

The IEICE Transactions on Communications announces that it will publish a special section entitled “Dynamic Spectrum Sharing for Future Wireless Systems” in the October 2021 issue.

To satisfy increasing demands for wireless communications as infrastructure of IoT, flexible operation of variety of wireless systems is necessary. New wireless systems, such as 5G, support detailed management of radio resources in frequency and time domains. Some of such systems downscale the cell sizes which consequently increases the number of base stations and requires allocation of more frequency. On the other hand, self-operation of wireless systems is recently getting attracted along with the diversification of use cases for wireless communications. For the future of wireless communications, the way to secure more radio resources and utilize them flexibly are the key issue. One of the solutions is dynamic spectrum sharing (DSS), where vacancy of frequency is identified by sensing and database analysis so that other wireless system reuses the frequency. Since R & D activities and experimental demonstrations are now ongoing in the world to establish the technologies including radio regulations, it is the best opportunity at this point of time to share the research results on DSS, investigate its feasibility widely and look for further academic issues. For these reasons, a special section on DSS was planned scheduled to appear in the October 2021 issue.

1. Scope

This special section aims at timely dissemination of research in these areas. Possible topics include, but are not limited to:

- (1) Principle theories and their application to DSS (Architectural concept, Machine learning, Artificial intelligence)
- (2) Sensing technologies of DSS (Distributed sensing, System recognition, Direction measurement, Monitoring system)
- (3) Radio database management of DSS (Radio resource management, Radio database management, Radio environment recognition, Interference control, Transmission power control)
- (4) Radio system and operation for DSS (Dynamic spectrum access, Software defined radio, Spectrum shaping, Traffic control, Beam-forming, Interference cancellation, NOMA, Self organized networks, Local 5G, Massive MIMO)
- (5) Experimental demonstration of DSS (Feasibility experiment, Field test, Application to 5G, Experimental testbed)

A submitted paper should be related to DSS. Otherwise, the editorial committee decides it as out of scope in this special section.

2. Submission Instructions

The standard number of pages is 8. The page charges are considerably higher for extra pages. Manuscripts should be prepared according to the guideline in the “Information for Authors.” The latest version is available at the web site, https://www.ieice.org/eng/shiori/mokuji_cs.html. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for regular issues (60 days) because of the tight review schedule.

This special section will accept papers only by electronic submission. Submit a manuscript and electronic source files (LaTeX/Word files, figures, authors' photos and biographies) via the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx by November 2, 2020 (JST). Authors should choose the Dynamic Spectrum Sharing for Future Wireless Systems as a “Journal/Section” on the online screen. Do not choose [Regular EB] .

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