

EURO Bulletin

Bulletin of the Association of European Operational Research Societies (EURO) distributed quarterly through the National Societies. Societies or individual members having news for the EURO Bulletin are requested to send their information to the editor: Ph. Van Asbroeck, 108 av. Sleenckx, B-1030 Brussels, Belgium (tel. & fax.: +32 2 245 60 69).

from Richard Nicholls

Marketing Operational Research

How the President of EURO came to pick my name from the hat as a suitable author for an article on 'Marketing OR' is something of a mystery as I am not a professional marketing man, or for that matter, a qualified operational researcher. It may have something to do with the fact that I have recently retired and must obviously have lots of free time or even that I retired as

Head of OR for Cadbury Schweppes plc having incidentally been a member of Council of the UK OR Society for the last four years. In any event I agreed to tackle it but must emphasise that these are my personal views and experiences and do not necessarily reflect those of either my former employers of the UK OR Society.

I was a relative latecomer to the world of OR. I joined my company's management trainee scheme in 1963 and gained early exposure to the realms of Research and Development, Sales and Marketing, Manufacturing and Industrial Engineering. I found my home in the latter function and then worked both at factory and company level. It was then that I discovered how OR could help solve complex sup-

INSIDE

- ① Marketing OR
- ② EURO_Start
- ③ EURO Bulletin Annual Report
- ④ EWG Locational Analysis
- ⑤ Call for Papers

from Richard Nicholls

ply chain problems using techniques which had not formed part of my I.E. education.

I recently dipped into a number of marketing textbooks to see whether I could find a suitable definition to help me focus on 'Marketing OR'. It came as something of a surprise to find that there are nearly as many definitions of marketing as there are of OR! One of the simpler primers offered one which I will paraphrase thus - "Marketing is simply the total activity of our enterprise and it is concerned with the four 'Ps' of product, price, promotion and place. In my consideration of the marketing of OR I will use these four 'Ps' both in the context of OR as a profession and then at the level of application based on my own in-company experience.

I see OR very much as a brand rather than a product but with a range of products within the brand such as LP/MP modelling, simulation and D.E.A. Successful branding then requires the third 'p' - promotion which must also encompass

communication so that brand/product awareness is generated. The second 'p' of price is critical as very many institutions do not necessarily recognise OR as an essential management function or understand the benefits that it can bring. Thus it can be seen to be price sensitive. The final 'p' is for place, as in market place and here there is a dichotomy as OR needs to be promoted both as a profession and a brand/group of products.

The brand, of course, can not be a static thing but must evolve over time. This is particularly true at the product level where new techniques are introduced such as Data Envelopment Analysis, and others become less fashionable such as Linear Programming. The promotion of, and communications about, OR are issues very close to the heart of the UK OR Society. Its officers and members have expended considerable time and money on outside consultants to market research opinion on awareness, attitude and image of OR and opportunities for better relations with, and use

from Richard Nicholls

of, the media. This has helped us to understand better the difficulty of providing a coherent and transparent message of what OR is, does and can do. A video has been produced to show 'OR in Action' for use with students considering their university course choices and future careers. An up-to-date brochure has also been prepared for the same purpose. A media working party has been set up and a part-time media consultant has been taken on. One of the first fruits of this initiative has been the professional production of a brochure aimed at decision makers and influencers.

Evidence of price sensitivity has been found in recent years in some key 'make or buy' decisions made by large organisations. At a stroke one of the UK's big five banks decided to close its OR Department in a cost-cutting reorganisation - this despite the excellent track record of its OR team. One of the major energy suppliers sold its complete OR operation to a well known systems consultancy.

The market place for selling OR as a profession is basically in two segments. The first one is academic where students have to be attracted into studying the subject for without the seedcorn the profession will die. Secondly OR must be sold to national and local government, commercial and industrial institutions and the consultancies or there will be no funding of college courses and no jobs for their products.

OR as a brand is difficult to market because the message is frequently unclear. There is also some confusion in people's minds about the bounds of OR and the interface/overlap with statistics, economics, applied mathematics, organisation and methods and computing/systems.

It is a sad fact that more OR departments are closing down in the UK than are currently being set up. One of the particular problems that influence this is that in too many OR departments only a limited number of products are on offer and they can be in only a narrow portfolio of func-

from Richard Nicholls

tional/problem areas. This has encouraged the growth of the big management consultancies who know the true value of OR but do not sell it as such. What they sell is solutions based on the use of the appropriate skills and experience.

Whilst in recent years I have been involved at the macro level in the problems of marketing OR as a profession, my main experience has clearly been in doing the job in-house. In 1983 I was invited to join the OR Group where I served an apprenticeship as a senior projects manager prior to becoming Head of OR. I found that the Cadbury Schweppes OR Department had started life as the Cadbury Statistics Department in the early 1950's. In 1969, on the merger of Cadbury with Schweppes a proper OR Department was formed by adding some logistic skills from Schweppes and recruiting some new blood from outside. In 1979 computing, systems, O and M and OR were brought together under the one Management Services umbrella and in 1987 this was transformed into a company to

be known as ITnet Ltd with a remit to sell its services on the open market as well as maintaining the original services to in-house clients.

Marketing the products was always one of the most stretching of tasks for some of the reasons I have already referred to. In addition none of us had any training in marketing skills or recent exposure to it, save for work we had done on forecasting systems. We relied very heavily on 'word of mouth' and the fact that many senior decision-makers knew the sort of things we were good at. We also rather liked out Olympian reputation of being very clever and flexible. The only overt marketing we ever indulged in was when presentations were made to operating boards on the things we were doing for them and their peer groups around the Company.

The product that we were offering was basically encompassed by the expression 'OR is what OR does'. We sold our services to clients on the basis of successful past performance

from Richard Nicholls

rather than current and future capability. 'Nothing succeeds like success' is fine as a short term strategy but the world moves on and clients get better educated. Unless you can prove that you can tackle new areas and techniques you are doomed to eventual extinction.

The marketing position was not helped by a constant moving of the pricing goal posts. When I first used OR it had been a free service to the user - a wonderful way of building a large client base! By the time I joined the company they had just started charging each operating division on an at-cost basis. The next step was for each division to have a central budget for OR, followed later by a cascading down of these budgets to the user departments. As this last happened at the same time as we were called upon to deliver profit targets as well, it is clear that marketing OR took on a whole new meaning. The way we tackled this was to set up a new Consultancy Services Department which included the OR team so that we could better compete with the outside

opposition by offering a more comprehensive service which we sold at between 50 - 70% of market rates.

The 'ad hoc' word of mouth communication of the past still has a part to play but now IT-net produces a quarterly bulletin that is circulated to the great and the good, and there is also an in-house marketing department to develop professional campaigns and supportive literature. OR is now actively involved in a wider spectrum of clients and projects because of this.

The market place has altered considerably over the years. Originally, as already explained, it was QC statistics for Cadbury. Now it can be any operating division of the Company as well. I feel sure that there will be a place for OR long into the future.

At the macro level I also feel that UK OR has a healthy future. The challenges of the 1990s are being addressed by Council of the OR Society in a professional manner and as the UK economy continues to pick up OR (under whatever banner) will be playing its part.

from E. A. Field

EURO Start

Potential instrument for pump-priming new OR activities

In January the Executive Committee discussed some proposals for new EURO instruments. One of the ones chosen for evaluation is called EURO_Start.

EURO_Start will help to start new OR units.

This instrument is based upon sound practice. Its task is to help with the starting of new OR groups in Europe. Such units are vulnerable during the first few months of their life. The choice of the initial project can be a vital factor in their success. This initiative will supply expert guidance to any organisation or new OR unit that applies.

The EURO_Start BOARD

EURO_Start will require two

elements for its success. The first is a board made up of two senior OR people working under the direction of a member of the Executive Committee. This is called the EURO_Start BOARD. Its function is to examine submissions from clients and appoint advisers.

The EURO_Start REGISTER

The second element is a register of senior OR practitioners who have agreed to become EURO Advisers. This is called the EURO_Start REGISTER. Advisers will be able OR people with good practical knowledge of the subject. They may be 1) in OR units, 2) consultants, or 3) recently retired OR managers. In general they will have good experience of applying OR within organisations.

from E. A. Field

Operational procedures.

Initial requests for help should be made to the BOARD. It will decide whether or not the request meets the EURO_Start guide-lines [Still to be finalised]. If it does, the organisation will be told the conditions under which help can be given and asked to agree to these. The organisation will then be registered and assigned an adviser from the REGISTER.

The conditions will explain that EURO will pay the expenses for the initial meeting with the organisation requesting help. For this visit the adviser will receive no fees. Any additional work or visits following the first meeting will be paid for by the organisation seeking help.

Registration will confer more benefits.

Registration will also entitle the organisation to benefits and privileges sanctioned by EURO. These are yet to be decided, but will include such items as general information on OR developments and invitations

to attend some EURO meetings.

Getting started.

If the project can be started this year, EURO Start could be ready during 1995. It is expected that its initial development cost will be some 2000 SFr. Annual costs for the first year of EURO Start operations are estimated at 10000 SFr. The detailed plan, already put before the Executive Committee, includes a scoping phase during which the initial estimates of time, resources, and costs, would be checked.

Council's approval is needed to proceed.

The Executive Committee is expecting to seek Council approval for the project stage of EURO Start to proceed. This will be done when the Council meets in July.

E. A. Field

from EURO Bulletin Editor

EURO Bulletin Annual Report July 93 - June 94

S Since the last EURO Council meeting held in Lisboa on 11 July 1993, the special effort to increase the distribution of the EURO Bulletin has been continued.

At the present time about 500 copies of the EURO Bulletin are mailed to:

- the EURO Officers;
- the Members OR Societies Presidents, Representatives and Alternates;
- the Co-ordinators of each EURO Working Group;
- the members of the EURO Working Groups having the EURO Bulletin as their own information bulletin, i.e.:

- EWG OR Applied to Health Services;
- EWG Locational Analysis;

-EWG OR netwORk EURO 's network for practitioners;

-the EJOR Editors;

A new scale has been reached with the use of electronic mail and network information tools on Internet. A revised EURO Brochure, the special spring'94 issue on EWGs & Networks (EURO Bulletin Vol.3 N°1) and the present Summer'94 issue (Vol.3 N°2) are on-line on the EURO World Wide Web server accessible through the server of the University of Brussels, URL = "<http://www.ulb.ac.be/>". Furthermore the EURO publications are in the process to be available on the anonymous ftp server "[ftp.ulb.ac.be](ftp://ftp.ulb.ac.be)" in directory `"/pub/projects/euro"`. Any information, question or remarks will be welcomed at E-mail: EURO@ULB.AC.BE

The objective to produce four

from EURO Bulletin Editor

issues a year is fulfilled. Since the last EURO Bulletin report (presented in July 93) four issues have been edited, their contents are:

-Summer'93 (12 pages): L Fortuin, P van Beek & L. Van Wassenhove «OR Networks»; M. Shutler «EURO Council Meeting», C. Pappis «EURO Summer Institute», J. Bovet «From EURO Treasurer», TOP & TEST Journals, Events;

-Fall'93 (12 pages): M. Pidd «Teaching OR/MS», C. Pappis «OR in MBA courses», C. Pappis «OR Handbook, News from EWGs, Events;

-Winter'93 (12 pages): J. Spronk «Aspects of Applications», A. Lotov «News from Russia», E. Field «The new EURO statutes», V. Belton «EURO XIII Glasgow 1994», C. Papis «ESI IX Mannheim 1993», Events;

-Spring'94 (24 pages): T. Kinnunen «EURO Working Groups & Networks Annual Report (Multicriteria Aid for Decisions, Fuzzy Sets/IFSA European Chapter, OR Applied to Health

Services, EUROBanking special interest group, Locational Analysis, ESIGMA EURO Summer Institute Group on Multicriteria Analysis, Project Management and Scheduling, Financial Modelling, ECCO - European Chapter on Combinatorial Optimisation, Decision Support Systems, Urban Traffic and Transportation, Information Systems, OR network, Mini EURO Conference, Up' Conference in UK), A. H. Christer «EURO Summer Institute 1995», E. Field «A comment on J. Spronk's Aspects of Applications, Aspects of Decision Problems», S. Ward «OR Insight got there first», «EURO XIII Programme», Events.

Finally formal procedures have given as results that the EURO Bulletin is now considered as a periodical by the Belgian Post Office and has been registered at the Royal Library of Belgium under the registration number BD 45.367.

Ph. Van Asbroeck

From Prof. F. Plastria, Co-ordinator of the EWG on Locational Analysis

News from the EWG on Locational Analysis

The seventh meeting of the group was held in Brussels, Belgium, on 9-11 May 1994 at the Vrije Universiteit Brussel. It turned out to be a productive conference, appreciated by all 38 participants.

Following presentations were held:

Daniel SERRA (Barcelona, Spain): Competitive location under uncertainty; John KARKAZIS (Chios, Greece): Location of a facility in a competitive environment: a planar-based approach; Rosa-Maria RAMOS, Joaquin SICILIA, Teresa RAMOS (Madrid, Tenerife, Spain): Some efficient points in a multiobjective center problem; Justo PUERTO (Sevilla, Spain): Multicriteria games in location; Stephan NICKEL (Kaiserslautern, Germany): Bicriterial and restricted planar 2-median problems; Nenad MLADENOVIC (Montreal, Canada): A polynomial bicriterion single cluster clustering method; Jean-Pierre RASSON (Namur, Belgium): About a behavioral classification rule; Eddy DECLERCQ (Antwerp, Belgium): Optimal location for multimodal terminals for inland navigation in Flanders: strategic management approach; Brian

BOFFEY (Liverpool, UK): Modelling pollution spread; Lazaro CANOVAS (Murcia, Spain): Primal and dual algorithms for the minimum covering lp-hypersphere problem; Frank PLASTRIA (Brussels, Belgium): Fully geometric solutions to some planar minimax location problems; Emilio CARRIZOSA (Sevilla, Spain): On the set of optimal points to the weighted maxmin problem; Pier Luigi PAPINI (Bologna, Italy): Some stability results for minsum and minmax problems; Yoshiaki OHSAWA (Tsukuba, Japan): Errors caused by map projection on the Weber problem; Dominique PEETERS (Louvain-la-Neuve, Belgium): The effect of the spatial structure on the p-median results : hexagonal vs squared gridpoints; Francisco ORTEGA (Sevilla, Spain): Assessing topological configurations for rapid transit networks; Barbaros TANSEL (Bilkent, Turkey): Distance constrained multifacility location; Jörg FLIEGE (Dortmund, Germany): New coincidence conditions in minsum multifacility location with mixed gauges; Hans FRENK (Rotterdam, The Netherlands): On Miehle's algorithm and the perturbed Lp-distance multifacility location problem; Jack BRIMBERG (Kingston, Canada): A Location problem with economies of scale; Jose MORENO (Tenerife,

Locational Analysis EWG

Spain): A parallel genetic algorithm for the discrete p-median problem.

Proceedings of this meeting will be published later this year as Issue 7 of the *Studies in Locational Analysis*, edited by Brian BOFFEY and John KARKAZIS at the Department of Business Administration, University of the Aegean, Chios 82100, Greece.

Our next meeting is planned in September 1995 in Kaiserslautern, Germany. More details will be distributed in due time.

During the meeting, Frank PLASTRIA was elected as new co-ordinator of the working group, replacing Christian MICHELOT. As a consequence the new coordinates of the working group are as follows:

Contact address :Prof. Dr. F. PLASTRIA INVE (Research Center for Industrial Location) Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium Tel: +32 2 629 3609, Fax: +32 2 629 3645, E-mail: FAPLASTR@VNET3.VUB.AC.BE. Permanent mailing address: EURO Working Group on Locational Analysis, EURO OFFICE, c/o Ph. VAN ASBROECK, ULB - SMG, CP 210/01 Boulevard du Triomphe, B-1050 Brussels, Belgium.

Intention declaration of the co-ordinator

The research field of locational analysis is in full development, and its application field is huge. The current importance of environmental thinking enhances the application prospects of our field. It is a pleasure to see that much ongoing research is oriented towards environmental problems, and this should be further encouraged, not only from theoretical point of view, but certainly also in practice. It is our intention to start up some new activities in order to enhance and stimulate contacts between our group members in between meetings. First an e-mail discussion group and listserving should be started soon. Secondly we would like to collect on a regular basis and distribute information about ongoing research, working papers and publications by our members. Thirdly we would like to merge several local databases of references on Locational Analysis and connected fields, and make them available for on-line search. Finally we intend to collect software and computer codes related to the field and make them available by ftp.

Prof. Dr. F. Plastria

CALL FOR PAPERS

**SPECIAL ISSUE
EUROPEAN JOURNAL OF
OPERATIONAL RESEARCH
ON FINANCIAL
MODELLING**

Guest editors: Erio Castagnoli, Bocconi University, Milano (I) & Jaap Spronk, Erasmus University, Rotterdam (NL).

Deadline for submission: 31 July 1994

The editors of the European Journal of Operational Research have agreed upon a special issue on Financial Modelling, in co-operation with the EURO Working Group on Financial Modelling.

If you wish to submit your paper for publication in this special issue, you should send two copies of the final version to Prof. Castagnoli and two copies to Prof. Spronk at the addresses given below.

Prof. JAAP SPRONK, Erasmus Universiteit, Faculteit der Economische Wetenschappen, Postbus 1738, NL-3000 DR

ROTTERDAM, THE NETHERLANDS.

Prof. ERIO CASTAGNOLI, c/o Banca Agricola Mantovana, Corso Vittorio Emanuele 30, I-46100 MANTOVA, ITALY.

**SPECIAL ISSUE JORBEL
ON CONSTRAINT
PROGRAMMING**

In several application fields of operations research one may observe a shift from pure optimisation towards constraint satisfaction, certainly in the many cases where real-world generated constraints pop up. There where most academic research has mainly focused on the in depth study of "well-behaved" models and their extensions, yielding a wealth of "tailor-made" algorithms, the need of business and industry lies in "mass-production". This calls for general purpose techniques and available software, allowing to solve a broad spectrum of models, without too much effort from the analyst. One technique which holds

CALL FOR PAPERS

promise to tackle both these points is constraint programming, to which JORBEL plans to dedicate a special issue in 1995.

Constraint programming is a new method for finding feasible solutions in strongly constrained optimisation problems mainly of combinatorial type. Several commercial packages are available on the market place. The set of industrial applications of this technique is steadily growing, the most promising ones being in extremely constrained problems like e.g. time- tabling.

Constraint programming uses techniques and ideas from artificial intelligence. As such its current language may sound somewhat exotic to operational researchers while at the same time inducing a feeling of familiarity. The special issue of JORBEL aims at enforcing this feeling and help understanding the concepts underlying the technique.

The authors are invited to submit papers on any aspect of the subject such as:

- applications (description of a specific industrial application, analysis of the domains of application of the technique, survey of applications);
- analysis of constraint programming software;
- theoretical developments or foundations;
- tutorial papers.

As the readership is mainly operational researchers and practitioners, editors would appreciate the authors' effort to bridge the linguistic gap between OR and AI.

The authors should express their interest by sending a short abstract before July 31, 1994. The full paper should then be submitted before October 31, 1994. The proposed contributions will follow the usual refereeing procedure.

All abstracts and papers are to be sent to:

Prof. J . LEYSEN, Royal Military Academy, Department Economics and Management, Renaissance Ave. 30, B-1040 Brussels, BELGIUM, Fax: + 32 2 733 61 16, E-mail: leysen@RMA-BRUSSELS.rtt.be

CALL FOR PAPERS

IMSE'94 European Workshop on Integrated Manufacturing Systems Engineering Grenoble, France, December 12-14, 1994

Organized by INRIA and co-sponsored by EC DG III ESPRIT CIME, IFIP WG 5.7, IFAC, Ministère de l'Enseignement Supérieur et de la Recherche, GSIP, ENSGI.

Objectives: The aim of the Workshop is to gather European experts from industry and academia: - to establish the current state of understanding on theoretical results, models, techniques and tools for manufacturing systems modelling, specification, evaluation and integration; - to identify and prioritize areas (theoretical or technical) requiring urgent research advances according to real industrial needs; - to discuss the role of Information Technology (IT) in design and manufacturing; - to identify and discuss standardisation needs for integrated manufacturing; - to progress towards a European consensus on enterprise modelling and integration technology so that future developments can be part of a comprehensive plan of action to improve competitiveness of European industry including SMEs.

Targeted Audience: The Workshop is targeted to managers and engineers from manufacturing enterprises and service companies concerned with

business process engineering or reorganisation, manufacturing system design and analysis as well as enterprise integration. Contributors and invited speakers will come from academia, industrial companies or consulting companies involved in manufacturing system modelling, analysis, specification, evaluation and integration. Strong participation from contributors to EC-funded programmes (ESPRIT, BRITE, EUREKA) and large projects (such as the AIT Initiative) is expected. Participation from East-European countries is encouraged.

Technical Areas: The Workshop will be organised according to three major tracks:

Track 1: Manufacturing Enterprise Modelling and Engineering (Coordinators: Prof. S.K. Banerjee and Dr. F. Vemadat) - Enterprise modelling frameworks and methodologies - Business process modelling and analysis - Business process re-engineering and simplification - Management of change; Process improvement; Impact on Concurrent Engineering - Business process coordination; Model-based operations - Computer-Aided Enterprise Engineering tools - Metrics and benchmarking

Track 2: Manufacturing System Specification and Evaluation (Coordinators: Dr. J-M. Proth and Dr. A.E.K. Sahraoui) - Specification methods (Petri nets, statecharts, process algebras); Analysis techniques - Formal specification techniques; Concurrent languages; Agent-oriented

CALL FOR PAPERS

languages - System prototyping - Synthesis of control programs - Performance evaluation methods and tools - Performance indicators - Advanced decision support systems

Track 3: Manufacturing Systems Integration (Coordinators: K. Kosanke and Prof. G.H. Weston) - Open systems architectures: Distributed computing environments - Communication networks and protocols; Integration platforms - Information sharing; Information infrastructure systems; Concurrent Engineering platforms - Cooperative systems; Agent-based architectures - Product/process data exchange methods and standards

Operational issues: The number of participants will be limited to 100 and parallel sessions will be avoided. Each day will start with an invited talk (45 mn) followed by technical sessions for regular paper presentation. Enough time will be reserved for technical discussions on selected topics controlled by a moderator (1 hr). Working group meetings (2hrs) on specific topics identified during technical discussions will be held each day. A closing session with reports from working groups will conclude the meeting. It is planned that the Workshop will be followed by a two-day standardization meeting of CEN/TC 310/WG1 working on enterprise modelling.

Proceedings and post-conference book: All papers duly reviewed and selected for the Workshop will be published in the form of soft bound proceedings edited by INRIA and

made available to Workshop participants. A second selection will be made after the Workshop for publication of revised papers as well as reports of working group meetings in a book printed by one of the major scientific publishers.

Instructions for Authors: All papers must be in English, typed in double spaced format and may not exceed 6000 words. Each submission should provide author(s)' name, affiliation, complete address and phone and fax numbers. Three copies of the papers must be submitted to the Workshop Secretariat no later than 15 July 1995.

Workshop Secretariat: Mrs. M. Joyaux (IMSE'94 Secretariat) GSIP/INPG 46, avenue Felix Viallet F-38031 Grenoble Cedex, France Tel. +33 76 57 48 32 Fax: +33 76 57 47 93

Deadlines: Paper submission: 15 July 1994, Notification to authors: 15 September 1994, Final papers (camera-ready): 31 October 1994.

CALL FOR PAPERS

Int. Workshop on the Design of Cooperative Systems, Antibes-Juan les Pins, France 25-27 January 95

Objectives: A growing number of system designers consider that the problem solving capabilities of the human-machine couple are more important than the performance of the system alone. This view mandates that the design, validation and maintenance of such systems utilize an interdisciplinary approach and that new concepts need to be defined to understand the characteristics of the cooperation between the artificial and human agents. The aim of this workshop is to review the state of the art in the field of cooperative systems. The program committee is seeking for original papers in all areas concerning the design of cooperative systems.

Topics of interest: - Methodologies for the analysis, functional specifications, knowledge acquisition and validation of cooperative systems, - Cooperation models and their use in design - Cooperative systems architecture - Communication in cooperative systems (dialogues, negotiation, explanations and user models) - Theoretical contributions or empirical studies from Cognitive Psychology and Ergonomics, Distributed Artificial Intelligence, Organizational Sciences. Decision Analysis, Group Decision Support Systems, and Groupware. Papers should either describe signifi-

cant results from ongoing research or user experience or offer new contributions to theories and methodologies for cooperative system design as well as techniques and tools.

Calendar: 25th September 1994: Paper submission deadline, 10th November 1994: Notification of acceptance or rejection, 9th December 1994: Camera ready copies received.

Submissions details: Papers will be written in English and should not exceed 20 pages. The contribution should be in Times 12 points or equivalent, double space. Latex and word are the only formats accepted if you want to send your contribution by electronic mail. Papers should be send in 4 copies to be received by the 25th September at the following address: Régine Bourguine, GRID - Ecole Normale Supérieure de Cachan, 61 av. du Président Wilson, F-94235 Cachan Cedex, France.

Information: INRIA, Unité de Recherche de Sophia Antipolis, Relations Extérieures, Bureau des Colloques, 2004 route des Lucioles BP 93, F-06902 Sophia Antipolis Cedex, France (tel.: +33 93 65 78 64, fax: +33 93 65 79 55, E-mail: Monique.Simonetti@sophia.inria.fr).

EVENTS

Present section was closed on 1 July 1994. «*» denotes information featured previously.

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, E-mail: fdbaa49@blekul11).

July 13-15, 1994

XVIIth National Conference of Operational Research and Industrial Engineering, Bilkent, Turkey.

Information: M. Selim Aktürk, Dept. of Ind. Engineering, Bilkent University, 06533 Bilkent, Ankara, Turkey (fax: +90 312 266 4127, E-mail: akturk@bilkent.edu.tr).

July 18-23, 1994

XIIIth Congress of Sociology: Sociocybernetics and Social Systems Theories, Bielefeld, Germany.

Information: F. Parra-Luna, Facultad de Ciencias Políticas y Sociología, Campus de Somosaguas, E-28023 Madrid, Spain.

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 23, 1994

*EURO Summer Institute Group on Multicriteria Analysis ESIGMA Meeting, Glasgow, UK.

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

July 25-30, 1994

*6th International Congress on Computational and Applied Mathematics, Leuven, Belgium.

Information: Prof. F. Broeckx, Universiteit Antwerpen RUCA, Middelheimlaan 1, B-2020 Antwerpen, Belgium (tel.: +32 3

218 07 84, fax: +32 3 218 06 52, E-mail: BROECKX@BANRUC60.Bitnet

July 25-30, 1994

*4th International Statistical Institute Conference on Teaching Statistics, Marrakech, Morocco.

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

July 26-28, 1994

* IFAC Symposium on Transportation Systems: Theory and Applications of Advanced Technology, Tianjin, 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.

July 30-August 6, 1994

ICSI'94 the Integration of Society for the Social, Economical, Scientific and Technological Development, Sao Paulo, Brazil.

Information: Prof. P.A. Ng, IISis-USA Office, New Jersey Inst. of Technology, University Heights, Newark, NJ 07102, USA (tel.: 201 596-3387, fax: -5777, E-mail: ng_p@vienna.njit.edu)

July 31-August 5, 1994

*EWG Meeting on OR Applied to Health Services, Chania, Greece.

Information: Vassilis Moustakis, Institute of Computer Science, Foundation of Research and Technology, Hellas, Greece (tel.: +30 81 22 93 46, fax: +30 81 22 93 42, e-mail: moustaki@cs.forth.gr).

July 31-August 6, 1994

Human Science Research: a Systemic Approach, Castel Ivano, Strigno, Italy.

Information: Prof. Arne Collen, P.O. Box 4550, Walnut Creek, CA 94596, USA (fax: 510 930 9779).

August 1-6, 1994

* 11th International Conference on Multiple Criteria Decision Making, Coimbra, Portugal.

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

ECAI 11th European Conference on Artificial Intelligence, Amsterdam, The Netherlands.

Information: Erasmus Forum, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands (tel.: +31 10 408 2302, fax: +31 10 453 0784, E-mail: M.M.deLeeuw@apv.oos.eur.nl)

August 15-19, 1994

4th Annual International Linear Algebra Society Conference, Rotterdam, The Netherlands.

Information: H. Bart, Econometrisch Instituut, Erasmus Universiteit, Postbus 1738, NL-3000 DR Rotterdam, The Netherlands (E-mail: bart@wis.few.eur.nl).

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, fax: +313 764 2990, E-mail: xvismp@um.cc.umich.edu).

August 20-26, 1994

Frontiers of Statistical Ecology and Ecological Studies, Manchester, UK.

Information: G.P. Patil, Center for Statistical Ecology and Environmental Statistics, Dept. of Statistics, Pennsylvania State University, University Park, PA 16802, USA (fax: 1 814 8637114, E-mail: gpp@psuvm).

August 21-27, 1994

Human Science: Methods and Models, Mullsjön Friluftsgård, Mullsjö, Sweden.

Information: Prof. Arne Collen, P.O. Box 4550, Walnut Creek, CA 94596, USA (fax: 510 930 9779).

August 22-26, 1994

COMPSTAT'94 11th Symposium on Computational Statistics, Wien, Austria.

Information: Prof. W. Grossmann, Institute for Statistics, OR and Computing Science, Universitätsstrasse 5/3, A-1010 Wien, Austria (fax: +43 1 40407/88, E-mail: compstat@smc.univie.ac.at).

August 22-26, 1994

EVENTS

***Conference on Manufacturing in Southern Africa**, Cape Town, South Africa.
Information: Prof. R. Reineke, Dept. of Industrial Engineering University, ZA-7600 Stellenbosch, South Africa (tel.: +21 808 4235, fax: +21 808 4245).

August 24-26, 1994

***7th Symposium on Transportation Systems: Theory and Application of Advanced Technology**, Tianjin, China.
Information: Prof. G. G. He, IFAC/IFORS Symposium TS'94, Institute of Systems Engineering, Tianjin University, Tianjin 300072, P. R. China (fax: +86 22 358 329).

August 28-September 2, 1994

13th World Computer Congress IFIP Congress'94, Hamburg, Germany.
Information: Congress Secretariat, IFIP'94, c/o CCH Congress Organisation, P.O. Box 30 24 80, D-20308 Hamburg, Germany (fax: +49 40 35 69 23 43).

August 29-September 2, 1994

12th Prague Conference on Information Theory, Statistical Decision Functions and Random Processes, Praha, Czech Republic.
Information: A. Otohal, UTIA AV CR, P.O. Box 18, 182 08 Praha, Czech Republic (fax: +42 2 664 14903, E-mail: stochin@cspgas11).

August 29-September 3, 1994

XIV Seminar on Stability Problems of Stochastic Models, Eger, Hungary.
Information: Prof. V.M. Zolotarev, Steklov Institute, Vavilova 42, 117966 Moscow, Russia (E-mail: zolotare@prob.mian.su).

August 30-September 1, 1994

19th Conference on Regional and Urban Statistics, Helsinki, Finland.
Information: A. Manninen, The City of Helsinki Information Management Centre, P.O. Box 303, SF-00171 Helsinki, Finland (fax: +358 0 1693200).

August 30-September 2, 1994

***OR 1994 International Conference on Operations Research**, Berlin, Germany.
Information: Prof. Dr. R.H. Möhring, Techn. Univ. Berlin, Fachbereich Math., Strasse des 17 Juni 136, D-10623 Berlin, Germany (tel.: +49 30 314 24594-25728, e-mail: or94@math.tu.berlin.de).

September 12-13, 1994

Long-Term Perspectives on International Statistics, Conference on the Statistical Implications of «Scanning the Future», Information: ISI Permanent Office, Postbus

950, NL-2270 AZ Voorburg, The Netherlands.

September 20-22, 1994

ISD'94 4th International Conference on Information Systems Development, Bled, Slovenia.

Information: Dr. J. Zupancic, University of Maribor, Presernova 11, 64000 Kranj, Slovenia (tel.: 386 64 222 804, fax: 386 64 221 424, E-mail: isd@fov.uni.mb.si)

September 20-23, 1994

***EUFIT'94, second European Congress on Intelligent Techniques and Soft Computing**, Aachen, Germany.
Information: ELITE Foundation, EUFIT'94, Promenade 6, D-52076, Aachen, Germany.

September 21-23, 1994

2nd Colloquium on Grammatical Inference, Alicante, Spain.
Information: Dr. J. Oncina, Dept. Tecnologia Informatica y Computacion, Universidad de Alicante, E-03080 Alicante, Spain (fax: +34 6 590 3464).

September 21-24, 1994

6th International Conference on Artificial Intelligence, Sofia, Bulgaria.
Information: Philippe Jorrand, AIMS'A'94 Programme Chairman, Institut IMAG-LIFIA, 46 av. Félix Vialley, F-38000 Grenoble, France (E-mail: philippe.jorrand@imag.fr).

September 27-28, 1994

***Computational methods for transfert of solutes in porous media**, Besançon, France.
Information: M. Di Guglielmo, Laboratoire du calcul scientifique, 16 Route de Gray - La Bouloie, F-25030 Besançon, France (Tel.: +33 81 66 63 14, fax: +33 81 66 64 94).

September 28-30, 1994

Systems Thinking and Progressive Change, Cape Town, South Africa.
Information: Prof. Tom Ryan, School of Engineering Mgt., University of Cape Town, Private Bag, Rondebosch 7700, South Africa (tel.: +27 21 650 2600, E-mail: tbr@cerecam.uct.ac.za).

September 28-30, 1994

***First European Conference on Cognitive Science in Industry**, Luxembourg.
Information: R. Bisdorf, Centre de Recherche Public - Centre Universitaire, 162a avenue de la faïencerie, L-1511 Luxembourg (tel.: +352 47 02 or +352 44 01 95, fax: +352 47 02 64, E-mail: bisdorff@crpcu.lu)

September 28-30, 1994

***AILOG / AIRO Conference on Networks of Services and Firms, Methods and Tech-**

nologies, Santa Margherita Ligure, Italy
Information: AIOG / 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).

October 5-6, 1994

International Conference on Ecology and Statistical Methods, Niort, France.
Information: Dr. V. Bretagnolle, CEBC-CNRS, F-79360 Beauvoir sur Niort, France (fax: +33 49096526).

October 6-7, 1994

***40th EWG Meeting on Multicriteria Aid for Decisions**, Paris - Bordeaux, France.
Information: Bernard Roy, LAMSADE, Université Paris-Dauphine, Place Maréchal De Lattre de Tassigny, F-75775 Paris Cedex 16, France (tel.: +33 1 44 05 42 88, fax: +33 1 44 05 40 91, e-mail: roy@lamsade.dauphine.fr).

October 9-12, 1994

***European Simulation Symposium**, Istanbul, Turkey.
Information: Philippe Geril, The Society for Computer Simulation, European Simulation Office, Universiteit van Gent, Coupure Links 653, B-9000 Gent, Belgium (tel.: +32 9 233 7790 or +32 59 800 804, fax: +32 9 223 4941.).

October 10-11, 1994

ICSP 3rd International Conference on the Software Process: Applying Software Process, Reston, Virginia, USA.
Information: Dewayne E. Perry, AT & T Bell Laboratories, 600 Mountain Avenue, Murray Hill NJ 07974 USA, E-mail: dep@research.att.com).

October 16-19, 1994

1st International Congress on Confronting Disasters in Local Authorities, Tel Aviv Yafo, Israël.
Information: A. Rabinovitch, 3 Hefman Street, P.O. Box 20040, Tel Aviv Yafo, 61200 Israël (fax: 972 3 6967447).

October 18-20, 1994

Document Analysis Systems, Kaiserslautern, Germany.
Information: Andreas Dengel, German Centre for Artificial Intelligence (DFKI), P.O. Box 2080, D-6750 Kaiserslautern, Germany (E-mail: das94@dfki.uni-kl.de).

October 19-21, 1994

CON'94 Connectivity 1994: Workflow Management Challenges, Paradigms and Products, Hagenberg (Linz), Austria.
Information: Prof. Gerhard Chroust, Kepler University Linz, A-4040 Linz, Austria (tel.: +43 732 2468 -865, fax: -878, Email:

EVENTS

chroust@sea.uni.linz.ac.at).

October 23-26, 1994

***ORSA/TIMS Joint National Conference,** Emphasis: Building bridges between OR/MS theoreticians, practitioners and managers, Theme: Global Manufacturing in the 21st Century, Detroit, Michigan, USA.

Information: K. R. Chelst, Industrial and Manufacturing Engrng., Engineering Building, Wayne State University, Detroit, MI 48202, USA (tel.: (313) 577-3857, fax: (313) 577-8833, E-mail: chelst@mie.eng.wayne.edu)

November 1994

1st Congress of the International Fuzzy Management and Economics Society, Reus, Spain.

Information: SIGEF, Facultat de Ciències Econòmiques i Empresariales, Universitat Rovira i Virgili, Passeig Misericòrdia, s/n E-43205 Reus (Tarragona), Spain (tel.: 977 32 33 43, fax: 977 31 98 20).

November 9-11, 1994

IDIM'94 2nd Interdisciplinary Information Management Talks 1994, Kubova Hut, Czech Republic.

Information: Prof. Gerhard Chroust, Kepler University Linz, A-4040 Linz, Austria (tel.: +43 732 2468 -865, fax: -878, Email: chroust@sea.uni.linz.ac.at).

November 24-26, 1994

16th Meeting of the EWG on Financial Modelling, Pécs, Hungary.

Information: 16th Meeting on Financial Modelling, Prof. Sándor Komlósi, Faculty of Economics, Janus Pannonius University, H-7621 Pécs, Rákóczi út 80, Hungary (fax: +36 72 433 129, E-mail: komlosi@ktp.jpte.hu)

December 1994

International Conference on Statistics and Quality of Life, a Third World Perspective, Luxor, Egypt.

Information: P.K. Sen, Dept. of Biostatistics, University of North Carolina, Chaptel Hill, NC 27599, USA.

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).

December 12-14, 1994

European Workshop on Integrated

Manufacturing Systems Engineering, Grenoble, France.

Information: Mrs. M. Joyaux (IMSE'94 Secretariat), GSIP/INPG, 46 avenue Félix Viallet, F-38031 Grenoble Cedex, France (tel.: +33 76 57 48 32, fax: +33 76 57 47 93).

January 25-27, 1995

International Workshop on the Design of Cooperative Systems, Antibes - Juan les Pins, France.

Information: Unité de recherche de Sophia Antipolis, Relations extérieures, Bureau des colloques, 2004, route des Lucioles, BP 93, F-06902 Sophia Antipolis Cedex, France (tel.: +33 93 65 78 64, fax: +33 93 65 79 55).

February 7-10, 1995

FRACTAL'95 «Fractals in the Natural and Applied Sciences», 3rd International Working Conference, Marseille, France.

Information: M.M. Novak, School of Physics, Kingston University, Surrey KT1 2EE, UK (fax: +44 81 5477562, E-mail: novak@kingston.ac.uk).

March 16-17 or 23-24, 1995

***41th EWG Meeting on Multicriteria Aid for Decisions,** Lausanne, Switzerland.

Information: Bernard Roy, LAMSADE, Université Paris-Dauphine, Place Maréchal De Lattre de Tassigny, F-75775 Paris Cedex 16, France (tel.: +33 1 44 05 42 88, fax: +33 1 44 05 40 91, e-mail: roy@lamsade.dauphine.fr).

March 20-24, 1995

***4th IEEE International Conference on Fuzzy Systems and 2nd International Fuzzy Engineering Symposium,** Yokohama, Japan.

Information: Mieko Hemmi (Ms), LIFE, Siber Hegner Building 4FL 89-1 Yamashita-cho, Naka-ku, Yokohama, 231, Japan (tel.: +81 45 212 8268, fax: +81 45 212 8255).

April 1-4, 1995

International Conference on Survey Methodology and Process Quality, Bristol, UK.

Information: L. Lyberg, R&D Dept., Statistics Sweden, S-11581 Stockholm, Sweden (fax: +46 8 7834288).

April 4-7, 1995

***International Conference on Industrial Engineering and Production Management,** Marrakech, Morocco.

Information: Mrs. D. Raulier, FuCaM, Chaussée de Binche, 151, B-7000 Mons, Belgium, (tel.: +32 65 32 32 17, fax: +32 65 31 56 91).

April 18-29, 1995

*** 11th EURO Summer Institute on Mainte-**

nance Replacement and Reliability Modelling, UK.

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

April 19-21, 1995

***2nd International Conference on Mathematical Modelling,** Manchester, UK.

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

June 4-8, 1995

4th Meeting on Model Oriented Data Analysis MODA4, Spetses, Greece.

Information: C.P. Kitsos, Athens University of Economics and Business, 76 Patisson Street, Athens, Greece (fax: +30 1 8226204).

July 3-6, 1995

*** EURO XIV Conference '95,** Jerusalem, Israel.

Information: Prof. Zilla. Sinuany-Stern c/o Ortra Ltd. P.O. Box 50432, Tel-Aviv 61500, Israel (tel.: +972 3 664825, fax: +972 3 660952, email: euro14@bgumail.bgu.ac.il).

July 23-29, 1995

1st International Conference on Multiple Objective Decision Support Systems for Agricultural and Environmental Management: Concepts, Approaches, and Applications, Hononulu, Hawaii, USA.

Information: Int. Conference on MODSS for Agriculture and Environment, Department of Agronomy and Soil Science, College of Tropical Agriculture and Human Resources, 1910 East West Road, Hononulu, Hawaii, USA (fax: +1 808 956 6539).

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 8364).

October, 5-6 or 12-13, 1995

***42th EWG Meeting on Multicriteria Aid for Decisions,** Brussels, Belgium.

Information: Bernard Roy, LAMSADE, Université Paris-Dauphine, Place Maréchal De Lattre de Tassigny, F-75775 Paris Cedex 16, France (tel.: +33 1 44 05 42 88, fax: +33 1 44 05 40 91, e-mail: roy@lamsade.dauphine.fr).

July, 1996

***IFORS XIV,** Vancouver, Canada.

Information: IFORS Secretariat, Ms. Helle R. Welling, c/o IMSOR, bldg. 321, Technical University of Denmark, DK-2800 Lyngby, Denmark (fax: +45 42 88 13 97).



**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);

President Elect: P. Toth, D.E.I.S., University of Bologna, Viale Risorgimento 2, I-40136 Bologna, Italy (tel. Off.: +39 51 6443028 Home: +39 51 431027, fax: +39 51 6443073, E-mail: paolo@boder1.cineca.it

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: tkinunen@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, roucairol@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 O, 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, B. Roy, 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. Sleafcx, 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), Techn. 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 +2 733 6116);

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 Hornbaek, (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 (AF CET), 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 Reykjavik;

Ireland: Operations Research and Management Society of Ireland (ORMSI), c/o Mr D. P. Darcy, Dept. of Mngt. Information Systems, Arts-Commerce Building,

University College Dublin, Belfield, IRL-Dublin 4, (tel. +353 1 706 8349, fax +353 1 283 7260 or 1911);

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 850, ZA-Groenkloof 0027.

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

Sweden: Swedish OR 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.