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## FOREWORD

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### Special Section on Satellite Communication Technologies in Conjunction with Main Topics of JC-SAT2015

Research and development of space communication technologies has been continuously conducted, reflecting the important role such technologies play in wireless communications networks. The importance of satellite communications during disasters has been recognized, and research has explored new types of satellite communication, such as the upcoming next-generation High Throughput Satellite (HTS), which can provide flexible traffic control by using digital channelizer and digital beam forming technologies.

The Joint Conference on Satellite Communications (JC-SAT) is held every year in cooperation with the Technical Committee on Satellite Communications; the Institute of Electronics, Information and Communication Engineers (IEICE) of Japan; and the Korea Society of Space Technology (KOSST). This conference is intended to be a forum for discussing the current status, technical challenges, standards, fundamental issues, future services, and applications in the fields of satellite communications (including fixed-satellite communications, mobile satellite communications, inter-satellite communications, and deep space communications), satellite broadcasting (BS, mobile broadcasting), satellite-ground integrated communications systems, satellite sensor networks, and unmanned aircraft communications systems.

For this Special Section on Satellite Communication Technologies in Conjunction with Main Topics of JC-SAT2015, we received 17 submissions including 2 invited papers and 15 general papers. Each submission was carefully reviewed by one guest associate editor and two experts. Finally, the special section contains 1 invited papers and 5 general papers.

The editorial committee believes that this special section will be informative for future research and development activities in the field of satellite communications. On behalf of the editorial committee, I would like to thank all the authors for their excellent contributions to this special issue. I am also grateful to the reviewers, who have dedicated time to providing valuable review comments within a very tight schedule. I also thank the members of the publication staff for continuous support during the preparation and publication process of this special issue.

Special Section Editorial Committee Members

Guest Editors: Amane Miura (NICT), Fumihiro Yamashita (NTT)

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Morio Toyoshima, Guest Editor-in-Chief

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**Morio Toyoshima** (*Member*) received B.S. and M.S. degrees in electronic engineering from Shizuoka University (Shizuoka, Japan) in 1992 and in 1994, respectively. He received a Ph.D. in electronic engineering from the University of Tokyo (Tokyo, Japan) in 2003. He joined the Communications Research Laboratory (CRL, Ministry of Posts and Telecommunications) in 1994 and soon after was engaged in research for the Engineering Test Satellite VI (ETS-VI) optical communication experiment. He was later involved in the Ground-to-Orbit Lasercomm Demonstration (GOLD) experiment with NASA's Jet Propulsion Laboratory. He received the Minister of Posts and Telecommunications Award on April 20, 1996, as part of the ETS-VI Satellite Experiment Group; and an Annual NASA Honor Award on May 28, 1997 as part of the GOLD Team. He joined the Japan Aerospace Exploration Agency (JAXA; formerly, NASDA) to assist in the development of the Optical Inter-orbit Communications Engineering Test Satellite (OICETS) from 1999 to 2003. In December 2003, he became a Senior Researcher of the Optical Space Communications Group (NICT; formerly CRL), Japan. Starting in October 2004, he spent one year as a guest scientist at Vienna University of Technology, Austria, in the field of optical space communications. In April 2006, he returned to NICT, where he conducted ground-to-OICETS laser communication experiments in 2006. He was involved in the development of the Small Optical Transponder (SOTA) for 50-kg-class satellites. His research interests are laser beam propagation through atmospheric turbulence, space laser communications, and quantum cryptography. He held the position of Visiting Professor in the Graduate School of Information Systems, the University of Electro-Communications from 2007 to 2013. He was the Director of the Space Communication Systems Laboratory, the Wireless Network Research Institute in NICT, from 2011 to 2016. He is now the Director of the Space Communications Laboratory, the Wireless Networks Research Center in NICT, since April, 2016.

