FINAL PROGRAM

26-28 October 2009

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General Information

1. Conference Location

The Conference is being held at

The **ESM'2009** conference is held at the
The Holiday Inn Leicester
129 St.Nicholas Circle
LE1 5LX Leicester, United Kingdom
Tel: +44-871-9429048
Fax: +44-116-2513169

The registration desk will be placed in the hallway of the **of the hotel left of the hotel entrance** from Monday morning October the 26th onwards, where registration will start at 08.00 and will end at 5.00 p.m..On Tuesday October 27th registration will be from 8.30 a.m. - 5.00 p.m. with Wednesday registration only from 8.30 a.m.- 9.30. a.m. The way to the conference and desk will be signposted.

ALL MAJOR MAPS ARE AT THE BACK OF THIS PROGRAMME

2. Badges

Each registrant will receive a name badge upon registration. The badge must be worn, in order to be admitted to the technical sessions, lunches and social event.

3. Tickets

Extra tickets for the social event and lunches are available from the registration desk. Price: (or equivalent in another currency) for extra tickets

Extra conference dinner	**€ 60**
Extra lunch ticket	**€ 25**

4. Registration

The ESM'2009 Registration Desk will be open for information and registration:

Monday, October 26..... 8.00 a.m. to 5.00 p. m.
Tuesday, October 27..... 8.30 a.m. to 5.00 p. m.
Wednesday, October 28.....8.30 a.m. to 9.30 a.m.

The location of the registration desk will be signposted

5. Conference Proceedings

Each fully paid registrant will be provided with a copy of the Conference Proceedings (printed format). **This is NOT applicable to students who are not authors**.
(Extra copies are available on a cash and carry basis at special rates during **ESM'2009**)

Price: (or equivalent in another currency) for an extra copy

ESM'2009 Proceedings CASH AND CARRY	**€ 50**

6. Meeting Rooms

The meeting rooms are designated A and B. The way to the rooms will be signposted. WIFI-Internet is available ask at the hotel reception.

7. Need Help?

Please see the conference desk for your questions

8. Social Events and Lunches

All registrants are invited to
All **lunches** and **Coffee Breaks** are served at the **Holiday Inn. Participants need to show the relevant tickets at the entrance to the restaurant.**

Visit to DMU
Two groups are envisaged to leave and visit DMU. The first group would leave at 12.45, while the second group would leave at 13.15

The Conference Dinner
All participants are invited to the conference dinner on **TUESDAY** the 27th of October. As we need to give an exact number of participants we would appreciate **your confirmation at the desk before Monday evening**.

The **conference dinner** will be held at the Lahore Karahi Restaurant (further information can be found in the programme on page 21)

We will meet at 7.30 p.m. in front of the Holiday Inn at the main entrance where we will walk as a group to the conference dinner site Of course, you can also make your own way to the restaurant and meet up with us there at 8.00 p.m.

General Information

9. Room Legend

The meeting rooms will be designated ROOM A and B .Signposts will indicate each room.

10. Best Paper Award

During the conference the papers, which were accepted as extended papers will be judged by the committee in order to choose the best paper of the ESM'2009 conference.

ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL

THE NUMBERS NEXT TO THE PRESENTATIONS DENOTE THE PAGE-NUMBERS IN THE PROCEEDINGS. IF NO NUMBERS ARE MENTIONED THEN THIS PAPER IS NOT PUBLISHED IN THE PROCEEDINGS

THE AUTHORS WHO ARE UNDERLINED ARE NORMALLY THE PRESENTERS

PAPERS IN GREY BOXES ARE THE EXTENDED PAPERS ELIGIBLE FOR THE BEST PAPER AWARD

CHECK OUT THE OTHER EUROSIS EVENTS ON OUR WEBSITE:
http://www.eurosis.org

MONDAY, 26th OCTOBER 2009		
08.00-17.00	REGISTRATION	
09.00-09.15	OPENING SESSION AND WELCOME BY MARWAN AL-AKAIDI	
09.15-10.00	KEYNOTE ADDRESS BY ADRIAN HOPGOOD ROOM A	
10.00-10.30	COFFEE BREAK	
10.30-12.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	AGENT BASED COMPLEX SIMULATION	LOGISTICS WAREHOUSING UTILITY TOOLS
12.30-14.00	LUNCH BREAK	
14.00-15.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	WATER MANAGEMENT FLUID FLOW SIMULATION I	MODELLING ENVIRONMENTS
15.00-15.30	COFFEE BREAK	
15.30-18.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	SIMULATION TOOLS	HEALTH SERVICE MANAGEMENT
FREE EVENING		

TUESDAY, 27th OCTOBER 2009		
08.30-17.00	REGISTRATION	
09.00-10.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	ENGINEERING SIMULATION	BACK-UP SESSION
10.00-10.30	COFFEE BREAK	
10.30-12.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	WATER MANAGEMENT FLUID FLOW SIMULATION II	MANUFACTURING MANAGEMENT TOOLS I
12.00-14.00	LUNCH BREAK AND VISIT TO DMU	
14.00-15.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	INVITED SPEAKER	MANUFACTURING MANAGEMENT TOOLS II
15.00-15.30	COFFEE BREAK	
15.30-18.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	BEHAVIOURAL MODELLING	DATA SIMULATION AND STORAGE AND DECISION SUPPORT SYSTEMS
20.00 – 23.00	CONFERENCE DINNER	

WEDNESDAY, 28th OCTOBER 2009		
08.30-09.30	REGISTRATION	
09.00 10.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	INVITED SPEAKER	ENERGY SIMULATION
10.00-10.30	COFFEE BREAK	
10.30 12.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	MODULAR SIMULATION AND DESIGN	MODEL VERIFICATION VALIDATION AND EVALUATION
12.30-12.45	CLOSING SESSION AND BEST PAPER AWARD ROOM A	

Notes

NOTES

Monday, 26th October 2009

HALLWAY

Registration

08.00 - 17.00

ROOM A

09.00 – 10.00

Opening ESM'2009 and Welcome

Welcome Address

Prof. Marwan Al-Akaidi
De Montfort University
ESM2009 General Conference Chair

09.15 – 10.00
KEYNOTE SPEECH
Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK

Hybrid Systems: The Future of Artificial Intelligence?
Adrian Hopgood

Welcome

Monday, 26th October 2009

10.00 - 10.30
COFFEE BREAK

10.30 – 12.30

ROOM A- 10.30-12.30 AI
AGENT BASED COMPLEX SIMULATION
Chair: Jose Neves, Universidade do Minho, Braga, Portugal

AGENT_01
Experimental Study of Agent Population Models with a Specific Attention to the Discretization Biases
Pierre Chevaillier, Stéphane Bonneaud, Gireg Desmeulles and Pascal Redou **323**

AGENT_02
Actor and Observer Processes of Normative Agents in Social Simulations
Ulf Lotzmann and Michael Möhring **332**

AGENT_04
A Synchronization Protocol for Distributed Agent Based Simulations with Constrained Optimism
Dirk Pawlaszczyk and Steffen Strassburger **337**

METH_07_COMPLEX
Coupled Atmosphere Wildfire Model for Piloted Flight Simulation of Aerial Fire Fighting Operations
Luca Cistriani, Sebastiano Bonfiglio and Nicola Stella **388**

ROOM B- 10.30-12.30 LOGISTICS
LOGISTICS WAREHOUSING UTILITY TOOLS
Chair: Michel Gourgand, Universite Blaise Pascal, Aubiere, France

COMPLEX_05
Dynamic Routing Strategies for Automated Container Terminals
Su Min Jeon, Mark B. Duinkerken and Gabriel Lodewijks **109**

Monday, 26th October 2009

METH_15
Improving the Job-Shop Workload Control through Order Acceptance and Due Date Negotiation
Maria do Rosário Alves Moreira **141**

ANMT_02
SRN Model for Performance Evaluation of TCP Sessions Sharing Bottleneck Links in WAN
Osama S. Younes, Wail S. Elkilani and Nigel Thomas **54**

METH_17
Utility Computing Simulation
Benjamin Heckmann, Ingo Stengel, Günter Turetschek and Andy Phippen **175**

12.30 - 14.00
LUNCH BREAK

14.00 – 15.00

ROOM A- 14.00-15.00 ENVIRONMENT
WATER MANAGEMENT/FLUID FLOW SIMULATION I
Chair: Andrzej Urbaniak, Poznan Univ. of Techn., Poznan, Poland

ENV_03
Some Algorithms supporting the Computer Aided Management of Communal Water Nets
Jan Studzinski **345**

ENV_04
Modeling and Simulation for predicting Water-Flower Based on RBF Neural Network
Zaiwen Liu, Xiaoyi Wang and Jiping Xu **350**

ROOM B- 14.00-15.00 METH
MODELLING ENVIRONMENTS
Chair: Alain Tanguy, Universite Blaise Pascal, Aubiere, France

BIO_01
OPTFERM-A Computational Platform for the Optimization of Fermentation Processes
Orlando Rocha, Paulo Maia, Isabel Rocha and Miguel Rocha **5**

Monday, 26th October 2009

BIO_02
MLPS: A Method for Modeling Livestock Production Systems
Laurent Pérochon **10**

15.00 - 15.30
COFFEE BREAK

15.30 - 18.30

ROOM A- 15.30-18.30 **METH**
SIMULATION TOOLS
Chair: Norbert Adamko, University of Zilina, Zilina, Slovak Republic

ENV_02
Evaluation of Four Artificial Lighting Simulation Tools with Virtual Building Reference
Shariful H. Shikder, Andrew D. Price and Monjur M. Mourshed **77**

MOD_01_TOOLS
Modeling and Simulation of CO_2 Absorber Column in MODELICA
Masoud Najafi and Zakia Benjelloun-Dabaghi **83**

MOD_02
Simulation of PDES in MODELICA, Application to Absorber Column
Masoud Najafi and Zakia Benjelloun-Dabaghi **88**

ANMT_01_TOOLS
Experiences of using the PEPA Performance Modelling Tools with a Non-Repudiation Protocol
Yishi Zhao and Nigel Thomas **95**

TOOLS_03_WEB
The Co-Space Project – A Framework and Set of Tools for the Building and Visualization of Sensor, Telemetry & Web-Integrated Simulations within Wonderland Worlds
Chong-Wee Simon See, Chee-Kian Melvin Koh, Che-Wing Cheung, Douglas Finnigan and Joon Jew Liow **101**

Monday, 26th October 2009

METH_13_VIR
Data Placement and Migration Strategies for Virtualised Data Storage Systems
H.A. Bond, N.J. Dingle, F. Franciosi, P.G. Harrison and W.J. Knottenbelt **231**

ROOM B- 15.30-18.30 HEALTH

HEALTH SERVICE MANAGEMENT

Chair: Paulo Novais, Universidade do Minho, Braga, Portugal

COMPLEX_01
Human resources integration in complex systems modeling: application to the health care systems
Michelle Chabrol, Michel Gourgand and Sophie Rodier **189**

TOOLS_04
Methodological approach and decision-making aid tool for the hospital systems: Application to an emergency department
Julie Chauvet, Michel Gourgand and Sophie Rodier **197**

BIO_04
Interoperability and Healthcare
Miguel Miranda, Júlio Duarte, António Abelha, José Machado and Josë Neves **205**

AGENT_05_BIO
Modelling and Simulation of the Stomatology Service for the Rmuho
Khaled Belkadi and Alain Tanguy **213**

AI_04
Memory Assistant in Everyday Living
Ângelo Costa, Paulo Novais, Ricardo Costa and José Neves **269**

PETRI_02
Composition of product-form Generalized Stochastic Petri Nets: a modular approach
Simonetta Balsamo and Andrea Marin **26**

FREE EVENING

Tuesday, 27th October 2009

HALLWAY

Registration

08.30 - 17.00

09.00 – 10.00

ROOM A- 09.00-10.00 **INDUSTRY**
ENGINEERING SIMULATION
Chair: Eugeniusz Sroczan, Poznan Univ.of Techn., Poznan, Poland

METH_11
Reduced Simulation's Model of a Wheel Loader by using the Bond Graph technique to use in Training Simulators
G. Romero, J. Félez, J. Maroto and J. D. Sanz **..... 161**

N_02
On Line Fault Diagnosis of a Diesel Engine
Chady Nohra, Hassan Noura and Rafic Younes**..... 168**

ROOM B- 09.00-10.00 **BACK-UP**
BACK-UP SESSION
Chair: TBA

This session is set up for those authors who are unable through circumstances beyond their control to give their presentation in the allotted time slot. If there are any presentations in this session they will be posted at the conference on the conference notice board.

10.00 - 10.30
COFFEE BREAK

Tuesday, 27th October 2009

10.30 - 12.30

ROOM A- 10.30-12.30 ENVIRONMENT

WATER MANAGEMENT/FLUID FLOW SIMULATION II

Chair: Jan Studzinski, Polish Academy of Sciences, Warsaw, Poland

ENV_07
Simulation Tools for the Choice of Water Treatment Technology
Marek M. Sozański and Andrzej Urbaniak **356**

FLUID_02
Modelling and Simulation of the CANDU 6 Feedwater System Behaviour
Ilie Prisecaru, Daniel Dupleac and Niţă Iulian Pavel **361**

BIO_03_METH
Simulation of the 'GP' MTD Device intended for the Extraction of Blood Clots by using the Bond Graph Technique
I. Higuera, G. Romero; J. Félez and M.L. Martínez **372**

ENV_06
Bayesian Tracking of the Toxic Plume Spreading in the early Stage of Radiation Accident
Petr Pecha, Radek Hofman and Václav Šmidl **381**

ROOM B- 10.30-12.00 INDUSTRY

MANUFACTURING MANAGEMENT TOOLS I

Chair: Sofie van Volsem, Ghent University, Ghent, Belgium

PAR_03
Adapting an Evolutionary Algorithm with Embedded Simulation and Pseudo-Random Number Generation for the Cell Broadband Engine
Sofie Van Volsem and Sven Neirynck **282**

TOOLS_01
Combining Scripting and Commercial Simulation Software to simulate In-Plant Logistics
Tim Govaert, Sven Neirynck, Sofie Van Volsem and Hendrik Van Landeghem **114**

Tuesday, 27th October 2009

TOOLS_02
Conducting the Simulation of Warehousing Systems
Christian-Andreas Schumann, Noemi Nikoghosyan and Andreas Rutsch **119**

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Ali G. Shetwan and Valentin I. Vitanov..... **131**

12.00 - 14.00
LUNCH BREAK AND VISIT TO DMU (from 12.45 to 13.55)

Two groups are envisaged to leave and visit DMU. The first group would leave at 12.45, while the second group would leave at 13.15

14.00 - 15.00

ROOM A- 14.00-15.00 **INVITED**
INVITED SPEAKER
Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK

XXXX
The Modelling 4All Project: a Web based modeling tool embedded in Web 2.0
Ken Kahn

ROOM B- 14.00-15.00 **INDUSTRY**
MANUFACTURING MANAGEMENT TOOLS II
Chair: David Hill, Universite Blaise Pascal, Aubiere, France

COMPLEX_07
Optimization of Car Repair Processes by Scattered Context Grammars Application
Šárka Květoňová and Dušan Kolář **146**

COMPLEX_03
System engineering approach for safety management of complex systems
R. Guillerm, H. Demmou and N. Sadou **150**

15.00 - 15.30
COFFEE BREAK

Tuesday, 27th October 2009

15.30 – 17.30

ROOM A- 15.30-18.00 AI
BEHAVIOURAL MODELLING
Chair: Christophe Laroque, Heinz Nixdorf Institute, Paderborn, Germany

METH_03
Modeling Motorway Driving Behaviour using Microscopic Vehicle Trajectory Data
Abs Dumbuya and George Lunt **291**

N_04
Managing Spatial Self-Organization via Collective Behaviours
Rawan Ghnemat, Cyrille Bertelle and Gérard H.E. Duchamp **302**

ENERG_02
A Constriction Factor Based Particle Swarm Optimization for Economic Dispatch
Shi Yao Lim, Mohammad Montakhab and Hassan Nouri **305**

PAR_04
Statistical Models for pricing Weather Derivatives South African Coastal Areas
Mark W. Nasila and Igor N. Litvine **312**

ENV_05_METH
Modelling of Intervention Effect on Trust
Arnostka Netrvalova and Jiri Safarik **315**

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DATA SIMULATION AND STORAGE AND DECISION SUPPORT SYSTEMS
Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK

METH_16
Modelling of VoIP Overlay Routing using Graph Transformation
Ajab Khan and Muhammad Muzammal **221**

METH_06
Microarray data and image simulation
Ignazio Infantino, Carmelo Lodato and Salvatore Lopes **226**

Tuesday, 27th October 2009

PETRI_03
Datapath Architecture Simulation
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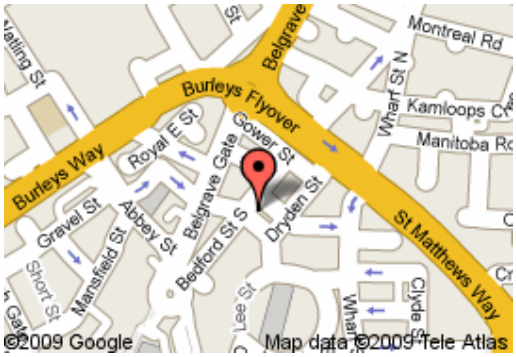
AGENT_03
Design of a Decision Making Support within Agent-Based Simulations reflecting Railway Traffic
Antonin Kavička and Michael Bažant **251**

AI_03
Development of Decision Support and Simulation System BPsim.DSS: Integration of Simulation, expert Situational and Multi-Agent Modeling
Konstantin A. Aksyonov, Eugene A. Bykov, Olga P. Aksyonova, Wang Kai, Alex ey V.Popov, Elena F. Smoliy, Ekaterina M. Sufrygina, Irina A.Spitsina and Alexey A.Sheklein **256**

HNI_01
Decision Support System for a regional spreading of A/H1N1 Influenza Virus
David Hill, Romain Barraud, Benoit Crozat, Luc Touraille, Alexandre Muzy and Frederic Leccia **261**

CONFERENCE DINNER – 20.00 -23.00

Lahore Karahi Restaurant
23-25 Bedford Street South
LE1 3JR Leicester
Tel: +44 116 253 1717
Fax: +44-116-2513169



Wednesday, 28th October 2009

HALLWAY

Registration

08.30 - 09.30

09.00 – 10.00

ROOM A- 09.00-10.00 **INVITED**
INVITED SPEECH
Chair: Marwan Al-Akaidi, de Montfort University, Leicester, UK

INV_02
Putting a Heart into a Box: GPGPU Simulation of a Cardiac Model on the Xbox 360
Simon Scarle

ROOM B- 09.00-10.00 **INDUSTRY**
ENERGY SIMULATION
Chair: Tim Govaert, Ghent University, Ghent, Belgium

COMPLEX_06
The Simulation of the Energetic Characteristics of Hydropower Plants and Wind Farms applied to the Cost Analysis of Electricity Generation in the Power System
Eugeniusz M. Sroczan..... **181**

PAR_06
Parallelism of Control Process of Electric Energy Consumption in a Distributed Power Grid System
Dariusz Bober and Henryk Kapron..... **184**

10.00 - 10.30
COFFEE BREAK

Wednesday, 28th October 2009

10.30 - 12.30

ROOM A- 10.30-12.00 METH
MODULAR SIMULATION AND DESIGN
Chair: Andrzej Urbaniak, Poznan Univ. of Techn., Poznan, Poland

PAR_01_DEVS
A Python Validation of the Multilayer DEVS Theory: Case of a Catchment Basin
Emilie Broutin, Paul Bisgambiglia and Jean-François Santucci..... **15**

METH_04
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Megdouda Ourbih-Tari, Abdelouhab Aloui and Amine Alioui..... **23**

METH_14_GRAPH
Enhancing Discrete Simulation Executive with Simple Continuous Simulation and Animation Support
Norbert Adamko..... **35**

ROOM B- 10.30-12.30 METH
MODEL VERIFICATION, VALIDATION AND EVALUATION
Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK

METH_05
A Formal Definition of Simulation Validity
Vincent Albert and Alexandre Nketsa..... **43**

METH_12
Concepts for Model Verification and Validation during Simulation Runtime
Wilhelm Dangelmaier, Robin Delius, Christoph Laroque and Matthias Fischer **49**

PAR_05
A Simulation Model for Evaluating Distributed Systems Dependability
Ciprian Dobre, Florin Pop and Valentin Cristea **62**

Wednesday, 28th October 2009

METH_09
Monte Carlo and Latin Hypercube Methods through a Case Study
Samy Mziou **70**

ROOM A 12.30 - 12.45 **BEST PAPER**
CLOSING SESSION AND BEST PAPER AWARD
Chair: Marwan Al-Akaidi, De Montfort University, Leicester, United Kingdom

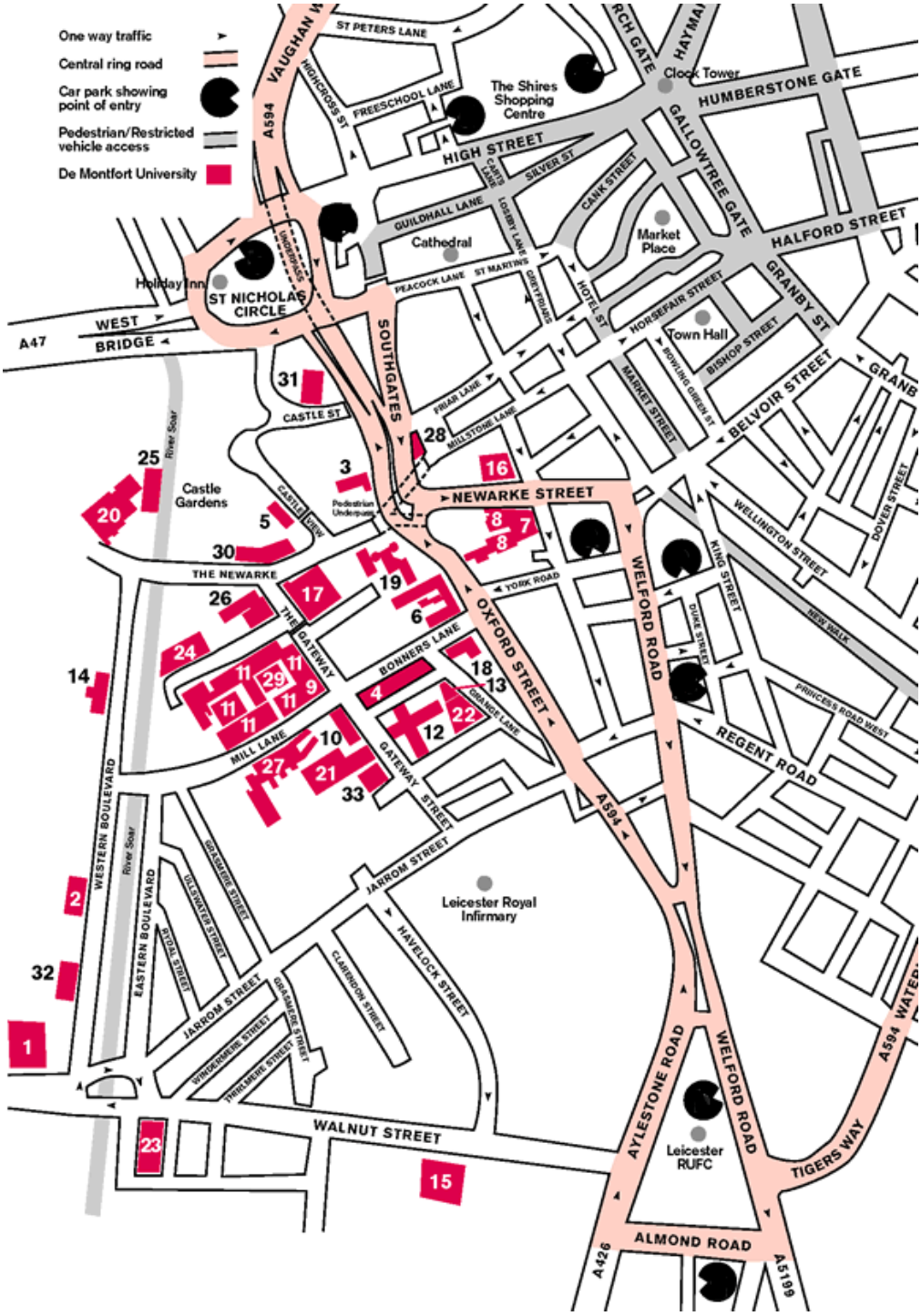
SEE YOU ALL
OCTOBER 25-27, 2010
FOR ESM'2010
At Hasselt University, Hasselt
Belgium
Track proposals and tutorial proposals can be sent in by
January 30th, 2010

Information
On all 2010 EUROSIS
Events can be found on
http://www.eurosis.org

Conference Site Map

Conference Site Map

LEICESTER HOTEL LOCATION AND DMU



eurosis

EUROSIS was borne out of discussions with the European Community to set up a new kind of Society, which would be project-driven instead of driven by pure membership and conferences.

The aim of the new Society will be to set up topic related Technical Committees which will link directly to European Projects in the field of computer simulation and related areas and to act as a knowledge pool for future European Networks of Excellence, like MOSAIC.

If you would like to receive more information about EUROSIS, please contact

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EUROSIS Info