Final Program

21 – 23 October 2026
Organized by

Sponsored by

In Cooperation With

Contents

General Information **4**
Badges 5
Best Paper Award 8
Conference Location 4
Conference Proceedings 6
How to get there 4/5
Internet Connection 6
Meeting Room 6
Need Help? 6
Paper Legend 8
Registration 6
Social Events and Lunches 6/7
Tickets 5

Quick Program Overview **9**
Welcome Address **13**

Scientific Program **13**

Wednesday, October 21 ..... **13**
Thursday, October 22 ..... **19**
Friday, October 23 ..... **25**

ESM® '2027/GAME-ON® '2027 ..... **28**

Conference Location **29**
..... **31**

Notes **32**

Registration Form **33**

EUROSIS Contact Info **34**

Contents

General Information

1.1 Conference Location

The ESM®'2026/GAME-ON®'2026 Conference itself is held at



ENIM
1 route d'Ars Laquenexy
57070 Metz, France
Tel: +33 (0)3 87 37 54 30
Email: daniel.roy@enim.univ-lorraine.fr
See the Campus map for more location info at the back of the programme.

The meeting rooms are in the ENIM building**.** The way to the meeting rooms will be signposted. Registration will start on Wednesday from 8.00 a.m. till 4.00 p.m. On Thursday from 8.30 a.m. till 5.00 p.m. On Wednesday from 09.00 a.m. till 09.30 a.m. The registration desk will be located in the main hall of the ENIM building. The meeting rooms are ENIM AUDITORIUM LEVEL 0, ROOM A - 1A10 LEVEL 1, ROOM B - 1A11 LEVEL 1 and ROOM C - 2A26 LEVEL 2.

Reaching the ENIM Campus

By Plane:
Metz lies some 75 kms from The Luxembourg International Airport, some 16.5 km (10.3 mi) from The Metz-Nancy-Lorraine Airport located in Goin, southeast of Metz and 320 kms from France international Charles de Gaulle Airport in Paris. On arrival at The Luxembourg International Airport, take bus line 29 to Luxembourg train station and a regional train (TER) to Metz city train station. From Lorraine Airport, the tour operator Coutarel offers connections between Metz (Pôle multimodal rue aux Arènes) train stations to and from the airport by minibus or coach, depending on demand (15€). This service serves all commercial flights from the airport. Considering the short train journey between Paris and the Metz Lorraine TGV railway station (82 minutes), the France international Charles de Gaulle Airport may also be a good alternative.

By Train:
Trains coming from French and European main cities arrive either at Metz station or Lorraine Station. High-speed trains may arrive at either (*). Metz Railway Station is connected to the French high speed train (TGV) network, which provides a direct rail service to Paris and Luxembourg. The time from Paris (Gare de l'Est) to Metz is 82 minutes. Additionally, Metz is served by the Lorraine TGV railway station, located at Louvigny, 25 km (16 mi) to the south of Metz, for high speed trains going to Nantes, Rennes, Lille and Bordeaux (without stopping in Paris). Also, Metz is one of the main stations of the regional express trains system, Métrolor.

(*) From the Lorraine TGV railway station, there is direct shuttle from station to station for TGV connections. Information on these can be found at the SNCF stations and ticket offices and online at oui.sncf. Shuttle timetables are available here.

By Bus and Mettis:
Public transport in Metz includes a bus rapid transit system, called Mettis. Mettis vehicles are high-capacity hybrid bi-articulated buses and stop at designated elevated tubes, complete with disability access. Mettis has its own planned and integrated transportation system, which includes two dedicated lines that spread out into the Metz conurbation. Mettis lanes A and B serve the city's major facilities (e.g., city centre, university campus and hospitals), and a transport hub is located next to the railway station. There are 2 direct bus lanes from main train station or city center to ENIM/ENSAM (the 2 building are close from each other).
By standard bus, lane L4 direction “Grange Aux Bois”, “Grandes Écoles” stop. From city center, or Train station, it’s a 30’ journey, with a frequency of one bus every 20 minutes.
By Mettis lane B a high service rate bus (with dedicated road and traffic priority). Mettis is the name given to the two bus rapid transit (BRT) lines in the Metz area. It uses a dedicated road and has priority at traffic lights. The conference venue is located on the B line, direction “Hopital Mercy”, “Grandes Écoles” or “Ensam” stops.From city center, or Train station, it’s a 20’ journey, with a frequency of one bus every 10 minutes.

By Car:
Metz is accessible via two motorways: The A31 (North-south axis from Luxembourg to Bourgogne and further south to the Mediterranean) and the A4 (West-east axis from Paris to Strasbourg and further on to Prague)

ALL OTHER MAPS ARE AT THE BACK OF THIS PROGRAMME

1.2 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.

1.3 Tickets

Extra tickets for the social event and lunches are available from the Registration desk. (**at conference prices**) All participants will be issued with tickets for bus travel, lunch and the conference dinner. **Or just the badge will apply.**

General Information

conference dinner:	**€ 80**
lunch	**€ 25/lunch**

1.4 Registration

The **ESM®'2026/GAME-ON®'2026** Registration Desk will be open for information and will be located in the main hall of the ENIM building in the same hallway as the meeting rooms:

Wednesday, October 21 ..... 8.00 a.m. to 04.00 p.m.
Thursday, October 22 ..... 8.30 a.m. to 05.00 p.m.
Friday, October 23 ..... 9.00 a.m. to 9.30 a.m.

1.5 Conference Proceedings

Each fully paid registrant will be provided with a copy of the Conference Proceedings (printed format and/or electronic format) after the conference. Price: (or equivalent in another currency) for an extra printed copy

ESM'2026 Proceedings	**€ 60**
GAME-ON'2026 Proceedings	**€ 35**

Other Proceedings can be ordered from the EUROSIS website.

1.6 Meeting Rooms

The **ESM®'2026/GAME-ON®'2026** meeting rooms are the **ENIM AUDITORIUM LEVEL 0, ROOM A - 1A10 LEVEL 1, ROOM B - 1A11 LEVEL 1 and ROOM C - 2A26 LEVEL 2.** Directions to the rooms will be signposted.

1.7 Internet Connection

There is full free WIFI at the conference site. Participants are advised to log in using their EDUROAM account.

1.8 Need Help?

Please see the conference desk in **ENIM AUDITORIUM LEVEL 0** for your questions

1.9 Social Events and Lunches

All registrants are invited: to the **Coffee Breaks** (3 days), the **Lunches** (2 days), **a guided city tour** which is scheduled from 18h30 to 19h30 on Wednesday the 21st and the **Conference Dinner on Thursday the 22nd of October** at 20.00 hours at **LA RESERVE, 5 Av. Ney, 57000 Metz, France.**

General Information

To the Coffee Breaks and Lunches



ENIM
1 route d'Ars Laquenexy
57070 Metz, France
Tel: +33 (0)3 87 37 54 30
Email:
daniel.roy@enim.univ-lorraine.fr

To the **Guided Tour**

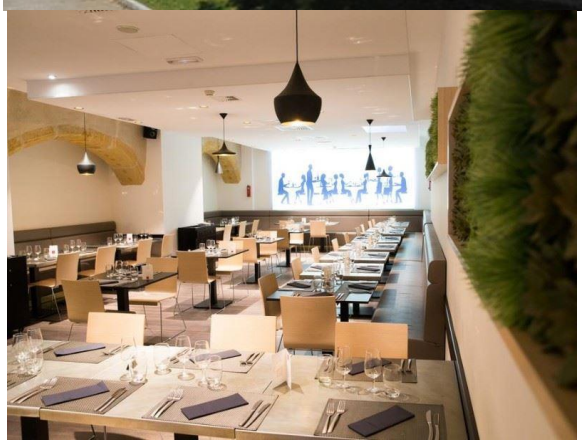




A guided city tour is scheduled from 18h30 to 19h30

To the **Conference Dinner**





From 20.00 p.m to 23.00 p.m.
The conference dinner will be held on **Thursday the 22nd of October** in the evening at
La Reserve – Restaurant a Metz, sous les voûtes de 1559
5 Avenue Ney
57000 Metz, France
Tel:**+33 3 87 17 17 17**
Website:
https://www.lareserve-metz.com/

General Information

1.10 Best Paper Award

During the conference the papers, which were accepted as extended papers will be judged by the committee and participants in order to choose the best paper of the ESM®'2026 conference. The best paper candidate receives a certificate signed by the General Conference and Program Chairs.

1.11 Paper Legend:

Each paper is designated before each paper by its number. This number has to be entered on the form for the best paper award.

The room has an LCD projector and an overhead projector

SESSION CHAIRPERSONS

ALL NAMES OF 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**

Sessions with extended papers: If you are a session chair in a session with extended papers make sure the session participants have a copy of the best paper award form and ask them to return them to you at the end of the session. After the session hand over the collected forms to Philippe Geril.

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

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

PAPER NUMBERS IN THE FINAL PROGRAMME FOLLOWED BY "ONL" MEAN THESE PAPERS WILL BE PRESENTED ONLINE

FINAL PROGRAMME ESM'2026 AND GAME-ON'2026 QUICK OVERVIEW

WEDNESDAY, 21st OCTOBER 2026			
08.00-16.00	**REGISTRATION IN THE ENIM MAIN HALL**		
08.45 - 09.00	**WELCOME MEETING - ENIM AUDITORIUM LEVEL 0, ENTRANCE IN THE HALL**		
	ESM'2026 – GAME-ON'2026 WELCOME		
09.00 - 10.00	**ESM'2026 KEYNOTE SESSION – ROOM A - ENIM AUDITORIUM LEVEL 0, ENTRANCE IN THE HALL**		
	KEYNOTE SPEAKER JOËL COLLOC UNIVERSITÉ DU HAVRE – NORMANDY UNIVERSITY LE HAVRE, FRANCE		
10.00 - 10.30	**COFFEE BREAK - ENIM MAIN HALL**		
10.30 - 12.30	**ESM'2026 SESSIONS**		
	ROOM A - 1A10 LEVEL 1	**ROOM B - 1A11 LEVEL 1**	**ROOM C - 2A26 LEVEL 2**
	SIMULATION IN ENERGY ENVIRONMENTS ANALYTICAL AND NUMERICAL TECHNIQUES I	**AUTONOMOUS SYSTEMS**	**MANUFACTURING OPTIMIZATION SIMULATION**
12.30 - 13.30	**LUNCH BREAK**		
13.30 - 15.00	**ESM'2026 SESSIONS**		
	ROOM A - 1A10 LEVEL 1	**ROOM B - 1A11 LEVEL 1**	**ROOM C - 2A26 LEVEL 2**
	TUTORIAL OVSEP AVAKIAN SUMUP SOFIA, BULGARIA	**WORKSHOP SIMULATION TOOLS MARIA HANINI AND MAHIMA GHOSH IMPERIAL COLLEGE LONDON, UNITED KINGDOM**	**INVITED SPEAKER MARCIN CHOINSKI WARSAW UNIVERSITY OF LIFE SCIENCES, SGGW, WARSAW, POLAND**
15.00 - 15.30	**COFFEE BREAK - ENIM Main Hall**		
15.30 - 17.30	**ESM'2026 SESSIONS**		
	ROOM A - 1A10 LEVEL 1	**ROOM B - 1A11 LEVEL 1**	**ROOM C - 2A26 LEVEL 2**
	ANALYICAL AND NUMERICAL TECHNIQUES II	**LARGE LANGUAGE MODELS**	**SIMULATION IN LOGISTICS**
18.30	**A guided city tour is scheduled from 18h30 to 19h30.**		

THURSDAY, 22nd OCTOBER 2026			
08.30 - 17.00	REGISTRATION		
09.00 - 10.00	ESM'2026 - GAME-ON '2026 KEYNOTE SESSION – ENIM AUDITORIUM LEVEL 0, ENTRANCE IN THE HALL		
	KEYNOTE SPEAKER LE THI HOAI AN UNIVERSITÉ DE LORRAINE METZ, FRANCE		
10.00 - 10.30	COFFEE BREAK - ENIM MAIN HALL		
10.30 - 12.30	ESM'2026 SESSIONS		
	ROOM A - 1A10 LEVEL 1	ROOM B - 1A11 LEVEL 1	ROOM C - 2A26 LEVEL 2
	OPTIMIZATION METHODOLOGY	MACHINE LEARNING	SIMULATION IN SMART MANUFACTURING
12.30 - 13.30	LUNCH BREAK		
13.30 - 15.00	ESM'2026 – GAME-ON '2026 SESSIONS		
	ROOM A - 1A10 LEVEL 1	ROOM B - 1A11 LEVEL 1	ROOM C - 2A26 LEVEL 2
	WORKSHOP MONIKA ARESTA UNIVERSITY OF AVEIRO AVEIRO, PORTUGAL	INVITED SPEAKER PETER MITIC UCL LONDON, UNITED KINGDOM	INVITED SPEAKER VLADIMIR KOLTCHANOV ANYLOGIC AVON-FONTAINEBLEAU FRANCE
15.00 - 15.30	COFFEE BREAK - ENIM Main Hall		
15.30 - 18.00	ESM'2026 – GAME-ON '2026 SESSIONS		
	ROOM A - 1A10 LEVEL 1	ROOM B - 1A11 LEVEL 1	ROOM C - 2A26 LEVEL 2
	PLAYER INTERACTION AND GAME DESIGN	PARALLEL COMPUTING AND ENGINEERING SIMULATION	EMERGENCY MANAGEMENT SIMULATION
20.00 - 23.00	CONFERENCE DINNER AT LA RESERVE, 5 Av. Ney, 57000 Metz, France		

FRIDAY, 23rd OCTOBER 2026			
09.00 - 09.30	REGISTRATION		
09.00 - 10.00	ESM'2026 KEYNOTE SESSION – ENIM AUDITORIUM LEVEL 0, ENTRANCE IN THE HALL		
	KEYNOTE SPEAKER REMI BONIDAL ARCELOR/MITTAL MAIZIERES LES METZ, FRANCE		
10.00 - 10.30	COFFEE BREAK - ENIM Main Hall		
10.30 - 12.00	ESM'2026 SESSIONS		
	ROOM A - 1A10 LEVEL 1	ROOM B - 1A11 LEVEL 1	ROOM C - 2A26 LEVEL 2
	AI IN SIMULATION	MAN-IN-THE-LOOP SIMULATION	BACK-UP SESSION
12.00 - 12.15	CLOSING SESSION ESM'2026 – GAME-ON'2026 AND BEST PAPER AWARD ROOM A - ENIM AUDITORIUM LEVEL 0, ENTRANCE IN THE HALL		
12.15 - 13.15	LUNCH BREAK MEETING AREA FOR POST CONFERENCE VISIT PARTICIPANTS ONLY		
13.15 – 15.00	POST CONFERENCE VISIT		

Conference Notes

NOTES

Wednesday, 21st October 2026

REGISTRATION

08.00 - 16.00

REGISTRATION ENIM MAIN HALL

08.45 – 09.00

ROOM A - ENIM AUDITORIUM LEVEL 0– 08.45-09.00 WELCOME
WELCOME ADDRESS

Introduction to ESM®'2026 – GAME-ON®'2026

By Stephane Fontaine, Director of Ensam Campus Metz, Pierre Chevrier, Director of Enim and Alexandre Sava, LCFC director.

09.00 – 10.00

ROOM A – ENIM AUDITORIUM LEVEL 0 – 09.00-10.00 KEYNOTE
KEYNOTE
Chairs: Daniel Roy, Univ. de Lorraine, ENIM, LCFC, Metz, France



ESM_KEY_01
INDICIA: An Assessment Indicator for Healthcare AI Systems that focuses on the Caregiver-Patient Relationship and Algorithmic Transparency
Joël Colloc…….5

10.00 - 10.30
COFFEE BREAK - MEETING AREA IN ENIM MAIN HALL

Wednesday, 21st October 2026

10.30 - 12.30

ROOM A – 1A10 LEVEL 1 - 10.30-11.30 ESM 2026 SESSION
SIMULATION IN ENERGY ENVIRONMENTS
Chair: Jean-Yves Dantan, Arts et Métiers, Inst.Tec., LCFC, Metz, France

SIM_ENERG_01
A Calibrated Sub-Stations Building Simulator for District-Heated Residential Buildings and Evaluation of Control Strategies
Christoffer Hansson and Gideon Mbiydzenyuy **347**

SIM_AGENT_01
An Iterative Co-Simulation Pipeline for Coupled Models
Amy Liffey, Khoa Nguyen, Sandro Luh and René Schumann **82**

ROOM A – 1A10 LEVEL 1- 11.30-12.30 ESM 2026 SESSION
ANALYTICAL AND NUMERICAL TECHNIQUES I
Chair: Jean-Yves Dantan, Arts et Métiers, Inst.Tec., LCFC, Metz, France

ANMT_01
Pies with Gradient-Driven Knot Refinement for 2D Stress Analysis
Agnieszka Boltuć and Eugeniusz Zieniuk **29**

ANMT_03
A Hybrid PIES-PINN Approach for solving Two-Dimensional Orthotropic Potential Problems
Eugeniusz Zieniuk and Krzysztof Szerszeń **35**

ROOM B – 1A11 LEVEL 1 - 10.30-12.30 ESM 2026 SESSION
AUTONOMOUS SYSTEMS
Chair: Joël Colloc, Université of Le Havre, Le Havre, France

SIM_AI_06_ONL
Model for Visual Terrain Relative Navigation
Paweł Śliwa **192**

SIM_AUTO_01
A Particle Swarm Optimization Algorithm for Mobile Robot Path Planning with Hermite Smoothing
Artur Babiarz **197**

Wednesday, 21st October 2026

SIM_EMERG_01
Development of a Low-Cost Open-Hardware throwable Mobile Robot for Remote Reconnaissance
Krzysztof Jaskot and Dawid Prokop **202**

SIM_AI_04
Deep Reinforcement Learning vs. PID Control: A Comparison of Autonomous Navigation of a Blimp in 3D Environment
Tomasz Grzejszczak, Michał Lasak and Maja Rudnicka..... **205**

ROOM C – 2A26 LEVEL 2 - 10.30-12.00 ESM 2026 SESSION MANUFACTURING OPTIMIZATION SIMULATION

Chair: Paul Stief, Arts et Métiers, Inst. of Techn., LCFC, Metz, France

SIM_OP_01
Holonic Control Architecture for Reconfigurable Manufacturing Systems
Sophie Hennequin, Adegoke Adesanmi, Daniel Roy and Ashraf Faraj **249**

SIM_OP_03_MANUF
Using Optimisation Tool for the Design Improvement of Production Systems – An Integrative View of Mathematical Modelling and Design Process
Paul Stief, Meisam Pour Massahian Tafti, Xavier Godot, Ali Siadat, Jean-Yves Dantan, Juan-Camilo Gomez Echeverri and Josselin Schumacker..... **254**

SIM_AI_14
Toward Deep Energy Neural Networks as Surrogates for Mass-Spring Models of Textiles
Sylvain Chabanet, Atal-Anil Kumar, Oriane Dermy and Thibaut Raharijaona **258**

12.30 – 13.30
LUNCH BREAK

13.30 - 15.00

ROOM A – 1A10 LEVEL 1- 13.30-15.00 ESM2026 TUTORIAL TUTORIAL

Chair: Philippe Geril, ETI-EUROSIS, Ostend, Belgium

Wednesday, 21st October 2026



ESM_TUT_01_ONL
Building Simulation Models with Flow-Based Programming using FMesh
Ovsep Avakian, SumUp, Sofia, Bulgaria

ROOM B – 1A11 LEVEL 1 - 13.30-15.00 ESM2026 WORKSHOP
WORKSHOP ON SIMULATION TOOLS

Chairs: Maria Hanini and Mahima Ghosh, Imperial College, London, UK

SIM_TOOLS_W_01
Quantum Kernels without the Quantum Computer: Demonstrating a Simulation-Based Stylometry Pipeline for Attributing AI-Generated Text
Kalin Kopanov and Tatiana Atanasova..... **91**

SIM_TOOLS_W_02
A Probabilistic Risk-Ranking Tool for Assessing Food Chain and Environmental Risks of Nitrification Inhibitors in Grazed Pastoral Systems
Vaibhav Bhatia, Patrick Forrestal, Surinder Saggar, Dumsane T. Matse, Marta Alfaro and Enda Cummins..... **96**

ROOM C – 2A26 LEVEL 2 - 13.30-15.00 ESM 2026 SESSION
INVITED SPEAKER

Chair: Paul Stief, Arts et Métiers Inst. of Techn., LCFC, Metz, France



ESM_INV_03
A Inherently Discrete-Time SIS of Epidemic Model Spread in a Heterogeneous Population with a Health Function projecting a Closed Unite Interval into Itself
Marcin Choiński.....**19**

Wednesday, 21st October 2026

15.00 - 15.30
COFFEE BREAK - MEETING AREA IN ENIM MAIN HALL

15.30 - 17.30

ROOM A – 1A10 LEVEL 1- 15.30-17.30 ESM2026 SESSION
ANALYTICAL AND NUMERICAL TECHNIQUES II
Chair: Sophie Hennequin, UNIV. de Lorraine,ENIM, LCFC, Metz, France

ANMT_05
Influence of Selected IFPIES Parameters on Solutions in the Domain
Andrzej Kuźelewski and Eugeniusz Zieniuk **40**

ANMT_06
Efficient 2D Elastoplastic Analysis using PIES with Global TELLES Transformation for handling weakly Singular Domain Integrals
Agnieszka Boltuć and Eugeniusz Zieníuk..... **46**

ANMT_08
A SIS–Type Continuous-Time Model of Tuberculosis Spread in a Heterogeneous Population with a Linear and a Bilinear Transmission Function
Marcin Choínski and Sylwia Stachowiak **61**

SIM_TEL_01_ONL
Advanced Modeling and Algorithmic Techniques for Self-Similar IP Network Traffic Simulation and Performance Evaluation
Izabella V. Lokshina and Cees J. M. Lanting..... **54**

ROOM B – 1A11 LEVEL 1 - 15.30-17.00 ESM2026 SESSION
LARGE LANGUAGE MODELS
Chair: Peter Mitic, UCL, London, United Kingdom

SIM_AI_17_NEUR
Dynamic Super-Resolution Strategy for Efficient Scene Text Legibility Classification
Seweryn Kalisz, Michał Marczyk and Rafał Fagas **145**

SIM_AI_18
Cross-Lingual Agreement between Text and Speech Emotion Recognition: Towards Robust Multimodal Perception in Social Robots
Kamil Skowroński, Adam Galuszka and Eryka Probierz..... **153**

Wednesday, 21st October 2026

SIM_METH_13
Exploring OODA Loops through Categorical Formalisation and Executable Aspect Semantics
Ian Oliver and Pekka Kuure **161**

ROOM C – 2A26 LEVEL 2 - 15.30-18.00 ESM 2026 SESSION
SIMULATION IN LOGISTICS
Chair: Daniel Roy, Univ. de Lorraine, ENIM, LCFC, Metz, France

SIM_METH_01
Modelling of Potential Symbiosis Networks based on a Fuzzy Cognitive Map: A Nigeria Case
Adegoke Adesanmi, Daniel Roy and Sophie Hennequin **283**

SIM_LOGIS_03
GRADES – A New Graph-Based System Dynamics and Discrete Event Simulation for Business Sector Supply Chains: Part 1: Agriculture
Asharab A. Haider, Johannes A. Koller, Alison Moldovan-Mauer and Dirk Beinert **286**

SIM_METH_10
Tackling Transaction Data Scarcity with a Multi-Paradigm Simulation Approach for Supply Chain Networks
Asharab A. Haider, Johannes A. Koller, Alison Moldovan-Mauer and Dirk Beinert **290**

SIM_TOOLS_01
Ontology-based Market Agents: Towards a Dynamic Instantiation of Supply Chain Simulations
Lasse Hammer, Andreas Schäfer, Patrick Westphal, Lorenz Bühmann, Minu Lee, Arlena Wellßow and Eric MSP Veith **300**

SIM_QUEUE_01_ONL
Simulation and Facility Layout Design for Intelligent Management in Fast Food Restaurants: Reducing Service Times and Maximizing of Operational Efficiency through Discrete-Event Simulation
Estebin Chuquillanqui-Mantari and Rodolfo Chávez-Castillo **307**

18.30 - 19.30 SOCIAL PROGRAMME – CITY VISIT



A guided city tour is scheduled from 18h30 to 19h30

Thursday, 22nd October 2026

REGISTRATION

08.30 - 17.00

REGISTRATION ENIM MAIN HALL

09.00 - 10.00

ROOM A – ENIM AUDITORIUM LEVEL 0 – 09.00-10.00 KEYNOTE
KEYNOTE
Chair: Daniel Roy, Univ. de Lorraine, ENIM, LCFC, Metz, France



ESM_GAME_ON_KEY_02
Beyond LLMs: Structured World Models via Difference of Convex functions Algorithm
Prof. LE THI Hoai An, Membre Sénior de l'IUF, Université de Lorraine, Metz, France

10.00 - 10.30
COFFEE BREAK - MEETING AREA IN ENIM MAIN HALL

10.30 - 12.30

ROOM A – 1A10 LEVEL 1- 10.30-12.00 ESM 2026 SESSION
OPTIMIZATION METHODOLOGY
Chair: Jean-Yves Dantan, Arts et Métiers Inst.Tec., LCFC, Metz, France

MONTE_CARLO_01
Robust Set-Based Design by Monte-Carlo Simulation and Decision Tree
Jean-Yves Dantan **81**

SIM_OP_04_ONL
Direct Versus Indirect Methods in Singular optimal Control: A Structural Benchmark
Mariusz Bodzioch **71**

Thursday, 22nd October 2026

SIM_OP_06_ONL
Gradient-Based Switching-Time Optimization for Singular Optimal Control: Locality, Admissibility and PMP Diagnostics
Mariusz Bodzioch **77**

ROOM B – 1A11 LEVEL 1 - 10.30-12.30 ESM2026 SESSION
MACHINE LEARNING
Chair: Tian Zhang, Arts et Métiers Inst. of Techn., LCFC, Metz, France

SIM_AI_01
A Machine Learning Approach for Decision Support in Infertility Risk Assessment
Dawid Zamojski, Adam Pudelko, Emilia Morawiec, Anna Bednarska-Czerwinska and Michal Marczyk **119**

SIM_METH_05_AGENT_ONL
Multi-Agent Simulation of Phishing using a Metamodel Integrating Machine Learning for Detection
Moussa Koïta, Mohamed Y. Maize and Oumar Y. Maïga **125**

SIM_METH_05_AGENT_ONL
Sequential Linearization for Physics-Informed Extreme Learning Machines: A Benchmark-Motivated Fix for Nonlinear PDE Failures
Karol Struniawski **132**

SIM_METH_08_HPCN_ONL
Physics-Informed Extreme Learning Machines for Steady-State Amplified Spontaneous Emission: A Feasibility Study
Karol Struniawski **132**

ROOM C – 2A26 LEVEL 2 - 10.30-12.30 ESM 2026 SESSION
SIMULATION IN SMART MANUFACTURING
Chair: Paul Stief, Arts et Métiers Inst. of Techn., LCFC, Metz, France

SIM_SMART_MANUF_01
Towards Smart Industry: A Modular Framework for Adaptive Monitoring of WAAM Systems
Soukaina Sadiki, Sandra Chevret, Paul Stief and Alexandre Sava **265**

SIM_SMART_MANUF_02
Scalability Assessment of Reconfigurable Manufacturing Systems under New Product Integration
Leila Khalili Doost Maklavani, Paul Stief, Jean-Yves Dantan and Nathalie Klement **269**

Thursday, 22nd October 2026

SIM_SMART_MANUF_06
Vision-Language Models in Smart Industry: Benchmarking OVOD Architectures for Real-World Deployment
Tomasz Strzoda **273**

SIM_SMART_MANUF_04
Industry 5.0 in Production Management Courses: Integration of Operator's Well-Being using Simulation-Based Decision-Making
Jelena Petronijevic, Tian Zhang, Alain Etienne, Jean-Yves Dantan and Ali Siadat **278**

12.30 - 13.30
LUNCH BREAK

13.30 - 15.00

ROOM A – 1A10 LEVEL 1- 13.30-15.00 GAMEON 2026 SESSION WORKSHOP
Chair: Philippe Geril, ETI-EUROSIS, Ostend, Belgium



WRK_01_GAME_ONL
Evaluating the Player Experience: A Hands-On Workshop in Heuristic Evaluation and the RITE Method
Mónica Aresta**……5**

ROOM B – 1A11 LEVEL 1 - 13.30-15.00 ESM2026 SESSION INVITED SPEAKER
Chair: Tian Zhang, Arts et Métiers Inst. of Techn., LCFC, Metz, France



INV_02
Sentiment and Reputation: a New Paradigm
Peter Mitic, UCL, London, United Kingdom

Thursday, 22nd October 2026

ROOM C – 2A26 LEVEL 2 - 13.30-15.00 ESM 2026 SESSION
INVITED SPEAKER
Chair: Jelena Petronijevic, Arts & Métiers Inst.Tec., LCFC, Metz, France



INV_01
Multi-Method Simulation Software AnyLogic. Current Features and Road Map
Vladimir Koltchanov, Anylogic, Avon-Fontainebleau, France

15.00 - 15.30
COFFEE BREAK - MEETING AREA IN ENIM MAIN HALL

15.30 - 18.00

ROOM A – L226 - 15.30-18.00 GAME-ON ’2026 SESSION
PLAYER INTERACTION AND GAME DESIGN
Chair: Philippe Geril, EUROSIS-ETI, Ostend, Belgium

GAME_DES_04_ONL
Player Agency and the Structural Discord of the Hero’s Journey in Interactive Media
Barbaros Bostan and Ahmet Ozan Apaydın **11**

GAME_DES_06
Analyzing Player Engagement in Action Role Playing Games using STEAM Achievements and User Reviews
Z. Volkan Hacıtahiroğulları, Çakır Aker and H. Kutay Tinç **15**

GAME_DES_01
Brutalism of Control
Güven Çatak and Server Z. Masalcı **23**

GAME_DES_03
Gaming over Quic: An Empirical Evaluation of Transport Protocols in Multiplayer Voxel Games
Mike Vandersanden, Dries Coenen, Joris Herbots, Wim Lamotte and Peter Quax **31**

Thursday, 22nd October 2026

GAME_DES_08_VR_ONL
Design and Development of an Immersive Virtual Reality System for Executive Control Training in Children with ADHD
Aihua Cao, Li Zheng, Peilin Li, Tingting Ma and Mei Si **..... 37**

ROOM B – 1A11 LEVEL 1 - 15.30-17.30 ESM2026 SESSION
PARALLEL COMPUTING AND ENGINEERING SIMULATION
Chair: Alexander Sava, Arts et Métiers Inst. of Tec., LCFC, Metz, France

SIM_PRED_01
A Design-Time Archetype Lens for HLA Object Models
Okan Topçu **..... 171**

HPCN_01
Beyond Single Stream Testing: A Large-Scale Statistical Evaluation of Modern Pseudo-Random Number Generators
Théau Wartel, Loïc Yon, David R.C.Hill and Benjamin Antunes**……..176**

SIM_AI_03_ENERG
Learning Strategy for XGBOOST Based Energy Consumption Forecasting of an Injection Molding Machine
Mohammed Charraoui, Rosa Abbou, Alexandre Sava and Julien Launay**…….211**

SIM_METH_04_ROB
A Three Degree of Freedom Mathematical Model Representing the Apparent Mass and Fore-and-Aft Cross Axis Apparent Mass of the Human Body exposed to Vertical Vibration
Naser Nawayseh**……..219**

ROOM C – 2A26 LEVEL 2 - 15.30-18.00 ESM 2026 SESSION
EMERGENCY MANAGEMENT SIMULATION
Chair: Eric Veith, OFFIS, Oldenburg, Germany

SIM_AI_15_EMERG
Potential of Artificial Intelligence in Scenario Creation in the Context of Simulations and Training in Disaster Management
Daniel Chovanec, Jozef Ristvej, Jozef Kubás and Vladimír Andrassy **..... 313**

SIM_METH_11_EMERG_0NL
A Multi-Sector Network Model for Assessing Critical Infrastructure Resilience
Piotr Stapor and Ryszard Antkiewicz **..... 318**

Conference Dinner

Thursday, 22nd October 2026

SIM_EMERG_03_ONL
Optimisation and Stochastic Simulation Methods to Reduce Uncertainty in Assessing the Impact of EDT on Military Operations
Andrzej Najgebauer, Ryszard Antkiewicz, Sławomir Wojciechowski and Dawid Maślanik **326**

SIM_AGENT_03
When Wildfire Breaks the Grid: A Validated Extreme-Event Testbed for Infrastructure Resilience
Eric M.S.P. Veith and Vivian Sultan.....**332**

SIM-ENERG_03
Mapping the Next Line of Wildfire Defense: GIS-Based REFCL Prioritization in Southern California
Vivian Sultan, Eric MSP Veith, Aristotle Ochoa and Carlos Rodriguez..... **340**

19.30 - 22.30

CONFERENCE DINNER





From 20.00 p.m to 23.00 p.m.
The conference dinner will be held on **Thursday the 22nd of October** in the evening at
La Reserve – Restaurant a Metz, sous les voûtes de 1559
5 Avenue Ney
57000 Metz, France
Tel:**+33 3 87 17 17 17**
Website:
https://www.lareserve-metz.com/

Friday, 23rd October 2026

REGISTRATION

09.00 – 09.30

REGISTRATION ENIM MAIN HALL

09.00 - 10.00

ROOM A – ENIM AUDITORIUM LEVEL 0 – 09.00-10.00 KEYNOTE
KEYNOTE
Chairs: Daniel Roy, Univ. de Lorraine, ENIM, LCFC, Metz, France



KEY_03
Multiscale Numerical Simulation for Steelmaking Process Decarbonization and Optimization
Rémi Bonidal, ArcelorMittal, Maizieres les metz, France

10.00 - 10.30
COFFEE BREAK - MEETING AREA IN ENIM MAIN HALL

10.30 - 12.00

ROOM A – 1A10 LEVEL 1- 10.30-12.00 ESM' 2026 SESSION
AI IN SIMULATION
Chair: Joël Colloc, Université of Le Havre, Le Havre, France

SIM_AI_07_ONL
How a Small Fine-Tuned Model can rival a Large General-Purpose Model in Culinary Tasks
Jan K. Krajewski, Aleksandra Hinc, Leszek J. Chmielewski and Arkadiusz Orłowski**……..101**

SIM_AI_08
Set Transformer for Bundle Recommendation: Modeling Bundles as Sets
Suman Kumar, Aakash Swami and Siddhartha Sarkar **..... 106**

Friday, 23rd October 2026

SIM_AI-10_ONL
Conservative Simulation-Guided Design Exploration using Uncertainty-Aware Graph Neural Network Surrogates
Pancho Dachkinov **111**

ROOM B – 1A11 LEVEL 1 - 10.30-12.00 ESM2026 SESSION
MAN-IN-THE-LOOP SIMULATION
Chair: Tian Zhang, Arts et Métiers Inst. of Techn., LCFC, Metz, France

SIM_CYBER_01
Towards Social Automation: Mathematical Modelling, Simulation and Control of Human Centric Systems
Eryka Probierz **229**

SIM_AGENT_04
Mixed-Model Simulation to Enable Human-Aware Decision-Making in Reconfigurable Manufacturing Systems
Tian Zhang, Jelena Petronijevic, Maroua Ratby, Mustapha Douache, Rémy Balland and Némo Grandidier **234**

SIM_AGENT_06
Agent-Based Simulation of Human Robot Interaction in Assisted Living Environments: Trust, Emotion and Adaptive Robot Behaviour
Eryka Probierz, Anita Gałuszka, Adam Gałuszka and Kamil Skowroński **242**

ROOM C – 2A26 LEVEL 2 - 10.30-12.00 ESM 2026 SESSION
BACK-UP SESSION
Chair: To be announced

This session is for participants who were unable to present at the allotted time. Updates will be posted during the conference

POSTER PRESENTATION DURING THE CONFERENCE

SIM_LOGIS_01
Pathplanning in Dynamic Environments
Matthias Becker and Joel Lienhard **187**

Friday, 23rd October 2026

12.00 - 12.15

ROOM A – L226 - 12.00-12.15 ESM'2026 – GAME-ON'2026 SESSION CLOSING SESSION
Chair: Daniel Roy, Université de Lorraine, LCFC, Metz, France

ESM®'2026 – GAME-ON®'2026 Closing Session and Best Paper Award

FOR POST CONFERENCE VISIT PARTICIPANTS ONLY

12.15 - 13.15

LUNCH BREAK – AND MEETING AREA

13.15-15.00

POST CONFERENCE VISIT

ESM®'2027- GAME-ON®'2027

ESM®'2027

GAME-ON®'2027

Proposals for workshops, special tracks, exhibitions etc. can be sent in by **December 1, 2026** to Philippe.Geril@eurosis.org

Conference Site Map

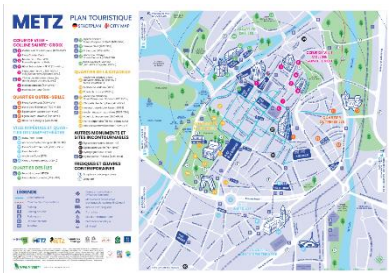
How to reach Metz by TGV



Conference Site Map

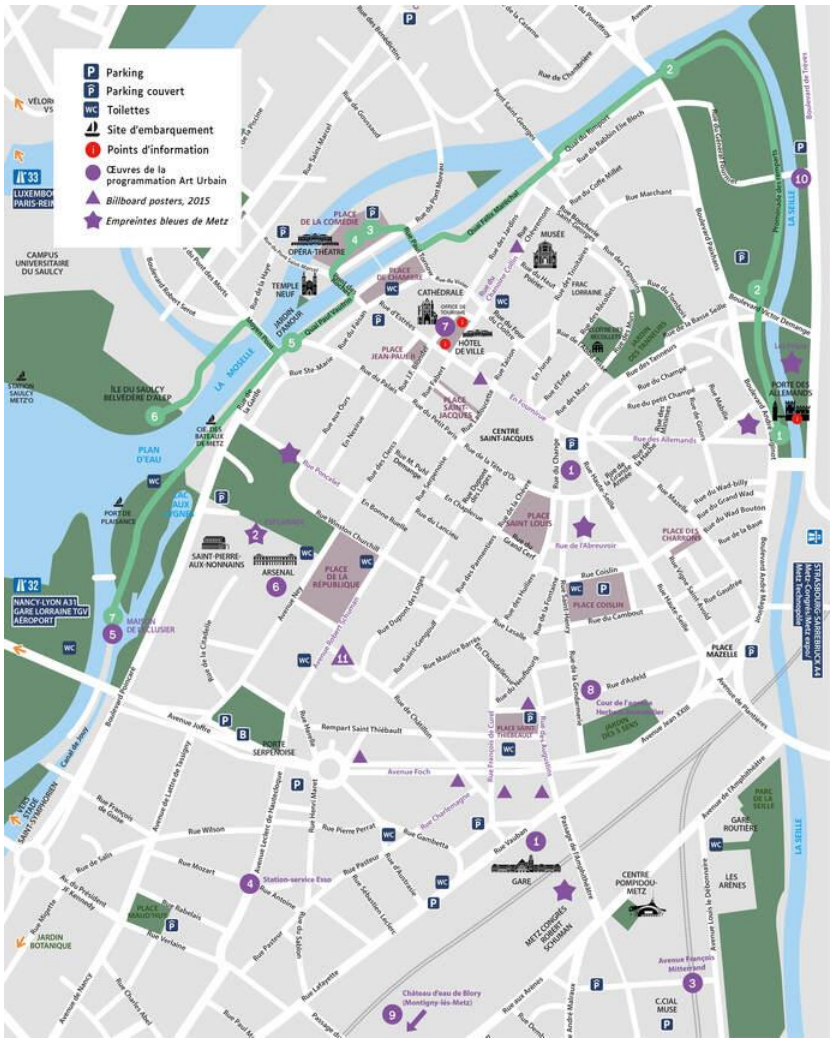
Conference Site Map

Metz City Centre Maps



A full scale copy of the map above can be downloaded from

https://www.tourisme-metz.com/en/planning-your-trip/brochures-to-download



La Reserve: Conference Dinner location is at nr 6 above

Conference Site Map

Conference Venue Map



All ESM®'2026 -GAME-ON®'2026 PRESENTATIONS WILL BE HELD AT THE ENIM BUILDING

1 Route d'Ars Laquenexy

F-57070 Metz

Conference Site Map

Conference Notes

NOTES

ESM®'2026- GAME-ON®'2026
At-Conference Registration Form

Please legibly print or type and fill out completely. (Check appropriate boxes where necessary)

FIRST NAME	LAST NAME	M.I.
COMPANY OR AFFILIATION		
Mailing address (tick one): [ ] HOME [ ] BUSINESS		
STREET		
CITY		
ZIPCODE	COUNTRY	
TELEPHONE	FAX	
E-MAIL		
DATE	SIGNATURE	

1. [ ] EUROSIS member € 600 **Member Number**:_____	€_____
2. [ ] Members of Sponsor or Affiliate Society € 600	€_____
3. [ ] Non-Member Participant € 655	€_____
4. [ ] Student Participant € 480	€_____
5. [ ] Students, **who are not authors** but who wish to attend the conference, or **ONE DAY PARTICIPANTS** pay: € 380	€_____
(Above registration fees include, one copy of the PROCEEDINGS, all midday meals, cocktail, refreshments, coffees and social program,) One Day Participants and Non-Author Students cannot participate in the conference dinner.	
6. [ ] Tutorial registration ONLY - €30 (students) Or €80 (non students)/ per tutorial	€_____
6. [ ] Conference Dinner Ticket for Companion € 80 **[] Lunch Ticket** for Companion € 25/day	€_____
7. [ ] Extra Conference Proceedings € 60 **Cash and Carry (plus 6% VAT)**	€_____
VAT Number if applicable: _____	
TOTAL AMOUNT DUE	€_____
TOTAL AMOUNT REMITTED	€_____

[ ] 2) Pay by **CREDIT CARD** and fill in the information below:
Charge my (tick one): [ ]Visa [ ] Euro/Mastercard [ ] American Express
CARD NO: __ __ __ __ : __ __ __ __ : __ __ __ __ : __ __ __ __ EXP.DATE: __ __ / __ __

Authorizing Signature:

Print Signature in CAPITALS



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 EUROSIS is 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

Philippe Geril
EUROSIS-ETI
European Simulation Office
Romestraat 19 B.04.02
B- 8400 Ostend, Belgium
Tel: +32.473.231.297
Email: Philippe.Geril@eurosis.org

Please send me info on EUROSIS:
Name: .....
Address: .....
.....
.....
Telephone .....
Fax: .....
Email: .....