
FOREWORD

Special Section on the Next Generation Ethernet Technologies

Ethernet is being applied to the Local Area Network field due to its low cost, and easy installation and operation. Because IP centric communication has been adopted widely, a recent trend is the application of Ethernet to Wide Area Networks to form the transport networks needed for IP communication. For example, recent optical access networks for FTTH and leased line networks for business users are based on Ethernet technologies. However, Ethernet has some problems which should be resolved if we are to realize truly effective Wide Area Networks. The goals include stronger operation and maintenance systems, more detailed network management, and QoS control functions. Some standardization committees and academic societies have started discussions on these problems. Therefore, the Technical Committee on Communication Systems of Communication Society in IEICE organized a special issue to examine the current status in detail; it discusses the future issues and proposes solutions.

This special section is intended to discuss recent advances in the next generation Ethernet technologies and includes the following topics of interest:

- Network architecture and application
- Protection control for high reliability
- QoS control
- Circuit emulation for TDM over Ethernet
- Performance evaluation
- Ethernet Operation and Maintenance functionalities
- Traffic control
- Ethernet-based FTTH access system
- Switching technology
- Standardization trend and future view

This section consists of three invited papers, one letter, and 5 selected papers that were selected from 22 submissions. The invited papers were selected from the excellent speakers of the tutorial session on the next generation Ethernet technologies at the IEICE general conference in March 2005.

Lastly, I would like to express sincere thanks to all authors for their hard work on these papers and the reviewers and editorial committee members for their helpful remarks that contributed to the outstanding quality of this special section.

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Yoichi Maeda, Guest Editor-in-Chief

Yoichi Maeda (*Member*) received his B.E. and M.E. degrees in electronic engineering from Shizuoka University, Japan in 1976 and 1978, respectively. Since joining NTT in 1980, he has been engaged in the research and development of access network transport systems for broadband communications including SDH, ATM, and IP. From 1988 to 1989, he worked for British Telecom Research Laboratories, UK, as an exchange research engineer. He currently leads the Global Strategy and Full Service Access Systems Groups in NTT Access Network Service Systems Laboratories. Since 1989, he has been an active participant in ITU-T Study Groups 13 and 15 and FSAN (Full Service Access Networks) initiatives. He is currently serving as Chairman of ITU-T SG15. He is a member of the IEEE. He has been a feature editor on Standards Series in IEEE Communications Magazine since 1999. He has been the Chairman of the IEICE Technical Group on Communication Systems since 2004.

