



International Association for Pattern Recognition, Inc.
An affiliate member of the International Federation for Information Processing

NEWSLETTER

Editor

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FROM THE EDITOR'S DESK

Dear Colleagues,

This editorial was inspired by the Colloquium recently given in the Computer and Information Science Department, here at the University of Pennsylvania, by Dr. Russel Kirsh from the National Bureau of Standards in Washington, D.C. In his remarks he quoted President Adams from the book of Abigail and John, *Selected Letters of the Adams Family, 1762-1784*:

"I must study Politics and War that my sons may have liberty to study Mathematics and Philosophy. My sons ought to study Mathematics and Philosophy, Geography, Natural History, Naval Architecture, Navigation, Commerce and Agriculture, in order to give their Children a right to study Painting, Poetry, Musick, Architecture, Statuary, Tapestry and Porcelaine."

I feel that we have passed the era of politics and wars. The field of Pattern Recognition is well established and well respected. Perhaps we are now in the second phase of the formalisation of the field and its practical implementation. However, I believe that it is now that the new generation should look towards the important applications of Pattern Recognition into the field of the arts, such as painting, architecture and tapestry. The methodology of pattern recognition applied to these fields will lead to understanding of creativity at large. I cannot think of a more noble goal for our future activities, and I do hope that the next generation will live up to these challenges.

With best wishes,

Ruzena Bajcsy

Ruzena Bajcsy

FROM THE PRESIDENT

An Overview of the IAPR Technical Committees

J.C. Simon, January 1984

At the 1982 Munich meeting of the IAPR Governing Board, it was decided to start some Technical Committees, somewhat on the model of the IFIP TCs.

J.C. Simon, president of IAPR, would be in charge of nominating the chairmen of these TCs, and guiding their first steps; *Prof. T. Kohonen*, vice-president of IAPR, would be in charge of following their activities, and *Prof. H. Freeman*, treasurer of IAPR, of financing these activities.

The main ideas behind these TCs are the following:

- give a more permanent activity to IAPR, outside the biannual International Conference ICPR;
- promote new meetings, conferences, newsletters, teaching activities, sponsored by IAPR;
- diversify our efforts in fields where other active organizations enter in competition for Pattern Recognition activities.

After a slow start, it is encouraging to find out that some notable actions are taking place. They are stated below by group:

TC-2, Syntactical Pattern Recognition Techniques

Chairman: *H. Bunke*, Univ. of Erlangen, Lehrstuhl für Informatik, Martenstrasse 3, 8520 Erlangen, F.R.G.

Secretary: *M. Richetin*, Fr.

Members: *J.W. Tai, Li-De Wu, China; R.E. Blake, G.B.; L.N. Kanal, T. Pavlidis, L.G. Shapiro, USA; L. Miclet, France; G. Winkler, FRG; G. Papkonstantinou, Greece; D. Dutta-Majumder, India; E. Tanaka, I. Masuda, Jap.; A. Sanfeliu, Spain*

The TC-2 members have suggested that panel discussions or a workshop be held.

TC-4, Image Understanding Techniques

Chairman: *B. Radig, Universitat Hamburg, Fachbereich Informatik, Schlutterstrasse 70, 2000 Hamburg 13, F.R.G.*

Secretary: *C. Brown, Roshester, USA*

Members: *H.H. Nagel, Karlsruhe FRG; E. Triendl, Stanford (on leave), FRG; H. Samet, Maryland, USA; B. Neuman, Hamburg, FRG; J. Tsotsos, Toronto, Canada; M. Nagao, Japan*

A subgroup, under the Leadership of Nagel and Tsotsos, wishes to promote "analysis of time varying images". The group itself suggested:

- to collect portable software modules for image understanding;
- the exchange of teaching and demonstration material, program, image;
- to improve contacts with industry, in particular, in the domain of robotics;
- to plan a workshop on "Image Understanding Techniques".

TC-5, Software Systems and Languages

Chairman: *R. Haralick, Virginia Polytechnic Institute and State University, Dept. of Electrical Engr., Blacksburg, VA 24610, USA*

Members: *C. Benchimol, Fr; A. Oosterlinck, Belgium; S. Levialdi, It.; W. Pratt, USA*

TC-5 will meet next June at the PRIP meeting.

TC-6, Special Purpose Architecture

Chairman: *M.J.B. Duff, Dept. of Physics and Astronomy, University College, Gower Street, London, WC1E 6BT, G.B.*

Members: *S. Castan, Toulouse, Fr.; F.A. Gerritsen, Nat. Aerospace Lab, Netherlands; G.H. Granlund, Linkoping, Sweden; M. Kikode, Toshiba, Japan; H.T. Kung, Carnegie-Mellon Univ., USA; H.J. Siegel, Purdue, USA; L. Uhr, Univ. Wisconsin-Madison, USA.*

TC-6 is planning:

- to centralize all informations on workshops and meetings in its domain;
- to provide help and sponsorship;
- to compile a list of referees, speakers, session chairmen, etc., as an advisory service for conference organizers.

TC-7, Applications in Remote Sensing

Chairman: *M. Goldberg, Dept. of Electrical Engr., Univ. of Ottawa, 770 King Edward Ave., Ottawa, Ontario, Canada, K1N 6N5*

Vice Chairman: *P.H. Swain, Purdue Univ., USA*

Members: *L. Boriello, Bari, It.; F. Leberl, IIPCG, Graz, Austria; J.A. Richards, Univ. of S. Wales, Australia; D. Goodenough, Ottawa, Canada; A. Guzman-Arenas, Mexico; G.E. Hunt, London, G.B.; R. Heydon, NASA, Houston, USA; P.T. Nguyen, IBM-France; G. Nagy, Univ. of Nebraska, USA*

Various contacts have been made with other similar societies, such as ESA and the International Society for Photogrammetry and Remote Sensing.

A workshop on "the analysis and integration for multisensor and multitemporal imagery" is being planned for July 26-27, just before the 7th ICPR in Montreal. It is sponsored by the Canada Center for Remote Sensing, organized by Dr. D. Goodenough, and will take place in Ottawa, Canada.

TC-9, Biomedical Pattern Recognition

Chairman: *J. Sklansky, Dept. of Electrical Engr., Univ. of California, Irvine, CA 92717, USA*

Advisory Committee:

A truly international advisory committee of 27 highly qualified scientists in the field has been asked to select members for TC-9 and to establish guidelines for its activities.

Technical liaison is established with the IEEE Computer Society Joint International Symposium on Medical Images and Icons (ISMI'84). Other actions are:

- specialized meetings and workshops, coordinator: *Mr. Rhodes, USA*
- sessions on Biomedical PR at ICPR-Montreal, coordinator: *C.C. Li, Pittsburgh*
- selected surveys in BPR
- publicity and possibly a newsletter, coordinator: *P.V. Sankar, Univ. of CA at Irvine, USA*
- planning of an international conference on Biomedical Pattern Recognition

TC-11, Applications in Text Processing

Chairman: *C.Y. Suen, Dept. of Computer Science, Concordia University, 1455 de Maisonneuve W., Montreal, Quebec H3G 1M8, Canada*

Members: Among a list of 24 well-known scientists in the field, 12 have already accepted to be active on TC-11.

Among the actions envisioned:

- recognition of Chinese and Oriental characters: *Ms. Q-H. Hu, Academia Sinica;*
- workshops at ICPR at Montreal-84 and/or at Intl. Computer Conf., Montreal-84;
- Availability of software or hardware and of data banks;
- an exhibition on machines for text reading at ICPR;
- a NATO Advanced Study Institute at BONAS, followed by the publication of a book on text processing.

TC-12, Automatic Speech Recognition

Chairman: *R. De Mori, Dept. of Computer Science, Concordia University, 1455 de Maisonneuve W., Montreal, Quebec H3G 1M8, Canada*

Secretary: *J.P. Haton, CRIN, Nancy, Fr.*

Actions taken:

- Preparation of a special issue of *INFORMATION SCIENCES* on automatic speech recognition; to be published in Spring 1984, the guest editor being *Prof. De Mori*.
- A NATO Advanced Study Institute "New Systems and Architectures for Automatic Speech Recognition and Systems" will be held at BONAS [See description of *Chateau de Bonas* at the end of this issue], 1-19 July 1984. The lecturers will include: *J. Allen*, MIT, USA; *C.Y. Suen*, Concordia, USA; *L.J. Siegel*, Purdue, USA; *H. Nieman*, Erlangen, USA; *J.P. Haton*, Nancy, Fr.; *R. Bisiani*, CMU, Ital.; *P. Laface*, Turin, Ital.; *M. Kunt*, Lausanne, Switzerland; *G. Mercier*, CNET, Fr.; *R. Moore*, Radar Establ., G.B.

Thus, we may say that eight out of the twelve TCs originally planned have become active. It seems that they may provide a very good framework in which to increase the activities of IAPR, in addition to the already successful ones: ICPR and the IAPR Newsletter. Let us hope that these groups will be ambitious in their actions and will not hesitate to request the aid of the central core of our society, i.e., the Governing Board, and more especially, the Vice President *T. Kohonen*, the Treasurer *H. Freeman*, and the President *J.C. Simon*.

UPDATED IAPR DIRECTORY

1 February 1984

Executive Committee

President	<i>Prof. J-C. Simon</i> (Fr)
First Vice-Pres.	<i>Prof. T. Kohonen</i> (Finland)
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Secretary	<i>Dr. P.A. Devijver</i> (BE)
Treasurer	<i>Prof. H. Freeman</i> (USA)
Past-Chm 6ICPR	<i>Prof. H. Marko</i> (FRG)
Chairman 7ICPR	<i>Prof. M. Levine</i> (Ca)

Standing Committees

Conference Committee	<i>Prof. H. Marko</i> (FRG) Chm. <i>Prof. T. Chang</i> (PRCh) <i>Prof. J-P. Haton</i> (Fr) <i>Prof. J. Nagumo</i> (Japan) <i>Dr. T. Pavlidis</i> (USA)
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Newsletter Editor *Prof. R. Bajcsy* (USA)

Corresponding Editors

Prof. E. Backer (for Europe)
Prof. M. Nagao (for Japan)

Ad Hoc Committees

Awards *Prof. D. Rutovitz* (UK) Chm.
Prof. Y.T. Chien (US)
Prof. P-E. Danielsson (Sw)
Dr. T. Kasvand (Ca)

Publicity and Education

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Prof. R. Bajcsy (USA)
Prof. S. Castan (Fr)
Dr. P.A. Devijver (Be)
Prof. G. Granlund (Sw)
Prof. M. Kunt (Switzerland)
Prof. M. Levine (Ca)
Prof. S. Levioldi (It)
Prof. L. Shapiro (USA)
Prof. G. Toriwaki (Japan)

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Dr. P.A. Devijver (Be)
Prof. K.S. Fu (USA)
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Dr. O. Faugeras (Fr)
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Prof. R. Lopez de Mantaras (Spain)
Prof. H. Nagel (FRG)
Prof. S. Peleg (Israel)

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Prof. T. Kohonen (Finland)

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Denmark	<i>Prof. P.W. Becker</i>
Federal Republic of Germany	<i>Prof. H. Kazmierczak</i> <i>Prof. H. Marko</i>
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Italy	<i>Prof. E.R. Canaiello</i>
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 Switzerland *Prof. M. Kunt*
 United Kingdom *Dr. D. Rutovitz*
 USA *Prof. H. Freeman*
Prof. K.S. Fu
Prof. A. Rosenfeld
Prof. M.S. Watanabe

National Member Organizations

Austria Austrian Working Group for Pattern Recognition of the Austrian Computer Society, and the Austrian Association for Cybernetics
 Category A. About 40 members
 Representative: *Prof. F. Leberl*

Belgium Pattern Recognition Contact Group of the SOGESCI
 Category A. About 25 members
 Representative: *Dr. P.A. Devijver*

Canada Canadian Image Processing and Pattern Recognition Society
 Category A. About 175 members
 Representative: *Dr. T. Kasvand*

People's Republic of China Pattern Recognition and Machine Intelligence Committee of the Chinese Association of Automation
 Category A. About 25 members
 Address: *Prof. Hu Qi Heng*,
 Institute of Automation,
 Academia Sinica, Beijing (Peking) China
 Representative: *Prof. T. Chang*

Denmark Danish Pattern Recognition Society
 Category A. 31 members
 Representative: *Prof. P.W. Becker*

Federal Republic of Germany Deutsch Arbeitsgemeinschaft fur Mustererkennung
 Category B
 Representatives: *Prof. H. Kazmierczak*,
Prof. H. Marko

Finland Pattern Recognition Society of Finland
 Category A. About 50 members
 Representative: *Prof. T. Kohonen*

France Pattern Recognition and Artificial Intelligence Group of AFCET (Association Francaise pour la Cybernetique Economique et Technique)
 Category B
 Representatives: *Prof. J-P. Haton*,
Prof. J-C. Simon

Hungary Section of Artificial Intelligence and Pattern Recognition of the John Von Neuman Society for Computer Science
 Category A
 Representative: *Dr. G. Kozman*

India Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI)
 Category A
 Representative: *Prof. D. Dutta Majumder*

Israel The Israel Working Group on Pattern Recognition and Image Processing of the Information Processing Association of Israel
 Category A
 Representative: *Dr. S. Peleg*

Italy Working Group for Pattern Recognition of the Italian Association for Automatic Computation
 Category A. About 50 members
 Representative: *Prof. E.R. Cainiello*

Japan Audio-Visual Information Research Group (AVIRG)
 Category B. 279 members
 Address: *Dr. K. Ozeki*, NHK Tech. Res. Lab.
 1-10-11, Kinuta, Setagaya-ku,
 Tokyo 157, Japan
 Representatives: *Prof. T. Nagao*
Prof. M. Takagi

Mexico Chapter on Pattern Recognition and Image Processing from the "Asociacion Mexicana de Ingenieros en Comunicaciones Electricas y Electronica" (AMICEE)
 Category A. 20 members
 Representative: *Prof. A. Guzman*

The Netherlands Nederlandse Vereniging voor Patroonherkenning en Beeldverwerking
 Category A. About 90 members
 Representative: *Prof. E. Backer*

Spain The Spanish Working Group for Pattern Recognition of the CEA-IFAC
 Category A
 Representative: *Prof. R. Lopez de Mantaras*

Sweden Svenska Sallskapet for Automatiserad Bildanalys (SSAB), (Swedish Society for Automated Image Analysis)
 Category A. About 120 members
 Representative: *Prof. P-E. Danielsson*

Switzerland The Swiss Association for Pattern Recognition
 Category A
 Representative: *Prof. M. Kunt*

United Kingdom British Pattern Recognition Association

Category A. 81 members
 Representative: *Prof. D. Rutovitz*

IEEE Computer Society Category C. About 3000 members
 Representatives: *Prof. H. Freeman*
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Proposed IAPR Technical Committees

- | | |
|---|--------------------|
| 1) Statistical Pattern Recognition Techniques | |
| 2) Syntactical Pattern Recognition Techniques | <i>H. Bunke</i> |
| 3) Image Pre-Processing Techniques | |
| 4) Image Understanding Techniques | <i>Radig</i> |
| 5) Software Systems and Languages | <i>B. Haralick</i> |
| 6) Special-Purpose Architectures | <i>M. Duff</i> |
| 7) Applications in Remote Sensing | <i>Goldberg</i> |
| 8) Applications in Industry | |
| 9) Biomedical Pattern Recognition | <i>J. Sklansky</i> |
| 10) Applications in Map and Line-Drawing Processing | |
| 11) Applications in Text Processing | <i>Suen</i> |
| 12) Automatic Speech Recognition | <i>De Mori</i> |

**International Association
for Pattern Recognition**

**Guidelines for the Selection of Location
for the Future International Conferences
on Pattern Recognition**

¹ The Conference should be assigned to a sponsoring society or institution, rather than a group of individuals. However, the names of general chairman, program chairman, and local arrangement chairman should be submitted with the proposal together with two alternate names of people who may replace one of the above, if for some reason, they cannot carry out their duties.

A proposal should contain documented estimates of attendance, both local and international, in order to substantiate the budget and the proposed registration fees. The proposal should also contain cost estimates for international travel from various countries.

Proposals should contain descriptions of conference and hotel facilities.

Proposals should be submitted at least three months before the ICPR where the decision will be made. A copy of the proposal should be sent to each of the conference committee members and, optionally, to the IAPR executive committee and governing board. (If the conference committee recommends consideration by the governing board, then the additional copies should be brought at the ICPR meeting.)

These guidelines were prepared by the Conference Committee of IAPR and discussed at the Executive Committee meeting in Dallas, August 1981.

The members of the 1983-1984 Conference Committee are:

- *Prof. H. Marko*, (Chairman) Inst. für Nachrichtentechnik, Tech. Univ. München, Arcisstrasse 21, 8-München F.R. Germany
- *Prof. T. Chang*, Dept. of Automation, Ging-Hua University, Beijing, People's Republic of China
- *Prof. J-P. Haton*, CRIN, Univ. Nancy 1, B.P. 239, 54506 Vandoeuvre-les-Nancy Cedex, France
- *Prof. J. Nagumo*, Univ. of Tokyo, Fac. of Engineering, Bunkyo-ku, Tokyo 113, Japan
- *Dr. T. Pavlidis*, Bell Lab. (2C-456) Murray Hill, NJ 07974

Members of IAPR are invited to send their proposals to the above committee for the location of the ninth ICPR (1988) not later than **May 1, 1984**. These proposals will be considered at the 7-ICPR in *Montreal* in *July-August 1984*.

¹Note added by the Secretary: I believe it is worthwhile to call your attention to the following motion that was accepted at the first meeting of the IAPR Governing Board in Kyoto: "Resolved that the organizers of an International Conference on Pattern Recognition prepare their budget and set their fee structure so as to provide for compensation to IAPR for its efforts and expenses in promoting the conference. Such compensation is to be ten per cent of the gross registration receipt and is to be paid to the IAPR treasury no later than 45 days after the conclusion of the conference".

**JAPANESE DOMESTIC ACTIVITIES
IN PATTERN RECOGNITION
AND IMAGE PROCESSING**

**Institute of Electronics and
Communication Engineers of Japan**

December 1983

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Faculty of Engineering Science, Osaka University

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Toyoashi University of Technology

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Berthold K.P. HORN, Keith H. NISHIHARA
AI Lab, M.I.T.

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Naoyuki FUKUDA, Osamu KAKUSHO
Institute of Scientific and Industrial
Research, Osaka University

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WITH AUTOMATIC RULE DEFINITION
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Faculty of Engr. and Faculty of Medicine,
The University of Tokyo

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Faculty of Engineering, Toyama University

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Faculty of Engineering, Ehime University

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Ehime University
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Osaka University

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Toyohashi University of Technology

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Faculty of Engineering, Kyoto University

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Faculty of Engineering, Kyoto University

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Hidkazu ENJO, Hiroki ARAKAWA*
Yokosuka Electrical Communication Lab., NTT

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Shun-ichi AMARI, University of Tokyo*

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Kanji KATO, Yoshio MIYAKE, Ei-ji YODOGAWA
Musashino Electrical Communication Lab., NTT

February 1984

CHARACTER SEGMENTATION
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NEC Corporation
C&C Systems Research Laboratories

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Kambiz BADIE, Masamichi SHIMURA
Department of Computer Science
Tokyo Institute of Technology

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Fumitaka KIMURA, Yasuji MIYAKE*
Faculty of Engineering, Mie University

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Electrotechnical Laboratory

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AND SYMBOLS IN A FLOWCHART
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Motoyuki MUKOUDA, Keiichi ABE
Faculty of Engr., Shizuoka University
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Graduate School of Electronic Science and
Technology, Shizuoka University

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Faculty of Engineering, Tokushima University

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*Hidemitsu OGAWA and Erkki OJA**
Faculty of Engr., Tokyo Inst. of Technology
*Permanent address: Univ. of Kuopio, Finland

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System Technology Department

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Osaka Univ., Faculty of Engr. Science

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*Kenji MURAKAMI, Masanori IZUMIDA,
Tsunehiro AIBARA*
Faculty of Engr., Ehime University

ON THE 10TH WORLD COMPUTER CONGRESS: IFIP CONGRESS 86

Some second thoughts on its structure

Excerpts from the March 1984 document

Dines Bjorner
IFIP Congress 86 Program Committee Chairman
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Telex: 37704 ddc dk

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General

The purpose of "the 10th World Computer Congress organized by IFIP" (hereafter referred to as "(the) IFIP Congress 86") is to bring edp professionals from *business* and *industry* together with computer scientists from *academe*, and software engineers from leading *software houses*, with the aim of exchanging views and news; to provide a ground for mutual *theory*, *methodology* and *technology transfer*; to make scientists (including theoreticians) aware of the medium range problems of practitioners; and, vice versa, to make practitioners aware of the longer range promises of the informatics sciences.

The IFIP Congress 86 will attract participants whose interest profiles, roughly speaking, are:

- **edp professionals**, whose interest it is to have hard/firm/software components work together with human beings in several, evolving information systems,
- **computer scientists**, who provide theory and expertise on components and methods for information and computer systems design, and
- **software engineers**, who produce, sell and service hard/firm/software components, including turn-key systems

The IFIP Congress 86 should be a balance between "state-of-the-art" and "beyond" for each of the computing science and systems engineering components, as listed below under stream 1.

- The "state-of-the-art" probably centers around *systems engineering*, and hence should mostly attract edp professionals and software engineers, whereas
- "beyond" mostly relates to *computing science*, and hence traditionally mostly attracts computer scientists, software engineers, and a few edp professionals. Every effort must be made to have these sessions attract an even balance of participants from all three profile groups.

"State-of-the-art" of the *informatics applications*, as listed below under stream 2:

- here the IFIP Congress 86 will concentrate on presentations exploring the field of systems integrated in non-edp environments.

Sources of Contributions

Invited papers, panelists and solicited paper contributors are to be drawn from such university groups which show ability to bridge the academe to industry/user gap, and from such industry and user (general edp) project groups which have been designated leading edge.

Structure

To present and appreciate the structure of the IFIP Congress 86 one must first understand its conceptual basis: We understand *informatics* as a new main area consisting of *computation*, *cognition*, *communication* and *organization*. Informatics is a collection of sciences as are the natural, or the social, or the humanistic sciences. We understand *computation* as the sciences and engineering of *computers*, *computing* and *systems* of software and hardware. *Computer science* is the study of computing devices, including programs. *Computing science* is the study of how to construct computing devices, and notably includes programming (methodology). *Computing systems*, including *software engineering*, is then the practice of constructing and using software, firmware and hardware computing systems.

The sciences and engineering of *cognition* (including expert systems), *communications* (including linguistics, dialogics), and *organization*, combine with computation in the perception, construction and evolution of use of applications.

The Three Congress Streams

1. Computation: Science and Engineering

This is mostly a 'components' stream. The three subareas of computation are:

<i>Computer Science</i> -	Study of Programs
<i>Computing Science</i> -	Programming Methodology
<i>Systems Engineering</i> -	Practice of Programming and use of Program and Programming Systems: Soft/Firm/Hard Technologies

IFIP Congress 86 will, within computation, focus on the latter two areas. There will, however, be some invited talks presenting state-of-the-art in Computer Science, motivating its importance. The motivation for bringing invited papers, panels and solicited papers in the area of computing science and software engineering is to report on methods and technologies for producing and maintaining software, both in systems and in applications areas. It is to be expected that most presentations in this stream will be from academe and leading edge software housing.

2. Informatics Applications

...corresponding to the combination of the computation, cognition, communication and organization sciences and engineering into the *informatics applications* areas—this, then is mostly a 'fitting components together' stream.

3. Informatics in the Developing World

The structure and contents of streams 1 and 2 shall determine the similar one for stream 3. Thus little can be said about the present stream other than that its main purpose is to relate the advanced, to very advanced, applications, technologies and methodologies as presented in streams 1 and 2, to the specific environments of the developing world—according to a number of theses, e.g.: do contributions of streams 1 and 2 present specific challenges in the developing world?. will they widen, or create, rather than narrow potential, or existing gaps?, in which areas must the

developing world seek its own solutions, and in which areas can or is it actually avoiding the informatics problems witnessed in the industrial world?, etc.

Session Layout

There are 4 kinds of sessions:

IR	Invited paper + Responder lead discussion	(50+10)+(10+20)
IS	Invited paper + Top quality solicited paper	(50+10)+(20+10)
P	Panel Discussions	(3*10+45+3*5)
S	Solicited papers	(3*(20+10))

I *Invited talks* are to be 50 minutes long with an additional 10 minutes for QA.

IR Some invited talks will be followed by *responder sessions* of half an hour. A responder is a person specially designated to introduce a 20 minute *discussion* period following certain invited talks by giving a kind of "rebuttal" reply to the invited speaker's talk. Rebuttals are 10 minutes long.

IS Remaining invited talks will be followed by a top-quality solicited paper presentation of 20 mins. talk plus 10 minute QA.

P *Panel discussions* are to be 1¹/₂ hours long (only), with 3X10 minute *position statements*, 45 mins. for *discussion* and QA, and a round of 3X5 minute *closing remarks*.

S *Solicited paper sessions* consist of 3 papers presentations of 20 minutes talk and 10 minutes QA each.

QA Questions and Answers

PUBLICATIONS

Journals and Information

*Association for Literary
and Linguistic Computing*
ALLC Bulletin

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ALLC BULLETIN

Volume 11, Number 1, 1988

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A Note on the Application of Graph Theory to the
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Copyright and Texts in Machine-Readable Form, Joan M. Smith

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Computer-Assisted Language Learning: A Growth
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Offers of Interest to IAPR Members

1984 SUBSCRIPTION PRICES TO
PATTERN RECOGNITION LETTERS (PRL)
FOR INDIVIDUAL MEMBERS
OF IAPR MEMBER SOCIETIES

As from 1984, *Pattern Recognition Letters* will be made available at a discounted subscription rate to individual IAPR members and individual members of the Societies within the IAPR. The following options are available:

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Option 2: *Bulk Mailing*: Any IAPR Member Society may order, for its personal members, a bulk subscription to *PRL* at 25% of the yearly institutional subscription price (inclusive of postage and handling costs). The Society collects all orders and sends the Publisher a list of names and addresses of individual members who subscribe, together with payment for the total number of subscriptions. The ultimate deadline for receipt of the Society's bulk order is March 15th of the year for which the subscription order applies. The issues will be mailed in bulk to the Society Secretariat who will forward them to their subscribers.

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- only apply to the/those volume(s) which are published within the current subscription period and will never apply to back volumes.

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CALENDAR OF EVENTS

A New International Conference on Fundamental Computer Science

Sponsored by
A.F.C.E.T. (Association Francaise pour la
Cybernetique Economique et Technique)

and
G.I. (Gesellschaft fur Informatik)

S.T.A.C.S.
(Symposium on Theoretical Aspects of Computer Sciences)

Germany and France are the European countries where researches in fundamental computer science are the most developed. Many laboratories of these two countries enjoy world-wide preeminence. By nature, the laboratories have settled, for a long time, regular French-German scientific cooperations. This new conference originated from these two established facts. The first conference will be held in *Paris* this spring (11-13 April 1984). It will provide an opportunity for the scientific community of computer scientists to hear about the latest results from these European laboratories.

For more information, contact:

A.F.C.E.T.
STACS '84
156 bld Pereire
75017 PARIS
Tel. (1) 766-24-19

Agence de l'Informatique

Expert Systems and Their Applications
Workshop and Exhibition

Palais des Congres - Avignon, France
May 2-4, 1984

Program Committee

J.-C. Rault, Chm. ADI - Paris
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Marseille
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Exhibition: *J. Ducloy*, ANL - Nancy

Organization: *E. Thuly-Vuillaume*, ADI - Paris

Within the framework of its general mission of research and technology transfer in computer engineering, the Agence de l'Informatique, in cooperation with the AFCET, is holding their Fourth Workshop on Expert Systems and their Applications. It will consist of two concurrent events:

- a conference, dedicated to both basic tools and techniques for building expert systems and expert systems implementations concerning real life applications
- an exhibition, in which operational or experimental tools and applications will be demonstrated.

Almed at developers and users of expert systems, the conference will offer an assessment of available tools and techniques, provide practical choice guidelines, and will help define, clarify, and make sense of the claims, promises and realities of practical expert system application. Consequently, it will comprise two main distinct tracts.

The first tract will consist of a group of survey and tutorial invited lectures by leading experts in the field, reporting the results of the various ongoing studies supported by the Agence de l'Informatique in this field. In this respect, programming environments specific to artificial intelligence applications (e.g. the different implementations of the LISP and PROLOG languages along with their variants, object-oriented languages, dedicated hardware processors) and tools for guiding expert systems (e.g. knowledge representation tools, inference engines) will be covered, among others.

The second tract will consist of a series of sessions organized according to main areas of applications covering, among others:

- computer aided manufacturing: production management, robotics, quality control, planning
- computer aided design: mechanical engineering, electronics, architecture, engineering, construction, structural design
- computer-aided instruction
- technical diagnosis
- behavioral and social sciences
- computer science and engineering: software engineering, configuration management, reliability, safety
- medicine
- biology
- decision making
- communication, control, command and intelligence
- complex systems simulation and training
- geology, earth resources, prospection
- oil industry
- chemistry and chemical engineering
- Physics
- Mathematics
- Agriculture
- Economics
- Office automation

The conference will be supplemented by a related exhibition. Software tools, expert systems packages or AI dedicated hardware, both experimental and commercial, will be demonstrated.

Direct requests for information to:

Jean-Claude Rault
Agence de l'Informatique
Tour Fiat - Cedex 16
92084 Paris-La Defense
FRANCE
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Telex AGINFOR 613632F

* _____ *

1984 International Symposium on Noise and Clutter Rejection in Radars and Imaging Sensors

Tokyo, Japan

October 22-24, 1984

Sasakawa Hall, Tokyo, Japan.

The symposium is sponsored by the Technical Groups on Electromagnetic Theory and on Space, Aeronautics and Navigational Electronics of the IECE and the IEE of Japan, and co-sponsored by the Aerospace and Electronics Systems Society of the IEEE and by the Professional Group Committee E15 of IEE.

Scope and Principal Topics. The ISNCR-84 is intended to promote the interaction and fruitful exchange of advances in the signal and image processing techniques with special emphasis on clutter and noise reduction in radars and imaging sensors. Papers will be presented describing original works in the following fields concerning topics 1-4.

- Radar and Sonar
- Medical Electronics
- Remote Sensing
- Video Processing

1. Properties of Noise, Clutter and Interference
2. Analog and Digital Processing and Simulation for Rejection of Noise, Clutter and Interference
3. Recognition and Identification of Particular Objects
4. Improvement on Image Display Techniques

Working Language. English will be used for all printed materials, presentations and discussion.

Program. The advanced program, with registration and hotel accommodation form, will be sent in June 1984 to those who have completed registration.

Registration. The registration fee (24,000 Yen before 20 August; 30,000 Yen after 21 August) entitles participants to attend any technical sessions of the Symposium and to receive a copy of the Proceedings. For student participants the registration fee is half the regular fee.

Official Travel Agent. For information on local tours, contact directly:

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Higashi-Shimbashi, Minato-ku, Tokyo, 105 Japan
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Further Information

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* _____ *

Pattern Recognition in Practice II

Amsterdam, June 19-21, 1985

Organizing Committee:

E.S. Gelsema (chmn.), *J.H. van Bemmel* (co-chmn.), *E. Backer*, *C.E. Queiros*

Program Committee:

L.N. Kanal, *I.T. Young*, *E.S. Gelsema*

Editorial Committee:

E.S. Gelsema, *L.N. Kanal*

Conference Secretariat:

Dept. of Medical Informatics
Free University
Van de Boechorstraat 7
1007 MC Amsterdam
Tel. (0)20 - 5483306

AIMS and Scope:

The Conference *Pattern Recognition in Practice II* will be a meeting place for scientists from various research areas and experts of pattern recognition methodology to discuss possibilities of the application of modern pattern recognition techniques in practical situations and the need for such techniques from the point of view of those engaged in application areas.

Proposed Topics:

- Non-linear filtering techniques
- Precision of measurements in images
- Computational aspects and estimation problems using large data sets
- Relationship between data bases, pattern analysis and expert systems
- Use of models in pattern recognition
- Use of interactive systems

Proceedings

The proceedings will be published by North-Holland Publishing Company

Attendance:

Attendance will be limited to 100 persons. If you are interested in attending/participating, please contact the Conference Secretariat.

CALL FOR PAPERS

Nato Advanced Studies Institute

Bonas, Gers, France
July 2-14, 1984

New Systems and Architectures for Automatic Speech Recognition and Synthesis

The objective of this Advanced Studies Institute is to discuss and study new concepts and technologies in systems and architectures for automatic speech recognition and synthesis through tutorial lectures by leading experts, paper presentations and panel discussions by participants of the ASI. Some support will be available to qualified attendees of this ASI. Application and registration package will be mailed to you upon request. Should you wish to present a paper at this ASI, please send a 2 page summary for consideration by the committee.

Schedule

Deadline for application: April 15, 1984

Notification of acceptance and amount of support: May 1, 1984

Contact for information, application and registration forms:

Prof. R. De Mori or *Prof. C.Y. Suen*
Co-Director, NATO ASI Co-Director, NATO ASI
Tel. 514-879-8070 Tel. 514-879-8067

Department of Computer Science
Concordia University
1455 de Maisonneuve Blvd. West
Montreal, Quebec H3G 1M8, Canada

Pecora IX

The Ninth William T. Pecora Memorial Remote Sensing Symposium

October 2, 3 and 4, 1984

Howard Johnson Convention Center
Sioux Falls, SD

Spatial Information Technologies for Remote Sensing Today and Tomorrow

Sponsored by

IEEE Computer Society
United States Geological Survey
National Aeronautics and Space Administration

The Pecora Symposium will focus on the wide variety of spatial information technologies germane to the remote sensing community. The purpose of the meeting is to expose the participants to all aspects of computer spatial data handling, an area which now involves a variety of disciplines. Topics will include:

- Geographic Information Systems
- Artificial Intelligence
- Natural Languages
- Database Design
- Cartography
- Advanced Interpretation Techniques
- Computational Geometry
- Technology Integration
- Graphics and Displays
- Hardware

Critical technological and scientific requirements will dictate how the remote sensing community will perform today and tomorrow. Therefore, this symposium's goal is to bring together managers, technologists, and scientists from leading private, government, and university sectors to display and present the latest research developments.

Schedule

Abstracts due April 24, 1984
Notification of Acceptance May 15, 1984
Full papers due July 10, 1984
Conference October 2-4, 1984

Conference Chairman

William L. Alford
Code 933
NASA/GSFC
Greenbelt, MD 20771
301-344-6276

Program Chairman *Dr. Robert M. Haralick*
 Department of EE
 Virginia Tech
 Blacksburg, VA 24016
 703-961-6819

Exhibits Chairman *William J. Campbell*
 Code 931
 NASA/GSFC
 Greenbelt, MD 20771
 301-344-9541

Logistics Chairman *Raymond A. Byrnes*
 U.S. Geological Survey
 EROS Data Center
 Sioux Falls, SD 57189
 605-594-2283

Workshop on Non-Monotonic Reasoning

Sponsored by the
 American Association for Artificial Intelligence (AAAI)
 Mohonk Mountain House, New Paltz NY 12561
 17-19 October 1984

Broadly conceived, non-monotonic reasoning is the process of making and reasoning with plausible or default assumptions. In recent years its central role within Artificial Intelligence has become apparent, and considerable research activity has been directed towards both theoretical and practical issues. The workshop aims to assemble theoreticians and practitioners from across AI who recognize in their research a need for non-monotonic reasoning. The objective is to identify those forms of plausible reasoning which arise in different areas of AI, to isolate common patterns, to entertain various accounts—both formal and informal—of these reasoning patterns, and to evaluate their suitability and limitations.

Papers are invited for consideration in all aspects of non-monotonic reasoning including, but not restricted to:

- formal theory
- computational mechanisms
- philosophical considerations
- reason (or "truth") maintenance and the retraction of assumptions
- non-monotonic reasoning as it arises in
 - planning
 - Natural Language
 - knowledge representation
 - databases
 - computational vision
 - expert systems

Three copies of an extended abstract (up to 8 pages, double spaced) should be sent to the General Chairman postmarked before 1 May 1984. Acceptance notices will be mailed by 15 June 1984. Revised abstracts should be returned to the General Chairman by 1 September 1984.

General Chairman: *Ray Reiter*
 Dept. of Computer Science
 University of British Columbia
 Vancouver, B.C. V6T 1W5
 Canada

Local Arrangements: *Bonnie Lynn Webber*
 Dept. of Computer and
 Information Science
 Univ. of Pennsylvania/D2
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Program Committee: *Jon Doyle, Carnegie-Mellon Univ.*
*David Israel, Bolt Beranek and
 Newman Inc.*
Hector Levesque, Fairchild Corp.
Robert Moore, SRI International
Ray Reiter, Univ. of British Columbia
Bonnie Lynn Webber, Univ. of PA

IFAC Workshop on Artificial Intelligence in Economics and Management

Zurich, Switzerland
 12-14 March 1985

Organized by
 Swiss Association for Automatic Control
 (SGA/ASSPA)

Sponsors

- International federation of automatic control (Economic and management systems committee: main sponsor)
- Sponsorship is currently also being requested from: IFORS, IFIP, AAAI, IAPR, Int. Finance Association, Econometric Society, SEDC, IEEE (PAMI), ACM, TIMS, Assoc. of International Economics

IPC Chairman *L.F. Pau*
 Battelle Memorial Institute
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 CH 1227 Carouge, Switzerland
 Tel: 41-22-439831
 Telex: 423472 BATEL CH

**National Organizing
 Committee** *J.G. Bertez*
 Battelle Memorial Institute

Scope of the Workshop

This workshop will be devoted to research and applications of artificial intelligence and pattern recognition in the area of economic and management studies, as well as finance. Original methods, case studies, new applications, specific AI tools (hardware and software) will be presented and discussed. The aim of the workshop is both to highlight the state of the art in the field and to explore the most promising areas for further research and applications of AI in economics, management and finance. Contributed papers and case studies are welcome on the following and related topics:

Methods

1. Artificial intelligence and pattern recognition methods or tools
 - Knowledge representation and model structure in economics, finance and management; the case of ill-structured problems
 - Expert system design in economics, econometrics
 - Statistical or structural pattern recognition methods in economics
 - Languages and basic AI software

2. Economic and management models using AI and PR

- Economic models and model building software using AI and PR
- Experiments with the development of AI tools for such models

Tools

- Specialized AI hardware and software for economics, banking, insurance, general management, and public policy. The contributed papers in this area should deal with tools in use or in development. Demonstrations are welcomed.

Applications

1. Economic and management data base systems

- Document handling using AI methods
- Query procedures, including natural language queries
- Connections with decision support systems in economics and management

2. AI and PR in economic analysis and forecasting

- Macroeconomics
- Microeconomics and management
- Inference of financial and commercial flows of goods and services

3. AI in decision support systems (DSS) in banking, economics, and management

- Intelligent information system design
- Computer assisted decision modelling
- Validation procedures for DSS using AI

4. AI in scheduling and planning

- Job and job-shop scheduling
- Logistics planning

5. Financial analysis and risk assessment using AI and PR

- Inference of comparative analyses
- Discrimination and classification of risks

6. Strategy games

- AI in business games
- AI in economic and regional planning games
- AI in policy games and strategic analysis

7. Computer aided learning in economics and management using AI

8. Automatic translation of economic texts

For the case studies of actual relevance for this workshop, proposals and background material should be prepared, distributed to the participants and submitted in advance to the program committee.

The official language of the workshop is English. No simultaneous translation will be provided. Final papers should be in English.

Deadlines:

Submit abstracts (500 words): 1 August 1984

Submit full papers (6000 words, 5 copies): 1 December 1984

Notification of acceptance: 15 January 1985

Software demonstrations and programs (microcomputer, general computer) are welcome if practical arrangements can be made by the authors. Send 200 word description by 1 December 1984 for inclusion in the workshop program.

Publications

A volume of abstracts will be provided to registrants at the workshop. After the workshop, a volume of final proceedings will be published based on typed contributions in camera ready form. Proceedings will be published by the official IFAC publisher, Pergamon Press. IFAC holds the copyright for the publications of the papers. Accepted papers are considered to have been submitted for possible contribution to the IFAC Journal *Automatica*. The paper is automatically released for publication elsewhere three months after the workshop unless the author has been notified that the paper is being considered for possible publication in *Automatica*.

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PROLAMAT 85

6th International Conference

SOFTWARE FOR DISCRETE MANUFACTURING

Organized by AFCET

(Association Francaise pour la Cybernetique

Economique et Technique)

PARIS, June 11-13 1985

PROLAMAT 85 is the sixth in a series of triennial meetings of IFIP (International Federation for Information Processing) and IFAC (International Federation of Automatic Control). It has become the recognized forum for the presentation of new developments in computer software for discrete manufacturing. Therefore, papers are invited dealing with advances and new results and applications in software aspects and computing methods and techniques for design and planning in discrete manufacturing (from machining to assembly).

Themes

- Design and implementation of CAD/CAM systems
- Computer Aided Design
- Computer Aided Process and Production Planning and Optimization
- Robotics and Automated Manufacturing Systems
- Artificial Intelligence in CAD/CAM

Papers

Titles of the papers should reach the Conference Secretariat by 1 May 1984. Full texts, written in English must be received by the Conference Secretariat before September 15, 1984, in 4 copies according to the following instructions.

1st page: title of the paper
name, affiliation, address, telephone
abstract (10 lines)
key words (among the indicated themes)

Deadlines

May 1, 1984 reception of intention forms
September 15 reception of full texts (4 copies)
December 1 notification of acceptance or rejection
Feb. 15, 1985 mailing of the final programme
March 1 reception of final texts

Texts will be submitted in English. Simultaneous translation will be available in French and English during the conference.

Associated Event. An industrial exhibition on production automation will take place during the week of PROLAMAT.

Detailed information may be obtained upon request from the
Conference Secretariat:

Elisabeth FAYOLA, Catherine FRACHON

AFCET

156, Boulevard Pereire

F. 75017 Paris

Tel. (1)766.24.19

Telex: 290 163 EURTEL Code 235

4th Scandinavian Conference on Image Analysis

Trondheim, Norway

June 18-20, 1985

The Conference

The Norwegian Society for Image Processing and Pattern Recognition hosts the 4th Scandinavian Conference on Image Analysis. This is an international conference, open to contributors and participants from all countries. The official language of the conference will be English.

The conference is open to all aspects of *Image Analysis*, including:

- theoretical problems in image analysis
- remote sensing
- software
- hardware
- industrial applications
- biotechnical and biomedical applications

Poster sessions and sessions on other topics of Pattern Recognition may also be organized, depending on the number of abstracts received. The duration of the presentations will be 20 minutes. During the conference, several invited speakers will give talks on selected topics of Image Analysis. In connection with the conference, there will be an exhibition of Image Analysis equipment.

Papers

3 copies of a 300 word abstract of the paper, in English, should be submitted by November 15, 1984 to:

Dr. Eric Swane

Automatic Control Division, SINTEF

The Norwegian Institute of Technology

N-7034 Trondheim-NTH

Tel. 47 7 59 43 61

The deadlines are:

November 15, 1984: Reception of abstracts

January 15, 1985: Notification concerning acceptance

March 15, 1985: Reception of camera-ready accepted papers

Chateau de Bonas

32410 Castera-Verduzan

Tel. 18 (62) 64.52.68

Gers-en-Gascogne... The beauty of its green hills. Its cathedrals, its medieval forts, its castles, its varied sites, its gourmet cooking and its Armagnac liqueur. In this mild-weathered country, in absolute peace, the Center offers its beauty as an historical monument, the enjoyment of a 13 hectare garden where fragrances have lingered from more than two hundred years, and all the comfort and conveniences for work and leisure of the modern age.

Accommodations may be arranged to suit the most luxurious to the most modest needs, allowing to host 40 persons in single premises, or up to a maximum of 80 adults and 12 children. A fifty place parking lot shall be available for your car.

Food is affordable at a single well-studied price, with the possibility of organizing, at one's wish, special meals and catering.

Five conference rooms are at the disposition of convention attendees, all with blackboards, overhead projectors, and other miscellaneous audiovisual equipment. Their sizes are 20, 30, 40, 50, and 100 seats, respectively.

For your leisure, in the castle you will socialize in the library, the game rooms, or the music room with piano... You will also enjoy the sport facilities: tennis, petanque (a very popular ball game in southern France), table tennis... And you may enjoy bicycle riding in the neighboring countryside.

Accommodations

Only educational and cultural conventions will be considered. Various formulas are possible:

Forfeiting price for the entire stay: Room-and-board or Room only. Reservation of the conference rooms and audiovisual equipment is included in this price.

Customized arrangements: Services are accounted for according to a pre-set agreement.

