

# NFC TECHNOLOGY FOR ACCESS CONTROL SYSTEMS

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Widespread use of mobile phone payments makes Near-field communication (NFC) technology a promising research area [1]. NFC provides both security and unambiguous identification of the paying user as well as reliable, fast resistance to various types of attacks identification algorithm that allow to use it in the access control systems.

As a result of a comprehensive analysis of NFC technology, the physical component, the NFC technology protocol, as well as the basic algorithms and methods of user identification based on NFC technology were investigated. The simulation results of an access control system based on NFC technology showed that for BPSK modulation, the probability of successful packet transmission is 100 %, while this is about 95% for QPSK modulation. In the presence of traffic jam and SIC, BPSK still gives a 100 % probability of successful

packet transmission, while this figure drops to about 80 % for QPSK. In other locations, PSR is approximately 90 % for BPSK and 60–70 % for QPSK.

The probability of successful packet transmission, for different rooms with different noise levels, practically does not depend on the level of the mixing factor. The probability of successful packet transmission for different visits with different noise levels decreases with an increase in the mixing factor.

Based on the simulation results, it can be concluded that NFC technology for user identification has a number of key advantages, such as: speed of operation, protection against various types of attacks, and also low cost.

## **References**

1. Coskun V., Ok K, Ozdenizci B. Near Field Communication (NFC): From Theory to Practice. John Wiley & Sons, 2011. 632 p.