

*M. Safonova, Master student*  
*K. Molodetska-Grinchuk, PhD in Engr., As. Prof., research advisor*  
*V. Shadura, senior teacher, language advisor*  
*Zhytomyr State Technological University*

## **THE SYSTEM CONTROL OF ACCESS BASED ON RADIO FREQUENCY IDENTIFICATION**

The aim of this study is to find more convenient way for accounting and control students, who go to school and to improve the security of participants of educational process applying modern technology.

### **1. Abstract:**

The problem of safety and security is a priority of the existence of any state. It is directly related to different spheres of any person's life, including the national education system.

Despite the fact that the protection of schools, kindergartens and universities is an important and necessary task, nobody undertakes centralized solution to this serious issue at the state level. That is why, the educational institutions (schools, kindergartens and universities), together with parent committees are focused on solution the problem of strengthening the protection of the institution.

Most schools just do not have the capacity to improve the safety of students and the staff. Thus, in the absence of any security systems installed on the territory of schools, the number of dangerous and emergency situations, criminal events, cases of child morbidity, injuries and even deaths cause huge problems.

Children are the most important object for both - the state and society, so the task of the project is to develop a user-friendly and affordable security system of educational institutions using contactless radio frequency identification (Rfid).

### **2. Introduction to RFID Technology**

RFID (Radio Frequency Identification- is a method of automatic identification of objects, that uses radio signals to read or write data from transponders or RFID-tags.

Any RFID-system includes a reader (or interrogator) and a transponder (also RFID-label, sometimes uses the term RFID-tag).

The reader – is a device, that reads the information from Rfid-tag. These devices can be constantly connected to the accounting system or operate independently.

Rfid-Tag or transponder is a device that receives and sends some data from and to a reader by radio frequency signal.

The classification of RFID-tags is as following:

- The operating frequency
- The power supply (active, passive, half passive)
- The type of memory (rewritable, Write-Once)
- The developing (materials and forms of production)

RFID-systems use four frequency ranges: 125-150 kHz, 13.56 MHz, 862-950 MHz and GHz 2,4-5.

More common frequency range is 13.56 MHz, because it is cheaper and more user-friendly.

### **3. The access system control**

The system control of access(SCA) is a set of hardware and software technical security measures that are intended to limit registration and log-out objects (people, vehicles) in a given area through the "point of passage": doors, gate checkpoint.

The main task is to control the access to the given area (when, at what time and on what territory), including also:

- access restrictions to the given territory
- identification of the person who has access to the given territory

The additional tasks are:

- time tracking;
- maintaining staff / visitors database;

### **4. The conclusion:**

The full operation system includes the PC, RFID-reader and RFID-tags.

The advantages of the developed monitoring system are:

1. Resource availability.
2. Low cost.
3. Easy to install, to use and to service.

## **REFERENCES**

1. RFID-метка на простой логике [Принципиальная схема и принцип работы метки](https://geektimes.ru/post/257560/). [Virtual Resource]//Режим доступа: URL:<https://geektimes.ru/post/257560/> - Загл. с экрана. – Дата обращения: 06.05.2016.

2. Система контроля и управления доступом[Virtual Resource] // Режим доступаURL:[https://ru.wikipedia.org/wiki/Система\\_контроля\\_и\\_управления\\_доступом](https://ru.wikipedia.org/wiki/Система_контроля_и_управления_доступом) - Загл. с экрана. – Дата обращения: 16.05.2016.

3. RadioFrequencyIdentification (RFID) *Access Mode: URL: <https://w2.eff.org/Privacy/RFID/>*Title from screen. – Date of Access:27.05.2016.