# FINAL PROGRAM

**26-28 October 2015**

**Holiday Inn**
**Leicester, United Kingdom**

**Organized by**

**Sponsored by**

UKRI SPC

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# General Information

## 1. Conference Location

The **ESM'2015 Conference** is being held at

The Holiday Inn Leicester
129 St.Nicholas Circle
LE1 5LX Leicester, United Kingdom
Tel+44-116-9429048
Fax: +44-116-2513169

The registration desk will be placed in the hallway on the ground floor from Monday morning October the 26th onwards, where registration will start at 08.00 a.m. 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 9.00 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**

**How to reach the conference location in Leicester:**

**By Plane**
When arriving by plane in the UK you are mostly destined to arrive in London either at Heathrow, Stansted, Gatwick or Luton Airport. From these airports you need to make your way by train or tube to St.Pancras Station from where you can take a direct train to Leicester. However, if you come by plane the closest airports are either Birmingham Airport or East Midlands Airport, which is really the closest to Leicester and only about 7-8 miles away from the town. There are several ways you can get from the airport to Leicester as are shown here
If you leave by car then East Midlands Airport is just a few miles away from Junction 21 on the M1 as shown on this map.
If you leave by bus then you can take the Skylink service to Leicester. It runs half-hourly from the airport to Leicester town centre. There are bus (coach) connections between Leicester and Luton, Heathrow and Gatwick. The operator is National Express.

# General Information

**By Train**
When taking the train to the United Kingdom, you will be using the EUROSTAR service arriving at St.Pancras station. After clearing customs and passport control you leave the EUROSTAR part of the station, turn right and up the escalators for all northbound trains to Leeds, Sheffield and Nottingham on East Midland Trains. You can take a direct train to Leicester. If you come from Birmingham then take a train from the airport to Birmingham New Street Station. (See Journeyplanner to work out your itinerary). The Leicester London Road station is located very near the centre of the City with some large and smaller hotels within either walking distance or a short taxi ride. You can take taxis in the forecourt of the station. Rail Information can be found on: For details of local/London train services, visit the London Midland website. For up-to-date information on train services and fares, contact National Rail Enquiries on: 08457 48 49 50.

**By Bus**
A number of coach companies travel to and from Leicester from most major cities. Inter city coaches and local buses arrive at two termini for local bus services:St Margaret's Bus Station in Gravel Street which is fairly close to the centre of the city, and the Haymarket Bus Terminus in Charles Street (at the Haymarket Shopping Centre.)
**National coach services**
Inter city coaches and local buses arrive at St Margaret's bus station (see above). For details of routes and journeys use the National Express web site or call 08750 80 80 80 (UK only).
**Local bus services**
UK Public Transport Information - Covering all travel by rail, air, coach, bus, ferry, metro and tram within the UK, (including the Channel Islands, Isle of Man and Northern Ireland) and between the UK and Ireland. Plus all rail, ferry and coach travel between the UK and mainland Europe.
ARRIVA Fox County operates an extensive network of bus services throughout Leicestershire. For timetable information phone **Traveline** (below). Tel: 0116 253 9534 or 0116 264 0400 / Fax: 0116 260 5605
Information about Regional Bus and Coach services
Telephone **Traveline** on: 0870 608 2608. 7am to 9 pm, seven days a week. A local bus service locator is available at Leicester Equal . Click here for First Leicester's website, providing information on maps, routes. timetables, fares and tickets. For details of buses in Leicester City, see the bus page

**By Taxi**

A number of companies can be contacted following these links:

Leicester Taxis

Taxis and Mini-Cabs in Leicester

# General Information

## 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** | **€ 50** |
| **Extra lunch ticket** | **€ 25** |

## 4. Registration

The ESM'2015 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 ..... 9.00 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 and who have not fully registered.**
(Extra copies are available on a cash and carry basis at special rates during **ESM'2015**)

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

| | |
|---|---|
| ESM'2015 Proceedings CASH AND CARRY | **€ 50** |

## 6. Meeting Rooms

The ESM'2015 conference will be held in **rooms designated A (Loughborough) (ground floor), B (Harborough) (ground floor) and C** (**Fernie suite**) (**first floor**) in this programme.

# General Information

The way to the rooms will be signposted. WIFI-Internet is available on request and **not included in the conference registration fee**. WIFI login information will be available from the hotel front desk.

## 7. Need Help?

Please see the conference desk for your questions

## 8. Social Events and Lunches

**All registrants are invited to**
All **Coffee Breaks** are served in the hallway in front of the meeting rooms on the ground floor.
The lunches are served in **the Vermont restaurant of the Holiday Inn.**

**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 dinner will be held at:

Restaurant Santhi
124 Granby Street,
Leicester, LE1 1DL
United Kingdom
Tel: +44.(0) 116 255 5511
email: info@santhirestaurant.co.uk
Website:
http://www.santhirestaurant.co.uk/contact-us/

## 9. Room Legend

The parallel meeting rooms will be designated **ROOM A B and C**. Signposts will indicate the room number above each door.

## 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'2015 conference.

# General Information

Session Chairs information

**ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL**

**Session Chairs** are chosen on a voluntary basis by proposals by either authors or local committee members or are appointed by the Track Chairs, General Program Chair or General Conference Chair. They are responsible for their assigned session. They make sure their speakers are available, take care of the timing within the session, chair the discussion after each presentation and introduce each speaker based on the CV's given to them by the authors. **If a session chair is not available then the first author takes on the responsiblity to chair** In case they chair a session featuring **extended papers**, then they are required to distribute and collect the reviews of that or those papers at the beginning and end of the session. If they have time they should also indicate in their papers the number of session participants.

**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 2015 | | | |
|---|---|---|---|
| 08.00-17.00 | REGISTRATION | | |
| 09.00-09.15 | WELCOME BY DR. ALADDIN AYESH – ESM'2015 CONFERENCE CHAIR - ROOM A | | |
| 09.15-10.00 | KEYNOTE ADDRESS BY CYRILLE BERTELLE - ROOM A | | |
| 10.00-10.30 | COFFEE BREAK | | |
| 10.30-12.30 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | META-RESOURCE MODELS | POPULATION DYNAMICS AND HEALTH CARE SIMULATION | |
| 12.30-13.30 | LUNCH BREAK | | |
| 13.30-15.00 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | HARDWARE OPTIMIZATION | COMPLEX INTERMODAL SYSTEMS I | |
| 15.00-15.30 | COFFEE BREAK | | |
| 15.30-18.30 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | ENVIRONMENTAL SIMULATION AND SIMULATION FUNDAMENTALS | COMPLEX INTERMODAL SYSTEMS II | |
| 18.30-……. | FREE EVENING | | |

| TUESDAY, 27th OCTOBER 2015 | | | |
|---|---|---|---|
| 08.30-17.00 | REGISTRATION | | |
| 09.00-10.00 | TUTORIAL BY DR. STEPHAN BHAKTI ONGGO | | |
| 10.00-10.30 | COFFEE BREAK | | |
| 10.30-12.30 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | ROBOTICS SIMULATION | INTELLIGENT DATA SETS AND PETRI NETS SIMULATION | GRAPHICS FUNDAMENTALS AND MEDIA NETWORK SIMULATION |
| 12.30-13.30 | LUNCH BREAK | | |
| 13.30-15.00 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | SIMULATION TOOLS | WATER DISTRIBUTION SYSTEMS | VIRTUAL REALITY SIMULATION |
| 15.00-15.30 | COFFEE BREAK | | |
| 15.30-18.30 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | ENGINEERING SIMULATION | ENERGY CONSUMPTION SIMULATION | TUTORIALS |
| 20.00 – 22.30 | CONFERENCE DINNER at the Restaurant Santhi | | |

| WEDNESDAY, 28th OCTOBER 2015 | | | |
|---|---|---|---|
| 09.00-09.30 | REGISTRATION | | |
| 09.00-10.00 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | SOFTWARE ENGINEERING AND DEVS I | VIRTUAL REALITY PRODUCTION ENVIRONMENTS | |
| 10.00-10.30 | COFFEE BREAK | | |
| 10.30 12.30 | PARALLEL SESSIONS | | |
| | ROOM A | ROOM B | ROOM C |
| | SOFTWARE ENGINEERING AND DEVS II | AUTOMOTIVE SIMULATION | |
| 12.30-12.45 | CLOSING SESSION AND BEST PAPER AWARD ROOM A | | |

Notes

# NOTES

# Monday, 26th October 2015

**HALLWAY**

**Registration**

**08.00 - 17.00**

**ROOM A**

**09.00 – 09.15**

## Opening ESM'2015 and Welcome

## Welcome Address

**Dr. Aladdin Ayesh**
**De Montfort University**
**ESM'2015 General Conference Chair**

**ROOM A - 09.15-10.00** **KEYNOTE**
**KEYNOTE SPEECH**
**Chair:** Aladdin Ayesh, De Montfort University, Leicester, United Kingdom

**Local Nash Equilibrium in Social Networks**
Professor Cyrille Bertelle, Vice President for Research and Development, Université du Havre - Normandie Université, Le Havre, France

Welcome

# Monday, 26th October 2015

**10.00 - 10.30**
**COFFEE BREAK**

**10.30 – 12.30**

## ROOM A - 10.30-12.30 METH
## META-RESOURCE MODELS
**Chair:** Cyrille Bertelle, University of Le Havre, Le Havre, France

**METH_06**
**A Meta-Model for Consistent & Automatic Simulation Model Selection**
Sangeeth Saagar Ponnusamy, Vincent Albert and Patrice Thebault..... **31**

**METH_04_TOOLS**
**A Resource Model for the Rule-Based Dynamic Business Process Modelling and Simulation**
Olegas Vasilecas, Diana Kalibatiene, Audrius Rima, Ilze Birzniece and Peteris Rudzajs..... **36**

**AI_01**
**Flat vs Nested Firm Real-time Transactions: an Analysis of their Success Ratio**
Mourad Kaddes, Laurent Amanton, Majed Abdouli, Mohalilou Aleiyouka and Alexandre Berred..... **42**

**AGENT_05**
**Discrete Event Simulation to Reduce the Effect of Uncertainties on Project Planning**
Parminder Singh Kang, Adam Aboutaleb, Tim Embley, James Glenn, Colin Adams and Alistair Duffy ..... **47**

## ROOM B - 10.30-12.30 HEALTH
## POPULATION DYNAMICS AND HEALTH CARE SIMULATION
**Chair:** Andrea Marin, Universita Ce Foscari di Venezia, Venice, Italy

**AGENT_04**
**Modeling and Simulation of Tawaf and Sa'Yee: A Survey of Recent Work in the Field**
Omar Kurdi, Mike Stannett and Daniela M. Romano ..... **441**

# Monday, 26th October 2015

**AGENT_09**
**An Agent-Based Approach to reveal the Effects of Age-Related Contact Patterns on Epidemic Spread**
Dietmar Neubacher, Nikolaus Furian and Siegfried Vössner ..... **185**

**DEVS_03_HOS**
**Towards a Framework for Holistic Analysis of Healthcare Systems**
Ignace Djitog, Hamzat Olanrewayu Aliyu and Mamadou Kaba Traoré ..... **193**

**OPT_13_HOS**
**Simulating the Impact of Optimized Dispatching Strategies for Patient Transits**
Nikolaus Furian, Michael O'Sullivan, Cameron Walker, Simon Riezboz, Dietmar Neubacher and Siegfried Vössner ..... **197**

**12.30 - 13.30**
**LUNCH BREAK**

**13.30 – 15.00**

**ROOM A – 13.30-15.00** **HARD**
**HARDWARE OPTIMIZATION**
**Chair:** Aladdin Ayesh, de Montfort University, Leicester, United Kingdom

**NEUR_01**
**Signal Processing at Different Mental Tasks Execution for Brain-Computer Interface**
Svetla Radeva and Dimitar Radev ..... **159**

**DIS_SIM_01**
**A Based-Optimization Scheduling Approach for Multi-Processor Platform with DVFS Facilities**
Hamza Chniter, Fethi Jarray, Mohamed Khalgui and Maryline Chetto ..... **164**

**OPT_04**
**Efficient Techniques for Test Generation and Validation of Reconfigurable Hardware Systems**
Asma Ben Ahmed, Olfa Mosbahi and Mohamed Khalgui ..... **172**

# Monday, 26th October 2015

## ROOM B- 13.30-15.00 LOGIS
## COMPLEX INTERMODAL TRANSPORT SYSTEMS I
**Chair:** Gerrit Janssens, Hasselt University, Hasselt, Belgium

**DIS_SIM_05**
**A Graph Model of Intermodal Transportation Networks**
Rui P.P.Cardoso, Antonio D. Casimiro and Rosaldo J. F. Rossetti ..... **399**

**DIS_SIM_02**
**Verification by Discrete Simulation of Interlocking Systems**
Quentin Cappart, Christophe Limbrée, Pierre Schaus and Axel Legay ..... **402**

**SUP_05**
**Providing Adaptive Traffic Routing Based on User and Network Context**
Sergio S.Spinola, André L.C.Oliveira, Joatham P.S.Silva, Carlos F.J. Muakad, Paulo N.M. Sampaio and Lina M.P.L. Brito ..... **410**

**15.00 - 15.30**
**COFFEE BREAK**

**15.30 - 18.30**

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## ROOM A- 15.30-18.30 ENV-METH
## ENVIRONMENTAL SIMULATION & SIMULATION FUNDAMENTALS
**Chair:** Andrzej Urbaniak, Poznan University of Technology, Poland

**ENV_AI_01**

**Comparing Neural Networks and Pseudo Inverse Matrix to Flood Forecasting of the Amazon River**
Marcio Menezes, Marly Costa and Cicero Costa Filho ..... **205**

**GRAPH_04_PAR**
**Performance Evaluation of Discontinuity Tracking in Vector Fields for Avalanche Simulation**
Ángel Rodríguez-Cerro, Miguel Lozano, Ignacio García-Fernández and Rafael J. Martínez-Durá ..... **211**

# Monday, 26th October 2015

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**Modelling and Analysis of Hybrid Physical Systems Using Bond Graph and Dynamic Causality**
J Madrigal Salas and R F Ngwompo ..... **16**

**DIS_SIM_03**
**Hybrid Synchronization in the DCB Based on Uncoordinated Checkpoints**
Flávio Marques Migowski Carvalho and Braulio Adriano de Mello ..... **22**

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**Big Data Reduction**
William Conley ..... **5**

**OPT_10**
**Traversing Two and Twelve Dimensional Space**
William Conley ..... **10**

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**COMPLEX INTERMODAL TRANSPORT SYSTEMS II**
**Chair:** Ross Clement, de Montfort University, Leicester, United Kingdom

**SUP_01**
**The Need of Simulation in Queuing Models for Port Logistics**
Pasquale Legato and Rina M. Mazza ..... **418**

**SUP_03**
**Impact of Different Input Data Sets on the Sorting System Performance of a Parcel Transshipment Terminal**
Daniel Diekmann, Uwe Clausen and Ina Dormuth ..... **423**

**SUP_02**
**Pickup and Delivery Selection with a Fixed Vehicle Cost**
Katrien Ramaekers, Gerrit K. Janssens, Tabitha Maes and An Caris ..... **428**

**AGENT_06**
**Using Agent Based Simulation to Investigate Daily Order Variation of a B2B Fresh Food Supplier**
Ross Clement, Parminder Kang, Alistair Duffy and Ashley Hopwell ..... **433**

**18.30 - …..**

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**FREE EVENING**

# Tuesday, 27th October 2015

**HALLWAY**

**Registration**

**08.30 - 17.00**

**09.00 – 10.00**

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**ROOM A- 09.00-10.00** **TUT**
**TUTORIAL**
**Chair:** Aladdin Ayesh, de Montfort University, Leicester, United Kingdom

**TUT_01**
**Introduction to Agent-Based Simulation using Repast Simphony**
Dr. Bhakti Stephan Onggo, Department of Management Science, Lancaster University, Lancaster, United Kingdom
**Software for this tutorial to download from:**
**http://repast.sourceforge.net/download.php**

**10.00 - 10.30**
**COFFEE BREAK**

**10.30 - 12.30**

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**ROOM A- 10.30-12.30** **ROB**
**ROBOTICS SIMULATION**
**Chair:** Naser Nawayseh**,** University of Sharjah, Sharjah, UAE

**DIS_SIM_11**
**Simulating and Implementing the Integration of Service Robots into Manual Work Processes**
Frank Heinze, Maike Klöckner, Juergen Rossmann, Bernd Kuhlenkoetter and Jochen Deuse..... **371**

# Tuesday, 27th October 2015

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**Simulation-based Time and Jerk Optimisation for Robotic Press Tending**
Emile Glorieux, Bo Svensson, Fredrik Danielsson and Bengt Lennartson ..... **377**

**GRAPH_10**
**Flexible Data Logging, Management and Analysis of Simulation Results of Complex Systems for E-Robotics Applications**
Linus Atorf, Torben Cichon and Juergen Rossmann ..... **385**

**BIO_01**
**Fish Motion Simulation**
Ievgen Smielik, Klaus Müller and Klaus-Dieter Kuhnert..... **392**

## ROOM B- 10.30-12.30 METH
## INTELLIGENT DATA SIMULATION & PETRI NET SIMULATION
**Chair:** Bhakti Stephan Onggo, Lancaster University, United Kingdom

**INTEL_05**
**Metaheuristics Applied to the Autonomous Movement of Intelligent Agents**
Dâmaris da Silva Bento, Bárbara da Costa Rodrigues, Juliano Costa Penha Alves, Bruno Luan de Sousa, Angelo Batista Neves Júnior, Lindomar Matos de Paulo and Alex F. V. Machado ..... **57**

**INTEL_06**
**Predicting 2 Way Football Results by Means of Data Mining**
João Gomes, Filipe Portela, Manuel Felipe Santos, António Abelha and José Machado ..... **64**

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**Quantitative Analysis of the Publish/Subscribe Paradigm in the Context of Web Service Resources with Timed Colored Petri Nets**
Valentín Valero, Hermenegilda Macià and Gregorio Díaz ..... **73**

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**Deriving the Performance Indices in Product-Form Stochastic Petri Nets: Open Problems and Simulation**
Simonetta Balsamo, Andrea Marin and Ivan Stojic..... **81**

# Tuesday, 27th October 2015

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## GRAPHICS FUNDAMENTALS & MEDIA NETWORK SIMULATION
**Chair:** Aladdin Ayesh, De Montfort University, Leicester, United Kingdom

**INTEL_01**
**An Extension to the FEEDB Multimodal Database of Facial Expressions and Emotions**
Luis Marco-Giménez, Miguel Arevalillo-Herráez, Aladdin Ayesh and Mariusz Szwoch ..... **455**

**GRAPH_05_POS**
**Visualisation of Physical Simulation using Javascript Physics Engine with X3DOM**
Olaf Berndt and Linda Huber ..... **315**

**AI_03**
**Video Replication over DASH in Distributed Multimedia Systems**
Haifa Harrouch, Mourad Kaddes, Claude Duvallet, Majed Abdouli and Rafik Bouaziz ..... **318**

**ANMT_01**
**Study of the Disturbance Spread in an Interaction Network**
Haifa Rabai, Rodolphe Charrier and Cyrille Bertelle ..... **323**

**12.30 - 13.30**
**LUNCH BREAK**

**13.30 - 15.00**

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## ROOM A- 13.30-15.00 TOOLS
## SIMULATION TOOLS
**Chair:** Linus Atorf, RWTH Aachen University, Aachen, Germany

**DIS_SIM_06**
**Discrete Event Simulation Packages Data Sharing: A Case Study of ARENA and Simul8 Softwares Data Integration Analysis**
Yusuf Jamiu

# Tuesday, 27th October 2015

**DIS_SIM_07**
**ASSISI Playground: A Simulation Tool for Collective Bio-Hybrid System Research**
Pedro Mariano, Rob Mills, Luís Correia, Damjan Miklić and Stjepan Bogdan ..... **91**

**DIS_SIM_09**
**Synthesis of a Three Stages Servovalve by AMESIM**
Costin Ina, Nicolae Vasiliu, Constantin Călinoiu, Daniela Vasiliu and Marius Daniel Bontos..... **99**

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## WATER DISTRIBUTION SYSTEMS
**Chair:** Eugeniusz Sroczan, Poznan University of Technology, Poland

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**Model Calibration and Hydraulic Optimization of the Water Distribution System of the Upper Silesian Waterworks**
Jan Studzinski, Andrzej Ziólkowski and Dorota Tomasiuk..... **219**

**OPT_15_FLUID**
**A Simulation Study of Minimizing Water Cost in Multisource Water Distribution System**
Rafał Brodziak, Jędrzej Bylka, Andrzej Urbaniak and Przemysław Zakrzewski ..... **225**

**OPT_20**
**Modelling and Optimization of Communal Sewerage Systems**
Grazyna Petriczek and Jan Studzinski ..... **229**

## ROOM C- 13.30-15.00 VR
## VIRTUAL REALITY SIMULATION
**Chair:** Aladdin Ayesh, de Montfort University, Leicester, United Kingdom

**EDU_03**
**3D Surgery Simulation Software Development Kit**
Anton Ivaschenko, Alexandr Kolsanov, Aikush Nazaryan and Andrey Kuzmin ..... **333**

# Tuesday, 27th October 2015

**GRAPH_02**
**Affective Computing: Measuring the Player Emotions in Virtual Reality Environments**
Gabriel B. S. M. Moreira, Paulo R. C. Faustino, Matheus M. Ramalho, Alex F. V. Machado, Matheus F.O Baffa and Esteban W.G.Clua ..... **341**

**GRAPH_09_TRAIN**
**A Simulation Based Game Approach for Test Drive Exam**
Rula Al-Azawi and Aladdin Ayesh ..... **346**

**15.00 - 15.30**
**COFFEE BREAK**

**15.30 – 18.00**

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**ROOM A -15.30-17.30** **ENGIN**
**ENGINEERING SIMULATION**
**Chair:** Bhakti Stephan Onggo, Lancaster University, United Kingdom

**FLUID_TOOLS_01**
**CFD Analysis on Characteristics of CANDU6 Ventilation/Cooling Systems**
S. Nicolici, C.T.Mateescu, R. Arsene, I. Prisecaru and D. Dupleac ..... **273**

**METH_01**
**Modelling of the Vertical Apparent Mass at the Seat Surface and Backrest**
Naser Nawayseh ..... **278**

**METH_08**
**Mathematical Analysis on Pitch and Roll Variations Based Hit Probability Prediction for a Combat Vehicle Design**
Hwan Il Kang and Hyun Soo Kim ..... **284**

**OPT_12**
**Analysis of Design Parameters Based on Bullet Trajectories and Hit Probability**
Hwan Il Kang, Sang Yeong Choi and Hyun Soo Kim ..... **289**

# Tuesday, 27th October 2015

## ROOM B- 15.30-18.30 ENERG
## ENERGY CONSUMPTION SIMULATION
**Chair:** Jan Studzinski, Systems Research Institute, Warsaw, Poland


**OPT_02**
**Optimal Load Sharing Strategy in System of Multiple Source Based on Model Control Predictive**
Mouhamadou Falilou Ndiaye, Pape Alioune Ndiaye, François Guerin and Dimitri Lefebre ..... **237**

**OPT_07**
**Wireless Sensor Network Live Circle Simulation Tools To Balance Energy Consumption in the Network Nodes**
Aleksejs Jurenoks and Leonids Nocickis ..... **245**

**OPT_18**
**Simulation of Change Power Demand in Micro-Grid Supplied by Mix of Sources including Aggregate of Small Scale Hydropower Plants**
Eugeniusz M. Sroczan ..... **251**

**PAR_01**
**Real-time Task Reconfiguration in Energy-Harvesting based Multiprocessor Systems**
Wiem Housseyni, Olfa Mosbahi, Mohamed Khalgui and Maryline Chetto ..... **254**

**INTEL_04**
**Application of Intelligent Control Algorithms for Thermal Comfort and Energy Saving in the Computer Laboratory**
Mariusz Nowak and Andrzej Urbaniak ..... **265**

# Tuesday, 27th October 2015

**ROOM C- 15.30-18.00** **TUT**
**TUTORIALS**
**Chair:** Aladdin Ayesh, de Montfort University, Leicester, United Kingdom

**TUT_02**
**Soft Body Dynamics on the GPU Using Shells**
Noe Pages Puertas, Napier University, Edinburgh, United Kingdom

**TUT_03**
**Fluid Simulation in Games: The Advantages and Pains**
Haoyang Hou, Edinburgh Napier University, Edinburgh, United Kingdom

## CONFERENCE DINNER – 20.00 -23.00

**All participants are invited to the conference dinner which will be held from 20.00 to 23.00 at the Santhi Authentic Indian Restaurant**

Santhi
124 Granby Street,
Leicester, LE1 1DL
United Kingdom
Tel: +44.(0) 116 255 5511
email: info@santhirestaurant.co.uk
Website:
http://www.santhirestaurant.co.uk/contact-us/

# Wednesday, 28th October 2015

**HALLWAY**

**Registration**

**09.00 - 09.30**

**09.00 – 10.00**

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**ROOM A- 09.00-10.00** **SOFT**
**SOFTWARE ENGINEERING SIMULATION AND DEVS I**
**Chair:** Aladdin Ayesh, De Montfort University, Leicester, United Kingdom

**OPT_03**
**New Codesign Solutions for Modelling and Partitioning of Probabilistic Reconfigurable Embedded Software**
Ines Ghribi, Riadh Ben Abdallah, Mohamed Khalgui and Marco Platzner ..... **107**

**OPT_05**
**Modeling Issues when using Simulation to test The Performance of Mathematical Programming Models under Stochastic Conditions**
Anne-Laure Ladier, Allen G. Greenwood and Gülgün Alpan ..... **117**

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**VIRTUAL PRODUCTION ENVIRONMENTS**
**Chair:** Gerrit Janssens, Hasselt University, Hasselt, Belgium

**LIV_01**
**Semi-Real Evaluation Environments for Mobile Applications**
Sascha Alpers, Christoph Becker and Esmahan Eryilmaz ..... **357**

**AI_05_SUP**
**A Genetic Algorithm with Shuffle for Job Shop Scheduling Problems**
Fredrik Danielsson, Bo Svensson and Dhanush Reddy ..... **363**

**10.00 - 10.30**
**COFFEE BREAK**

# Wednesday, 28th October 2015

**10.30 – 12.30**

## ROOM A- 10.30-12.30 SOFT
## SOFTWARE ENGINEERING SIMULATION AND DEVS II

**Chair:** Aladdin Ayesh, De Montfort University, Leicester, United Kingdom

**PAR_03**
**Function Slices: A Model to Extract Parallelism from Sequential Applications**
Nils Potthoff, Carsten Gremzow, Christoph Brandau and Dietmar Tutsch ..... **122**

**DEVS_01**
**Optimizing Distributed DEVS Simulations with Partitioning and Hidden Markov Model Learning Methods**
Christopher Herbez, Eric Ramat and Gauthier Quesnel ..... **133**

**DEVS_04**
**A New Approach to Modeling Dynamic Structure Systems**
Oumar Maïga, Hamzat Olanrewaju Aliyu and Mamadou Kaba Traoré ..... **141**

**DEVS_05**
**A Framework for Discrete Events Systems Enactment**
Hamzat Olanrewaju Aliyu, Oumar Maïga and Mamadou Kaba Traoré ..... **149**

## ROOM B – 10.30-12.00 AUTO
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**Chair:** Hwan Il Kang, Agency of Defense Development, Yuseong, South-Korea

**GRAPH_01**
**Procedural Modelling Techniques to Configure Scenes in a Serious Game Based Driving Simulator**
Pedro Rosa and Rosaldo J.F.Rossetti ..... **448**

**GRAPH_07_TRAIN**
**Driving Simulator Development Phase II – Building and Controlling Scenarios through the Motion Algorithm**
Alexandra Tuca, Valerian Croitorescu and Thomas Brandmeier ..... **297**

**AGENT_02**
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Emna Guerfala, Mohamed Khalgui, Anis Koubâa and Oussema Karoui ..... **302**

# Wednesday, 28th October 2015

**ROOM A – 12.30 - 12.45** **BEST PAPER**
**CLOSING SESSION AND BEST PAPER AWARD**
**Chair:** Aladdin Ayesh, De Montfort University, Leicester, United Kingdom

**EUROSIS**
**Philippe Geril, EUROSIS, Ostend, Belgium**

ESM'2016 - Las Palmas - Spain

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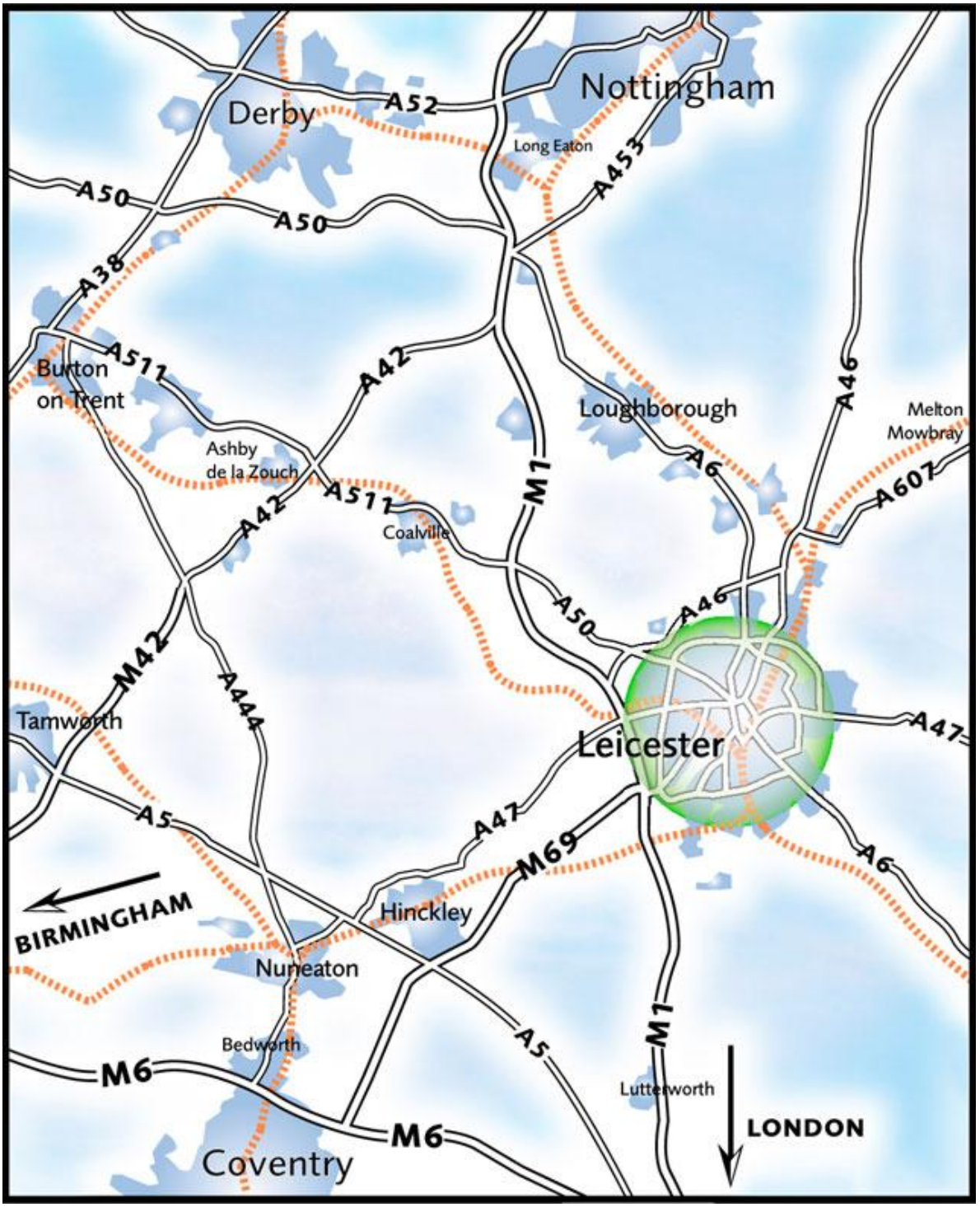
**ESM'2016, Week of October 24-28, 2016, SIANI, University of Las Palmas, Las Palmas, Spain**

**FOR ESM'2016**

**Track proposals and tutorial proposals can be sent in by January 30th, 2016**

**Proposals for future ESM locations can be emailed to philippe.geril@eurosis.org**

# LEICESTER LOCATION MAP

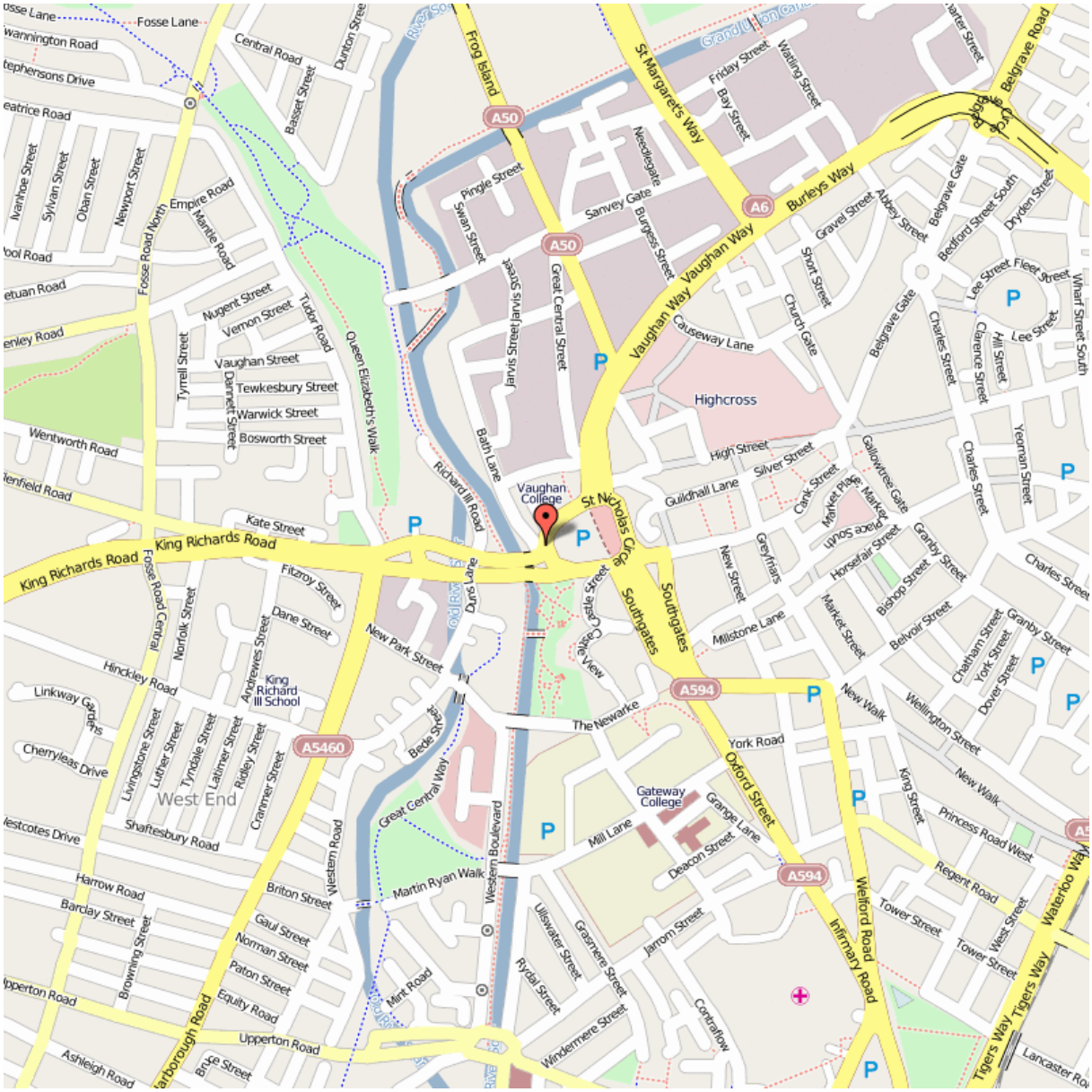



Conference Site Maps

Conference Site Maps

# Conference Site Maps

## Hotel Location Map



# EUROSIS
# Forthcoming Conferences

GAMEON'2015, December 2-4, 2015, University of Amsterdam (UvA) , Amsterdam, The Netherlands

SIMEX'2016, February 4-6, 2016, Brussels, Belgium

MESM'2016-GAMEON-ARABIA'2016, March 21-23, 2016, AOU, Amman, Jordan

FOODSIM'2016, April 4-7, 2016, Catholic University Louvain, Ghent, Belgium in cooperation with the 12th International Trends in Brewing Symposium with the conference dinner on the 6th of April and an organized visit to Belgian breweries on the 7th of April.

EUROSIS Conferences

# EUROSIS Conferences

## EUROSIS
## Forthcoming Conferences

ECEC'2016-FUBUTEC'2016-EUROMEDIA'2016, April 13-15, 2016, Plymouth University, Plymouth, United Kingdom.

IAH'2016 (Industrialized Affordable Housing), May 9-11, 2016, Greenbridge, Ghent University - Ostend Campus, Ostend, Belgium

ISC'2016, June 6-8, 2016, POLITECHNICA University of Bucharest, Bucharest, Romania

GAMEON-NA'2016-NASTEC'2016, August 4-5, 2016, Chicago, USA

GAMEON'2016, September 13-15, 2016, Universidade Nova de Lisboa, Lisbon, Portugal

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 Society is to set up and manage 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, HORIZON2020.

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

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EUROSIS Info

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