

Media Independent Service for Software-Defined Radio Access Networks

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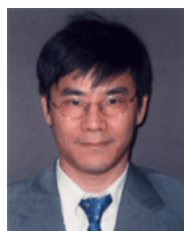
Abstract— In recent days, Software-defined networking paradigm, characterized by a clear separation of the control and data planes, has been attracted in wireless Radio Access Networks (RANs). This paper proposes and presents an approach for applying IEEE 802.21 Media Independent Services (MIS) framework to the Software-Defined Radio Access Network (SDRAN). MIS-capable centralized controller in this approach enables both seamless handover and dynamic radio resource allocation by keeping a clear separation of MIS control from SDN control plane in heterogeneous RAN environment.

Keyword— Software-defined radio access network, SDRAN, IEEE 802.21, MIS, Media independent service, Seamless Handover, Heterogeneous Network



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

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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