

IEICE Society Conference 2020 Symposium

A: Engineering Sciences Society [Click here to see details.](#)

AS-1. Stochastic & Approximate Computing and VLSI Design Technologies

ABS-1. Expanding UWB Technology - Regulation and Standardization Trends Together With Expective Applications -

B: Communications Society [Click here to see details.](#)

BS-1. Wireless sensing technology for realizing a smart society

BS-2. Latest technologies and future perspective of high throughput satellites (HTS)

BS-3. Radio Access Technologies and Proof-of-Concept Activities Towards Further Development of 5G

BS-4. Special Poster Session ~ Network Technology ~

BS-5. Underwater Wireless Technologies

BS-6. Energy Electronics technologies in the society of wireless power supply

BS-7. System Design based on Quality of Experience for Smart Society

BS-8. Network and Service Design, Control and Management (English Session)

ABS-1. Expanding UWB Technology - Regulation and Standardization Trends Together With Expective Applications -

C: Electronics Society [Click here to see details.](#)

CS-1. Recent progress on electromagnetic field analysis with frequency-dispersive medium

A: Engineering Sciences Society

AS-1. Stochastic & Approximate Computing and VLSI Design Technologies

This symposium is planned to discuss how to design and implement Stochastic Computing and Approximate Computing in VLSI, which have attracted attention in recent years, through presentation of the latest research. Researchers related to this theme and VLSI designers will gather and discuss at this symposium in order to deepen research on this theme and develop these technologies.

ABS-1. Expanding UWB Technology - Regulation and Standardization Trends Together With Expective Applications -

Because of its outstanding superiority on ranging/localization and short distance communications, ultra-wideband (UWB) technique has been attracting attentions in high-reliable wireless communications, high precision ranging/localization, and body area network (BAN). In recent years, standardization activities within IEEE 802.15, domestic UWB de-regulation, and domestic standardization have been continued. Moreover, products with build-in UWB have been developed for car and iPhone. This symposium provides a forum for presenting the new trends on UWB standardization, domestic UWB de-regulation, and up-to-date research outputs for various applications using UWB.

B: Communications Society

BS-1. Wireless sensing technology for realizing a smart society

The importance of sensing technologies has been increasingly recognized in an attempt to realize a smart society, which is also known as Society 5.0. In particular, hardware and software aspects of wireless sensing are expected to play an important role because they are the basis of various novel wireless sensing applications such as wireless vital sensing and drone detection and tracking. On the hardware side, novel wireless sensing technologies are emerging with the help of hardware innovation such as wireless power transmission and distributed antenna systems using radio-over-fiber. On the software side, a large amount of information is expected to be collected using a limited number of sensors with the help of information science techniques represented by machine learning, clustering and independent component analysis. This symposium invites papers related to antennas, propagation and systems, and discusses the latest technical achievements of wireless sensing.

BS-2. Latest technologies and future perspective of high throughput satellites (HTS)

In recent years, demands for high throughput satellites (HTS) and ultra-high-speed optical satellites, which can provide large scale data transmission capacity compared to the conventional communication satellites, are increased with the innovation of advanced information and communications society. The HTS adopts higher frequency such as Ka band and carries the multi-beam antenna for improving frequency utilization efficiency. Further, the ultra-high-speed optical satellites provide broadband data transmission capabilities what seems to be unattainable by radio waves. These advanced satellites are expected to be applied to various areas in the society. This symposium will present newest technologies and their applications to the researchers and affiliates who are interested in the HTS and ultra-high-speed optical satellites.

BS-3. Radio Access Technologies and Proof-of-Concept Activities Towards Further Development of 5G

The 5th generation (5G) cellular communication systems are launched. This symposium session aims to discuss related technologies toward the future development of 5G such as radio access technology, standalone 5G networking technology, use case analysis and proof-of-concept activities in local 5G and closed networks, and new technologies for future cellular communication systems. In addition, invited lectures are presented to clarify the direction of the research and developments.

BS-4. Special Poster Session ~ Network Technology ~

This session handles themes on Network Technology. The presentation style is poster session so that people in the room including speakers could hold an active and fruitful discussion anytime during the session and could have feedback or tips for his or her own study. As the session aims to have a discussion about research topics in progress, 1 written paper would be sufficient.

BS-5. Underwater Wireless Technologies

Underwater wireless technologies using acoustic waves, optical waves, and RF waves gains attentions from both industry and academic researchers towards opening up new application fields. We invite submissions on a wide range of research topics related to underwater wireless technologies.

BS-6. Energy Electronics technologies in the society of wireless power supply

Wireless power supply is expanding not only to sensor devices but also to applications such as mobility. In this symposium, power devices and components for realizing wireless power supply, and application are to be discussed.

BS-7. System Design based on Quality of Experience for Smart Society

Recently, the concept of super smart society has been proposed, which integrates cyberspace and physical space to realize a comfortable society where everyone can receive high quality services. To realize the super smart society, the system design based on Quality of Service (QoS) is insufficient, and the system design based on QoE (QoE: Quality of Experience) that evaluates the quality of experience of individual users will become increasingly important. Therefore, this session provides opportunity to discuss about issues of the QoE based system design.

BS-8. Network and Service Design, Control and Management

The 5G service will launch soon, and new ICT technologies such as deep-learning AI, IoT security, are studied and developed widely. Therefore, the network and service design, control and management are getting more important. In this session, authors are invited to submit their papers regarding the network design, control and management technologies from various aspects such as performance, quality, reliability, security, and usability.

ABS-1. Expanding UWB Technology - Regulation and Standardization Trends Together With Expective Applications -

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C: Electronics Society

CS-1. Recent progress on electromagnetic field analysis with frequency-dispersive medium

Recently, electromagnetic field analyses for frequency-dispersive medium are required for wide frequency region, for example microwave frequency, millimeter-wave frequency, THz, infrared, and visible light region. Furthermore, there are various kinds of materials to be analyzed, such as metals, dielectric medium and so on. This symposium session is organized for electromagnetic field analyses for frequency-dispersive medium. We also discuss about the state of art techniques of electromagnetic field analyses fabricated for frequency-dispersive medium.

D: Information and Systems Society

DS-1. COMP Student Symposium

In the field of theoretical computer science, wide spread view over various topics is necessary for outstanding researches, and only those with such view can develop the research frontier. Therefore, academic exchange among students with different research themes is effective for supporting the growth of high-level researchers.
The purpose of this symposium is to provide opportunities for their research communication. The presenters are required to be students, while the other coauthors may be regular members.