

# EURO Bulletin

Bulletin of the Association of European Operational Research Societies (EURO) distributed quarterly through the National Societies and on INTERNET (EURO WWW server of the Université Libre de Bruxelles, URL = "http://www.ulb.ac.be/" and anonymous ftp server "ftp.ulb.ac.be" in the directory "/pub/projects/euro". Societies or individual members having news for the EURO Bulletin are requested to E-mail their information to the EURO Bulletin editor: EURO@ULB.AC.BE . Copy deadline for next issue: 15 March 1996.

from Paolo Toth EURO President

## EURO President Report of the EURO Council Meeting

The last EURO Council Meeting took place on July 3, 1995, during the EURO XIV Conference held in Jerusalem. Many important matters were discussed in a really friendly atmosphere, as usually occurs in the EURO meetings. I would like to thank all the participants for their fruitful collaboration.

## European Initiatives

The possibility for EURO to act as a clearing house for the European Union initiatives was discussed. In particular, it was proposed to set up a EURO network for advance warning of new calls for tenders coming from the European Commission. The Council decided that during an experimental period of 2 years, starting from Fall 1995, Dr. Anita Tenenbaum of the Free University of Brussels will be involved in the contacts with the European Union.

## EURO-K Conferences

Zilla Sinuany-Stern (Chair of the Organising Committee) and Roman Slowinski (Chair of the Program Committee) reported about the organisation of EURO XIV. The Final Program contained 2 Plenary Sessions, 20 Semi-Plenary Sessions and almost 190 Parallel Sessions, with over 620 presentations, while the number of participants was about 650. I wish to thank Zilla, Roman and their collaborators for the

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from Paolo Toth EURO President

excellent work they have done in organising such a successful Conference. A new EURO initiative started at EURO XIV, i.e. the Prize for the Best Applied Paper presented at the Conference. I would like to thank Luk Van Wassenhove and the other members of the Prize Jury for their activity.

As many of you probably already know, the next EURO XV Conference will be held, jointly with INFORMS, in Barcelona, July 14-17, 1997. The final agreement between EURO and INFORMS for the organisation of joint conferences has been eventually reached, and the corresponding protocol was signed in March 1995. Jaime Barcelo' has been appointed as Chair of the Organising Committee, while the two Co-Chairs of the Program Committee will be Luis Valadares Tavares (for EURO) and Burton Dean (for INFORMS). Jesus Pastor (President of the Spanish O.R. Society) reported about the organisation of the Conference.

EURO XVI will be held in Brussels in the first half of July

1988. Jacques Teghem and Benedetto Matarazzo will act as Chairmen of the Organising and of the Program Committee, respectively. As for the EURO 2000 Conference, which will take place in 2000, the member societies will be asked to present bids to host this event within May 1996. The final decision about EURO 2000 will be taken at the Council Meeting of Vancouver in July 1996.

### Other Conferences

Tuula Kinnunen reported about future Mini EURO Conferences: Conference on Decision Support Systems, Bruges, Belgium, March 25-27, 1997 (organised by Jean Pierre Brans), and the ES-IGMA Conference, 1997. An ALIO-EURO International Workshop on Practical Combinatorial Optimisation will be held in Valparaiso, Chile, November 11-15, 1996.



## EURO Council Report

## General Support to Societies

A sum of CHF 5000 is annually available for covering travelling expenses of eminent speakers going from one country to another, or for registration fees or travelling expenses for people from Central and Eastern Europe coming to meetings in western Europe, especially students. Denis Bouyssou reported on this new EURO instrument and on the grants given for the year 1995.

Requests for support under this instrument for the second half of the calendar year 1996 and the first half of the calendar year 1997 should be made to Denis Bouyssou by April 30, 1996, and November 30, 1996, respectively.

## European Summer Institutes

Costas Pappis reported on the success of the two ESI's held in 1995: ESI on "OR Models of Maintenance", April 18-29,

1995, Greater Manchester, U.K., organised by A.H. Christer, and ESI on "Locational Analysis", June 17-30, 1995, Puerto de La Cruz, Tenerife, Spain, organised by J. Barcelo' and J. Moreno. The next three in the series are: Semmering, Austria, January 7-18, 1996, on "Stochastic Optimisation", organised by G. Pflugg; Piraeus, Greece, June 17-20, 1996, on "Environmental Planning", organised by C. Pappis; Aosta Valley, Italy, September 12-26, 1997, organised by R. Tadei.

## EURO Gold Medal

Silvano Martello was appointed Chairman of the Gold medal Jury for 1997. He will present his proposed jury next year.

## Publications

The editors of EJOR reported on the increasing success of the journal, and pointed out their wish to have more papers in new emerging fields of OR. All the members of the Euro-

from Paolo Toth EURO President

pean OR societies are warmly invited to submit papers to EJOR. The organisers of the ESI's are requested to prepare the corresponding special issues within six months from the occurrence of the ESI.

Costas Pappis has prepared a special issue of EJOR dedicated to the 20th anniversary of EURO. The issue will contain papers on the past, the present and the future of EURO, and on the OR practice in several European countries.

Philippe Van Asbroeck reported on the publication of the last issues of the EURO Bulletin, of the EURO Directory, and of the EURO Brochure. I would like to remind you that all these publications are available on Internet.

### **European OR Handbook**

Costas Pappis is finishing the preparation of the handbook on OR/MS educational courses leading to M.Sc.,

M.B.A. and Ph.D. degrees in Europe. The handbook will be available, both in paper and electronic format, to national OR Societies, university libraries and research institutions, manager associations, educational and other cultural organisations. The handbook, which has been granted both by the European Union and EURO, will be distributed before the end of December 1995. EURO will establish a procedure to regularly update the data base built by Costas Pappis.

### **EURO/IFORS Relationships**

Rainer Burkard (EURO Vice-President of IFORS) reported on the relationships between EURO and IFORS in the last year.

Peter Bell (President of IFORS) was invited to participate to the Council Meeting. He observed that the integration of INFORMS into IFORS should be profitable for all the national societies and EURO.



## EURO Council Report

He also informed the Council that IFORS can support the societies in the preparation of their national conferences. I feel highly honoured by the participation of Peter Bell to the meeting.

### Accounts

Marino Widmer reported on the financial situation of EURO. The Council approved the accounts for 1994, the budget for 1995, and the provisional budget for 1996.

### Elections

I am really happy to report the unanimous election of Jan Weglarz as President-Elect and Valerie Belton as Vice President 1. Jan Weglarz will serve as President-Elect for 1996, as President in 1997-98, and as Past-President in 1999. He is well known in the OR community for his scientific work, the organisation of several conferences, and as the winner of the EURO Gold

Medal in 1991. Valerie Belton will serve as Vice President 1 for 1996-97. She has already been involved in the EURO activities as Organiser of ESI III and as Chair of the Organising Committee of EURO XIII in Glasgow, one of the most successful EURO conferences.

I congratulate Valerie Belton and Jan Weglarz for their new appointments. They will succeed Costas Pappis and Maurice Shutler (Past President), respectively. I would like to warmly thank Maurice and Costas for their invaluable job performed for EURO in the last years. The EURO Executive Committee is really missing two exceptional friends.

Paolo Toth  
EURO President

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**Copy deadline for next issue: 15 March 1996.**

from Prof. Costas Pappis

## A Handbook on OR/MS Courses in Europe

A Handbook on Operational Research / Management Science courses in Europe produced by EURO is now available to all interested persons. The Handbook is the product of a project initiated in September 1994 by EURO and partly financed by the European Union within the context of the ERASMUS Programme.

The objective of the project has been to gather information concerning OR/MS educational programmes in the countries of EURO member societies, to create an appropriate, periodically updated, database containing this information and to publish it, that is, to make this information available to academic and other institutions, students, companies etc. The product of the project is valuable for the purposes of selecting appropriate European post-graduate programmes in OR/MS, planning educational and training activities, comparing and reshaping existing programmes, etc.

The Handbook has been prepared under the responsibility of the ex-Vice President of EURO Professor Costas Pappis and contains all data collected so far. Access to the database will be provided via Internet (EURO WWW Server of the Université Libre de Bruxelles :

URL= "<http://www.ulb.ac.be/>"

Prof. Costas Pappis  
ex-Vice President of EURO

## More food for thought

The point of the note is to take sides in the old controversy: specialists vs generalists and E.A. Field sides with a particular version of it based on generalists, if I have understood him well. For Operations Researchers, I do not understand what is the point. If I want to become an expert in O.R., I study O.R., while if I want to become a senior manager, I shall study Management. Perhaps, they need an O.R. specialist at the top, then I may find myself there, but because I have the culture of O.R. and that is what is needed. If Organisation people are required up at the top, then Organisation specialists will be called upon. Why choose a (minotour) half O.R. half Organisation?

Frankly, I believe that many people enter O.R. as a passe-partout to careers in Management, a bit like in 50s and 60s people entered Engineering to make a career in senior management. Pity that when their time came, top management needed Accountants, so people entered Accounting, only to find ... (Is E.A. Field's friend in this category?).

O.R. is a hi tec profession and research activity. One should enter it to become a specialist, for one desires this kind of career. You can always learn another profession if this does not satisfy you, but while you are in it, culture and study should be the major concern. O.R. is not a philosopher's stone. Who would go to an Oncologist knowing that he has not opened a book in 20 years?



from Giacomo Patrizi

Generalists, qua generalists tend to be eclectic unreliable and mesmerisers. It is almost too easy to show this point.

E.A. Field, uses a tourist trip in Umbria, visiting Urbino, to make an analogy with what he is saying by calling upon Macchiavelli and his booklet "The Prince". Pity that Urbino is not in Umbria, it is in the Marche. At the time Macchiavelli wrote the book (second half of 1513), the Duke of Urbino was Francesco Maria della Rovere (d. 1538) who inherited the domains at the death of his uncle Guidobaldo di Montefeltro (d. 1508), son of that nice couple painted by Piero della Francesca, which can be seen at the Uffizi Gallery. The story gets even more involved and different from the way E.A. Field relates it.

Lorenzo il Magnifico (1448 - 1492) is dead and he was never a Duke, nor was he ever Duke of Urbino, (but see below). The book is dedicated to him, since the pope was a Medici (Leo X, pope from 1513 - 1520) and that was the kind of referring process which then existed. Scholars are all generally agreed that Macchiavelli wrote the Prince with Cesar Borgia (1475 - 1507) as a emblem, a ruthless efficient ruler, who was Duke of Valentinois (1499-) and thus his name 'Il Valentino'. He briefly occupied Urbino (1502 - 1503).

While the book appears to be a recruiting handbook, in fact, it is held to be exactly the opposite. It is meant to indicate to the population how to choose a wise ruler, so that under him Italy could become a National State, as Macchiavelli hoped, (see the profound pages of Sabine p. 285 - 303). The

writings of Macchiavelli are extremely important from a Historiographic and Philosophical point of view and a direct link can be found with Hegel's conception of the State. Leo X, the Medici pope, in fact chucked out the Della Rovere, to appoint his nephew Lorenzo de Medici (1492 - 1519) to the Dukedom, which he won with great difficulties in 1516. The Della Rovere returned in 1521 with the compliance of the new pope Hadrian VI.

The book is certainly not dedicated to Lorenzo the younger who at that time was running round Florence and had no title, until 1516, nor power. He is generally considered an ambitious man, who lacked the strength and capacity to develop a coherent political design, (Could this be the sought for generalist?).

I do not claim to be a specialist on Renaissance history, I only consulted an Encyclopaedia, to draw out these few facts, which I hope, in the interest of Culture and careful research is an indication of the importance of attaining specialisation. As Wittgenstein stated: (lemma 7.6.5) Of what I can prove I can talk, the rest is silence ...

To conclude, the World does not require Minotaurs, or other composites. Human beings are required with a mission and the humility to persevere it, for this is true professionalism. No one obliges a man to become an O.R. specialist, let us hope that if he does so is because he wants to be just that, not something else.

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from Anita Tenenbaum

## THE ESPRIT CONFERENCE OF NOVEMBER '95- EITC'95

### "Managing Change" towards Europe's Information Society The ESPRIT Exhibition

The ESPRIT programme (ESPRIT for European Strategic Programme for Research and development in Information Technologies) was launched about 10 years ago by the European Commission, with the aim to strengthen the competitiveness of the European industries in the sector of Informations Technologies (IT).

Every year, the Programme organises a Conference - the ESPRIT Conference which gathers specialists from all IT related activities, coming from all the state members : scientists from Research Institutions, research managers from Industries, business managers, SME's ...)

Every year, an Exhibition is set up, open throughout the Conference, illustrating the latest realisations in the world of IT.

This year, the ESPRIT conference - and its exhibition - was centred on three main themes of the information society, all highlighting the breakthrough made by the IT : challenges for the

Individuals, challenges for the Public Sector, challenges for the Enterprises.

So, these were the themes illustrated by the different sections of the Exhibition organised during the Conference.

A special section was dedicated to the interface between the human and IT - showing several innovative display technologies. Electronical displays form a vital part of the human-machine interface in almost every aspect of the information technology. From industrial application monitoring through office automation, the display takes a major role.

After all, the ultimate objective of OR is to offer a computer aided decision support, through the best possible channels. In this triangular relation between the OR consultant, the decision maker and the computer, the quality of the display is of major importance.

So, planar electroluminescent (EL) displays were shown, achieving very high contrast and exceptionally clear images.

Another type of display was presented at the Exhibition, based on new ferro-magnetic liquid crystals, offering the quality and low power consumption which make them ideal for use in modern portable information products.

A second section dedicated to the theme "IT and the citizen" was showing the way to the "info-agora" of the future (Agora : the market place in Athens, used for political and public meetings in





from Anita Tenenbaum

Ancient Greece).

As the access to information becomes wider and wider, the "info-agera" - just as in ancient Greece, is now the centre for access to information, thus becoming the place where decisions are taken.

Applications were shown, illustrating some of the technologies influencing the financial sector, like the use of neural nets to model financial markets.

Another application was presented for the marketing sector, showing interactive shopping. Thus, an interactive multimedia approach was shown, based on a new concept in electronic shopping, using interactive and multimedia based sales points to allow customers to refine their choice of products, options and price in detail, before contacting the sales staff. The technology includes sales points, the sales database and connecting links (Although, where is the fun of going out to shop in an unmanned shopping centre, where an IT voice delivers an IT - digested information?)

A third section of the exhibition was allocated to the theme "IT serving the public sector/ IT serving the society". Indeed, the public sector, throughout Europe, should be revitalised by the advent of the information society. Applied IT will enable the public sector to extend the reach of its services to more and more Europe's citizens, without increasing the costs of these services. This should be a win-win solution for Europe.

In the area "IT serving society", an ESPRIT prototype was shown, addressing the crisis management for major hazards - in particular, for dealing with forest fires. The new software, called CHARADE, integrates situation assessment, resource management and interactive planning modules with a geographic database to provide fire fighting organisations with a single tool to support the total fire prevention and fighting process. The system is already implemented in France and in Spain.

More generally, this pilot-software is expected to be equally well suited to other situations of crisis-management in emergency situations of all kinds.

Other OR related prototypes were shown, such as the crew allocation project DAYSY - "making sure each aircraft has a pilot", or the project MADE - "moving to paperless aircraft maintenance", or other prototypes showing the way to improve quality control, such as the project IDERS "automated inspection techniques : up with the market leaders" : an inspection system for detecting the defect on the surface of rolled and coated metal strips...

Looking for more?

Go to the World-Wide Web  
<http://www.cordis.lu/esprit/src/results.htm>

A.TENENBAUM





Among hundreds of ongoing ESPRIT projects presented throughout the Conference, here is a selection of chosen projects which might be of interest for OR :

CHARADE, ICIMS-NOE, INRECA, EURO-KNOWLEDGE



## TIPS AROUND THE ESPRIT CONFERENCE "EITC '95"

### CHARADE

#### Combining Human Assessment and Reasoning Aids for Decision making in environmental Emergencies Esprit Project 6095

Contact point : Alcatel - ISR, 523, Terrasse de l'Agora, F-91025 Evry CEDEX, Mr Alain GRAU, Department "Affaires civiles", Director, Tel : +33 1 60912358, Fax : +33 1 60912498.

CHARADE is an integrated system for the management of environmental emergencies whose main application is forest fire fighting. The system was developed by an European consortium within the III Framework Program Esprit of the Commission of the European Communities. It is the result of the application of state-of-art techniques as well as of a strict involvement of users and domain experts both in knowledge acquisition and validation. Indeed the functional architecture of the system strongly relies on the modelisation of the human operator's behaviour when taking decisions in emergency situations.

**ENVIRONMENTAL EMERGENCIES.** The management of environmental emergencies is a complex problem involving many actors and means. Rapid access to territorial data, an accurate assessment of the event, and the rapid and effective organisation and mobilisation of forces are the keys to successing.

**MAN MACHINE INTERFACE.** User-friendly screens enable the operator to manipulate objects on maps, to

apply temporal and spatial reasoning on graphical schedules and allocation tables. A task model is used at run time, as a component of the User-Interface, to assist the operator in accomplishing tasks and to guide the dialogue between the user and the system.

**INTERVENTION PLANNING.** Charade draws up intervention plans helping the operator to elaborate a strategy tailored to the current situation. Charade can both automatically plan an intervention by consulting stored scenarios and support the operator in: selecting tactics to implement the strategy, plan interactively an intervention, check the temporal consistency of a plan, dimensionate the type and number of resources for a plane.

**SITUATION ASSESSMENT.** Charade provides a sharp interpretation of the situation by retrieving and processing all information relevant to the current situation. It allows to : retrieve geographical data, forecast the evolution of the situation, assess the site accessibility, assess the values at risk, assess resources' distribution.

**EARLY DETECTION.** Charade is designed for the early detection of disastrous events and their localisation with a reasonable degree of accuracy. In the fire application the system is designed to be connected to an infrared sensor patented by Alenia.

**RESOURCE MANAGEMENT.** Charade supports the resource allocation both in interaction with the operator



from Anita Tenenbaum

and in automatic mode. Charade makes it possible to : assess the availability of resources, assess the suitability of resources for a fire situation, estimate travel times to reach a destination, automatically schedule an intervention, forecast resources' activity

## ICIMS-NOE

### Network of Excellence in Intelligent Control and Integrated Manufacturing Systems

Co-ordinating node : Lab. for Automation and Robotics, Electrical Engineering Department, Division of Systems and Control, University of Patras, GR 265 00 Rion, Greece.

Structure of the ICIMS-NOE : Network Co-ordinator (NECO): Prof. Peter P. Groumos Tel : +30 61 997 295, Fax : +30 61 997 309, E-mail : groumos@ee.upatras.gr ; Network Manager (NEMA) : Mr. Vlassios N. Gourvelos, E-mail : gourvel@ee.upatras.gr

**Description of the Network :** The main objective of the NOE in Intelligent Control and Integration of Manufacturing Systems (ICIMS) is to pool together and enhance the human and material resources of leading research and academic institutions as well as all related industries aiming at the creation of an infrastructure that will allow the co-ordination of research and development. Provide the leadership for new research directions, efficiently disseminate the new knowledge and help the

effective training of professionals and students alike. The long term industrial goal of the ICIMS-NOE is to develop and contribute the necessary tools so that an Adaptive Intelligent Factory (ADIF) becomes a reality in the long run of 10-12 years. The distinct feature of ADIF would be the effective linkage of Intelligence and Integration.

**INTELLIGENT MANUFACTURING SYSTEMS (IMS).** Using information technologies to develop innovative and novel solutions in flexible automation of manufacturing and assembly with the potential for significant improvement of productivity, flexibility, quality and reliability of production.

**COMPUTER INTEGRATED MANUFACTURING AND ENGINEERING (CIME).** Using information technologies to integrate and co-ordinate functions, operations, activities and decision making procedures in such a way that local as well as global performance objectives are optimised.

**METHODOLOGIES AND DESIGN TOOLS OF SYSTEMS THEORY AND CONTROLS (STC).** It will cover areas of adaptive control, hierarchical control and decentralised systems, fuzzy control systems, neural networks, expert systems and discrete event dynamic systems.

**COMMUNICATIONS.** At both the enterprise and the shop-floor levels, and between the two levels. Communications should be taken to include man-machine interfaces, possibly customised for different environments and cultures.

### Research Areas and Technical Work





## TIPS AROUND THE ESPRIT CONFERENCE "EITC '95"

**PRODUCT AND PROCESS MODELLING.** Representation of physical and managerial processes through mathematical models and representation of data through data models. Furthermore, knowledge-based systems should be developed that can assist the designer by providing information about past designs and experiences relative to the task at hand.

**AUTOMATED COMPUTER-AIDED TESTING AND QUALITY MANAGEMENT.** Using the computer in an on-line fashion to develop total quality, enhance production flexibility and measure the performance of the product design and production processes.

For each of the above six areas a Technical Committee (TC) has been formed. Each TC has been asked to conduct a state-of-the-art survey, and compile the findings in a report. These reports are widely distributed.

**Academic Nodes :** **Austria :** Graz, Univ. of Technology, Prof. R. Weiss; **Belgium :** Katholieke Universiteit Leuven, Prof. P. Valckenaers; **Denmark :** Technical University of Denmark, Dr. P. Falster and Prof. O. Ravn; **Finland :** Helsinki Univ. of Technology, Dr. T. Savolainen; Tampere Univ. of Technology, Prof. H. Koivo; **France :** Université Bordeaux 1, GRAI, Prof. G. Doumeingnts and Prof. J.P. Bourrieres; Centre National de la Recherche Scientifique, Prof. J. Bernusou; University of Nancy, Prof. G. Morel; **Germany :** BIBA University of Bremen, Prof. B. Hirsch; Universitat

Karlsruhe, Prof. U. Rembold; Fraunhofer Institute, Prof. H.J. Warnecke; Ruhr Universität Bochum, Prof. J. Dastych

**Greece :** University of Patras, Prof. P.P. Groumpos and As. Prof. N. Koussoulas; National Technical University of Athens, Prof. S. Tzafestas; Technical University of Crete, Prof. M. Christodoulou; **Ireland :** University College Galway, Prof. J. Browne; **Italy :** Politecnico di Torino, Prof. A. Villa and Prof. M. Cantamessa; Università di Genova, Prof. R. Minciardi and Dr. Sacone; University di Firenze, Prof. E. Mosca; **Netherlands :** Eindhoven University of Technology, Prof. H. Wortmann; **Portugal :** Universidade de Porto, Prof. J.C. Dos Santos and Prof. C. Ramos; Universidade de Aveiro, Prof. J.A. Fonseca; Universidade Nova de Lisboa, Prof. Luis M. Camarinha-Matos; **Spain :** Universidad Politecnica de Madrid, Prof. J. Uceda and Prof. E. Puente; Universidad Politecnica de Valencia, Prof. P. Albertos; **Sweden :** The Royal Institute of Technology, Dr. B. Finnstrom; **U. K. :** University of Strathclyde, Prof. M.J. Grimble and Dr. A. Petropoulakis; CITY University, Prof. N. Karcanias; CIM Institute, Cranfield University, Prof. P. Sackett; University of Reading, Prof. K. Warwick; University of Liverpool, Prof. K.K.B. Hon; Brunel University of W. London, Dr. R. Grieve and Dr. A. Pierce; University of Bradford, Prof. H. Bartlett; Liverpool John Moores University, Prof. W. Brian Rowe.

**Industrial Nodes :** **France :** SEMA METRA Group S.A., Mr. Q. Tron

ICIMS-NOE  
DIRECTORY



from Anita Tenenbaum

Dinh; AEROSPATIALE, Mr. G. Guilbert; FRAMONE, Dr. Omer Mercier; **Germany** : MERCEDES BENZ, Dipl. Ing. U. Fischer; DAIMLER BENZ, Dr. H. Soboll; SIEMENS, Mr. S. Buck and Mr. H. Ebach; **Greece** : INTRACOM S.A., Mr. J. Tzavaras; ALGO-SYSTEMS S.A., Mr. P. Andreacos; INTRASOFT S.A., Mr. G. Zenzefilis; KNOWLEDGE S.A., Mr. V. Christidis **Ireland** : HYPERION, Dr. D. McCarthy; AMIT Ireland, Mr. B. O'Grady **Italy** :SAPRI SpA, Mr. D. Appendino; TXT Ingeneria Informatica, Mr. M. Guida; FIAT-TELEXIS, Dr. F. Naccari; **Netherlands** :Philips Centre, Dipl. Ing. H.P. Koch; **Norway** : Sintef Production Engineering, Prof. A. Rolstradas; **Portugal** : ALPHATEC S.A., Dr. A. De Oliveira; CCP-CIM Centre of Porto, Dr. F. Restivo; **Spain** : FATRONIC SYSTEM S.A., Mr. I. Sebastian; Instituto de Automatica Industrial, Mr. A. Alique; **U.K.** : ICI Engineering (ICI), Dr. D. Boland; BRITISH AEROSPACE, Mr. E.J. Waite; Nestec York Ltd (part of Nestle), Mr. A. Rawden; Parallax Management, Mr. E. Rose and Mr. P. Marlow; Computer Sciences Corporation Ltd., Mr. C. Piddington; KEWILL GCS, Mrs. S.T. Burgmeier

## INRECA

**Induction and reasoning from cases. Building a Corporate Memory for Decision Making**

For further information please call your nearest INRECA representative : **France** : AcknoSoft, 58a, rue du dessous des berges, 75013 Paris, Tel : +33 1 44 24 88 00, Fax : +33 1

44 24 88 66, Contact : Michel Manago; **Germany** : techInno, Sauerwiesen, 2, 67661 Kaiserslautern, Tel : +49 6301 60 60, Fax : +49 6301 60666, Contact : Ralph Traphöner; **Ireland** :IMS, Clara House, Glenageary Park, Glenageary, Co. Dublin, Tel : +353 1 284 0555, Fax : +353 1 284 0829, Contact : Sean Breen; **USA** : AcknoSoft, 2460 Waverley Street, Palo Alto CA 94301, Tel : +1 415 326 24 60, Fax : +1 415 323 47 38, Contact : Michel Baudin.

INRECA pools the talents of three European high-technology companies and a university to offer cost-effective means of delivering consistent business and technical decisions based on the experience of the most skilled specialists.

INRECA provides packaged tools and methods for the development, validation and maintenance of decision support systems. With these tools, a user can develop an application autonomously or with assistance from the INRECA consortium in requirements analysis, evaluation of costs and benefits, and system integration.

By not requiring specialists to describe their know-how as rules expressed in a formal language, the INRECA approach has an intuitive appeal for engineers, and overcomes what has historically been the main stumbling block in building expert systems. The INRECA technology adapts to the engineer's mode of reasoning : Have I ever seen something similar before? If so, what did I do about it ?"

INRECA's core technologies include induction and case-based reasoning.





from Anita Tenenbaum

Induction extracts decision knowledge from case databases. It brings to light patterns among cases and helps monitoring trends over time. Case-based reasoning relates the engineer's current problem to past experiences. The INRECA technology is particularly effective when : experience is as valuable as textbook knowledge, specialists describe their domain by giving examples, problems are not fully understood, decision rules have many exceptions

The INRECA project is supported by the European Community as ESPRIT project ( 6322 and is setting a European standard for case-based reasoning.

Michael Manago, CEO, AcknoSoft S.A., Prime contractor of INRECA : "The INRECA consortium not only allows customers to leverage the technical talent of all partners, but also provides local application support, from California to Germany. The engineers involved in INRECA have diverse backgrounds and complementary skills. They are committed to building decision support systems that work in a variety of real industrial applications, and share the conviction that induction and case-based reasoning are the right technologies to do it. We are grateful for the support of the EC and determined to make this project a success, both in the development of new technology and in innovative applications".

AcknoSoft has been a profitable company since its foundation in 1991. 60% of our revenues come

from selling products such as the KATE-toolbox for reasoning with cases. We are Apple partner-developer, SUN catalyst and certified by the French Ministry of research. We received the Challenge+ award for innovative enterprises from HEC, France's top business school, in 1992. The systems we build are centered on products, embedded in a layer of custom integration software. To minimise maintenance costs, we use advanced software engineering methods to ensure that more and more of the integration software can be reused and converted to new products. This strategy is being successfully applied in the INRECA project, and we are merging results obtained by applying the technology in real business and engineering settings into our KATE-toolbox line of products.

## EUROKNOWLEDGE

Esprit 9806

EUROKNOWLEDGE was founded as a European IT Initiative in early 1995. The Initiative aims to establish recommendations for knowledge representation standardisation. EUROKNOWLEDGE views its role as a focal point for the consolidation of common views and best practise from knowledge technology users, theorists and tool vendors. More than 180 organisations, from both industry and academia, have expressed interest in and/or volunteered effort to EUROKNOWLEDGE.

**Mission Statement and View :** to co-ordinate and encourage activities in the area of knowledge technology





from Anita Tenenbaum

- in the capture, formalisation, use and distribution of knowledge, to facilitate reuse of knowledge, to facilitate exchange of knowledge.

The EUROKNOWLEDGE view is that knowledge is a fundamental corporate asset. The extent to which this asset is employed is a major factor in determining the success of an organisation. Knowledge technology is making an important contribution to more fully exploiting knowledge assets, but the difficulties in reusing and sharing knowledge are a major bottleneck in operationalising the technology.

#### Project Aims and Approach

EUROKNOWLEDGE will make recommendations for standardisation on the following knowledge level topics : knowledge representation formalisms, domain ontologies, problem-solving models.

EUROKNOWLEDGE project members do not undertake all the work alone, but rather rely upon significant input from the knowledge technology community. This is not only for reasons of efficiency (the task would be far too vast for a small project!), but also due to the fact that the results must reflect a consensus view of the community.

Today, voluntary effort is sought, both for technical contributions to recommendation elaboration, and for the evaluation of formalisms / ontologies / problem-solving models as candidates for standardisation.

#### Project Results to date

EUROKNOWLEDGE Glossary, Technical Reference Model for Conceptual-Level Modelling of Knowledge, Standardisation of Conceptual-Level Knowledge Modelling Formalisms, Report on Survey around Knowledge Engineering Standardisation Efforts, ... together with Requests-for-Action/Commentary on criteria for conceptual-level knowledge : modelling formalisms, domain ontology reuse, and reusable problem-solving models.

#### EUROKNOWLEDGE Consortium

France : ILOG, Intelligence Logicielle; CGInn, Cap Gemini Innovation; DEC, Digital Equipment  
Germany : DTK, DTK Gesellschaft für Technische Kommunikation  
U.K. : AIA, The University of Edinburgh/AIAI; KBEC, KOB Engineering Centre/Coventry University  
Switzerland: SYSTOR, Swiss Bank Group

For more information :  
<http://www.aiai.ed.ac.uk/~euroknow/>  
Mari Georges, tel : +33 1 49 08 35 57; ILOG : fax : +33 1 49 08 35 10, e-mail : georges@ilog.fr  
To receive the special issue of AI Watch (August 1995) dedicated to EUROKNOWLEDGE, contact : Alex Goodall, tel : +44 1865 791 600,; AI Intelligence: fax : +44 1865 791 007, e-mail : alex@aaiintelligence.com



## Call for papers

**Parallel Optimisation  
Colloquium - POC96  
Versailles, France, 25-27  
March 96**

Organised by Laboratoire PriSM, Université de Versailles Saint Quentin en Yvelines; Centre de recherche sur les transports; Université de Montréal.

The objective of the Parallel Optimisation Colloquium is to bring together researchers actively involved in the development and applications of parallel computing methodologies for discrete and continuous optimisation. Through presentations and open discussion, we aim to exchange experiences, to review successes and setbacks, to identify promising avenues and application domains, to foster new collaborations.

Contact address : Annick Baffert, Parallel Optimisation Colloquium-POC96, Laboratoire PRISM, Université de Versailles-Saint Quentin en Yvelines, 45 Avenue des Etats-Unis, 78035 Versailles Cedex, France (tel.: +33 1 39 25 40 62, fax: +33 1 39 25 40 57, E-mail: [annick.baffert@prism.uvsq.fr](mailto:annick.baffert@prism.uvsq.fr))

**ECCO IX Conference of the  
European Chapter on  
Combinatorial Optimisation  
1-4 April 96 Dublin, Ireland**

Eight invited speakers will present keynote addresses at the meeting. They will include : C. Roucairol, H. W. Hamacher, L. Wolsey, G. Cornuejols, H. Thiriez, J. Desrosiers.

Proposals for contributed papers, posters and workshops should be addressed to : Helen Keogan, Centre for Computing, DCU, Dublin 9, Ireland (tel.: +353 1 704 5454, fax: +353 1 704 5442, email: [ecco@compapp.dcu.ie](mailto:ecco@compapp.dcu.ie),

[http://www.compapp.dcu.ie/ctc/ctc\\_home.html](http://www.compapp.dcu.ie/ctc/ctc_home.html)

**18th International  
Conference on Information  
Technology Interfaces ITI '96**

Meeting of Researchers in Computer Science, Information Systems, Operations Research and Statistics, Pula, Croatia, June 18-21, 1996.

ORGANISED BY University of Zagreb, University Computing Centre, Croatia .

CO-ORGANISED BY IEEE Croatia Section.

CONFERENCE STRUCTURE : Invited papers, Contributed papers, Poster sessions, Panel discussions, Workshops Tutorials, Video taped short courses, Hardware and software presentations, Book exhibitions

PANEL DISCUSSIONS and WORKSHOPS are welcome.

TOPICS: 1. Application of Information Technology; 2. Artificial Intelligence and Expert Systems; 3. Biometrics; 4. Computer Systems and Networks; 5. Data Analysis and Statistics; 6. Information Systems and Databases; 7. Mathematics and Computation; 8. Modelling, Simulation and Optimisation; 9. Multimedia; 10. Software Engineering and Programming Languages.

PAPERS : Authors who wish to present the original paper at the Conference or to be considered for the poster/demo session should submit three (3) copies in English of a full paper related to any topic of the Conference.

Invited papers, and original contributed papers reviewed and accepted by two independent referees, will be published in the Conference Proceedings. Proceedings will be distributed at the Conference.

A selection of published papers will also be published in the international journal CIT - Computing and Information Technology. Any paper submitted for ITI'96 is automatically considered for publication in CIT.

Camera-ready copy of the full paper must be printed on laser printer and submitted not later than March 15, 1996. Notification of acceptance of papers will be mailed to the authors by May 20, 1996. Conference Proceedings will contain



**Call for papers**

only accepted contributions of the authors for whom the registration fee will have been paid.

LANGUAGE : English is the official language of the Conference.

Conference secretariat : Branka Radic  
UNIVERSITY COMPUTING CENTRE, J.  
Marohnica bb, 10000 Zagreb, CROATIA Phone:  
+385 1 518 656 Fax: +385 1 518 656 E-mail:  
iti@srce.hr WWW: <http://www.srce.hr/iti>  
Gopher: <gopher://gopher.srce.hr/11/eng/iti>

**EWGLA9**  
**Ninth Meeting of the EURO**  
**Working Group on Loca-**  
**tional Analysis**

**Birmingham, 5-8 September 1996 First An-**  
**ouncement and Call for Papers**

The ninth meeting of the EURO Working Group on Locational Analysis will take place in Birmingham. Delegates will be accommodated in the attractive and historical University House and lectures will take place in the nearby School of Mathematics and Statistics.

Birmingham is well situated with regard to transport. There are international flights to Birmingham airport from major European and American cities and there are half-hourly trains from London Euston. Birmingham is in the heart of England, with Stratford-upon-Avon, Warwick castle, Welsh mountains and other attractive sites within easy reach.

The meeting is scheduled to take place immediately after the national OR conference OR38 in Warwick, with which it may be combined. It will start early afternoon on the 5th September and end midday on the 8th September.

The first section will be scheduled on the 5th. On the Saturday afternoon (7/09) there will be a trip. Two possibilities on which we would welcome opinions are the hometown of Shakespeare, Stratford-upon-Avon, or central Wales. The conference dinner will take place afterwards, in the evening.

The cost for accommodation including breakfast

and evening meals, pre-prints, conference proceedings, conference dinner and the social trip will be GBP 170 if booked by May 1st or GBP 190 thereafter. The only item not included in the above fee is midday meals which may be obtained cheaply on campus at a variety of restaurants.

We are pleased to announce that invited speakers include Zvi Drezner, Erhan Erkut, Horst Hamacher and Gilbert Laporte. We would also like to ask you to spend a few minutes completing the questionnaire below as this would be very useful for our planning. We hope you will be able to attend.

**Organising Committee** : M. Agar, B. Boffey, C. James, S. Khan, G. Nagy, S. Salhi (Chair), S. Welch.

**Scientific Committee** : B. Boffey (Chair), R. A. Cuninghame-Green, H. Hamacher, F. Plastra, S. Salhi.

**Contact Address** : Dr S. Salhi, Management Mathematics Group, School of Mathematics and Statistics, The University of Birmingham, Edgbaston, Birmingham, B15 2TT, England. (tel: 44-121-414 6602, fax: 44-121-414 3389, email: [s.salhi@bham.ac.uk](mailto:s.salhi@bham.ac.uk) or [ewgla9@mat.for.bham.ac.uk](mailto:ewgla9@mat.for.bham.ac.uk)).

**EWGLA9 - Birmingham 5-8 Sep. 96**  
**Questionnaire**

Name of delegate:

Mailing Address:

Fax:  
E-mail:

I plan to attend  
I will not be able to attend  
I plan to present a paper

Title of the paper is:

Paper authors:

For the excursion I would prefer : Stratford; Wales; Other, please specify. Note: There will only be one trip and we will try, on the basis of the responses, to choose the most popular.

## Call for papers

## II ALIO/EURO WORKSHOP ON PRACTICAL COMBINATORIAL OPTI- MISATION November 11-15, 1996 Valparaiso, CHILE

Sponsored by ALIO, Latin-Iberian-American Association of Operations Research EURO, Association of European Operational research Societies

Program Committee : E. Santibanez-Gonzalez (General Chair, Chile), C. Roucairol (EURO Chair, France), F. Maffioli (Italy), N. Maculan (Brazil)

International Advisory Committee : J. Beasley (England), C.J. Colbourn (Canada), R. Galvao (Brazil), B. Gavish (USA), J. Lesser (France), J. MacGregor-Smith (USA), P. Toth (Italy), A. Weintraub (Chile)

Submissions of abstracts are invited on all computational, practical and theoretical aspects of combinatorial optimisations. Sessions will be organised around the following and related topics : Telecommunication Network Design; Computer Network Design; Routing and Scheduling of Vehicles and Crews; Facility Location, Layout and Allocation Problems; Financial Modelling; Knapsack Problems; Production Planning and Scheduling; Machine Sequencing; Polyhedral Combinatorics.

Tutorial Lectures and discussion papers on the following topics are also welcome : Travelling Salesman Problem : Complexity and applications; Computational Complexity : Problems and Algorithms; Network Optimisations : New developments; Parallel Computing and Parallel Algorithms : New directions; Graph Theory; Artificial intelligence Algorithms for Combinatorial Optimisation Problems; Trends in interior point methods.

Papers will be selected on the basis of extended abstracts to be submitted as described below.

It is expected that approximately thirty contribu-

tion papers, plus ten tutorial/invited papers will be presented, in a series of non-parallel sessions.

The proceedings of the workshop will contain full texts of all presented papers. Copies will be provided to all participants at registration time.

### Submissions of Abstracts

Extended abstracts should be submitted before 18 March 1996. The names and affiliations of authors together with the paper title should be submitted in a separate sheet. The extended abstract should be between three and five pages in length (typed double spaced).

Extended abstracts should be sent by e-mail to [pracomo@aix1.ucv.cl](mailto:pracomo@aix1.ucv.cl) or by normal mail to the address indicated at the end of this call.

Authors of all accepted papers will be notified by May 31, 1996. Final full versions of all accepted papers must be provided by September 2, 1996.

It is intended that a special volume of a prestigious international journal will be dedicated to the Workshop.

Financial Aid for the participants : It is intended to provide financial aid for some of the principal speakers of each selected paper to be presented at the workshop. Resources will cover totally or partially the accommodations and travel expenses.

Workshop language : the workshop language will be English and no simultaneous translation will be available.

For further Information : School of Industrial Engineering, Catholic University of Valparaiso, Av. Brazil 2147, 3er, Piso, Valparaiso, CHILE, Tel : 56-32-214823, Ext 501, Fax : 56-32-214823, E-mail : [pracomo@aix1.ucv.cl](mailto:pracomo@aix1.ucv.cl)



## Call for papers

**7TH MINI EURO  
CONFERENCE DECISION  
SUPPORT SYSTEMS  
GROUPWARE, MULTIMEDIA  
AND ELECTRONIC COM-  
MERCE BRUGES - BELGIUM  
24-27 March, 1997**

EURO, the Association of European Operational Research Societies, regularly organises international conferences such as the EURO Conferences, Working Group Meetings (EWG), EURO Summer Institutes (ESI) and Mini EURO Conferences focusing on a specific topic.

The seventh Mini EURO Conference is devoted to 'Decision Support Systems (DSS), Groupware, Multimedia and Electronic Commerce'. It will bring together researchers and practitioners mainly from Europe, North America and the Pacific Rim to present and discuss technological advances, conceptual frameworks and business applications of these managerial technologies.

The conference will be the follow-up to the IFORS-SPC1 conference on DSS held in Bruges in 1991. Bruges is called the Venice of the North; it is renowned for its lovely canals, beautiful parks, renaissance buildings and famous museums.

The conference programme consists of: a comprehensive tutorial on the conference theme to be held on Monday, March 24, 1997; paper presentation and software demonstration sessions to take place from Tuesday March 25 through Thursday March 27, 1997.

The conference language is English. Attendance will be limited.

## STRUCTURE OF THE CONFERENCE

**TUTORIAL :** Groupware, Multimedia and Electronic Commerce

On Monday, March 24, 1997 (9.00-12.00 ; 14.00-17.00), a one-day tutorial will be given by Professor T. Jelassi (Theseus Institute, Sophia Antipolis and INSEAD, Fontainebleau, France)

and Professor A. Anghern (INSEAD). It will cover concepts, technologies and business applications of Groupware, Multimedia and Electronic Commerce. A comprehensive handout will be provided to all tutorial participants.

## CONFERENCE

Parallel sessions on the Conference themes will be organized; they will cover the following topics: Conceptual Frameworks and Methodologies, Technological Advances; Real World Applications

Authors are kindly requested to bring copies of their papers for distribution to the participants.

## SOFTWARE DEMONSTRATIONS :

Software demonstrations of Decision Support Systems, Groupware, Multimedia and Electronic Commerce will be organised. They will be open to all participants.

## INVITATION PROGRAMME

The Invitation Programme will be sent to participants and interested parties in November 1996. It will include the conference programme as well as registration and accommodation information.

## CALL FOR PAPERS - ABSTRACTS

Submissions are invited to the following tracks of the DSS, Groupware, Multimedia and Electronic Commerce streams: Conceptual Frameworks and Methodologies; Technological Advances; Real-World Applications.

Submission of papers on actual applications is strongly encouraged. Each submission should include the following items, all on one page : Title of Paper; Author(s): (main author first); Address: (main author only); E-Mail; Tel; Fax; Keywords: (max. 3 keywords); Abstract: (max. 200 words)

All abstracts will be reviewed for acceptance by the programme committee. Notification of acceptance will be sent together with the Invitation Programme in November 1996.

### Call for papers

#### PUBLICATION OF SELECTED PAPERS

A select set of papers will be published in special issues (or special sections) of prominent academic journals including EJOR: the European Journal of Operational Research, DSS: the International Journal, The Journal of Decision Systems, The Journal of Strategic Information Systems. Only full papers submitted by the authors by the conference date will be considered for journal publication.

#### CALL FOR SOFTWARE DEMONSTRATIONS

Interested Individuals, Research Laboratories, Universities, Government Agencies are invited to submit proposals for DSS, Groupware, Multimedia and Electronic Commerce software demonstrations. Each software demonstrator is expected to register for the conference.

A description of the software demonstration (max. 200 words), including name, mailing address, keywords and abstract is required (all on one page).

DEADLINE FOR ABSTRACTS: JULY 20, 1996.

MAILING ADDRESS (abstracts, software, information and registration) : Professor Jean-Pierre BRANS, Mini EURO Conference on DSS, Groupware, Multimedia and Electronic Commerce, Center for Statistics and O.R., Pleinlann 2, B - 1050 Brussels, BELGIUM, Phone : + 32 - 2 - 629 20 70, 2066, 2048; Fax : + 32 - 2 - 629 22 82; E-mail : jppbrans@is1.vub.ac.be

CONFERENCE COMMITTEE : Co-Chairs: J.P. BRANS (Belgium) and T. JELASSI (France); Members: F. Ackermann, M. Amami, A. Angehrn, R. Anson, L. Applegate, A. Artiba, S. Baile, C. Bana e Costa, J. Bartoli, V. Belton, A. Berdugo, F. Bergeron, M. Binbasioglu, R. Blanning, M. Brannback, T. Bui, C. Carlsson, J. Climaco, J.C. Courbon, J. Darzentas, M. Despontin, G. Doukidis, S. Dutta, A. Edelmeyer, C. Eden, O. El Sawy, B. Espinasse, A. Foroughi, R. Galliers, P. Gray, J. Ho Ahn, M. Jarke, B. Jones, P. Keenan, D. Kenis, M. Khalifa, P. Kunsch, R. Lang, L. LeBlanc, R. Lee, T. Leino, J.L.

Lemoigne, R. Lessuisse, M. Limayem, C. Loebbecke, R. Magalhaes, B. Mareschal, J.M. Martel, I. Mendes, S. Munari, J. Nunamaker, R. O'Callaghan, L. Olfman, J. Paxiao, D. Petrovic, Y. Pigneur, S. Pinson, J.C. Pomerol, P. Powell, G. Prastacos, R. Reix, T. Reponen, R. Ribeiro, A. Rodriguez, C. Rosenthal-Sabroux, M. Roubens, F. Rowe, M. Shakun, R. Slowinski, H. Sol, R. Sprague, C. Stabell, T. Stohr, K.Y. Tam, J. Trahand, P. Vincke, D. Vogel, R. Watson, A. Whinston, P. Zarate.

ORGANISING COMMITTEE IN BELGIUM : J.P. Brans, M. Dedeyne, M. Despontin, J. Devos, S. Loccufier, C. Macharis, B. Mareschal, M. Segers, C. Vanderhoeft.

### Special volume of Annals of Operation Research on Reliability and Maintenance in Production Control

The Annals of Operations Research is planning to publish a special volume devoted to Reliability and Maintenance in the context of Production Control. Original papers dealing with modelling algorithms or review are sought. The special volume will include new advances in the subject. We welcome submissions on the use of a wide range of OR techniques such as linear programming, non-linear programming, stochastic and dynamic programming, as well as on simulation and heuristics applied to more complex reliability and maintenance problems, etc. Refereeing and selection of papers will take place according to the usual standards of major international scientific publications. Authors should send four copies of the manuscript to the guest-editor listed below. The deadline for submissions is June 15, 1996.

Zilla Sinuany-Stern Department of Industrial Engineering and Management, Ben Gurion University of the Negev, Beer-Sheva 84105, Israel, Phone : 972 7 472223; Fax : 972 2 472958; E-mail : zilla@bgumail.bgu.ac.il

