

Radio Resource Management Based on IEEE 802.21 Media Independent Service Framework

Hyeong Ho Lee^{* **}, Hyunho Park^{*}, Jin Seek Choi^{***}

^{*}ETRI (Electronics and Telecommunications Research Institute), Korea

^{**}Department of Information and Communication Network Technology, UST (University of Science and Technology), Korea

^{***}Department of Computer and Software, Hanyang University, Korea

holee@etri.re.kr, hyunhopark@etri.re.kr, jinseek@hanyang.ac.kr

Abstract— As various radio access technologies and multi-mode terminals incorporating multiple network interfaces have appeared, interferences between wireless access networks have increased. This paper proposes radio resource management in heterogeneous radio access networks based on IEEE 802.21 Media Independent Service (MIS) Framework. The proposed schemes use MIS framework of IEEE 802.21 standard as a common platform to support radio resource management in heterogeneous networks.

Keyword— IEEE 802.21, MIS, radio resource management, Interworking, Heterogeneous network, MIH, WLAN



Hyeong Ho Lee received B.S. degree from Seoul National University, Seoul, Korea in 1977, and the M.S. and Ph.D. degrees from KAIST (Korea Advanced Institute of Science and Technology), Daejeon, Korea, all in Electrical Engineering in 1979 and 1983, respectively. From 1983 he has been working for ETRI (Electronics and Telecommunications Research Institute) and engaged in the research and development of digital switching systems, LAN equipment, routers, optical access systems, and IT standardization. From 1984 to 1986, he was a visiting engineer in AT&T Bell Laboratories, Naperville, U.S.A., where he was involved in the development of the No.5 ESS digital switching system. From 1997 to 2007, he was the director of Switching System, Router Technology, Optical Access Network Technology Departments, and Protocol Engineering Center (PEC) in ETRI. Since 2008, he is serving as a Special Fellow in ETRI, and works in the area of standardization researches for wireless mobile networks. Since 2013, he has been an adjunct professor at UST (University of Science and Technology), Daejeon, Korea. He was the chairman of KOREF (Korea Ethernet Forum) from 2000 to 2004, the President of IPv6 Forum Korea from 2005 to 2008, and a Vice President of IEIE (Institute of Electronics and Information Engineers) from 2004 to 2011. Also, from 2005 to 2012, He served as a Vice Chairman of ITU-T SG11 (Study Group on signalling requirements, protocols and test specifications). Currently, he is the Chairman of IEEE (Institute of Electrical and Electronics Engineers) Korea Council, the Vice Chair of IEEE 802.21 WG, an Editor of the ETRI Journal, a Council member of IEIE, a Council member of KICS (Korean Institute of Communications and Information Sciences), and a Senior member of IEEE.



Hyunho Park received the B.S. degree in electrical engineering and computer science from KNU (Kyungpook National University), Daegu, Rep. of Korea, in 2005, the M.S. degree in information and communications from the GIST (Gwangju Institute of Science and Technology), Gwangju, Rep. of Korea, in 2007, and the Ph.D. degree in broadband network technology at the UST (University of Science and Technology), Rep. of Korea, in 2014. From 2008 to 2014, he worked as a UST student for ETRI (Electronics and Telecommunications Research Institute) and was engaged in the research and standardization on vertical handover technologies for heterogeneous networks. From 2011 to 2014, he served as a secretary of IEEE Standard 802.21c Task Group on Single Radio Handover Optimization. From 2014, he has been working as a researcher for ETRI and engaged in research on open screen service platform and low power set-top box.



Jin Seek Choi is presently working for Hanyang University from 2004, Korea. He has authored more than 50 reviewed technical papers related with communication networking. His current research interest includes path computation element, control and management framework, software defined networking, optical Internet, routing and wavelength assignment, QoS guaranteed high-speed switching and routing, and location and mobility management protocol in next generation wired and wireless networks. He received his BSEE from Sogang University in 1985, and MSEE and Ph.D degree from the Korea Advanced Institute of Science and Technology (KAIST), Korea, in 1987 and 1995, respectively. He worked at Gold Star Information and Communication Co. from 1987 to 1991 where he worked on the development of Ethernet, FDDI bridge, and ISDN systems. He worked at Kongju National University from 1995 to 2001. He worked for National Institute of Science and Technology (NIST), Washington D.C., U.S. as a Visiting Researcher from September 1998 to August 2000. He also worked for School of Engineering at Information and Communications University (ICU merged into KAIST) from 2001 to 2003.