



# HORIZONTAL CAROUSELS

SIMPLE AND FLEXIBLE AUTOMATIC PICKING

**MEMBER OF SYNERGY LOGISTIC GROUP**

Barcelona · Madrid · Bilbao · Málaga · Lisboa · Brasil (Sudamérica)

## PRESENTATION

Synergy Logistic Group ® is part of a group of companies with a common goal:  
**cover storage equipment and technology needs.**



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高端智能仓储专家

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## PRESENTATION

et systems leading company in solutions and equipment for storage and picking orders.

et systems analyze the initial situation, studies your case and proposes the logistics solutions that best suits your needs, providing:

- ✓ **Reduction** of operating cost.
- ✓ **Productivity** increase.
- ✓ **Space** optimization.
- ✓ **Increase** in the quality of the logistics process.
- ✓ **Inventory** security.
- ✓ **Improve** working conditions.
- ✓ **Errors** reduction.
- ✓ **Improve** storage conditions.



et systems is a company made up of professionals with extensive experience who advise and study the best logistics solutions for your needs.

- 30 years in the sector guarantee us.
- More than 900 costumers.
- More than 2.000 installations made.



## MORE EFFICIENT PICKING WITH ET SYSTEMS HORIZONTAL CAROUSELS



- The best system for **intensive Picking**.
- The **most advanced technology** applied to a simple and proven solution.
- Horizontal Carousels are applied in the preparation of product orders of medium and small size, and work under the **"Product to Operator Principle"**.

## ET SYSTEMS HORIZONTAL CAROUSELS

### ADVANTAGES OF HORIZONTAL CAROUSELS



- **High sustainable productivity** Depending on the sector and type of order, productivity between 150 and 500 lines/hour per operator, sustainable throughout the working day. Possibility of incorporating an adjoining Pick to Light area for Super A products with very high turnover.
- **Zero errors** System fully guided by displays, without paper, which make it a Pick to Light solution in the extraction of the Carousel and Put to Light in the distribution in the Multiorder Station. Scanner confirmation for barcode items. Contrasted statistics of errors less than 1/10,000.
- **Stock control** Maximum reliability of stocks at all times, which provides a Permanent Inventory and balance with the ERP in real time. Allows customers who wish to eliminate annual inventory. Its application in "customs warehouses" has practically eliminated inspections.
- **Simplicity of the system** The fully guided operation allows the incorporation of new personnel who become productive in a few hours. Especially useful in companies with high seasonality and work peaks.
- **Automatic Packing List** The work system itself provides control of the content of the prepared packages, by working with simultaneous picking and packing, eliminating subsequent revisions and manipulations.



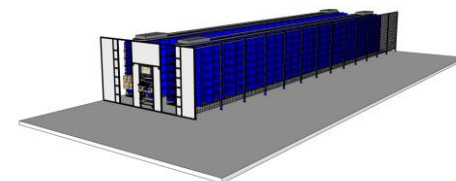
## ET SYSTEMS HORIZONTAL CAROUSELS

### ADVANTAGES OF HORIZONTAL CAROUSELS

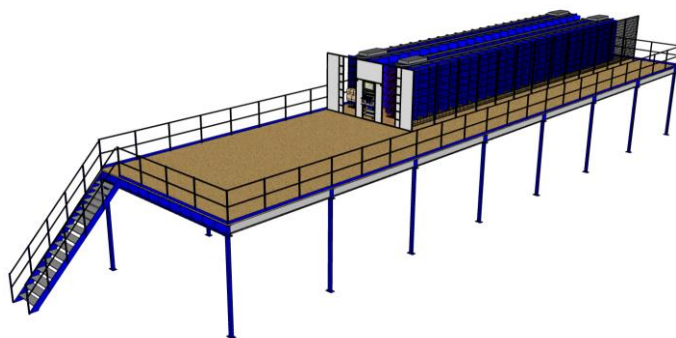
- **Use of space** Horizontal warehouses save between 50 to 60% of floor space compared to a traditional racking system. The elimination of corridors allows a great use of the surface.



Conventional warehouse: 150 m<sup>2</sup>

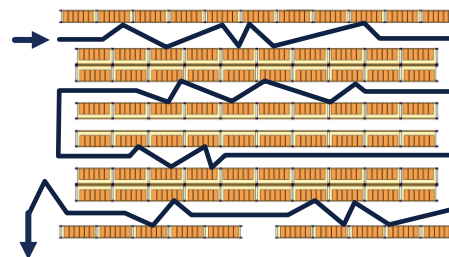


Horizontal Carousel: aprox. 60 m<sup>2</sup>

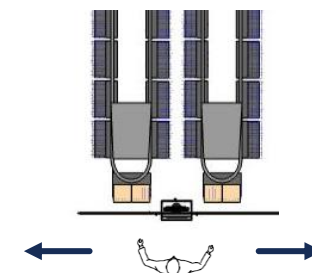


- **Very high effectiveness percentage** The most advanced technology applied to a technically very simple solution. The result is a system with very low incident levels. An annual maintenance review practically guarantees the continued activity of the installation. Horizontal Carousels can also be installed on mezzanines, to make the most of the available height.

- **Greater productivity** The functionality of the horizontal storage equipment allows the operator to work with optimum productivity and handling more efficiently, drastically reducing displacement. This means that productivity in a horizontal equipment is between 2 and 4 times more than usual than in a conventional picking warehouse.



Picking in conventional warehouse: 150 m.



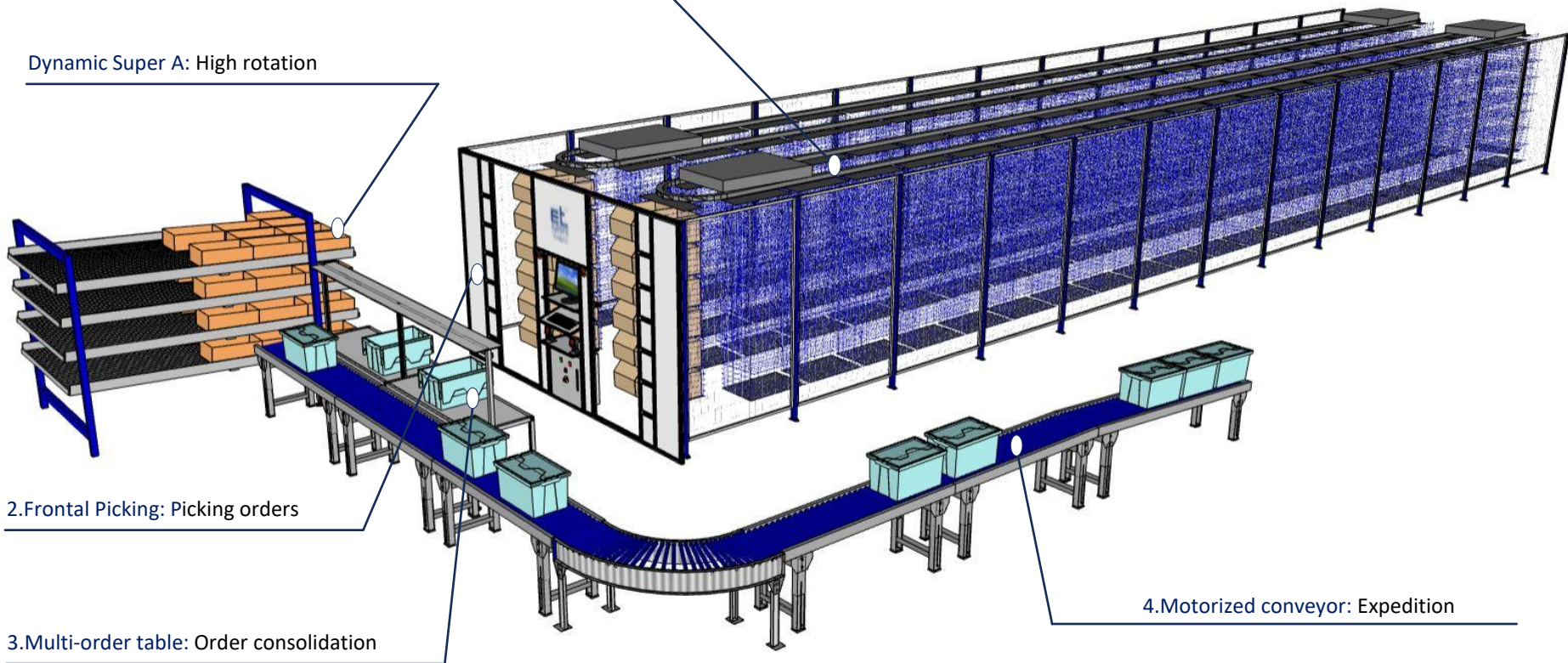
Picking Carousel: 3,5 m.

## ET SYSTEMS HORIZONTAL CAROUSELS

### HOW DO HORIZONTAL CAROUSELS WORK?

1. Carousels: Movement of carriers to the picking station

Dynamic Super A: High rotation



2. Frontal Picking: Picking orders

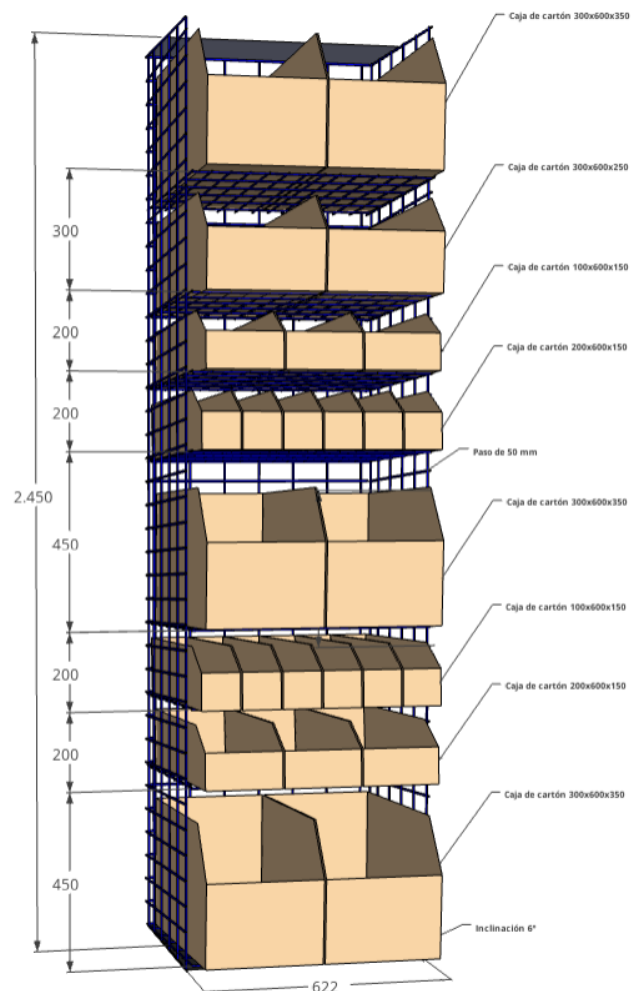
3. Multi-order table: Order consolidation

4. Motorized conveyor: Expedition

The concept of automated order picking using carousels is simple and scalable. **(1)** The carousels move presenting the different carriers at the picking station **(2)** The operator takes the units indicated by the display and **(3)** puts them in each one of the orders on the preparation table according the quantity indicated by the displays. Once the order is finished, **(4)** they are launched onto a motorized conveyor that takes them to the dispatch area.

# ET SYSTEMS HORIZONTAL CAROUSELS

## TECHNICAL DATA HORIZONTAL CAROUSELS



<b>Carousel length</b>	From 5.900 mm to 46.700 mm
<b>Number of carriers</b>	16-120 carriers
<b>Carrier width</b>	622 mm and 832mm
<b>Carrier depth</b>	450 mm and 600 mm
<b>Useful carrier height</b>	1.850 mm – 2.150 mm – 2.405 mm
<b>Max. load per carrier</b>	300 kg to 500 kg
<b>Max. load per level</b>	35 kg to 50 kg
<b>Height ajustment between levels</b>	50 mm.
<b>Shelves</b>	Bending 6 °
<b>Carton and plastic boxes</b>	Wide range of sizes





## ET SYSTEMS HORIZONTAL CAROUSELS

### FRONT PICKING FEATURES



**Technology:** Incremental encoder for safety and precision in movements. Programmable frequency inverter (smooth acceleration ramps), double motor for redundant system (high availability)

**Robust:** front structure extruded profile. Custom designed and quick assembly

**Multifunction Displays:** 1 display per location/ quantity signaling level and multi-user

**PC Station:** Pc station integrated in the front

**Electrical cabinet:** Electrical cabinet integrated in the front

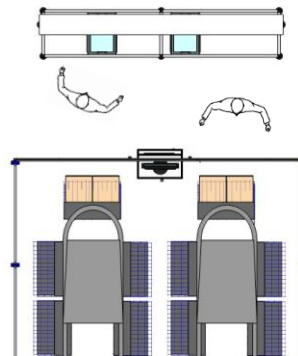
**Front button panel:** Emergency stop, manual/ automatic movement of the carousel, green led indicator of installation in operation

**Control:** Accurate, fast and reliable barcode reader 3D Scanner

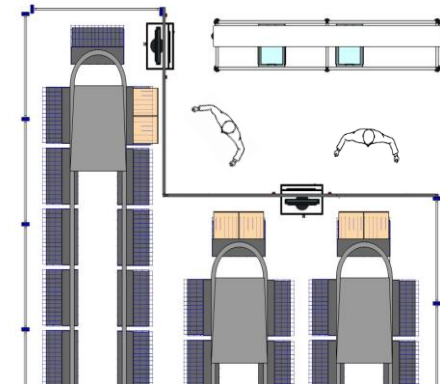
**Security:** Long-lasting security barriers. Current ISO regulation.

## ET SYSTEMS HORIZONTAL CAROUSELS CONFIGURATIONS & ADD-ONS

- **Configurations adapted to the available space.** Horizontal warehouses allow line configurations and “L” or “U” configurations, allows to optimize the available space in your warehouse, in addition to reducing picking routes, allowing to work with one or more workers simultaneously



Linear Configuration



“L” Configuration



- **Automatic door opening and closing.** These doors can be configured to open and close in each of the carrier movements, or be configured as a function of opening and closing the installation at the beginning and end of the shift. (Optional)
- **Location identification laser system.** The order preparation stations can be equipped with laser pointers that point to the front of the box from which we have to take the units to be prepared. (Optional)



## ET SYSTEMS HORIZONTAL CAROUSELS OPTIMIZES THE PICKING ORDERS



- A. Dynamic Shelving.** Designed in multiple compositions and sizes, the introduction of empty boxes for the preparation of orders, or for the preparation of references of greater volume/rotation and consolidation on the table.
- B. Multi-order Table.** The multi-order tables are designed with a series of displays that facilitate the visualization of packaging operations. The display provides all the necessary information so that the operator can work without having to use paper or a PC..
- C. Motorized Conveyors.** Integrated in the zone of preparation, allows the evacuation / transport of the already prepared orders to other preparation zones or expedition one. Allows the integration of weighing machines, automatic labellers, volumetric meters, etc.

## ET SYSTEMS HORIZONTAL CAROUSELS

# ULISES MANAGEMENT SOFTWARE

**ULISES** is the result of more than **25 years of experience** in the implementation of warehouse management software (WMS): powerful, complete and intuitive, developed 100% in Java technology.

Thus, depending on his application we can talk about:

- **Ulises Smart**, applied to the management of our entire range of automatic storage and picking systems: Horizontal Carousels, Vertical Lifts, Vertical Carousels, Multi-column Vertical Lifts, etc.
- **Ulises WMS**, for integral warehouse/s management, including options such as Radiofrequency and Pick by Voice. The current version is completely developed in Java, wich allows working with multiple databases: Oracle, SQL Server, MySQL, etc.



The screenshot displays the Ulises WMS software interface. On the left, there is a navigation menu with various options like 'Expeditions', 'Inventory', 'Warehouse', etc. The main area shows a list of expeditions with columns for 'Expedition', 'Status', 'From', 'To', 'Weight', 'Volume', 'Cube', and 'Units'. Below this, there is a detailed view of a specific expedition, showing a list of items with columns for 'Item', 'Description', 'Status', 'From', 'To', 'Weight', 'Volume', 'Cube', and 'Units'. The bottom of the screen shows summary statistics: 'Expeditions: 1', 'Lines: 17', 'Weight: 6303694', 'Volume: 0.114 cm3', 'Units: 16', and '6925'.

Expedition	Status	From	To	Weight	Volume	Cube	Units
EXP000001	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000002	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000003	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000004	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000005	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000006	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000007	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000008	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000009	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000010	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000011	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
EXP000012	Completed	10/03/2018	10/03/2018	17	0.114	0.000	16
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## REFERENCIAS



Cosmetics



Industrial



Logistics & Distribution



Goods



Automotion &  
Transport



Medical / Pharma  
Laboratory

ROYAL  TALENS

Tahe

  
EQUIVALENZA

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COSMETICS

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 **grupoHEFAME**

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Hospital**

**CST**  
CONSORCI SANITARI DE TERRASSA

# BELLVITGE HOSPITAL

LOCATION: BARCELONA

YEAR: 2021

SECTOR: HOSPITAL/LABORATORIES

## PROJECT/CASE STUDY:

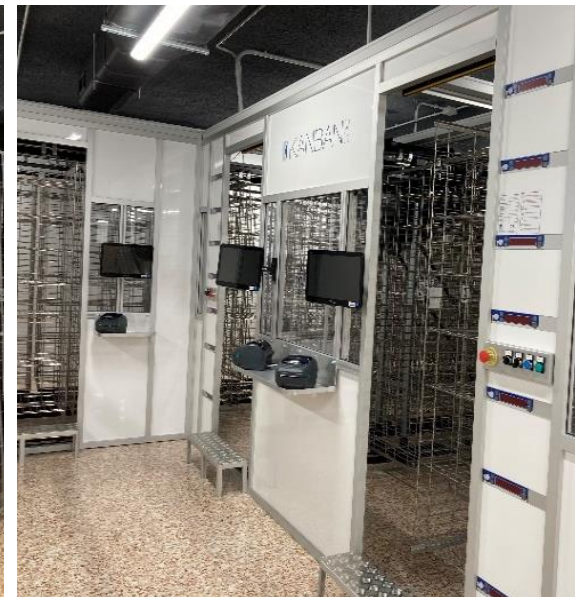
New implementation of three horizontal carousels dedicated to the picking of pharmaceutical products.

The carousels, all equipped with two work openings with closing doors, one dedicated to the preparation of orders and the other dedicated to the entry of material, stands out for the space optimization, speed and quality of preparation, and stock control.

The project is completed with the installation of 3 Vertical Carousels, one of them refrigerated, intended for the management and preparation of single-dose drugs.

## DESIGN:

- 3 Horizontal Carousels (38, 38 and 40 carriers) + multi-order table.
- 2 Vertical Carousels 273-09-15 for a total of 35 levels.
- 1 Vertical Carousel 336-09-10 Refrigerated for a total of 24 levels.





# TOLEDO HOSPITAL

LOCATION: ILLESCAS (TOLEDO)

YEAR: 2021

SECTOR: HOSPITAL/LABORATORIES

## PROJECT/CASE STUDY:

New implementation of three horizontal carousels dedicated to the picking of pharmaceutical products.

The carousels, all equipped with two work openings with closing doors, one dedicated to the preparation of orders and the other dedicated to the entry of material, stands out for the space optimization, speed and quality of preparation, and stock control.

The project is completed with the installation of 3 Vertical Carousels, one of them refrigerated, intended for the management and preparation of single-dose drugs.

## DESIGN:

- 3 Horizontal Carousels (22, 22 and 28 carriers) + multi-order table.
- 2 Vertical Carousels 273-09-14 for a total of 31 levels.
- 1 Vertical Carousel 336-09-14 Refrigerated for a total of 29 levels.



# TAHE

LOCATION: MURCIA

YEAR: 2018

SECTOR: COSMETICS & PARFUMS

## PROJECT/CASE STUDY:

Implementation of 4 horizontal carousels for the management of unit picking or small boxes. Multi-order management to optimize carousel cycles.

Completed orders are delivered through dynamics to packing zone and sent afterwards to shipping docks (by grouping agencies).

## DESIGN:

- 4 Horizontal Carousels (60 carriers ea.).
- Multi-order table (with 2 working levels) 32 displays in total.
- Dynamic shelving for SuperA items management.
- Ulises WMS.





# TALENS

LOCATION: BARCELONA

YEAR: 2020

SECTOR: LOGISTICS & DISTRIBUTION

## PROJECT/CASE STUDY:

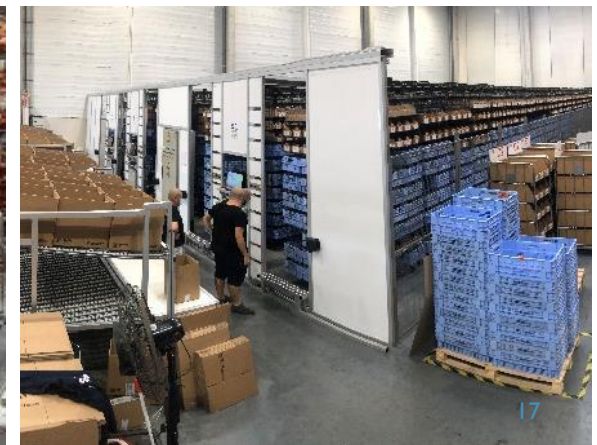
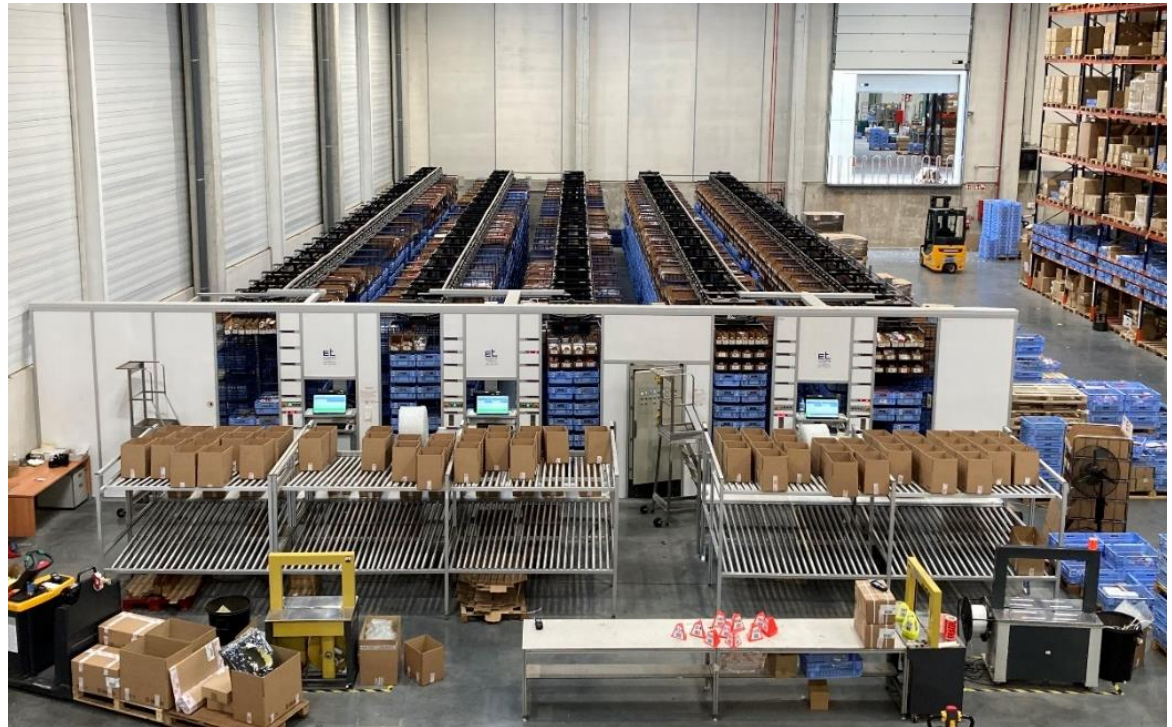
Movint of existing Horizontal Carousels adding a new one.

Creation of two areas for the management of multiple orders for unit picking.

Through dynamic shelving, delivery of finished packages to be moved to the dispatch area.

## DESING:

- 5 Horizontal Carousels (60 carriers ea.).
- Multi-order table with 20 displays.
- Dynamic shelving for finished orders.
- Ulises WMS.



ROYAL  TALENS