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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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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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