

# IEICE General Conference 2021 Symposium

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

AS-1. Smart mobility in a smart city

ADS-1. Present and Future Perspectives on RISC-V System Design

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

BS-1. Millimeter wave and THz antennas utilized and developed in the recent high-frequency wireless technology

BS-2. Antenna and Propagation Research for Beyond-5G and 6G

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## D: Information and Systems Society [Click here to see ditails.](#)

DS-1. COMP Student Symposium

ADS-1. Present and Future Perspectives on RISC-V System Design

## A: Engineering Sciences Society

### AS-1. Smart mobility in a smart city

The age of IoT is coming, and every device such as vehicles and UAV will be connected to the Internet. This innovation will result in significant changes of the environment of the mobility in response to 5G services and the revision of the road traffic act. On the other hand, smart city initiatives for sustainable urban development have started in many parts of the world. We organize this symposium to discuss the future of the smart mobility in the smart city.

### ADS-1. Present and Future Perspectives on RISC-V System Design

This symposium is planned to discuss the present and future perspectives on RISC-V, which have attracted attention in recent years, from the viewpoint of system design by presenting 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.

## B: Communications Society

### BS-1. Millimeter wave and THz antennas utilized and developed in the recent high-frequency wireless technology

For mobile communication, 28 GHz band was assigned for 5G and utilization of higher frequency millimeter wave is being considered. In addition, R&D activities for THz wave have been started for beyond 5G and/or 6G systems. Millimeter wave and THz technologies are also expected to be applied in wider technical areas such as radar and imaging. These high frequency antennas are very small and then their losses become large. Issues concerning antenna structure, design and fabrication should be resolved. In this symposium, we call for papers about the high frequency millimeter wave and THz antennas. Challenges in high frequency antenna development, and the differences between the high and the low frequency antenna will be discussed.

### BS-2. Antenna and Propagation Research for Beyond-5G and 6G

The commercial fifth-generation mobile communication system (5G) has started in Japan from 2020, and further research and development activities become heating up in the world to realize the Beyond-5G and 6G system. The importance of 6G is also increasing as the basic communication infrastructure for the future cyber-physical system such as Society 5.0 as well as the mobile communication system. Therefore, it is expected to cover various kinds of application services with extremely high communication capacity. In this session, we call the antenna and propagation research papers from various viewpoints to clarify issues of the existing 5G system and realize the new technologies for Beyond-5G and 6G.

### BS-3. Power Conversion Technologies for Society 5.0

Power demand will increase because advanced technologies such as autonomous vehicles, drones, and AI (Artificial Intelligence) will progress in Society 5.0, whose strategy has designed by the cabinet office. Because of increasing high-level requirements for power conversion, it is necessary to discuss the related technologies such as improving efficiency, downsizing, noise reduction, intelligent control, and design method. In addition, the robustness of infrastructures is crucial in Japan, where many natural disasters occur. Therefore, it is also necessary to share technologies of power generation, storage, and VPP. From the above background, we propose the symposium session of “Power Conversion Technologies for Society 5.0” in the 2021 IEICE General Conference.

### BS-4. Sensor Networks and Mobile Intelligence for the New Normal

Towards the new normal triggered by COVID-19, we provide a symposium for discussion among researchers on sensing technology, mobility technology, mobile and ubiquitous computing technology, and mobile intelligence that links these technologies.

### BS-5. Use of ICT as a countermeasure against pandemics

The COVID-19 pandemic has provided an opportunity to expand the use of ICT in clinical fields.

In hospitals, ICT is increasingly used as a means to share ever-changing patient conditions quickly and accurately, as well as to avoid contact.

On the other hand, patients are getting tend to avoid visiting clinics, and the use of online medical services as a countermeasure to this trend is becoming more prominent. There is also a move to ease restrictions on telemedicine temporarily.

This session provides an opportunity to present these developments through an open call to share information in participants.

### BS-6. Growth of Underwater Wireless Technologies: Talk with Potential Users

Currently, new industries related to underwater, including the sea, are about to emerge. Underwater wireless technology is viewed as the driving force. In this symposium, we will provide underwater wireless researchers with an opportunity to talk with underwater wireless users, mainly robot engineers who will play a key role in creating the industries related to underwater.

## **BS-7. AI technologies and their applications for future network systems and services**

### **(English Session)**

Nowadays, AI technologies, such as machine learning and deep learning, attract much attention to academia, industry and government. Such technologies are indispensable for boosting development of future intelligent network systems and applications. Thus, this symposium aims at providing a chance to demonstrate, discuss and share the state-of-the-art research efforts on the AI technologies and their applications for future network systems and services. Target topics are not limited to the AI technologies for network control and management, but widely covered the AI technologies regarding networking and communication, such as mobile and wireless communications, MAC layer design, Transport layer design, network security, and network applications.

## **BS-8. Poster Session for Young Researchers - Internet**

From 2016, technical committee on internet architecture (TCIA) regularly provides a poster session for young researchers in General Conference in each year. Young researchers including students are encouraged to submit one or two page manuscripts for the poster session. The poster presenters must bring their posters in the session. English or Japanese language is allowed to use in the manuscript and poster. TCIA will select excellent poster awards.

## **BS-9. Special Poster Session ~ Network Technology ~**

This session handles themes on Network Technology. The presentation style is a 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.

## 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 on theoretical computer science 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.

### ADS-1. Present and Future Perspectives on RISC-V System Design

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