

Implementation and Performance Evaluation of 256-QAM in Vienna System Level Simulator

Igor Kim, Jungsun Um, Seungkeun Park

Radio Resource Research Group

Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea

ikim@etri.re.kr, korses@etri.re.kr, seungkp@etri.re.kr

Abstract— System level simulation (SLS) is a good method for evaluating the performance of wireless networks. By using a single computer and simplifying the level of link level details it provides a good measure of the performance for large-scale complex wireless systems. Vienna downlink SLS is one of the most popular tools used for the performance evaluation and analysis of 4G LTE/LTE-A wireless networks. In this work we implement 256-QAM module for Vienna SLS and complement all the required parts of the simulator to support this functionality. We also show how much performance gain can be obtained when using 256-QAM in various simulation settings. It is verified that the network performance does not increase much in dense network deployments.

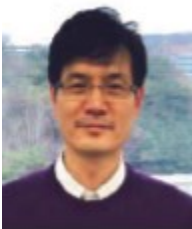
(Pt9)Keyword—256-QAM, Vienna SLS, LLS, LTE



Igor Kim received his B.S degree in telecommunications and information technology from Tashkent University of Information Technologies (TUIT, Uzbekistan) in 2005. He received his M.S. and Ph. D. degrees in information and communication engineering from Yeungnam University (Korea) in 2007 and 2012, respectively. Currently, Dr. Kim works as a senior researcher in Electronics and Telecommunications Research Institute (ETRI, Korea). His research interests include mobility management, QoS provisioning, interference and resource control in wireless networks, and network simulation study.



Jungsun Um received his BS and MS degrees in electronic and electrical engineering from Sungkyunkwan University and Ph.D. degree in electrical engineering from Korea Advanced Institute of Science and Technology (KAIST), respectively. Since 2006, he has been with Electronics and Telecommunications Research Institute (ETRI, Korea). His current research interests include spectrum sharing technologies, digital signal processing, and wireless communication systems.



Seungkeun Park received his B. S. and M. S. degrees in applied statistics from Korea University, Seoul, Rep. of Korea, in 1991 and 1993, respectively. He received his Ph. D. degree in information and communication engineering from the University of Chungbuk, Cheongju, Rep. of Korea, in 2004. He is currently a principal researcher at Electronics and Telecommunications Research Institute (ETRI). His research interests include statistical communication and electromagnetic theories.