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Device-To-Device (D2D) communication in 5G cellular networks

Trung-Dinh Han

Samsung Vietnam Mobile R&D Center, Vietnam

According to eMarketer market research, smartphone users will be reached 2 billion in 2016, resulting in a lot of challenges for current cellular networks, such as bandwidth utilization, spectrum crisis and high energy consumption. Although the fourth generation (4G) networks are now becoming great success, it cannot accommodate the challenges. Device-To-Device (D2D) communication may be one of key solutions for the next generation (5G) networks to deal with these issues. D2D communication in cellular networks allows direct communication between two mobile users without assisted from Base Station (BS) or infrastructure based networks. With initial studies, the D2D communication exposes some advantages for improving spectrum efficiency, communication delay, as well as energy consumption; however, it still has some shortcomings, such as security issues, mobility management, and handoff. The research community is now actively contributing for the next generation networks by adopting the D2D communication. This presentation will focus on discussing about the challenges, designs, and future research directions of D2D communication in 5G cellular networks.

Biography

Trung-Dinh Han is a Senior Manager/Principal Engineer of Samsung Vietnam Mobile R&D Center, Samsung Electronics. He is managing and developing B2B and Cloud Solutions. He has been developing a hundred commercialized smartphone projects for South East Asia. For academic experience, he'd served as a Research Professor at University of Ulsan, South Korea since 2011.

trungdinhvn@yahoo.com

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