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## FOREWORD

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### Special Section on 5G Radio Access Networks — Part I: Radio Access Technologies and System Design

With the start of commercial services using 4th generation cellular systems, we are enjoying full multi-media services using smart phones, and our life style is completely changed from that we had in about 10 years before. Now, we are facing a start point of new era, which is called the 5<sup>th</sup> generation systems. Although discussion on designing the 5<sup>th</sup> generation systems is not started yet, most of the engineers believe that many revolutionary functionality may be supported by the 5G systems compared to the previous generations. Some examples are support of much higher throughput, flexible support of internet of things (IoT), and comfortable control of our social environments.

Although discussion on 5G development has just started globally, we received 23 paper submissions, and accepted 10 papers based on careful and fair review process. Though the number of accepted papers is not so large, these paper covers very wide range of technical fields, advanced MIMO, non-orthogonal multiple access, dynamic TDD, and application of higher frequency. The researchers and engineers for 5G would, we believe, recognize these fields as useful and mandatory ones for 5G. In addition, we have invited two papers, one from NTT DOCOMO and another from Ericsson, because they are the leading companies for 5G cellular systems.

Through editing of this special section, the editorial board members believe that contents of this special section include very important technical future vision and useful insight for the development of 5G cellular systems.

Finally, as the guest editor-in-chief, I would like to sincerely appreciate all the authors, all the reviewers and editorial committee members for their kind contributions and their efforts for publications of this special section.

#### Special Section Editorial Committee

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Seiichi Sampei, Guest Editor-in-Chief

**Seiichi Sampei** (*Fellow*) received the B.E., M.E. and Ph.D. degrees in electrical engineering from Tokyo Institute of Technology, Japan, in 1980, 1982 and 1991, respectively. From 1982 to 1993, he was with the Communications Research Laboratory, Ministry of Posts and Telecommunications. During 1991 to 1992, he was at the University of California, Davis, as a visiting researcher. In 1993, he joined the Faculty of Engineering, Osaka University, and he is currently a Professor in the department of Information and Communications Technology, Osaka University. He has developed adaptive modulation, intelligent radio transmission/access, cognitive wireless networking, wireless distributed network techniques and millimeter wave technologies for wireless access systems. He received the Shinohara Young Engineering Award, the Achievements Award, Communications Society Best Paper Award and Best paper Award from the IEICE, the Telecom System Technology Award from the Telecommunication Advancement Foundation, the DoCoMo Mobile Science Award from Mobile Communication Fund, the Ericsson Telecommunications Award, and Shida Rinzauro Award. He is a member of the Institute of Image Information and Television Engineers (ITE) and a Fellow of IEEE.

