# FOREWORD

## Special Section on Network Systems for Virtualized Environment

In recent years, virtualization technologies achieving higher utilization efficiency of physical computing and network resources are widely used. Cloud computing environment based on virtual machines grows drastically, where the intra-data center networks play important roles to efficiently use the distributed computing resources. Also inter-cloud networks receive much attention to realize large-scale disaster-tolerant platforms. In addition, the network virtualization technologies such as SDN (Software Defined Network) or NFV (Network Functions Virtualization) are the most successful technologies used in the network control/management area to dynamically allocate network resources and functionalities in fixed and mobiles networks. This special section is to discuss the sate-of-the-art network systems and technologies for such virtualized environments.

The Call for Papers attracted 28 papers submitted from many countries. After careful review and much discussion, the editorial committee selected 10 papers (including two invited papers). The selected papers cover a variety of topics, such as cloud data center requirements for Tera-bps networks, novel network resource sharing & allocation methods for MVNOs or multi-tenant datacenters, techniques to improve layer-tunneling protocol performance, virtual network verification methods, and a novel virtual network management based on the end-user application inference from virtual network flow characteristics using a machine learning method. The editorial committee hopes that this special section will help the readers share new knowledge and ideas and encourage R&D activities in this field.

As the guest editor-in-chief, I would like to express my sincere appreciation to all authors for their contributions and to all the reviewers and members of the editorial committee for their great effort in the review process.

Atsushi Hiramatsu, Guest Editor-in-Chief

**Atsushi Hiramatsu** *(Member)* is a Business Unit Manager in Application Solutions Business Headquarters of NTT Advanced Technology Corporation. He received the B.E. and M.E. degrees in applied physics from the University of Tokyo, Tokyo, Japan, in 1984 and 1986, respectively, and then Dr. of Informatics from Kyoto University in 2015. Since joining Nippon Telegraph and Telephone Corporation (NTT), Tokyo, Japan, in 1986, he has been working on innovative technologies such as adaptive ATM traffic control using neural networks and WDM/SCM photonic switching systems. From 1991 to 1992, he was a Visiting Associate at the California Institute of Technology. From 2004 to 2008, he was in the Next Generation Network (NGN) Promotion Office in NTT, promoting R&D activities and a field trial for NGN, in Japan. He joined NTT Advanced Technology Corporation in 2014. He received the Best Paper Awards in 1990 and 2000 from IEICE. He is a member of the IEEE.