

16th Conference on Behavior Representation in Modeling and Simulation 2007

(BRIMS)

**Norfolk, Virginia, USA
26-29 March 2007**

Volume 1 of 2

ISBN: 978-1-61567-174-8

Printed from e-media with permission by:

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

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

Copyright© (2007) 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 Donavan Drive
Bedford, MA 01730

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

Siso-help@sisostds.org

TABLE OF CONTENTS

VOLUME 1

CHESAPEAKE I-II

TUTORIALS

07-BRIMS-046 Cognitive Crash Dummies: Predictive Human Performance Modeling for Interactive System Design	1
<i>B. E. John, R. L. Lewis</i>	
07-BRIMS-031 Examining Subject Variability Using Human Performance Modeling.....	4
<i>A. Fowles-Winkler, A. Belyavin, B. Cain</i>	
07-BRIMS-005 User Interface Evaluation and Development Using The Graph Based Interface Language (GRBIL) Tool	8
<i>R. Archer, M. Matesza</i>	
07-BRIMS-048 Human Behavior Models and Performance Moderation Functions (PMFs) for Realistic Leader, Follower, & Faction Sims	11
<i>B. G. Silverman</i>	

NORFOLK I-II

INTRODUCTION & WELCOME

07-BRIMS-067 Welcome to BRIMS 2007 - Behavior Representation in Modeling & Simulation.....	12
<i>L. Allender, T. Kelley</i>	

PLENARY SPEAKER

07-BRIMS-055 Neuroscience-Based Engineering Principles for Technology Application or Psychological Science for Engineers or Foundations of Neurotechnology	22
<i>D. K. McBride</i>	

SPONSOR TALKS

07-BRIMS-056 BRIMS - Relevant Research in AFRL.....	106
<i>K. Gluck</i>	
07-BRIMS-057 U.S. Army Research Institute for the Behavioral and Social Sciences.....	117
<i>S. Goldberg</i>	
07-BRIMS-058 A Constraint-Based Approach to Understanding the Composition of Skill.....	128
<i>A. Vera</i>	
07-BRIMS-059 Simulation Technologies - Thoughts and Pointers	152
<i>J. R. Surdu</i>	
07-BRIMS-013 Symbolic and Sub-symbolic Robotic Intelligence Control System (SS-RICS)	174
<i>T. Kelley, E. Avery</i>	
07-BRIMS-060 Human Behavior in the Infantry Warrior Simulation (IWARS) - Applications of BRIMS	177
<i>A. Borgman</i>	
07-BRIMS-061 A Perspective on Behavior Representation in Modeling & Simulation for Human Systems Integration	193
<i>L. Allender</i>	

HBR – BUILDING ON THE BASICS

07-BRIMS-035 Modeling Automaticity and Strategy Selection in Dynamic Visual Detection	204
<i>B. J. Best, C. Gonzalez, M. D. Young, A. F. Healy, L. E. Bourne Jr.</i>	
07-BRIMS-041 An ACT-R Model of an Approach Officer in a Modified Periscope Depth Task	252
<i>M. D. Fleetwood, T. P. Santoro, R. J. Severinghaus</i>	
07-BRIMS-012 Towards a Human Behavior Model Based on Instincts	280
<i>V. C. Hung, A. J. Gonzalez</i>	

HBR FOR TRAINING

07-BRIMS-016 Critical Facilities Virtual Environment for Emergency Responders.....	307
<i>A. Wasfy, W. Gill</i>	
07-BRIMS-025 Multi-Scale Behavioral Models for Urban Crisis Training Simulation.....	317
<i>J. Comptaer, E. Chiva, S. Delorme, H. Morlaye, J. Volpoet, O. Balet</i>	

INTERACTIVE POSTERS AND DEMOS

NORFOLK III

07-BRIMS-010 Using a Diagram Representation System with ACT-R	353
<i>M. Matessa, A. Brockett</i>	
07-BRIMS-011 Modeling of Aggregates of Individuals and Crowd Evaluation Station (MAICE StationTM) Demonstration.....	355
<i>T. G. Glass, P. D. Hottenstein</i>	
07-BRIMS-019 Modeling Data Entry in IMPRINT.....	357
<i>C. J. Buck-Gengler, W. D. Raymond, A. F. Healy, L. E. Bourne Jr.</i>	
07-BRIMS-022 Deception Detection: Creating Realistic Facial Expressions Using the FACS Methodology in Training Simulations.....	359
<i>J. L. King</i>	
07-BRIMS-23 Visual Systems Interface.....	361
<i>S. Nicholson, M. Fotta, R. S. Amant, M. D. Byrne</i>	
07-BRIMS-026 HFM-128 NATO Research Task Group on Representation of Human Behavior in Constructive Simulation: A Perspective on Progress and Plans	363
<i>W. Lotens, L. Allender, A. Belyavin, B. Cain, M. Castor, K. Gluck, J. Armstrong</i>	
07-BRIMS-038 Using Realistic Weather to Add Realism to Exercises	365
<i>S. Lowe, M. Webb</i>	
07-BRIMS-040 Modeling Affective Reactions for Training Adaptive Interviewing	385
<i>G. A. Frank, R. C. Hubal</i>	
07-BRIMS-042 Six Month Post Training Transfer Utilizing Mental Knowledge Structure Modeling	392
<i>R. C. Gaskins III, W. Ishom, S. S. Gittelman</i>	
07-BRIMS-050 The Development of a Virtual McKenna MOUT Site for Soldier Performance Experiments	395
<i>D. R. Scribner, P. W. Wiley</i>	
07-BRIMS-051 InsurgiSIM.....	397
<i>Aline Normoyle, Rich Pater, Mark Roddy, Preveen Kannan, Gnana Bharathy, Barry G. Silverman, Deepthi Chandrasekaran</i>	
07-BRIMS-052 Monte Carlo: FactionSim	398
<i>B. Nye, B. G. Silverman, M. Roddy, T. Smith, G. Bharathy</i>	

NORFOLK I-II

HBR ENVIRONMENTS FOR TESTING

07-BRIMS-014 dTank Updated: Exploring Moderated Behavior in a Light-weight Synthetic Environment	399
<i>F. E. Ritter, S. E. Kase, D. Bhandarkar, B. Lewis, M. A. Cohen</i>	

07-BRIMS-015 The BICA Cognitive Decathlon: A Test Suite for Biologically-Inspire Cognitive Agents	418
<i>S. T. Mueller, M. Jones, B. S. Minnery, J. M. H. Hiland</i>	
07-BRIMS-037 Combinatorics Meets Processing Power: Large-Scale Computational Resources for BRIMS	451
<i>K. Gluck, G. Gunzelmann, J. Harris, M. Scheutz, J. Kershner</i>	

VOLUME 2

HBR – GETTING INFORMATION TO THE AGENT

07-BRIMS-029 Modeling and Measuring the Interaction Between Experience and the Quality of Informatoion	481
<i>A. Belyavin, C. Ryder</i>	
07-BRIMS-017 Computer Graphics-Based Target Detection for Synthetic Soldiers	519
<i>C. J. Darken, B. E. Jones</i>	
07-BRIMS-028 Computational Narrative in Support of M & S Behavior Representation	546
<i>R. L. Hobbs</i>	

HBR FOR DECISION – MAKING AND PLANNING

07-BRIMS-036 A Naturalistic Approach to Adversarial Behavior: Modeling the Prisoner’s Dilemma	572
<i>A. Santamaria, W. Warwick</i>	
07-BRIMS-021 Modeling Rules of Engagement in Computer Generated Forces	613
<i>R. Everts, F. E. Ritter, S. Russell, D. Shepherdson</i>	
07-BRIMS-024 A Mission Plan Representation for Autonomous Reasoning of Consequences	665
<i>B. C. Becker, A. Gonzalez, K. Garfield</i>	

HBR – VALIDATION AND CHAOS

07-BRIMS-054 Agent Interactions in Construct: An Empirical Validation using Calibrated Grounding	691
<i>C. Schreiber, K. M. Carley</i>	
07-BRIMS-020 The Appearance of Chaos in High Performance Behavior	708
<i>T. L. Clarke, B. F. Goldie</i>	
07-BRIMS-044 Validation of Workload Algorithms Within the Integrated Performance Modeling Environment	715
<i>J. Armstrong, M. Gauthier, W. Wang, B. Cain, A. Belyavin</i>	

HBR – CULTURE AND CROWDS

07-BRIMS-018 Crowd Dynamics Simulation Research	756
<i>D. J. Kaup, T. L. Clarke, R. Oleson, L. C. Malone</i>	
07-BRIMS-047 Crowd Federate Integration with a Multi-Player On-Line Game	764
<i>F. D. McKenzie, H. Piland, M. Cherng</i>	
07-BRIMS-045 A Computational Approach to Etiquette and Politeness: An “Etiquette Engine™” for Cultural Interaction Training.....	809
<i>C. Miller, P. Wu, H. Funk, L. Johnson, H. Vilhjalmsson</i>	

CLOSING SESSION

07-BRIMS-066 Closing Session	847
<i>T. Kelley</i>	

SYMPOSIA FOR 2007 BRIMS

07-BRIMS-033 Social and Cultural Modeling: Can We Notice the Difference Yet? (or Can You Hear It Now?) - Paper.....	863
<i>L. Allender, J. Sutton</i>	
07-BRIMS-062 Social and Cultural Modeling: Can We Notice the Difference Yet? (or Can You Hear it Now?) - Presentation.....	868
<i>L. Allender, J. Sutton</i>	
07-BRIMS-063 Situation Authorable Behavior Research Environment (SABRE).....	874
<i>J. Sutton</i>	
07-BRIMS-064 Mapping the Cultural Modeling Space	896
<i>G. Taylor</i>	
07-BRIMS-065 Human-oriented Training: The Killer Application for Social & Cultural Modeling	912
<i>M. Van Lent</i>	
07-BRIMS-068 Psychological Skills Necessary for Effective Adaptation and Adjustment in a Multicultural Environment.....	924
<i>D. Matsumoto</i>	
07-BRIMS-069 PsychSim: Incorporating Cultural Factors Into An Agent-based Model.....	952
<i>D. V. Pynadath, S. C. Marsella</i>	
Author Index	