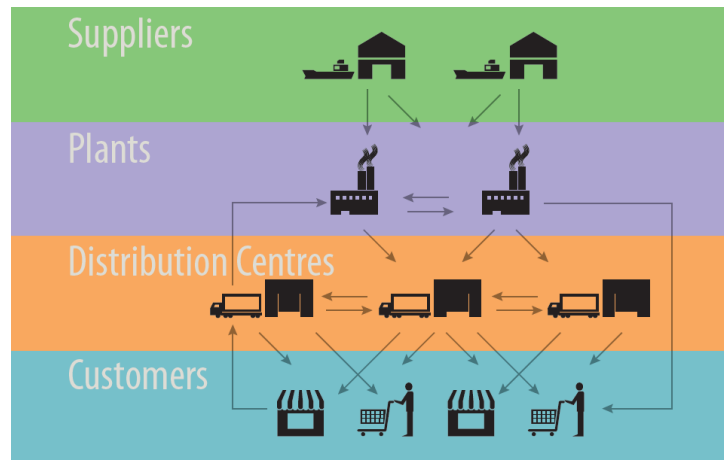


EURO WINTER INSTITUTE ON LOCATION AND LOGISTICS

Estoril, Portugal, 27 January – 10 February 2007



FINAL REPORT

16 April 2007

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1. Introduction

The EURO Winter Institute on Location and Logistics (EWI 2007) was held in Estoril, Portugal, between 27th and 10th of February 2007. In this document the Scientific and Organizing Committees present the final report of this EURO Institute, with emphasis to the most relevant goals, activities and outcomes.

Before the EWI 2007, two EURO Institutes had been devoted to *Locational Analysis*: ESI I (Brussels, Belgium 1984) and ESI XII (Tenerife, Spain, 1995). Around two years ago, it was a general feeling amongst the scientific community working in Location Analysis that it was time for another EURO Institute to be held on the topic.

In fact, since the ESI XII many changes occurred. From the available technology to the complexity of the problems, the reality has changed significantly. Hardware has been developed to a level difficult to predict in 1995, the same happened with the software. Both allow us to solve in a few minutes many problems that a few years ago had 'prohibitive' running times and memory consumption. Moreover, globalization - a reality that can hardly be ignored - has led to extremely complex problems not only by their intrinsic characteristics but also by the amount of data that needs to be considered.

What is more, nowadays, many Locational Analysis problems are imbedded in more global problems, particularly those found in Logistics. Consequently many researchers working in logistics are addressing location problems as part of the strategic/tactical logistics decisions.

On the other hand, from the point of view of the researchers coming from the Location Community, the last years have shown that very successful approaches of Location Theory have been mainly in logistics (and here especially in Supply Chain Management and optimization modules for GIS).

In full awareness of the above mentioned aspects a group of five laureates in the ESI XII (Ioannis Giannikos, Alfredo Marín, Malick Ndiaye, Stefan Nickel and Francisco Saldanha da Gama) encouraged by the Coordinator of the EURO Working Group on Locational Analysis (Frank Plastria) decided to apply for organizing the EURO Winter Institute on Location and Logistics.

This was the first EURO Institute combining the topics of Location and Logistics, which was an opportunity to encourage people from the two areas to exchange their experiences and stimulate new research directions to emerge so that a better articulation between these two fields is achieved.

2. Venue

As mentioned above, the EURO Winter Institute on Location and Logistics was held in Estoril, which is a small town by the sea 20 kilometers away from Lisbon (Figure 1). Several possibilities were analyzed in order to find the more appropriate location for this Institute. The reasons supporting the final choice were:

- Estoril has a very pleasant atmosphere;
- Accommodation in Estoril is fairly cheap during the Winter;
- Estoril has an easy access from the Lisbon Airport;
- Weather is usually cold but dry in February;

- The town has excellent infrastructures for scientific meetings;
- A small town assures that all people in the group will stay permanently in touch with others.



Figure 1: Estoril.

The EURO Winter Institute on Location and Logistics was held in SANA Estoril hotel (Figure 2), a 3 star hotel close to the heart of Estoril.



Figure 2: SANA Estoril hotel

3. Organization details

The application for organizing the EURO Winter Institute on Location and Logistics was submitted by the end of October 2005. By the beginning of March 2006, the EURO Bureau notified the Organizing Committee that the Institute could be organized. The following steps were immediately taken:

- A Poster and a leaflet were created with an image for the Institute as well as all the relevant information (appendix 1 and 2).
- A web page was created (<http://ewi2007.fc.ul.pt>) and permanently updated in order to contain the most relevant up-to-date information.
- An e-mail account was created (ewi2007@fc.ul.pt), which was checked on a daily basis so that all queries were promptly answered.

The Institute was largely advertised:

- All the national OR Societies belonging to EURO were contacted in order to announce the event amongst their members;
- All the members of the EURO Working Group on Locational Analysis were contacted;
- The editors of EURO and IFORS bulletins were contacted to edit the announcement in the corresponding bulletins;
- The editor of the EURO Web site was contacted and the announcement is currently on the EURO web site;
- Several other mailing lists were used to announce the event;
- The posters was taken to several conferences including EURO XXI in Iceland;

4. People involved

Below we refer to the Committees, to the final list of laureates and also to the invited lecturers of the EURO Winter Institute on Location and Logistics.

4.1 Committees

As mentioned above, the decision to apply for organizing the EURO Winter Institute on Location and Logistics was taken by 5 laureates in the Twelfth EURO Summer Institute (Tenerife, Spain 1995) together with the Coordinator of the EURO Working Group on Locational Analysis (who was member of the Organizing Committees of the First and the Twelfth EURO Summer Institutes).

In order to keep the core decisions within a tight group it was decided that these 6 people would constitute the Scientific Committee of the EURO Winter Institute on Location and Logistics.

In this type of event the scientific decisions often overlap the pure organizational decisions. For this reason, it was also decided that all members of the Scientific Committee would belong to the Organizing Committee, which should also include local people. The Local Organizer of the Twelfth EURO Summer Institute (Tenerife, 1995) was also invited to participate in the Organizing Committee due to his past experience dealing with many details of such an event.

The resulting groups were very tight and all the crucial decisions were unanimous. We believe that this gave a strong contribution to the success of the Institute. Even the fact that many members of the Organizing Committee had themselves been laureates in a past EURO Institute was crucial to the success of this EURO Institute because these members had themselves a deep knowledge of the goals behind such an Institute and also of the atmosphere that must be created to achieve them.

The Committees were the following:

Scientific Committee

Ioannis Giannikos (University of Patras, Greece)
Alfredo Marín (Universidad de Murcia, Spain)
Malick Ndiaye (King Fahd University of Petroleum and Minerals, Saudi Arabia)
Stefan Nickel (Saarland University, Germany)
Frank Plastria (Vrije Universiteit Brussel, Belgium)
Francisco Saldanha da Gama (Universidade de Lisboa, Portugal)

Organizing Committee

Miguel Constantino (Universidade de Lisboa, Portugal)
Ioannis Giannikos (University of Patras, Greece)
Luís Gouveia (Universidade de Lisboa, Portugal)
Alfredo Marín (Universidad de Murcia, Spain)
Malick Ndiaye (King Fahd University of Petroleum and Minerals, Saudi Arabia)
Stefan Nickel (Saarland University, Germany)
Ana Pias (Universidade de Lisboa, Portugal)
Frank Plastria (Vrije Universiteit Brussel, Belgium)
Francisco Saldanha da Gama (Universidade de Lisboa, Portugal)

4.2 Laureates

The deadline for the candidates to apply to the national OR societies was September 2006; the deadline for the national OR societies to notify the Scientific Committee of the ranking of the candidates approved in the corresponding countries was October the 31st.

28 applications were forwarded to the Scientific Committee representing 12 countries: Austria, Belgium, France, Germany, Greece, Hungary, Israel, Italy, Portugal, Mexico (ALIO), Spain, and United Kingdom.

Three candidates were excluded by the Scientific Committee. The final list included 25 laureates:

Martin BISCHOFF (Germany)
V́ctor BLANCO (Spain)
Valentina CACCHIANI (Italy)
Ivan CONTRERAS (South America - ALIO)
Inmaculada ESPEJO-MIRANDA (Spain)
Guenther FUELLERER (Austria)
Sergio GARCÍA-QUILES (Spain)
José GORDILLO-SANTOFIMIA (Spain)
Jörn GRAHL (Germany)
Dilek GÜNNEÇ (Turkey)
Vera HEMMELMAYR (Austria)
Jörg KALCSICS (Germany)
Saskia KAUDER (Austria)
Juana LÓPEZ-REDONDO (Spain)
Panagiotis MITROPOULOS (Greece)
Kerem ÖZKISACIK (Turkey)
Dwi POETRANTO (Germany)
Isabel SALEMA (Portugal)
Antonino SGALAMBRO (Italy)
Phuong Nga THANH (France)
Boglárka TÓTH (Hungary)
Lieselot VANHAVERBEKE (Belgium)
Sebastian VELTEN (Germany)
Can YILDIRMAZ (Turkey)
Anastasios XANTHOPOULOS (Greece)

By the beginning of January, Victor Blanco notified the Committees of his absence in Estoril due to the fact that he had been granted a support for a 3-month stay in the USA.

The reasons behind the choice of 25 laureates instead of the 20 stated in the EURO guidelines for the EURO Institutes were the following:

- i) The overall standard was high;
- ii) There was a good diversity in terms of the works proposed by the 25 laureates selected;
- iii) More than 3 laureates from Germany and also from Spain reflect the dimension of the scientific communities in those countries working in Location and Logistics;
- iv) All the chosen laureates were considered by the Scientific Committee ‘young and promising’ and would probably not have another opportunity in a near future to be nominated laureates on a EURO Institute on a similar topic;
- v) 25 laureates is a number that still guarantees that a tight group is created;

4.3 Invited lecturers

Before thinking about names for presenting invited lectures, the Scientific Committee enumerated the topics that should be covered by the lectures. These topics were:

- Complexity issues / Network location problems;
- Logic of logistics;
- Continuous Location;
- Location routing;
- Hub Location;
- Geographical Information Systems and Location;
- Supply chain management models;
- Integer programming / Discrete location;
- Obnoxious/Semi-obnoxious location;
- Location with stochastic influences;
- Multi-stage location problems;
- Real world location problems.

Taking the previous list into account, the following renowned scientists were invited to make a high level tutorial during the Institute:

Oded BERMAN (University of Toronto, Canada)
 Maria Eugénia CAPTIVO (Universidade de Lisboa, Portugal)
 Laureano ESCUDERO (Universidad Miguel Hernández, Spain)
 Elena FERNÁNDEZ (Universitat Politècnica de Catalunya, Spain)
 Horst HAMACHER (University of Kaiserslautern, Germany)
 Martine LABBÉ (Université Libre de Bruxelles, Belgium)
 Gilbert LAPORTE (HEC, Montréal, Canada)
 Justo PUERTO (Universidad de Sevilla, Spain)
 David SIMCHI-LEVI (MIT, USA)
 Arie TAMIR (University of Tel Aviv, Israel)
 Laurence WOLSEY (Université catholique de Louvain, Belgium)

It should be noted that all the above mentioned names were first choices of the Scientific Committee and all of them accepted the invitation to participate in this EURO Institute.

In order to assure a full coverage of the above mentioned topics, the following members of the Scientific Committee also presented a lecture in the Institute:

Ioannis GIANNIKOS (University of Patras, Greece)
 Alfredo MARÍN (Universidad de Murcia, Spain)
 Stefan NICKEL (University of Saarland, Germany)
 Frank PLASTRIA (Vrije Universiteit Brussel)

All the invited lecturers were invited to stay in Estoril more than the necessary time to make their presentations. This way, it was assured that the laureates could interact with them for several days, exchanging ideas and deepening discussions that hardly could have been taken place during a 1-day visit to the Institute.

5. 'Towards' Estoril

After notifying the laureates of their selection (which happened on the 23th of November), the Organizing and Scientific Committees tried to maintain regular contact with them and to make sure that they felt increasingly involved with the Institute.

In order to allow the 'ice breaking' to happen before January the 27th (the beginning of the Institute) the laureates were encouraged to make short introductions by e-mail. The idea was to give a scientific and personal portrait and to attach some photos. The result exceeded the expectations. Not only the laureates accepted this challenge without hesitation but they also took this opportunity as a serious one to know each other. A clear proof of the success of these preliminary introductions is the fact that prior to their travel to Portugal, many laureates made arrangements in order to meet at the airport and do together the journey from Lisbon to Estoril.

The web page of the Institute was permanently up-to-date with all the relevant information. A small photo gallery was also built with the photos sent by the laureates when making their introductions.

It was decided that the laureates should share a room. This is a way not only to control the costs but also to make sure that all laureates have the chance to know well at least one other laureate.

Due to the fact there were an odd number of ladies as well as an odd number of gentlemen, it was also decided that there should be two triple rooms: one for ladies and one for gentlemen. Nevertheless, the Organization made it sure that the room would be proportionally larger when compared with the double rooms so that all laureates could have the same space. This was achieved.

6. Activities

A clear goal of a EURO is to promote the exchange of scientific knowledge and experience between the laureates and between the laureates and the senior scientists. Another goal is to promote friendship, which can make it easy to raise future cooperation between the laureates.

The Organizing and Scientific Committees considered these aspects when designing the program of the Institute. Scientific and social activities were organized in a complementary way. In the next subsections all the activities are described. An overview of the program can be seen in figures 3a) and 3b).

2-hour lunch breaks were scheduled so that everybody had time to have lunch and also relax before the sessions in the afternoon.

Apart from the breakfast, all meals were scheduled for a specific time to make sure that the entire group had the meals together.

First week	Saturday 27th Jan	Sunday 28th Jan	Monday 29th Jan	Tuesday 30th Jan	Wednesday 31st Jan	Thursday 1st Feb	Friday 2nd Feb	Saturday 3rd Feb	Sunday 4th Feb	
09:00 - 09:30		Social Program 1	D. Simchi-Levi	V. Hemmelmayr	S. Kauder	V. Cacchiani	P. N. Thanh	Social Program 2	Free day	
09:30 - 10:00			coffee break	coffee break	coffee break	coffee break	coffee break			
10:00 - 10:30			A. Xanthopoulos	M. Labbé	L. Wolsey	O. Berman	C. Yildirmaz			
10:30 - 11:00			Joint Research Activity	D. Günneç	S. Velten	I. Contreras	S. Nickel			
11:00 - 11:30			Lunch	Lunch	Lunch	Lunch	Lunch			
11:30 - 12:00			I. Salema	P. Mitropoulos	A. Sgalambro	J. Redondo	L. Vanhaverbeke			
12:00 - 12:30			coffee break	coffee break	coffee break	coffee break	coffee break			
12:30 - 13:00			Workshop	L. Escudero	G. Laporte	M. E. Captivo	Joint Research Activity			
13:00 - 13:30			D. Simchi-Levi	Dinner	Dinner	Dinner	Dinner			Wine tasting & Company Party
13:30 - 14:00			S. Nickel							
14:00 - 14:30	G. Fuellerer	J. Grahl								
14:30 - 15:00										
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20:30 - 21:00										
21:00 - 21:30										
21:30 - 22:00										

Figure 3a): EWI 2007 Program overview – first week.

Second week	Monday 5th Feb	Tuesday 6th Feb	Wednesday 7th Feb	Thursday 8th Feb	Friday 9th Feb	Saturday 10th Feb	Friday/Sunday 11th Feb
09:00 - 09:30	K. Özkisacik	J. Santofimia	B. Tóth	H. Hamacher	EWGLA XVI	EWGLA XVI	EWGLA XVI
09:30 - 10:00	coffee break	coffee break	coffee break	coffee break			
10:00 - 10:30	I. Giannikos	J. Puerto	A. Tamir	A. Marin			
10:30 - 11:00	M. Bischoff	J. Kalsics	I. Espejo	Scientific closing session			
11:00 - 11:30	Lunch	Lunch	Lunch	Lunch			
11:30 - 12:00	Lunch	Lunch	Lunch	Lunch			
12:00 - 12:30	Lunch	Lunch	Lunch	Lunch			
12:30 - 13:00	Lunch	Lunch	Lunch	Lunch			
13:00 - 13:30	Lunch	Lunch	Lunch	Lunch			
13:30 - 14:00	Lunch	Lunch	Lunch	Lunch			
14:00 - 14:30	E. Fernández	F. Plastria	S. Quiles	ESI Alumni & friends meeting	EWGLA XVI	EWGLA XVI	
14:30 - 15:00	coffee break	coffee break	coffee break				
15:00 - 15:30	Workshop	D. Poetranto	Workshop				
15:30 - 16:00	I. Giannikos	M. Ndiaye	J. Puerto				S. Nickel
16:00 - 16:30	Joint Research Activity						
16:30 - 17:00							
17:00 - 17:30							
17:30 - 18:00							
18:00 - 18:30							
18:30 - 19:00							
19:00 - 19:30							
19:30 - 20:00							
20:00 - 20:30	Dinner	Dinner	EWI2007 Farewell dinner				
20:30 - 21:00							
21:00 - 21:30							
21:30 - 22:00							

Figure 3b): EWI 2007 Program overview – second week.

6.1. Scientific Activities

The scientific activities of the EURO Winter Institute on Location and Logistics were the following:

- The talks of the laureates;
- Lectures presented by the invited speakers and by members of the Scientific Committee;
- Workshops;
- A joint research activity;

- ESI Alumni & Friends Meeting;
- EWGLA XVI;

6.1.1 Talks of the laureates

Each laureate had 1 hour for presenting his/her work (including time for immediate questions/discussion). These presentations referred to the original paper with which they applied to the Institute.

The fact that the Institute was held for two weeks made it possible to extend the discussions using other time when no activities were scheduled.

Each laureate introduced the following laureate, chairing the corresponding session. The last laureate making a presentation chaired the session of the first laureate.

The full list of papers presented by the laureates is the following:

“Two Branch & Bound Methods for a Generalized Class of Location-Allocation Problems”

Martin Bischoff

“Freight Transportation in Railway Networks”

Valentina Cacchiani

“A Lagrangean Relaxation Approach for the Capacitated Single Allocation Hub Location Problem”

Ivan Contreras

“Ordered Median Problem with ℓ_p norm”

Inmaculada Espejo-Miranda

“Ant Colony Optimization for the Two-dimensional Loading Vehicle Routing Problem”

Guenther Fuellerer

“Chvátal T-inequalities for the p-median Simple Plant Location Problem with Order”

Sergio García-Quiles

“Locating a semi-obnoxious facility with repelling polygonal regions”

José Gordillo-Santofimia

“Linkage in warehouse location problems: The numbering effect and its influence on evolutionary algorithms”

Jörn Grahl

“A Two-Stage Multi-Criteria Stochastic Programming Model for Location of Emergency Response and Distribution Centers”

Dilek Günneç

“Delivery Strategies for Blood Products Supplies”

Vera Hemmelmayr

“Conditional and Semi-obnoxious Ordered Median Problems on Networks”

Jörg Kalcsics

“Strategic Network Planning for International Automotive Manufacturers”

Saskia Kauder

“CG – GASUB: A parallelized algorithm for finding global optima to a class of discrete location problems”

Juana López-Redondo

“Locational Planning for an Integrated Solid Waste Management System”

Panagiotis Mitropoulos

“Solving Probabilistic Multi-facility Weber Problem by Vector Quantization”

Kerem Özkisacik

“A general model of location problems on capacitated networks”

Dwi Poetranto

“A strategic and tactical model for closed-loop supply chains”

Isabel Salema

“Models for the schedule optimization problem at a public transit terminal”

Antonino Sgalambro

“A dynamic model for the facility location in supply chain design”

Phuong Nga Thanh

“Sensitivity analysis of the optimal solutions to Huff-type competitive location and design problems”

Boglárka Tóth

“Maximal Covering Location Problem with Price Decision for Revenue Maximization in a Competitive Environment”

Lieselot Vanhaverbeke

“A Reformulated and Extended Covering Model for Flexible Discrete Location Problems”

Sebastian Velten

“Pricing and Lot Sizing Decisions in a Two-Echelon Supply Chain with Transportation Costs”

Can Yildirmaz

“A Generic Analytical Quantitative Location Model for the Design of a Reverse Supply Chain”

Anastasios Xanthopoulos

6.1.2 Lectures presented by the invited speakers and members of the Scientific Committee

Each lecture had one hour (including time for immediate questions/discussion) for presenting a lecture. The titles of the lecturers as well as the corresponding lecturer were the following:

“Stochastic Facility Location and Capacity Problems”

Oded Berman

“Semiobnoxious Location Problems: Some Approaches”

Maria Eugénia Captivo

“On Supply Chain Management Problems under uncertainty”

Laureano Escudero

“Models and algorithms for multistage location problems”

Elena Fernández

“GIS and Location Analysis”

Ioannis Giannikos

“Center Hub Location Problems and Multicriteria Optimization”

Horst Hamacher

“Reliable Network Design Problems

Martine Labbé

“Location-routing problems”

Gilbert Laporte

“Location of Hubs”

Alfredo Marín

“Location Problems in Supply Chain Management”

Stefan Nickel

“Public Facility Location in Practice”

Frank Plastria

“The ordered median location problem: A unified tool for location analysis”

Justo Puerto

“Risk Aversion in Inventory Management”

David Simchi-Levi

“Algorithmic Results on Facility Location Problems on Networks”

Arie Tamir

“Separation and Decomposition in IP and MIP”

Laurence Wolsey

6.1.3 Workshops

Three Workshops were organized by the Scientific Committee extending and/or combining topics considered in the presentations made by the lecturers and by the laureates. Each workshop was moderated by two people.

Workshop 1

Title: *“Is Location needed in Logistics?”*

Moderators: **David Simchi-Levi** and **Stefan Nickel**;

Workshop 2

Title: *“Location and Logistics: real-life aspects”*

Moderators: **Ioannis Giannikos** and **Malick Ndiaye**;

Workshop 3

Title: “*Location and Games*”

Moderators: **Justo Puerto** and **Stefan Nickel**;

6.1.4 A joint research activity

As one of the main purposes of a EURO Institute is to stimulate scientific cooperation between the laureates, the Scientific Committee proposed a scientifically creative group exercise: do research together during the Institute.

Accordingly, a topic connected with the concerned fields was suggested, which also had a playful character and was sufficiently non-specialized to allow for constructive input by all.

The proposed topic was the table seating problem, which can be summarized as follows:

We are all faced with such situations up to two or three times a day: sitting together with other people for a breakfast, lunch, dinner, supper,...but also for many meetings of all kinds, be they professional, formal social or much less formal among friends and family. The standard is that this goes on around one or more tables with a quite precisely limited number of seats. And the main question is then the location question:

Who will sit where?

This main question leads to many sub-questions such as

- Are there reasons to consider one particular placement as ‘better’ or ‘worse’ than another one?
- What might these reasons be?
- How can this preference be evaluated?
- Can we use Operations Research to help choosing a particular placement?
- How can this be described by an optimization problem? Single or multicriteria?
- How do we collect the data?
- How do we solve the problem?
- ...

In the EWI 2007 program, three slots of 1,5 hours were considered in which the laureates had specifically to work this topic. The first slot was held on the first day with scientific activities to make sure that the laureates would start working together on the topic from the beginning of the Institute. Two other slots were scheduled: in the end of the first week and in the middle of the second one.

During their stay in Estoril, by their own will, the laureates made additional arrangements for working on this topic. When necessary, one or more members of the Scientific Committee attended these sessions and helped in the brain storming.

In order to provide the laureates with real data, the Scientific Committee suggested that they tested their progress with the EWI 2007 official dinner, which was the case. In this dinner, all people were seated according to a solution obtained by the laureates.

After the end of the EURO Winter Institute on Location and Logistics, the Scientific Committee has observed that most of the laureates are still interested in studying together this topic and are currently structuring their work so that a paper can be written.

6.1.5 ESI Alumni & Friends Meeting

The EURO Winter Institute on Location and Logistics was the third devoted to the topic of Locational Analysis. Accordingly, the Organizing and Scientific Committees decided to organize an afternoon meeting with as many people as possibly involved not only in the EWI 2007 but also in ESI I and ESI XII (the other EURO Institutes devoted to Locational Analysis). The program of this meeting included a scientific discussion on the past, present and future perspectives of Locational Analysis followed by a short exhibition and a video projection remembering the past ESIs on Location.

6.1.6 EWGLA XVI

The Sixteenth Meeting of the EURO Working Group on Locational Analysis (EWGLA XVI) was a culmination for the EURO Winter Institute on Location and Logistics. This way, the laureates had the opportunity to meet many more people working in the field than just the invited speakers and members of the Scientific Committee. For the laureates, the registration in this meeting was automatic (and free), as the meeting was part of the scientific activities.

6.2. Social Activities

The social activities in a EURO Summer/Winter Institute are an essential component to make sure that strong links will emerge amongst the laureates and also between the laureates and the lecturers.

The social activities scheduled for the EURO Winter Institute on Location and Logistics included:

- Get together;
- Full day tour (Sintra/Estoril/Cascais);
- Half day tour (Cascais Coast);
- “Wine Tasting & Company” Party;
- A table tennis championship;
- EWI 2007 official dinner;
- EWGLA XVI official dinner;
- Full day free;

6.2.1 Get together

The Get together included handing out the documentation and badges and also a welcome reception. This get together was held on the evening of January the 27th.

6.2.2 Full day tour (Sintra/Estoril/Cascais)

This tour was held on Sunday the 28th of January. The goal was to make sure that on Monday, when the scientific activities started, the laureates felt in a more familiar atmosphere.

In the morning the group went to Sintra and in the Afternoon to Cascais. The lunch was held in a restaurant close to the Estoril Casino. The goal in the afternoon was to have the laureates guided in their first visit to Cascais.

Cascais is within 20 minutes walking from Estoril using a pedestrian walk by the sea. Many people went there often in the end of the afternoon sessions.

6.2.3 Half day tour (Cascais coast)

In this tour, the group visited Cabo da Roca (the most western point in continental Europe), Guincho beach, Boca do Inferno and Condes Castro Guimarães Museum. In the end, the municipality of Cascais offered to every person in the group an edition of a book about Cascais with high quality photos taken in the region.

6.2.4 “Wine tasting & Company” Party

This party marked the end of the first week. It was held on Friday the 3rd. All people were asked to bring something to drink (wine, spirits or some typical drink from the corresponding countries) or, alternatively, sweets. People were also invited to bring music from their countries/regions. The goal was to make a ‘cultural’ party. Dinner was part of it. The party (dinner included) took place in the Ball Room of the hotel. It started at 18:30.

6.2.5 A table tennis championship

During the Institute, a table tennis was available for those who wanted to play. An informal championship was organized. In the end, the winners got their prizes: merchandizing from the Faculty of Science, University of Lisbon.

6.2.6 EWI 2007 Official dinner

The EWI 2007 official dinner took place in Cascais Cultural Centre. It was a sophisticated meal in a very special environment combining modern and old architecture. The room was exclusive for the group. A jazz band made the entertainment.

6.2.7 EWGLA XVI Official dinner

The EWGLA XVI official dinner took place in a restaurant close to Sintra. Portuguese food was served.

6.2.8 Full day free

During the Institute, Sunday the 4th of February was a free day for the laureates. The suggestion given by the organizers was that they visited Lisbon (30 minutes away by train).

Organized into groups, most of the laureates made a visit to Lisbon. The feedback received by the organizers was very good. It was also important to make a break in the middle of the

EWI 2007 – a day without any schedule so that everybody could feel ready for the second week of scientific activities.

6.2.9 Non-scheduled activities

Apart from all the organized activities prepared by the Organizing Committee, the atmosphere in Estoril became extremely friendly and in a couple of days other activities were being prepared.

The organization provided for a leisure room to be available in the hotel. This was a room close to the conference room. The table tennis was in this room. It was in the leisure room that people learned how to chuckle balls (one of the laureates is an expert) where people could play the guitar (those who knew how to do it...). Music could also be listened to in this room.

Apart from the above mentioned activities held in the hotel, other activities were organized outside:

- A Fado dinner in Lisbon. It was held on Saturday the 3rd of February;
- A Pizza dinner;
- Drinks at the Casino Pub and in other pubs around Estoril;
- Jogging;
- Walking in the pedestrian walk linking Estoril and Cascais;
- ...

6.3. Detailed Program

The detailed program drawn by the Scientific and Organizing Committees of the EURO winter Institute on Location and Logistics was the following:

Saturday, January 27

17.00 - 21.00 – Get together

Sunday, January 28

9.00 - 18.00 Tour - Sintra / Estoril / Cascais

Monday, January 29

10.00 - 11.00 Lecturer: **David Simchi-Levi**, MIT, USA
Risk Aversion in Inventory Management

11.00 - 11.30 Coffee break

11.30 - 12.30 Laureate: **Anastasios Xanthopoulos**, Greece
A Generic Analytical Quantitative Location Model for the Design of a Reverse Supply Chain

12.30 - 14.30 Lunch

14.30 - 15.30 Laureate: **Isabel Salema**, Portugal
A strategic and tactical model for closed-loop supply chains

15.30 - 16.00 Coffee break

16.00 - 17.00 Joint Research Activity

- 17.00 - 17.30 Break
 17.30 - 19.00 Workshop: **David Simchi-Levi** and **Stefan Nickel**
Is location needed in Logistics?

Tuesday, January 30

- 9.00 - 10.00 Laureate: **Vera Hemmelmayr**, Austria
Delivery Strategies for Blood Products Supplies
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Martine Labbé**, Université Libre de Bruxelles, Belgium
Reliable communication network design problems: models and solution methods
- 11.30 - 12.30 Laureate: **Dilek Günneç**, Turkey
A Two-Stage Multi-Criteria Stochastic Programming Model for Location of Emergency Response and Distribution Centers
- 12.30 - 14.30 Lunch
- 14.30 - 15.30 Laureate: **Panagiotis Mitropoulos**, Greece
Locational Planning for an Integrated Solid Waste Management System
- 15.30 - 16.00 Coffee break
- 16.00 - 17.00 Lecturer: **Laureano Escudero**, Universidad Miguel Hernández, Spain
On Supply Chain Management Problems under uncertainty

Wednesday, January 31

- 9.00 - 10.00 Laureate: **Saskia Kauder**, Austria
Strategic Network Planning for International Automotive Manufacturers
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Laurence Wolsey**, Université catholique de Louvain, Belgium
Separation and Decomposition in IP and MIP
- 11.30 - 12.30 Laureate: **Sebastian Velten**, Germany
A Reformulated and Extended Covering Model for Flexible Discrete Location Problems
- 12.30 - 14.30 Lunch
- 14.30 - 15.30 Laureate: **Antonino Sgalambro**, Italy
Models for the schedule optimization problem at a public transit terminal
- 15.30 - 16.00 Coffee break
- 16.00 - 17.00 Lecturer: **Gilbert Laporte**, HEC Montréal, Canada
Location-routing problems
- 17.00 - 18.00 Laureate: **Guenther Fuellerer**, Austria
Ant Colony Optimization for the Two-dimensional Loading Vehicle Routing Problem

Thursday, February 1

- 9.00 - 10.00 Laureate: **Valentina Cacchiani**, Italy
Freight Transportation in Railway Networks
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Oded Berman**, University of Toronto, Canada
Stochastic Facility Location and Capacity Problems
- 11.30 - 12.30 Laureate: **Ivan Contreras**, Mexico
A Lagrangean Relaxation Approach for the Capacitated Single Allocation Hub Location Problem
- 12.30 - 14.30 Lunch

- 14.30 - 15.30** Laureate: **Juana Redondo**, Spain
CG-GASUB: A parallelized algorithm for finding multiple global optima to a class of discrete location problems
- 15.30 - 16.00** Coffee break
- 16.00 - 17.00** Lecturer: **Maria Eugénia Captivo**, University of Lisbon, Portugal
Semiobnoxious Location Problems: Some Approaches
- 17.00 - 18.00** Laureate: **Jörn Grahl**, Germany
Linkage in warehouse location problems: The numbering effect and its influence on evolutionary algorithms

Friday, February 2

- 9.00 - 10.00** Laureate: **Dwi Poetranto**, Germany
A general model of location problems on capacitated networks
- 10.00 - 10.30** Coffee break
- 10.30 - 11.30** Laureate: **Phuong Nga Thanh**, France
A dynamic model for the facility location in supply chain design
- 11.30 - 12.30** Lecturer: **Stefan Nickel**, Saarland University, Germany
Location Problems in Supply Chain Management
- 12.30 - 14.30** Lunch
- 14.30 - 15.30** Laureate: **Can Yildirmaz**, Turkey
Pricing and Lot Sizing Decisions in a Two-Echelon Supply Chain with Transportation Costs
- 15.30 - 16.00** Coffee break
- 16.00 - 17.00** Joint Research Activity
- 18.00 - 21.00** Wine Tasting & Company Party

Saturday, February 3

- 14.00 - 18.00** Tour - Cascais Coast

Sunday, February 4

Free day

Monday, February 5

- 9.00 - 10.00** Laureate: **Kerem Özkisacik**, Turkey
Solving Probabilistic Multi-facility Weber Problem by Vector Quantization
- 10.00 - 10.30** Coffee break
- 10.30 - 11.30** Lecturer: **Ioannis Giannikos**, University of Patras, Greece
GIS and Location Analysis
- 11.30 - 12.30** Laureate: **Lieselot Vanhaverbeke**, Belgium
Maximal Covering Location Problem with Price Decision for Revenue Maximization in a Competitive Environment
- 12.30 - 14.30** Lunch
- 14.30 - 15.30** Lecturer: **Elena Fernández**, Universitat Politècnica de Catalunya, Spain
Models and algorithms for multistage location problems
- 15.30 - 16.00** Coffee break
- 16.00 - 17.30** Workshop: **Ioannis Giannikos** and **Malick Ndiaye**
Location and Logistics: real-life aspects

Tuesday, February 6

- 9.00 - 10.00 Laureate: **José Gordillo**, Spain
Locating a semi-obnoxious facility with repelling polygonal regions
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Justo Puerto**, University of Sevilla, Spain
The ordered median location problem: A unified tool for location analysis
- 11.30 - 12.30 Laureate: **Jörg Kalcsics**, Germany
Conditional and Semi-obnoxious Ordered Median Problems on Networks
- 12.30 - 14.30 Lunch
- 14.30 - 15.30 Lecturer: **Frank Plastria**, Vrije Universiteit Brussel, Belgium
Distances and covering in continuous space
- 15.30 - 16.00 Coffee break
- 16.00 - 17.00 Laureate: **Martin Bischoff**, Germany
Two Branch & Bound Methods for a Generalized Class of Location-Allocation Problems
- 17.00 - 18.00 Joint Research Activity

Wednesday, February 7

- 9.00 - 10.00 Laureate: **Boglárka Tóth**, Hungary
Sensitivity analysis of the optimal solutions to Huff-type competitive location and design problems
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Arie Tamir**, University of Tel Aviv, Israel
Algorithmic Results on Facility Location Problems on Networks
- 11.30 - 12.30 Laureate: **Inmaculada Espejo**, Spain
Ordered Median Problem with ℓ_p norm
- 12.30 - 14.30 Lunch
- 14.30 - 15.30 Laureate: **Sergio García**, Spain
Chvátal T-inequalities for the p -median Simple Plant Location Problem with Order
- 15.30 - 16.00 Coffee break
- 16.00 - 17.30 Workshop: **Justo Puerto** and **Stefan Nickel**
Location and games
- 19.00 - 22.30 EWI 2007 Dinner

Thursday, February 8

- 9.00 - 10.00 Lecturer: **Horst Hamacher**, University of Kaiserslautern, Germany
Center Hub Location Problems and Multicriteria Optimization
- 10.00 - 10.30 Coffee break
- 10.30 - 11.30 Lecturer: **Alfredo Marín**, University of Murcia, Spain
Location of Hubs
- 11.30 - 12.30 Scientific Closing Session
- 12.30 - 14.30 Lunch

ESI Alumni & Friends Meeting

- 15.00 - 16.30 Scientific Session: *Locational Analysis: Past, present and future expectations*
- 16.00 - 16.30 Coffee break
- 16.30 - 18.30 Exhibition and Video

7. Outcomes

After the end of the EURO Winter Institute on Location and Logistics, the following outcomes can already be enumerated:

1. A feature issue of OR Spectrum is going to be edited with a selection of the papers presented by the laureates.

The editors of EJOR (the journal that is supposed to publish an issue devoted to each EURO Institute) notified the Scientific Committee of this Institute that due to a large backlog of papers already accepted but not yet printed, no feature issue would be associated with the Institute.

Searching for alternatives, the Scientific Committee decided for a feature issue of OR Spectrum. This feature issue will appear in the second half of 2008. The deadline for submission to the feature issue is April the 30th. Stefan Nickel and Francisco Saldanha da Gama will be the guest editors.

2. The joint research activity.

Due to the great enthusiasm that the laureates have shown so far the Scientific Committee believes that this joint research will continue. At least one paper can be expected as a result of this work.

3. A Yahoo group was created for the EWI 2007 (<http://tech.groups.yahoo.com/group/ewi2007/>). This is one of the ways found by the laureates to make sure that every people involved in EWI 2007 will stay in touch.
4. The history of the EURO Summer/Winter Institutes has shown that these Institutes lead quite often to much joint work. It is not easy to enumerate everything done together by laureates in ESI I and ESI XII (the past EURO Institutes on Locational Analysis) but many books and papers exist in the literature co-authored by people involved in these Institutes. Even the EWI 2007 was itself a joint organization involving 5 laureates of the ESI XII. Accordingly, it is expected that the new laureates will take the opportunity given to them and will start a fruitful cooperation in a near future.

8. Costs and support

In this section we present all the costs and supports associated with the EURO Winter Institute on Location and Logistics. We start by presenting costs per person. Afterwards we present the total costs as well as the total support.

In order to keep the costs controlled, all the invited lecturers were invited to stay 3-4 days. The members of the Organizing and Scientific Committees stayed between 8 and 15 days.

All laureates shared a room. The cost per laureate in a triple room was the same as in a double room. As mentioned above, the triple rooms were in fact triple (not 2+1), which prevented the Organization from decreasing the cost by using these rooms.

It should be noted that for 1 or 2 days a couple of laureates stayed in a single room (when their room mates left earlier). The Organization decided to keep the rooms as they were assigned from the beginning, avoiding changing rooms for one or two days, which was also a problem in terms of the accounting of the hotel. Nevertheless, the Organization tried to minimize this situation by trying to put in the same room laureates whose staying period was similar.

All the values presented are in euros.

8.1 Costs per person

Accommodation and breakfast:	
Per laureate:	30,00 €
Per senior:	50,00 €
Lunch/dinner:	15,00 €
Coffee break:	3,50 €
EWI 2007 official dinner:	25,00 €
EWGLA XVI official dinner:	25,00 €

8.2 Total costs

Travel expenses	6203,13 €
Accommodation (laureates)	7185,00 €
Accommodation (seniors)	3200,00 €
Meals	
Lunches	7455,00 €
Dinners	5010,00 €
Coffee breaks	2744,00 €
Other (Get together Wine tasting party Official dinner)	2372,00 €
Social program 1	2340,00 €
Social program 2	750,00 €
Documentation bags badges	2350,00 €
Internet Administrative expenses	750,00 €
TOTAL COST = 40.359,13 €	

8.3 Support

EURO	14000,00 €
OR Centre (Univ. Lisbon)	6250,00 €
EWGLA	1500,00 €
Portuguese OR Society	500,00 €
Portuguese Science Foundation	5000,00 €
Spanish Network on Location Analysis	3060,00 €
By the way of Stefan Nickel	862,00 €
Portugal-USA Foundation	1000,00 €
ADONET	326,63 €
Ioannis Giannikos (self funding)	764,00 €

José Moreno (self funding)	584,00 €
Frank Plastia (self funding)	240,13 €
Malick Ndiaye (self funding)	1000,00 €
EURO (Martine Labbé)	370,13 €
Estoril & Sintra Convention Bureau	2340,00 €
Municipality of Cascais	750,00 €
IBM Portugal	100,00 €
Banco Português de Negócios	150,00 €
EWGLA XVI	1250,00 €

TOTAL SUPPORT = 40.046,89 €

DEFICIT = 312,24 €

The Organization managed to negotiate with the hotel the deficit arguing that the corresponding amount was too little when compared with the total value. The hotel accepted this request, which allowed the organization to balance the costs with the support.

9. Photos

In this section, a photo selection is presented for each day of the EURO Winter Institute on Location and Logistics.



27th January: Get together.



28th January: Social program 1; Table tennis (at the hotel).



29th January: Workshop “Is location needed in Logistics?” moderated by David Simchi-Levi and Stefan Nickel



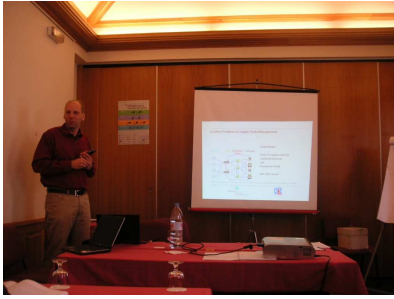
30th January: A lecture (Martine Labbé), a coffee break and a laureate (Vera Hemmelmayr).



31st January: In the working room.

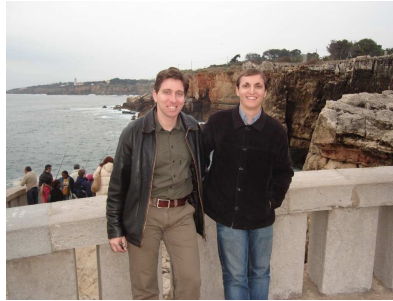


1st February: A laureate (Juana Redondo).



2nd of February:

A lecturer, a laureate and... the beginning of the “Wine tasting & Company” Party



3rd of February (Social Program 2): Cabo da Roca and Boca do Inferno.



4th February: Full day free (a detail of a visit to Lisbon by a group of laureates)



5th February: A laureate (Kerem Özkisacik).



6th February: A laureate (José Gordillo) and a lecturer (Justo Puerto).



7th February: EWI 2007 official dinner.



8th February: In the working room.



9th February: A laureate (Ivan Contreras) and a Lecturer (Elena Fernández).



10th February: EWGLA XVI official dinner.

10. Conclusion

In this document a full report of the EURO Winter Institute on Location and Logistics is presented.

The success of this EURO Institute can already be confirmed by the immediate outcomes mentioned above.

The scientific and personal experience of organizing a EURO Institute was extremely rewarding and positive. The goal of creating a tight group was clearly achieved. Hardly many links created in Estoril will be broken.

The Scientific and Organizing Committees believe that in due time, the “young and promising” scientists selected as laureates will start publishing together, organizing scientific events and giving strong and decisive contributions for an area whose importance is widely recognized.

To all our sponsors and to everybody that in many occasions put their efforts in the organization of this Institute and whose names we have not mentioned we would like to express our deep gratitude for the support given.

Appendix 1: Poster

Centro de Investigação Operacional
FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA

27th January > 10th February 2007 | Estoril · Portugal

EURO Winter Institute on Location and Logistics

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AIMS AND SCOPE
Recently, many researchers working mainly in logistics have addressed location problems as part of strategic/tactical logistics decisions. From the point of view of the researchers coming from the location community, the last years have shown that many successful approaches of location theory have been mainly achieved in logistics (and here especially in Supply Chain Management and optimization modules for Geographical Information Systems).

A EURO Winter Institute in Location and Logistics is an opportunity to bring closer young researchers and renowned scientists from the two areas, which is an opportunity to stimulate the emergence of new research directions.

PARTICIPATION
Participation is limited to 20 young promising scientists, normally aged 25-35, from different European countries, who are authors of at least one high-quality paper in the theme of the event that has not yet been published neither submitted for publication.

The costs of the EURO Winter Institute are covered by EURO and other organizations excluding the laureates' travel expenses, which are normally covered by the corresponding national OR societies.

ESI ALUMNI & FRIENDS MEETING
A meeting of the laureates in the past EURO Summer Institutes on Location.

INVITED SPEAKERS
Arie Tamir (University of Tel Aviv, Israel)
David Simchi-Levi (MIT, USA)
Elena Fernández (Universitat Politècnica de Catalunya, Spain)
Gilbert Laporte (HEC Montréal, Canada)
Horst Hamacher (Technische Universität Kaiserslautern, Germany)
Justo Puerto (Universidad de Sevilla, Spain)
Laureano Escudero (Universidad Miguel Hernández, Spain)
Laurence Wolsey (Université Catholique de Louvain, Belgium)
Maria Eugénia Captivo (CIO-DEIO, Universidade de Lisboa, Portugal)
Martine Labbé (Université Libre de Bruxelles, Belgium)
Oded Berman (University of Toronto, Canada)

ORGANIZING COMMITTEE
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Ana Paiais (CIO-DEIO, Universidade de Lisboa, Portugal)
Francisco Saldanha da Gama (CIO-DEIO, Universidade de Lisboa, Portugal)
Frank Plastria (Vrije Universiteit Brussel, Belgium)
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http://ewi2007.fc.ul.pt

www.ewi2007.org

Appendix 2: Leaflet



ORGANIZING COMMITTEE

Alfredo Marín (Universidad de Murcia, Spain)
 Ana Paías (CIO-DEIO, Universidade de Lisboa, Portugal)
 Francisco Saldanha da Gama (CIO-DEIO, Universidade de Lisboa, Portugal)
 Frank Plastria (Vrije Universiteit Brussel, Belgium)
 Ioannis Giannikos (University of Patras, Greece)
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Centro de Investigação Operacional
FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA

27th January - 10th February 2007 | Estoril - Portugal

**EURO Winter Institute
 on Location and Logistics**



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APPLICATION

Applicants should send their curriculum vitae together with an unpublished paper on the theme of the event to their national OR society. Each national OR society will select their national laureates (at most three).

DEADLINES

The deadline for application at the national OR societies is September 30, 2006.
 The deadline for the national OR societies to notify the scientific committee of their selection is October 31, 2006.

ACTIVITIES

Each laureate will have a slot for presenting his/her paper followed by discussion.

Several renowned scientists will give lectures on different topics associated with Location and Logistics.

Workshops and other research activities will be conducted by the Scientific Committee.

ESI Alumni & friends meeting: A meeting of the laureates in the past EURO Summer Institutes on Location.

Social activities will be organized in order to encourage the establishment of long lasting links amongst the laureates, and between the laureates and the scientific community working on Location and/or Logistics easing future cooperation between people coming from different countries in Europe.

VENUE

The EURO Winter Institute will be held in Estoril, which is small town 20 kms away from Lisbon. This is a very pleasant place located on the coast. Estoril is famous by its gardens, the beach, the casino, many street cafes restaurants and pubs. Estoril is also close to Cascais (a nice picturesque town), Cabo da Roca (the most western point in continental Europe) and Sintra, a very beautiful old town.

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