

# McLeod Institute of Simulation Science



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[www.simulationscience.org](http://www.simulationscience.org)





# McLeod Institute of Simulation Science

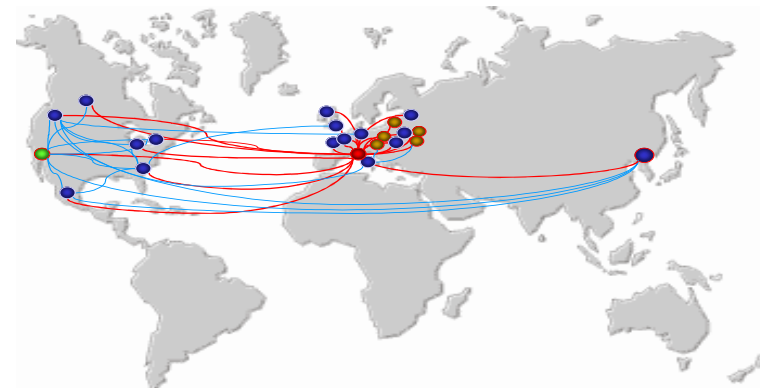
[www.simulationscience.org](http://www.simulationscience.org)

The Institute of Simulation Science is an International Network named after John McLeod, the founder of the Society for Computer Simulation International and the first editor of its journal, "Simulation"

The MISS consists of co-operating Centers active in professionalism, research, education and knowledge dissemination in the modeling and simulation domain.

Modeling and simulation (M&S) is an enabling technology for:

- Decision making in system design, development, optimization, control, and acquisition, as well as for sensitivity analysis, planning, and prototyping
- Understanding
- Education and training to enhance decision making and/or motor skills
- Entertainment
- Supporting real system operations
- Enriching real system operations



The MISS aims to provide an organizational structure that will serve to integrate and enrich, within its Centers, the activities of modeling and simulation expertise throughout the world.

*Prof. Agostino Bruzzone, World Director of MISS*



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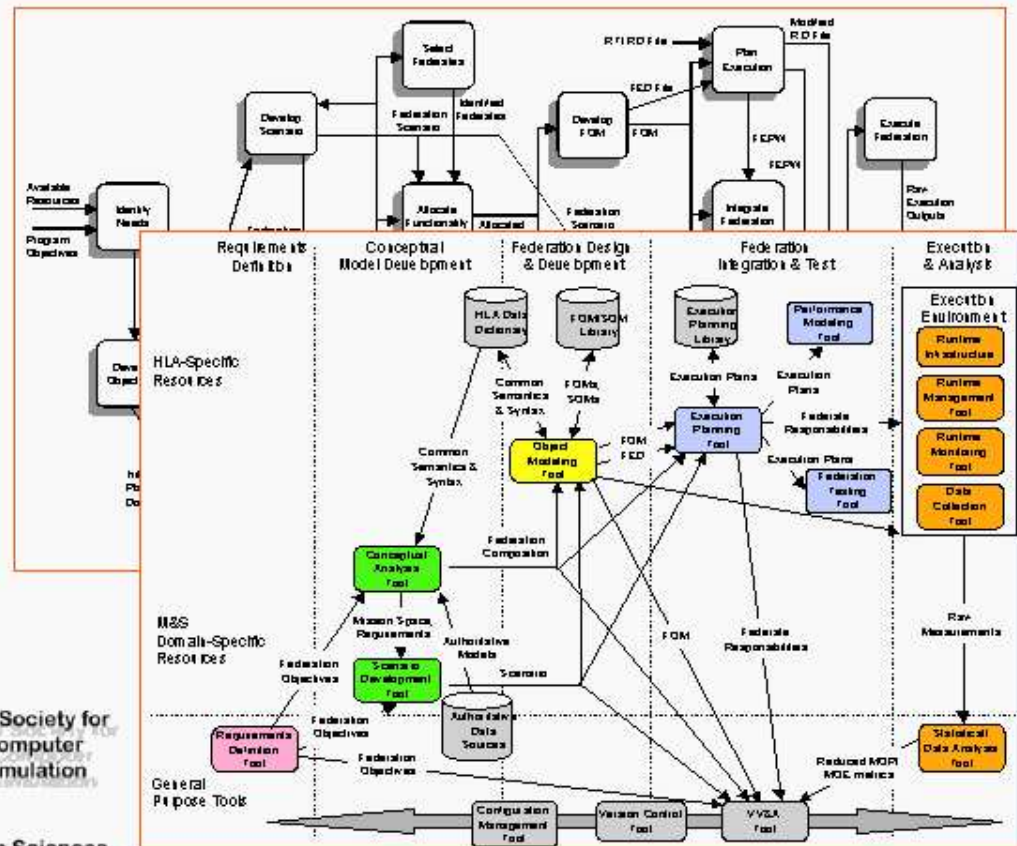
## Centers & Satellites

MISS is active in many sites:

- *Ghent Univ, Belgium*
- *Calgary Univ., Canada*
- *Ottawa Univ.&Carleton Univ., Canada*
- *Beijing Univ. of Aerospace and Astronautics, China*
- *LSIS Marseille, France*
- *INSA Rouen, France*
- *TU Hamburg, Germany*
- *TU Wien, Austria*
- *Budapest Univ. Of Economics, Hungary*
- *Szechenyi Istvan University Gyor, Hungary*
- *DIP Genoa Univ., Italy*
- *CNR Napoli, Italy*
- *Riga TU, Latvia*
- *Universidad Panamericana, Mexico*
- *Polish Academy of Science, Poland*
- *Bialystok Satellite Center , Poland*
- *Radom TU, Poland*
- *TU Gdansk, Poland*
- *University of Edinburgh, UK*
- *DeMontfort University, UK*
- *California State University, USA*
- *Old Dominion University, USA*

# Project: HLA University Outreach Program

The McLeod Institute of Simulation Sciences (MISS) at California State University-Chico, University of Genoa and Hamburg University, is developing courses about the High-Level Architecture (HLA) and demonstration examples in cooperation with the Defense Modeling and Simulation Office (DMSO).





# MISS - Genoa

## DIP University of Genoa

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The research group of MISS-DIP of *Genoa University* is active from '60 in Simulation applied to Industrial Engineering.

The activities involve modeling, simulation, VV&A and analysis of Industrial Applications and Services (design, re-engineering, management, training etc.) as:

Chemical Facilities

Harbor Terminals

Manufacturing

Public Transportation

Power Plants

Public Services

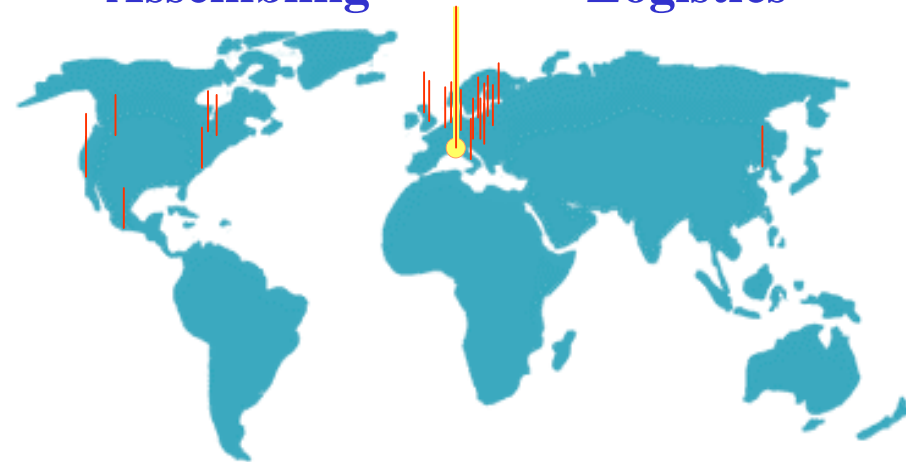
Assembling

PM

Environment

Logistics

The Department staff is in touch world-wide with the simulation community and is present actively to conferences, exhibitions and working meetings with the major Associations, Agencies and Companies.



**18 MISS Centers World-Wide  
& 5 Satellite Centers**



MISS - DIP University of Genoa



Liophant Simulation Club



# MISS - DIP University of Genoa

The MISS-DIP of *Genoa University* carries out many industrial simulation projects in cooperation with the large corporations and small and medium sized Enterprises; some example of recent industrial simulation project are following:

	<b>ADtranz</b>	<b>On-Line Simulation for Distributed Production Management of Locomotives</b>				<b>ADtranz</b>
 	ABB Daimler-Benz					
	<b>Ansaldo</b>	<b>Distributed Synthetic Environment for Power Plant Design</b>				
						
	<b>Cetena Fincantieri</b>	<b>Simulation &amp; Virtual Project Management of Car Deck Construction for Fast Ferry</b>				
	<b>COOP</b>	<b>Simulation for Re-Engineering Supply Chain in a National Chain of Grocery Stores</b>				

Members of MISS are appointed in several positions in simulation community such as:

- Italian Point of Contact of ISAG (International Simulation Advisory Group)
- Associate Vice President of SCS and Chairman of Industrial Relations for Europe
- Member of NATO Industrial Advisory Group for Simulation & VV&A for Design

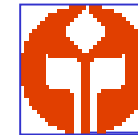
# Project: SIREN

## Professional Courses

The professional courses have been organized since 2000 for WorldWide professionals, in Italian, French and English, focusing on the following subjects:

- PM: Project Management in M&S Projects
- M&S: Modeling & Simulation
- HLA: High Level Architecture
- VV&A: Verification, Validation and Accreditation

The courses include lecturing and exercises; teachers are world-wide experts from major excellence centers (i.e. Boston College, Genoa University, NASA, DMSO, National Center for Simulation, SAIC, Aegis Technologies, California State University, Riga TU, UCF, McLeod Institute of Simulation Science).



# Simulation Technology Transfer

Since 2000 MISS-DIP organises Simulation Professional Courses:

- Project Management
- Modelling & Simulation
- High Level Architecture
- Verification, Validation & Accreditation

The Lecturers included experts from major excellence centres (i.e. Boston College, University of Genoa, NASA, DMSO, National Center for Simulation, SAIC, Aegis , California State University., Riga TU, UCF , McLeod Institute of Simulation Science).

The course attendance (PM ~60, M&S 15, HLA 20, VV&A 10) included Companies (i.e. Piaggio Aero Industries, Alenia Aeronautica, Alenia Marconi, SIA, Fincantieri, COOP) and Academia (Pol.Torino, TU Delft, Univ.Marseille, Pol.Milano, Univ.Firenze, Univ.Bari, Univ.L'Aquila, etc.).



*Course Location*



*Lecturing*



*Team Working & Exercises*





# M&SNet Initiative

The logo for M&SNet, consisting of the text "M&SNet" in a serif font, enclosed in a blue rectangular border.

[www.site.uottawa.ca/~oren/SCS\\_MSNet/MSNet-index.htm](http://www.site.uottawa.ca/~oren/SCS_MSNet/MSNet-index.htm)

The M&SNet is a consortium of co-operating independent organizations active in professionalism, research, education, and knowledge dissemination in the modeling and simulation (M&S) domain established in 2003. The M&SNet aims to provide an organizational structure that will serve to integrate and enrich, within its organizations, modeling and simulation activities throughout the world. The M&SNet provides a framework within which organizations interested in M&S can interact, share expertise, and work on problems of common interest.

The mission of the M&SNet is to foster:

- Professionalism in modeling and simulation,
  - Advancing the art and science of M&S,
  - Applying M&S in all domains where it is applicable, and
  - Disseminating M&S-related knowledge.
- 
- MISS (McLeod Institute of Simulation Science)
  - ACIMS (Arizona Center for Integrative Modeling and Simulation)
  - MISS-DIP Genoa
  - MISS Ottawa Center
  - AMSL (The Auburn Modeling and Simulation Laboratory)
  - LSIS Center
  - KAIST (Korea Advanced Institute of Science and Technology)
  - IST - Institute for Simulation & Training - UCF
  - SENDLAB - Secure Network Systems Design Lab
  - BioSystems Group (UCSF - University of California San Francisco)

# Conclusions

San José

SCSC 2004



The MISS DIP is acting, with major partners, as a reference point between users and providers in simulation area.

The integration of experts, technicians is providing very good results on real case studies and complex projects.

A new active area of development is related to distributed simulation and web-based modeling for extending the impact and exploitation of these proposed systems.

Every year MISS promotes Conferences and International Workshops focusing on application of Modelling & Simulation; for instance, this year: Summer Simulation in California HMS2004 in Rio de Janeiro and MAS/I3M on the Italian Riviera.

There is a constant interest in fostering joint cooperation and exchanges with international Excellence Centers working on simulation.





## References



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