



**INTERNATIONAL
FEDERATION
FOR
SYSTEMS
RESEARCH**

NEWSLETTER

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From your Editors

Dear Readers,

We would first like to apologize for the incorrect e-mail address in several issues of the Newsletter. It has now been revised.

At its biennial meeting on April 7, 1994, the IFSR board made some far-reaching decisions in respect to the Newsletter. In the future, only a small number will be printed centrally in Austria. Our larger member organizations will instead receive a master copy by airmail and will be responsible for copying it. Of course this new distribution scheme, which is intended to slash our mailing costs and to substantially reduce overseas delivery times, does require preparatory work. Therefore it will probably not be implemented until October. As soon as it is in effect, we will start with our next step - putting out an e-mail version of the Newsletter.

In this edition you can read about Bela H. Banathy, the new president of the IFSR. He and the other recently elected officers have already worked out an ambitious set of objectives, as you can see from the letter on page 2. In these plans the Newsletter will play a prominent role; please read it and contribute to it! The calendar of events provides you with an easy means of publicizing your conferences and seminars. We will be glad to include any relevant announcements that we receive on time - that means at least three months before the meeting! Of course we would also appreciate post-conference reports. They shouldn't just mention who was there, but should summarize interesting ideas and developments. The writer is free to take a subjective point of view and report on the insights which were most important for him personally. Please take the time to share your experiences with us so that we can convey them to your colleagues.

Looking forward to an intensified co-operation,

Gerhard Chroust, Stephen Sokoloff
Systemtechnik und Automation
Kepler University Linz, 4040 Linz, Austria

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New Officers of the IFSR



Prof. Bela H. Banathy, president of the IFSR

On April 7, 1994, the IFSR held its bi-annual Board Meeting in Vienna. 12 of the 21 member societies were represented. The Board elected a new Executive Committee:

President: **Bela H. Banathy**,
International Systems Institute,
25781 Morse Drive, CARMEL, CA. 93923,
USA tel/fax: (408) 625-3178,
email: BelaSR@AOL.COM

Vice-President: **Michael C. Jackson**,
United Kingdom Systems Society,
University of Humberside,
Cottingham Road, Hull HU6 7RT, U.K:
tel: +(44) 482-449622, fax: +(44) 482-440856
(his biography will appear in the next issue)

Secretary/Treasurer: **Gerhard Chroust**,
Austrian Society for Cybernetic Studies, Kepler
Univ. Linz, 4040 Linz, Austria.
tel: +43-732-2468-866, fax: -878
email: CHROUST@SEA.UNI-LINZ.AC.AT

Bela H. Banathy

Bela H. Banathy is a researcher, educator, and author. A graduate of the Hungarian Royal Ludovika Academy, he has a masters degree in counseling psychology with post-graduate work in psycholinguistics at San José State University and a doctorate in education with a minor in linguistics from the University of California, Berkeley.

Until his recent retirement, he was Senior Research Director and Associate Laboratory Director at the Far West Laboratory for Research and Development, where he directed some fifty R & D programs and projects for two decades. During the 60s and 70s, he taught graduate courses and seminars at San José State University and the University of California, Berkeley. In the 80s he developed and directed the systems science program of the Saybrook Graduate School, where he is now Professor Emeritus. During the 50s he was on the faculty of the US Government foreign language program in Monterey, California, as professor and Chairman of the Hungarian Department, and in the 60s he was Dean of the East Europe and Middle East Division.

He is President of the International Systems Institute (ISI), a non-profit, public benefit scientific and educational corporation. A Past-President of the International Society for the Systems Sciences, he is now on the Board of Trustees of that society, and chairs its Commission on Education. Since 1981 he has served on the Board of Directors of the International Federation of Systems Research, and he is now President of the Federation. He is a founding member of the Evolutionary Research Group and a Fellow at the European Academy for Evolutionary Studies.

He is on the editorial boards of three international journals: Systems Research, World Futures and Systems Practice, and is a regular columnist of Education Technology. Over the last three decades he has chaired numerous conferences of various national and international professional societies. Since 1982, he has coordinated over twenty international systems research conferences held in eight countries, including the 1994 Fuschl conversation.

He has authored several books, numerous chapters in books, and over one hundred articles and research reports. Over the years, he has edited a number of compendia and conference proceedings and special issues of journals. During the last decade, he has focussed his research and publications on the comprehensive design of social and educational systems.

A letter from IFSR's

Executive Committee

As the newly elected Executive Committee (EC) of IFSR, it is our privilege to offer our services to our member organizations and to the Federation. We pledge to the Federation and the international systems community our commitment to working with you in order to advance the cybernetic and systems sciences and to promote systems applications in the service of humanity. It is our hope and expectation that all member organizations will join us in developing ideas, arrangements and programs that will bring to life the purposes of the Federation.

We hold that IFSR should be more than the sum of its member organizations. It can become more as a result of the interaction and integration of our member organizations in a joint effort to carry out tasks that serve each member, serve the Federation, and make contributions to the larger systems community. Based on:

(1) the deliberations at the meeting of the IFSR Board on the 7th of April,

(2) conversations among representatives of member organizations, and

3) discussions/correspondence among members of the Executive Committee; it has been concluded that the following tasks now confront us:

- The continuation of the publication of Systems Research, the journal of the Federation. This is a primary concern of the EC, and Mike Jackson will assume the leadership in our effort to work out an effective plan of action. Ideas and recommendations of member organizations are invited and should be shared with Mike.

- The continuing publication of the IFSR Newsletter, including: (1) annual and periodic reports on activities/meetings of member organizations, (2) information on meetings of the systems community, (3) brief research/program reports, and (4) reviews of systems publications.

Gerhard Chroust will continue to provide leadership in the management of the Newsletter.

- **Membership.** Tasks include: keeping full records of member organizations, inviting new members and considering new applications. Gerhard Chroust and Bela Banathy are attending to these tasks. Recommendations for invitations of new members are welcomed from our member organizations.

- The encouragement of research in the cybernetic and systems sciences. To this end Mike Jackson will gather, coordinate, and distribute information about active research groups in the field. Our aim is to increase communication between the research groups and make joint applications for research funding to bodies such as the European Union.

- Assistance in program development for the '96 European Meeting on Cybernetics and Systems Research. At the Board meeting we received an invitation from Robert Trappl for the development of a half-day presentation on the "State of the Federation." This would involve reports from all the member organizations. The EC will coordinate this program.

- The Fuschl Conversations are sponsored and supported by the IFSR. A brief report on the '94 Conversation is presented in this Newsletter.

A comprehensive report will soon be available and will be mailed out to our member organizations this fall. A special issue of *Systems Research* will be developed from papers selected from the proceedings of the '94 Conversation. Bela Banathy is coordinating this program. Invitations for the '96 Conversation will be issued early in 1995.

- Task-focused purposeful interaction among our member organizations could forge a "living system" out of the Federation. Task-forces could be organized from representatives of our members, working on such issues as: program development, research and development, publications, electronic communication, systems education, resources development, membership development, and some other tasks. The EC will coordinate this effort. Your comments and suggestions are invited.

In attending to the tasks described here we must all engage in intensive cooperation, carry out joint work, and share our resources. As members of the Executive Committee, we are dedicated to accomplishing these tasks and hope that all of you will accept the challenge.

B. H. Banathy M. J. Jackson G. Chroust

NEW TRENDS

We shouldn't leave it to the experts, says Bela H. Banathy, president of the IFSR

Designing our Future

Prof. Bela H. Banathy
International Systems Institute
25781 Morse Drive
Carmel, Ca. 93923, USA

We have a choice!

We can continue to be design illiterates. We can go on accepting design decisions made by the experts, living in ugly and crowded blockhouses, driving dangerous, polluting cars, using shoddy goods, working in unsafe factories, destroying nature in order to build even more freeways and suffering from outdated educational designs. Or we can opt for the alternative of bringing about a change in society by acquiring literacy in design and assuming responsibility for planning the

future. After all it is the users, the people in the system, who are the real experts.

What do we mean by design culture?

In the course of societal evolution three different cultures have emerged: the humanities, the sciences and design. The humanities are concerned with the portrayal of human experience, science involves the study and description of our surroundings, and design means the conscious creation of new things and systems - the implementation of change. Of

course there is a lively interaction between these three domains; design, for example, makes use of the knowledge and insights gained in both the sciences and the humanities. I would like to suggest that these three cultures jointly constitute the wholeness of human intellectual and creative experience.

Competence in design

General education is nowadays almost exclusively focussed on attaining literacy in the sciences and the humanities. There is hardly any awareness of the need for literacy and competence in design. The challenge is therefore to create and develop resources, arrangements and programs for providing children, adolescents and the general public with designing skills. A mere awareness, a mere readiness for change, can after all only be the first step. Learning how to design is a prerequisite for bringing about a permanent, positive societal transformation.

Literature

Banathy, B H.: "Building a Design Culture", in Trappl R. (ed.): "Cybernetics and Systems '94", World Scientific Publishing Co., Singapore, New Jersey, London, Hong Kong, 1994.

Banathy, B H.: "The Prime Imperative - Building a Design Culture", Educational Technology, June 1992.

(From a talk given at the EMCSR '94, condensed and edited by Stephen Sokoloff).

Conference Report

Twelfth European Meeting on Cybernetics and Systems Research - EMCSR '94

April 5-8, 1994, Vienna

Interest in cybernetics and systems research is continuing to grow. For EMCSR'94, 295 draft papers were submitted. 238 of them were accepted for presentation in one of the 17 symposia and for publication in the proceedings, an increase of more than 10% over the last conference. The 408 authors of these 238 papers stem from 42 countries on all continents: 306 from Europe (52 of them from Austria), 59 from North America, 7 from South America, 28 from Asia, 1 from Africa and 7 from Australia.

The number of theoretical papers has slightly decreased and a shift in the focus of research from abstract mathematical themes to psychological, biological and ecological applications can be discerned. This probably reflects the general trend in our present cultural development.

Therefore the conference provided a considerable spectrum of the ongoing research in the whole world.

The Best Paper Awards

The award for the best paper of the whole conference (from the symposium "Fuzzy Systems, Approximate Reasoning and Knowledge-Based Systems") was given to B. De Baets and E. Kerre, University of Ghent, Belgium, for their contribution, "A Representation of Solution Sets of Fuzzy Relational Equations". The authors introduce two new types of special subsets of partially ordered sets (lattices): root systems and crowns. They use them to represent the solution sets of both classical and new equations.

Proceedings:

Trappl R. (ed.): "Cybernetics and Systems '94", World Scientific Publishing Co., Singapore, New Jersey, London, Hong Kong, 1994.

The 94 Fuschl Conversation

Fuschl, Austria, April 10-15

Systems scholars and practitioners, representing eleven countries, spent five days in intensive structured conversation on the shores of Lake Fuschl in Fuschl am See, Austria. The Conversation was supported by a grant from IFSR. The 94 event was the seventh in the series of bi-annual conversations. Since the first meeting in 1982, we have been addressing the following question: How can we apply the insights gained from systems research to the improvement of the human condition and to global societal learning? This year the research groups worked on four themes: the design of systems of learning and human development, approaches to participative systems design, systems education, societal evolution and development. The summary of the findings of the 94 Conversation will be presented in an upcoming IFSR Newsletter and the proceedings will be mailed to member organizations of the Federation. The next Conversation is scheduled for the days immediately following the 96 European Meeting on Cybernetics and Systems Research.

News from the Bookmarket

*IFSR International Series on
Systems Science and Engineering*
(Series Editor: George J. Klir)
volume 8

The Alternative Mathematical Model of Linguistic Semantics and Pragmatics

Vilem Novak
Czechoslovak Academy of Sciences, Mining
Institute, Ostrava-Poruba



In this original monograph, the author utilizes the functional generative description of natural language to develop a new approach to the mathematical modeling of the pragmatics and semantics of natural language. The author includes an introduction to the alternative set theory that provides the basis for this alternative mathematical model, emphasizing the phenomenon of vagueness. Based on the discussions of an internationally respected group of linguists and logicians, this text contains a wealth of innovative ideas about mathematically expressing the semantics of words, phrases, and sentences.

ISBN 0-306-44269-8, \$65.00
(\$78.00 outside USA & Canada)
Plenum Publishing Corp.,
233 Sprint St., New York, NY 10013-1578
tel: (212) 620-8000; fax(212) 463-0742

What is new in "SYSTEMS RESEARCH"?

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

Vol. 10, No. 3, 1993:
Special Edition in honour of Gordon Pask.
This special edition contains 24 papers of
leading scientists, all related to Gordon Pask.

Gordon PASK

photo: Sokoloff



The achievement of Gordon Pask, who was born in 1928 and retired last year, cannot all be listed in this brief account. Because of his recognition and development of the conversational paradigm (see below), he is rightly considered to be one of the forefathers of "Second-order Cybernetics". He is also one of the forefathers of "First-order Cybernetics".

The mainstay of Gordon Pask's working life has been the research organisation "System Research (SR)" which has obtained many important research and implementation contracts from the US military, the British Ministry of Defense, the British Home Office, The British Road Research Laboratory, etc. Pask also

developed and implemented many ideas that are now common such as the self-adaptive machine SAKI (Self Adaptive Keyboard Instructor). He is Professor at Brunel University and the University of Amsterdam. His bibliography includes more than 250 publications and projects - and he is still going strong!

Gordon Pask's Conversation Theory

We can gain a better understanding of Pask's life work by briefly considering one of his most important theories. It deals with learning and, therefore, also with teaching. Pask's initial premise is that humans are machines for (with the purpose of) learning. He maintains that communication in a meaningful learning environment (i.e. the world we design and/or find ourselves in) can only be achieved by means of conversation [circular, feedback, (computing) matching responses, agreement - including the vital agreement to disagree] with personal and personally generated meanings and understandings - and, hence, knowledge; and not by means of coding (linear, programmed response, binary logic) with its tendency towards universal and absolute meanings. In a conversation, an understanding of a topic is presented to another "p-individual" (the one that does the learning and knowing), that returns its understanding of (what is presumed to be) the same topic so that the proposer can confirm the similarity of the two understandings. A conversation is circular. It is a relativistic means of communicating relativistic (and personal) understandings.

In this personal, relativistic world, testing of what learners know is still possible. The means for doing this include conversational explanation (to another human) or explicit demonstration (to a machine). In the original CT machine environment "CASTE" (Course Assembly System and Tutorial Environment), testing was carried out on a "modelling facility". This allowed models that exhibited understandings of topics to be constructed by hard-wiring them.

(Strongly edited version of :R. Glanville: Gordon Pask, A Skeleton for an Unofficial Biography .

Systems Research, vol 10, No.3 contains contributions of the following authors, all related to Gordon Pask's work:

R. Glanville; S. Beer; P. Cariani; H. von Foerster; J. H. Frazer; R. Glanville; D. Gregory; A. Hayes and G. Davidson; R. Llewellyn-Jones; A. Locker; L. Löfgren; G. McIntyre Boyd;

R. McKinnon-Wood; M. and P. Medina-Martins; P. Pangaro; E. Pask; A. Pedretti; C. Price; B. Scott; L. Thomas and S. Harri-Augstein; G. de Zeeuw; J. Zeidner; R. R. Choudbury

Conference Announcements

For contact address, etc. see Calendar of Events.

CON'94: Workflow Management

Oct. 19-21, 1994, Hagenberg/Linz, Austria

Workflow aims at defining the flow of documents by formal means and using a run-time system to support and control the flow of such documents in the office. The goal is to drastically improve the productivity, the execution speed and the transparency of office work, especially in large organizations.

Two tutorials (Oct. 19) will augment the scientific program:

Active Database Systems

Prof. Dr. Klaus R. Dittrich

Database Technology Research Group

University of Zurich, Switzerland

Workflow

Professor Clarence (Skip) Ellis, University of Colorado, Boulder, CO, USA

Sixth Int. Conversation of the Design of Social Systems

Nov. 13-18, 1994, Monterey, California

The themes of the conference are in the field of system design. The special focus is on sociological systems and on establishing a Design Culture: The themes of the conference are:

Understanding Systems Design

Philosophical and Theoretical Bases of Systems Design

Real World Applications of the Design of Human Activity Systems

Building a Design Culture

The Ethics of Design

The Exploration of Designing Software for Design Simulations

Designing Conversations

The conference will be carried out in the form of a conversation.

News from the IFSR

Subscription to the IFSR Newsletter

Beginning in 1995 we are offering subscriptions to the Newsletter. The cost is only \$ 10 per year (generally five issues) and includes air-mail delivery. You may either transfer this amount to our bank account 04.05.924.865 at Raika, Linz-Traun, Austria (Bank ID No.: 34 500) or mail it to us by registered mail.

Meritorious Award of the IFSR to Professor Adolf ADAM



photo Sokoloff

Prof. A. Adam, Kepler University Linz, has made many pioneering contributions to the use of computers in statistics, econometrics and operations research. He has written a great deal about the history of science, especially astronomy, and has continually been concerned with ethical

aspects of computer and econometric applications. He is the founding editor of the first German language operations research journal, "Unternehmensforschung - Operations Research", and the founder of the technical-scientific faculty of the University of Linz. Although now 77 years old and retired, he is still extremely active and he isn't even thinking of slowing down.

Adam fans will be interested in the German-language volume "Beiträge zur Systemforschung - Festschrift Adolf Adam" by Helmut Beran and Franz Pichler (eds.), Springer Verlag.

From our Member societies

EMCSR '94 - Special Awards Honorary Membership in the Austrian Society for Cybernetic Studies

This award, which is from time to time bestowed upon a leading international pioneer in the field of cybernetics and systems, was given to

Academician Prof. Tibor VAMOS, chairman of the board of the Computer and Automation Institute of the Hungarian Academy of Science in Budapest.

He has a double doctorate and is currently a professor at the Technical University of Budapest and an affiliate professor at the George Mason University in Fairfax, VA., USA. He was the president of the International Federation of Automatic Control (IFAC) from 1981 to 1984 and was instrumental in organizing the IFAC Center in Laxenburg (near Vienna). He is honorary president of the Janos v Neumann Society, an honorary member of the Austrian Computer Society, a fellow of the IEEE and author of about 200 publications including the book "Computer Epistemology" which was published by World Scientific 1990/91.

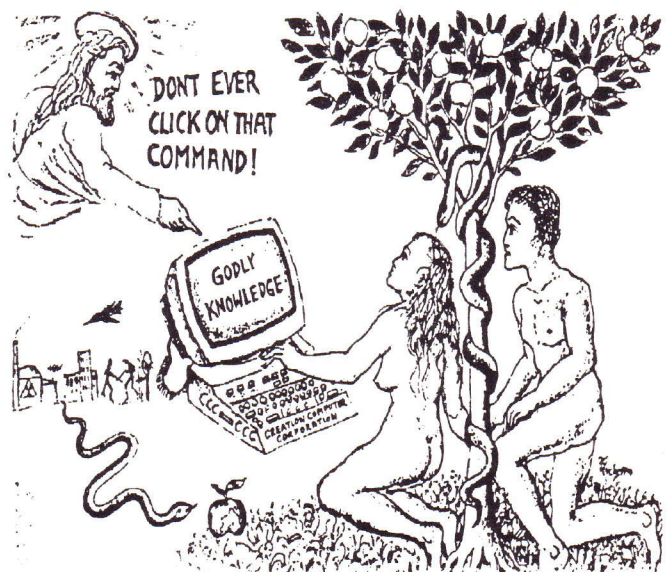
From the Treasurer/Secretary

Dear IFSR members!

I would like to thank the entire IFSR membership for the confidence that the organization has shown in me by re-electing me. We are trying to attain greater financial flexibility and at the same time to improve our service to you by reallocating funds. I apologize for the delays that occur when work at the university has to take precedence and beg you to be patient.

Yours sincerely,

Gerhard Chroust



Franz Fuchs, S. Sokoloff

Calendar 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		
Human Science Research: A Systemic Approach	July 31-Aug. 6, 1994, Castel Ivano, Stringo, Italy	Prof. Arne Collen, P.O.box 4550, Walnut Creek, CA 94596, USA, phone/fax: 510-930-9779
ECAI-94: 11th Europ. Conf. on Artificial Intelligence <No.32>	Aug. 8-12, 1994, Amsterdam <i>CfP: expired</i>	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
3rd Systems Symposium of GESI, Buenos Aires.	Aug. 19-21, Buenos Aires, Argentina,	Enrique G. Herscher, Univ. of Buenos Aires, fax: +54-1-322-8668
5th Int. Symposium on Electronic Art	Aug. 20-25, 1994, Helsinki, Finland	ISEA'94 Office, Univ. of Art and Design, UIAH, Hämeentie 135 C.FIN 00560 Helsinki, Finland, tel: +358-0-756360-1, fax: -2, email: isea@uia.fi
Human Science Research: Methods and Models	Aug. 21-27, 1994, Mullsjön Friluftsgård, Mullsjö, Sweden	Prof. Arne Collen, P.O.box 4550, Walnut Creek, CA 94596, USA, phone/fax: 510-930-9779
COMBIO'94: Summer Workshop on The Computational Modelling in Biosciences	Aug. 23-27, 1994, Nyiregyhaza, Hungary	Kathie Tarnay, KFKI-MSZKI, H-15235 Budapest, PO Box 49, Hungary, tel: +36 1 169 9499, fax: -5532, e-mail: H294TAR@ELLA.HU
Environmental Knowledge Organization and Information Management	Sept 14-17, 1994, Bratislava, Slovakia	Pavla Stancikova, Biskupicka 1, 821-06 Bratislava, Slovak Republic, tel/fax: +427-244-175
Information Systems Architecture and Technology - ISAT School/IFIP Workshop	Sept 19-25, Szklarska Poreba, Poland	Leopold Misiaszek, Techn. University Wroclaw, 50-370 Wroclaw, Poland, tel: +48-71 20-3589, fax, -3664, email: bazew@plwrtu11.bitnet
ISD'94 - 4th Int. Conference on Information Systems Development	Sept. 20-22, 1994, Bled, Slovenia <i>CfP: March 20, 1994</i>	Dr. J. Zupancic, Univ. of Maribor, Presernova 11, 64000 Kranj, Slovenia, tel: 386 (64) 222-804, fax -- 424, email: ISD@FOV.UNI-MB.SI
Systems Thinking and Progressive Change	Sept. 28-30, 1994, Cape Town, South Africa <i>FP: June 1</i>	Prof. Tom Ryan, School of Engineering Mgt. University of Cape Town, Private Bag, Rondebosch 7700, South Africa, tel: +27-21 650 2600, email: tbr@cerecam.uct.ac.za
ICSP3: 3rd Int. Conf. on the Software Process: Applying Software Process	Oct. 10-11, 1994, Reston, Virginia, USA <i>CfP: March 1, 1994</i>	Dewayne E. Perry, AT&T Bell Laboratories, 600 Mountain Avenue, Murray Hill NJ 07974 USA, email: dep@research.att.com <No.32>
Third European School of System Sciences	Oct. 16-21, 1994, Valencia, Spain	Escuela Investigacion Operativa, Avda Böascp Obamez 13, Valencia 46010, Spain
CON'94, Connectivity 1994: Workflow Management - Challenges, Paradigms and Products <No. 33>	Oct. 19-21, 1994, Hagenberg/Linz, Austria	Austrian Computer Society, Wollzeile 1-3, A-1010 Wien, tel: +43-1-512-02-35-0, fax: -9, email: ocg@vm.univie.ac.at <33>
IDIMT'94, 2nd Interdisciplinary Information Management Talks 1994	Nov. 9-11, Kubova Hut, Czech Republic	Gerhard Chroust, Kepler Univ. Linz, A-4040 Linz, tel: +43-732-2468-865, fax: -878, email: CHROUST@SEA.UNI-LINZ.AC.ATjnz
6th Int. Conversation on the Design of Social Systems <No. 33>	Nov. 13-18, 1994, Monterey, Calif.	Tad Goguen Frantz, Calif. Family Study Center, 5433 Laurel Canyon Blvd, North Hollywood CA 91607, USA tel: (818) 509-5959-118, fax (818) 762-6547
STIQUE'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
ICED 95, 10th Int. Conf. on Engineering Design: Design Science for and in Design Practice	Aug. 22-24, 1995, Prague <i>CfA: Aug. 30, 1994</i> <i>FP: Feb 15, 1995</i>	CVUT Faculty of Mech. Eng., Technicka 4, CZ 166-07 Praha 6. tel: +422 311 1273, fax: +422 2431-0292