Common Hardware Reference Platform for Smart Networks : Network Function Board

Jihyun Lee^a, Myung-Ki Shin^a, Youngrak Kim^b, Sunghyuk Park^c, Sungil Lim^d

^aETRI(Electronics and Telecommunications Research Institute), Daejeon, Korea

^bPIOLINK. Inc., Seoul, Korea

^cWOORINET, Seoul, Korea

^dubiQuoss, Seoul, Korea

hyuny@etri.re.kr, mkshin@etri.re.kr, yrkim@piolink.com, iacehyuk@gmail.com, phantom@ubiquoss.com

Abstract— This paper describes the reference design architecture and the network function board of the network common hardware platform which supports diverse and flexible network services. As the SDN(Software Defined Network) and NFV(Network Functions Virtualization) technology development, there is a need of low-cost general purpose hardware systems instead of the expensive ones. Thus we provide a common hardware reference platform and the goals are to rapidly develop high quality network service solutions and to ensure compatibility between the local network devices and the solutions using this platform. This paper includes system components of common hardware platform and hardware specifications of network function board such as mechanical size, design, appearance and power consumption.

Keyword— Common Hardware Platform, Reference Design Architecture, Network Function Board, SDN(Software Defined Network), NFV(Network Functions Virtualization)



Jihyun Lee received an M.S. Degree in Information and Communication at KNU in 2005. In 2009, she received Ph.D degree in Computer Science at KNU in Korea. She worked as a visiting research scholar in Computer Engineering at Arizona State University in 2007. Since 2009, she has been a senior researcher of Network Standard Research Section at Electronics and Telecommunications Research Institute (ETRI). She is interested in the smart internet common platform, SDN, NFV and wireless communication networks.



Myung-Ki Shin is currently a director at ETRI, Korea. He is a technical leader of SDN/NFV standardization project in ETRI. He has been working on Internet protocols since 1994. He is an author of several IETF RFCs (RFC 3338, RFC 4038, RFC 4489, RFC 5181, etc.). His research interests include Future Internet, IPv6, mobility, network virtualization and software-defined networking (SDN) technologies. He was also a guest researcher at NIST, USA in 2004-2005. He received a Ph.D. degree in computer engineering from Chungnam National University by research on IPv6 multicast and mobility in 2003.



Youngrak Kim received bachelor's degree in electronics at Incheon National University in 2003. After graduation, He worked at Dasan Networks and Ahnlab. Since 2009, he has been a senior researcher of R&D Center at PIOLINK,Inc. He is working as Network Hardware design engineer. He developed L2/3 Network Switch and FTTH GEPON at Dasan Networks. Also, he is designing L4/7 ADC(Application Delivery Switch) and SDN Switch



Sung-Hyuk Park received a bachelor degree in Electronic Engineering at CKU in 1997. He worked at KNC Co., Ltd., HappyComm Co., Ltd., Dayou Networks in 1997-2007. Since 2008, he has been a Chief researcher of System Architecture Design Department at Woori-net Co., Ltd. He is interested in the Optical Transport Networks, T-SDN and smart internet common platform.



Sungil Lim received an M.S. Degree in Computer Science and Engineering at Korea University in 2003. He worked at Locus Networks, which was the previous Company Name of Ubiquoss Co. Ltd, and LG Electronics Technology Institute in 2003~2007. Since 2009, he has worked at Ubiquoss Co. Ltd. He developed L2/L3 Network switches. He is interested in the Copper based Access Networks, SDN, NFV and Next Generation Network Research.