FOREWORD

Special Section on Autonomous Decentralized Systems Technologies and Applications for Next-Generation Social Infrastructure

The Autonomous Decentralized Systems (ADS), proposed in Japan 38 years ago, have technologically evolved in communication, computing, and control systems. It has been applied in many actual systems, and it has progressed in standardization activities. IEICE and IEEE published joint Special Sections on "Autonomous Decentralized Systems" in May 2000, October 2001, December 2005, and January 2011, cooperating with the International Symposium on Autonomous Decentralized Systems (ISADS). Since then, ADS technology has been making drastic advancement, innovative new research is being reported successively, and the research and development have been expanded in both of the advanced and emerging countries.

ADS has been expected to be promising as the core technology for sustainable and resilient systems. The application fields have been expanded into social infrastructure such as railway, electric power, smart city, manufacturing, supply chain management, etc., in the world.

The objective of this Special Section is to discuss new technologies in the field of Autonomous Decentralized System from both theories and application deployments point of view through papers. The Special Section solicits paper submissions not only from people who presented new technologies in the International Symposium on Autonomous Decentralized System (ISADS 2015) in March 2015, Taiwan but also from people who are interested in this field. Due to the fact that ADS has cross-fielding wide applications, this special section had been planned by coordinating the Societies of IEICE Information Systems (D) and the committee members of ISAD 2015.

There were 22 submissions and editorial committee selected 10 papers with careful and fair review. The editorial committee hopes that these sophisticated papers will make great contribution to the ADS, related technologies and their applications.

As the Guest Editor-in-Chief, I would like to express my sincere appreciation to all the authors for their contribution, and to all the Editorial Committee members for their devoted review works.

Kinji Mori, Guest Editor-in-Chief

Kinji Mori *(Member)* received B.S., M.S., and Ph.D degrees from Waseda University in 1969, 1971 and 1974. From 1974 to 1997 he joined with Hitachi and had the position of Chief Researcher. During 1997 and 2012, he was Professor of Tokyo Institute of Technology. Since 2012, he is Professor of Waseda University and Professor of Emeritus of Tokyo Institute of Technology. He is a Life Fellow of IEEE and Fellow of IEICE. Dr. Mori is the proponent of ADS and the pioneer of the concept-oriented research and development. He founded the IEEE International Symposium on Autonomous Decentralized Systems. Dr. Mori holds more than 350 patents in the world and has received the Special Distinguished Ichimura Award, the Japan Patent Award, and the Research Achievement Award in Japan, among others.