

## References

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**УДК 004.656, 336.7**

### **NFC TECHNOLOGIES FOR IDENTIFICATION AND CONTACTLESS PAYMENT**

*Liu W., Balukho I. N., Kolchevsky N. N.*

*Belarussian State University*

*e-mail: liuwei198990@live.cn, kolchevsky@gmail.com*

**Summary.** *Since the birth of Internet, electronic money and electronic payment system have gradually appeared in various forms in the trade transaction scene, but the payment method and information security of the transaction are still one of the problems that need to be improved. With the popularity of intelligent electronic devices and the improvement of electronic money payment system, NFC payment, as a new mobile payment method, has gradually received widespread attention and application in all walks of life and our Daily life. This paper aims to explain the working principle, characteristics and future trend of NFC payment system in electronic money payment system.*

Today, the application of digital technologies both in the scientific field and in everyday life is widely developed. In everyday life, the application of IT technologies is an integral part of modern society. For example, NFC technologies are widely used for payment, discount programmes, e-ticketing, identification, online and physical access, and, of course, various smart home technologies (figure 1). The basis for all this is contactless data exchange, conversion and processing systems such as NFC and RFID.

Near Field Communication (NFC) technology is a short-range high-frequency wireless communication technology based on the integration and evolution of contactless radio frequency identification (RFID) technology and interconnection technology. When electronic devices with NFC function are close to each other, data can be exchanged. The initiating device excites the antenna with a 13.56 MHz signal to generate a magnetic field, and then transmits the energy to the target through near-field coupling. The target device to complete communication [2]. IT is mainly divided into active, two devices with NFC function, such as smartphones and payment terminals, each generate their own RF field to

communicate with each other. Each device generates an RF field, while another device (such as a smartphone) uses this RF field to communicate. NFC tags usually do not require a built-in power supply, but are power supply, but are powered by the RF field of an external device [2].

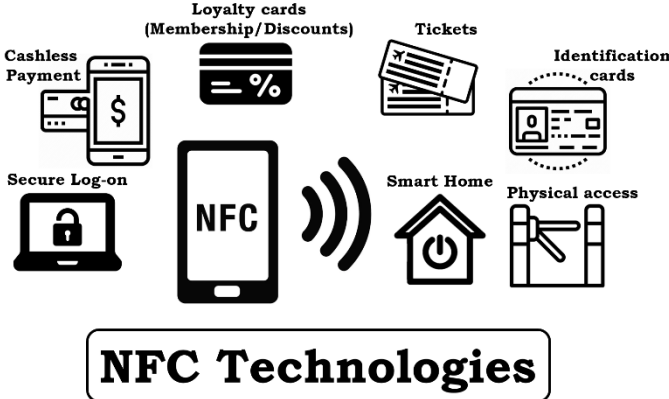


Figure 1 – NFC technologies

The devices involved in NFC are mainly divided into the following three types [2]: NFC tags, NFC reader/writer, NFC point-point devices.

The security mechanism of NFC payments usually includes encryption technology and dynamic token generation, ensuring the independence of each transaction and reducing the risk of theft. For example, a secure memory, communication interface and processor are installed.

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