



EURO XX

20th European Conference on Operational Research

“OR and the Management of Electronic Services”

July 4-7, 2004 – Rhodes, Greece

Programme Committee Report

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1 Preparatory Work

Nomination of the Programme Committee Chair

Raymond Bisdorff was nominated Chair of the Programme Committee of the 20th EURO Conference at the EURO'2001 Conference in Rotterdam, July 2001.

Composition of the Programme Committee

The following composition of the Programme Committee was approved by the EURO Executive Committee in its January 2002 meeting.

Raymond BİSDORFF (L), *chair*

Gülay Barbarosoglu (TR), EURO *vice-president (from January 2004)*

Jacek BLAZEWICZ (PL)

Federico DELLA CROCE (I)

János FODOR (H)

Valery S. GORDON (By)

Frank PLASTRIA (B)

Marc SEVAUX (F)

Zilla SINUANY-STERN (II), EURO *vice-president (until January 2004)*

Yannis SISKOS (Gr), *chair of Organizing Committee (*

Gerhard WÄSCHER (D), *chair of EURO'2003*

Meetings of the Programme Committee

1st Meeting

Edinburgh (IFORS 2002 Conference), July 9, 2002, 15:00 until 17:00. Attended by R. Bisdorff, M. Sevaux, F. Della Croce, Y. Siskos (OC chair), Z. Sinuany-Stern (EURO VP).

Following new guidelines accepted by the EURO Council, it was decided to reduced the number of parallel sessions in order to gather more people in each session.

The formerly called “invited sessions” were retitled “organized sessions”. Invited session were only to be initiated by the PC and only concerned plenary and semi-plenary sessions.

Upon a suggestion of Yannis Siskos, the main theme of the Conference “OR for the Management of Electronic Services” was accepted.

2nd Meeting

Istanbul (EURO/INFORMS 2003 Conference), July 7, 2003, 15:30 until 18:00.



Attended by: R. Bisdorff, V. Gordon, J. Blazewicz, G. Wäscher, F. Della Croce, Y. Siskos, Z. Sinuany-Stern

Agenda:

- 1) News from Yannis Siskos (Conference organizer)
- 2) News from Zilla Stern (EURO Executive Committee)
- 3) Date for the next meeting of the EURO2004 PC meeting
- 4) Preparation of the call for paper

Documents distributed:

- First announcement leaflet
- Abstract of first announcement for the EURO Council
- Best Poster Award: a new EURO Award (proposal by Yannis Siskos)
- Provisional schedule of the Programme

1) News from the Organizing Committee

The first announcement was made available on the conference website: <http://www.Euro-rhodes2004.org>

The poster session proposal by Yannis Siskos was critically discussed. Yannis Siskos supported the idea through his own negative experience of short and mostly unattended lectures, compared to potential good discussion in front of a poster presentation. Also the new poster award consisting of 1000Euros was to largely attract potential poster submissions.

Some members of the PC expressed their concern about the possible negative connotation of the poster sessions, especially in the domain of computer science.

The possible evaluation of the poster presentation was discussed and a procedure for evaluation and selection of the winning presentation was sketched.

The initially announced number of 150/day posters was considered to high and a smaller number, i.e. more space allocated to each poster, should be considered. Also the scheduling of the 30min discussion presentations should take into account a convenient distance between each parallel poster presentation.

The provisional Programme schedule proposal was considered to be too early and a precise discussion was postponed to the next PC meeting.

Decisions: It was decided to call for three types of sessions:

- lecture communications of 20min (maximum of 416: 13 parallel streams)
- discussion (poster) presentation of 30min
- software demonstration

The jury of the best discussion presentation was fixed to three members from

the PC (J. Blazewicz, R. Bisdorff and G. Wäscher) and two members from the OC (Nikos Matsatsinis and Constantin Zopounidis)

To be eligible for the best poster award, the discussion presentation authors were asked to submit a two A4 page extended abstract of their presentation and a digital picture of their poster for the 1st of June 2004.

A pre-selection of the ten best discussion presentations was done by the above mentioned jury before the conference date. At the moment of conference the jury should select the prize winning presentation (diploma + 1000Euro award).

The evaluation criteria to be used were the following:

- a) scientific quality
- b) contribution to Theory/Practice of OR
- c) Originality
- d) presentation quality

2) News from the EURO Executive Committee

From the EURO Vice president I, Zilla Stern, it was emphasized that the PC should rapidly select the list of official keywords for the conference and allocate each one to a potential promoter of organized sessions.

Also, the PC's and the OC's work should not be confused.

Decisions: Only the plenary and semi-plenary lectures directly invited by the PC were called invited sessions. All other sessions were called either organized or contributed sessions.

3) Date of next PC meeting

Discussion: A rather long discussion was devoted to fix the next PC meeting. A first proposal by Yannis Siskos for October 2003 could not find the consensus of the PC members. Indeed, the main mission of the PC is the scheduling of the actual Programme of the Conference, a task which can only be done after the submission of organized and contributed presentations is closed, i.e in April 2004.

Decisions: It was decided that the next official EURO2004 PC meeting should take place at the beginning of May 2004, preferable from Thursday April 29th to Sunday May 2nd.

4) Preparation and Circulation of the call for paper

Discussion: The preparation of the call for paper was shortly sketched. The submitting authors should generally choose themselves which kind of presentation (lecture or discussion presentation; organized or contributed) they want to propose.

Zilla Stern emphasized the importance of the organized sessions for the quality of the presentations and the attendance of the sessions.

R. Bisdorff proposed to consider a rather late deadline for abstract submissions as the evaluation of the abstracts is rather simple due to the shortness of the abstracts.

Decision: R. Bisdorff provides Yannis Siskos with a draft version from the Budapest CfP version, who prepares the first draft version to be completed by R. Bisdorff and checked with all PC members before effective launching.

3rd Meeting

Rhodos (Hotel Rhodos Palace, Conference Venue), May 7 and 8 2004, 8:300 – 13:30, 15:00 - 20:00; 9:00 – 13:00, 15:00 – 18:50. Attended by: Gülay Barbarosoglu, replacing Zilla Sinuany-Stern as EURO-VP (GB), Gerhard Wäscher (GW), Marc Sevaux (MS), Frank Plastria (FP), János Fodor (JF), Valery Gordon (VG), Federico Della Croce (FDC), Jacek Blazewicz (JB), Yannis Siskos (YS), Raymond Bisdorff (RB)

Agenda:

1. Inspection of the Conference Venue
2. Circulation of the Call for Papers
3. Submission of Abstracts
4. The conference structure
5. Opening session
6. Closing session
7. Banquet
8. Semi-plenary sessions
9. Available rooms
10. Scheduling of the organized and contributed sessions
11. Contributed sessions: session chairs
12. Discussion presentations
13. Printed Material
14. Publication plans (EJOR)
15. Social Programme
16. Agreement, budget

1) Inspection of the Conference Venue

The PC visited the Conference venue on May 7 2004 from 9:00 to 10:30.

2) Circulation of Call for Paper

Short information exchange about circulation of call for papers.



3) Submission of Abstracts

The electronic submission system appeared immature and not very user-friendly. It did confuse some people when submitting their papers.

It appears important to fix a date limit for registration of contributed paper authors. End of May is suggested.

4) Conference Structure

The Opening-session is placed in the Monday morning slot 10h45 – 12:30 and parallel sessions are planned on Monday afternoon.

The semi-plenary sessions are placed on Tuesday and Wednesday morning 11h00 – 12:30.

Four parallel semi-plenary sessions and two speakers per session with 40 min each are scheduled.

Eight parallel sessions are planned with four speakers (20 min) per session.

Slots	Monday	Slots	Tuesday	Wednesday
9:00 – 10h:30	parallel sessions MA	9:00 – 10h:30	parallel sessions TA	parallel sessions WA
	<i>coffee break</i>		<i>coffee break</i>	<i>coffee break</i>
10:45 – 12:30	Opening session MB	11:00 – 12:30	Semi-plenary sessions TB	Semi-plenary sessions WB
	<i>lunch break</i>		<i>lunch break</i>	<i>lunch break</i>
14:00 – 15:30	parallel sessions MC	14:00 – 15:30	parallel sessions TC	parallel sessions WC
	<i>coffee break</i>		<i>coffee break</i>	<i>coffee break</i>
16:00 – 17:30	parallel sessions MD	16:00 – 17:30	parallel sessions TD	Closing session WD

5) Opening session 10:45 – 12:30

chair: YS (conference chair)

(reduce the preceeding coffee break to 15m)

1. Welcome addresses: Chair OC, President of EURO, Greek Minister of Culture (to be confirmed), 20m
2. Doukidis (Introducing the Conference Theme), 30m
3. President of the EURO Gold Medal jury (Dominique de Werra), 10m
4. EURO Gold Medalist, 40m



6) *Closing session 16:00 – 17:30*

chair: YS (conference chair)

1. IFORS Distinguished Lecture, 40m
2. Best Poster Award (RB), 10m
3. EDDA Award (J.-P. Brans), 10m
4. Conclusions (RB), 10m
5. Future EURO related Conferences, 15m
6. Closing addresses, 5m

Decision: The EDDA award ceremony does not include a presentation by the laureate. The president of the jury can present in more detail the new instrument. In replacement the PC proposes that the EDDA finalists will present their thesis work in a regular parallel session in presence of the jury (see final Conference Programme: EDDA session: Tuesday, 9h00 to 10h30).

7) *Banquet Tuesday night*

Excellence in Practice Award, MSSIP award , Greek awards.

8) *Semi- plenary sessions*

Time: Tuesday and Wednesday, 11:00 to 12:30

Salon des Roses A 280

chair: Gerhard Wäscher

T. Crainic, J. Wallenius (T)

chair: Marc Sevaux

J. Weglarz, P. Pardalos (W)

Salon des Roses B 280

chair: Valery Gordon

Ph. Vincke, D. Bertsimas (T)

chair: Janos Fodor

S. Olafsson, C. Zopounidos (W)

Athena 300

chair: Federico Della Croce

A. Caprara, A. Rubinov (T)

chair: Jacek Blazewicz

V. Paschos, E. Pesch (W)

Delphi Amphitheatre 550

**chair: President of the jury**

Excellence in Practice Award (3 x 30m) (T)

chair: Frank Plastria

J. Barcelo (W, 11h45-12h:30)

Jupiter 1300**chair: President of the jury (Robert Dyson)**

MSSIP (W, 11h00-11h45)

9) Available rooms

All rooms were requested to be equipped with standard overhead projector, data beamer, screen and flip-chart.

1. Jupiter 1300 (full theater style equipped)
2. Delphi 600 (fully theater style equipped)
3. Athena 350
4. Salon des Roses A 300
5. Salon des Roses B 300
6. Nafsica A 170
7. Nefeli B 120
8. Nafsica B 90
9. Jupiter 60

It was originally planned to arrange a smaller space in the back, theater like 60 p., for parallel sessions, can remain in place during Opening and Closing session. In fact, the whole room was eventually used for all sessions, as it appeared to be complicated to move chairs and presentations facilities.

10. Nefeli A 60
11. Executive Room Alpha 60
12. Executive Room Beta 60
13. Executive Room Gamma 60
14. Executive Room Delta 60
15. VIP Lounge 30
16. Syndicate Room A 15
17. Syndicate Room B 15

Was used as a small meeting room for common business meetings.

18. Syndicate Room C 15

Was kept on reserve, but actually not needed due to the provisional no-show elimination of the programme schedule.



10) Scheduling of the organized and contributed sessions

Most of the time of the third PC meeting was concerned with the scheduling of the conference programme. On April 30, 2004, there were 1246 pre-registered authors for the conference. Total number of submitted contributions was 626 out of which 404 were contributed submissions and 222 were organized (formerly called invited) communications.

# of accepted paper in category : - Situation: April 30, 2004	Submitted (with this keyword)
8 Combinatorial Optimization	55
55 Metaheuristics	52
53 Mathematical Programming	49
88 Scheduling	43
17 Decision Support Systems	42
58 Multi-Criteria Decision Aids	41
103 Transportation and Logistics	37
74 Programming, Integer	31
60 Multi-Objective Decision Making	28
32 Financial Modelling	28
94 Stochastic Models	26
72 Production and Inventory Systems	25
87 Routing	25
92 Simulation	24
96 Supply Chain Management	23
76 Programming, Nonlinear	23
15 Data Envelopment Analysis	23
30 Finance and Banking	22
51 Management Information Systems	20
75 Programming, Linear	20
18 Decision Theory and Analysis	19
2 Analytic Hierarchy Process	18
40 Graphs and Networks	17
31 Financial Engineering	17
52 Marketing	17
22 Economic Modeling	17
34 Forecasting	16
50 Location	16



# of accepted paper in category : - Situation: April 30, 2004	Submitted (with this keyword)
36 Fuzzy Sets and Systems	16
3 Artificial Intelligence, ES and Neural Networks	15
66 OR for Electronic Services	14
78 Quality Management	14
16 Data Mining and Data Base Modeling	14
95 Strategic Planning and Management	14
42 Health Care	13
107 Web-based information systems	13
81 Reliability	13
85 Risk Analysis and Management	13
100 Telecommunications	12
77 Project Management and Scheduling	12
62 Network Design	12
79 Queuing Systems	12
102 Timetabling	11
39 Global Optimization	11
10 Complexity and Approximation	10
37 Game Theory	10
89 Search Algorithms	10
1 Airline Applications	10
4 Auctions / Competitive Bidding	9
24 Energy Policy and Planning	9
46 Innovation	9
23 Education and Distance Learning	9
41 Group Decision Making and Negotiation	9
98 System Dynamics and Theory	9
73 Programming, Dynamic	8
7 Capacity Planning	8
64 OR and the Internet	7
44 Human Resources Management	7
91 Service Operations	7
13 Cutting and Packing	7
57 Mobile e-services	7



# of accepted paper in category : - Situation: April 30, 2004	Submitted (with this keyword)
49 Large Scale Optimization	7
25 Engineering Management	6
54 Medical Applications	6
69 OR/MS and the Public Sector	6
97 Sustainable Development	6
48 Knowledge Engineering and Management	5
56 Military Operations Research	5
86 Robust Optimization	5
28 Environmental Management	5
6 Bioinformatics	5
45 Information Retrieval - filtering	5
93 Software for OR/MS Analysis	5
109 EWG MCAD Multi-Criteria Aid for Decision	5
29 Facilities Planning and Design	5
61 Natural Resources	5
35 Forestry Management	4
9 Complex Societal Problems	4
26 Enterprise Resource Planning Systems	4
33 Flexible Manufacturing Systems	4
5 Bayesian Statistics	4
82 Research and Development	4
27 Entrepreneurship	4
20 Disaster and Crisis Management	4
67 OR in Development	3
68 OR in Sports	3
99 Technology Management	3
63 On line Market Research	3
12 Cross-Entropy	3
21 Distributed Artificial Intelligence and Multi-Agent Systems	2
114 EWG ESIGMA Special interest group on Multi-criteria Analysis	2
38 Global Operations	2
84 Reverse Logistics / Remanufacturing	2
14 Cyber Cities & Communities	2



# of accepted paper in category : - Situation: April 30, 2004	Submitted (with this keyword)
47 International Business	2
70 Parallel Algorithms and Implementation	2
43 Human Centred Processes	2
105 Virtual enterprises	2
131 EWG EU/ME European chapter on Meta-heuristics	1
113 EWG LA Locational Analysis	1
112 EWG EUROBANKING special interest group in banking	1
120 EWG Group Decision and Negotiation Support	1
123 EWG Environmental Planning	1
127 EWG Methodology for Complex Societal Problems	1
128 EWG EUROPT Continuous Optimization Working Group	1
116 EWG Financial Modelling	1
118 EWG Decision Support Systems	1
119 EWG Transportation	1
129 EWG HCP Human Centered Processes	1
59 Multimedia	1
83 Revenue Management and Pricing	1
71 Portals and Vortals	1
101 Teleworking	1
11 Critical Decision Making	1
106 Warehouse Design, Planning, and Control	1
108 Work Flow Management Systems	1
19 Digital Libraries	1
104 Utility Systems	1

Inspecting the repartition of contributions on the topics as of April 30 – shown in the table above – reveals that there was an equilibrated return for nearly all important categories. This allowed a balanced programme set up with respect to all major topics generally present at a EURO K Conference.

Most interest was shown in Combinatorial Optimization (8.8%), Meta-heuristics (8.3%), Mathematical Programming (7.8%), Scheduling (6.9%), Decision Support Systems (6.7%), Multi-Criteria Decision Aids (6.5%), as well as Transportation and Logistics (5.9%). This reflects in fact the scientific profile of the PC composition.

Elaboration of the detailed conference programme represented the main task of the third PC meeting. Depending on the more or less previously fixed decisions, this task might take more than a day time work. Most of the time of the third PC meeting was spent on this task.

11) Sessions' chair persons

Session chair person was chosen to be the speaker of the first present communication in the session. It is either the explicitly assigned one or the default person in case of absence of the scheduled first speaker.

In case of absence of a speaker, the PC decided to shift forward in time the remaining presentations. The same principle was applied to the organized sessions.

12) Posters and discussion presentations

It was decided to install the posters in the left part of the lobby of room Jupiter.

The scheduling of the discussion presentations required the setting up of 43 posters on Monday, 45 posters on Tuesday and 36 on Wednesday. Thus 23 panels of 1m width and 2m height were disposed in such a way that they could be used on both sides. Each poster optimally consisted in a DIN A0 sheet.

The posters were set up from 8:30 to 9:00 by the authors on the day of their discussion presentation. The posters were to be removed by the authors the same day from 17:30 to 18:00.

In order to avoid concurrency between discussion presentation of the same topic, no presentations with a same first topic keyword were scheduled in each 30 minutes time slot. Luckily, the large number of keywords and the low number of time slots allowed gave an easy allocation problem. However, avoiding simultaneous regular and discussion presentations for a same author team could not be directly handle, but had to be post-treated upon authors requests in same specific cases.

13) Printed Material

There were two material published: the invitation programme and the abstract booklet. The abstract booklet was published in paper and CDROM format.

The codes of the session slots and the room numbers are used to identify the sessions.

The sessions in the booklet were checked for the order of the communications. In principle, authors with a professor title were scheduled as first speaker (implied directly the session chair).

Sorting principle for the abstract booklet: all events were gathered per slot, i.e. organized, contributed papers in ascending room number and discussion presentations in ascending panel number.



In order to allow the printing of the abstract book, a hard due deadline was fixed at June 10 2004.

Efficient and rapid support from the EURO Office (Bernard Fortz) for generating the final author index was provided.

The OC distributed also a CD-Rom version of the abstract book. It is regrettable that no extended bookmarked PDF file generation was used. The prepared Word document did contain all necessary styles for allowing such a feature. Future Organizers should consult on how to generate full featured PDF documents.

14) Publication plans (EJOR)

A feature issue on the conference theme “OR and the Management of electronic services” is currently being edited by Raymond Bisdorff and Yannis Siskos. Reference text for the call will be the corresponding text in the second announcement & invitation Programme. Some 38 papers have been submitted at present to the special feature issue.

Late changes to the Programme

The conference organizer installed an efficient check of registration confirmation on all scheduled authors and about a hundred communications could be prematurely cancelled and a preciser conference programme could be rescheduled just before the last deadline for printing the abstract book, i.e. June 10th 2004.

This allowed to efficiently lower the inevitable no-show figures (see below).



2 Final Conference Programme

Monday July 5				Tuesday July 6				Wednesday July 7			
MA	MB	MC	MD	TA	TB	TC	TD	WA	WB	WC	WD
9:00-10:30	10:45-12:30	14:00-15:30	16:00-17:30	9:00-10:30	11:00-12:30	14:00-15:30	16:00-17:30	9:00-10:30	11:00-12:30	14:00-15:30	16:00-17:30
	Opening Session										Closing Session
Scheduling: Flow shop I (C81a)		Scheduling : Flow shop II (C81b)	Scheduling : Single machine (C82)	Scheduling : Parallel machines (C83)	Semi-Plenary Sessions	Scheduling : Multi-objective and uncertainty (C84)	Scheduling : Batch and groups (C84b)	Capacity Planning (C07)	Semi-Plenary Sessions	Software for OR/MS Analysis (C102)	
Comb. Opt. : Routing (C09)		Comb. Opt. : Applications of Heuristics (C13)	Comb. Opt. : Integer Programming Models (C11)	Comb. Opt. Set Partitioning (C10)		Combinatorial Optimization (C14)		Graphs and Networks I (C41)		Graphs and Networks II (C42)	
EWG MCAD: Applications in Finance (O03)		EWG MCAD: Environmental issues (O14)	EWG MCAD: Applications (O13)	MCDA Applications in e-business (C58)		EWG MCAD: Multi Criteria Aid for Decision (O10)	MCAD and Artificial Intelligence I (O09a)	MCAD and Artificial Intelligence II (O09b)		EWG MCDA: Bipolar Approach (O01)	
Vector Optimization (C61)		Strategic Planning and Management (C90)	EWG ESIGMA: Uncertainty and Problem Structuring (O27)	EWG ESIGMA: Value Measurement and Decision Conferencing (O28)		Decision Theory and Analysis (C24)	Decision Support Systems (C22)	Group Decision Making and Auctions I (C06a)		Group Decision Making and Auctions II (C06b)	
Supply Chain Management I (C52)		Supply Chain Management II (C93)	Supply Chain Management III (C94)	Supply Chain Management IV (O15)		Supply Chain Management V (C95)	Product. & Inventory Systems I (C67)	Product. & Inventory Systems II (C68)		Product. & Inventory Systems III (C69)	
Data Envelopment Analysis I (O29)		Data Envelopment Analysis II (C17)	Data Envelopment Analysis III (C18)	Data Envelopment Analysis IV (C19a)			Project Management and Scheduling I (O31)	Project Management and Scheduling II (C74)		Project Management and Scheduling III (C74b)	
Cutting & Packing I (O04)		Cutting & Packing II (O04b)	Meta-Heuristics I (C16)	Meta-Heuristics II (C55)		Meta-Heuristics III (C54)	Integer programming (C72)	Marketing (C51)			
Finance and Banking (C29)		Financial Engineering I (O02)	Financial Engineering II (C30)	Financial Engineering III (C31)			Financial Modelling I (C32)	Financial Modelling II (C33)		Financial Modelling III (C34)	
Health Care: Bioinformatics & Computational Biology (O18)		Health Care: Mathematical Diagnostics (O16)	Health Care (C43)	OR for electronic services I (O30)		OR for electronic services II (C65)	OR for electronic services III (O05)	Management Information Systems and e-Marketing (C26)		Web based Information systems (C27)	
OR for Military and Security (C57)		Timetabling I (O34)	Timetabling II (C97)	Airline Applications I (C01)		Airline Applications II (C02)	Logistics (C98)	Analytical Hierarchy Process I (C03)		Analytical Hierarchy Process II (C04)	
Mathematical Programming I (C52)		Mathematical Programming II (C53)	Non linear programming I (O36)	Global optimization (C39)	Non linear programming II (C73)	Continuous optimization I (O25)	Continuous optimization II (O17)	Continuous optimization III (O26)			
Computational Methods in Transportation and Logistics (C35)		Competitive Location (C47)	Location (C48)	Freight transportation and vehicle routing (C101)	Routing (C80)		Urban traffic (C99)	Traffic issues (C46)			
Fuzzy Sets and Systems (C37)		Stochastic Models I (C87)	Stochastic Models II (C88)	Knowledge Engineering and Management (C45)	Quality Management (C75)	Human Resource Management (C44)	Reliability and Risk Analysis (C78)	Maintenance and Stochastic Models (C77)			
Dynamic Programming (C71)		Telecommunication I (O11)	Telecommunication II (C104)	EURO Doctoral Dissertation Award finalists	Network Design and Optimization (C96)	Economic Modelling (C25)	Data Mining (C21)	OR and the internet (C64)			
Environment Managt Natural Resources (C20b)		Forestry Management I (C35)	Forestry Management II (C36)								
Discussion Presentations I		Discussion Presentations II	Discussion Presentations III	Discussion Presentations IV	Discussion Presentations V	Discussion Presentations VI	Discussion Presentations VII	Discussion Presentations VIII			

3 Conference Evaluation

Global statistics

<i>Number of plenary sessions (Opening, EURO gold medal, IFORS distinguished lecture)</i>	3
<i>Number of semi-plenary (PC invited) sessions</i>	10
<i>Number of tutorial sessions</i>	2
<i>Number of regular organized and contributed sessions:</i>	109
<i>Overall number of regular presentations:</i>	372
No-shows: 10%	
<i>Number of listeners:</i>	1863
<i>Average session attendance:</i>	17
<i>Number of discussion presentation posters:</i>	71
No-shows: 28%	

If the regular organized and contributed sessions' no-shows figure (10% in average) is quite satisfactory and usual, the posters' no-shows figure (28%), however, might appear a bit high. It is plausible that several discussion presentation authors did not prepare any poster, especially if they were not familiar with this kind of participation, or else, if they were unsatisfied with the acceptance of their contribution in this new category.

It has to be noticed that the posters attracted a lot of people, especially during the coffee breaks, (see Picture 1) and it is regrettable that not all authors took the opportunity to present their work to an obviously curious and more numerous audience than in most regular sessions.

If the discussion presentation type of participation is likely to persist in the context of future EURO Conferences, it has to be actively promoted and especially prepared both by the Organizing Committee (it is necessary for choose a well visited place for instance) as well as the Programme Committee (it is necessary to elaborate a clearer concept in order to better support the allocation of contributed communications either to regular or to discussion presentations). PhD students could be systematically



Picture 1: High interest shown for the poster exhibition

encouraged to submit in the discussion presentations category and to participate in the EURO Best Poster Award contest.

Quality of the regular sessions

Two means are generally available for supporting the overall scientific quality of the regular sessions. On the one hand, a scientific community organizes communications under the control and responsibility of renown session chairs. This is mostly the tradition in management sciences and OR conferences. On the other hand, a more or less severe evaluation of contributed papers, based on extended abstracts, may ensure a high quality standard of the freely contributed communications. This is more likely the tradition in computer sciences or applied mathematics conferences.

The 20th EURO Conference apparently addressed both kinds of scientific communities with its 25 organized and 84 contributed sessions. If the organized sessions (MCDA for instance) may be judged on behalf of the corresponding scientific communities, it is less easy to control the scientific quality of the otherwise freely contributed communications. Indeed, the short abstract of 100 words maximum is insufficient to effectively judge, apart from obviously out of scope or unreadable abstracts, the quality of the submitted work.

It would be wise to differentiate in the future between these two kinds of contributions by requesting for instance an extended abstract (maximum four pages for instance) for freely contributed communications and reserve short abstracts solely for the organized communications.

4 The EURO Best Poster Award

As mentioned above, the 20th European Conference on Operational Research, has innovated with a new category of contributions, the *discussion presentations*, a type of presentations organized in the style of the prestigious natural science conferences.

Such a discussion presentation is ideally situated in between a traditional lecture of 20 minutes in a regular contributed (invited) or organized session and a simple poster without any oral presentation. It consists in fact in a daily exhibited poster and a parallel scheduled oral presentation of 30 minutes in front of the poster. The reason for proposing such a new type of contributions is on the one hand given by the desire to keep low the required number of parallel regular sessions with short 20 minutes presentations without reducing the number of globally accepted contributions. On the other hand, the new discussion presentation may considerably increase the audience of professional contributors and, most importantly, of young researchers.

Indeed, all presentations accepted in this new contribution category were requested, apart from preparing an oral discussion presentation, to elaborate a poster of approximative size Din A0 (841 x 1189 mm²) to be exhibited for one

day in the lobby of the principal conference room, actually the main coffee break place. The posters were set up between 8h30 and 9h00 the day the discussion presentation was scheduled and had to be removed the same day between 17h30 and 18h00.

Eventually 99 discussion presentations were scheduled at the EURO XX Conference in 8 sessions: MA (Monday 9:00 – 10:30), MC (Monday 14:00-15:30), MD (Monday 16:00-17:30), TA (Tuesday 9:00 - 10:30), TC (Tuesday 14:00-15:30), TD (Tuesday 16:00-17:30), WA (Wednesday 9:00 – 10:30) and WC (Wednesday 14:00-15:30) in separated time slots of 30 minutes parallel to the 15 or 16 regular organized and contributed session streams. They gave the authors the possibility to present and discuss their ongoing work with their poster illustration in the background.



Picture 2: *The poster exhibition during the EURO XX Conference, Rhodes, July 4-7, 2004*

As illustrated in Picture 2, the posters attracted a large interested audience.

To encourage this new type of submissions, the Conference organizer offered the EURO Best Poster Award 2004. This award, granted during the Closing session, consisted in a diploma and a prize of €1000. In order to participate in the contest, authors of accepted discussion presentations were invited to submit a reduced electronic version in pdf format of their poster before June 15th

2004.

The jury of the EBPA 2004 was composed of three members from the Programme Committee: *Raymond Bisdorff* (president of the EBPA jury), *Jacek Blazewicz* and *Gergard Wäscher*, and two members from the Organizing Committee: *Nikolaos Matsatsinis* and *Constantin Zopounidis*.

The evaluation criteria of the posters, explicitly proposed by the programme committee, were in order of decreasing significance: (a) *scientific quality*, (b) *contribution to OR theory and/or practice*, (c) *originality* and (d) *presentation quality*. For the global preference aggregation via the classical concordance principle (see *Roy & Bouyssou, 1993*) we used the following cardinal significance weights: $w_a = 4$, $w_b = 3$, $w_c = 2$ and $w_d = 1$.

Eventually 13 posters were submitted in due time to the jury. Each jury member was asked to evaluate the 13 posters on the four criteria with the help of an ordinal scale from 0 (very weak) to 10 (excellent). These individual evaluations were aggregated via the concordance principle in a robust ordinally valued

outranking relation shown in Table 1, where +3 (-3) means unanimous concordance (discordance) of outranking, +2 (-2) means majority concordance (discordance) of outranking with any significance weights compatible with the given significance order, +1 (-1) means classical simple majority concordance (discordance) of the outranking with the given cardinal significance weights, and finally 0 means logically undetermined.

S	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉	P ₁₀	P ₁₁	P ₁₂	P ₁₃
P ₁	-	+2	-2	-2	-1	+2	-2	+2	+2	-2	+2	-2	-2
P ₂	-2	-	-2	-2	-2	-2	-2	-2	+2	-2	-1	-2	-2
P ₃	+2	+2	-	+1	+1	+2	+2	+2	+2	-2	+2	+1	-1
P ₄	+2	+2	+2	-	+2	+2	+2	+2	+2	-1	+2	+2	+2
P ₅	+2	+2	+2	-1	-	+3	+2	+2	+2	-2	+2	+1	-3
P ₆	+1	+2	-2	-2	-2	-	-2	+2	+2	-3	+2	-2	-3
P ₇	+2	+2	-2	-1	-2	+2	-	+2	+2	-2	+2	0	-2
P ₈	0	+2	-2	-2	-2	+2	-2	-	+2	-2	+2	-2	-3
P ₉	-2	-2	-2	-2	-2	-2	-2	-2	-	-3	-2	-2	-2
P ₁₀	+3	+2	+3	+2	+3	+3	+2	+3	+2	-	+2	+2	+2
P ₁₁	+2	+2	-2	-2	-2	-2	-2	+2	+2	-3	-	-2	-2
P ₁₂	+2	+2	+2	+1	+2	+2	+2	+2	+2	-1	+2	-	+2
P ₁₃	+3	+2	+2	+1	+2	+2	+2	+2	+2	-1	+2	+2	-

Poster p₁₀ (see Picture 2) was the only submission to concordantly outrank all other posters. For instance, p₁₀ unanimously, i.e. on all four criteria by all five judges, outranks poster p₁, p₃, p₅, p₆ and p₈ and similarly, p₆ and p₁₁ are unanimously outranked by p₁₀. The latter poster is also preferred with a weighted majority of criteria and judges for any possible significance order-compatible cardinal weights to all other posters.

Table 1: robust outranking of the 13 posters

From a technical point of view, poster p₁₀ gives the unique dominating kernel of the ordinal valued robust outranking relation of Table 1, in fact independent of precisely given cardinal significance weights. It clearly appears as the best evaluated poster.

Therefore the jury unanimously granted the authors of poster p₁₀ :
A weighted Voronoi diagram approach to political districting, by

*Federica RICCA,
 Bruno SIMEONE and
 Isabella LARI,*
 from the University of Rome "La Sapienza" – the EURO Best Poster Award 2004.

A WEIGHTED VORONOI DIAGRAM APPROACH TO POLITICAL DISTRICTING
 Isabella Lari, Federica Ricca, Bruno Simeone, Dept. of Statistics, University of Rome "La Sapienza"

AIM: To oppose to partisan manipulation of electoral district boundaries (gerrymandering) by using automatic procedures for political districting, designed so as to be as neutral as possible.

METHODOLOGY
 The input to our procedure is the following:
 - a convex polygon C (EU) whose nodes represent the territorial units and whose vertices represent the nodes of the two corresponding sets of neighboring units;
 - a positive map of the number of electors;
 - a set of S nodes called centers of the S political parties;
 - positive integer node weights w_i (representing territorial and sociological peculiarities) for all nodes and all centers;
 - positive real distances d_{ij} for all nodes and all centers.

DEFINITIONS
 Weight for Party i for all i (see full requirements in details and comment on both between two different sites)
 Center for Party i for all i (see full requirements in details and comment on both between two different sites)
 Area of an enclave: No district can be fully surrounded by another district.
 Connected: The districts must have regular geometric shapes. On holes or narrow shaped districts it can be used.

CRITERIA
 Forbidden cases: Grids with irregular shapes, disconnected shapes, narrow shapes, holes, etc.

EXAMPLE: Try to make the Orange party win
 A 5x5 grid with colored cells (Y, O, G, R) representing different parties. The goal is to partition the grid into districts such that the Orange party (O) wins the most districts.

MAIN RESULTS
 - Good properties for our Weighted Voronoi Algorithms.
 - Experimental results show:
 - On real population data, the problem can be easily solved by fitting the algorithm (robustness threshold).
 - Good proportion balance rate for achieved solutions (representing critical cases) but result that user can choose further preferred (or generate).

FUTURE WORK
 - Systematic experimentation on Voronoi algorithms.
 - Study the following three districting problems:
 1. Find a k -party plan (for a given expected vote share) that gives the best possible result.
 2. Find a district plan that, for a given expected vote share, "follows" party as much as possible.
 3. Find a district plan that is as balanced as possible.
 - Connections of these problems with Discrepancy Theory.

ORIGINAL FEATURES
 - Voronoi regions: If one takes as centers the ordinary Voronoi regions, the distances of a point to the nearest center are equal and the area of the region is equal to the area of the Voronoi region.
 - circles and squares are generally accepted as very compact figures.
 - with respect to an example consider the Manhattan distance metric.
 - the districting map obtained by the Voronoi regions is compact.

Weighted Voronoi regions
 In order to take into account population, one would like to generalize the Voronoi regions. One of "Robust" Voronoi (geometrical and metric) regions.
 Consider the following weighted distances:

$$d_{ij} = \frac{w_i}{d_{ij} + w_j} \quad \text{STATIC approach}$$

$$d_{ij} = \frac{w_i}{d_{ij} + w_j} \quad \text{DYNAMIC approach}$$
 Both a full border and a single border version of the Weighted Voronoi algorithm can be considered.

PAST WORK
 A broad survey of political redistricting algorithms is given in:
 Plan of the Center for Civic Values, and the Center for Political Institutions, Center for the Study of the Administration of the State, Center for the Study of the Administration of the State, Center for the Study of the Administration of the State, Center for the Study of the Administration of the State.

References
 - Traditional approaches to political districting: - Luciano de Luca and Bruno Simeone, 1990. - Local Search approach (Burrage et al., 1981; Emery 1980; Aronoff et al., 1992; Blitzer et al., 1996; Ricca Simeone 2003; Burrage et al., 1981; Emery 1980).
 - A branch-and-price approach (Mehlhorn, Aronoff, and Simeone, 1996).

Picture 3: poster p₁₀

5 Concluding with acknowledgments

Let me conclude by thanking all those who helped me setting up the scientific programme of the 20th EURO Conference, especially all the PC members, who did such a great job in Rhodes at the third meeting. I also need to mention the kind support I got from the EURO-Office and especially from Bernard Fortz. The preparation of the final programme as well as the compilation of the abstract book requested an extensive operational support he provided with great efficiency.

Many thanks I would like also to address to Yannis Siskos, the chair of the organizing committee, and to his Organizing Committee, for supporting and putting into reality all desiderata of the PC.

A final thank goes to the EURO Executive Committee who, by nominating me as PC chair, gave me the great opportunity to contribute in such an honorable way to the promotion of EURO and Operations Research in general.

Luxembourg, December 2004

Raymond Bisdorff