
FOREWORD

Special Section on Technologies and Architectures for Improving Scalability, Reliability, and Robustness for Future Information Networks

The IEICE Technical Committee on Information Networks has been engaging in the research and development of information networks for the last three decades. Recently under the name of Future Internet, many researchers have been investigating various kinds of network architectures and technologies such as data centers and cloud computing, software-defined networking (SDN), information/content centric networking (ICN/CCN), and delay/disruption/disaster tolerant networks (DTN). They must possess the features of scalability, reliability, and robustness so that they can provide high quality communication services while adapting to changing circumstances and disturbances. This special section was designed to further promote these research activities by timely dissemination of currently available research results.

After a careful discussion, the editorial committee has arranged two invited papers. The first invited paper proposes an identity-based control plane to achieve enhanced security and mobility management operations essential for future information networks, where an identity is a collection of attributes about a communication entity. The second invited paper proposes a clean-slate approach called ZNA (Z Network Architecture) which introduces a session layer, internode cross-layer cooperation, locator/identifier separation, data/control plane separation, etc. Including the invited papers, this special section consists of other ten papers selected through a rigorous review of 20 submissions. Among them, four papers deal with different issues of ICN/CCN such as routing, caching, and name resolution. The remaining papers deal with scalability and reliability of content delivery, peer-to-peer (P2P) networking, session initiation protocol (SIP) servers, and home networks interoperability.

As the guest editor-in-chief, I would like to express my sincere appreciation to all the authors for their contributions and to all the reviewers and the editorial committee members for their voluntary activities.

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Tohru Asami, Guest Editor-in-Chief

Tohru Asami (*Fellow*) received B.E. degree and M.E. degree in electrical engineering from Kyoto University in 1974 and 1976 respectively, and Ph.D. from University of Tokyo in 2005. Since joining KDD (KDDI) in 1976, he has been working in several research areas such as network management systems, the international gateway development for JUNMET, Ina Field Experiment of xDSL, "Development of Next-generation High-efficiency Network Device Technology" by NEDO. After CEO of KDDI R&D Laboratories Inc., in 2006, he moved to The University of Tokyo as a professor of Dept. of Information and Communication Engineering, Graduate School of Information Science and Technology. His current research field is ubiquitous network and sustainable network as social infrastructure. He was a vice chairman of the board of directors of Information System Society in IEICE from 2003 to 2005.

