



## McLeod Institute of Simulation Sciences

*Center Of Marseilles,  
MISS-LSIS*

*France*





# MISS-LSIS

## Center of Marseilles

LSIS was established in 2002 combining teams from DIAM (UPRES-EA n°2210), LIM (FRE n°2246) and ENSAM d'Aix-en-Provence.

LSIS includes today over 150 researchers and PhD working in different sectors of M&S, IT and Automation

LSIS is directed by Prof. Norbert Giambiasi and it is composed by 5 research group

- **COSI** : **CO**mmande et **SI**mulation
- **IMS** : **IN**g nierie, **M** canique, **S**yst mes,
- **INCA** : **IN**f rence, **C**ontraintes, et **A**pplications,
- **INCOD** : **IN**formation et **CO**nnaissance **D**istribu es,
- **LXAO** : **MO**d lisation, **C**onception et **R**econstruction **A**ssist es par **O**rdinateur.





# MISS-LSIS, Projects



Image processing	Simulfoot: 3D representation and analysis of sport scenes
Workflow management and simulation	Simport: specification and realization of a system of workflow management and simulation, suitable for intermodal transport of freight and relative to port activities.
Simulation for education programs	IEPAL: integration of regular existing courses in current and emerging advances in research and technology as applied to Logistics and Supply Chain Management with specific intensive seminars that expose the student to real world challenges
Modeling and Simulation of air terminals	Engineering departments of the air bases. The goal of the project is to constitute a tool for simulation of flows of passenger, luggage, guides and freight in air terminals in order to evaluate their capacity
Simulation and fault diagnosis	Simulation and fault diagnostic in the manufacturing of electronic circuits. This project is led in collaboration with STMicroelectronics and funded by the Region Provence-Alpes-Côte d'Azur

- More than 20 Ph.D Students in simulation area;
- New projects on System diagnosis, Human behavioral
- modeling and simulation, knowledge based simulation
- New collaborations with Universities of Eastern Europe, Northern Africa and Asia
- Creation of a New French research Group in Simulation with more than 10 french laboratories (VERSIM CNRS),



Agent Based Simulation of human influenced ecosystems	Propose an agent-based simulation framework enabling decisional, operational and physical behaviours in the case of the water management of the Camargue ecosystem (ex: negotiation process to define salinity level, realized through pumping facilities modifying in turn the ecosystem state). Project in collaboration with the DESMID-CNRS Laboratory, and the Camargue Ecological Protection Agency and financed by the PACA Regional Council (SIMFONHYC Project)
Agent Based Supply Chain Simulation	Proposal of a methodological, modelling and implementation framework for agent based simulation of socio-technical systems. Concepts are first tested and validated on Supply Chain organisations. This Research Work developed in collaboration with the CENTOR laboratory (Laval University, Quebec, CANADA).
DEVS simulator for monitoring and fault diagnosis	ELP: Event, Language and Probabilities for Discrete Event Perception) is relevant to alarm correlation, supervision, diagnostic techniques and knowledge acquisition for monitoring dynamic process like industrial production tools. This project was conducted in collaboration with a steel company "ARCELOR".



# MISS-Cooperation PIOVRA Project



- The development of operative Prototypes to be Run in a Federation for completing the Dynamic VV&A and Execution Phase of new generation intelligent CGF.
- To develop a new generation of Computer Generated Forces (CGF) PIOVRA (*Polyfunctional Intelligent Operational Virtual Reality Agents*), to be used both for exercise scope, both for defence planning and support operations in an HLA Federation.
- New CGF should be in some extent “Intelligent”, meaning that they should demonstrate co-operative and competitive behaviours (co-ordinating units both during operative actions and situation evaluation) based on the current boundary conditions and situation.

PIOVRA initiative involves MISS Genoa  
and MISS Marseille

