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Massively Multi-Agent Systems I

First International Workshop, MMAS 2004
Kyoto, Japan, December 10 – 11, 2004
Revised Selected and Invited Papers



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Preface

We are now in the era of ubiquitous computing and networking: millions of electronic devices with computing facilities in the public space are connected with each other in ad hoc ways, but are required to behave coherently. Massively multiagent systems (MMAS) can be a major design paradigm or an implementation method for ubiquitous computing and ambient intelligence. As the infrastructure of massively multiagent systems, technologies such as grid computing together with semantic annotation can be combined with agent technologies. A new system design approach, society-centered design, may be realized by embedding participatory technologies in human society. Applications include large-scale navigation, scientific or social simulations, e-homes, e-offices, e-cities, and e-science.

The 1st International Workshop on Massively Multiagent Systems (MMAS 2004), was held from December 10 to 11 in Kyoto, Japan. The workshop consisted of 12 invited talks, 3 chair talks, 20 oral and poster presentations, and excursions to world heritage sites in Kyoto. Participation in the workshop was by invitation only, and was limited to around 50 professionals who have made significant contributions to the topics of the meeting. Attendees were from many countries including Algeria, Australia, China, France, Korea, Luxembourg, the US, and Japan. This volume includes 25 of the papers presented at the workshop. The papers cover the area of massively multiagent technology, teams and organization, ubiquitous computing and ambient intelligence; all are related to massively multiagent systems in the public space.

At the end of the workshop, we had discussions on why MMAS should be the focus of attention rather than just MAS. Massively multiagent systems create applications for society as a whole; this raises the possibility of having a new structure in our social life via mass-support rather than individual-support. “Massive” means “beyond resource limitation”: the number of agents exceeds local computer resources, or the situations are too complex to design/program given human cognitive resource limits. The discussion will be continued at the next workshop, which will be held in 2006.

March 2005

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Japan Science and Technology Agency (JST)
IEICE Special Interest Group for Artificial Intelligence and Knowledge Processing
(SIG-AI)
IPSJ Special Interest Group for Ubiquitous Computing Systems
JSSST Special Interest Group for Multi-agent and Cooperative Computation
Support Center for Advanced Telecommunications Technology Research
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Table of Contents

Massively Multi-agent Technology

Agent Server Technology for Managing Millions of Agents (Invited Talk) <i>Gaku Yamamoto</i>	1
Exploring Flows in the Intelligent Agent Grid Environment (Invited Talk) <i>Zhuge Hai</i>	13
Adaptive Agent Allocation for Massively Multi-agent Applications <i>Myeong-Wuk Jang, Gul Agha</i>	25
Hierarchical Resource Usage Coordination for Large-Scale Multi-agent Systems <i>Nadeem Jamali, Xinghui Zhao</i>	40
Towards Fault-Tolerant Massively Multiagent Systems <i>Zahia Guessoum, Jean-Pierre Briot, Nora Faci</i>	55
Virtual Space Ontologies for Scripting Agents <i>Zhiqiang Gao, Liqun Ren, Yuzhong Qu, Toru Ishida</i>	70

Team and Organization

Challenges in Building Very Large Teams (Invited Talk) <i>Paul Scerri, Katia Sycara</i>	86
Maximal Clique Based Distributed Coalition Formation for Task Allocation in Large-Scale Multi-agent Systems <i>Predrag T. Tošić, Gul A. Agha</i>	104
Quantitative Organizational Models for Large-Scale Agent Systems <i>Bryan Horling, Victor Lesser</i>	121
Adaptive Modeling: An Approach and a Method for Implementing Adaptive Agents <i>Reza Razavi, Jean-François Perrot, Nicolas Guelfi</i>	136
Multi-agent Based Participatory Simulations on Various Scales <i>Paul Guyot, Alexis Drogoul</i>	149

A Massively Multi-agent System for Discovering HIV-Immune Interaction Dynamics
Shiwu Zhang, Jiming Liu 161

A Massive Multi-agent System for Brain MRI Segmentation
Radia Haroun, Fatima Boumghar, Salima Hassas, Latifa Hamami 174

Ubiquitous Computing and Ambient Intelligence

Mobile Agents for Ambient Intelligence (Invited Talk)
Ichiro Satoh 187

Himalaya Framework: Hierarchical Intelligent Mobile Agents for Building Large-Scale and Adaptive Systems Based on Ambients
Amal El Fallah Seghrouchni, Alexandru Suna 202

Multi-agent Human-Environment Interaction Framework for the Ubiquitous Environment
Satoshi Kurihara, Kensuke Fukuda, Toshio Hirotsu, Shigemi Aoyagi, Toshihiro Takada, Toshiharu Sugawara 217

Agent Server for a Location-Aware Personalized Notification Service
Teruo Koyanagi, Yoshiaki Kobayashi, Sachiko Miyagi, Gaku Yamamoto 224

Needs and Benefits of Massively Multi Book Agent Systems for u-Libraries
Toshiro Minami 239

Social Network and Spatial Semantics for Real-World Information Service
Yutaka Matsuo 254

Massively Multi-agent Systems in Public Space

A Massively Multi-agent Simulation System for Disaster Mitigation (Invited Talk)
Ikuo Takeuchi 269

Designing Emergency Guidance in a Social Interaction Platform
Hideyuki Nakanishi, Toru Ishida 283

SmartRescue: Multi Agent System Based on Location and Context Aware Information
Jung-Jin Yang, Dong-Hoon Lee 295

Multiagent-Based Demand Bus Simulation for Shanghai
Zhiqiang Liu, Toru Ishida, Huanye Sheng 309

Scalability of Dial-a-Ride Systems — A Case Study to Assess Utilities of Ubiquitous Mass User Support <i>Noda Itsuki</i>	323
Distributed Visitors Coordination System in Theme Park Problem <i>Takashi Kataoka, Hidenori Kawamura, Koichi Kurumatani, Azuma Ohuchi</i>	335
Authors Index	349