

13th Conference on Behavior Representation in Modeling and Simulation 2004

(BRIMS)

**Arlington, Virginia, USA
17-20 May 2004**

ISBN: 978-1-61567-169-4

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© (2004) by SISO - Simulation Interoperability Standards Organization
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact SISO - Simulation Interoperability Standards Organization
at the address below.

SISO - Simulation Interoperability Standards Organization
1 Donovan Drive
Bedford, MA 01730

Phone: (781) 271-9872
Fax: (781) 271-9874

Siso-help@sisostds.org

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

04-BRIMS-001 Cognition in Context: Using Simple Agents for Discrete Event Simulation.....	1
<i>Dmitri O. Kondratiev, Vasily V. Suvorov</i>	
04-BRIMS-003 Human Behavior Models and Performance Moderator Functions (PMFs) for Improving the Realism of Synthetic Bots and Crowds	3
<i>Barry G. Silverman</i>	
04-BRIMS-005 Using Formal Concept Analysis (FCA) To Model and Represent Counter-Deception Analytic Tasks.....	7
<i>Thomas M. Cook, Michael Coombs</i>	
04-BRIMS-006 Simulating Military Radio Communications Using Speech Recognition and Chat-Bot Technology	9
<i>Donald J. Stoner, Louis Ford, Mark Ricci</i>	
04-BRIMS-008 Knowledge Tracing for Complex Training Applications: Beyond Bayesian Mastery Estimates	19
<i>Glenn Gunzelmann</i>	
04-BRIMS-009 CCA-Soar – A Training System for Peace Negotiations	21
<i>A. Kalus</i>	
04-BRIMS-010 TASP: A Toolkit for Human Experimentation in a Synthetic Environment with a Hybrid Human-Agent Team.....	23
<i>Hari Thiruvengada, Damodar Bhandarkar, Urmila Kukreja, Ling Rothrock</i>	
04-BRIMS-011 Simulating the Effects of Mental Workload on Performance in Tankcrew	25
<i>Mikael Lundin</i>	
04-BRIMS-012 Developing an Agent-Based C2 Model for JWARS Air Planning.....	34
<i>John D. Prince, Maria E. Stropky, H. Rie Blacksten, Judy A. Schandua, Nini L. Morales, Joanna C. Oh</i>	
04-BRIMS-013 Application of Human Decision Field Theory to Estimation of Air-to-Ground Combat Identification Latencies	43
<i>Glenn O. Allgood, Jack C. Schryver, Lauren G. Hatchell, Dwight P. Miller</i>	
04-BRIMS-014 RTS Games and Real-Time AI Research	53
<i>Michael Buro, Timothy M. Furtak</i>	
04-BRIMS-015 A Cognitively Plausible Model of Language Comprehension.....	61
<i>Jerry T. Ball</i>	
04-BRIMS-016 Evolving Models of Human Behavior Representation from Observation of Human Performance in a Simulator.....	73
<i>Hans K. G. Fernlund, Avelino J. Gonzalez</i>	
04-BRIMS-017 Towards Applying Case-Based Reasoning to Composable Behavior Modeling	82
<i>Joshua D. Summers, Bruce M. McLaren, David W. Aha</i>	
04-BRIMS-018 Realistic Human Path Planning using Fluid Simulation	90
<i>Rene G. Burgess, Christian J. Darken</i>	
04-BRIMS-019 Shifting the Burden for Creating Behaviors From Programmer to Program.....	100
<i>John Morrison, Gregory Schow, Jeffrey Stahl</i>	
04-BRIMS-020 Framework for a Common Instructor Operator System, Part 1: Enabling Scenario Development.....	102
<i>Michael E. Stiso, Jerry M. Owens, Jennifer E. Fowlkes, Susan Eitelman, Amanda Hafich, Melissa M. Walwanis Nelson, David G. Smith</i>	
04-BRIMS-021 On the Interpretation of Gestures arising in Flight Deck Officers Training.....	112
<i>Deniz T. Sodiri</i>	
04-BRIMS-023 The Performance of Motivational Command Agents in a Command Post Training Simulation	123
<i>Emmanuel Chiva, Stephane Delorme</i>	
04-BRIMS-024 Modeling and Simulating Work Practice with the Brahms Multi-agent Environment.....	125
<i>Maarten Sierhuis, Chin Seah</i>	
04-BRIMS-025 The Good Fly Young: Augmenting Undergraduate Pilot Training with Selective-Fidelity Situation Awareness Training	126
<i>Benjamin Bell, Joan Ryder, Jonathan Cain</i>	
04-BRIMS-026 Detecting Threatening Behavior Using Bayesian Networks	136
<i>Kathryn Laskey</i>	
04-BRIMS-027 Using Cognitive Models for Computer Generated Forces and Human Tutoring.....	146
<i>Tom Livak, Neil Heffernan, Dale Moyer</i>	

04-BRIMS-028 The COGNET/iGEN Architecture and its Application in Modeling Complex Behaviors	156
<i>Wayne Zachary, Michael Szczepkowski</i>	
04-BRIMS-029 Application of Time-Sensitive Computational Models to Training Within a Scenario-Based Team Training System	159
<i>Amy E. Bolton, David W. Dorsey, Gwendolyn E. Campbell</i>	
04-BRIMS-030 Visibility and Concealment Algorithms for 3D Simulations	168
<i>Christian J. Darken</i>	
04-BRIMS-031 Influencing Ontology	178
<i>Dale E. Lichtblau, Brian A. Haugh, Kelton Rhoads</i>	
04-BRIMS-032 CaDaDis: A Tool for Displaying the Behavior of Cognitive Models and Agents	180
<i>Kevin Tor, Frank E. Ritter, Steven R. Haynes, Mark A. Cohen</i>	
04-BRIMS-035 Evaluating Learning Techniques in Gaming Simulators	188
<i>Matthew Molineaux, David W. Aha</i>	
04-BRIMS-037 Behavior Design Patterns: Engineering Human Behavior Models	190
<i>Glenn Taylor, Robert E. Wray</i>	
04-BRIMS-039 Using Human Behavior and Environmental Servers to Enhance the Fidelity of Joint Semi-Automated Forces (JSAF) Entities	198
<i>Jennifer L. King, Christopher Scannell, Ruth P. Willis, Steven D. Peters, Nils D. LaVine, Lee Napravnik</i>	
04-BRIMS-041 Method for Development of Human Behaviour Models for Simulation Based Training	205
<i>Ralf R. Sluimer, Karel Van Den Bosch</i>	
04-BRIMS-045 Observations of Crowd Behavior	210
<i>Carlotta M. Boone, Ryland C. Gaskins III, Mikel D. Petty</i>	
04-BRIMS-051 A High Level Symbolic Representation for Behavior Modeling	212
<i>Jacob Crossman, Robert E. Wray, Randolph M. Jones, Christian Lebiere</i>	
04-BRIMS-056 C3HPM: An Application of IMPRINT within the MATREX	220
<i>Bret Kelliham, Randolph Washington</i>	
04-BRIMS-059 Towards a Common Ontology for Improved Traceability of Human Behavior Models	227
<i>Daniel P. Napierski, Andrew S. Young, Karen A. Harper</i>	
04-BRIMS-060 Practical Applications in Human Performance Modeling and Simulation Insertion of Human Performance Models into M&S Environments	236
<i>Rick Archer, Christian Lebiere, Dan Schunk, Christian Lebiere, Brad Best, Nils LaVine, Cleotilde Gonzalez, Walter Warwick</i>	
04-BRIMS-062 Embedded Simulation for Decision Support	237
<i>Qi Huang</i>	
04-BRIMS-064 Representation of Cohesion in Small Combat Unit During a Combat Incident	239
<i>William E. Warner</i>	
04-BRIMS-066 Enhancing the Behavioral Fidelity of Synthetic Entities with Human Behavior Models	248
<i>Michael Van Lent, Ryan McAlinden, Paul Brobst, Barry G. Silverman, Kevin O'brien, Jason Cornwell</i>	
04-BRIMS-067 Initial Comparisons between a “Naturalistic” Model of Decision Making and Human Performance Data	257
<i>Walter Warwick, Shaun Hutchins</i>	
04-BRIMS-068 Computer Generated Forces (CGF) User Interface (UI): A Common Front End for CGF Applications	263
<i>Derek Bryan, Brian Teer</i>	
04-BRIMS-069 Psychological Research for Crowd Modeling	271
<i>Ryland C. Gaskins III, Carlotta M. Boone, Thomas M. Verna Jr., James P. Bliss, Mikel D. Petty</i>	
04-BRIMS-071 Situation Awareness of Commanders: A Cognitive Model	273
<i>Octavio Juarez-Espinosa, Cleotilde Gonzalez</i>	
04-BRIMS-072 A Case-Based Reasoning Tool for Composing Behaviors for Computer Generated Forces	283
<i>Douglas A. Reece, Jenifer McCormack, Jackie Zhang</i>	
04-BRIMS-073 Developing Reality-based Models of Crowd Behavior	291
<i>Roxanne Constable, Patrick Mason</i>	
04-BRIMS-074 Developing Asymmetrical Warfare Capabilities in DISAF	294
<i>Jaime E. Cisneros, Monicka Birr</i>	
04-BRIMS-075 Redux: Example-Driven Diagrammatic Tools for Rapid Knowledge Acquisition	302
<i>Douglas J. Pearson, John E. Laird</i>	
04-BRIMS-076 Symposium: Software Agents with Natural Language Capabilities – Where are we?	310
<i>Jerry T. Ball</i>	

04-BRIMS-077 Transforming Legacy Agent Simulators into 3D Virtual Environments.....	314
<i>John R. Lee, George Thomas, Andrew B. Williams</i>	
04-BRIMS-078 Automated Scenario Generation Using Data Mining.....	316
<i>Mike Graul, Dan McDonald, Melissa Walwanis Nelson, David Smith</i>	
04-BRIMS-079 Behavior Modeling in Commercial Games	318
<i>David E. Diller, William Ferguson, Alice M. Leung, Brett Benyo, Dennis Foley</i>	
04-BRIMS-082 Standard Ontological Behavior Representations to Support Composability	330
<i>William J. Gerber, Lee W. Lacy</i>	
04-BRIMS-083 Modeling Physical Variability for Synthetic MOUT Agents	332
<i>Gita Sukthankar, Michael Mandel, Katia Sycara, Jessica Hodgins</i>	
04-BRIMS-084 What do Design Patterns Have to do with Cognitive Modeling?	342
<i>Wayne Zachary</i>	
04-BRIMS-085 Observations on Human Performance in Air Traffic Control Operations: Preliminaries to a Cognitive Model	346
<i>Roger W. Remington, Seung Man Lee, Ujwala Ravinder, Michael Matessa</i>	
04-BRIMS-087 The NATO Virtual Institute for Human Behavior Representation: A Mechanism for International Cooperation	354
<i>Sheila B. Banks, Martin R. Stytz, Uwe Dompke</i>	
04-BRIMS-089 Predicting Group Behavior from Profiles and Stereotypes	362
<i>Eva Hudlicka, Bryan Karabaich, Jonathan Pfautz, Ken Jones, Greg Zacharias</i>	
04-BRIMS-090 Toward A Working Taxonomy of Groups	374
<i>Bryan N. Karabaich</i>	
04-BRIMS-091 Synthetic Dialog Agents in Simulated Classroom Discussion for Case-Method Instruction	386
<i>Susann Luperfoy, Eric Domeshek, Eli Holman, David Struck</i>	
04-BRIMS-092 PSYASE: An Environment for Psychological Operations Analysis.....	394
<i>Brian A. Haugh, Dale E. Lichtblau, Stacy Marsella, David Pynadath</i>	
04-BRIMS-094 Using a Simulation Model HERCM in the Evaluation of Human Effects Effectiveness and Risk Characterization for Non-Lethal Weapons	404
<i>Paul S. Price, Douglas R. Tedder, Eric T. Mathis, Christine F. Chaisson, Lynne T. Haber, Patricia M. Nance, Andrew Maier, B. Jon Klauenberg</i>	
04-BRIMS-095 Autonomous Control of UAVs Today Through Behavioral Modeling	406
<i>Gary E. Lohman, Marc Briere</i>	
Author Index	