AUCXIS
RFID SOLUTIONS

CASE STUDY
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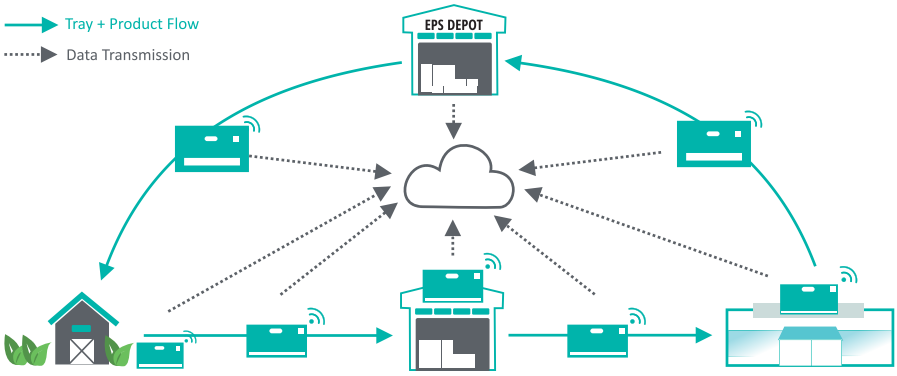
Aucxis subcontractor for

THE RETURN LOGISTICS DISTRIBUTION CENTRE OF THE FUTURE



Optimal efficiency through smart technology!

RFID VISION BARCODE WIFI Bluetooth

Complete automation of the logistical processes in and around the RLDC

- Yard Management
- Inbound Management
- Processing Management
- Outbound Management
- People Steering

The customer

Euro Pool System is a market leader in reusable packaging in the European fresh supply chain. Their reusable trays and foldable crates are the European standard in the chain for fresh and packaged foods. EPS is operational in 30 countries and has more than 1 billion crates in circulation each year.

The challenge

EPS decided to build a new Return Logistics Distribution Centre - the depot of the future - together with Delhaize. The two parties did not only build a new depot: their goal was also to improve the logistics return process from the stores.

The shops return RTIs (empty and used plastic trays, pallets, fish boxes, dollies, etc.) to the depot for processing (sorting, registering, counting, washing, reparation, cross docking), after which they are put back into use. In the past, this process did not always run as smoothly as required:

- Very high numbers: every 24 hours, about 3.000 units (SSCCs) arrive, distributed over +/- 150 trucks;
- The empty crates had to be sorted as much as possible per type;
- The shops had to count all crates before they were sent off to EPS;
- Not all RTIs were monitored (only those equipped with an RFID tag);
- The internal processes in and around the depot were barely automated;
- Complex proof of identification of the returned goods.

Aucxis was asked to automate the tracking & tracing process of the RTIs in and around the depot.

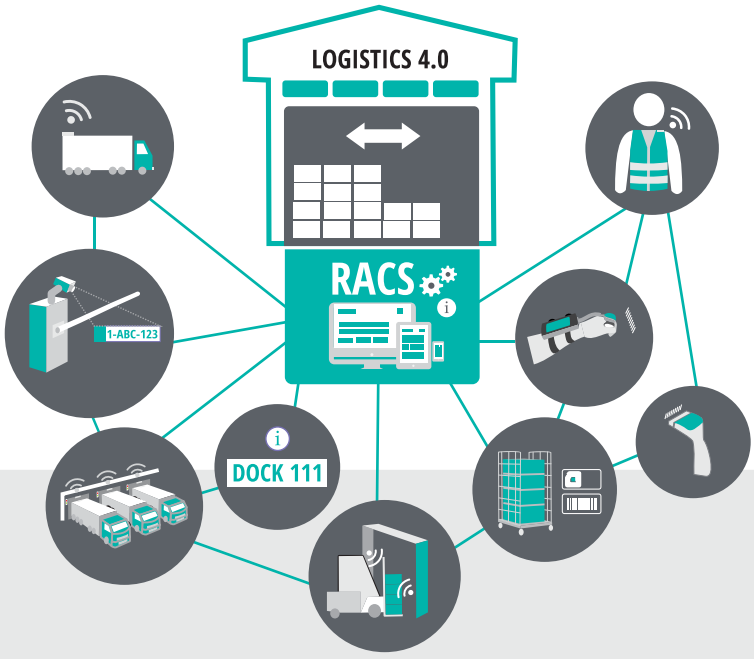
The solution

EPS' request resulted into the development of a **'Registration & Control Solution' (RACS) – software for automatic registration and steering of the logistical processes in the RLDC.**

In order to automate these processes, over 2 million RTIs throughout the supply chain of the depot were tagged.

RACS
Registration & Control Solution

Software for automatic registration and steering of the logistical processes in the RLDC.



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RACS: Registration & Control Solution


Yard Management

Steering of incoming and outgoing trucks using intelligent, real-time YMS

In the shops, the crates are collected on pallets and dollies. These crates do no longer have to be sorted by type: this saves place and the RTIs can be sent out faster. Each unit gets an SSCC label (Serial Shipping Container Code), which contains information about the shop and the content of the unit. The driver scans all labels; then the data of the SSCCs concerned are transferred to the RACS system (based on GS1 standard), so that the depot knows which load is on its way.

Upon arrival at the depot, the RFID tag and the truck number plate are read out. A dock number is assigned based on the content of the truck (received via the retailer's EDI). At the same time, an order is assigned via RACS to the EPS employees who must unload the truck (see 'people steering' module).

Automatic 'spotter' steering

Some of the load carriers must be returned to the retailer's 'Fresh DC'. The transport between the depot and the DC is mainly done by spotters.

An automatic order - containing the goods to be collected, including the assigned dock - is sent to the spotters. When the stock remains temporarily in the truck, the location and the content of the 'stock on wheels' is registered in the RACS system.

Aucxis hardware

- 6 kiosks: one at each entry and exit, equipped with an RFID reader, number plate recognition and exit ticket registration
- 31 RFID antennas for docks and parking lots
- LED display: truck with number plate X can drive on to the assigned dock
- 4 industrial tablets with 4G communication to RACS for spotters

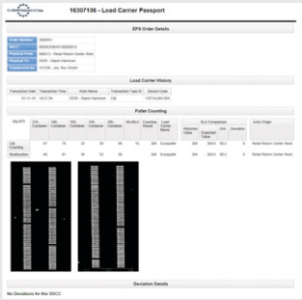

Inbound Management

Transparency towards the shops via proof of delivery (load carrier passport)

The truck is unloaded and the SSCC label of each RTI is scanned using wearable scanners. The data from this scan are registered in RACS to validate that this unit has arrived at the depot (RTIs are not counted yet).

After the incoming scan of the SSCC, the RTI is transferred to the appropriate processing area. At that moment, the employee ID and RTI type are checked. Next, the RTI content is counted and the SSCC label is scanned to know its origin.
Hybrid portals automatically count all items on the RTIs based on RFID, vision and barcode.

In all cases, a picture of the load carrier is taken (load carrier passport), which can be used as proof of the counted items on the RTI.



Aucxis hardware

- 35 wearable handhelds
- 14 inbound registration gates, each one equipped with an RFID reader and 2 cameras
- 4 inbound Elevator Registration with RFID reader and vision system
- 1 stand-alone vision gate

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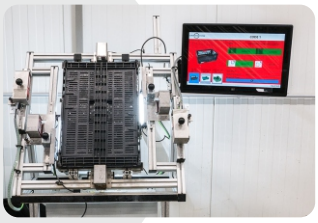
RACS: Registration & Control Solution

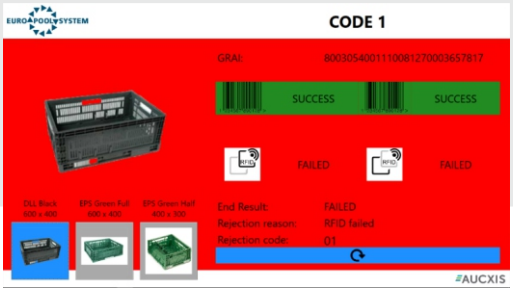
Processing Management

Higher efficiency in the RLDC thanks to automated scanning and identification throughout the process

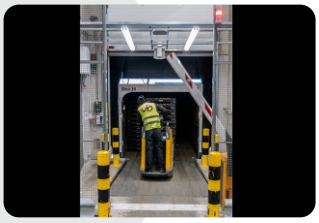
The RTIs are unstacked and washed, followed by the RFID and barcode quality control. Next, they are re-stacked and grouped on the palletizer, where they get 1 label per SSCC of 160 RTIs.

Aucxis hardware

- In the chain: quality control of barcode and RFID
  - 4 scanning stations for quality control of the crates
  - 1 scanning station for quality control of the dollies
- Outside the chain: control of rejected RTIs by the stand-alone reject station (SARS). The quality of the barcode and RFID tag of the crates which are emitted by the industrial washing line is checked on this test unit.



- Palletizer with barcode scanner, RFID reader and 10 antennas + communication with wrapping machine and printer
- Backup registration gate and printer

Outbound Management

Efficient data exchange between all the supply chain partners, based on GS1 standards

After registration of the RTIs, the SSCCs are scanned once more by the driver at the dock before they are transported to the retailer's suppliers. They are filled for delivery to the Delhaize DC and then to the shops: at this point, the logistics chain has come full circle.

Outbound registration gate:

- Scan dollies: registration number and IDs of RTIs with link to ERP package
- Scan RTIs: link in database docks – operator – RTIs, with communication to EPS

Aucxis hardware

- 4 outbound registration gates, each one equipped with an RFID reader and 2 cameras
- 4 laser printers

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RACS: Registration & Control Solution

People Steering

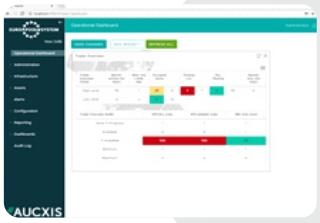
The right work order – the right people – the right time

The activities of the employees in the depot can be steered in RACS by algorithms. The employees use a wearable device which registers their activities, like unloading trucks, counting/sorting RTIs etc.

Thanks to the RFID tag in their safety jacket, the location of the employees is known; tasks are assigned according to several parameters, like skills of the employees, priority code of the task, location/availability of the employee etc.
The depot manager can monitor the people steering using E-Track's widgets and reporting tools.

Aucxis hardware

- 35 wearables



E-Track

Centralised web portal to manage the complete site

EPS uses this portal to consult and manage all depot modules:

- Overviews based on widgets of docks, trucks, empties, KPIs etc.
- RACS master data management - configuration of user management:
  - Add/modify drivers, trucks,…
  - Enter authorisations, skills, task assignments-> vital in function of people steering
- RACS hardware management, ex. modify docks, entry/exit gates etc.
- RTI management, ex. add/change crate type, inbound / process / outbound flows
- Real-time overview of reports throughout the different modules, ex. time on site, unloading progress, truckers/spotters with faulty tags etc.
- Configuration of system settings
- Automatic alert generation

RACS: Registration & Control Solution

The result

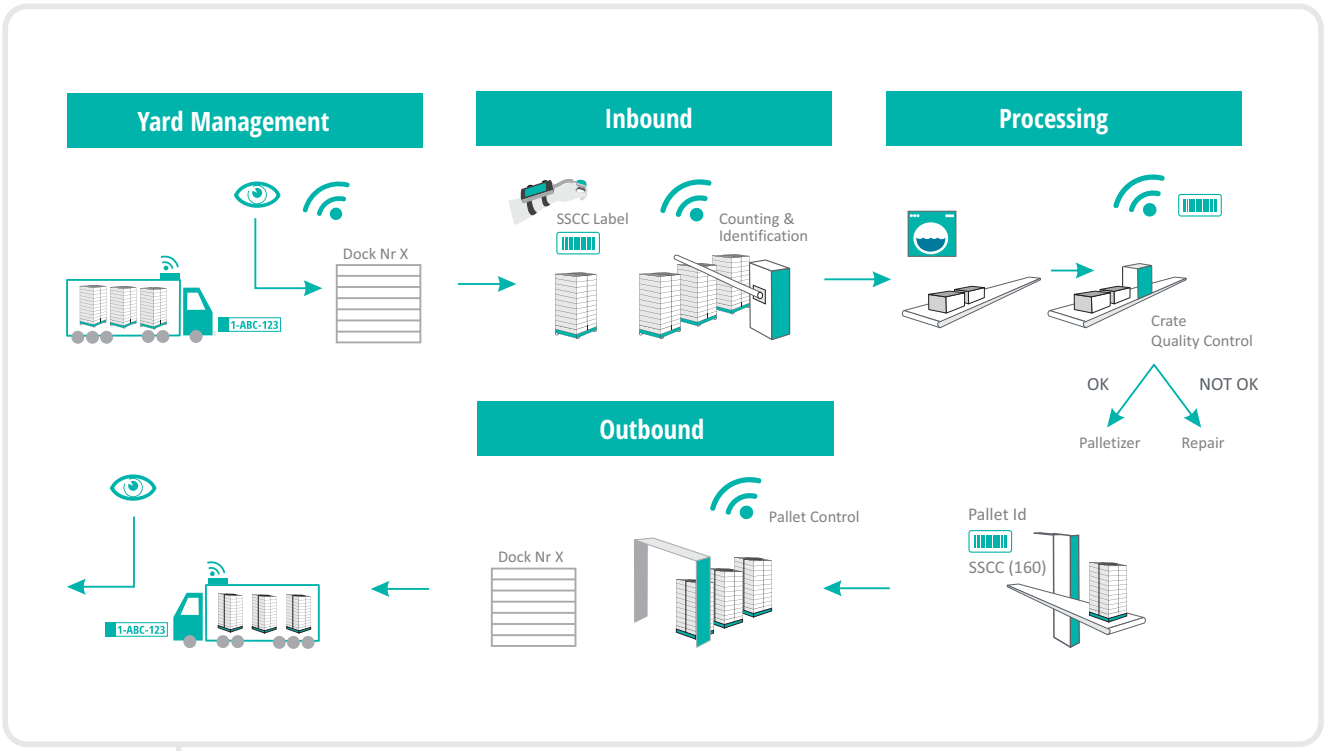
In cooperation with Delhaize and other partners, EPS has created a higher efficiency in the supply chain, especially in the Delhaize shops and the depot itself:

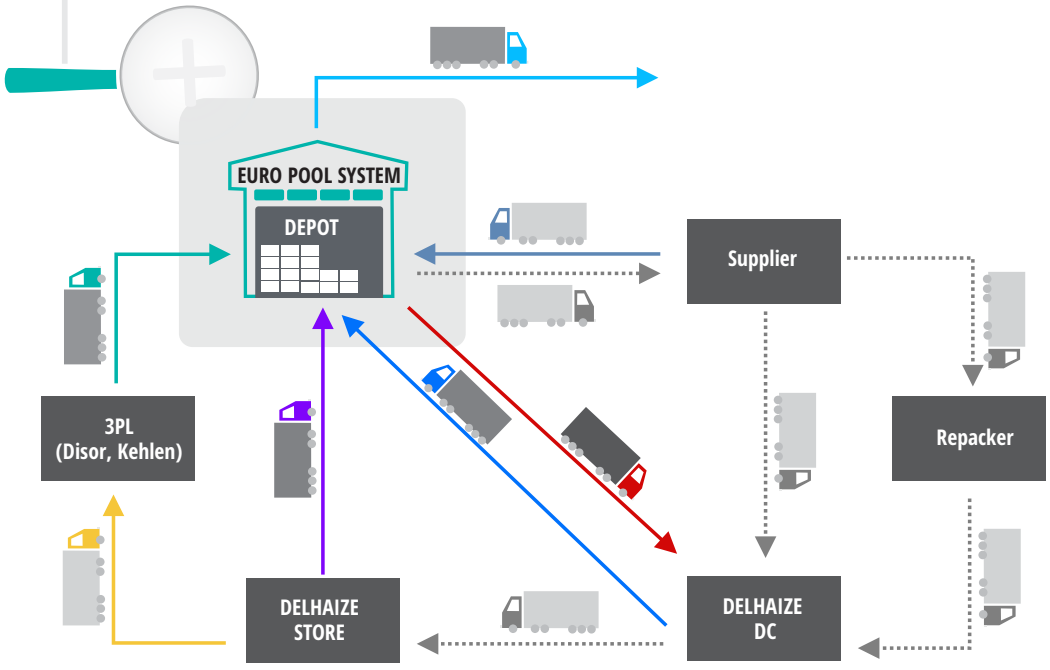
- **More accurate counting and identification** of incoming RTIs;
- **Less registration differences** between shops and RLDC: 100 % transparency to the shops;
- **Higher productivity in the shops:** no need to sort or count the RTIs anymore;
- **Less helpdesk / back-office** at Delhaize thanks to transparency to the shops;
- **Shorter "time on site" for inbound trucks** – optimal use of available trucks;
- **Higher efficiency at the RLDC thanks to the automated RACS steering** of processes and the higher automation of the production process:
  processing costs are reduced by 30%!
- Thanks to the **visibility on stock and asset flows** in the supply chain, the RTIs can be used more often, and their availability will increase during the peak moments of the year.

Aucxis realised the challenge to increase the rotation speed of the crates and to reduce investments to a minimum by implementing a track & trace system.

RACS: Registration & Control Solution

Graphic representation





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RFID

THE SYNERGY OF THREE EXPERT BUSINESS UNITS

AUCXIS
RFID SOLUTIONS

Turnkey automation projects built around project identification.

AUCXIS
E-TRADE SYSTEMS

Turnkey automation projects built around price-setting mechanisms.

AUCXIS
PROCESS CONTROL

Process Control Systems for industrial application and product preservation.

Aucxis is a leading specialist in business automation. With over 30 years international experience in designing and implementing tailor-made solutions, we have gained a thorough knowledge of the nature and mechanism of business processes. Our extensive expertise enables us to offer professional advice and to integrate our clients' ideas and objectives into advanced, user-friendly systems, using the latest technology.
Because of our strong shareholder structure and experienced team of 52 employees, we are able to guarantee continuity and stability to our worldwide clients.

RFID CLIENTS

Take a look at examples of RFID projects in different sectors on our website.

OUR TECHNOLOGY
YOUR FUTURE

Contact us for an exploratory discussion without engagement!

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