International Federation For Systems Research
NEWSLETTER

Manuscripts for Publication in "SYSTEMS RESEARCH", the Journal of IFSR

Following the outline of editorial policies with reference to the potential readership which we published in our last issue, we are now happy to publicize the invitation by the Editor-in-Chief, Professor John N. Warfield, for manuscripts to be submitted to him for review:

Manuscripts submitted for review should be in English, showing clearly to whom correspondence concerning the manuscript is to be directed. Contributions should include five copies of a manuscript, unless it is intended to be published as correspondence, in which case three copies will be sufficient.

All manuscripts should be typed, double-spaced, with no more than 25 double-spaced typed pages exclusive of figures. At most 16 figures should be supplied.

Additional suggestions for authors can be found by examining the "Information for Contributors to **Automatica**." Pergamon Press, which publishes **Automatica**, will also be the publisher of **Systems Research.**

Manuscript should be addressed to:
John N. Warfield
Editor-in-Chief **Systems Research**
The Center for Interactive Management
Thornton Hall
University of Virginia
Charlottesville, VA 22901 USA
Phone 804-295-8659

The following information has been submitted to the publisher as a description of the general nature of **Systems Research:**

The Journal is intended to publish papers that develop the ideas of systems thinking to a wide public of persons who are intending to help others, and themselves, to overcome discrepancies on human constructions and organizations.

The papers may deal with problems of change in societies or organizations; with implementation of rules and regulations to increase the quality of life, work, and mutual helping; with problems and difficulties related to the introduction of new scientific results and ideas into daily life in ways that are emancipatory; with clashes of norms and values in inter-active patterns of individuals and groups; with redesigning of various types of societal structures; with clarifying and harmonizing formal languages; or with any general research that holds promise in humanistic applications and elaborates such promise and potential in clear and compelling ways.

Systems Research will have a paper section, a correspondence section, a book review section, and an "authors" section, the latter presenting biosketches and photographs of authors.

In keeping with the concept of making **Systems Research** an archival journal, the attempt is made to reserve ephemora, such as conference announcements and other items of passing interest to the IFSR Newsletter in line with current practice. As reported in our last issue, **Systems Research** also plans a special issue to be published once a year, arranged by a guest editor (under the general supervision of the Editor-in-Chief) on a particular theme laid out in a special key paper by a leading authority in the field, followed by contributions and discussions which may be supportive, elaborative, critical or additive to the primary stimulus paper. Regular features, such as correspondence, book reviews and the "authors" section will also be part of the special issue.

▲ Artificial Intelligence (AI) on the March ▲

We are about to see a lot more of this "logo" in the future. AI appears to have overcome the duration extended to it when its exponents were characterized by a predilection for developing more and more powerful chess playing programs. The scope and scale of the 8th International Joint Conference on AI in Karlsruhe, FRG, this summer is the evidence of world-wide support.

But even in this small a corner as Austria, the rate of growth of scientific interest in AI has been phenomenal. The Austrian Society for AI has concluded a 2 year survival without support of public funds (with only a small initial support from the Austrian Society for Cybernetic Studies) and with it the first volume of its journal. The number of introductory courses and seminars at advanced level is growing. Presentations having met with such support that repeats had to be scheduled.

Quoting from an invitation by the Austrian Society for Cybernetic Studies: AI both as a science and a technique aimed at reproducing of „intelligent" accomplishments by the computer, is being viewed with rapidly growing interest. "Business Week", "Capital" and "Technik und Wirtschaft" devoted AI articles of several pages in the last few weeks alone. This for two reasons: The science of AI has made considerable progress over the last few years, and, the development of "Expert Systems" which contain in a single computer program the information and the conclusions of the top specialists in the field (e.g. in geology, advice on the selection of the most promising mineral resource exploration sites; in medicine,

diagnosis and therapy suggestions, etc.); "Natural Language Systems" which facilitate communications with computers (e.g. with the aim that professionals in complex formal computer languages will no longer be needed); the development of "Robots" capable of perception of vision, touch, etc.

These forward steps have shown the application of these ideas not only in industry and technology but also in the administrative areas which makes AI processes economical and interesting.

A half hour presentation by Professor Robert Trappl (Vice President of the International Federation for Systems Research [IFSR]), followed by "life-phone", where questions came so fast and furious by listeners to an ORF (Austrian Broadcasting Company) program, documented the wide public interest referred to above. Many of the questions were very intelligent and to the point.

The interest in AI in Germany has reached the point were the Fachausschuß 6 der Gesellschaft für Informatik has produced a guide, the "Studien- und Forschungsführer für Künstliche Intelligenz" of (150 pages) at the surprising low price of DM 7,—. The guide offers a short introduction to the subject, informs about the most important scientific activities in the field and shows the scene in USA and the European countries. It includes a list of publications and addresses of important contacts. For copies apply to:
Dr. Rampacher, Geschäftsstelle der GI, Postfach 1669, D-5300 Bonn 1, FRG

Austrian Society for Cybernetic Studies (ASCS) Annual General Meeting

Chairing the 12th Annual General Meeting of the Society for Cybernetic Studies, Professor Dr. Robert Trappl, the Society's President, reviewed the activities of the Society during 1982.
Three projects were undertaken in 1982:
"Software-Innovation in Medicine, with Special Emphasis on Artificial Intelligence Methods." This project is undertaken with a research contract of the Austrian Federal Ministry for Science and Research and in cooperation with the Department of Medical Cybernetics of the University of Vienna; "Computer-Assisted Diagnosis and Therapy for Primary Medical Care." This project is supported by the Jubiläumsfonds of the Austrian National Bank and undertaken in cooperation with the Department of Medical Cybernetics of the University of Vienna; and "Knowledge Representation: Survey and Attempts for Clarification". This is a full "in-house" project which started in October 1982.

All three projects will be completed in 1983.

During the past year, 14 "Colloquia in Kybernetik" were held by eminent scientists visiting Vienna, and a one-day well attended seminar on "Local Computer-Networks" encouraged to hold more seminars in the future.

PUBLICATIONS
The list of "Reports" issued by the Society has grown by five items, i.e.: Gesundheitliche Versorgung in Österreich: 1980—2000, by W. Horn, J. Retti, W. Buchstaller, R. Trappl;
Daten- und Verhaltensanalyse mit Klassifikationsmodellen, by M. Peschel, S. F. Bocklisch, W. Meyer, P. Straube, J. Richardt;
Establishing a Rational Energy Policy for Western Europe, by R. S. Caputo;
Die universelle Relation als logische Sicht von Datenbanken, by A. M. Tjoa and R. R. Wagner;

Wissensrepräsentation: Die Darstellung von Wissen im Computer, by A. Kobsa;
to a total of 26.

Following the unanimous re-election of Professor Trappl (wo offers his resignation at every Annual General Meeting in order to make sure that he continues to enjoy the full support of the Society's membership), Prof. Paul Hanika and Prof. Franz Pichler were confirmed as Vice Presidents, the minor offices of the council were filled and the Heads of the wide range of sections confirmed viz.
Foundation of Cybernetics: Prof. Franz Pichler
Programming: Dr. Gerhard Chroust
Technical Cybernetics: Dr. Karl Lichtblau †
Systems Engineering: Dr. Karl Kellermayr
Organizational Cybernetics: Dr. Norbert Rozsenich
Data Processing in Medicine: Dr. Walter Buchstaller
Management Cybernetics: Prof. F. de P. Hanika
Regional Systems Research: Prof. Adolf Adam
Information Systems for Administration:
Mr. Paul E. Martin
Public Relations/International Contacts:
Prof. F. de P. Hanika

International Affiliates
During the past year, 53 scientists from 21 countries have joined the Society as International Affiliates.

Seventh European Meeting for Cybernetics and Systems Research (7th EMCSR).
The organizing committee of this event which will be held in Vienna from April 24 to 27, 1984 met immediately after the Annual General Meeting fo ASCS and finalized its general framework. The result of their deliberations appears later on in this issue.

Seventh European Meeting on Cybernetics and Systems Research 24—27 April 1984 University of Vienna, Austria

Chairman: Professor Dr. Robert Trappl, Director, Department of Medical Cybernetics, Vienna University Medical School; President, Austrian Society for Cybernetic Studies; Vice President, International Federation for Systems Research.

Despite their origininally modest geographical ambitions, these biennial meetings organized by the Austrian Society for Cybernetic Studies since 1972, have become international events, regularly attracting between 250 and 350 scientists from all over the world, representing about 30 nations.

All papers submitted are carefully refereed by competent specialists to maintain the high scientific standards for which these meetings have become known. Proceedings of all previous meetings have been published. The Symposia and Workshops scheduled for the 1984 event are:

Symposia:

General Systems Methodology
G. J. Klir, USA

System and Decision Theroy
F. Pichler, Austria, and A. Wierzbicki, Poland

Cybernetics in Biology and Medicine
L. M. Ricciardi, Italy

Cybernetics in Organization and Management
F. de P. Hanika, UK, and H. Huebner, Austria

Economic and Social Systems
G. Majone, Italy

Ecological Systems
C. S. Holling, Canada, and J. Retti, Austria

Health Care Systems
W. Buchstaller, Austria and B.Z. Nizetic, Denmark

Fuzzy Sets - Meeting of the EURO Working Group
C. Carlsson, Finland

Communication and Computers
H. Maurer, Austria, and W.-D. Rauch, FRG

Humanity, Architecture, and Conceptualisation
G. Pask, UK

Artificial Intelligence
W. Horn, Austria, Y. Kodratoff, France, and
W. Wahlster, FRG

Workshops:

Generalized Information Theory
G. Broekstra, Netherlands

Management as Applied Cybernetics
F. de P. Hanika, UK, and P.K. M'Pherson, UK

Systems and Cybernetics for the Progress
of Developing Countries
Elohim, J. L. Mexico, A. Ghosal, India, and
E. Nicolau, Romania

KEY DATES

To allow the full text of all accepted papers to be available for distribution before the start of the meeting, the Draft Final Papers must arrive at the Conference Secretariat before September 1, 1983.

Preliminary Programs, enrolment forms and further details may be obtained from the Organizing Committee EMCSR 84, Austrian Society for Cybernetic Studies, Schottengasse 3, A-1010 Vienna, Austria.

SOCIETY FOR GENERAL SYSTEMS RESEARCH (SGSR)

...designs communication facilities for specialized interests.

Every large scientific organization faces the problem how best to facilitate and develop the synergistic potential present. This potential arises both from a communality of interest in special aspects on a given science, as well as in the possibilities offered by exploitation of interdisciplinary development of concepts and ideas.

Local chapters or groups are one way of fostering such developments, the formation of Special Interest Groups (SIG's) is another. The Society for General Systems Research has long used both these means to good purpose.

Now, August Smith of the University of Texas developed, in the General Systems Bulletin (Vol. XIII, No. 2), a well worked out practical scheme for a system enticing contact facilities and processes for scientists of like-minded interest within the membership of SGSR.

A special Memo on "Membership vitalization and interest groups" produces a whole host of ideas:
■ Ways to identify area leaders for interest groups;
■ ways to get them to contribute to the 1983 program;
■ ways to build interest in participating in all areas of the Society;
■ ways to achieve an information update on all members by this Fall, and especially on those who did not reply to last Spring's questionnaire.
■ ways to attract potential members with an attractive membership brochure (with possible inserts, i.e. flyers on particular interest areas).

A lot of spade work has been done such as the suggestion of a list of names of potential leaders who would build up and develop general broad interest in "Special Interest Groups" at the 1983 Conference in the fields of:
■ Philosophy and Theory
■ Research Methods and Comparative Models
■ Human Development
■ Health and the Human Condition
■ Community and Culture
■ Organizations and Social Structures
■ Information Technology and Communication
■ Control and Cybernetics
■ Environment, Energy and Ecology
■ Public Sector
■ Business and Industry
■ Futurism and Change

Each of these headings is divided into anything from 4 to 14 subdivisions (too long to reproduce here).

Arising out of the survey of membership interests, a list of membership responses, arranged by state and country, is given for well over 700 members.

August Smith is well aware that every improvement has its cost. Once more he makes the case for expansion and development of special interest groups whose members may require special services, including, possibly, specialized bulletins which point out the need "to get membership renewals and fees related to the extent of desired involvement in the Society, i.e., more interest areas beyond several cost more."

EIGHTH INTERNATIONAL JOINT CONFERENCE ON ARTIFICIAL INTELLIGENCE
(IJCAI-83) — Karlsruhe, FRG, August 8—12, 1983

General Chairman:

Saul Amarel, Computer Science Dept., Hill Center, Busch Campus, Rutgers University, New Brunswick, N.J. 08903, USA

Program Chairman:

Alan Bundy, Dept. of Artificial Intelligence, University of Edinburg, Hope Park Square, Meadow Lane, Edinburgh EH8 9NW, G.B.

Local Arrangements:

Graham Wrightson, Jörg Siekmann, Peter Raulefs, Institut für Informatik 1, Universität Karlsruhe, Postfach 6380, D-7500 Karlsruhe 1, FRG, (telex: uni d 7826521)

The themes listed comprise:

System Support, Theorem Proving, Cognitive Modelling, Automatic Programming, Planning and Search, Knowledge Representation, Learning and Knowledge Acquisition, Logic Programming, Natural Language, Expert Systems, Vision, Robotics

The IJCAI Conferences are the main forum for the presentation of Artificial Intelligence (AI) research and technology to an international audience. The goal of IJCAI-83 is to promote scientific inter-change within and between all subfields of Artificial Intelligence among researchers and industrial representatives from all over the world.

The Conference is expected to be attended by more than a thousand scientists as well as leading representatives from those sections of industry developing AI-related products. The Conference will also include program demonstrations and exhibits.

Karlsruhe as a conference venue may be unfamiliar to most. It describes itself on the impressive five-colour, 36 x 24 inch conference poster depicting the "Schloss" and its park under a Mediterranean kind of blue sky, as the city of gardens and the city of arts.

Karlsruhe is located in the south-west of Germany, in the Rhine Valley, close to the Black Forest area, the Alsace (France) and the Pfalz (Palatinate). It has a warm, sometimes even hot, climate in August. A theater, concerts and museums present many cultural events.

Karlsruhe was the location of the first university of technology in Germany and has a particularly strong tradition in the electrical and electronic engineering fields (here Heinrich Hertz discovered electromagnetic waves). Hence, it is not surprising that one of the first and largest faculties of computer science within the Federal Republic of Germany is situated at this university. The student population in this faculty numbers approximately 1400, and there are about 15 chairs and a scientific staff of about 200.

AN EVOLUTIONARY VISION OF A BETTER FUTURE FOR ALL

(Part I)

A Summary Report by Bela H. Banathy
Global Learning Symposium — Fuschl (Austria) 1982

SPONSORS: Far West Laboratory for Educational Research and Development — Intersystems — Österreichische Studiengesellschaft für Kybernetik — Society for General Systems Research — Systeemgroep Nederland.

VIEWING THE GLOBAL PREDICAMENT

As we approach the end of the 20th century, social changes caused by unrestrained growth or technological advance are no longer viewed as the route to a better future for humanity. These changes have occurred much faster than the corresponding rate of adaptive social behavior and/or ability to guide them. They put man on a collision course with his own creations. We can now look back to two decades of research and analysis of this predicament.

For twenty years, scientific inquiry has addressed practical world problems — involving enrivonment, population, agriculture, pollution, and health care, and issues related to transportation, management, economics, and the human habitat in general. However, each one of these problems and issues has been analyzed alone, as if it would be and could be isolated from the others.

Systems science and systems inquiry present a new scientific paradigm: a science of organized complexity which, through its integrative and transdisciplinary orientation, allows for the comprehension of connectedness and the management of complex systems or problems.

Pioneering work in systems science has provided us with a new understanding of our world, much of which is based on the ever expanding knowledge about global systems. This understanding can provide the ground rules for implementing changes without being entrapped by attempts at social engineering our utopianism. It defines present conditions and alternatives in the following manner:

- Man and his global environment constitute an extremely complex system, which is more than and different from the aggregate of interactive components. All human activities express themselves through these dynamically connected components which mutually influence each other. Problems affecting mankind's future can only be studied and resolved in the context of the entire planetary system.
- Accelerated and uncontrolled change for which little or no societal adaptation exists can lead to breakdowns which multiply their effects throughout the entire world.
- Mankind needs to manage the global community system with as much or more care and planning than has been observed within national boundaries.
- We must be guided by the broadest possible world view that enhances a deep understanding of the complexities, the perils, and the potentials of our collective action.

SEEKING SOLUTIONS

The solutions to mankind's major problems require unprecedented efforts to develop global perspectives for global action. A disciplined exploration of the outer global limits and the inner human potentials during the last decade, provided us with enough understanding to give direction to evolution by creative planning and intelligent purposeful action.

The Fuschl symposium reported here, is aimed at creating an evolutionary vision of the future and to counsel human activity systems on how to implement it.