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System of management and traceability of logisticitems through new technologies

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Abstract

The article deals with management, controlling and traceability of transport containers through automatic and data capture technologies. The identification and monitoring of roll cages through new technologies, allows the administration and management of container logistics. The main tasks include the traceability and control of the movement of containers and accumulation of transport units within the logistics centers. In this article we would like to share knowledge how to provide visibility, identification and monitoring of roll containers in real condition by selected logistics provider. Our pilot tests are based on the results reached during the test that was realized on a selected area of transport network, the aforementioned logistic provider. The end of the article focuses on the economic assessment of the managing, monitoring and identification of containers in conjunction with needs of the logistics provider.

1. Introduction

Automatic identification and data capture i.e. AIDC system of varying technologies for data collection based on different principles. They are mainly bar code technology, radio-frequency identification, voice identification, OCR technology, identification via infrared, etc. RFID could be called the rising star in this family, in that it seems poised

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to offer many benefits not yet offered by any other technology. Radio frequency identification (RFID) technology is considered as ''the next big thing'' in management (Wyld, 2006) since the technology enables:

- This technology can provide valuable data for optimizing business processes, as well as to increase the degree of automation and will allow the elimination of bottlenecks(Strassner, &Schoch, 2005).
- This technology will further enable the emergence of new intelligent processes that allow their automatic implementation based on demand.

RFID technology is increasingly starting to become part of our everyday life. The biggest advantage of this technology is undoubtedly its ability to identify, monitor movements of persons of assets in real time. Another advantage is that it does not require line of sight between the RFID tag and an RFID gate. At present, we can say that it is applicable in almost all areas of human life. But its greatest application is in the area of logistics. In this context there are several question of feasibility of the use of identification of goods. The most important aspects that determine the possibility of introducing new technologies into organizational processes. In addition to these important aspect is the objectivity of the introduction of new technologies.

There are many pilot solutions in conjunction with tracking goods, roll containers to measure trailer utilization and to track container locations (Vaculík, Kolarovszki, &Tengler, 2013). At present there are still many businesses that use manual tracking systems for containers. This activity is not cost- and time-consuming. This process moreover does not provide information in real time and thus may not be in peak periods sufficient information for optimal management. One of the potential application of RFID technology. Suitably selected points within the transport network logistics operator to monitor the movement of containers in real time. Through historical data and data from RFID readers can be better management realized containers throughout the logistics network. This technology is able to provide relevant information to reduce the cost of transportation of containers between branches logistics operator, also allows to reduce the rate of loss of containers and ensure relevant information about their utilization and maintenance.

In general, and based on the results of various solutions based on AIDC technology it can be stated that the automated processes are much more reliable than manual ones. The most common AIDC technology is bar code technology, which uses optical scanners to read labels. Most people in the world already has experience with barcodes, especially in the time of smartphones. Faced with them, mainly at stores but also in other activities of your life. Barcodes can be named to mark a small revolution because they allow automated read at one time or several numbers characters in a row, a human vision not. The actual use of this technology will significantly accelerate and improve the accuracy of the identification process. Another important technology is already mentioned RFID technology. This technology again represents a small revolution in terms of identification, and because it allows what other technologies cannot. The whole principle is based on the use of small electronics to communicate via radio-frequency waves.A type of AIDC technologies clearly describes figure 1.