Efficient Tag to Tag NFC Protocol for Secure Mobile Payment

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Abstract— **Communication between the NFC devices occur in a very close distance of about 4 cm. In the NFC-based payment system, close proximity between devices will increase the security of transactions. The disadvantage is the interaction between devices require more physical activity of device owners because the device must be brought near to other devices some times. Besides requiring more physical activity, NFC-based interaction also takes a longer time because the device need to be moved from one position to another. Secure and efficient protocol that will reduce the physical activity of the device owners and reducing transaction time. The data sending between merchant and payer will be executed without waiting for each other and one transaction will require two data transmissions are performed by the merchant and payer. Transactions are secured by the use of encryption on each data which sent by the merchant and payer. In addition, the protocol also guarantees the security of offline micro transactions and online macros transactions.**

Keywords-NFC-based payment, efficient protocol, secure mobile payment, secure protocol