

# Point-to-Multipoint and Multipoint-to-Multipoint Services on PBB-TE System

Wonkyoung Lee\*, Chang-Ho Choi\*, Sun-Me Kim\*

*\*Optical Internet Research Department, Electronics and Telecommunications Research Institute, 161 Gajeong-dong, Yuseong-gu, Daejeon, 305-350, Korea*

wklee@etri.re.kr, chhchoi@etri.re.kr, kimsunme@etri.re.kr

**Abstract**— We have implemented point-to-multipoint (PtMP) and multipoint-to-multipoint (MPtMP) services on a packet transport system (PTS) based on PBB-TE. The point-to-multipoint (PtMP) connection in the PBB-TE system has been realized by grouping point-to-point (PtP) packet transport layer (PTL) trunks and mapping a BSI onto the PtP PTL trunks using a multicast backbone destination address. For providing different capabilities for service selection and priority selection, the PTS offers customers three basic types of the port-based, C-tagged, and S-tagged service interfaces defined by the IEEE 802.1ah. To offer customers different capabilities of the layer 3 applications and services, moreover, an IP-flow service interface have been added. In order to evaluate traffic performance for PtMP services in the PTS, the PtMP throughputs for the link capacity of 1 Gbps at the four service interfaces were measured in the leaves of the ingress edge node, the transit node, and the egress edge node. The throughputs were about 96% because the B-MAC overhead of 22 bytes occupys 4 % of the 512-byte packet.

**Keyword**— MAC-in-MAC encapsulation, multipoint-to-multipoint, packet transport system, PBB-TE, point-to-multipoint, service interface



**Wonkyoung Lee** received the B.S. degree from the Department of Electronic Engineering, Pusan National University, Pusan, Korea in 1999 and the M.S. degree from the Department of Information and Communication Engineering, Gwangju Institute of Science and Technology, Kwangju, Korea in 2001. From 2001 to present, she is with the Optical Internet Research Department, Electronics and Telecommunications Research Institute, Daejeon, Korea. Her research interests include packet optical transport network and network management.



**Chang-Ho Choi** received his B.S. degree in Mining and Minerals Engineering from Chonbuk National University, Jeonju, Rep. of Korea, in 1998 and M.S. degree in Information and Communication Engineering from Chonbuk National University, Jeonju, Rep. of Korea, in 2000. He is currently working towards his PhD degree at the Chungnam National University, Daejeon, Rep. of Korea. Since 2002, he joined ETRI, Rep of Korea, his work has been focused on Ethernet and packet transport network technology research. His current interests are packet-optical transport systems and protection switching in packet transport network.



**Sun-Me Kim** received the B.S. degree in Computer Science from Chungnam National University, Daejeon and the M.S. degree in Computer Science from Pohang University of Science and Technology, Pohang, Korea, in 1991 and 1993, respectively. Since 1993, she has been with Electronics and Telecommunication Research Institute (ETRI), Daejeon, Korea, where she is currently a Principal Researcher. Her interested research topics are packet-circuit-optical converged switching system, multi-layer transport network control and management in packet-optical converged network and IDC network control