SUMMER'93 VOLUME 2.2

# EURO Bulletin

Bulletin of the Association of European Operational Research Societies (EURO) distributed 4 times a year (Spring, Summer, Fall, Winter) through the National Societies. National Societies or individual members having news for the bulletin are requested to sentheir information to the editor: Ph. Van Asbroeck, 108 av. Sleeckx, B-1030 Brussels, Belgium (tel. & fax.: +32 2 245 60 69).

from L. Fortuin, P. van Beek and L. Van Wassenhove

### OR netwORk BRIDGING THE GAP

a report to the OR community

n the world of Operational Research, the gap between theory and practice is well-known. Here "theory" stands for a plethora of activities mainly taking place at universities; they are aimed at, e.g., developing new concepts and creating better algorithms, in other words: at the mathematics of OR. Application of the marvellous findings of our science in real life situations, e.g. in industry, commerce and agriculture, is what we mean by "practice".

Many OR workers have tried to bridge this gap, convinced that it is undesirable, for society as well as for our profession. This has resulted in articles in professional journals, books and courses especially designed to support managers. But the

gap continues to exist, albeit less wide than in the past.

At a very modest scale, we have tried since May 1986 to promote our profession outside academic circles. At the IFORS'90 Conference in Athens, we presented our ideas and achievements so far, and had the pleasure of meeting persons interested in joining an OR netwORk. Later on, we received very encouraging mail from all over the world. At EURO XI at Aachen, in 1991, we continued our efforts with the result that more people joined the network. Formal contacts with IFORS and EURO have been established also.

During the IFORS'93 Conference, on Friday 16 July 1993, another meeting of the OR netwORk was held in the "Salão de Exposicões" of Hotel Ritz, in which some 15 persons took part. Its purpose was simple and straightforward: renewing contact with members of the OR netwORk, establishing contact with new members, and exchanging ideas about reducing the gap between OR theorists and possible users of OR products. There were three items on the programme:

- -Overview of the present situation.
- -Plans for the future.
- Discussion.

#### INSIDE

- 1 OR netwORk
- 2 EURO Council Meeting
- 3 EURO Summer Institute
- (4) from EURO Treasurer
- (5) TOP & TEST Journals

a report to the OR community (continued)

### Overview of the present situation

Currently our attention is devoted to a number of activities:

Contact with board of management of (industrial) companies, in order to convince them of the importance of OR for their decision problems and to find fellowships for Ph.D. and M.Sc. students.

#### Contact with:

- academics working on the mathematics of OR;
- OR practitioners, i.e. consultants but also university staff busy with the implementation of OR;
- OR societies: IFORS, EURO, NSOR, DGOR.

Contributions to OR conferences, via sessions such as "OR and the Environment" at IFORS'93, and via informal meetings like the one reported about here.

Development of the OR netwORk, although it must be admitted that so far no activities have been executed other than membership registration and meetings at OR conferences. The membership is now 63 persons: Europe (40), North-America (12), Asia (6), Africa (4) and Australia (1).

Publications both in professional and general journals, even daily newspapers. The list contains now 9 titles. A contribution on "Industrial applications" will appear in the Encyclopedia of OR/MS.

The preparation of a monograph "Consult OR perish!" containing case studies about successful application of OR in industry, aircraft maintenance, banking, agribusiness, and public transport. Twelve authors have agreed to contribute, an editor is being searched for. The book is intended for three types of readers: (1) managers and policy makers, to show them how OR can support the decision-making process; (2) OR workers, to show how OR can successfully be used in practice; (3) students, to reveal the added value of OR.

### Plans for the future

As the authors have been "running" the OR netwORk for more than seven years, we feel that the time has come to appoint a new co-ordinator. Hence attempts have started to find a young, energetic and creative person with a Ph.D. in OR. For the new co-ordinator, we can see several tasks:

Examination of the activities mentioned in Section 1 and continuation of those that seem still valuable.

Looking for ways to give the OR netwORk a more official character. Discussions with the Executive Committee of EURO at IFORS'93 have reaffirmed that EURO is very much in favour of the network's activities and would like to see it becoming an EURO Working Group. It should be noted, however, that the OR netwORk has members all over the world so that too strong ties with

### OR netwORk (continued)

an European organisation are undesirable.

Developing ideas to make the OR netwORk more than a List of members, e.g. by setting up a Newsletter. EURO kindly has offered the EURO Bulletin as a means of communication. As this Bulletin can be mailed all over the globe, the present "troika" has gratefully accepted this offer, as this report shows.

Stimulating the setting up of international projects for the implementation of OR. Here we imagine international co-operation between industries and universities with financial support from e.g. EEC.

### **Discussion**

The results of a stimulating and encouraging discussion can be summarized in a number of statements:

- 1. OR curricula at universities should give more attention to the application of OR in practice. Moreover, those non-OR curricula where OR could be beneficial, have to be encouraged to give OR its proper place.
- 2. It would be nice and useful to have a userfriendly means to obtain information about:
- OR workers ("Who is who in OR?");
   publications about OR applications.
   Perhaps E-mail can become a communication tool able to answer this kind of questions.
- Case studies about successful

application of OR are interesting, but case studies about *failures* are even more so, because of the lessons other OR workers can learn from them.

- 4. OR should not be *producer* driven, but *customer* driven. More attention should be given to the *marketing* of OR.
- 5. OR is a practical discipline, and so the "theory of OR" is a contradictio in terminis. It would serve the transparency of both OR and mathematics if academics working on the theory of OR should stop pretending to do OR; they are merely occupying themselves with "mathematics for OR", which is a very respectable and rewarding job in itself.
- 6. There is more information about the application of OR in practice than many people are aware of. EURO intends to develop activities for distributing this information to interested parties.

### Interested?

The aforementioned attempts to find a new co-ordinator have been successful, in the mean time. So if this report has raised your interest in the OR netwORk and if you like to join it, please contact the new co-ordinator. His address is:

Dr. M. Salomon, Erasmus University Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands. (tel.: +31 10 408 2021, fax: +31 10 452 3595, E-mail: MSALOMON @ FAC.FBK.EUR.NL).

from the President

## Highlights of the Council Meeting Lisboa July 1993

ears ago in many English shops one saw the notice 'Please do not ask for credit, since a refusal often offends".

To avoid a similar fate I decided to write myself notes of this years' Council Meeting. Next time it will be the turn of someone else. However I have before me as I write, a synopsis prepared by Valerie Belton (Chairman of the Organising Committee of EURO-Glasgow) which has lightened my task.

### **EURO / TIMS**

I think that many present at the Council meeting thought that it went on too long. I was among them! The reason was the perennial question of relations with TIMS. However the points made in debate were very valuable in guidance terms when other officers and I went to meet TIMS for discussions on the following Friday.

The Hispanic ORS had very kindly agreed to host a joint EURO/TIMS Conference in Barcelona in July 1997 (1996 is an IFORS conference year, so we shall be having a EUROPRIME (Up'), formally 'Young OR', conference that year). Prof Jaume Barcelo is the nominee for Chairman of the Organising Committee. A number of proposals for organising such a con-

ference were agreed by what turned out to be a constructive meeting for putting back to the respective councils. In summary these were that the conference should be organised by the local society as joint agents of EURO and TIMS. Surpluses would be shared 1/3, 1/3, 1/3. There would also be a joint Programme Committee with two "joint chairs". The conference would last 4 days so that the same number of papers could be handled with fewer parallel streams and there would be separately sponsored TIMS and EURO sessions, for example to cater for presentations by EURO gold medallists. The EC of EURO is now awaiting a response from TIMS Council.

### **Elections**

One of those present at this meeting was Paolo Toth and to those of you whom the news has not yet reached, I am very happy to announce his unanimous election as President-elect for 1994. He will then serve as President in 1995-96. I am sure that all of you join with me in wishing him every success in that office, having already graced the office of Secretary of EURO, Chairman of the Organising Committee of EURO VII and President of the Italian ORS.

Council Meeting (continu.)

### **EURO XIV - 1995**

The matter taking the next longest to debate was the decision to accept Israel's invitation to locate EURO XIV in Jerusalem in 1995. A number of members of Council wished EURO to re-visit this decision because of the security situation in that part of the world and of possible abuses of human rights. A full debate was held and in the end Council decided to maintain its original decision. The conference will be located in West (rather than East) Jerusalem. The proposed budget gives every prospect of there being a reasonable priced conference. Zilla Sinuany-Stern has kindly agreed to be chairman of the Organising Committee and Roman Slowinski of the Programme Committee. We all wish them the best of luck.

### **EURO XVI**

Council welcomed the kind offer by the Belgian ORS to host EURO XVI in 1998. Judging from the success of EURO I from which the whole of EURO stemmed, we shall enjoy a fine conference. Formal proposals will be made next year.

### **Other Conferences**

Council agreed a subsidy of SF 10,000 for the EUROPRIME Conference in 1996 to support attendees

from Eastern Europe. For the same purpose a loan was granted to the Second Balkan OR Conference, organised by the Hellenic OR Society. This could be turned into a grant if the need arose.

### **EURO Gold Medal**

Graham Rand was appointed Chairman of the Gold Medal Jury for 1995. He will present his proposed committee next year.

### **Education**

Costas Pappis introduced a proposal which was accepted, to produce a handbook of OR Courses in Europe with support to be sought from EC.

### **Initiatives**

Council approved the proposal of Jaap Spronk to allocate a modest sum of money to young researchers to carry out tasks for particular EURO officers. The President proposed a new initiative to fund up to SF 5000 for the travel by Western OR scientists to conferences in Central and Eastern Europe jointly organised by a one OR Society from that part of the world and one from the West. Only one such conference would be funded each year. Any proposals for 1994 should go to Jaap Spronk who will chair a committee of Past Presidents. Council also approved Catherine Roucairol's proposal to ask Philippe Van Asbroeck to set up a

### **EURO Council Meeting Lisboa July 1993 (continued)**

EURO Office (BURO) to handle the distribution of papers to member societies as well as the Bulletin. Councils' approval was for one year initially. I am very grateful to Philippe, and to Philippe Vincke, Vice-rector of the Université Libre de Bruxelles for making this possible.

### **New Members**

I was very pleased to welcome the Czech and Slovak and the Hungarian OR societies as new members and the OR Society of South Africa as an associate. This means that it can enjoy all the privileges of membership except the vote.

### Income, Expenditure and Budgets

Tuula Kinnunen put forward a number of proposals for expenditure by EURO Working Groups, which were approved. At Costas Pappis' suggestion the EC can now enter into agreements with member societies for hosting EURO-K Conferences which may differ within limits in respect of the sharing of surpluses. Jean Bovet drew attention to the magnitude of EURO's total assets and the fact that they were increasing each year, assisted (in 1993 only) by increased income from EJOR. He also proposed the accounts for 1992 which were approved. In the light of this Council approved additional expenditure totalling some SF 22000 in 1993 and some SF 33000 in 1994. Jean will circulate revised budgets to member societies and show a consolidated grouping of all expenditure assisting OR in Central and Eastern Europe whatever the instrument heading under which it comes. Ernest Field produced a report on his audit of EURO/TIMS XII in Helsinki which was also approved.

### **Statutes**

Finally Council approved new statutes drafted by Ernest Field. The changes were principally designed to ensure greater conformity to Swiss law.

In fact Council was kind enough to approve all the proposals emanating from the EC (I have named the individual authors of proposals above, but they all of course came to Council with the full backing of the EC). This leaves your officers with a great deal of work to do and I am grateful to them for all the hard work they have put in already this year. The EC too has delegated powers and it has welcomed to the EURO fold the OR NetwORk (Leonard Fortuin, Paul van Beek and Luk Wassenhove), with which remark I close read more in the rest of this issue, and don't forget the new edition of the EURO Brochure written by Jakob Krarup and produced by Philippe Van Asbroeck.

Maucice Shutler

from EURO Vice-President

## Organisation of a EURO Summer Institute

URO Summer Institutes (ESI) are an instrument EURO has established for the encouragement of good social and working relationships between promising young O.R. scientists in EUROPE.

Three ESI may be organized every two years. Each ESI covers a different theme so that as many young scientists as possible will have the opportunity to participate once in their career. The duration of an ESI is normally between 2 and 2 1/2 weeks.

The main purpose of each ESI is to establish, in each O.R. field, a network of outstanding people who will continue to work together in the future.

Participation can be considered an honour as it is limited to a group of, at the maximum 20 people, aged 25-35, who have significant experience in the chosen field, and are authors of at least one good unpublished paper. The applicants will have submitted their curriculum vitae together with their paper to their National O.R. Society, who in turn will have selected not more than two National Candidates and passed them to the Scientific Committee.

No special courses are organized during the ESI but every participant gives a well prepared presentation of their work as a starting point for discussion. Invited experts' lectures can be included in the programme, as can seminars and other research activities conducted by the Scientific Committee. Papers for a special issue of the European Journal of Operational Research are prepared during the ESI.

EURO considers the social activities (dining and playing together ) to be most important for the success of the ESI for it is through these activities that friendships develop.

EURO provides a substantial financial support to the organisers (maximum 12.000 Swiss Fr., which is about one third of the total budget). The organizers will have to raise additional funds with the help of the National O.R. Society. Public and private sponsors can be approached.

Each ESI is a generous and beautiful instrument for the promotion of young O.R. scientists. It is an instrument for the future of EURO. It is expected that each National Society at its turn will contribute once to the organization of a ESI.

If your National O.R. Society is prepared to organize a ESI on a particular theme, please send your proposal as soon as possible. Relevant forms to be completed have already been sent to all EURO member Societies. This list of suggested topics for future ESI is by no means exhaustive and others can certainly be considered: Forecasting, Simulation, Logistics / Physical Distribution, Health Care and Education, Environmental Problems, OR and Artificial Intelligence

Thank you in advance for all contribu-

Professor Costas Papis, University of Piraeus, Department of Industrial Management, 80 Karaoli & Dimitriou Str., G-18534 Piraeus, Greece (tel.: office: +30 1 42 22 060 home: +30 1 94 22 052, fax: +30 1 41 79 064).

from EURO treasurer

### LET'S TALK MONEY

Account Balance 1991: 85.000 Sfr Account Balance 1992: 101.000 Sfr Account Balance 1993: >100.000 Sfr

As you know, EURO is a non-profit organization, and as such is in violation of Swiss law insofar it makes profits like those above. You are all equally well-aware that EURO's goal is to promote OR throughout Europe.

It seems to me that these two statements lead inevitably to a question that I would like to see raised within and among the national members-societies of EURO

### How can we spend this money?

It is true that several instruments are ready in place and are working relatively well. However, other useful outlets for our «surplus» cash must be found. Here, for example, are some suggestions put forward by members:

- financial and logistical help for young participants at EURO conferences;
   organization of new events;
- fellowships/scholarships for young researchers (differently conceived from the present).

I therefore invite all members of EURO to open debate on the question of how to spend money on promoting OR.

Please inform the Executive Committee of your ideas. These new instruments will both advance the cause of OR in Europe and provoke an immediate and grateful shipment of Swiss chocolate offered by your treasurer.

Jean Bovet

## Call for Papers SEIO Journals TOP and TEST

### TOP

The Journal Top is a journal of operations research, in which the emphasis is placed on papers containing both original theoretical and application-oriented contributions. A volume of about 300 pages will be published annually in two parts, issued in May and October. During 1993 however only one issue will be published. Top is published, in English, by the Sociedad Española de Estadística e Investigación Operativa (SEIO). The journal is a transformation of Trabajos de Investigación Operativa, which has been published in Spanish since 1950.

### Submission of papers

Original manuscripts should be submitted to one of the Editors:
Jaume BARCELO or Laureano F.
ESCUDERO
Sociedad de Estadística e Investigación Operativa
Hortaleza, 104 - 2.º Izda.
E-28004 - Madrid, Spain.
(Tel.: +34 1 308 2474).

### **TEST**

Test is a journal of statistics and probability in which the emphasis is placed on papers containing original theoretical contributions of direct or potential value in applications. A volume of about 400 pages will be published annually in two parts, issued in November and May. Test is published,

in English, by the Sociedad Española de Estadística e I.O. (SEIO). The journal is a transformation of Trabajos de Estadística, which has been published in Spanish since 1950.

### Submission of papers

Original manuscripts should be submitted to the Editor:
Jos. M. BERNARDO
Centro de Documentación y Análisis
Presidencia de la Generalidad
Caballeros 9,
E-46001 - Valencia, Spain
(tel.: +346 386 6138, fax: +346 386 3626).

The Associate Editors are Dominique BAKRY, Wenceslao GONZALEZ, Daniel PENA, James O. BERGER, Julián de la HORRA, Luis R. PERICCHI, Philip J. BROWN, Gérard LETAC, Nozer SINGPURWALLA, Bradley EFRON, Dennis V. LINDLEY, Adrian F. M. SMITH, Evarist GINE, Manuel MENDOZA, Henry P. WYNN, Javier GIRON, David NUALART, Victor J. YOHAI.

### **Subscriptions**

Subscription to the journal is included in the regular fee of the SEIO. For Institutions and individuals who do not belong to SEIO the 1993 subscription price for TEST + TOP is 9,000 pta. (USA\$ 90). Subscriptions ordered from developping countries will qualify for a 40% discount. Subscriptions must be prepaid; a cheque, payable to SEIO and drawn in any convertible currency, should be sent to:

Secretario General Sociedad de Estadística e Investigación Operativa Hortaleza, 104 - 2.º izda. E-28004 - Madrid Spain

#### **EVENTS**

Present section was closed on 10 September, 1993; «\*» denotes information featured previously.

September 28-30, 1993

International Conference on Advances in Production Management Systems, Athene, Greece;

Information: Asst. Prof. Ilias P. Tatsiopoulos, 2 Charokopou Street, GR-17671 Kallithea, Greece;

September 29-30, 1993

\* CIRP-IFORS International Workshop on Designing Innovations in Industrial Logistics, Capri, Italy;

Information: Dr. M. Bielli, National Research Council, Viale Manzoni 30, I-00185 Roma, Italy (tel.: +39 6 771 61, fax: +39 6 771 6461);

September 29 -October 1, 1993

\* Annual Conference of the Assocazione Italiana di Ricerca Operativa on Innovation Management in Transportation and Logistic Systems, (Models, Algorithms, Tools), Capri. Italy:

Information: AIRO '93 Secretariat, Dipt. di Informatica e Sistemistica, Università di Napoli «Federico II», Via Claudio 21, I-80125 Napoli, Italy (tel. & fax + 39 81 768 3376, fax + 39 81 768 3186);

September 30-October 2, 1993
Colloque «Intelligence Artificielle et Epistémologie». Tramelau. Switzerland:

Information: J.-P. Müller, Institut d'informatique, Université de Neuchatel, rue de Manruz, CH-2000 Neuchatel, Switzerland;

October 3-6, 1993

Netflow 93, an International Workshop on Network Optimization: Theory and practice, San Miniato, Italy;

Information: Federico Malucelli, Dipartimento di Infomatica, Universita di Pisa, Corso Italia 40, I-56125 Pisa, Italy;

October 3-6, 1993

4th Annual Meeting of the Production and Operations Management Society, Boston, USA:

Information: Prof. Yash Gupta, College of Business, Campus Box 165, POB 173364, University of Colorado, Denver, Colorado 80217-3364 USA (tel.: +303 628 1205, fax: +303 628 1299);

October 5-7, 1993

\* 3rd Conference on Operational Research,

Rovinj, Croatia;

Information: Vesna Kos, Ekonomski fakultet, Kennedyjev trg 6, 41000 Zagreb, Croatia (tel.: +38 41 231 111, fax: +38 41 235 633, E-mail: LUKA.NERALIC@UNIZG.AC.MAIL.YU);

October 5-8, 1993

2nd European Congress on Systems Science, Praha, Czechoslovakia;

Information: AFCET, 156 bld. Péreire, F-75017 Paris, France (tel.: (1) 47 66 24 19, fax: (1) 42 67 93 12);

October 7, 1993

Blackett Memoriam Lecture on «evaluating the effects of privatising electricity» by Prof. Derek Bunn, London, UK;

Information: Kathryn Ainsworth, Conference Organiser, Operational Research Society, Neville House, Waterloo Street, Birmingham B2 5TX, UK (tel.: +21 643 0236, fax: +21 631 3485);

October 7-8 or 14-15, 1993

\* 38th EWG Meeting on Multicriteria Aid for Decisions, Ispra, Italy; Information: M. Paruccini or A. Zanié (tel.: +39 332 785285, fax: +39 332 789394, E-mail: alexandre.zenie@cen.jrc.it);

October 8-9, 1993

GWSk Meeting on «Interaktion - Modellierung, Kommunikation und Lenkung in komplexen Organisationen, Koblenz, Germany;

Information: Prof. Dr. Bernd Schiemenz, Institut für Wirtschaftsinformatik, Rheinau 1, D-56075 Koblenz, Germany;

October 17-20, 1993

\* International Conference on Systems, Man and Cybernetics, Systems Engineering in Service of Humans, Le Touquet, France; Information: IEEE, SMC '93 Conference, Ecole Centrale de Lille, Boulevard Paul Langevin BP 48, F-59651 Villeneuve d'Ascq Cedex, France;

October 18-21, 1993

\* 2nd Balkan Conference on Operational Research, Thessaloniki, Greece; Information: HELLORS Macedonia-Thrace Branch, Att. I. Dardamanis, 25 Plataion

Information: HELLOHS Macedonia-Thrace Branch, Att. I. Dardamanis, 25 Plataion Str., GR-54249 Thessaloniki, Greece (tel. & fax: +031 314 888);

October 20-22, 1993

\* European Conference on Regional Development induced by Innovation in High Technology, Patras, Greece;

Information: Prof. N. Zagouras, Division of Management & O.R., Department of Mechanical Engineering, University of Patras, GR-26500 Patras, Greece (fax: +30 61 997 260);

October 20-22, 1993

Fuzzy- Systeme'93 - Management unsichere Informationen, Braunschweig, Germany:

Information: Deutsche Informatik Akademie GmbH, Wissenschaftszentrum, Ahrstr. 45, D-5300 Bonn 2, Germany (tel.: +228 302 165, fax: +228 378 690);

October 21-22, 1993

Workshop on Multi-Level Analysis Models, Utrecht. The Netherlands:

Information: iec ProGAMMA, Grote Rozenstraat 15, NL-9712 TG Groningen, The Netherlands (tel.: +50 636900, fax: +50 636687, E-mail: gamma.post@gamma.rug.nl);

October 25-29, 1993

Conference on Neural Networks and their Industrial and Cognitive Apllications, Nimes, France;

Information: Jean-Claude Rault, EC2 - 269-287, rue de la Garenne, F-92024 Nanterre Cedex, France (fax: +33 1 47 80 6629);

November 10, 1993

Meetingon Global Optimization Heuristics, Antwergen, Belgium:

Antwerpen, Belgium; Information: Prof. F. Broeck, Universiteit Antwerpen RUCA, Middelheimlaan 1, B-2020 Antwerpen, Belgium (tel.: + 3 218 07 841).

November 14-19, 1993

5th Annual Conference on Comprehensive Systems Design of Education, Monterey, CA, USA;

Information: Bela H. Banalthy, 25781 Morse Drive, Carmel CA 93923, USA (tel. & fax: +408 625 3178);

November 25-27, 1993

14th EWG Meeting on Financial Modelling, Mantova, Italy;

Information: Erio Castagnoli, c/o Banca Agricola Mantovana, Corso Vittorio Emmanuele 30, I-43100 Mantova, Italy (tel.: +39 376 331 205, +39 376 331 249, fax: +39 376 331 261);

December 6-10, 1993

\* International Congress on Modelling and Simulation: Modelling Change in Environmental and Socioeconomic Systems, Perth, Australia:

Information: A. Jakeman, Cres, Australian National University, GPO Box 4, Canberra, ACT 2601, Australia (fax: +61 6 2490 757, E-mail: tony@cres.anu.edu.au);

December 7-8, 1993

UNICOM Seminars on : using EDI for business in the 1990', the quick response approach to supply and distribution logis-

#### **EVENTS**

tics, management tools and the project support office, Uxbridge, UK; Information: UNICOM, Brunel Science Park, Cleveland Road, Uxbridge, Middlesex, UB8 3PH, UK (tel.: +895 256 484, fax: +895 813 095);

December 13-15, 1993

\* 4th EURO Mini Conference on Risk Management, Liège, Belgium;

Information: Prof. Dr. Ing. Gérard Colson, EURO, Université de Liège, Bâtiment B31, Bte 50, B-4000 Liège, Belgium (tel.: +32 41 56 31 88, +32 41 56 27 21, fax: +32 41 56 29 83);

December 13-16, 1993

UNICOM Seminars on: linear programming, simulation modelling, Uxbridge, UK;

Information: UNICOM, Brunel Science Park, Cleveland Road, Uxbridge, Middlesex, UB8 3PH, UK (tel.: +895 256 484, fax: +895 813 095);

January 11-14, 1994

\* 9th Congress on «Reconnaissance des Formes et Intelligence Artificielle», Paris, France;

Information: AFCET, 156 bld. Péreire, F-75017 Paris, France (tel.: (1) 47 66 24 19, fax: (1) 42 67 93 12);

January 20-21, 1994

8th National Conference on Quantitative Methods for Decision Making, Brussels, Belgium:

Information: Dirk Cattrysse, Katholieke Universiteit Leuven, Afdeling Industrieel Beleid, Celestijnenlaan 300A, B-3001 Leuven, Belgium (tel.: +16 28 66 11 ext. 2564, fax: +16 22 23 45, E-mail: fhbbb04@blekul11);

January 25-26, 1994

UNICOM Seminar on adaptive computing and information processing: neural networks, bayesian belief networks, genetic algorithms and simulated annealing, Uxbridge, UK;

Information: UNICOM, Brunel Science Park, Cleveland Road, Uxbridge, Middlesex, UB8 3PH, UK (tel.: +895 256 484, fax: +895 813 095):

February 2-4, 1994

International Conference on Forecasting Financial Markets: New Advances for Exchange Rates, Interest Rates and Stock Prices, London, UK;

Information: Christian Dunis, Treasury, Chemical Bank, 125 London Wall, London EC2Y 5AJ, UK (tel.: +44 71 777 4015, fax: +44 71 777 4774);

February 7-9, 1994

\* IFAC Workshop on Man - Environment Integration, The Challenging Relationship, Lisboa, Portugal:

Information: Prof. L. Valadares Tavares, APDIO - CESUR - IST, Av. Rovisco Pais, P-1000 Lisboa, Portugal;

February 24-25, 1994

2nd Latin-American Congress on Juridical Informatics, La Habana, Cuba;

Information: F. Hartmann Soler, Chairman, c/o Lic. N. Batard Najarro, Informatics 94 Executive Secretary, Palacio de las Convenciones, Apartado 16046, La Habana, Cuba;

March 1994

4th Workshop of the German Working Group on Decision Theory, Chemnitz, Germany:

Information: Gert Wanka, Fachbereich Mathematik, Reichenhainer Strasse 41, PSF 964, D-0-9010 Chemnitz, Germany;

March 21-23, 1994

Young OR Conference, York, UK;

Information: Sandra Weddell, Co-Chair. YOR8, H. M. Treasury, 10/5 Treasury Chambers, Parliament Street, London SW1P 3AG, UK (tel.: +71 270 5390 (work) or +71 733 6644 (home), fax: +71 270 5653);

March 24-25,1994 or April 7-8, 1994 \* 39th EWG Meeting on Multicriteria Aid for Decisions, Poznan, Poland;

Information: R. Slowinsky, Institute of Computing Science, Technical University of Poznan, ul Piotrowo 3A, Pl-60-965 Poznan, Poland (fax: +61 782363);

April 5-8, 1994

12th European Meeting on Cybernetics and Systems Research, Wien, Austria;

Information: Robert Trappl, Dept. of Med. Cybernetics & Al, University of Vienna, Freyung 6/2, A-1010 Wien,, Austria (tel.: +43 1 535 32810, fax: +43 1 532 0652, E-mail: sec@ai.univie.ac.at);

April 24-27, 1994

TIMS/ORSA Meeting on OR/MS without Boundaries, Boston, USA;

Information: TIMS/ORSA Boston 94, c/o ORSA Business Office, 1314 Guilford Avenue, Baltimore, MD 21202, USA;

April 25-27, 1994

1994 IMACS International Symposium on Signal Processing, Robotics and Neural Networks, Lille, France;

Information: SPRANN'94, Ecole centrale de Lille, BP 48, F-59651 Villeneuve d'Ascq Cedex, France (tel.: +33 20 33 53 10, fax: +33 20 33 54 99, E-mail: SPRANN94@Idnges.decnet.citilile.fr);

May 9-13, 1994

4th International Workshop on Computer Aided Systems Technology, Ottawa, Canada:

Information: Tuncer I. Oren, University of Ottawa, Computer Science Dept., Ottawa, On, Canada K1N 6N5 (tel.: +613 564 5068, fax: +613 564 7089);

May 30-31, 1994

2nd European conference on Information Systems, Breukelen, The Netherlands;

Information: Walter Baets, Nijenrode University, The Netherlands Business School, Straatweg 25, NL-3621 BG Breukelen, The Netherlands (tel.: +31 3462 91275, fax: +31 3462 91250):

May 30-June 1, 1994

CORS 1994 & Optimization Days, Montréal, Canada:

Information: Gilbert Laporte, Programme Chairman, Centre for Research on Tranportation, Université de Montréal, P.O. Box 6128, Station A, Montréal, Canada (tel.: +514 343 6143, fax: +514 343 7121);

June 1-3, 1994

International Conference on Multi-Objective and Goal Programming, Portsmouth, UK; Information: M. Tamiz, School of Mathematical Studies, University of Portsmouth, Mercantile House, Portsmouth, Hants PO1 2EG, UK (tel.: +44 705 843 110, fax: +44 705 823 504, E-mail: Tamizm@uk.ac.port.cv);

June 12-15, 1994

TIMS XXXII Meeting on Natural Resources, Economic Development and the Environment: The Role of Management Science, Anchorage, Alaska;

Information: TIMS XXXII - Anchorage, The Institute of Management Sciences, 290 Westminster Street, Providence, RI 02903 USA (tel.: +401 274 2525, fax: +401 274 3189):

June 14-17, 1994

16th International Conference «Information Technology Interfaces», Pula, Croatia; Information: Branka Radic, University Computing Centre, J. Marohnica bb, 41000 Zagreb, Croatia, (tel.: +38 41 518 656, fax: +38 41 518 451, E-mail: ITI@SRCE.HR);

June 22-24, 1994

\* IFAC Workshop on Intelligent Manufacturing Systems, Wien, Austria;

Information: IFORS Secretariat, H. Weilling Secretary, c/o IMSOR bldg. 321, Technical University of Denmark, DK-2800 Lyngby,

### **EVENTS**

Denmark (tel. +45 42 88 14 33 / ext 3410, +45 42 88 22 22 / ext 3410, +45 45 93 12 22 / ext3410, fax: +45 42 88 13 97);

June 23-28, 1994

Triennal Symposium on Transportation

Analysis, Capri, Italy;

Information: Prof. Lucio Bianco, IASI, National Research Council, Viale Manzoni 30, I-00185 Roma, Italy (tel.: +39 6 771 61, fax: +39 6 771 6461, E-mail: BIANCO@IASI.RM.CNR.IT);

July 4-6, 1994

IFAC Symposium on Identification and System Parameter Estimation, Lyngby, Denmark:

Information: Prof. R. V. Vidal, IMSOR bldg. 321, Technical University of Denmark, DK-2800 Lyngby, Denmark (tel. +45 42 88 14 33 / ext 3410, +45 42 88 22 22 / ext 3410, +45 45 93 12 22 / ext3410, fax: +45 42 88 13 97);

July 4-8, 1994

VII Congresso Latino-Ibero Americano de Investigacion de Operaciones e Ingenieria de Sistemas, Santiago, Chile;

Information: Dr. Maximo Bosch, Departamento de Ingenieria Industrial, Universidad de Chile, Casilla 2777, Santiago, Chile (fax: +56 2 689 7896);

July 4-16, 1994

5th International Summer School on Multiple Criteria Decision Aid, Chania, Crete, Greece:

Information: Yannis Siskos, Technical University of Crete, Greece (fax: +30 821 64824):

July 11-15, 1994

System Dynamics Conference, Stirling, UK; Information: Claire Monaghan, Department of Management Science, University of Sterling, Stirling FK9 4LA, UK (tel.: +786 467 360, fax: +786 467 359);

July 12-15, 1994

\* 4th International Workshop on Project Management and Scheduling, Leuven, Belgium:

Information: Prof. Dr. Erik Demeulemeester, Prof. Dr. Willy Herroelen, Katholieke Universiteit Leuven, Department of Applied Economics, Dekenstraat 2, B-3000 Leuven, Belgium (tel.: +32-16-28 57 70 or 28 45 63 or 28 45 59, fax: 32-16-28 57 99, Email: fdbaa49@blekul11);

July 13-28, 1994

\* 10th EURO Summer Institute on Combinatorial Optimization, Jouv-en Josas, France:

Information: Prof. Catherine Roucairol, Univ. Versailles - INRIA, Domaine de Voluceau, BP 105 Rocquencourt, F-78153 Le Chesnay Cedex, France (fax: +33 1 3963 5330):

July 19-22, 1994

\* EURO XIII Conference, Glasgow, UK;

Information: Valerie Belton, Department of Management Science, Strathclyde Business School, University of Strathclyde, Livingstone Tower, 26 Richmond Street, Glasgow G1 1XH, UK (tel.: +41 552 4400, fax: +41 552 6686);

July 25-30, 1994

4th International Statistical Institute Conference on Teaching Statistics, Marrakech, Marocco:

Information: Mr. El Ghazali Abdelaziz, Chairman of the Local Organizing Committee, I.N.S.E.A., P.O. Box 6217, Rabat Instituts, Rabat, Marocco, or Prof. Y. Escoufier Chairman of the Programme Committee, Université Montpellier II, Science et Technique du Languedoc, Place E. Batail-Ion, F-34095 Montpellier Cedex, France;

July 26-28, 1994

\* IFAC Symposium on Transportation Systems: Theory and Applications of Advanced Technology, Tianijn, China;

Information: IFORS Secretariat, H. Weilling Secretary, c/o IMSOR bldg. 321, Technical University of Denmark, DK-2800 Lyngby, Denmark (tel. +45 42 88 14 33 / ext 3410, +45 42 88 22 22 / ext 3410, +45 45 93 12 22 / ext3410, fax: +45 42 88 13 97);

July 26-29, 1994

\* Association of Asian-Pacific Operational Research Societies Conference on Development in Diversity and Harmony, Fukuoka, Japan;

Information: APORS'94, Operations Research Society of Japan, Gakkai-Centre Bldg. 4-16, Yayoi 2-chome, Bunkyo-ku, Tokyo 113, Japan;

August 1-6, 1994

\* 11th International Conference on Multiple Criteria Decision Making, Coimbra, Por-

Information: 11th International Conference on MCDM, INESC, Rua Antero de Quental 199, P-3000 Coimbra, Portugal (tel.: +351 39 324 30, fax: +351 39 246 92, E-mail: ximcdm@inescc.pt);

August 8-12, 1994

7th International Biometric Conference of the Biometric Society, Hamilton, Ontario. Canada:

Information: Prof. P. D. M. Macdonald. Dept. of Mathematics and Statistics, 1280 Main Street West, Hamilton, Ontario, L8Sk1, Canada;

August 15-19, 1994

15th International Symposium on Mathematical Programming, Ann Arbor, Michigan, USA:

Information: 15th ISMP. Conferences and Seminars, 541 Thompson Street, Room 112, University of Michigan, Ann Arbor, MI 48109-1360, USA (tel.: +313 764 5305, +313 764 2990, fax: E-mail: xvismp@um.cc.umich.edu);

August 24-26, 1994

7th Symposium on Transportation Systems: Theory and Application od Advanced Technology, Tianjin, China;

Information: Prof. G. G. He, IFAC/IFORS Symposium TS'94, Institute of Systems Engineering, Tianjin University, 300072, P. R. China (fax: +86 22 358 329);

September 28-30, 1994

AILOG / AIRO Conference on Networks of Services and Firms, Methods and Technologies, Santa Margherita Ligure, Italy Information: AILOG / AIRO Conference Secretariat, DIST, Università di Genova, Via Opera Pia 11A, I-16145 Genova, Italy (tel.: +39 10 353 2982, fax: +39 10 353 2948, E-mail: ailogairo@dist.unige.it);

December 1994

2nd International Meeting on Systems Thinking, Innovation, Quality and Entrepreneurship, Maribor, Slovenia; Information: M. Rebernik, EPF, Univerza di Mariboru, 62000 Maribor, Slovenia (tel.:

+62 28 261, fax: +62 27 056);

\* 11th EURO Summer Institute on Maintenance Replacement and Reliability Modelling, UK;

Information: Prof. A. H. Christer, University of Salford, Salford M5 4 WT, UK (fax: +61 7 455 999);

1995

\* EURO XIV Conference '95, Israel; Information: EURO Secretariat;

August 15-17, 1995

6th International Conference of the Chinese Special Interest Group on MCDM, Beijing, PR China;

Information: Ku Chi-fa, Institute of Systems Science, Beijing, PR China (fax: +861 256 83641:



### PROMOTING IN EUROPE THE INTERCHANGE OF PRACTICE IN OPERATIONAL RESEARCH MANAGEMENT SCIENCES AND SYSTEMS

### **EURO - Officers**

President: F. Shutler, Monopolies and Mergers Commission, New Court, 48 Carey Street, London WC2A 2JT, UK (tel. Office: +44 71 324 1315 Home: +44 81 668 2104, fax +44 71 324 1736, E-mail: shutler@lse.ac.uk);

Immediate Past President: Jaap Spronk, Erasmus University, P.O. Box 1738, 3000 DR Rotterdam, Netherlands (+tel. 31 10 408 1282, fax +31 10 411 7558, spronk@hroeur5):

Vice President: Costas Pappis, University of Piraeus, Department of Industrial Management, 80 Karaoli & Dimitriou Street, GR-18534 Piraeus, Greece (tel.: Office: +30 1 42 22 060 Home: +30 1 94 22 052, fax: +30 1 41 79 064);

Vice President: Tuula Kinnunen, Turku School of Economics and Business Administration, Rehtorinpellonkatu 3, SF-20500 Turku, Finland (tel.: office: +358 21 6383 304 Home: +358 21 8696 76, fax: +358 21 6383 302, E-mail: tkinnunen@finabo.abo.fi);

Secretary: Catherine Roucairol, Université Paris 6 et INRIA, Domaine de Voluceau, B.P. 105, Rocquencourt, F-78153 Le Chesnay, France (tel.: Office: +33 1 39 63 59 31 Home: +33 1 42 80 30 08, fax +33 1 39 63 53 30, roucairo@seti.inria.fr);

Treasurer: Jean Bovet, M.A.D., Route d'Oron 100, CH-1000 Lausanne, Switzerland (tel. +41 21 784 36 35, fax +41 21 784 36 55);

EURO Vice President of IFORS: Jakob Krarup, DIKU Univ. of Copenhagen, Universitetsparken 1, DK-2100 Copenhagen 0, Denmark (tel. +45 35 32 14 50, fax +45 35 32 14 01, krarup@diku.dk);

Past Presidents: H. Zimmermann, B. Rapp, R. Tomlinson, J. Brans, D. de Werra, J. Krarup, J. Spronk.

National Societies or Individual members having news for the EURO Bulletin are requested to send their information to the editor: Ph. Van Asbroeck, 108 av. Sleeckx, B-1030 Brussels, Belgium (tel. & fax: 32 2 245 60 69). All recipients are free to copy the contents of the EURO Bulletin without charge and without requesting specific permission.

### **EURO - Members**

Austria: Österreichische Gesellschaft für Operations Research (ÖGOR), c/o Institut für Ökonometrie, OR und Systemtheorie (Prof. G. Feichtinger), Technische Universität Wien, Argentinierstrasse 8, A-1040 Wien:

Belgium: Société Belge pour les Applications des Méthodes Scientifiques de Gestion / Belgische Vereniging voor Toepassing van Wetenschappelijke Methoden in het Bedrijfsbeheer (SOGESCI / BVWB), Renaissancelaan 30 Av. de la Renaissance, B-1040 Brussels, (tel. +2 735 5152, fax +2 735 2421):

Czechoslovakia: CSORS, Czech and Slovak Operational Research Society, Department of Operations Research and Econometrics, The School of Economics, Odbojarov 10, CS-832 20 Bratislava;

Denmark: Danish Operations Research Society (DORS), c/o Spadille Congress Service, P.O. Box 9, DK-3100 Hornback, (tel. +45 42 20 24 96);

Egypt: Operations Research Society of Egypt (ORSE), c/o Nasser Wahba, Centre for Middle East Management Studies, The American University in Cairo, P.O. Box 2511. Cairo:

Finland: Finnish Operation Research Society (FORS), P.O. Box 702, SF-00101 Helsinki 10:

France: Association Française pour la Cybernétique Economique et Technique (AFCET), 156 Boulevard Péreire, F-75017 Paris, (tel. 01-47662419);

Germany: Deutsche Gesellschaft für Operations Research (DGOR), Am Steinknapp 14b, D-4630 Bochum 1, (tel. +49 234 462246, fax +49 234 462245);

Greece: Hellenic Operational Research Society (HELORS), Solomou 20, G-11682 Athens, (tel.: 01-3619892, 01-3607532);

Hungary: Committe of OR at the Hungarian Academy of Sciences, Kende u. 13-17, P.O. Box 63, H-1502 Budapest, (Associate Member);

Iceland: Icelandic Operations Research Society (ICORS), University of Iceland, Faculty of Economics and Business Administration, IS-101 Reykjavík;

Ireland: Operations Research and Management Society of Ireland (ORMSI), c/o Stokes Kennedy Crowley, 1 Stokes Place,

St. Stephen's Green, Dublin 2 (tel. 735566);

Israel: Operational Research Society of Israel (ORSIS), c/o Faculty of Industrial Engineering and Management, Technion, Haifa, (tel. 04-292239);

Italy: Associazione Italiana di Ricerca Operativa (AIRO), c/o Signora Agnese Martinoli - Bagnasco, Via Serretto 1/4, I-16131 Genova, (tel. 39 10-3777703);

Netherlands: Netherlands Society for Operations Research (NSOR), c/o Dr. P. van Laarhoven, c/o McKinsey & Company, Amstel 344, NL-1017 AS Amsterdam, The Netherlands;

Norway: Norwegian Operations Research Society (NORS), c/o Polyteknisk Forening, Rosenkrantzgt. 7, N-0159 Oslo 1, (tel. 02-330741);

Poland: Polish Cybernetical Society, Technical University of Poznan, Inst. Automatyki, Piotrowu 3A, PL-60-965 Poznan, or ASPORS, IBS Pan, Newelska 6, PL-01-447 Warszawa;

Portugal: Associacao Portuguesa para o Desenvolvimento da Investigacao Operacional (APDIO), Cesur-Instituto Superior Tecnico, Av. Rovisco Pais, P-1000 Lisboa, (tel. 807455 / 882992, fax 809884);

South Africa: ORSSA, P. O. Box 3982, Johannesburg 2000;

Spain: Sociedad de Estadistica e Investigación Operativa, Hortaleza 104 - 2 izda, E-28004 Madrid:

Sweden: Swedish Operations Research Association (SORA), FOA, S-172 90 Sundbyberg;

Switzerland: Schweizerische Vereinigung für Operations Research / Association Suisse de Recherche Operationnelle (SVOR / ASRO),c/o Ms T. Häring, Grossmattstrasse 38, CH-4133 Pratteln (tel. +41 61 821 4145);

Turkey: Operations Research Society of Turkey (ORST), Middle East Technical University, TR-06531 Ankara;

United Kingdom: Operational Research Society (ORS), Neville House, Waterloo Street, Birmingham B2 5tx, (tel. 021-6430236);

Yugoslavia: Yugoslav Society for Electronics, Telecommunications, Automation and Nuclear Engineering (ETAN), Kneza Milosa 9, P.O. Box 356, Belgrade.