

Innovation of Logistics Management Model Based on Automatic Identification Technology

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Abstract: With the development of economic globalization, enterprises are facing more and more fierce competition. Many enterprises have realized that the informationization of logistics management will become an important factor for their success. China's logistics field has achieved considerable progress. The extensive application of automatic identification technology in logistics management is the most intuitive manifestation of this progress. Modern logistics information has a large quantity, many sources and fast change. Today's express delivery industry, because of the application of automatic identification technology, can greatly improve the speed of logistics. As the entrance of logistics information into logistics information management system, its speed and accuracy become an important link to restrict logistics information management and logistics management. In order to ensure that the automatic identification technology can better serve the development of various industries in our country, this paper makes a specific study on the application of automatic identification technology in logistics management.

1. Introduction

With the rapid development of China's economy and the continuous expansion of enterprise production, the implementation of enterprise logistics management informatization has become an urgent requirement to improve the level of enterprise management and market competitiveness [1]. Whether it is train tickets and air tickets needed for travel or express delivery industry which is closely related to people's life, automatic identification technology has already been widely applied in it. The achievements of this application in various fields have also made automatic identification technology get more and more attention [2]. The amount of modern logistics information is large, the source is many, and the update is fast. Today's express delivery industry is able to greatly improve the speed of logistics because of the application of automatic identification technology. The logistics information must be collected, processed, stored, transmitted and utilized in a timely manner, in order to achieve the purpose of accurately grasping the logistics dynamics and implementing scientific logistics management [3]. In the face of future opportunities and challenges, it is necessary to continue to apply automatic identification technology to logistics management. As the entrance of logistics information into the logistics information management system, its speed and accuracy have become an important part of restricting logistics information management and logistics management [4].

The rapid development of information technology also provides a good technical guarantee for enterprise information construction. In particular, the development of computer and communication technology has greatly improved the processing power, storage capacity and transmission capacity of information [5]. The automatic identification technology has also gradually developed. It has laid a good foundation for the data collection in the enterprise informationization. Its application in the enterprise logistics management information system will bring higher management level to the enterprise [6]. Automatic identification technology has developed rapidly in developed countries abroad. China has also realized the industrialization of automatic identification technology, such as China's second-generation ID card and train ticketing system. Automatic identification system usually consists of reader and electronic tag. The reader is also called a communicator or a reading

device, which is used for generating and transmitting radio frequency signals and receiving the radio frequency signals reflected by the electronic tags, and obtaining tag data information after processing [7]. In order to ensure that the automatic identification technology can better serve the development of various industries in our country, this paper makes a specific study on the application of automatic identification technology in logistics management.

2. Importance of Automatic Identification Technology in Logistics Management

2.1. Laying the foundation of logistics management informatization

Logistics is one of the most influential new disciplines in modern times. It takes the dynamic circulation process of things as the main research object, reveals the internal connection of logistics activities, makes the logistics system emerge from behind in economic activities, and becomes an independent research field and subject scope. Noise signal filtering is one of the basic tasks of image processing, mainly including linear filtering and nonlinear filtering. The image filtering technology is simply a technology that designs a suitable filtering algorithm for the image signal polluted by noise so that the filtered image signal can best approach the original image signal [8]. An image may be disturbed by various noise sources, including electrical sensor noise, photographic particle noise and channel error. The noise is filtered by linear or non-linear filtering method for the image disturbed by noise. Logistics is the flow of material, and material is the main object of logistics management. The informationization of materials is the basis of realizing the informationization of logistics management. No matter how powerful the function of computer processing information is, how fast the network transmits information, the material of entity can not enter the information network system.

2.2. Promoting the development of modern logistics

Only by virtualizing and coding the material's physical characteristics, such as its variety, quantity, origin and other information, and inputting it into the computer system, can the material be managed informatization. For automatic identification technology, electronic tag, reader-writer and computer network are its main components, in which electronic tag is responsible for storing commodity information, reader-writer is responsible for reading and modifying information, and computer network is responsible for transmitting and exchanging information. Automatic identification technology automatically collects data, automatically identifies information, and automatically inputs the information into a computer, so that human beings can process a large amount of data and information in a timely and accurate manner. The edge information of an image corresponds to a high frequency signal, so linear filtering methods often lead to blurred image edges and cannot achieve good restoration effect [9]. Because sorting is a time-consuming operation, for each pixel, the adaptive filtering method with small and large filtering window can significantly increase the computing time. Enterprise logistics is a logistics activity with enterprise management as its core, and it is a typical micro-logistics field. It is the process of organization and management of material flow and related information flow from raw materials to product users. For the signal, due to band limitation, the energy of the signal is mainly distributed in the low frequency region. Therefore, for noisy signals, the proportion of noise energy in low frequency region is small, while the proportion of noise energy in high frequency region is large. Therefore, the focus of denoising should be in the high frequency region. Figure 1 is the structure of the digital image analysis system.

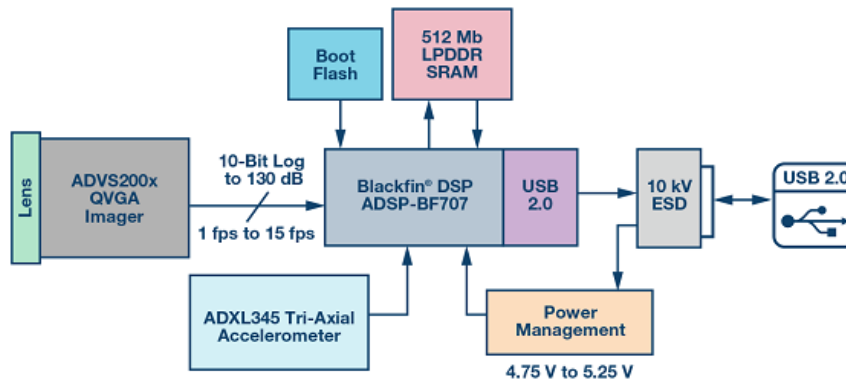


Fig.1. Automatic identification of digital image processing analysis system structure

3. Application of Automatic Identification Technology in Logistics Management

For the logistics industry, in order to improve the overall logistics speed, it is not only necessary to increase the speed of cargo transportation, apply faster transportation, but also reduce the time required to write, record, and scan items. Traditional materials transfer handwritten records have the disadvantages of slow speed, low efficiency, and difficulty in ensuring accuracy. The application of automatic identification technology in logistics management can realize timely control of logistics information. In the implementation process of adaptive threshold median filtering, the full parallel comparison sorting algorithm is based on parallel comparison of any two numbers in the sequence [10]. In order to speed up the adaptive median filtering, make full use of the relationship between the front and back windows, and reduce the data elements involved in sorting. Networking will connect the branches, suppliers, distributors and customers in different geographical locations. Through the enterprise logistics management information system real-time analysis, query, summary, exchange of data.

Storage of a large number of information, reading and recording of logistics information, control of the whole process of logistics information, timely discovery of logistics management problems, and rapid management of logistics information are all important manifestations of the application of automatic identification technology in logistics management. There are two ways to combine multiple digital image windows: serial and parallel. The method adopted is a proportional link and a number of digital image links in parallel. Each digital image link tracks and controls a frequency signal. The system also considers the influence of the nonlinearity of the inverters. The parameters of the inverters are shown in Table 1.

Table 1 Driver power inverter parameters

Parameter	Numerical value
Modulation carrier period (μs)	130
Modulated carrier frequency (kHz)	10
Delay time (μs)	5
Flywheel diode voltage drop (v)	2

With the rapid development of modern logistics, precise logistics management has become a common pursuit in the field of logistics management. If this pursuit is to be truly realized, it must be supported by automatic identification technology. Enterprise logistics management system mainly includes planning management, raw material management, production management, warehouse management and several sub-modules. In logistics management with automatic identification technology, a large number of logistics information can be recorded, classified, identified and stored efficiently with the support of automatic identification technology. Median filtering is a sort operation in the sliding window, so most of the results of the previous sort are retained in each sliding window. Entering the sorting operation this time, the amount of sorting calculation is reduced and the system time is saved. The noise embedded in the image shows different characteristics. The ultimate goal of enterprise logistics management information system is to minimize enterprise logistics, reduce the residence time of raw materials and products in the

enterprise, and speed up capital turnover. The logistics management informatization based on this has greatly improved the speed of physical transportation, which has given more powerful support to the development of modern logistics in China, thus showing the importance of automatic identification technology in logistics management.

4. Conclusions

In the automatic identification technology, RFID technology has incomparable advantages over other technologies, but it has not been widely used due to its high cost. However, with the development of technology, its cost has approached the practical stage. The implementation of enterprise logistics management information system has accumulated a large amount of product data, which contains a lot of useful information waiting for us to find. This paper studies the application of automatic identification technology in logistics management, and discusses in detail the connotation of automatic identification technology, the classification of automatic identification technology, and the importance of the application of automatic identification technology in logistics management. The images acquired by the imaging system are often not directly applicable due to various conditions and random interference. The original image must be subjected to image preprocessing such as gamma correction, noise filtering, etc. at an early stage of the application. The adaptive median filtering effect is better than the standard median filtering effect, which not only filters out the impulse noise, but also preserves the image details. The system should introduce data mining technology to realize the analysis of the enterprise logistics management information system data and the extraction of knowledge will bring the value of the system to a greater extent.

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