
FOREWORD

Special Section on Dynamic Spectrum Sharing for Future Wireless Systems

Wireless communications will put its position not only for personal and business communications but as the basis of the future society called “Society 5.0.” In the future, wireless systems are used in every layer of the society, such as city, factory, transportation, supply chain, agriculture, etc. However, growing demand for wireless systems requires much more frequency spectrum resources and we are facing shortage of the necessary spectrum. Spectrum sharing has great potential to achieve efficient use of the spectrum. In radio regulations, however, frequency spectra are assigned separately to individual services, which makes spectrum sharing between services not common. Dynamic spectrum sharing (DSS) techniques make it possible to assign spectrum resources flexibly among different services and improve spectrum efficiency by reducing vacant spectrum. The DSS techniques have been developed worldwide and some of them have already launched or will soon start. In order to establish more efficient DSS system, studies of new and effective DSS techniques should be pursued. It is the best opportunity at this point of time to share the state-of-the-art research results on DSS, investigate its feasibility and recognize further issues. In this special section, 12 papers were submitted and 7 papers including 2 invited papers were accepted for publication. I hope this special section can provide deep and wide understanding among readers and stimulate the research & development of DSS.

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Yasushi Yamao (*Fellow*) received his B.S., M.S., and Ph.D. degrees in electronics engineering from Kyoto University, Kyoto, Japan, in 1977, 1979, and 1998, respectively. He started his research career of mobile communications from the measurement and analysis of urban radio propagation as his M.S. thesis. In 1979, he joined the Nippon Telegraph and Telephone Corporation (NTT) Laboratories, Japan, where his major activities included leading research on GMSK modulator/demodulator and GaAs RF ICs for digital mobile communications, and development of PDC digital cellular handheld phones. In 1993, he moved to NTT DoCoMo Inc. and directed standardization of high-speed paging system (FLEX-TD) and development of 3G radio network system. He also joined European IST research programs for IP-based 4th generation mobile communication system. In 2005, he moved to the University of Electro-Communications as a professor of the Advanced Wireless Communication Research Center (AWCC). Prof. Yamao is a Fellow of the IEICE and member of the IEEE and IPSJ. He served as the Vice President of IEICE Communications Society (2003–2004), the Chairman of IEICE Technical Group on Radio Communication Systems (2006–2008), the Chief Editor of IEICE Communication Magazine (2008–2010), and a Director of the IEICE (2015–2017). From 2019, he has been the chairman of IEEE Vehicular Society Tokyo/Japan chapter.

