

International Conference on Harbor, Maritime and Multimodal Logistics Modeling and Simulation

(HMS 2009)

**Held at the International Mediterranean and Latin American
Modeling Multiconference**

**Puerto de la Cruz, Spain
23-25 September 2009**

Editors:

**Agostino G. Bruzzone
Rafael Martinez**

**Gerson Cunha
Yuri Merkuryev**

ISBN: 978-1-62993-473-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2009) by CAL-TEK S.r.l.
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact CAL-TEK S.r.l.
at the address below.

CAL-TEK S.r.l.
Via Spagna 240-242
87036 Rende (CS)
Italy

Phone: +39 333 7042 612
Fax: +39 0984 937849

info@cal-tek.eu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Invited Talks

INVITED TALK: REAL-TIME SIMULATORS DEVELOPMENTS: CURRENT AND NEW TRENDS <i>Rafael J. Martínez Durá</i>	1
---	---

Advanced Models and Applications of Logistics & Manufacturing

A NOVEL HYBRID APPROACH TO SEMANTIC INTEROPERABILITY FOR LOGISTIC APPLICATIONS <i>Alessandro Pierpaolo Beneduce, Mosè Gallo, Vincenzo Moscato, Antonio Picariello, Lucio Sansone</i>	10
A SIMULATION DECISION SUPPORT MODEL FOR CHECK-IN DESKS IN AN AIRPORT <i>T. Murino E. Romano, L. C. Santillo</i>	16
ABOUT OPTIMAL REMANUFACTURING POLICIES AND SECONDARY MARKETS SUPPLYING <i>M. Gallo, L. Guerra, G. Guizzi</i>	21
AN INFORMATION MODEL FOR INTEGRATED PRODUCTION SCHEDULING AND TRANSPORTATION PLANNING <i>K. Brauer, F. Zesch, M. Motta, A. Wagenitz</i>	27
MATHEMATICAL MODEL TO OPTIMIZE LAND EMPTY CONTAINER MOVEMENTS <i>S. Furió, C. Andrés, S. Lozano, B. Adenso-Díaz</i>	33
WHAT IS BETTER: 4 TIERS OR 5 TIERS IN THE CONTAINER STACKING PROBLEM? <i>Miguel A. Salido, Oscar Sapena, Federico Barber</i>	39

Maritime Training

MODELING AND ANALYSIS OF MARINE TRAFFIC FOR ANOMALY DETECTION (A POSITION PAPER) <i>Wen-Jing Hsu, Hui Fang, and Shell-Ying Huang</i>	43
CHALLENGES ON ORE PORT SIMULATION <i>Marcelo Moretti Fioroni, Caio Eduardo Zanin, José Alexandre Sereno Quintáns, Lúcia Dini Pereira, Isac Reis de Santana, Paulo Savastano, Luiz Augusto G. Franzese, Vítor Luciano de Almeida Benevides</i>	47
OPERATIONAL PLANNING TOOLS FOR U.S. NAVY MARITIME COMMANDERS <i>Gerald G. Brown, W. Matthew Carlyle, David Kelton, Jeffrey Kline and Javier Salmerón</i>	54
PORTSIM 6.0: A PORT SIMULATION MODELING MULTIPLE MODES OF OPERATION <i>Reejo Mathew, Thomas W. Mastaglio, James F. Leathrum, Jr.</i>	61
UVSIM: A HARBOR CRANES TRAINING SYSTEM <i>Ignacio García-Fernández, Marta Pla-Castells, Miguel A. Gamón, Rafael J. Martínez-Durá</i>	67
A VIBRATION EFFECT AS FATIGUE SOURCE IN A PORT CRANE SIMULATOR FOR TRAINING AND RESEARCH: SPECTRA VALIDATION PROCESS <i>Agostino G. Bruzzone, Paolo Fadda, Gianfranco Fancello, Gianmarco D'Errico, Enrico Bocca, Marina Massei</i>	77

Modelling & Simulation in Logistics, Traffic and Transportation

A GENETIC ALGORITHM FOR REAL-TIME OPTIMISATION OF DRAYAGE OPERATIONS <i>Alejandro Escudero Santana, Jesús Muñuzuri Sanz, Luis Onieva Giménez, Miguel Gutierrez Moya</i>	87
AN EFFICIENT BLOCK-BASED HEURISTIC METHOD FOR STOWAGE PLANNING OF LARGE CONTAINERSHIPS WITH CRANE SPLIT CONSIDERATION <i>Xiantao Xiao, Malcolm Yoke Hean Low, Fan Liu, Shell Ying Huang, Wen Jing Hsu, Zhengping Li</i>	93
ANCHORAGE CAPACITY ANALYSIS USING SIMULATION <i>Shell Ying Huang, Wen Jing Hsu, Yuxiong He, Tiancheng Song, Charles De Souza, Rong Ye, Chuanyu Chen, Stuti Nautiyal</i>	100
COMBINING LOGISTIC CONTAINER TERMINAL SIMULATION AND DEVICE EMULATION USING AN OPEN-SOURCE JAVA FRAMEWORK <i>P. Joschko, C. Brandt, B. Page</i>	106
INTEGRATION OF LOADING AND ROUTING IN LOGISTICS OUTSOURCING <i>S. Lisi, J. Egeblad, A. C. Garavelli, D. Pisinger</i>	116
THE CONTAINER STACKING PROBLEM: AN ARTIFICIAL INTELLIGENCE PLANNING-BASED APPROACH <i>Miguel A. Salido, Oscar Sapena, Federico Barber</i>	127

Multimodal transport: Hinterland Terminals

INTEGRATING EMPTY CONTAINER ALLOCATION WITH VEHICLE ROUTING IN INTERMODAL TRANSPORT <i>Kris Braekers, Gerrit K. Janssens, An Caris</i>	132
MULTI-AGENT SIMULATION FOR ANALYSING INLAND CONTAINER TERMINAL NETWORKS <i>Edith Schindlbacher, Manfred Gronalt, Hans Häuslmayer</i>	140
NASS: SYSTEM SIMULATION OF INLAND WATERWAYS <i>Keith D. Hofseth, Cory M. Rogers</i>	146

Supply Chain Simulation

A STATE OF THE ART ON DISCRETE EVENT SIMULATION AND AN APPLICATION TO SUPPLY CHAIN INVENTORY MANAGEMENT <i>Francesco Longo, Giovanni Mirabelli</i>	156
IMC CONTROL APPROACH FOR SUPPLY CHAIN MANAGEMENT <i>Carlos Andrés García, Ramón Vilanova, Carles Pedret</i>	163
INTEGRATED SUPPLY CHAIN RISK MANAGEMENT PERFORMED BY LOGISTIC ASSISTANCE SYSTEMS <i>Gökhan Yüzgülec, Axel Wagenitz, Michael Toth</i>	173
LOGISTIC ASSISTANCE SYSTEMS FOR DECISION SUPPORT IN COLLABORATIVE SUPPLY CHAIN PLANNING AND CONTROL <i>Felix Bockholt, Wolfgang Raabe, Dr. Michael Toth</i>	179
MULTI-OBJECTIVE GENETIC LOCAL SEARCH ALGORITHM FOR SUPPLY CHAIN SIMULATION OPTIMISATION <i>Galina Merkuryeva, Liana Napalkova</i>	190
SIMULATION VERSUS ANALYTICAL MODELLING FOR SUPPLY CHAIN DYNAMICS ANALYSIS <i>Julija Petuhova, Yuri Merkuryev, Maris Buikis</i>	195
SUSTAINABLE CAR INDUSTRY BASED ON GREEN LOGISTICS SIMULATION MODELS <i>Agostino G. Bruzzone, Marina Massei, Federico Tarone, Francesco Longo</i>	201