40th ANNIVERSARY YEAR

IFIP Newsletter

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Greetings to the Delegates of the 16th World Computer Congress from President Bollerslev

I am happy to welcome you, on behalf of **IFIP**, to the 16th World Computer Congress on Information Processing Beyond Year 2000. This multinational assembly in Beijing, China, is a challenge that I invite you all to meet.

The Congress, which consists of eight federated conferences focussing on different aspects of IT activities, has something to offer to everyone who has an interest in the IT field. You will be engaged with keynote speakers, invited papers and presentations of submitted papers from prominent researchers and professionals in the IT field. But I urge you not only to listen but also to be active and make it a working activity for yourself and other delegates. Ask questions of the presenters and engage in discussions. It is a challenge and a great opportunity to be able to exchange viewpoints with the world's leading IT professionals. Also, use the time between sessions to make friends, meet colleagues and discuss issues with them. An **IFIP** Congress also aims to be a place where you socialize and meet professionals unknown to you from distant lands. Remember that a stranger is simply a friend whom you have never met before!

The Congress features an exciting exhibition, where you will be presented with the newest developments in computer hardware and software. Spare some time between sessions to visit the exhibition, since the exhibitors will be eager to demonstrate their products.

IFIP is proud to offer you the excellent Congress facilities in the Beijing International Convention Center. Our Chinese hosts, the Chinese Institute of Electronics, the China Computer Federation, and the China Institute of Communication, have done their utmost to make your stay a pleasant one.

Let me finally wholeheartedly thank all who have volunteered so much time and effort to make this Congress happen. They deserve your full engagement in the event.

I wish all of you a fruitful and challenging Congress.

Peter Bollerslev

IFIP President

Ethics and the Governance of the Internet

A major discussion of issues related to ethics and the governance of the Internet has been taking place in **IFIP** during the past two or three years. We present here material that has evolved from that deliberation[1] and encourage the **IFIP** community and others to enter that dialog.

First, we present a brief history of the deliberations that have taken place in **IFIP** with regard to codes of conduct in the IT field. This history comes from a paper[2] by **Ms. Penny Duquenoy** (GB) and **Ms. Diane Whitehouse** (GB).

In the early 1990s, a debate took place in **IFIP** about the possibility of establishing an **IFIP** Code of Ethics, and an Ethics Task Group was set up in 1992 to explore this possibility. In order to complete its task, the Task Group undertook to survey the codes of ethics of the various **IFIP** Member societies. As a result of this assignment, the Task Group published an in-depth analysis of 31 codes of ethics and conduct[3] [and made] spe-

continued on page 10

1. Berleur, J., Duquenoy, P., and Whitehouse, D. (eds.) *Ethics and the Governance of the Internet*, September 1999, © **IFIP** (See the note about acquiring this monograph at the end of this article.)
2. "Governance of the Internet: An Ethical Point of View" in *Ethics and the Governance of the Internet*, © **IFIP**
3. Berleur, J. and Brunnstein, Kl. (eds.), *Ethics of Computing: Codes, Spaces for Discussion and Law*, Chapman & Hall, Andover, Hants (1996), © **IFIP**

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Prof. Asbjørn Rolstadås to Receive Auerbach Award at Congress 2000

The fourth **IFIP Isaac L. Auerbach** Award, commemorating our founding president, will be presented to **Prof. Asbjørn Rolstadås** (NO), a former president of **IFIP**, at the opening ceremony of **IFIP** Congress 2000 in Beijing, China, on 21 August. The Award is presented biennially "… to the individuals whose service in support of **IFIP** in its mission is deemed by their peers to be extraordinary." The recipients are nominated by Member societies of **IFIP**, and the selection is made by the **IFIP** Executive Board. A medallion and cash award are conferred.

The Honoree's Background

Prof. Rolstadås was born in Trondheim, Norway, in 1944. He received a M.Sc. degree in mechanical engineering in 1968 and a Dr.ing. (Ph.D.) in production engineering in 1972 (with a dissertation on scheduling line production by means of minicomputers) from the Norwegian University of Science and Technology (NTNU). He has been in his current position as Professor of Production and Quality Engineering at the NTNU since 1977, with the exception of a one-year sabbatical at the University of Washington in Seattle, WA, USA. Formerly Dean of Mechanical Engineering at NTNU, he is currently head of the Department of Production and Quality Engineering and the central university Committee for Continued Education. He also holds a part-time position in project management at the University of Tromsø, Norway.

His research covers topics such as computer numerical control of machine tools, computer-aided manufacturing systems, computer-aided production planning and control systems, project management, and productivity improvement studies and techniques. His teaching includes development of courses in production engineering, real time application of minicomputers, operations research, computer-based production planning and control, and project management. His current activities mainly involve distance learning in project management. This includes Web-based training and the application of multimedia.

Prof. Rolstadås has published 200 papers and 8 textbooks. He is the founding editor of the *International Journal of Production Planning and Control*, having served since 1989.

Since 1974, he has been a scientific advisor to the Industrial Management Institute of the SINTEF Group, the fourth-largest research institute in Europe, closely connected to the NTNU.

He is a member of The Royal Norwegian Society of Sciences, the Norwegian Academy of Technical Sciences, and the Royal Swedish Academy of Engineering Sciences.

Society Service

Prof. Rolstadås has had a long career within the Norwegian Computer Society (NCS) and **IFIP**. He was chairman of the Trondheim chapter of the NCS from 1974 to 1977. He was president of NCS twice (1979–1980 and 1996–1998), and he was elected as an honorary member in 1996.

He has also been president of the Nordic Data Processing Union (1980–1982), which is a collaborative body among the Nordic computer societies. **Prof. Rolstadås** was chairman of the board of the periodical *DATA*, published by the Union (1980–1983).

On several occasions, **Prof. Rolstadås** has been a member and chairman of the program committee and the organizing committee of the annual NordDATA conferences, which at one time were the main event for computer professional in the Nordic countries, attracting approximately 2000 participants.

In 1977, **Prof. Rolstadås** joined **IFIP** as the Norwegian representative to the Technical Committee on Computer Applications in Technology (TC5). He was chairman of the TC from 1983 to 1988. During his time in TC5, he took the initiative to establish a Working Group on Computer-Aided Production Management (WG5.7) and was chairman of the WG from its start in 1978 until 1983. He is still an active participant in the WG, which is currently among the most active ones within TC5.

In 1982, he became Norway's representative to the **IFIP** General Assembly (GA). He was elected vice-president in 1988, an office he held until he was elected president in 1991, serving from 1992 to 1995.

During his presidency, he initiated several changes in **IFIP**: the **IFIP** Secretariat was moved from Geneva, Switzerland, to Laxenburg, Austria, and changed into a more modern operation, especially by focusing on application of the Internet; rules and guidelines for **IFIP** events were established and formalized; more power was transferred to the TCs, which were also given control over their own funds; a new publisher was selected and new publications guidelines issued; and an active policy towards Member societies was initiated, involving visits to many of the societies to solicit their opinions of and expectations from **IFIP**.

Prof. Rolstadås was elected honorary member of **IFIP** at the GA in 1997.

He now joins the following distinguished recipients of the Auerbach Award: **Prof. Calvin Gotlieb** (CA) in 1994, **Prof. Lubomir Iliev** (BG) in 1996, and **Prof. Heinz Zemanek** (AT) in 1998. •

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The Chinese Institute of Electronics

The Chinese Institute of Electronics (CIE) is a nongovernmental academic and engineering organization, with a large number of professional and regional branches in China. The aim of the CIE is to promote electronics information science and technology by

- stimulating the development and applications of electronic science and technology.
- promoting cooperation in the field of electronics with colleagues around the world.
- popularizing electronic science and technology.
- encouraging lifetime education and training.

The membership of the CIE is composed of the following four grades: Fellow, Senior Member, Member, and Student Member.

The CIE was founded in 1956 and became an independent academic body in 1962. Since the beginning of the 1980s, the CIE has established worldwide relationships with 15 well known international electrical and electronic sister societies. It became a Full Member of **IFIP** in 1979.

Organization

The CIE is governed by a General Assembly (GA), which meets every four years. The GA elects the CIE Council, consisting of the president, vice-presidents, a secretary-general, and a treasurer. The Council meets annually and makes decisions that become necessary between GA meetings. Ten active working committees operate under the aegis of the Council. The day-to-day work is directed by the Secretary-General and carried out by his or her staff. The headquarters are located in Beijing, where seven departments administer the daily affairs.

Technical Activities

Technical exchanges, which are the most important of the CIE activities, are generally managed by the forty-four professional societies and the special interest groups, which cover the fields of semiconductors, computers, communication, broadcasting and TV, radar, navigation, signal processing, EMC, components and materials, digital and information technology, software, and networks.

The CIE produces twelve publications and periodicals, from the academic *Acta Electronic Sinica* to the popular newspaper *PC Week*.

Further information about CIE and its activities may be obtained by visiting the Web site at

http://www.cie-china.org

or contacting

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The CIE is pleased to be hosting **IFIP** Congress 2000 as well as the **IFIP** General Assembly, which will follow it in Beijing. •

IFIP NEWSLETTER

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

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Reprinting in national and local information processing periodicals is encouraged. Acknowledgement to **IFIP** would be appreciated.

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

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

IFIP on the Internet

IFIP information (including this *Newsletter*) is available through the Internet as follows:
anonymous ftp: ftp.ifip.or.at
WWW: http://www.ifip.or.at

National Abbreviations Used in Newsletter

AT	Austria	DK	Denmark	NO	Norway
AU	Australia	FI	Finland	PL	Poland
BE	Belgium	FR	France	PT	Portugal
BG	Bulgaria	GB	United Kingdom	SE	Sweden
BR	Brazil	HU	Hungary	SG	Singapore
CA	Canada	IN	India	SK	Slovakia
CH	Switzerland	IT	Italy	SY	Syria
CN	China	JP	Japan	US	USA
CZ	The Czech Republic	MY	Malaysia	ZA	South Africa
DE	Germany	NL	The Netherlands		

TC5 Engages in Ambitious Project on Virtual Enterprises

One Conference Already Held and One Being Held in December

The **IFIP** Technical Committee on Computer Applications in Technology (TC5) has instituted a new project: **Co**operation Infrastructure for **V**irtual **E**nterprises and Electronic Business (COVE). Led by **Prof. Luis Camarinha-Matos**, the Portuguese member of TC5, the project plans to assess research results and practices in the field of virtual enterprises (VEs) and electronic business, leading to the design of common reference models (i.e., generic models that can be used by enterprises to build their own specific models), infrastructures supporting cooperation, and the prospect for further collaborative developments. It will be based on the creation and operation of a cluster/forum of participants and projects active in the field worldwide, which will facilitate the exchange and refinement of knowledge and results in new ways of working in networks of independent but cooperative nodes.

Following are sections of the project description, written by **Prof. Camarinha-Matos,** the full text of which can be downloaded from the Web site at

http://www.uninova.pt/~cove.

Motivation and Background

New market trends, shaped by the globalization of the economy and the formation of large economic blocks, such as the European Union, NAFTA, and MERCOSUR [South America's Common Market], are forcing companies to attain world-class manufacturing capabilities. Furthermore, requirements for highly flexible/reactive systems, with high standards but constrained by environment-friendly requirements, are leading companies to new forms of organization....

Nowadays, most of the manufacturing process is no longer carried out by a single enterprise. Companies feel the need to focus on their core competencies and join efforts with others, in order to fulfill the requirements of the new products/services demanded by the market. In a cooperative networked organization, every enterprise is a node that adds some value to the process — a step in the manufacturing/supply chain. Although most classic examples of networked organizations can be found in a few businesses, such as the automotive industry, this trend is spreading to many other areas, including the food and agribusiness industry, and the concept of VE is emerging.

A VE is a temporary alliance of enterprises that come together to share skills or core competencies and resources in order to better respond to business opportunities, and whose cooperation is supported by computer networks.

A VE is formed by selecting skills and assets from different firms and synthesizing them temporarily into a single, functional business entity to respond to business opportunities. The cooperation among the enterprises involved in a VE is supported by computer networks and other information technology tools. Cooperation between enterprises, however, is not a recent phenomenon at all. For instance, in the construction industry, there is a long tradition of cooperation in consortia to jointly develop large projects. The novelty introduced by the VE paradigm is the heavy use of computer networks and advanced information technologies to better support the cooperation among companies. As a consequence of the new facilities offered by these technologies, which support both a more effective integration and coordination of activities and the geographical distribution of the involved industries, new forms of organizing the business process and new ways of working are naturally emerging.

Several new industrial manufacturing paradigms have emerged in recent years as an answer to the new challenges of globalization, such as virtual manufacturing, lean enterprise, agile manufacturing, and "holonic systems." The introduction of these concepts in enterprises has made them able to face successive waves of restructuring during recent decades. The emergence of the VE paradigm follows from these restructuring processes....The embodiment of this paradigm, although enabled by recent developments in communication technologies and computer networks, requires the definition of a reference architecture [a generic description of the system, from which a specific architecture can be built for a specific VE] for collaboration among enterprises and the design and development of an infrastructure for cooperation, with supporting platform, appropriate protocols, and coordination mechanisms.

The research area of VE represents a complex, large-scale, multidisciplinary domain. The cooperation scenario in VEs involves distributed/federated, heterogeneous, and autonomous agents representing both software and people. A large number of projects, worldwide, are nowadays addressing different aspects of infrastructures for VEs....

It should be mentioned that a large number of initiatives are also taking place in the area of electronic commerce. From these initiatives, several results are of major importance for the establishment of a VE environment, such as safety and authentication mechanisms, business transactions, and electronic catalogs.

In spite of the efforts being put in the VE area, the current approaches and the developed experimental prototypes are quite limited, still lacking a comprehensive and flexible characterization of the multiplicity and variety of the cooperation scenarios.

IFIP-Sponsored Events

The topic of VEs and electronic business has become part of several recent **IFIP**-sponsored events....In fact, a working conference on Infrastructures for Virtual Enterprises (PRO-VE) was held last October in Porto, Portugal. The international PRO-VE2000 conference is planned to be held in Brazil, 4–6 December 2000. [More information on this can be found at the end of this article.]

The proceedings of PRO-VE'99 are a rich source of information about the field. Edited by **Prof. Camarinha-Matos** and **Dr. Hamideh Afsarmanesh** (NL) and entitled *Infrastructures for Virtual Enterprises: Networking Industrial Enterprises*, they were published by Kluwer Academic Publishers last September. Although the book is composed of a set of multi-author sections, special editing efforts were applied to half of the book in order to facilitate its use as a text book. The remainder has the usual structure found in conference proceedings.

An Overview

We print here parts of the first chapter, "The Virtual Enterprise Concept," written by the editors, because it provides a good introduction to the topic of VEs:*

The paradigm of VE represents a prominent area of research and technological development for today's progressive industries. The research area is a growing, multidisciplinary one, which still lacks a precise definition of the concepts and an agreement on the terminology used. So far, there is no unified definition for this paradigm....Trying to combine the various elements of several definitions, however, we have arrived at the [definition of VE given earlier in this article.]

...In VEs, manufacturers do not produce complete products in isolated facilities. Rather, they operate as nodes in a network of suppliers, customers, engineers, and other specialized service functions. Therefore, under this paradigm, a number of preexisting enterprises or orga-

nizations with some common goals come together, forming an interoperable network that acts as a single organization. In other words, VEs materialize through the selection of skills and assets from different firms and their synthesis into a single business entity.

In fact, the establishment of cooperation agreements (links) between enterprises is not a new phenomenon,…but the use of communication and information technologies to support agile cooperation, one key characteristic of the VE concept, is a new requirement.… Cooperation on a global scale is expected to substantially increase, and distance will no longer be a major limiting issue.

The paradigm of VE challenges the way industrial manufacturing systems are planned and managed. Companies, especially Small and Medium size Enterprises, must join skills and resources in order to survive and gain competitive advantage in a global market environment. … [In addition to the embodiment of the VE paradigm,] some extensions, re-engineering, and modifications are necessary on the side of the organization and enterprise culture and need to be carefully identified for both technical and socio-organizational reasons.…

Terminology

The wide variety of different networked organizations and the emergence of new production-management paradigms have led to the generation of a number of related terms, such as the extended enterprise, virtual organization, networked organization, supply chain management, or cluster of enterprises. Some authors use some of these terms indiscriminately to refer to VEs, although (as indicated in the following) there are differences between their meanings.

extended enterprise. This is the closest "rival" term to VE, but it is better applied to an organization in which a dominant enterprise "extends" its boundaries to all or some of its suppliers, whilst the VE can be seen as a more general concept, including other types of organizations, namely more democratic structures in which the cooperation is peer-to-peer. In this sense, an extended enterprise can be seen as a particular case of VEs.

virtual organization. This is a concept similar to a VE, comprising a network of organizations that share resources and skills to achieve their mission, but it is not limited to an alliance of enterprises. For example, a virtual organization could be a virtual municipality, associating via a computer network all the organizations of a municipality.…

networked organization. This is perhaps the most general term referring to any group of organizations inter-linked by a computer network, but without necessarily sharing skills or resources or having a common goal. Typically, networked organizations correspond to a very loose type of organization.

supply-chain management. This term refers to the policies and supporting mechanisms to manage the flow of materials in a value chain, possibly covering all parties, from the raw-material suppliers to the consumers,…and supported by the flow of information between the supply chain participants. This concept is traditionally applied to organizations that are relatively stable, i.e., where the core partners remain the same for a long time; however, more dynamic supply chains are becoming current. The focus is on the logistics of the material product flows and related business information.

cluster of enterprises. A group or pool of enterprises that have the potential and the will to cooperate and therefore may become partners in a VE. These enterprises are normally "registered" in a directory, where their core competencies are "declared." On the basis of this information, a VE initiator/creator can select partners when a new business opportunity is detected.

Categories of VEs

…There is clearly a need to classify different VE paradigms in terms of their characteristics and respective requirements before the paradigm can be properly addressed and modeled.

d*uration.* Some alliances of enterprises are established for a *single business opportunity* and are dissolved at the end of such a process.…But there are also *long term alliances* that last for an indefinite number of business processes or for a specified long-term time span.…The first case raises the need for an infrastructure supporting very dynamic consortium creation/dissolution. In the second case, however, the emphasis is put on the operation of the VE and on the support for dynamic business process definition and supervision.

topology. There are situations that show a *variable/dynamic* nature to the topology of the network, in which some enterprises (nonstrategic partners) can dynamically join or leave the alliance according to the phases of the business process or other market factors. But in many sectors, there exist established supply chains with an almost *fixed structure*.…

participation. Another facet to be considered is the possibility of either an enterprise participating simultaneously in *multiple alliances* or being dedicated to a *single alliance*.…

coordination. Various approaches to network coordination can be found. In some sectors, as typified by the automobile industry, there is a dominant company "surrounded" by a relatively fixed network of suppliers *(star-like coordination structure).*…A different organization can be found in some supply chains, without a dominant company *(democratic alliance).*…But even in this case, a coordinator node may be necessary in order to administer the general information regarding the VE membership and to monitor the organizational structure and joint cooperation principles. In an extreme case, once a successful alliance is formed, companies may realize the mutual benefits of joint management of resources and skills and may tend to create a kind of joint coordination structure *(federation).*…

visibility scope. This term describes "how far" along the network one node can "see" the VE configuration. In most cases, a node sees only its direct neighbors (suppliers, clients) *(single-level visibility).*…In more advanced coordination situations, however, a node might have some visibility rights over other (non-directly related) enterprises *(multilevel visibility).*…

Other Considerations

When analyzing the infrastructure requirements for a VE, it is also important to consider the various phases of its life cycle:…creation, operation, evolution, and dissolution.…An enterprise may play different roles within a VE during the various phases of its life cycle.

It is important to notice that the VE paradigm is not an isolated phenomenon. Many other new services are rapidly being proposed over various networks, and some of them contribute to the functionality required from VEs. One important related area is electronic commerce, which proposes solutions of important issues, including the following:

- Organization and publication of electronic catalogues and related mechanisms…
- Security mechanisms, specifically to support interchange of information about payments.
- Advanced and customizable search engines, some of them based on mobile software agents.

Challenges and Objectives

In the final chapter of the book, "Further Developments in Virtual Enterprises," the book editors make the following points:

The recent efforts devoted to the development of infrastructures, mechanisms, and tools to support VEs are considerable, both at the national level in various countries and at the international level. As a result, considerable progress has been achieved, but there are still a large number of open issues requiring further developments and cooperation.

continued on following page

COVE continued from previous page

Despite most of the initial projects being focused on the development of VE infrastructures, various aspects remain without proper solution, among which the following cases can be mentioned:

- *Standards for information exchange*....
- *Full life-cycle-supporting functionalities*....
- *Interaction with enterprise applications.*...(Since enterprise applications [e.g., CAD] are both the main sources and consumers of the information that is interchanged among the VE partners, the interface mechanism between these systems and the VE infrastructure has to improve at two levels:

a. The information exchange between applications and the infrastructure....

b. Re-engineering and extension of applications functionalities. New levels of flexibility in the control mechanisms of these systems are required in order to cope with the new agility required by the VE environment. New functionalities are also needed to support the VE business practices.)...

- *Safe communications and independence of the channels*....

"*Geographical independence"* is an important aspect of the area of infrastructures. Since a VE may involve members in different geographical regions, even on different continents, there are obvious advantages in aiming at a wider standardization of the basic levels of the infrastructure. To achieve this goal, there is a need to identify the basic level of functionalities that are needed to become common practice, which also motivates more global international cooperation. Solutions developed for one particular region are not necessarily easily adaptable to other regions, owing to the many technological, cultural and business-practice differences. An **IFIP**-sponsored initiative can contribute to the "harmonization" of the available dispersed initiatives towards some form of common reference model and cooperation infrastructure.

It is also natural that businesses will change their practices and processes as a result of their first experiences with VEs. As a result, new requirements will emerge and new supporting functionalities must be developed. Not only will new tools and applications be required, but all the traditional enterprise applications...must be "re-visited," in order to take into account the networked cooperative environments....

New forms of organization of cooperation and new business scenarios are likely to emerge, which will require new conceptual and technological developments. In addition, there is a need for more interaction between the technological developments and the socio-organizational issues and legal aspects. The social and organizational impacts of these new paradigms require a careful analysis, not only to guarantee a smooth implantation, but also to guide the developments more successfully.

The IFIP Initiative

The COVE report ends as follows:

It is obvious that the very limited resources of **IFIP** cannot support comprehensive R&D; therefore, the proposed project is more a "concerted action" type of initiative, trying to raise synergies from the interactions among actual R&D projects financed by other sources.

By creating a forum for knowledge-sharing and exchange of experience, COVE expects to accomplish the following:

- comparison of approaches and practices
- efforts toward common reference models
- framework for further international cooperation (supported by national or regional funding programs)
- discussion forum for interested professionals and students
- dissemination agency, raising awareness
  - for students
  - for researchers
  - for industrialists
- creation of a database of best-practice cases
- increased interactions among Ph.D. students in the field
- a model Ph.D. program

The general approach was to invite leading members of key international projects and other initiatives in the area of VEs and electronic business to join the project. The membership is also open to students and other interested parties from industry. The opportunity to join the initiative still exists....

Participants will have the opportunity to contribute via the Discussion Forum (Web-based) and participate in the organized events. They will have access to all generated knowledge/information via the Internet.

Special attention will be devoted to complementing other international initiatives....

PRO-VE 2000

The second **IFIP** Working Conference on Infrastructures for Virtual Enterprises, PRO-VE 2000, will take place 4–6 December 2000 in Florianopolis, Brazil. The proceedings, *E-Business and Virtual Enterprises: Managing Business-to-Business Cooperation* (eds. L.M. Camarinha-Matos, H. Afsarmanesh, R.J. Rabelo), will be published by Kluwer Academic Publishers in December. For further information about the conference, please contact

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or visit the Web site at

http://www.uninova.pt/~prove •

Prof. Heinz Zemanek Is Feted on His 80th Birthday

*by Mr. Plamen Nedkov**

Last December, **Prof. Heinz Zemanek** was notably celebrated at the Austrian Academy of Sciences on the occasion of his 80th birthday. **Prof. Zemanek** was **IFIP** president from 1971 to 1974 and represented Austria in the General Assembly from 1963 to 1978. He is an Honorary Member, received **IFIP**'s prestigious Isaac Auerbach Award in 1998, and currently serves as **IFIP** Historian.

Among the distinguished speakers at the celebration were the President of the University of Vienna, the Secretary General of the Austrian Academy of Sciences, senior government officials, and representatives of academia and business. **Viktor Klima**, then the Bundeskanzler of the Republic of Austria, took part in the ceremony and talked about **Prof. Zemanek** and his many achievements and contributions.

The present **IFIP** president, **Dir. Peter Bollerslev** (DK), conveyed **IFIP**'s congratulations and thanks to **Prof. Zemanek** for his long and faithful service to **IFIP**. **Dr. Richard Tanaka** (US), Honorary Member of **IFIP** and a past president, talked about the contributions of **Prof. Zemanek** to **IFIP** and the world community of information processing. •

* Executive Director of **IFIP**

IFIP/IFAC Task Force on Enterprise Integration

*by Mr. Jakob Vlietstra (US)**

WG5.12 (the **IFIP** Working Group on Architectures for Enterprise Integration), the **IFIP** arm of the **IFIP**/IFAC (International Federation of Automatic Control) Task Force on Enterprise Integration, has concentrated its efforts on the development and standardization of GERAM, the Generalised Enterprise Reference Architecture and Methodology. GERAM is the basis of the final draft of the ISO international standard ISO 15704. The group responsible for that standard and the **IFIP**/IFAC Task Force held frequent joint meetings during the past three years.

GERAM has been adopted by the Globeman 21 IMS consortium of more than 40 companies as one of the bases of its common concepts for virtual enterprises and networks. Several new applications in industry and defense agencies are starting to develop. It appears that the concepts and framework of GERAM, e.g., the life cycle, life history, and modelling framework, are applicable to all sorts of enterprise entities other then companies. Thus GERAM (and compliant architectures) could become a widely accepted architecture for any complex system. Notably, systems engineering, software engineering, and project management are candidate areas where the unifying concepts of GERAM can be applied. This would foster a much better communication between these disciplines than was possible before.

WG 5.12 was invited to present GERAM at an October 1999 meeting in Nantes, with the view of identifying the possibly use of GERAM in the Systems Life Cycle standard currently being developed (ISO 15288). Similar expectations are being formulated regarding software life cycle processes. The relevance of this is that the group developing that standard is responsible in ISO for all Software Engineering standards.

The Joint **IFIP**/IFAC Task Force held its latest meeting last year in Beijing, where the new three-year mandate was decided. The new mandate, endorsed by IFAC, includes the development of UEML, a unification of various languages for enterprise modelling, the development of component-based reference models for virtual enterprises, the continuing development and dissemination of GERAM, and the liaison to relevant standards bodies.

The Task Force expresses its gratitude and best wishes to **Prof. Theodore Williams** (US), who resigned after many years of excellent contribution, first as chair and later as vice-chair of the Task Force.

Interested readers may wish to visit the WG5.12 Web site at

http://www.cit.gu.edu.au/~bernus/index.html •

* TC5 correspondent to the ***IFIP** Newsletter* and former TC5 chair

*Who's Who in **IFIP**: Dr. Robert Aiken*

Dr. Robert Aiken, an **IFIP** vice-president, was born in Springfield, IL, USA, in 1941. He received the Bachelor's and Master's degrees in Industrial Engineering in 1963 and 1965, respectively, and a Ph.D. with a major in Computer Science and a minor in Applied Mathematics in 1968, all from Northwestern University. From 1968 to 1984, he taught and helped to develop the Computer Science Department at the University of Tennessee. He has been at Temple University (Philadelphia, PA) since 1984, where he is currently a professor and Director of the Graduate Programs in the Computer and Information Sciences Department. His current research activity includes investigating the applicability of artificial intelligence models and techniques to education and evaluating the impact of technology in K–12 education.

He is the author or coauthor of three books and over 80 articles and has delivered more than 50 invited presentations in 20 countries. He has been a visiting professor and conducted research at nine universities on four continents and has consulted with several international organizations, including UNESCO and OECD, on strategic planning for the effective integration of computers into schools. He has been on the editorial board of international journals and a member of many international program committees, including the 1995 and 2001 **IFIP** World Conferences on Computers and Education (WCCE).

Dr. Aiken's professional activities include major roles in the work of ACM and other organizations related to education and artificial intelligence. He was a member of FOCUS (Federation On Computing in the United States) from its inception in 1991 to 1998 (while FOCUS was the US Full Member of **IFIP**) and was chair of the board of directors in 1993 and 1995.

He has received numerous awards, including the **IFIP** Silver Core Award in 1992.

IFIP Activities

Dr. Aiken's **IFIP** affiliation began in 1979, when he was invited to participate in WG3.3. He joined WGs 3.1 and 3.3 and was appointed as the US representative to the Technical Committee on Education (TC3) in 1988, where he served for 10 years, including two terms as vice-president, from 1991 to 1997. From 1997 to 1999, he was the representative of FOCUS in the **IFIP** General Assembly, and since the ACM became a Full Member in 1999, he has represented that organization. He was elected **IFIP** trustee in 1997 and vice-president in 1998 and continues in that position. He was chair of the Activities Management board from 1997 to 1999 and chair of the Technical Assembly from 1999 to the present.

He and his wife, Christine, have a son, David. In his spare time **Dr. Aiken** enjoys playing and watching sports, reading, and travelling with his family. His wife is an excellent cook, and both enjoy good food and wines. He has participated in numerous handball (American — not European) tournaments — with limited success, he says. •

TECHNICAL COMMITTEE CHAIRMEN

TC1:	G. Ausiello	IT	00–02
TC2:	R. Kurki-Suonio	FI	97–00
TC3:	B. Samways	GB	00–02
TC5:	G. Doumeingts	FR	00–02
TC6:	A. Casaca	PT	98–01
TC7:	P. Kall	CH	98–01
TC8:	B. Glasson	AU	99–01
TC9:	J. Berleur	BE	99–00
TC10:	J.-C. Laprie	FR	00–02
TC11:	B. von Solms	ZA	98–01
TC12:	B. Neumann	DE	97–00
TC13:	J. Hammond	AU	98–01

News from Member Societies

IEEE-CS Student Competition Winners Announced

In October 1999, the IEEE Computer Society (IEEE–CS), a Full Member of **IFIP**, announced the first annual Computer Society International Design Competition, which was planned to advance excellence in computer-design education worldwide. An article about this competition appeared in the March/June 2000 ***IFIP*** *Newsletter*, on page 5. At the end of June, the finals of the competition were held, and the winning teams were announced. The top teams are as follows, from first to fifth:

McMaster University (Hamilton, Ontario, Canada) — a heart-monitor health-care-information appliance they conceived, designed, and implemented in prototype form

National Taiwan University (Taipei) — a family-health-monitoring system

Technical University of Poznan (Poland) — health-care-information appliance

Slovak University of Technology (Bratislava) — asthma-monitoring and allergy-data appliance

University of Waterloo (Ontario, Canada) — Internet diabetes appliance

Honorable mention awards went to

Boston University

Moscow State University

Technical University of Plovdiv (Sofia, Bulgaria)

University of Hong Kong

University of Illinois–Urbana-Champaign

Presentations from the ten teams are available on the Web at URL

http://www.computer.org/csidc/CSIDCWinners.htm

We congratulate the winners as well as the IEEE-CS for holding the competition. •

Syrian–Lebanese Symposium

*by Prof. Bachir Mounajed (SY)**

The first Syrian–Lebanese Symposium on Information and Communication Technology Development, which was held in April, aimed at strengthening scientific and professional cooperation between the two countries in the field of Information Technology. The idea for this symposium originated in an initiative of the Syrian Computer Society, inviting representatives of Lebanese groups working in the field of IT to discuss aspects of scientific and professional cooperation. As a result of this meeting, which took place in July 1999, a Lebanese group was established to organize joint symposia between the two countries. The theme of the first symposium was An Assessment and Perspectives for Cooperation, where the emphasis was on current topics in information and communication technology and their relation to society and the economy. This will hopefully result in social and economic benefits for the two countries.

The first symposium, which took place over four days (the first two in Damascus and the last two in Beirut), included invited lectures, case studies, surveys of advanced experiments from other countries, and panel discussions that explored the scope of cooperation and prepared proposals and recommendations. Over fifty lecturers from Syria, Lebanon, Arab countries, and other countries participated. More than 350 attended (210 Syrians, 130 Lebanese, and 22 others), including eminent academics, engineers, computer scientists, jurists, and others, from both the public and private sectors. •

* Syrian representative to **IFIP**

Results of Survey on **IFIP** Demographics

by Dr. Takeo Miura (JP) and Mr. Plamen Nedkov***

At the March **IFIP** Council meeting in Washington, a survey of the composition of the **IFIP** community was commissioned in the following areas:

• In general, the **IFIP** community views the Federation as an academic entity with hardly any industrial representation. We wished to find out whether that is really so and, on the basis of the results, to see what can be done to make **IFIP** more appealing to representatives from industry.

• We wanted to determine the number of women, generally under-represented in the IT field, in **IFIP**. The membership in **IFIP**'s Working Groups (WGs) is based on merit; however, the percentage of women in our WGs indicates whether **IFIP** and the IT community are doing enough to make the profession appealing to women.

• We were interested to see if there is a flow of young professionals into **IFIP**, which is a serious concern for some Technical Committees (TCs) and WGs.

In order to answer these questions, we sent a brief questionnaire to all TC and WG chairs, 43 of whom responded (38 WG chairs and 5 TC chairs). The key elements of the results are given here. Some of the figures are approximate but valuable nonetheless, and we are hopeful that they will help to identify the pattern and trends.

IFIP Composition:

Industry	18.1%
University/Education[1]	75.0%
Government	3.8%
Other	3.5%
Women	12.4%
"Young" (under 40)	19.4%

1. It was difficult to categorize members that are involved in both academia and industry, which led to a lower industry percentage.

IFIP's Committee for Cooperation with Industry and our Executive Board will further analyze the results and take action to remedy the imbalances. •

* **IFIP** vice-president and chair of the Committee for Cooperation with Industry

** Executive Director of **IFIP**

Academician Lubomir Iliev

1913—2000

On 5 June 2000, following a prolonged illness, **Academician Lubomir Iliev**, one of the most prominent Bulgarian scientists and the second **IFIP** Auerbach Award recipient, died.

Prof. Iliev was one of the founders of contemporary Bulgarian mathematical science. He played a leading role in the development of major areas of contemporary mathematics: computational mathematics, mathematical modeling, numerical methods, probability theory and mathematical statistics, optimization, etc.

Because of his perseverance and influence, cybernetics was officially recognized as a science in Bulgaria, and in 1961 the Bulgarian Academy of Sciences established the first computing center in Bulgaria, as part of the Institute of Mathematics at the Academy. **Acad. Iliev** was its first director. He established a team of young Bulgarian experts, whose product was the first Bulgarian computer, Vitosha.

Acad. Iliev contributed to the introduction of Bulgaria to the international computer science community. He was the first official representative of Bulgaria to **IFIP**, serving from 1965 to 1982, and he was president of the Bulgarian National **IFIP** Committee from 1970 to 1982. Under his auspices, a number of **IFIP** workshops, symposia, and conferences were organized in Bulgaria. He was an **IFIP** vice-president from 1974 to 1977 and was awarded the Silver Core in 1974 for his service. **Acad. Iliev** was the second scientist presented with the **IFIP** Isaac L. Auerbach Award, commemorating our founding president. He was also recognized as a Computer Pioneer by the Computer Society of the IEEE.

With the death of **Acad. Iliev**, Bulgaria has lost her doyen of mathematics and computer science, and the world has lost an outstanding proponent of scientific, cultural and technical cooperation among peoples.

Blagovest Sendov

President of **IFIP**, 1989 to 1992

ETHICS continued from page 1

cific recommendations, which were adopted by the 1994 **IFIP** General Assembly (GA) in Hamburg.

The handbook provides a wide range of material necessary for **IFIP**'s Member societies to consider when introducing or revising a code of ethics (or a code of conduct, or guidelines). It includes over 30 computer societies' codes and their analysis; comments on the most important codes; the philosophical background of cultural diversity; and papers on some more sensitive questions.

It is not **IFIP**'s intention to provide its Member societies with precise guidelines for particular codes. Rather, it advises them to consider its recommendations when writing or updating their own....**IFIP** offers its expertise in assisting these developments, collecting and disseminating material about established codes, and organising international debates on further developments.

The 1994 GA recommendations also led to the foundation of the Special Interest Group on a Framework for Ethics of Computing (SIG9.2.2).

Internet Governance

Recently, the matter of ethics and the governance of the Internet has been raised and considered by SIG9.2.2, and last September, the SIG published a monograph[1] on that topic, edited by **Prof. Jacques Berleur** (BE), chair of TC9 (Technical Committee on the Relationship between Computers and Society) and of SIG9.2.2, **Ms. Duquenoy**, and **Ms. Whitehouse**. Because the dialog continues and is important to **IFIP** and its Member societies, we devote space here to quotations from that monograph. The references found in the original document have been removed.

The introductory paper [of the monograph] is intended as an overview of the current debates surrounding use of the Internet and regulation of the communications possibilities that the net offers. The paper lists a number of topics that have an ethical content and highlights some issues that are coming to the fore in the debate. Finally, it makes three recommendations to the Member societies of **IFIP**....

[Although some may have the impression] that the words "Internet governance" are linked today to the environment of domain-name administration, [others believe the phrase has a broader meaning]. When the Computer Professionals for Social Responsibility [a US organization] launched its "One Planet, One Net: CPSR Campaign on Internet Governance" in December 1997, it was "undertaking a broader examination of the issues in standards development, content development and control, and access to the Internet." Its Principles for the Internet Era" cover a wider area than simply domain names and addresses. They are principles intended "to counter the political, economic, social, and technical forces that ... threaten the promise of open communication on the Internet."...

Everybody knows the issues at stake regarding Internet self-regulation: the place of governments and national or international authorities in ruling cyberspace, democracy on the Internet, its multi-cultural aspects, the place of developing countries in universal service, etc. We think that all these kinds of questions fall under the scope of "Internet governance."...

Do We Need Governance?

The Internet has grown for a long time without too much regulation. Defining protocols and standards had been for a long time the most developed regulatory activity. But as soon as business became established, the requirements changed. [Some people] spoke about creating a "second Internet," dedicated to business, if safer measures were not taken. Questions concerning standards and routing administration, encryption, digital signature, Internet service provider licensing, property rights, tariffs, computer crime, etc. were raised as soon as commerce came to the forefront....

The debate is now lively because the key issue is "what kind of regulation?" Rules by governments or self-regulation by business and users? Because of its history, some highly sensitive features surround the concept of governance of the Internet....Anti-censorship concerns hark back to the origins, when the Internet was mainly a tool for research and education, i.e., operating according to the principle of "academic freedom."

Is more regulation needed? Those who advocate more regulation feel that the Internet today is chaotic and unmanaged and also weakly self-regulated....Most of the "codes" [of behaviour] are created to curb government regulation of the Internet — it is even sometimes proclaimed as such....One may wonder if such declarations or codes of conduct are not purely instrumental, i.e., aimed at making e-commerce or any use of the Internet or ICT [Information and Communication Technology] systems more acceptable to the public....

Where is the power of sanction [in the codes]? Are there any enforcement means? People know how sensitive these questions are....As far as we can see, associations in which every individual member has to commit him/herself to abide by the code seem very rare!

In a way, SIG9.2.2 regards the conflict between private and public regulation as something to be overcome and recommends a deeper cooperation of both sectors in the domain of governance. Controversial questions such as the relationship between self-regulation and the law must be confronted....Self-regulation with conditions, or embedded in an appropriate legal framework, could be satisfactory. The pending dialogue between the USA and Europe about the transfer of personal data to third countries and the interpretation of articles 25 and 26 of the European Directive on the protection of individuals with regard to the processing of personal data will be a very interesting case study on "self-regulation and/or the law."...

Do We Need *Ethical* Internet Governance?

...There has been a relatively general consensus that ethics is necessary on the net when speaking about protection of minors and human dignity. The "Action plan on promoting safer use of the Internet" is part of a coherent set of policies at the European Union level to deal with illegal and harmful content on the Internet. Other international organisations, such as UNESCO, have also developed actions to meet this general preoccupation. But this is probably only the tip of the iceberg.

There are also other topics that could similarly be considered as urgent ethical issues which require our attention and determine our priorities. However, this may depend upon different factors such as the culture, the place where we are living and acting, the practices in the workplace, the motivation of people, the interests at stake, etc.

Topics to be Considered

SIG9.2.2 has engaged in an initial exercise whose result we present here. We have classified the different ethical issues into two categories, the first into two sub-categories. The first sub-category deals with issues related to the protection of the individual (citizen and consumer); the second with more collective issues or with the organisation of society. The second category is dedicated to topics which we feel have a more ethical content. This is why we have not only listed them but also given a short explanation....

Protection of the individual (citizen and consumer)

- questions related to risk, security, reliability, vulnerability, liability, etc. (for instance, in e-commerce)
- privacy, identification, authentication (consumer), confidentiality, encryption, key escrow, trusted third party, etc.
- protection of competition/preventing

monopolistic practices

• intellectual property rights, copyrights, rights on software, etc.

• computer crime/misuse

• advertisements on the Internet: providing the customer with legal, decent, honest and truthful (adequate, accurate, etc.) information.

Other questions (collective organisation of society)

• infrastructure ownership/monopoly…

• technological dreams, utopias, computer metaphors, etc. and all questions linked to awareness and education

• impact on work and organisations

• democracy/organisation of the civil society in accordance with the "common good"; role of governments, political aspects, public policies, telecommunication policies, public security and order, etc.

• self-regulation.

Topics With a More Ethical Content

• equity in the right of access ("universal service"). *The importance of making information universally accessible and affordable has been stressed since the first declaration on the US National Information Infrastructure. Access to information is crucial for education, public health, etc.; its accessibility to all will be a sign of democracy. The current situation cannot be considered as equitable.*

• questions linked to the respect of the dignity of the person (protection of minors and human dignity; illegal and harmful content on the Internet, paedophilia, racial hate, denial of crimes against humanity, incitement to murder, to drug trafficking, to riot). *Many national and international organisations are preoccupied with the deleterious influence that the Internet could have in such matters. The time has come to confront the different ethics and approaches to these issues, to harmonise the practices, and combat such scourges.*

• justice and social exclusion (mainly North–South, but also work distribution, etc.) *Social exclusion is unfortunately a concept which is still fully relevant when speaking about the Information Highway: there, we observe discrimination and exclusion of the elderly, gender imbalance, etc.…*

• respect for the interests and the rights of the individual. *The Universal Declaration of Human Rights includes rights that can have an application in the field of ICT: privacy, freedom of thought, free speech, freedom to seek, receive and impart information and ideas, etc. This makes sense when we know that there are still 45 countries where access to the Internet is more or less strictly controlled. This may also be called "censorship."…*

• free speech/censorship. *On the Internet, how to find an appropriate balance between free speech and censorship?…What is the relationship between censorship and controlling the access to the Internet?…One cannot avoid balancing freedom of speech with the concept of responsibility.*

• quality of life.…*Does technology lead to an imbalance in mind, body, spirit?…What standard of life do we expect, and to what extent (if any) does ICT affect those standards? In what ways might ICT enhance or diminish our self-worth?*

• right to information ("transparency"). *The role of information in the relationship between the citizen and government as well as in an effective market requires that clear and sufficient information be given to the citizen or to the consumer. It implies, on the one side, easy access to government records. It also implies, on the other — in e-commerce, for instance — relevant promotional material, clear prices, terms and conditions brought to the attention of the customer, definition of complaint procedures, etc.…*

• personal qualities (honesty, competence, etc.). *All professional codes of conduct emphasise the personal qualities…of the individuals involved in that occupation or profession.*

• non-abuse of power (appropriate use).…*The appropriate behaviour of authorities can be explored at several levels: the roles of the various international and federal authorities, including police and security forces, Internet service providers, computer service providers in educational establishments and in commercial organisations, and the activities of Internet users themselves. Debate is to be encouraged about…how all these parties should ideally act (lawfully, democratically, and in an egalitarian manner).*

• respect for cultural differences. *In the face of the supremacy of some cultures over others in many domains (for instance, in values conveyed by current filtering services), all countries and minority groups must be encouraged to make respect for cultural differences a major concern.*

• freedom of choice in the use or non-use of the Internet.…*Could we exist without communications media that employ the highest of high technology?…The sorting out of what works from what doesn't — and why, and if it is needed — [is important].*

• grounding "virtual" life in the physical realm. *Many people are concerned that the increasing importance of "virtual life" will have serious psychological and social implications.…*

Recommendations

1. SIG9.2.2 recommends to **IFIP** Member societies that they support an ethical approach when involved at the national or regional level on Internet governance policies, where key ethical issues will be defined by the specific concerns of particular nations.…SIG9.2.2 offers its services to act as a rapporteur and to share with other **IFIP** Members what has been done by **IFIP** Member societies and others, and what is still to be done.…

2. SIG9.2.2 endorses the following recommendations [made during a round table discussion at a recent TC9 conference].…

Let **IFIP**:

• act to mitigate unequal access to the Internet.

• use the Internet to develop a cross-cultural approach to the search for peace on earth.

• focus on children and families and their need to access the Internet to further their learning experiences.…

• organise an active debate with North America on some of the more controversial questions relating to the ethics of the Internet.

• develop a channel or open forum for the expression of an Asian/Confucian ethics of computing.

3. SIG9.2.2 highly recommends that **IFIP** Members [all categories] be present in the different constituencies (e.g., UNESCO and the European Commission)…where ethical principles would have to be considered, in order to promote these principles.

SIG9.2.2 solicits information concerning the handling of issues on ethics in **IFIP** Member societies, and it welcomes the continued participation of a wider audience to its initiatives. Anyone wishing to learn more about this special interest group and its activities, should visit the Group's Website at:

http://www.info.fundp.ac.be/~jbl/IFIP/sig922

or should contact:

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The monograph discussed in this article can be downloaded from the SIG9.2.2 Website: http://www.info.fundp.ac.be/~jbl/IFIP/cadresIFIP.html by clicking on SIG9.2.2 Ethics and Internet Governance. It is also available from **Prof. Berleur** (address given above) or the **IFIP** Secretariat. •

FUTURE **IFIP** MEETINGS

GENERAL ASSEMBLY AND COUNCIL (and related meetings)

Council	4–8 Mar 2001 (Sun.–Thurs.)	Naples, Italy
GA	Sep 2002 (in conjunction with **IFIP** Congress)	Montreal, QU, Canada
GA	Sep 2003	Bilbao, Spain (tentative)

TECHNICAL COMMITTEE AND WORKING GROUP MEETINGS

TC1	Jul 2001	Crete, Greece
WG1.1	Dec 2000	Hong Kong, China
WG1.2	7 Oct 2000	San Jose, CA, USA
WG1.3	30–31 Mar 2001	Genova, Italy
WG1.4	11–13 Dec 2000	Sydney, Australia
TC2	1–2 Jun 2001	San Miniato, Italy
WG2.1	15–19 Jan 2001	Cochabamba, Bolivia
	10–14 Sep 2001 (tentative)	Ameland, the Netherlands
WG2.2	25–29 Sep 2000	Oldenburg, Germany
WG2.3	8–12 Jan 2001	Santa Clara, CA, USA
WG2.4	Sep/Oct 2000	Germany
	Jun 2001	San Miniato, Italy
WG2.5	30 Sep–1 Oct 2000	Ottawa, ON, Canada
	26–27 May 2001	Amsterdam, the Netherlands
WG2.6	27–29 Nov 2000	Darmstadt, Germany
WG2.7/13.4	1–3 Dec 2000	Philadelphia, PA, USA
	11–14 May 2001	Toronto, ON, Canada
TC3	24–25 Nov 2000	Copenhagen, Denmark
	28 Jul–3 Aug 2001	Copenhagen, Denmark
WG3.1	30 Jul 2001	Copenhagen, Denmark
WG3.2	29 Jul 2001	Copenhagen, Denmark
WG3.3	30 Jul 2001	Copenhagen, Denmark
WG3.4	12 Sep 2000	Sunderland, UK
	29 Jul 2001	Copenhagen, Denmark
WG3.5	2 Aug 2001	Copenhagen, Denmark
WG3.6	9 Dec 2000	Vienna, Austria
	1 Aug 2001	Copenhagen, Denmark
WG3.7	3 Aug 2001	Copenhagen, Denmark
TC5	15 Sep 2000	Bordeaux, France
TC6	30–31 Mar 2001	Cape Town, South Africa
	Oct 2001	Zurich, Switzerland
WG6.1	10 Oct 2000	Pisa, Italy
WG6.6	5 Dec 2000	Austin, TX, USA
WG6.7	19 Sep 2000	Vienna, Austria
WG6.8	15 Sep 2000	Gdansk, Poland
WG6.10	4 Feb 2001	Vienna, Austria
TC7	23–27 Jul 2001	Trier, Germany
WG7.4	23–27 Jul 2001	Trier, Germany
WG7.5	Sep 2000	Ann Arbor, MI, USA
WG8.2	10 Dec 2000	Brisbane, Australia
	May/Jun 2001	Boise, ID, USA
WG8.8	20–22 Sep 2000	Bristol, UK
TC9	19–20 May 2001	Namur, Belgium, or London, UK
	24–25 Aug 2002	Montreal, QU, Canada
WG9.1	1 Dec 2000	New York, NY, USA
WG9.2	12–14 Jan 2001	Namur, Belgium
WG9.6	autumn, 2000	Vienna, Austria
TC13	Feb 2001	to be advised
	8 Jul 2001	Tokyo, Japan
WG13.4/2.7	see WG2.7 above	
WG13.5	2000	Boston, MA, USA

This information is furnished to the *Newsletter* by the Secretariat. Will TC and WG chairs kindly keep the Secretariat advised of the dates and locations of their future administrative meetings and also send a copy of the minutes to the Secretariat.

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

CALLS FOR PAPERS

Seventh **IFIP** World Conf. on **Computers in Education**
29 Jul–3 Aug 2001, Copenhagen, Denmark
papers due: 31 Oct 2000
contact: WCCE 2001, Dansk Dataforening
Store Kongensgade 59 A, DK-1264
Copenhagen K, Denmark
e-mail: WCCE2001@sek.ddf.dk

IFIP WG8.2 Conf. on **Realigning Research and Practice in IS Development: The Social and Organisational Perspective**
27–29 Jul 2001, Boise, Idaho, USA
submissions due: 1 Nov 2000
contact:
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Will event organizers please send calls for papers to both the **IFIP** Secretariat and the *Newsletter* editor. Note that calls cannot be listed in this column until the events have been approved by **IFIP**. •