Case study

Grupo Disber

At a glance

Customer: Grupo Disber

Industry: Specialised distribution

Market: Distribution

Application: Tracking

Product: IF61 RFID reader. Intermec IA39B and IA39C Antennae. CN3 handheld computers. IP30 mobile RFID readers.

Developer and implementer:
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Christmas hampers with RFID technology

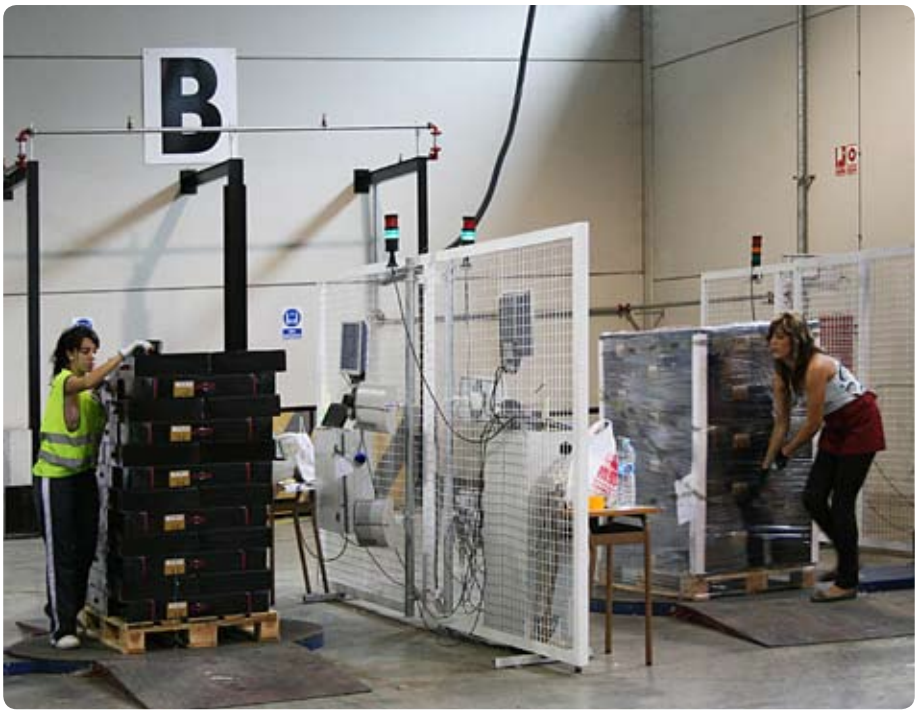
In Spain, the Christmas hamper (cesta de navidad) is the most popular and most widely-given gift, particularly among businesses. And Grupo Disber is Spain's leading company in the production, sale and distribution of this product, offering a wide range of hamper options. It is also very much a seasonal business focused on the last few months of the year, where speed in meeting the demands of the market, tracking the product and the reliability of the operations are crucial. In record time, Tag Ingenieros Consultores and Intermec have developed a tracking solution based on RFID technology which has increased operational efficiency, enhanced productivity, and has reduced product handling and distribution errors to virtually zero.

The objective of the RFID project at Grupo Disber was full, automated, error-free tracking of these Christmas packages from the production stage through to dispatch, including monitoring refunds. It covered picking, palletization, pallet shrink-wrapping, transferring the pallets between warehouses and their temporary storage and dispatch to distributors and customers. Grupo Disber's focus on innovation meant they were seeking a state-of-the-art technology solution based on RFID technology. They used engineering company TAG Ingenieros Consultores, S.L., which carried out the project's analysis, design, planning and execution with the help and support of Intermec, which provided all the RFID equipment needed to identify and track the Christmas packages and boxes.

The challenge

According to **Vicente Arastey**, assistant manager at Grupo Disber, *"The company's needs were to locate and identify the boxes and packages at its various storage warehouses. The sheer number of the pallets produced – up to 1,000 per day – led on numerous occasions to losses of goods in the storage areas, with the consequent associated cost. Additionally, there was no way of tracking the boxes and packages, so it was not possible to identify which had been dispatched to each customer. The solution to this was RFID. A comprehensive analysis of the company by our supplier, Tag Ingenieros, found that this technology was the only solution which could drastically reduce or eliminate all the customer service problems we were having, thanks to the visibility and automation it introduced".*

The processes were not affected at all, since one of the benefits of RFID is that it offers totally user-friendly technology



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Processes are completed in less time and a lot of information about the status of all the operations is available in real time, such as work in progress, availability of goods in stock etc.

CN3 handheld computer

The project began by identifying each of the Christmas packages and boxes the company wanted to track throughout all of the company's processes. By adding an RFID tag to the box or package's quality guarantee stamp, each product can be monitored across all the different warehouses and during dispatch to the distributors and customers.

According to Arastey, *"RFID technology enables us to identify multiple items at the same time, remotely, and without needing to view them directly. This was key for automating the validation and identification processes in the scanning areas. We had previously been working with the bar code, but the need for per-unit, manual scanning increased the time spent on validating the pallets, transferring them between warehouses, dispatching them etc., not to mention the errors we used to encounter during the identification process".*

System ready for the Christmas campaign

One of the key goals was to design and implement the project rapidly. In just four months, Tag Ingenieros and Intermec carried out analyses of the processes and ran the pilot project, applying RFID technology to their processes and to the type of products they needed to identify, in order to ensure they worked well in the company environment. Once the pilot project was complete, the scanning devices were set up and installed. Everything was ready in time for the Christmas campaign, with zero impact on the company's operational processes.

As Arastey says, *"The processes were not affected at all, since one of the benefits of RFID is that it offers totally user-friendly technology. All we needed was a set of instructions in the dispatch process when loading the lorries, since all the pallets have to be loaded onto the lorry using mobile RFID docks".*

For the users and workers, the impact of the new technology has been very positive. *"The new technology makes their tasks easier and they get help in validating the pallet to be shrink-wrapped and dispatched. The information shown on the screens installed at each of the RFID reading points also helps them make corrections",* Arastey adds.

By tracking each of the Christmas packages and hampers, the company now has an effective monitoring system at all of its premises, with a semi-automatic product validation system. The control and monitoring functions obtained by integrating the RFID technology into all the products means that they have a great deal of information available in real time associated with every single product. Information on the stock availability of a particular product, and the boxes which are being dispatched or which are at a specific warehouse can now be known at any time.

The per-unit tracking of each product has reduced complaints and refund requests from distributors and customers, since various checks and controls are being carried out up to the moment the orders are dispatched.

Intermec

tag ingenieros

Tag Ingenieros and Intermec's teamwork has enabled the project to be completed in just four months, from initial analysis to implementation

IP30 Handheld RFID Reader

Fewer errors, more reliability
Another great success of this installation has been the reduction of errors and their associated huge costs in terms of refunds and product returns. *"The error rate in the operatives' identification processes has been reduced. An RFID portal is used to scan the whole pallet. Additionally, the operative is shown any errors which have occurred during the validation of the pallets or during loading, preventing orders getting mixed up".*

This offers a huge range of operational and administrative benefits. *"Processes are completed in less time and a lot of information about the company's current position is available. With less than a month to finalise the Christmas campaign, the installation of RFID technology has had positive results, since it has improved the company's operational efficiency and productivity"*, concludes Arastey.

The steps for installing model tracking with RFID technology

One of the most complex aspects of this installation lies in the huge range of products to identify and the company's internal logistics, from picking and storing the orders to their dispatch. These are the various steps and processes for which the RFID infrastructure is used.

Labelling boxes and packages
The first stage is the RFID tagging of the boxes and packages. The RFID tag has been integrated into the adhesive label which acts as the stamp which guarantees the quality of the products inside the boxes and packages. The labelling process is carried out in the same way as it was previously, and so it did not affect the labelling operatives, or the legacy processes used. Once the boxes and packages have been identified individually by their coding, they are palletized and transported to the shrink-wrapping area, the first stage of validation, using RFID technology.

Pallet shrink-wrapping
In the shrink-wrapping area, the first checks of the boxes and packages are made, with the pallet's registration on the Information System. This process is carried out by scanning the RFID tags of each package during the pallet shrink-wrapping. While the pallet rotates on the shrink-wrapping machine platform, two Intermec IA39B antennae per machine scan the tags. In total, 3 pairs of shrink-wrapping machines have been provided, each managed by an Intermec IF61 reader. This is the first stage of pallet validation.

Intermec

Infographics courtesy of RFID Magazine

IF61 Reader

Transfer between warehouses
Once the boxes making up a pallet have been validated, they are transferred to the storage area using automated pallet transport tunnels. 4 RFID scanning tunnels have been set up for this purpose, equipped with an Intermec IF61 reader and four IA39C antennae, which scan all the pallet's boxes. Once the pallet has passed through the RFID scanning tunnel, the system communicates the change of warehouse. A total of four RFID scanning tunnels have been set up at the 5 GRUPO DISBER warehouses.

Picking
The orders to send to the distributors and customers are picked using CN3 handheld computers equipped with the IP30 mobile RFID reader, both made by Intermec. Thanks to this mobile RFID solution, the picking of the boxes and packages has been improved, and the order picking process in the zones equipped for this purpose has been streamlined.

Dispatch
The final stage of the RFID installation project at GRUPO DISBER is the dispatch of the picked pallets and orders to the distributors and customers. This requires a scanning system which can move around the dispatch area and between the lorry loading and unloading bays. For this, TAG Ingenieros designed a mobile RFID scanning dock equipped with an IF61 reader and four IA39B circularly polarised antennae. 12 RFID scanning docks especially tailored to the company's needs have been built, which are used in all five GRUPO DISBER storage and dispatch warehouses. Thanks to the mobile RFID scanning dock, order dispatches can take place without loading errors, since information is available at all times on which goods are being loaded and if they correspond to the order being dispatched.

The entire pallets are scanned using the RFID docks. An alarm system sends a clear warning to operatives if any error occurs

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Intermec RFID antennae

The pilot project and implementation

For the installation of RFID technology at GRUPO DISBER, an initial analysis of the technology applied to the company's production processes was carried out. This pilot, carried out by **Tag Ingenieros**, ensured first-hand that the technology was compatible with the products to be labelled, which consisted of liquid and metallic products.

The objective of the pilot was to verify how the technology worked with each of the processes carried out at the company's premises. To do this, they made test scanning devices available at every stage of implementing the technology. The correct functioning of the RFID readers was checked in the shrink-wrapping area, in the transfer of pallets between warehouses, and in dispatch using a mobile dock. The various tests conducted confirmed the system was working well, and meant that a defined plan for the project's implementation could be set out.

Once the technology had been confirmed as fully compatible with the company's processes, all of the RFID readers began to be set up and installed. 3 pairs of shrink-wrapping machines, four RFID tunnels for transfer between pallet warehouses and 12 mobile RFID docks were set up. The mounting, installation and fine-tuning was carried out very rapidly in time for the Christmas campaign, and the whole project was completed in just 4 months.

Once the Christmas campaign began, the volume of work was such that a new set of two shrink-wrapping machines needed to be set up at the distribution warehouse. The readers are in full use, and validate around 1,000 pallets per day in the shrink-wrapping machines. They are then transferred to other warehouses using RFID scanning tunnels, and 20 to 25 lorries are dispatched each day using the mobile RFID docks.

All the RFID readers have a computer which communicates with the central server managing all the information generated by the RFID system. The applications are centralised on the server, so that all the information is generated and can be viewed in real time. The software developed by TAG Ingenieros communicates with the company's Information System through a file exchange system, providing information on the scans carried out by each of the devices and whether the boxes and packages identified need to be corrected.

All the Intermec RFID devices and interrogators have WiFi technology for communicating with the central server. The tag identifiers are stored as files transmitted to the server via WiFi, through which the processing and subsequent validation is carried out, and any error encountered during the RFID scanning is communicated.

The box and package tracking has resulted in significant error reduction, improving customer service and preventing costly refunds and product returns

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