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Formal Approaches to Agent-Based Systems

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Preface

The idea of a FAABS workshop was first conceived in 1998 at the NASA Goddard Space Flight Center, while the Agent Technology Development Group in the Advanced Architectures and Automation Branch (Code 588) was developing a prototype agent community to automate satellite ground operations.

While developing this system, several race conditions arose within and between agents. Due to the complexity of the agents and the communications between them, it was decided that a formal approach was needed to specify the agents and the communications between them, so that the system could be checked for additional errors.

A formal model of the inter-agent communications was developed, with the expectation that this would enable us to find more errors. Success in this convinced us of the importance of using formal methods to model agent-based systems. To share our own experiences and to learn how others were approaching these issues, we decided to hold a workshop on formal methods and agent-based systems.

The response was overwhelming. The result was the first FAABS workshop, which was held at the NASA Goddard Space Flight Center. Posters, paper presentations, panels, and an invited talk by J Moore stimulated much discussion and subsequent collaboration.

This proceedings contains papers from FAABS-II, the second workshop held at the Greenbelt Marriott Hotel (near the NASA Goddard Space Flight Center) in October 2002 and sponsored in conjunction with the IEEE Computer Society. Participants from around the world joined together to present papers and posters, participate in panels, and hear an enlightening invited presentation by Prof. Sir Roger Penrose.

We would like to express our sincere thanks to all those who attended the workshop, presented papers or posters, and participated in panel sessions and both formal and informal discussions. Our thanks to NASA Goddard Code 588 and Code 581 (Software Engineering Laboratory), the Naval Research Laboratory, and CTA, Inc. for their financial support and to the IEEE Computer Society for their sponsorship of this event. Thanks also to Springer-Verlag for once again publishing the proceedings.

We trust that the reader will find this compilation to be of interest, and we look forward to welcoming some of you to FAABS-III, tentatively planned for early 2004.

Greenbelt, MD
May 2003

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Table of Contents

“What Is an Agent and Why Should I Care?”	1
<i>Tim Menzies, Adrian Pearce, Clinton Heinze, Simon Goss</i>	
Organising Logic-Based Agents	15
<i>Michael Fisher, Chiara Ghidini, Benjamin Hirsch</i>	
A Statechart Framework for Agent Roles that Captures Expertise and Learns Improved Behavior	28
<i>Bahram Kimiaghalam, Abdollah Homaifar, Albert C. Esterline</i>	
Formal Specification of Interaction in Agent Societies	37
<i>Virginia Dignum, John-Jules C. Meyer, Frank Dignum, Hans Weigand</i>	
Formal Verification for a Next-Generation Space Shuttle	53
<i>Stacy D. Nelson, Charles Pecheur</i>	
Automated Protocol Analysis in Maude	68
<i>Jeffrey Van Baalen, Thomas Böhne</i>	
Towards Interaction Protocol Operations for Large Multi-agent Systems	79
<i>Joaquín Peña, Rafael Corchuelo, José Luis Arjona</i>	
Formal Modeling and Supervisory Control of Reconfigurable Robot Teams	92
<i>Kiriakos Kiriakidis, Diana F. Gordon-Spears</i>	
Computational Models for Multiagent Coordination Analysis: Extending Distributed POMDP Models	103
<i>Hyuckchul Jung, Ranjit Nair, Milind Tambe, Stacy Marsella</i>	
Bounded Model Checking for Interpreted Systems: Preliminary Experimental Results	115
<i>A. Lomuscio, T. Lasica, W. Penczek</i>	
Verifiable Middleware for Secure Agent Interoperability	126
<i>Ramesh Bharadwaj</i>	
Distributed Implementation of a Connection Graph Based on Cylindric Set Algebra Operators	133
<i>Silvana Zappacosta Amboldi</i>	
Using Statecharts and Modal Logics to Model Multiagent Plans and Transactions	146
<i>Albert C. Esterline</i>	

Qu-Prolog: An Implementation Language for Agents with Advanced Reasoning Capabilities	162
<i>Peter J. Robinson, Mike Hinchey, Keith Clark</i>	
A Model for Conformance Testing of Mobile Agents in a MASIF Framework	173
<i>Mikaël Marche, Yves-Marie Quemener</i>	
Analysis of a Phase Transition in a Physics-Based Multiagent System	193
<i>Diana F. Gordon-Spears, William M. Spears</i>	
You Seem Friendly, But Can I Trust You?	208
<i>Tim Menzies, David Owen, Bojan Cukic</i>	
Taking Intelligent Agents to the Battlefield	220
<i>Jeffrey Hicks, Richard Flanagan, Plamen Petrov, Alexander Stoyen</i>	
Panel Session on “Applications”	
Naval Applications of Secure Multi-agent Technology	235
<i>Ramesh Bharadwaj</i>	
Challenges Arising from Applications	236
<i>Charles Pecheur</i>	
Agents Applied to Autonomous Vehicles	239
<i>Craig Schlenoff</i>	
Using XML for Interprocess Communications in a Space Situational Awareness and Control Application	241
<i>Stuart Aldridge, Alexander Stoyen, Jeffrey Hicks, Plamen Petrov</i>	
Panel Session on “Asimov’s Laws”	
Asimov’s Laws: Current Progress	257
<i>Diana F. Gordon-Spears</i>	
Asimov’s Laws	260
<i>James P. Hogan</i>	
On Laws of Robotics	264
<i>Yoji Kondo</i>	
Panel Session on “Tools and Education”	
Challenges Arising from Applications of Agent-Based System	269
<i>Walt Truszkowski</i>	

Tools and Education towards Formal Methods Practice	274
<i>John-Jules C. Meyer</i>	

Poster Presentations

Evaluating Agent-Based Modeling as a Tool for Economists	283
<i>Margo Bergman</i>	
Modeling Traffic Control through Deterrent Agents.....	286
<i>Michel Rudnianski, Hélène Bestougeff</i>	
Towards a Formal Representation of Driving Behaviors	290
<i>Craig Schlenoff, Michael Gruninger</i>	
Formal Analysis of an Agent-Based Medical Diagnosis Confirmation System	292
<i>Alexander Hoole, Issa Traore, Michael Liu Yanguo</i>	
Agent Programming in Dribble: From Beliefs to Goals with Plans	294
<i>Birna van Riemsdijk, Wiebe van der Hoek, John-Jules C. Meyer</i>	
Author Index	297