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Distributed Autonomous Robotic Systems 5

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Preface

A decade has already passed since the first International Symposium on Distributed Autonomous Robotic Systems (DARS) was held in Wako-shi, Saitama, Japan. The DARS symposia have been held every two years since then. DARS 92, DARS 94, and DARS 96 were held in Japan; DARS 98 in Karlsruhe, Germany; and DARS 2000 in Knoxville, Tennessee, USA. In 2002, DARS came back to Japan and was held June 25–27, 2002, in Fukuoka, Japan. DARS 2002 was planned in conjunction with the robot soccer competition, RoboCup-2002, which was held also in Fukuoka and in Busan, Korea, because the scope of multirobot cooperation encompasses both events. This book includes all the papers accepted after review and presented at DARS 2002.

In DARS symposia, various aspects of distributed autonomous robotic systems have been discussed, such as architecture, communication, control, sensing, planning, and learning. While the size of the conference (the number of presentations and participants) has remained almost constant, interests seem to have shifted gradually in 10 years due to technological progress and concurrent change in the social environment. The following tendencies have been observed:

(1) Practical papers have increased in comparison with theoretical ones.
(2) Learning issues have become more important.
(3) Application of DARS has become a matter of greater concern.

In DARS 2002, 46 technical papers were presented in sessions of Modular Robotic Systems, Communication for Cooperation, Human-Machine Cooperative Interaction, Multi-Robot Coordination, Robot Soccer, Distributed Sensing and Mapping, Distributed Control, Multi-Agent and Group Systems, Multi-Robot Motion Planning, Emergence in Mobility, and Learning in Distributed Robotic Systems.

We express great thanks to Prof. Kazuhiro Kosuge, Prof. Satoshi Murata, program vice co-chairs, and program committee members who reviewed papers submitted to DARS 2002 and contributed to enhancing the quality of the program. We would like to thank Prof. Masafumi Yamashita, vice general chair, and the organizing committee and local arrangement committee members, as well as members of the Institute of Systems & Information Technologies, for successful organization of DARS 2002. We appreciate the cooperation of Prof. Minoru Asada, Chair of the RoboCup-2002 symposium, in setting up the joint program of the RoboCup-2002 symposium and DARS 2002.

We express our gratitude to the co-sponsoring organizations, IEEE RAS (Robotics & Automation Society), RSJ (Robotics Society of Japan), JSME (Japan Society of Mechanical Engineers), SICE (The Society of Instrument & Control

Engineers of Japan), RIKEN (The Institute of Physical and Chemical Research), as well as FANUC FA and Robot Foundation and the Tateisi Science and Technology Foundation, which contributed to DARS 2002 in the way of financial support. We also thank the IEEE Fukuoka Section for their cooperation.

We thank Prof. Rolf Pfeifer (University of Zurich, Switzerland), and Dr. Lynne E. Parker (Oak Ridge National Laboratory, USA) for their plenary talks, which were programmed as part of the joint program of DARS 2002 and the RoboCup Symposium.

Finally, we are grateful to Dr. Kuniaki Kawabata and to Ms. Chieko Takahashi for their help in secretariat administration.

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