

Study of CAN-to-LTE gateway architecture for automotive safety in V2I environment

Kisoon SUNG, Jeonghwan LEE, Jaewook SHIN

Wireless Transmission Section 4, ETRI, 218 Gajeongro Yuseonggu Daejeon KOREA

{kssung, jeonghwan.lee, jwshin}@etri.re.kr

Abstract— To realize the V2I communication technology based on 3GPP LTE infrastructure, the gateway is required to connected 3GPP network to in-vehicle communication system. The gateway must be suitable for the legacy car systems and functional safety requirements. In this paper, I describe the architecture of CAN-to-3GPP LTE gateway to fit those requirements. CAN is the general purpose communication system in the car domain to connect vehicle E/E systems.

Keyword— V2X, V2I, 3GPP LTE, CAN, AUTOSAR, ISO26262



Kisoon SUNG received the Master Degree from the Chung-nam National University, South Korea in 2001. From 2001 to present day, she has been with ETRI and involved the national projects funded by government. From 2004 to 2008, she researched and developed the 3GPP/ETSI/Parlay gateway and from 2009 to 2013 participated to develop the AUTOSAR solutions and its applications. She is a senior researcher at ETRI and currently studying 5G mobile communication technology. She is interested in moving networks, V2X technologies based on mobile communication.



Jeong-Hwan LEE received M.E degree in electronics engineering from the Yonsei University, Korea, in 2009 respectively. From 1995-2000, he was with LG Electronics Inc, Korea engaged on wired communication system and from 2000-07 he was employed as an IPv6 team leader at iBIT technologies engaged in IPv6 protocol stack and IPv6/IPv4 translator product development. Since 2011, he has been with Electronics and Telecommunication Research Institute (ETRI) where he is a senior researcher of the wireless transmission research section.



Jaewook SHIN received the M.S. degree from the Kyungpook National University, South Korea in 1994 and Ph.D. degree in computer science from the Chungnam National University, South Korea in 2005. He has been working for Electronics and Telecommunications Research Institute (ETRI) as a researcher since 1994. He was a visiting researcher at the University of California, Irvine in 2012. He is currently a director of radio transmission technology section in ETRI. His current research interests include 5G mobile telecommunication, D2D and M2M.