INTERNATIONAL FEDERATION FOR SYSTEMS RESEARCH

NEWSLETTER

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From your Editors

Dear Readers!

Several important announcements can be found in this issue. One concerns EMCSR'94, the bi-annual conference of the ÖSGK, one of the founding members of IFSR. There you will be able to meet all your colleagues.

The second one concerns the Board Meeting of the IFSR in Vienna (in conjunction with EMCSR'94). The announcement appears on page 5.

One of the topics at this meeting will be the future of the IFSR-Newsletter - How can we make it even more useful to YOU: So come with new ideas! You are also invited to write to us. Regrettably up to now there has been very little feedback from our readership.

Therefore let me remind you again that this Newsletter could be a very convenient medium for communicating with the rest of the systems world. The turn-around time is one month on average! So it is a rather fast communication channel!

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HONORARIUM FOR AUTHORS

We pay a modest honorarium (about US-$ 40) for longer original contributions (not announcements or advertising). Authors are therefore requested to send us their bank connections along with their manuscripts.

FAX US A MESSAGE !

You can reach the Newsletter via Stephen Sokoloff's fax (number: +43-732-792657). Please don't fax late at night! Please call first to announce your fax. If nobody is at home, you can still send it, but you have to wait about half a minute before the transmission begins..

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Symposium in Honor of a Pioneering Systems Thinker -

Raoul H. Francé
(1874 Vienna - 1943 Budapest)

In commemoration of the 50th anniversary of Francé's death a meeting was held in the library of the University of Salzburg on Oct. 22-23, 1993. It was organized by Prof. Franz Pichler and Dr. Erna Aescht, both of Linz, Austria. One of the main speakers was René Roth.

René Roth (right) with his wife and Prof. F. Pichler (Photo: Sokoloff)

Raoul Francé's Heritage

a Nightmare for Specialists

Dr. Stephen Sokoloff

More than fifty years ago Raoul H. Francé died and it's no wonder that orthodox scientist are still trying to bury him. He is occasionally revered as a pioneer systems thinker and ecologist and as one of the fathers of bionics, but many of his ideas have been conveniently swept under the carpet. Today they seem even more out-of-step, more utopian, than they did during his lifetime. For example he envisioned a science that would serve as a major cultural force, and not just as the private domain of specialists. That's why he ultimately left research and ended up devoting himself to popular scientific writing - a decision that certainly didn't endear him to his colleagues.

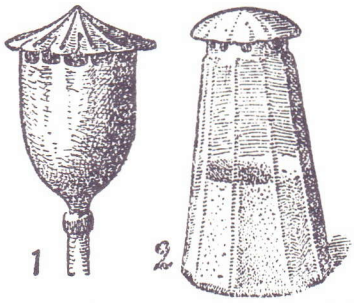
The science of decay [2]

Ever the unconventional thinker, Francé dedicated six years of his life to a field which others considered repugnant. In 1906, when he initiated his work, nothing was known about the microscopic denizens of the soil. Bacteria were regarded as nasty little creatures which inflict mankind with death and disease. Although it was assumed that some of them dwell in the earth beneath our feet, nobody knew - or wanted to find out - anything about them. The fertility of the soil was regarded as purely a matter of chemistry.

Until then, compost production had been a trial-and-error procedure. Francé's studies gave it a sound scientific foundation. The topsoil resources of our planet were and still are being squandered, but the new discoveries facilitated the conversion of garbage into organic fertilizer for humus rejuvenation. Besides, Francé warned at a time when there was no widespread interest in environmental protection that mankind, by destroying nature, was digging its own grave

Plants as inventors [3]

Another phase of his work began when he turned to nature for inspiration. The success of a project hinged on his being able to scatter grains uniformly over a surface, but none of the devices he tried out was able to accomplish the task to his satisfaction. Then he reflected that plants have been confronted with basically the same problem for hundreds of millions of years. After all, spores or seeds which land too close together compete with each other for nourishment, water, light and growing space. Francé decided to investigate how flowers deal with this constraint, an approach that enabled him to make a breakthrough. On the basis of the poppy capsule he designed a salt-shaker which did the job and was granted a patent. Thus the science of bionics was born and the world of living things manifested itself as a vast open-air museum of technical marvels.



Salt shaker ('2') and poppy seed capsule ('1') from [5]

The insect-eating pitcher plants of Asia were one of Francé's main examples of the technical accomplishements of plants. They pump liquid into their 'pitchers'.

Insect-eating pitcher plant (Borneo)
photo:Sokoloff

Not by bread alone [4]

The elucidation of isolated phenomena and processes is for many scientists the only goal. This was not the case for Francé the universalist thinker, the philosophical biologist. He wanted to determine the ultimate value of research.

Man does not live by bread alone, he decided. Scientific knowledge is no less essential than food, clothing or shelter, but it must be made generally comprehensible and brought into relationship with practical necessities. He encouraged his readers to enlist their "knowledge of the design of the natural and human world and its laws as a constant companion and advisor"[1]. Naive, poorly informed individuals are, after all, easily victimized, and they make decisions that have dire if not fatal consequences, for example concerning health matters or partnership problems.

Today, as in Francé's time, narrow specialization is the surest way to academic success. Francé chose to depart from this straight and narrow path for the greater benefit of mankind. That is one of the many reasons why he deserves to be remembered and to be honored.

[1] Francé, Raoul H., "Der Weg zu mir", Alfred Kröner Verlag, Leipzig 1927
[2] Francé R.H: "Das Edaphon", München 1913, new impression: Franckh'sche Verlagsbuchhandlung, Stuttgart 1959
[3] Francé R.H: "Die technischen Leistungen der Pflanzen", Veit&Co., Leipzig 1919
[4] Francé R.H.: "Das Buch des Lebens", Ullstein Verlag, Berlin 1924
[5] Francé R.H: "Die Pflanze als Erfinder", Kosmos Verlag, Stuttgart 1920

NEW TRENDS

Creating Intelligent Machines with Fuzzy Logic

Prof. Lofti A. Zadeh
University of California in Berkeley

(A conference speech held in St. Magdalena, Linz, Austria,summer 1993 on the occasion of a Conference on Fuzzy Logic, edited and summarized by Dr. Stephen Sokoloff).

Prof. L. Zadeh (left) receiving an award from Prof. R. Trappl at the EMCSR92 photo: Sokoloff

Don't waste your time trying to teach your computer how to park a car. Contemporary hardware-software systems can never learn to perform this task, since they are unable to cope with imprecision and uncertainty. Thanks to Lofti Zadeh and other visionary thinkers, however, the machines are now making rapid progress toward dealing with these factors.

Let's begin by discussing the term machine IQ. There's no precise definition for it yet, but we do have a vague feeling as to what we mean by it. The pace of progress toward enhancing the intelligence of machines began to pick up around 1990. I think that what happened is that up until then we had been, for the most part, using traditional computing, which is here referred to as hard computing. Around the beginning of the current decade, however, we began to use what might be called soft computing. In the former, rigor and precision are

emphasized; one tries to minimize imprecision and uncertainty. In the latter, in contrast, we take the position that the real world is pervaded by imprecision and uncertainty, and we attempt to attain a tolerance for these in order to achieve tractability, robustness, high machine IQ, lower costs, and economy of communication.

Computer languages are maximally unambigous, but this is not the case with human languages, which assume a shared knowledge of context. For example, we say, "Meet me at five", without specifying whether 5 AM or 5 PM is meant. That is why machines are often baffled by translation tasks.

The principle constituents of soft computing are fuzzy logic, neural network theory and probabilistic reasoning. The latter is concerned not only with probabilities but also with genetic algorithms, belief networks, etc. Soft computing therefore resembles a kind of a partnership in which various fields are involved. Fuzzy logic, for example, contributes a methodfor dealing with imprecision.

There are some problems that can be very effectively solved with just one of the above techniques, but for others it is advantageous to employ a combination of them. Especially the utilization of fuzzy logic together with neural networks is becoming increasingly important. Particularly in Japan many neural-fuzzy consumer products are beginning to appear on the market.

Fuzzy logic is a term that has different meanings. It was introduced by Lofti Zadeh in the early sixties [1]. In the narrow sense it is the logic of approximate reasoning. In the broader sense, however, it is basically synonymous with fuzzy set theory, which includes fuzzy sets, fuzzy relations, fuzzy rules, etc. You can take practically any field and "fuzzify" it. Today the term "fuzzy logic" is mostly used in this latter, wider, manner.

By "fuzzifying" one gains greater generality, but one also exploits the tolerance for a lack of precision. It becomes apparent that humans can solve many problems because they are not precisely formulated. One example is the parking of a car, which actually involves three components: 1) finding a parking space, 2) deciding whether to park there (it might be too narrow or too far away from your destination), and 3) maneuvering the car into it. Humans can accomplish these tasks because they are not exactly formulated, but machines cannot cope with them because of their inability to exploit the tolerance for imprecision. In the case of the first two, fuzzy logic solutions must be employed. These are basically human responses, expressed in the form of "if - then" rules. The third is reasonably well defined, however, and other techniques could conceivibly also be used to tackle it. Nevertheless that would involve considerable difficulties because the problem has a high level of generality - it involves too many parameters. For that reason only the fuzzy logic approach has heretofore been attempted.

Linguistic variables play an important role in fuzzy logic; an entire range of values is thereby given a common label (eg. "small", "medium", "large"). In this way, data compression is achieved, since there are considerably fewer ranges than precise values.

It is not possible within the framework of our newsletter to go into greater detail. The intention of this report is merely to convey an idea of what fuzzy logic is basically about and to give an impression of what can be accomplished by using it. Its applications are becoming increasingly important in industrial control processes and consumer products. One should be aware of the progress in this field.

[1] Zadeh L.A.: "Fuzzy sets. Information and Control " vol. 8 (1965) pp. 338-353.

The newsletter would like to thank Prof Dr. Erich P. Klement, organizer of the conference in Linz.

What is new in "SYSTEMS RESEARCH"?

SYSTEMS RESEARCH is the official journal of the IFSR. We will periodically report about interesting articles which appear in it (Subscription: Thesis Publishers, P.O.Box 14791, 1001 LG Amsterdam, The Netherlands.

Volume 10, Number 4, 1993 contains:

Conrad M.: "Adaptability Theory as a Guide for Interfacing Computers and Human Society".

Badalamenti A.F. et. al.:"The Non-Random Nature of Communication in Psychotherapy".

De Green K.B.: "Will there be a Fifth Kondratiev Cycle/Structure?"

Paritsis N.C.: "Evolution Learning and Progress of Science: an Increase in Variety and Order".

Davydov A.A.: "Intermedity - Basic State of Social Systems?"

Conference Reports

5th Int. Conversation on Comprehensive Systems Design of Education

Monterey Peninsula, California, Nov. 14-19, 1993

At the meeting, which was organized by ISI, 46 scholars from seven countries discussed the following topics: the Processes of Systems Design, Philosophical/Theoretical Foundations of Systems Design, the Ethics of Design, Building a Design Culture and Designing Conversations.

News from the Bookmarket

Practical Philosophy and Action Theory

Edited by: Airaksinen T., Gasparski W.W.

319 pp., April 1993

Publisher: Transaction, New Brunswick, New Jersey 08903,ISBN 1-56000-094-5, $49.95

Conference Announcements

For contact address, etc,. see Calendar of Events.

12th European Meeting on Cybernetics and Systems Research (EMCSR 94)

April 5-8, 1994, Vienna, Austria

A shift from abstract, mathematical contributions to psychological, biological and ecological applications can be seen. A few new topics have been added, and besides interest in cybernetics and systems research is growing.

A total of 238 papers were accepted, a 10% increase over the previous conference. The authors come from 42 different countries. The following symposia will be offered:

- General Systems Methodology
- Advances in Mathematical Systems Theory
- Fuzzy Sets, Approximate Reasoning
- Designing and Systems and their Education
- Humanity, Architecture, Conceptualization
- Biocybernetics and Mathematical Biology
- Systems and Ecology
- Cybernetics and Informatics in Medicine
- Cybernetics of Socio-Economic Systems
- Systems, Management and Organization
- Cybernetics of Country Development
- Communication and Computers
- Intelligent Autonomous Systems
- Cybernetic Principles of Knowledge Development
- Cybernetics, Systems and Psychotherapy
- Artificial Neural Networks and Adaptive Systems
- Artificial Intelligence and Cognitive Science

Proceedings: R. Trappl (ed.): "Cybernetics and Systems'94", World Scientific Publ. Company, Singapore 1994 (2 volumes, 191 pp.)

3rd International Conference on the Software Process (ICSP3):

Oct 10-11, 1994,

Hyatt Regency, Reston, Virginia, USA

Software Process Models provide a basis for guiding the production of large, complex software artifacts and for improving such processes. Technology to support the effective application of process models requires foundational contributions in areas like process experimentation, interplay between technical and organizational issues, understanding of differences and similarities between software and non-software manufacturing processes.

Specific emphasis will be placed on:

- process description formalisms
- process models and programs
- measurement and experiment paradigms
- emipirical and assessment studies
- process support mechanisms
- relationships between software and non-software processes

Systems Engineering of Computer Based Systems

May 24-27, 1994, Stockholm, Sweden

Advances in computers and network technology have led to a proliferation of complex systems with distributed processing, data bases and heterogeneous components. The processing components can themselves comprise a system or they may be embedded in a physical system. Both the encompassing system and the processing system are designated as Computer Based Systems.

The IEEE Task Force on Engineering of Computer Based Systems (ECBS) has come to the conclusion that a new discipline is needed at the systems engineering level.

38th Annual Meeting of the Int. Society for the Systems Sciences

June 14-19, 1994, Monterey Peninsula, Calif.

The combination of exploding population and rapidly changing technology is creating a smaller, more complex world. We perceive 7 interrelated imperatives :

- achieving better balance between near ('me-now') and far in both space and time.
- achieving a better balance between individual and collective, between rights and responsibilities.
- ridding ourselves of obsolete assumptions.
- recognizing that 'more is less'.
- design of coordination-intensive structures.
- reinvigorating science and technology.
- managing increasingly powerful technologies.

ICSI'94 - Integration of Society for the Social, Economical, Scientific and Technological Development

July 30 - Aug 6, 1994, Sao Paulo City, Brazil

This conference focuses on the integraton of technologies, processes and systems, and the development of mechanisms and tools which enable solutions to complex multi-disciplinary problems in agriculture, telecommunications, housing, financing and business, public services,education and software. The conference will provide a forum for sharing novel research and development results.

From the Treasurer/Secretary

Dear Members of the IFSR!

At two-year intervals the IFSR holds its Board Meeting in parallel with the EMCSR-Conference. I would like to encourage all our members to send their representatives (each member organisation may send 2) to this meeting. It is our intention to increase the effectiveness of the IFSR - but we need your help. You will find the details about the meeting in the next box.

We will discuss all the pending issues, the future of our publications and new activities of the IFSR.

One important event will be the election of the officers of the IFSR for the next 2-year period. We are looking for initiative candidates!

Looking forward to seeing you in Vienna,
yours sincerely

Gerhard Chroust

INVITATION

The next
BOARD Meeting of the IFSR

will take place on
April 7, 1994, 17.00-19.00
at the Esterhazy-Keller, Vienna 1.,Haarhof 1
(walking distance from the University)

Agenda:
1. Opening
2. Minutes of Board Meeting, April 20, 1992
3. Minutes of the Meeting, April 23, 1992
4. Report of the President
5. Report of the Secretary/Treasurer
6. IFSR-Publications
   a. 'IFSR-Newsletter'
   b. 'System Research'
   c. IFSR brochure
   d. IFSR Book Series
7. IFSR supported events
8. Admission to membership
9. Election of Officers
10. Making IFSR more effective (brainstorming)
11. Other Business

A separate invitation will be sent to all members.

Our Members:

At irregular intervals we present IFSR members.

Systemgroep Nederland

Societies such as the Systeemgroep Nederland (Dutch Systems Group) lead a somewhat humdrum life. The real actors are its members. It is they who are teaching systems, thinking systems, developing new ideas, participating in workshops, etc. The organisation merely tries to help such activities become more effective. Still, it is a privilege to have been invited by the editors of the Newsletter to report on what the Systeemgroup is doing, presumably as part of a wider series of reports on the various member organisations of the IFSR.

The Systeemgroep was established in 1970. There was a lot of unrest in the academic world at that time; the Paris uprising occurred then, and so did the occupation of the Maagdenhuis in Amsterdam. Students and staff were demanding more influence on the

curriculum and on research. They had become aware of the drawbacks of established scientific customs and procedures. In short, the time was ripe for an initiative that would explicitly establish contacts between various disciplines. Among the initiators were Prof. Ab Hanken, Prof. Bob van Rootselaar and Prof. Aristide Lindenmayer.

Times have now become in some respects less exciting. Systems thinking and systems science have become staple items in the programs of Dutch Universities. And although some of the older members still maintain contacts, in most disciplines many of them have established their own groups - allowing some fragmentation to reappear. An example is the Nederlands Genootschap voor Informatica (the Dutch Group for Computer Science (Informatics), which did attract some of the more mathematically minded systems thinkers and the Nederlandse Vereniging voor Kunstmatige Intelligentie (Dutch Society for Artificial Intelligence). Relations between the groups are quite supportive, however.

Over the years the Systeemgroep has continued to organize a number of activities for its members. One is the biennial meeting on 'Problems of ...', which is sandwiched in between the EMCSRs, e.g. 'Problems of Context' (1979), 'Problems of levels and Boundaries' (1981), and more recently, 'Problems of support, Survival and Culture' (1991) and 'Problems of (In)variants and Values' (1993). Another is a working group that studies 'strange' events in the social sciences - such as the effects of re-entry of results of research, unpredictability, the 'talking back' of the subjects who participate in experiments, etc.

The Systeemgroep publishes a journal - Systemica - in which papers from the conferences are presented. A quite recent event was a meeting convened to discuss 'constructive realism' (June 1993). The Systeemgroep is a loyal member of the International Federation for Systems Research; it provides all of its members with subscriptions to Systems Research. This is part of its present policy: helping them to keep abreast of new developments and of currents discussions. Systems thinking is extremely widespread in the Netherlands, and is possibly more popular there than in any other country.

The Systeemgroep has not endeavoured to professionalise its members as system thinkers, and to become a political force in Dutch Academia. This was the stated policy of the Board of the Systeemgroep from the beginning. Its main aim was to establish a forum for systems thinkers from all disciplines, to help people become aware of the many interactive forces in which systems thrive. And to some extent it has been successful.

But one should never sleep! In a recent discussion a professor of the University of Amsterdam stated that he understood systems thinking to be just a 'point of view'. He appeared not yet to be aware of the fact that the standard methodology (that of dealing with 'things', not 'systems') also represents a mere 'point of view', and, in fact, a very restricted one.

At present the Board of the Systeemgroep consists of: Prof. Dr. Gerard de Zeeuw (President), Dr. Felix Geyer (Secretary/ Treasurer), Prof. Dr. Henk Koppelaar (Managing Editor Systems Research), Prof. Dr.Ir. Gerrit Broekstra , Dr. Karel Soudijn , Prof.Ir. Ger Honderd , Prof. Dr. Hans van der Zouwen .

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Chairman's address: Grote Bickersstraat 72, 1013 KS Amsterdam. Tel. +31 20 5251250; fax +31 20 6270858.

Calender of Events

Title	Date and Place	Further Information
Abbreviations: CfP, CfA: Call f.Papers/Abstract, FP: Final Paper due, <No. nn>: more details in issue.nn		
12th European Meeting on Cybernetics and Systems Research, Vienna <No. 29, 32>	Apr. 5-8, 1994, Vienna, Austria *CfP: expired*	Robert Trappl, Dept.of Med.Cybernetics & AI Univ. of Vienna, Freyung 6/2, A-1010 Vienna, Austria tel: +43-1-53532810, fax: +43-1-5320652 E-mail: sec@ai.univie.ac.at
CAST'94 , 4th Int. Workshop on Computer Aided Systems Technology<No. 30>	May 9-13, 1994 Ottawa, Canada *CfP: expired*	Tuncer I. Ören, Univ. Ottawa, Computer Science Dept. Ottawa, On., Canada K1N 6N5, tel: + (613) 564-5068, fax (613) 564-7089, email: oren@csi.uottawa.ca
KR'94, 4th Int. Conference on Principles of Knowledge Respresentation and Reasoning < No.30>	May 24-27, 1994 Bonn, Germany *FP: Feb. 28, 1994*	John Doyle, Lab. for Computer Science, 545 Technology Square, Cambridge, MA 02139, USA, tel: +1(617)253-3512, email: doyle@lcs.mit.edu

Systems Engineering of Computer Based Systems (Tutorial and Workshop)<No. 32>	May 24-27, 1994, Stockholm *CfP: Feb 15, 1994* *Pos. Papers: March15, 1994:*	G. Schweizer, Univ. Karlsruhe (IMA), Haid-und-Neu-Str. 7-9, D-76133 Karlsruhe, Germany, tel:+49 721 6084378, fax +49 721 661732, email: mvoss@ira.uka.de
CAiSE*94, 6th Conf. on Advanced Information Systems Engineering<No 31>	June 6-10, 1994, Utrecht The Netherlands *CfP:expired*	Gerard M. Wijers, SW Engineering Res. Centre, PO box 424, 3500 AK UTRECHT, The Netherlands, tel: +31-30-545-412, fax: -948, email: gwijers@serc.nl
System Integration'94	June 7, 1994, Prague, Czech Republic *CfP: expiredi*	Hana Hurkova, Dept. of IT, Prague University of Economics, W. Churchill Squ. 4, 130 67 Prague 3, Czech Republic, tel: (42)-2-242-22-101, fax: -605, email: hurkova@vse.cz
38th Annual Meeting of the Int. Society for the Systems Sciences: New Systems Thinking and Action for a New Century <No.32>	June 14-19, 1994, Monterey Calif. *CfP: March 15, 1994*	Linda Peeno, ISSS, PO Box 6808, Louisville KY 40206-0808, tel+fax: (502) 899-3332
Interdisciplinary Conf. on Neural Modelling <No. 31>	June 20-24, 1994 Lyon, France *CfA:expired*	Mdm Claire Rigaud-Bully, AIDRI Bat. 101, Univ. Claude Bernard, Lyon 1, 43 Bd du 11 nov. 1918, F-69622 Villeurbanne Cedex tel: 7244-8000-34, fax: 72 44 0573, email:AIDRI @CISM.Univ-Lyon1.France
5th Int. Conf. on Information Processing and Management of Uncertainty in Knowledge-based Systems (IPMU-Conference)	July 4-8, 1994, Paris *CfP: expired*	IPMU'94, Bernadette Bouchon-Meunier, LAFORIA-IBP, Univeriste Paris VI, Boite 169, 4 place Jussieu , F-75252 Paris Cedex 05, France, email: IPMU@LAFORIA.ibp.fr
XIIIth Congress of Sociology : Sociocybernetics and Social Systems Theories.	July 18-23, 1994, Bielefeld, Germany	F. Parra-Luna, Facultad de Ciencias Politicas y Sociologia, Campus de Somosaguas, E-28023 Madrid, Spain
ICSI-94, The Integration of Society for the Social, Economical, Scientific and Technological Development <No.32>	July 30-Aug. 6, 1994. Sao Paulo City, Brazil *CfP:expired*	Prof.P.A.Ng, IIISis-USA Office, New Jersey Inst. of Technology, University Heights, Newark, NJ 07102, USA tel:(201) 596-3387, fax:-5777, email:ng_p@vienna.njit.edu
Human Science Research: A Systemic Approach	July 31- Aug 6, 1994, Castel Ivano, Strigno, Italy	Prof. Arne Collen, P.O. box 4550, Walnut Creek, CA 94596, USA,phos/fax: 510-930-9779
ECAI-94: 11th Europ. Conf. on Artificial Intelligence <No. 32>	Aug, 8-12, 1994, Amsterdam *CfP: expired*	Erasmus Forum, PO box 1738, NL-3000 DR Rotterdam, tel: +31-10 4082302, fax: +31-10 4530784, email: M.M.deLeeuw@apv.oos.eur.nl
Human Science Research: Methods and Models	Aug. 21-27, 1994, Mullsjön Friluftsgard, Mullsjö, Sweden	Prof. Arne Collen, P.O. box 4550, Walnut Creek, CA 94596, USA,phos/fax: 510-930-9779
ISD'94 - 4th Int. Conference on Information Systems Development	Sept 20-22, 1994, Bled, Slovenia *CfP: March 20, 1994*	Dr. J. Zupancic, Univ. of Maribor, Presernova 11, 64000 Kranj, Slovenia, tel: 386 (64) 222-804, fax -386 (64) 221-424, email: ISD@FOV.UNI-MB.SI
Systems Thinking and Progressive Change	Sept 28-30, 1994, Cape Town, Sourth Africa *CfA: March 1, FP:June 1*	Prof. Tom Ryan, School of Engineering Mgt, University of Cape Town, Private Bag, RONDEBOSCH 7700, Sourth Africa tel: +27-21 650 2600, email: tbr@cerecam.uct.ac.za
ICSP3: 3rd Int. Conf. on the Sofware Process: Applying Software Process <No.32>	Oct. 10-11, 1994, Reston, Virgina, USA *CfP: March 1, 1994*	Dewayne E. Perry, AT&T Bell Laboratories, 600 Mountain Avenue, Murray Hill NJ 07974 USA, email: dep@research.att.com
CON'94, Connectivity 1994: Workflow Management - Challenges, Paradigms and Products	Oct 19-21, 1994, Hagenberg (Linz), Austria *CfP: Apr 15, 1994*	Prof. Gerhard CHROUST, Kepler University Linz, A-4040 Linz, tel: +43-732-2468-865, fax: -878, email: CHROUST@SEA.UNI-LINZ.AC.AT
IDIM'94, 2nd Interdisziplinary Information Management Talks 1994	Nov. 9-11, 1994, Kubova Hut, Czech Republic *CfA: May 6, FP: Sept 13, 1994*	Prof. Gerhard CHROUST, Kepler University Linz, A-4040 Linz, tel: +43-732-2468-865, fax: -878, email: CHROUST@SEA.UNI-LINZ.AC.AT
STIQE'94: 2nd Int. Meeting on Systems Thinking, Innovation, Quality and Entrepreneurship	Dec. 1994, Maribor, Slovenia	M. Rebernik, EPF, Univerza di Mariboru -62000 Maribor, Slovenia, tel.: 062-28-261, fax 062-27056