Smart RFID Cabinet

Security and traceability

IWMS – Intelligent Warehouse Management Systems

The most important areas in warehouse management are security and traceability. Without security there is no guarantee that items still exist; without traceability there is no way to track them, no way of knowing where they are or, how they were applied. A proper warehouse management system as always seemed unfeasible.

And the outcome is already known; especially in the health sector where any “out of stock” situation can have disastrous results. Costs grow with the necessity of increasing stocks, maintaining intermediate stocks, losing track of expiration dates, etc.

Although these are known problems, there have not been any safe and reliable solutions to solve these issues.

Bar code

At first, bar codes on packages seemed to be a good ID solution and a stepping stone to sound warehouse management.

Only readable with line of sight and always with single-item reading, they at least proved to be a good way to avoid transcription errors. And this is all they have ever been good for.

With the introduction of medication prescription by active principle, the current product coding is no longer valid, as it reflects the supplier code and distinguishes between two products with the same application.

The reading of a bar code demands the labelled packages to be handled one at a time. An additional time-consuming task.

Technology

Datelka has developed a solution using UHF RFID, following the EPC Gen II standard (Electronic Product Code).

EPC will eventually replace the EAN (European Article Number) the visible characteristic of which is the current bar code. Though its external look is similar - it has the form of a label - two basic aspects distinguish the two: 1) readings can be made without line of sight and for multiple items; 2) the information contained in the identifier can be updated at any point of the supply chain.

These two aspects make all the difference. The user can now obtain information from all the products in a controlled area, control the amount of products on the go and write additional information like expiration date, lot, dangerous drug interactions etcetera, always from any network access point.

The ability to write on the tag and record relevant information anywhere in the supply chain, enables tracing the medicine from the moment it is administered all the way to the day it left the manufacturer’s premises.

Operation

The available cabinet management processes are highly fallible. Without the ability to control access to the cabinet contents and the quantities involved, it is practically impossible to guarantee efficient management of these items.

Controlling access is an essential first step, unequivocally identifying the user through RFID technology or vascular hand biometrics, which is ideally suited for the hospital environment, as it allows identification without any physical contact.

Once the user has been identified and his permission to access a specific cabinet (in a given time frame) has been confirmed, the system quickly reads the contents of the cabinet before the door is opened.

All the products are identified with an RFID tag, allowing them to be read without line of sight, from a central point in the premises. Knowing the contents of the cabinet and obtain an effective control has become a matter of seconds.
Datelka has developed a solution consisting of storage modules in a controlled environment.

The storage modules are basically cabinets, with a structure adapted to an RFID-controlled environment, including exterior shielding and internal reading optimization.

These units have an alarm system and redundant access control (that work both with and without power) and can include all the current leading ID technologies, such as:

- proximity card (RF)
- touch memory
- fingerprint biometrics
- hand biometrics
- vascular recognition
- Iris Recognition
- 3D face recognition

Each of these units has a TCP/IP interface, allowing it to connect to the IT network and access any cabinet and its content remotely.

### Customer Benefits

Expiration dates are no longer a problem. From any workplace the user can look up a certain product/active principle in all the areas where it might be duplicated, evaluate total stocks, understand available expiration dates and identify the critical ones or assess the critical dates for all products.

Fast and easy identification of all remaining items of a particular lot that has to be returned is done on the fly - today, this simply isn’t possible.

Shortage of stock in one unit can be supplemented by the availability of the product in another unit.

All the interactions with the cabinet are validated against operating errors, either with quantities or references.

### Additional Equipment

#### Labeling station

Label production is made by an RFID enabled label printer that prints the information on the label and records it on the tag chip simultaneously.

#### Conference station

Especially when supplying units where conference is mandatory (medicines, accessories etc.), the conference station is a valuable addition. It gains even greater relevance if some of the items have to be manipulated before they are delivered or applied.

After they have been taken off the cabinet, the stored units are placed in a control zone, where quantities and product references are validated.

This zone can either be shaped as an entrance/exit tray or simply applied to the interior of the distribution tables.
Applications

- Hospital pharmacy
- Intermediate stocks in advanced units
- Products on consignment, with remote consultation by the supplier
- Sterile equipment
- Laboratory (confirmation of the expiration date and lots of reagents)
- Operating room

Dimensions

- 60 x 80 x 210 (D x W x H in cm)

Datelka

Founded in 1981, Datelka – Engenharia e Sistemas is a Portuguese systems integrator that specializes in ID and control of people, vehicles and goods.

As an engineering company, Datelka designs, develops, installs and maintains solutions that are mostly tailor-made. Using our vast know-how on all kinds of devices and software platforms, we at Datelka design hardware and software that allows for seamless integration of systems, user interfaces, industrial devices or whatever our customers need to make their businesses more efficient, thus-ensuring they can focus on their business priorities.

Datelka installs and integrates systems in these key areas:

- RFID or Biometric ID
- Access Control, Intrusion and Video Surveillance
- Time Attendance
- Logistics
- Industrial Production Management and Control
- Cafeteria Control
- Dynamic Emergency

For more information click here to access www.datelka.pt