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Preface

The explosive growth of application areas such as electronic commerce, enterprise resource planning and mobile computing has profoundly and irreversibly changed our views on software systems. Nowadays, software is to be based on open architectures that continuously change and evolve to accommodate new components and meet new requirements. Software must also operate on different platforms, without recompilation, and with minimal assumptions about its operating environment and its users. Furthermore, software must be robust and autonomous, capable of serving a naive user with a minimum of overhead and interference.

Agent concepts hold great promise for responding to the new realities of software systems. They offer higher-level abstractions and mechanisms that address issues such as knowledge representation and reasoning, communication, coordination, cooperation among heterogeneous and autonomous parties, perception, commitments, goals, beliefs, and intentions, all of which need conceptual modeling. On the one hand, the concrete implementation of these concepts can lead to advanced functionalities, e.g., in inference-based query answering, transaction control, adaptive workflows, brokering and integration of disparate information sources, and automated communication processes. On the other hand, their rich representational capabilities allow more faithful and flexible treatments of complex organizational processes, leading to more effective requirements analysis and architectural/detailed design.

In keeping with its very successful predecessors, AOSE 2000, AOSE 2001, and AOSE 2002 (Lecture Notes in Computer Science Volumes 1957, 2222, and 2585), the AOSE 2003 workshop sought to examine the credentials of agent-based approaches as a software engineering paradigm, and to gain an insight into what agent-oriented software engineering will look like.

AOSE 2003 was hosted by the 2nd International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2003) held in Melbourne, Australia on July 2003. The workshop received 43 submissions, and 15 of them were accepted for presentation (an acceptance rate of 30%). These papers were reviewed by at least 3 members of an international program committee composed of 25 researchers. The submissions followed a call for papers on all aspects of agent-oriented software engineering, and showed the range of results achieved in several areas, such as methodologies, modeling, architectures, and tools.

The workshop program included an invited talk, a technical session in which the accepted papers were presented and discussed, and a closing plenary session. It congregated more than 50 attendees, among them researchers, students, and practitioners, who contributed to the discussion of research problems related to the main topics in AOSE.

This volume contains revised versions of the 15 papers presented at the workshop. Additionally, it contains an invited contribution by Bernhard Bauer and Jörg Müller on "Using UML in the Context of Agent-Oriented Software Engineering: State of the Art." We believe that this thoroughly prepared volume

is of particular value to all readers interested in the key topics and most recent developments in the very exciting field of agent-oriented software engineering.

We thank the authors, the participants, and the reviwers for making AOSE 2003 a high-quality scientific event.

November 2003

Paolo Giorgini
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Organization

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