Congestion Control Optimization of M2M in LTE Networks

Jiann-Liang CHEN, Han-Chuan HSIEH and Yanuarius Teofilus LAROSA

Department of Electrical Engineering National Taiwan University of Science and Technology, Taipei, Taiwan Lchen@mail.ntust.edu.tw, D10007501@mail.ntust.edu.tw, larosa@ee.ntust.edu.tw

Abstract—This paper introduces optimization methods of M2M communication based on 3GPP standard. The optimization techniques are specified on M2M bearer within the mobile communication network. Its presentation intends to present an insight and approach to develop high quality communication frameworks for IoT data test-bed, based on Long Term Evolution (LTE) communications systems. The test-bed framework is achieved by featuring an emulation of Evolve Packet Core (EPC) construction using NetFPGA and OpenFlow platforms. The test-bed model will be expected to offer the sensitiveness control over IoT communication data type. In addition the emulation scheme provided by this test-bed will allow an extensive achievement toward M2M over LTE compliance for IoT integrated architecture in the near future.

Keyword—Internet of Things (IoT), Machine-to-Machine (M2M), Human-to-Human (H2H), Long Term Evolution (LTE), NetFPGA, OpenFlow.



Jiann-Liang Chen was born in Taiwan on December 15, 1963. He received the Ph.D. degree in Electrical Engineering from National Taiwan University, Taipei, Taiwan in 1989. Since August 2008, he has been with the Department of Electrical Engineering of National Taiwan University of Science and Technology, where he is a professor now. His current research interests are directed at cellular mobility management and personal communication systems.



Han-Chuan Hsieh was received a B.S. degree in Electrical Engineering from National Taipei University of Technology (NTUT), in 1998, and an M.S. degree in Communication Engineering from Tatung Institute of Technology, Taipei, Taiwan, in 2008. He had been worked for Telecommunication Company for twelve years. He is currently a Ph.D. student in Department of Electrical Engineering of National Taiwan University of Science and Technology (NTUST). His major interests are in Advanced Telecommunication technologies, Internet of Things and Power Line Communication.



Yanuarius Teolus Larosa received his B.S degree in Electrical Engineering from Universitas Kristen Indonesia (UKI), Jakarta in 2005. After complete his M.S degree in Computer Science from National Taiwan University of Science and Technology (NTUST) Taipei in 2010, he joined the Department of Electrical Engineering of NTUST as researcher. His research interests are in mobile computing, next generation communications networks, networks performance and analysis, wireless sensor networks and Internet of Things.