
FOREWORD

Special Section on Wired-and-Wireless Network System Technologies in Beyond 5G Era

Recently, studies on advanced wired-and-wireless network system technologies for beyond 5G era have been in progress. We have been developing flexible network infrastructures supporting the creation of various application services, by means of which we aim to resolve various social issues caused by aging population, energy depletion, and natural disasters. We posit that the advancement of information networks will contribute to getting ready for Society 5.0, a human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space. It is essential to establish wired-and-wireless network system technologies that create innovative value in addition to the advancement of existing technologies. Furthermore, artificial intelligence (AI)/machine learning (ML) techniques are expected to play an important role for automating the operation and management of future network infrastructure.

In order to further promote the forementioned research efforts for network system technologies in beyond 5G era, the Technical Committee on Network Systems (NS) of the IEICE has organized the “Special Section on Wired-and-Wireless Network System Technologies in Beyond 5G Era”. In response to a call for papers, high-quality papers from the academia and industries have been received. Through peer review processes, finally, 8 papers have been accepted for the publication. We have also invited two papers of the latest studies concerning resource allocation modeling for fine-granular network slicing and integrated technologies in robotics, network, and computing. The editorial committee believes that this special section will provide useful information and promote innovation toward the beyond 5G era.

On behalf of the editorial committee, finally, I would like to express my sincere appreciation to all of the authors, the reviewers, and the IEICE publishing office who supported this special section.

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Akihiro Nakao, Guest Editor-in-Chief

Akihiro Nakao (*Senior Member*) received B.S. (1991) in Physics, M.E. (1994) in Information Engineering from the University of Tokyo. He was at IBM Yamato Laboratory, Tokyo Research Laboratory, and IBM Texas Austin from 1994 till 2005. He received M.S. (2001) and Ph.D. (2005) in Computer Science from Princeton University. He has been teaching as an associate professor (2005–2014) and as a professor (2014–2021) in Applied Computer Science, at Interfaculty Initiative in Information Studies, Graduate School of Interdisciplinary Information Studies, the University of Tokyo. From 2019 to present, he has served as Vice Dean of the University of Tokyo's Interfaculty Initiative in Information Studies (2019–2021). In April 2021, he has moved to School of Engineering, the University of Tokyo (2021–present). He was appointed as an adviser to the President of the University of Tokyo in 2019 and as a special adviser to the President of the University of Tokyo (2020–present). He is serving as Director, Collaborative Research Institute for NGCI, (Next-Generation Cyber Infrastructure), the University of Tokyo (2021–present). For social services, he has been playing several important roles in Japanese government and also at research societies. He has also been appointed Chairman of the 5G Mobile Network Promotion Forum (5GMF) Network Architecture Committee by Japanese government. He has been appointed as Chairman of 5G/Beyond 5G committee, Space ICT Promotion Initiative Forum, International Committee, and Beyond 5G Promotion Consortium as well (2020–present). From 2020 to present, he is a chair of IEICE technical committee on network systems (NS) as well as a chair of IEICE technical committee on cross-field research association of super-intelligent networking (RISING).


