FOREWORD

Special Section on Cognitive Radio and Spectrum Sharing Technology

Currently the number of standardized wireless communication systems has been increasing and the frequency band that is adequate for mobile communication systems has been occupied by such new standardized communication systems. Before the frequency band is fully occupied, we need to consider methods of securing spectrum that can reduce interference to conventional wireless communication systems and realize high frequency utilization efficiency. One of the solutions is cognitive radio or spectrum sharing. The IEICE Technical Committee of Software Radio (TCSR) has contributed to promoting the new technologies since 2005. This is because the wireless equipments that use software radio technology potentially have ability to control its frequency and bandwidth dynamically. To encourage fruitful discussion on this topic, the publication of this special section was planned.

In reply to call for papers, 45 papers and 4 letters are received. After fair and square review, 2 invited papers related to IEEE new standard activity on dynamic spectrum access networks, IEEE P1900.4 and reconfigurable RF devices, 15 papers and 1 letters are accepted for publication in this section. These papers cover topical subjects such as cognitive network, spectrum sharing, spectrum sensing, distributed optimization, and enabling technologies. This special section will be instructive to the people who are interested in research and development on cognitive radio and spectrum sharing technologies.

Finally I would like to express my sincere thanks to all authors for their contributions and to many reviewers and this section’s editorial committee members, Kiyomichi Araki (Tokyo Institute of Technology), Tetsushi Ikegami (Meiji Univ.), Kazuhiro Uehara (NTT), Ken Shoyama (Tokyo Univ. of Agriculture and Tech.), Tetsuro Ueda (KDDI Lab.), Ryuji Kohno (Yokohama National Univ.), Takashi Shono (Intel), Takeo Fujii (Univ. Electro-Communications), Hiroshi Yoshida (Toshiba), and Hitoshi Yoshino (NTT DoCoMo) for their voluntary activities as guest associate editors. Also I would like to express my cordial appreciation to Hiroyuki Ishii (NEC) and Kei Sakaguchi (Tokyo Institute of Technology) for their excellent management as guest editors of this section.

Hiroshi Harada, Guest Editor-in-Chief