

# **SOFTWARE-HARDWARE DATA PROTECTION FROM UNAUTHORIZED ACCESS**

## **ПРОГРАММНО-АППАРАТНАЯ ЗАЩИТА ИНФОРМАЦИИ ОТ НЕСАНКЦИОНИРОВАННОГО ДОСТУПА**

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In the modern world, the Customs authorities of all countries should correspond to constantly changing global trade conditions. First, they are designed to its development. Second, they are obliged to prevent offenses and crimes in the Customs sphere thus ensuring safety. At this point, it is relevant to use innovative technologies in the Customs sphere such as software and hardware facilities to protect against unauthorized access.

There are many methods connecting with protecting information from unauthorized access: RFID, smart cards, bar-coding system, etc.

Bar-coding system is one of the most effective solutions for simplifying the processes of marking and inventory of goods flow. Bar code is a sequence of black and white stripes, representing some information in a form that is convenient for reading by technical means. Automation of the warehouse of any modern enterprise, which operates with large volumes of accounting objects, cannot be considered without this capacious system.

Automatic data entry and identification of units of cargo is the most modern method. This is achieved by scanning the attached labels on the product containing special barcodes. Information read-out is accomplished with the help of optical, laser scanning devices that illuminate the barcode with its illuminator and read-out the resulting image.

Thus, barcoding nullifies the human factor that occurs when product data is entered manually. Moreover, it can optimize costs because such process does not require interference of the employee. In that way, when the identification, the inventory and marking of goods are necessary the introduction of bar-coding is justified and logical.

Radio Frequency Identification (RFID) is a modern technology, where the needed information is recorded or read from a labeled or inbuilt mark in the object, using radio waves. Not long ago a manual method of data collection and recording was more common. Today, the RFID system is very popular. This technology is quite new; therefore it is used by a few logistics companies.

For example, the Lithuanian Customs bodies have been using electronic stamps of radio frequency identification on lorries passing through the country for several years - mostly moving from China to Russia and to Eastern Europe in

order to prevent smuggling and stealing goods transported across their borders to other countries and ports.

*The main advantages of RFID over barcodes are the following:*

- the possibility of reading even hidden marks;
- the amount of memory which is up to 10,000 bytes when bar codes are up to 100 bytes in total;
- the possibility of identifying up to 200 marks per second, barcodes do not have such a function at all;
- validity of the label which is more than 10 years;
- the high level of security, the barcode is fake easily;
- the possibility of identifying moving and metallic objects and etc.

Nevertheless, the bar-coding system is still more popular in trade regulation while the most effective solution for quick processing is the usage of radio-frequency identification.

At that point: technologies will provide a foundation for unimpeded interaction of the Customs authorities with both different customers and other state bodies that is why technologies are the basis for international trade. The main Customs programs will be focused on sustainability and security, where the use of radio frequency technology will become common practice. In turn, this will enable the Customs officers to resolve unsolvable tasks now.

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