



## MODERN WAYS TO AUTOMATE THE INVENTORY PROCESS

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### Annotation:

This article is devoted to the consideration of the application of bar coding and radio frequency identification technologies, which make it possible to increase the efficiency of the inventory process of material resources.

### Key words:

Inventory, inventories, bar coding, radio frequency identification technology.



Currently, any enterprise is obliged to carry out such a procedure as an inventory. And warehouses are no exception. The inventory is carried out at least once a year (mandatory inventory carried out before the preparation of annual reports). In warehouses, inventory is usually carried out much more frequently.

Inventory means stopping the warehouse for a certain period. A simple warehouse can be expensive, especially if it is large enough. For this reason, companies are interested in carrying out the inventory procedure as soon as possible.

Today, warehouses are solving this problem by introducing modern software and hardware systems that automate inventory operations and make the inventory process as a whole much faster and more accurate.

Based on this, we can say that the study of the latest means of conducting an inventory is very important and relevant. It is these tools that will be considered in this article. To begin with, let's define what an inventory is. "Inventory is understood as an assessment of the presence and condition of the organization's property as of a certain date by comparing actual data with accounting data. Inventory is the main way to control the safety of the company's property". Warehouse inventory has its own characteristics:

- Inventory of a warehouse begins, as a rule, with drawing up a detailed work plan, where accounting zones are approved, the timing for each of the zones, as well as field employees;
- Difficulty tracking natural losses in the warehouse (shrinkage, deterioration, etc.);
- When receiving and shipping goods, warehouse personnel can often make mistakes, which leads to misgrading, shortages and surpluses, which are found as a result of the inventory;
- The complexity of the warehouse inventory process due to the need to process a large amount of data (especially in the case of large warehouses) in a limited time frame.

Let's go directly to the issue of automation. Automation of the warehouse inventory process is the first step towards eliminating the influence of the human factor and accelerating any processes in the company.

The structure of a modern hardware and software complex used in the inventory process usually includes:

- automated accounting system (for warehouses it is WMS (Warehouse Management System) or warehouse management system);
- specialized means of marking storage places and items of inventory property (various types of marking material with already applied identifiers, as well as equipment for applying or programming such identifiers on blank blanks);
  - means of collecting data of used identifiers
  - (data collection terminals - TSD).

Control of the compliance of the actual level of stocks with accounting data is possible by means of an inventory, which is a periodic determination of the quantity of stocks by means of their physical count. The main purpose of the inventory is to determine the real amount of available inventory, identify surpluses and shortages and make sure the information about the available inventory is accurate and complete, based on its comparison with the information obtained during the inventory. The type and frequency of the inventory, as well as the list of checked nomenclature items are determined by the management of the enterprise. There are two types of inventory: complete and selective. Carrying out a complete inventory covers the entire list of stocks of material resources available at the enterprise and requires a temporary stop of warehouse operations at the time of its implementation. Suspension of acceptance and release of stocks from the warehouse during a full inventory is justified by the need to reflect the most accurate information about the available inventory. A complete inventory is carried out once or twice a year and may take several days. During its implementation, a significant number of employees from various departments of the enterprise are involved, who may not always be familiar with the subject area. Selective inventory is carried out at a specified frequency according to the established list of stock items without the need to stop warehouse operations. In most large enterprises, a dedicated staff, the Inventory Team, is responsible for conducting this inventory to supplement and sometimes replace the complete inventory. Inventory can be carried out without fail. In accordance with the Federal Law "On Accounting"

the reasons for the mandatory inventory are:

- 1) transfer of property for rent, redemption, sale, as well as transformation of a state or municipal unitary enterprise;
  - 2) preparation for the preparation of annual financial statements;
  - 3) change of financially responsible persons;
  - 4) identification of the facts of theft, abuse or damage to property;
  - 5) natural disaster, fire or other emergency caused by extreme conditions;
  - 6) reorganization or liquidation of the organization;
  - 7) other reasons provided by the legislation of the Republic of Uzbekistan.
- The final result of the inventory is a reconciliation of information on stocks, identification of deviations between recorded in accounting and actual data, as well as recalculation and the necessary corrective measures. The problem of carrying out an inventory consists in the presence of the risk of errors caused by the human factor, and in the impossibility of promptly obtaining information about the level of stocks in the warehouse, which, as a result, can lead to discrepancies in accounting statements. Solve this problem allows the automation of the inventory process, which consists in the use of special software and technical means of identification. These tools, depending on their type and the software used, can cover both individual stages of the inventory, and apply to the entire process as a whole. The most widespread today is the barcoding technology based on automatic identification, collection and transformation of information presented in the form of bar codes printed on certain rules for combinations of elements of the established shape, size and color. The barcode applied to the identification object is read and transferred to the system using a special barcode scanner device. The advantages of this technology are comparative simplicity, accuracy, reliability, and its low cost. The disadvantages include the need for direct optical contact

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The cost of RFID tags significantly exceeds the cost of barcode labels, which in some cases makes the use of radio frequency identification technology economically impractical. The inventory process using bar coding or RFID technology is carried out in several stages. The first stage is preparatory and includes the formation of a database in accordance with accounting documentation, assigning individual inventory numbers to accounting units, printing barcodes or labels for RFID tags and marking all inventory items.

The second stage is the actual inventory process, in which the commission employees scan and transfer information with the help of reading devices from barcodes or RFID tags located on fixed assets and inventory items to the information system

The third stage consists in analyzing the results of the inventory, comparing the information received with accounting data and automatically generating the necessary reporting documents by the software. An important factor in the use of technologies for automatic identification of inventory objects is the existence of a unified information system for managing stocks of material resources at the enterprise. If available, it should be possible to integrate inventory software into the enterprise information environment in order to increase the efficiency of the inventory process.

To do this, you should make sure that the software is compatible with the information system used at the enterprise, and also check if the equipment used is in the list of supported devices. The most common way to achieve compatibility between the enterprise information system and the software used in the inventory process is to unify the file formats used. In the absence of a unified information system at the enterprise, the inventory software can be a separate stand-alone module. Automating the inventory process using the presented technologies can achieve the following results:

- 1) reduce the time of inventory taking, reduce labor costs for inventory taking, minimize the number of employees involved in the process and reduce the burden on the remaining staff;
- 2) minimize the amount of inaccurate information arising from employee errors, as well as reduce the search time for this information that has already appeared in the system;
- 3) ensure the completeness and correctness of the inventory results;
- 4) to quickly analyze and process a significant amount of information, to minimize paper workflow;
- 5) automatically generate reporting documents.

Thus, the use of the automatic identification technologies presented in this article can significantly increase the efficiency of the inventory process of material resources, reduce the costs incurred, reduce the time of its implementation and achieve the most accurate information processing.

For this reason, many organizations interested in a successful inventory are opting for automation over manual inventory tracking. In most cases, the choice is made in favor of barcoding technology, due to its relatively low cost compared to radio frequency identification technology, as well as sufficient functionality for conducting inventory in most enterprises.

## References:

1. Inventory: concept and types / General ledger. - 2017.
2. Bondarev A.A. Organization of inventory at a trading enterprise using information systems [Electronic resource] / Free Internet library. - 2014.
3. Inventory in the warehouse: money loves an account [Electronic resource] / logistics.ru Industry portal. - 2015.
4. WMS systems. What is it? / Ant Technologies - warehouse management systems.
5. Nessebar D. WMS warehouse management system. WMS system - what is it? / - 2014.
6. Implementation of RFID technology for warehouse automation and inventory [Electronic resource] / Business automation.
7. Simakina A. "Smart warehouses": how sensors, robots and drones are changing logistics [Electronic resource] / iot.ru News of the Internet of Things. - 2016.