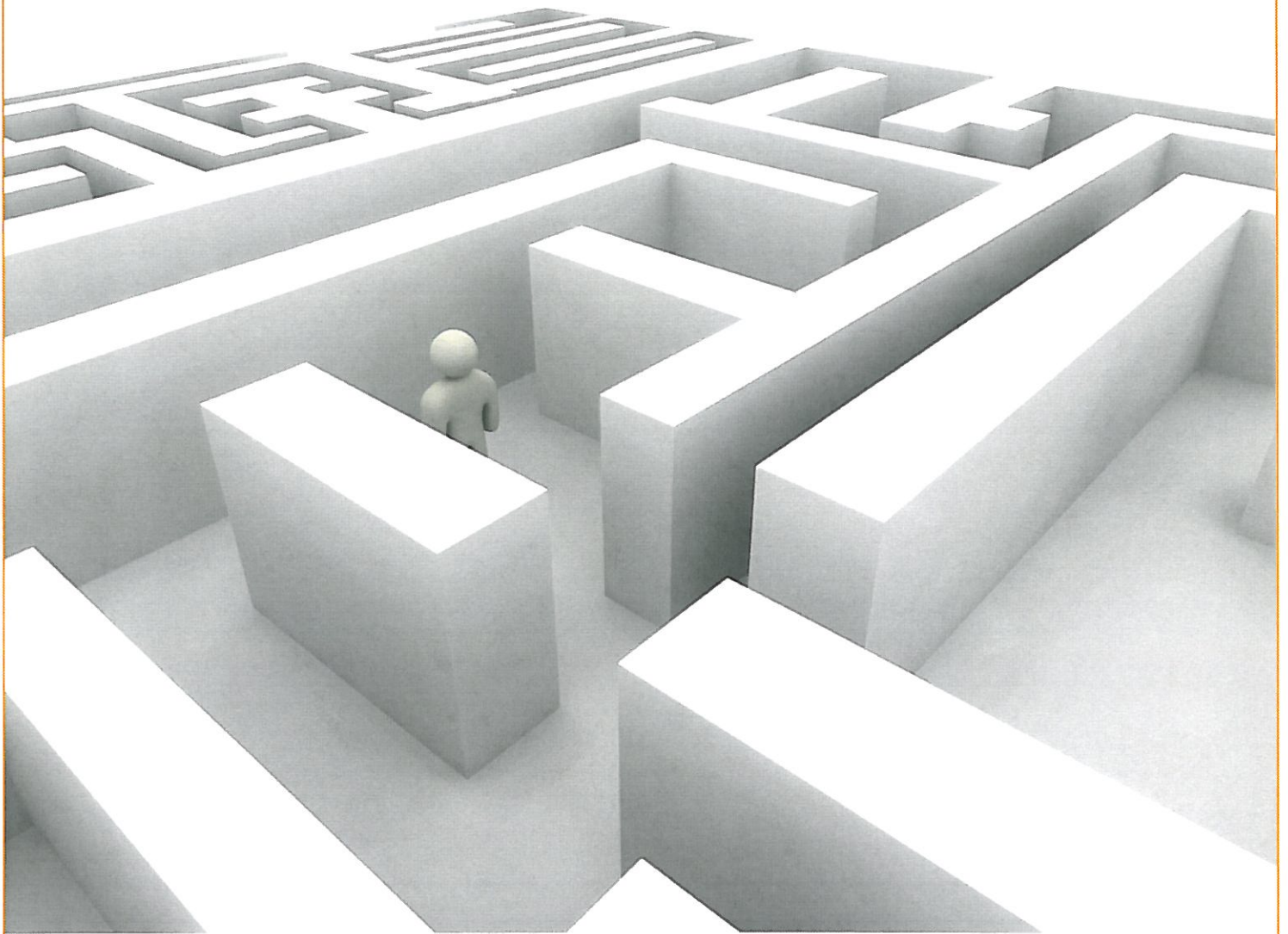




The Ultimate Solution Provider for Apparel Industry



How Should Garment Manufacturers Select a RFID Real-time Production Management System?

Whitepaper

November 2009

www.igarment.net

How Should Garment Manufacturers Select a RFID Real-time Production Management System?

The business flows of garment manufacturers are very complex and cumbersome. On the one hand, they need to deal with the numerous data generated during various production processes, on the other hand, they have to prevent huge backlogs of WIP on the production floor. Therefore, the application of information technology seems to be particularly important. Many enterprises have started to introduce RFID (Radio Frequency Identification) solutions to assist in production management and to improve efficiency. In order to successfully apply a RFID solution, first you need to select a proper system, and understand its major risks, objectives, features, system flow and so on.

1 Define Clear Objectives of Applying a System

First of all, the most important thing is to have a set of clear objectives. The RFID system you want to install must be based on attaining these objectives. No matter you introduce RFID to comply with business partners' requirements, or to track production, you must first precisely define what you need the RFID solution to do for you.

RFID solutions are superior than other data collection methods in the way that RFID can provide real-time production data, thus enable management to take immediate action, correct errors before they become costly problems, and balance production lines. However, this also relies on whether the system design is capable to collect real-time data or not.

If the system is designed to download data from the RFID reader on daily, half-day or hourly basis, though the data collected can still be used for analysis, the data are too old to enable error correction at real-time, to solve problems which may lead to production stoppage, thus it is difficult to improve productivity.

2 Choose the Right RFID Data Collector

The data collectors currently available in the market include: with display, without display, with keypad and without keypad. The choice of collector depends on the enterprise's actual needs and budget.

If you just need to collect information without the need for real-time data feedback, you can do without display. On the contrary, you need a display screen to reflect in real-time the accuracy of data captured.

The keypad is used to input additional information which is not included in the RFID tag, such as defect location, rework causes, production downtime causes, etc., so as to feedback the actual production status, to provide further information and to enhance the system functionality.

What is RFID?



RFID stands for Radio Frequency Identification, is a non-contact type of automatic identification technology. It utilizes the RF technology to identify the electronic tags embedded on objects, uses radio signals to receive and transmit the information to the system wirelessly.

Characteristics of RFID tags:

- Readable & writable
- Re-usable
- Environment tolerable, stain resistant
- Difficult to duplicate
- Long lifetime

RFID technology can be applied in a wide range of areas, including:

- ID cards, passes
- Electronic toll collection system such as Octopus
- Product anti-counterfeiting
- Supply chain management including retail, logistics and manufacturing

As far as the manufacturing industry is concerned, RFID is normally applied in object tracking and data collection in order to achieve real-time monitoring.

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Data Transfer Method

As real-time data has a great effect on the system functionality, it is important to understand the requirements of real-time for different data transfer methods.

i) Direct Transmission

After data capturing, the RFID collector will directly transmit the information to the server, then the data will be integrated into the application system. In this way, there are less data for transfer each time, the data is definitely real-time, and it is capable of real-time information feedback. However, it is needed to pay special attention to the system reliability and server loading issues. If there are several thousand data collectors transmitting information simultaneously, the server may get overloaded. Furthermore, you need to consider whether production will be affected during server failure or line interruption, how to solve these problems, and what about the costs.

ii) Server Extraction

Data are stored in the RFID collectors waiting for the server to extract and then send to the system. This kind of data transmission has the advantage that production will not be affected even if the server is dead or the line breaks. Once the server resumes operation, it will re-pull data from the collectors, results in higher system reliability. However, bear in mind that the data pulling cycle of server depends on the number of collectors, as well as the pulling time of each collector. The heavier the data loading, the longer the pulling cycle, and the longer the data refresh time. If data cannot be always refreshed instantly, it will be impossible to achieve real-time.

To determine whether the system can provide real-time data or not, the simplest way is to check the speed of information feedback. Users are able to see if the data have been processed and instantly feedback to the system from the RFID collectors' display or from the computers..

RFID System Components



- Electronic RFID cards
- RFID data collectors
- Data Collecting Computers
- Data processing system
- Network facilities

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The Lifetime of RFID Collector

The lifetime of data collector depends not only on its performance and quality, but also the way data is written. Collectors with built-in memory normally use Flash RAM, its endurance of one particular location is limited. If frequently write in the same location, flash memory will soon be damaged, the life of reader will also be ended.

If the system is designed to read data once a while, then this is not a problem, otherwise, need to avoid keep writing in the same location on the flash memory.



In conclusion, the most important criteria in selecting a right RFID system are the real-time, reliability and stability of data. In addition, it is essential to understand the total cost of installing a system. Most enterprises only take into account the costs of application software and data collectors, while overlook some hidden costs such as the lifetime of collectors, computer hardware, software licensing, network facilities and so on.



About iGarment

iGarment is a professional software provider of one-stop management system solutions for the apparel industry. As a pioneer who has been devoted in the research and development of application software since 1987, iGarment provides comprehensive and flexible solutions which allow enterprises to perform real-time and cross-country management. Our extensive knowledge and expertise in the industry enable us to deliver business solutions meeting the specific needs of apparel enterprises, and ensure a smooth running of their day-to-day business in the most effective and efficient way.

For more information, please visit www.igarment.net or send email to sales@igarment.net.

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