

# Annual Report of the McLeod Institute of Simulation Sciences

## Genoa Center, Italy

Center Postal Address:	MISS Genoa Center via Molinero 1, 17100 Savona, Italy
Center Director:	Prof. Agostino G. Bruzzone
Center Phone:	Tel +39 019 97 398
Center Fax:	Fax +39 019 97 600
Center E-mail:	Email agostino@itim.unige.it
Center Web Address:	URL <a href="http://st.itim.unige.it/mcleod">http://st.itim.unige.it/mcleod</a>
List of Research Activities & Projects - Subject - Type [Topic/Project] - Description - Year	<b>Production &amp; Assembling</b> <a href="#">APIS: Power Plant Service (Ansaldo) 2006-2007-2008</a> <b>Logistics Networks &amp; Supply Chain Management</b> <a href="#">CYBERSAR Simulator for Portainer, (CFLI, University of Cagliari) 2007-2008</a> <a href="#">MASC New Generation: Fine Tuning of DSS including Simulation &amp; Forecasts (COOP Liguria) 2005-2008</a> <a href="#">RIO: New Operation Management Supervision for Supermarkets (COOP Liguria) 2008</a> <a href="#">LEXIS: Layout Optimization and Process Analysis (Piaggio AI) 2008</a> <a href="#">RESET: Training Simulator for River Boat (CFLI, Regione Piemonte) 2005-2008</a> <a href="#">INNOVARE: Training Simulator for Truck and Contstacker (CFLI, Regione Piemonte) 2005-2008</a> <b>Business &amp; Services</b> <a href="#">SASSO-PRISMA: (CCNO) Ufficio Assistenza Ordinaria POA/PRA 2008</a> <a href="#">SASSO-MARIO: (CCNO) Ufficio Assistenza Straordinaria POA/PRA 2008</a> <b>Service for the Society</b> <a href="#">Green Logistics: Environmental Impact of Logistics (Assologistica) 2008</a> <b>Military Applications</b> <a href="#">PIOVRA: Examples on Intelligent Agent for CGF (Italian MoD, LSIS, DGA France) 2005-2008</a>
List of Educational - Title - Type [University Course/Professional Course] - Year	"Modeling & Simulation" and "Project Management & Concurrent Engineering in R&D Projects", "M&S for Biomedical Systems" <b>PhD Courses, University of Genoa, Italy, 2007</b> "SIREN: PM in M&S, M&S, VV&A, DIS, VV&A", <b>Professional Course, Bergeggi</b> "Cost Models in Transportation management", <b>Professional Course, Genoa, Italy (Ministry of Transportation) 2007</b>

	<p>“SIREN: Formazione, Ricerca, Sviluppo, Impiego Operativo Opportunita` per il 2008”, <b>Workshop</b>, Bergeggi, Italy, 2008</p> <p>“Piovra Exploitation”, <b>Workshop</b>, Rome, Italy, 2007</p> <p>“Piovra Exploitation”, <b>Workshop</b>, Paris, France, 2007-2008</p> <p>“Piovra Exploitation”, <b>EDA Workshop</b>, Bruxelles, Belgium, 2008</p>
Center publications	<ul style="list-style-type: none"> <li>• Bruzzone A.G., Massei M., Poggi S. (2007) "Simulation for Frozen Food Supply Chain", Proceedings of SpringSim, Norfolk VA, March</li> <li>• Bruzzone A.G., Poggi S., Modula D., Pierfederici L. (2007) "MARLIN - Models for Advanced Re-organization in Logistics of Ichthyic Nourishment", Proceedings of ICAMES2007, Istanbul, May 12-19</li> <li>• Bruzzone A.G., Massei M., Modula D., Pierfederici L. (2007) "Layer Modelling for National Homeland Security Crisis", Proceedings of EUROSIV2007, Santa Margherita, Italy, June</li> <li>• Rozenblit J., Bruzzone A.G., Momem F., Saetta S. (2007) "A Modelling and Simulation of Coarse of Action (COA) Consequences in Stability and Support Operations", Proceedings of EUROSIV2007, Santa Margherita, Italy, June</li> <li>• Bruzzone A.G., (2007) "Challenges and Opportunities for Human Behaviour Modelling in Applied Simulation", Keynote Speech at Applied Simulation and Modelling 2007, Palma de Mallorca</li> <li>• Bruzzone A.G., Brandolini M., Massei M. (2007) "Demonstration For Human Behavior Modeling Within Civil Disorder Scenarios", Proceedings of Summer Computer Simulation Conference 2007, San Diego, July</li> <li>• Bruzzone A., Caussanel J, Giambiasi N., Frydman C., (2007) "From Abstract Representation To Formal Modelling Of Tactical Military Operations", Proceedings of Summer Computer Simulation Conference 2007, San Diego, July</li> <li>• Bruzzone A.G., Bocca E., Briano E., Poggis S. (2007) "Supply Chain Management and Vulnerability", Proceedings of Summer Computer Simulation Conference 2007, San Diego, July</li> <li>• Bruzzone A.G., Briano C., Briano E. (2007) "Simulation as Decision Support System for Managing Power Plants Pool Maintenance", Proceedings of HMS2007, Bergeggi, October</li> <li>• Bruzzone A.G., Massei M., Mazzaresse M., Pierfederici L. (2007) "Stakeholders Satisfaction in Retail Business Based on Innovative Model Solution", Proceedings of I3M2007, Bergeggi, October</li> <li>• Bruzzone A.G., Mazzaresse M., Tremori A. (2007) Goods Contamination and External Attacks: Modeling Value Chain Dynamics in Retail Business", Proceedings of I3M2007, Bergeggi, October</li> <li>• Bruzzone A.G., Bocca E., Poggi S. (2007) "Proposal for an Innovative Approach for Modelling Goods Flows in Retail Stores", Proceedings of MAS2007, Bergeggi, October</li> <li>• Bruzzone A.G., Bocca E., Massei M., Pierfederici L., Poggi S. (2007) "Advanced Models for Performance Control in Supermarket Logistics Management", Proceedings of MAS2007, Bergeggi, October</li> <li>• Bruzzone, A. G. Mosca, R. Viazzo, S. Briano, C. Massei, M. Brandolini, M. Rocca, A. (2003) "Logistic Cooperative Functional Training System based on HLA Distributed Simulation" SIMULATION SERIES 2003 VOL 35; PART 3, page(s) 776-781 Society for Computer Simulation, ISSN-0735-9276</li> <li>• Bruzzone, A. Revetria, R. (2003) "VV&amp;A for Innovative Concept Design in New Vessels Simulation and Virtual Prototypes" SIMULATION SERIES 2003 VOL 35; PART 3, page(s) 748-754 Society for Computer Simulation, ISSN-0735-9276</li> <li>• Bruzzone, A. G. Revetria, R. (2003) "Advances in Supply Chain Management: An Agent Based Approach for Supporting Distributed Optimization", SIMULATION SERIES 2003 VOL 35; PART 3, page(s) 497-502 Society for Computer Simulation, ISSN-0735-9276</li> <li>• Bruzzone, A. Orsoni, A. Simeoni, S. Brandolini, M. (2003) "Simulation for the Reverse Management of Business Processes" SIMULATION SERIES 2003 VOL 35; PART 3, page(s) 61-65 Society for Computer Simulation, ISSN-0735-9276</li> <li>• Bruzzone, A. G. Revetria, R. (2002) "Reliability Analysis by Using Simulation for Complex Automated Plants", SIMULATION SERIES 2002 VOL 34; PART 4, page(s) 115-119 Society for Computer Simulation, ISSN-0735-9276</li> </ul>

- Bruzzone A.G. (2007) "R&D of Poly-functional Intelligent Operational Agents PIOVRA", Invited Speech at PIOVRA Workshop, Rome February
- Bruzzone A.G., (2007) "Generated Forces in Interoperable Simulations devoted to Training, Planning and Operation Support", Keynote Speaker at EuroSIW2007, Santa Margherita Ligure, Italy, June
- Garassino G., Bruzzone A.G. (2007) "Interoperability in Supply Chain Management for Aerospace Industry", Keynote Speech, Eurosiw2007, Santa Margherita, June
- Bruzzone A.G., (2007) "Project Management Issue in Simulation Projects", Tutorial in EuroSIW2007, Santa Margherita Ligure, Italy, June
- Bruzzone A.G. (2007) "Simulation Interoperability for Net-Centric Supply Chain Management", Invited Speech at Leading Edge in Supply Chain, Assolistica C&F, Confindustria Rome, July
- Bruzzone A.G. (2007) "PIOVRA PROJECT & DEMO: Polyfunctional Intelligent Operational Virtual Reality Agents", Invited Speech at JTLS User Conference, Monterey CA, October
- Bruzzone A.G. (2007) "PIOVRA Methodologies and Techniques", Keynote Speech at French PIOVRA Workshop, Paris, November
- Bruzzone A.G., Rocca A. (2007) "PIOVRA Architecture", Keynote Speech at French PIOVRA Workshop, Paris, November
- Bruzzone A.G., Modula D. (2007) "PIOVRA Scenario & Demonstration", Keynote Speech at French PIOVRA Workshop, Paris, November
- Bruzzone A.G., Frydman C. (2007) "VV&A in PIOVRA", Keynote Speech at French PIOVRA Workshop, Paris, November
- Bruzzone A.G., Frydman (2007) "Artificial Intelligence in PIOVRA - Swarm intelligence, Fuzzy logic, Data fusion, KBS", Keynote Speech at Italian PIOVRA Workshop, Rome, Italy, December
- Bruzzone A.G. (2007) "PIOVRA Technical Architecture", Keynote Speech at Italian PIOVRA Workshop, Rome, Italy, December
- Bruzzone A.G. (2007) "Piovra Scenario - Terrain, Compartment Objects, Action Objects", Keynote Speech at Italian PIOVRA Workshop, Rome, Italy, December
- Bruzzone A.G., Modula D. (2007) "Piovra Demonstration & Execution", Keynote Speech at Italian PIOVRA Workshop, Rome, Italy, December
- Bruzzone A.G., Massei M. Poggi S. (2007) "POSSO Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Bocca E., Poggi S. (2007) "UAO/UAS Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Bocca E., Brandolini M. (2007) "MOLOC Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Briano C., Bocca E., Simonluca L (2007) "AWARE Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Briano C. (2007) "Development Support for Front End Design in Bulk Material Transhipment System Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Brandolini M., Modula D., Pierfederici L. (2007) "Marlin Final Report", DIPTeM Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "PIOVRA Components", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "PIOVRA Company Components", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "Report: Case Studies, Preliminary Test, Examples", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "PIOVRA 1st Presentation Workshop – Italy", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "VV&A Report FEDEP Step 5", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "Review: Scenario Definition", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "Review: Metrics Report", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "Metrics Report Company Extension", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "Report: Integration Problems & PIOVRA Component Updates", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "Report: Integration Test Results", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Mosca R. (2007) "Integration Test Successful Completion", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "Report: Integration Company Level Test Results", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M., Frydman C. (2007) "Integration Company Level

- Test Successful Completion ", PIOVRA EDA Technical Report, Genoa, Italy
- Bruzzone A.G., Massei M.,Frydman C.(2007) "Report: Parameters Fine Tuning", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Fine Tuning of PIOVRA Parameters", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Report: Parameters Fine Tuning Company", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Fine Tuning of PIOVRA Company Parameters", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Statistical Dynamic Testing", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Mean Square Pure Error", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Final Report WP 5", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Results of Experiments: Scenario - Phase I", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Execution of Scenario - Phase I", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Results of Experiments: Scenario - Phase II", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Execution of Scenario - Phase II", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Results of Experiments: Company Scenario ", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Execution of Company Scenario", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Central Project Progress Report", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Central Updated Project Management Plan", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "National Project Progress Report – Italy", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Updated National Project Management Plan - Italy", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "National Project Progress Report – France", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Updated National Project Management Plan - France", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "PIOVRA 2nd Exploitation Workshop - France", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "VV&A Report FEDEP Step 6", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Report: PIOVRA Result Overview in Scenario", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Report: PIOVRA Results and Performance Metrics", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "Results and Performance Metrics Company Extension", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Sensitivity Analysis", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "PIOVRA Metamodelling", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M.,Frydman C.(2007) "PIOVRA DOE for Company Scenario", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Report about Results, Goals and Gaps", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Final Report WP 1", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "Final Report WP 6", PIOVRA EDA Technical Report, Genoa, Italy
  - Bruzzone A.G., Massei M., Mosca R. (2007) "RTP 111.043 Final Report compiled in accordance with Articles 5.2.3, 5.2.4 and 5.2.5 including Executive Summary – the Final Report to include results of all work, tests etc carried out under the Project", PIOVRA EDA Technical Report, Genoa, Italy
  - Longo, Ritorto A., Manica A., Mazzaresse M., (2007) "PLOTTER: Plant Layout design and Optimization Through Times and Ergonomics Re-organization", Proceedings of ICAMES2007, Istanbul, May 12-19
  - Longo F., Brandolini M. (2007) "Critical Issues and Potential of SCORM & HLA integration for Supporting Training Simulation Interoperability", Proceedings of EUROSIW2007, Santa Margherita, Italy, June
  - Caussanel J., Frydman C., Giambiasi N., Mosca R., Rocca A., Brandolini M. (2007) "State of Art and Future Trends on CGF", Proceedings of

	<p>EUROSIW2007, Santa Margherita, Italy, June</p> <ul style="list-style-type: none"> <li>• Fadda P., Fancello G., Massei M., Briano E., Rocca A., Tremori A. (2007) "Interoperable Simulation Integrating Biomedical Devices for Training Effectiveness", Proceedings of EUROSIW2007, Santa Margherita, Italy, June</li> <li>• Bocca E., Poggi S., Brandolini M. (2007) "Cooperative Training in Intermodal Terminal Logistics", Proceedings of EUROSIW2007, Santa Margherita, Italy, June</li> <li>• Massei M., Brandolini M., Briano C.(2007) "HUMAN Behavior Model for an HLA Federation", Proceedings of EUROSIW2007, Santa Margherita, Italy, June</li> <li>• Bocca E., Briano C., Modula D., Pierfederici L., Frydman C. (2007) "Intelligent Agents For Moving And Operating Computer Generated Forces", Proceedings of Summer Computer Simulation Conference 2007, San Diego, July</li> <li>• Rocca A., Modula D. (2007) "Interoperable Simulation for Training in Intermodal Logistics in Land Terminal", Proceedings of I3M2007, Bergeggi, October</li> <li>• Tremori A., Modula D., Pierfederici L. (2007) "Simulation as Decision Support System for Quick Response Supply Chain", Proceedings of MAS2007, Bergeggi, October</li> <li>• Tremori A., Rocca A., Modula D. (2007) "Distributed Simulation For Training in River Logistics", Proceedings of I3M2007, Bergeggi, October</li> <li>• Brandolini M., Bruzzone A.G. (2007) "VV&amp;A and Design of Experiment - VV&amp;A, VV&amp;T, MSpE, DOE, Metamodelling", Keynote Speech at Italian PIOVRA Workshop, Rome, Italy, December</li> <li>• Briano C., Bruzzone A.G. (2007) "VV&amp;T Procedures in Industrial M&amp;S Applications", Tutorial in EuroSIW2007, Santa Margherita Ligure, Italy, June</li> <li>• Mosca R., Brandolini M. (2007) "Deisng of Experiments for Simulation Projects", Tutorial in EuroSIW2007, Santa Margherita Ligure, Italy, June</li> <li>• Tremori A. (2007) "Euro Simulation Interoperability Workshop", Invited Speech at PIOVRA Workshop, Rome February</li> <li>• Massei M. (2007) "Simulation Dictionary", Invited Speech at PIOVRA Workshop, Rome February</li> </ul>
Center simulation tools	<p><b>Simulation software</b>  C/C++, Java, Visual Basic Arena, Horus, WinOp, Modsim III, Taylor II, Proservice, Simulink, Pasion,GPSS/H NeuralWare Pro, JTLSetc.</p> <p><b>Simulation Hardware</b>  Logistics Laboratory (16 PC), Cocodrillo Labs (4 PC), COCODRIS Mobile Lab (4 PC), HLA Laboratory (6 PC), DIP Labs (3 PC), WILD Mobile Lab (5 Laptops), VR Lab (1 SGI, 1 WS, 6 VRPC), CYBERSAR Lab(9 PC)</p>
Center highlights	<p><b>Scientific Activities</b>  The MISS organized the following events:  <b>WORKSHOP PIOVRA Exploitation, Rome/Paris/Bruxells, in Co-operation with Liophant &amp; LSIS, 2007</b>  <b>WORKSHOP HMS2007, Bergeggi, Italy, in Co-operation with UAB, UPC</b>  <b>WORKSHOP MAS2007, Bergeggi, Italy in Co-operation with Liophant</b></p> <p><b>Active Participation At Conferences</b>  ICAMES, Istanbul, T, 2008  ITEC 2008, Stockholm, 2008  Spring Sim, Ottawa, Canada, 2008  EMSS, Bergeggi, Italy 2007  HMS, Bergeggi, Italy 2007  I3M, Bergeggi, Italy 2007</p>

MAS, Bergeggi, Italy 2007

**Exchange Programs in MISS Genoa Centre**

MISS Genoa Guests:

[Prof. Jerzy Rosenblit, from University of Arizona, \(June 2007\)](#)

[Prof. Jean Caussanel, Greg Zacharewicz, Mamadou Seck, Amin Hamri from LSIS, \(December 2007\)](#)

**MISS Genoa Visitors**

Francesco Longo, Guests in ENSO Istanbul (May 2008)