 Jan 88
contact: Sudhir Aggarwal
AT&T Bell Laboratories
Rm 2C-I80
600 Mountain Ave.
Murray Hill, NJ 07974, U.S.A.
tel. 1 (201) 582-6095
or
Krishan Sabnani
Rm 3D-434
(same address)
tel. 1 (201) 582-5740

IFIP-IFAC Sixth International Conference on **Computer Applications in the Automation of Shipyard Operation and Ship Design (ICCAS 88)**
15-19 Sep 88, Shanghai
papers due: 1 Apr 88
contact: The International Programme Committee, ICCAS 88
Shanghai Corporation of Shipbuilding Industry
9 Zhong Shan Dong 2 Lu
Shanghai, P.R. China

TC8/TC9 Working Conference on **Impact of Information Systems in Developing Countries**
24-26 Nov 88, New Delhi
papers due: 1 Apr 88
contact: Prof. S.C. Bhatnagar
Indian Institute of Management
Ahmedabad 380 015, India

TC5 Third International Conference on **Computer Applications in Production and Engineering-CAPE'89**
2-5 Oct 89, Tokyo
abstracts due: 30 Sep 88
contact: Conference Secretariat-CAPE'89
c/o Conference Department
Business Center for Academic Societies Japan
2-40-14, Hongo Bunkyo-ku, Tokyo 133, Japan
tel. 03-817-5831
telex: 0 2722268 BCJSP J
fax: 03-817-5836 Intl ■

NEW IFIP PUBLICATIONS*

BOOKS

IFIP Bibliography
List of all **IFIP** publications from 1960 to 1985

IFIP Glossary of Terms Used in **Production Control**
produced by **IFIP** WG5.7
Burbidge, Author

CONFERENCE PROCEEDINGS

System Design for Human Development and Productivity: Participation and Beyond
Procs. of the **IFIP** TC9/WG9.1 Working Conf.
Berlin, FRG, May 86
Docherty, Fuchs-Kittowski, Mathiasson, Eds.

High Speed Local Area Networks
Procs. of the **IFIP** TC6/WG6.4 Intl. Workshop
Aachen, FRG, Feb 87
Spaniol, Danthine, Eds.

Expert Systems in Computer Aided Design
Procs. of the **IFIP** WG5.2 Working Conf.
Sydney, Australia, Feb 87
Gero, Ed.

Fast Prototyping of VLSI
Procs. of the **IFIP** WG10.5 Workshop
Grenoble, Mar 87
Saucier, Read, Trilhe, Eds.

A **Computer for Each Student and its Impact on Teaching and Curriculum**
Procs. of the **IFIP** WG3.2 Working Conf.
Delft, NL, Apr 87
Lewis, Tagg, Eds.

Protocol Specification, Testing and Verification, VII
Procs. of the **IFIP** WG6.1 7th Intl. Conf.
Zurich, May 87
Rudin, West, Eds.

Modern Production Management Systems
Procs. of the **IFIP** WG5.7 3rd Intl. Conf.
Winnipeg, Manitoba, Canada, Aug 87
Kusiac, Ed.

Human-Computer Interaction—Interact '87
Procs. of the **IFIP** 2nd Intl. Conf.
Stuttgart, Sep 87
Bullinger, Shackel, Eds.

Informatics and the Teaching of Mathematics
Procs. of the **IFIP** TC3/WG3.I Working Conf.
Sofia, Bulgaria, May 87
Johnson, Lovis, Eds.

Computer Hardware Description Languages and their Applications
Procs. of the **IFIP** WG10.2 8th Intl. Conf.
Amsterdam, Apr 87
Barbacci, Koomen, Eds.

IMIA PROCEEDINGS

Maintaining a Healthy State within the Individual
Procs. of the IMIA Working Conf.
Kobe, Japan, Apr 87
Harris, Yasaka, Eds.

JOURNALS

Computers in Industry. The International Journal of **IFIP** TC5
six issues per year

Computers and Security, The International Journal of **IFIP TCII**
four issues per year ■

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CALENDAR OF EVENTS

Event	Date	Location	Organized by
Intl. Symp. on *Computer Performance Modelling, Measurement and Evaluation-PERFORMANCE '87*	7-9 Dec 87	Brussels	WG7.3/ITC/FNRS
Work. Conf. on *The Social Implications of Robotics & Advanced Indus. Automation*	14-16 Dec 87	Tel Aviv	TC9/IIPA
Workshop on *Human Factors in CAD*	87 ?	The Netherlands	TC5/WG5.2
Work. Conf. on *Large Scale Computation in Science and Engineering*	87 ?	Dublin	TC7
Work. Conf. on *Teleteaching'88*	Jan 88	Bangkok	TC3
Work. Conf. on *Computers and the Law: A Technologist's Guide Through Legal Pitfalls and Pathways*	8-10 Feb 88	Santa Monica, U.S.A.	TC9
Intl. Conf. on *Informatics for Health*	15-21 Feb 88	Havana	MPH/IMIA
Workshop on *Concepts and Characteristics of Declarative-Based Environments*	Feb 88		WG10.1
Intl. Symp. on *Information Systems as a Resource for Management*	29 Feb-2 Mar 88	Sydney, Australia	TC8/WG8.3/ACS
Work. Conf. on *Info. Technology Mgt. for Productivity & Strategic Advantage*	7-8 Mar 88	Singapore	TC8/NUS
Intl. Seminar on *Digital Communications*	8-10 Mar 88	Zurich	ETH/TC6/IEEE/IEE
Working Seminar on *Information Networks & Data Communications (INDC-88)*	14-17 Mar 88	Copenhagen	TC6/SDF/SSI
Intl. Conf. on *Contribution of Artificial Intelligence to Manufacturing System*	15-17 Mar 88	Bordeaux	ADESO/TC5/WG5.3
Work. Conf. on *Computational Issues in Combinational Optimization*	Mar 88	Capri	TC7
Workshop on *High Speed Local Area Networks*	Mar 88	Liege, Belgium	WG6.4
Work. Conf. on *Artificial Intelligence, Data Bases and Information Systems*	4-8 Apr 88	Guangzhou, China	WG2.6/WG8.1
Intl. Workshop on *Industrial Computer Systems*	18-21 Apr 88	W. Lafayette, IN, U.S .A.	Purdue/TC5/WG5.4
Symp. on *Software for Computer Control-SOCOCO 88*	26-28 Apr 88	Cape Town	IFIP/IFAC
Third Conf. on *Women, Work and Computerization*	27-29 Apr 88	Amsterdam	TC9/WG9.I
Work. Conf. on *Parallel Computing: Algorithms, Languages and Architectures*	Apr 88	Pisa	TC10/WG10.3
Synip. on *Network Management*	Apr 88	U.S.A.	TC6/WG6.6
Work. Conf. on *Fourth Generation Language in Health*	Apr 88	Amsterdam	IMIA
First Intl. Conf. on *Information Resource Management*	3-5 May 88	Noordwijkerhout, NL	TC8/WG8.I/DUT
Intl. Symp. on *Network Information Processing Systems'88*	9-13 May 88	Sofia	TC6/TC8
Work. Conf. *Towards New Hospital Information Systems*	14-18 May 88	?, The Netherlands	IMIA
Intl. Conf. *EURINFO 88: Information Technology for Organisational Systems-Concepts for Increased Competitiveness*	16-20 May 88	Athens	CEC/IFIPcs
Work. Conf. on *Hardware and Software for Real-Time Process Control*	16-23 May 88	Warsaw	TC5/WG5.4
Fifth Intl. Conf. *IFIP/Sec'88: Computer Security in the Age of the Global Village*	19-21 May 88	Brisbane, Australia	TC I 1/ACS
Fifteenth Intl. Workshop on *Real Time Programming*	25-27 May 88	Valencia	IFAC/WG5.4
Work. Conf. on *Optimization of Stochastic Systems*	May 88	Budapest	TC7
Work. Conf. on *Landscapes for an Information Society*	6-8 Jun 88	Namur, Belgium	TC9/WG9.2
Eighth Intl. Synip. on *Protocol Specification. Testing, and Verification*	7-10 Jun 88	Atlantic City	WG6.l/AT&T-BL
Eighth Intl. Conf. on *Analysis, Design and Evaluation of Man-Machine Systems-MMS 88*	14-16 Jun 88	Oulu, Finland	IFAC/IFIP/ IFORS/IFA
Seventh Intl. Conf. on *Software for Manufacturing-PROLAMAT 88*	14-17 Jun 88	Dresden, G.D.R.	WG5.3/IFAC
Work. Conf. on *Organizational Decision Support Systems*	20-23 Jun 88	Como, Italy	TC8/WG8.3
Work. Conf. on *Computer in Nursing*	22-27 Jun 88	Dublin	IMIA/WG8
Work. Conf. on *Methodological Approches to Medical Technology Assessment*	Jun 88	Montpellier, France	IMIA
Work. Conf. on *The Role of Artificial Intelligence in Data Bases and Info. Systs.*	4-8 Jul 88	Canton, China	WG2.6/WG8.I
European Conf. on *Computers in Education-ECCE'88*	25-29 Jul 88	Lausanne	TC3/SCS
Work. Conf. on *Mathematical Software for Asynchronous Computation*	16-20 Aug 88	Palo Alto, CA, U.S.A.	WG2.5/IEEE
Intl. Conf. on *CAD/CAM and Technology Transfer to Latin America: Application of Computers to Engineering Design, Manufac. & Mgt. in Latin American Countries*	22-26 Aug 88	Mexico City	TC5/WG5.7
Work. Conf. on *Knowledge-Based Production Management Systems*	23-25 Aug 88	Galway, Ireland	WG5.7
Joint Conf. on *Open Communication Systems for Applications in Office and Manufacturing*	Aug 88	Vienna	TC5, 6, & 8/WG8.4/ GI/OCG
Work. Conf. on *Management Aspects of Information System Development*	Aug 88	Noordwijkerhout, NL	TC8/WG8.2
Work. Conf. on *Computerized Natural Medical Language Processing for Knowledge Representation*	12-15 Sep 88	Geneva	IMIA/WG6
Sixth Intl. Conf. on *Computer Applications in the Automation of Shipyard Operation and Ship Design-ICCAS'88*	15-19 Sep 88	Shanghai	CSNAME/IFIP/ WG5.6/IFAC
Work. Conf. on *Computerized Assistance during the Systems Life Cycle*	19-22 Sep 88	London	WG8.1
Work. Conf. on *Knowledge Based Systems on Test and Diagnosis*	27-29 Sep 88	Grenoble	TCl0/WG10.5
Work. Conf. on *Medical Informatics in Primary Care*	Sep 88	Oxford, England	IMIA
Seminar on *Formal Description of Programming Concepts*	Sep 88	South America	TC2/WG2.2/DCSC
Work. Conf. on *Issues of Design, Development, Distribution and Evaluation of Courseware: Planning and Design of Computer-Aided Teaching*	Sep *88*	Jerusalem	TC3
Work. Conf. on *Design Methodology in VLSI and Computer Architecture*	Sep 88	Pisa	TC10
Work. Conf. on *Message Systems*	Sep 88	Irvine, CA, U.S.A.	WG6.5
Workshop on *Artificial Intelligence in Economics and Management*	Sep 88	Singapore	SCS/IFIP
Intl. Workshop on *Industrial Computer Systems*	3-6 Oct 88	W. Lafayette, IN, U.S.A.	Purdue/TC5/WG5.4
Work. Conf. *SEACOMM'88*	5-6 Oct 88	Jakarta	TC6/SEARCC
Symp. on *Robot Control-SYROCOW8*	5-7 Oct 88	Karlsruhe, F.R.G.	IFIP/IFAC/IMACS
Fourth IFAC Symp. on *System Analysis Applied to Management of Water Resources*	*11-13* Oct 88	Rabat	IFAC/IFIP/ IFORS/IAHR
Work. Conf. on *Impact of Information Systems in Developing Countries*	24-26 Oct 88	New Delhi	TC9/TC8
Intl. Symp. on *Safety Related Comps. in an Expanding Market-SAFECOMP '88*	9-11 Nov 88	Fulda, F.R.G.	IFAC/IFIP/WG5.4
Work. Conf. on *Informatics and the Humanities*	88 ?	7	WG3.1
Work. Conf. on *Data Semantics-DS-3*	88 ?	Beijing	WG2.6
Work. Conf. on *Geometric Modelling*	88 ?	New York	TC5/WG5.2
Work. Conf. on *Shaping Organizations for Optimal Human Use of Information Technology*	22-24 Feb *89*	Sydney, Australia	TC9
Conf. on *Data Communication*	Mar 89	Israel	TC6
Work. Conf. on *Visual Database Systems*	3-7 Apr 89	Okinawa	TC2/WG2.6
Intl. Workshop on *Industrial Computer Systems*	17-20 Apr 89	W. Lafayette, IN, U.S.A.	Purdue/TC5/WG5.4
IFIP 89 - 11th World Computer Congress	28 Aug-1 Sep 89	San Francisco	IFIP
IHP 92 - 12th World Computer Congress	31 Aug-4 Sep 92	Madrid	IFIP

Please see page 11 for schedule of IFIP administrative meetings.