How to manage a warehouse with efficiency
How to Manage a Warehouse with

**easyWMS**

**Receiving**
Processes for goods and products entering the warehouse.

**Storage**
Operations for placing materials inside the warehouse.

**Inventory**
Permanent monitoring of warehouse status.

**Shipping**
Tasks for preparing orders and exit of goods.

**Tools**
Application of rules, monitoring, tasks, and security.

**Self-installable**
Basic package is self-installable by the client without the need of help from a computer technician.
Receiving

EasyWMS™ streamlines the receiving of material from the notification of the receiving order by the corporate management system (ERP) to the physical entry of the material.

**Planning of unloading operations**
- Planning of unloading receiving capacity by time slot.
- Printing of reports with graphics that show the transportation service provider’s or supplier’s delivery status.

**Receiving**
- Option of accepting receipts without a prior entry order, i.e., manually add receipts.
- Option of creating any number of receipts associated with an entry order. This way, the same receiving order can be received in multiple shipments.
- Shipping of receiving orders, anticipated based on purchase orders, from the client planning system (ERP).
- Option of correcting anticipated amounts due to excess or defect (shipping errors).
- Option of carrying out the receiving operations through the radiofrequency terminal.

**Capturing of logistic data**
- Confirmation of the receiving order information to avoid receiving errors.
- Confirmation of the delivery note information to avoid receiving errors.
- Manual creation of new articles from the WMS itself, if there are none in the system.
- Option of creating new presentations of items (packs, pallets, etc.) related to each product.
- Control of lot, serial number, expiration, etc., during receiving, for items with required logistic attributes.
- Control of temperature and weight during receiving for items with required logistic attributes.
- Control of goods by owner.

**Receiving documentation**
- Printing of standard receiving reports.
- Printing of personalized receiving reports.
- Printing of differences reports to match the material received with the material anticipated (shipping errors report).
| Bar-coded labeling | (S) - Printing of storage unit (container) labels in standard format.  
(S) - Printing of product labels in standard format  
(S) - Management of most of the printers of market labels.  
- Printing of storage unit (container) labels in personalized format.  
- Printing of product labels in personalized format. |
| Closing receiving orders | (S) - Manually closing of receiving orders and associated receiving operations.  
- Cancelation of receiving in order to partially close receiving orders.  
- Closing of receiving orders and associated receiving operations in the management system (ERP). |
| Entry of production | - Recognition of containers originating from production lines through container labeling.  
- Cross-docking management: if items are needed to fill an order, a movement is generated directly from the point of receiving to the shipping bin to complete the order without locating the goods beforehand.  
- Dimensional control of the container (height, control of holes, control of plugs) in automatic warehouses.  
- Management of shipments to reconditioning work posts to fix dimensional and quality errors in storage units.  
- Option of entering material from the corporate management system (ERP). |
| Monitoring of clearance errors | In automatic warehouses where clearance monitoring is available:  
- Image of clearance errors in automatic warehouses.  
- Option of solving label reading problems.  
- Printing of reports and statistics on clearance errors. |
| Returns | (S) - Manual entry of returns.  
- Entry of returns associated with a receiving order.  
- Treatment and location of containers according to the rules established in specific areas designated for quality control. |
| Communications with ERP | - Automatic communication from the received material to the corporate management system (ERP).  
- Automatic communication from the located material to the corporate management system (ERP). |
## Storage

EasyWMS™ configures location rules by choosing from a series of conditions.

### Location rules manager

<table>
<thead>
<tr>
<th>Location rules manager</th>
<th>(S) The location rules, i.e., the performance of the location process, can work with different strategies that can be applied or not applied based on need:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- By area and dimensional characteristics.</td>
</tr>
<tr>
<td></td>
<td>- By product and/or presentation.</td>
</tr>
<tr>
<td></td>
<td>- By supplier.</td>
</tr>
<tr>
<td></td>
<td>- By owner.</td>
</tr>
<tr>
<td></td>
<td>- By product rotation.</td>
</tr>
<tr>
<td></td>
<td>- By status of material</td>
</tr>
<tr>
<td></td>
<td>- By weight.</td>
</tr>
<tr>
<td></td>
<td>- By product risk.</td>
</tr>
<tr>
<td></td>
<td>- By type of container.</td>
</tr>
<tr>
<td></td>
<td>- By temperature.</td>
</tr>
<tr>
<td></td>
<td>- By type of product.</td>
</tr>
</tbody>
</table>

### Cross-docking

- If items are needed to fill an order, a movement is generated directly from the point of receiving to the shipping bin to complete the order without locating the goods beforehand.

### Consolidation

- Allows material to be consolidated by storage or reference unit.
- Moves the stock from location or from one storage unit to another in order to optimize warehouse space.
- The user can consolidate orders to pack material according to the following criteria:

<table>
<thead>
<tr>
<th>(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Product</td>
</tr>
<tr>
<td>- Owner</td>
</tr>
<tr>
<td>- Lot</td>
</tr>
<tr>
<td>- Series number</td>
</tr>
<tr>
<td>- Expiration date</td>
</tr>
<tr>
<td>- Aisle</td>
</tr>
<tr>
<td>- Range of coordinates</td>
</tr>
<tr>
<td>Traceability</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Automatic reorganization</td>
</tr>
</tbody>
</table>
| Restocking           | (S) - Manual restocking  
                        - Automatic restocking in the picking locations so that these areas always have stock available |
| Manual stock reservations | The system can perform manual reservations of stock with the following criteria:  
                          - Associating certain stock with a client. Such stock is used to serve only the specified client.  
                          - Associating certain stock with a shipping order. Such stock is used to serve only that order. |
Inventory

EasyWMS™ facilitates the management of inventory and changes in its status (correct, expired, broken, etc.).

Management of locations

- Management of path locations to optimize the movement from the operator to the location destination.
- Option of the operator manually changing the location suggested by the system.
- Restocking: the system generates automatic restocking in the picking locations configured to maintain permanent inventory.

Image of the warehouse and its stock

- The system has a graphic tool that shows a drawing of the shelves with the stock located on them; the tool can be used to define and change the status and location of the stock and to perform stock reservations and location blocking.

Dynamic Rotation Management

- Calculation of the rotation of each item during an interval of dates selected by the user starting with the movements produced. A report can be generated to suggest changes in the rotation of references.
- Generation of relocation tasks of the stock based on product rotation changes and other location rules, as changes occur in the status of the material.

Recounts

- The user can initiate recounts (warehouse inventory tasks) according to the following characteristics:
  - Owner of the product or warehouse
  - Product
  - Storage unit
  - Lot
  - Series number
  - Aisle
  - Warehouse area
  - Range of warehouse coordinates
- The recount can be done through the following types:
  - Informed
  - Blind
  - Partially informed

Management of the Lost & Found Location

There is a virtual location (lost and found) for problem stock. The containers exiting the system move to that location, which allows them to be manually deleted whenever desired or whenever it is necessary to recover them.
Shipping
The shipping process, beginning with order preparation.

There are two modes of removal: manual or automatic.

**Manual:** the material is removed, or picking operations are performed, manually from the radiofrequency terminal, without associating it to any shipping order, i.e., without the corporate management system (ERP) having communicated the departure of the stock to the WMS.

**Automatic:** the material is removed for a shipping order, i.e., the ERP has communicated with the WMS that the stock is leaving, and therefore, there was an order prepared by the WMS.

**Automatic mode**
This work mode is used when there are shipping orders sent from the ERP to the WMS to carry out the exit of material (preparation of orders) and the posterior shipping of the goods.

The system can manage the following capacities:

**Bin.** Location in front of the loading dock in which the containers to be shipped are placed.

**Shipping orders.** These are included in every client order (they have a single unloading point).

**Stop.** Every unloading point made by the vehicle that transports the client’s order.

**Route.** Path traveled by a transportation provider that leaves the warehouse and that frequently carries more than one order.

**Manual mode**
Here the operator works from a list (normally printed on paper from the ERP) of the material that needs to be removed. Exit operations are recorded through the radiofrequency terminal (RF) whenever stock is reduced in the system.
Terms used

**Route.** The batching of client orders on the same transportation vehicle making scheduled stops. The WMS will manage the loading of the orders onto the vehicle according to the stops to be made, by first loading the last order to be distributed.

**Shipping order.** Each of the client orders or exiting of material for any reason, generally for purchase, warehouse transfer or returns to supplier. If the material is associated with a route, then the number of stops must be specified (schedule of stops). There can be more than one shipping order or request for each stop.

**Stop.** Each of the points for unloading orders along a route. The system will remove the material in inverse order to the stops so that the first load corresponds with the last stop.

**Batched shipping orders.** The system fosters batching of shipping orders in two modes:

- **Waves of orders.** Batching to send all the orders in a wave together. This makes the use of the operators’ movements in filling an order, leading to greater productivity. The exit orders batched in waves are treated individually by telling the operator how much of the product must be removed for each order.

- **Groups of orders.** Summation of all of the shipping orders so that the orders can be filled by the total amount of material to be prepared. In other words, the operator is told to perform an overall product removal, which would result in creating batched orders. Later, the products will have to be separated into their original orders.
## Shipping Functions

<table>
<thead>
<tr>
<th>Shipping Routes/Orders</th>
<th>The system allows shipping orders to be received through a communication interface. These orders are equivalent to sales orders or the exit of material. They can contain data of specific containers that will leave or only the amounts of material by reference, along with necessary logistic data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>(S)</strong> - Handles exiting of material manually <strong>(S)</strong> - The system can plan shipment capacity by time slots. <strong>(S)</strong> - The system allows reports with graphics to be printed to show the fulfillment status of shipments in standard format. <strong>(S)</strong> - The system allows the option of printing personalized reports.</td>
</tr>
<tr>
<td>Preparation of Orders</td>
<td>Material leaves through the following ways: <strong>(S)</strong> - Management of complete container exits. <strong>(S)</strong> - Management of shipping routes (transportation). All the orders along the same shipping route are grouped together. <strong>(S)</strong> - Management of complete container exits, arranging the orders by lines.</td>
</tr>
<tr>
<td>Picking</td>
<td><strong>(S)</strong> - Perform picking at radiofrequency terminals or at a fixed position using a PC. <strong>(S)</strong> - Management of different presentations of the item. <strong>(S)</strong> - Management of stackable products. <strong>(S)</strong> - Management of client-container and management of return of the client-container to the warehouse.</td>
</tr>
<tr>
<td>Pick/Put to light</td>
<td>- Management of PTL devices (Pick and Put to Light) to perform the picking process.</td>
</tr>
<tr>
<td>Exiting of Material</td>
<td><strong>(S)</strong> - Stock exiting performed manually from the radiofrequency terminal or fixed PC. <strong>(S)</strong> - Management of orders generated directly at the sales counter at the request of the client and transmitted by radiofrequency. The system will manage the acceptance or non-acceptance of the product by the client. If the product is rejected, the system will manage its relocation in the warehouse.</td>
</tr>
<tr>
<td>Manual Reassignment of Stock</td>
<td>- Manual reassignment of stock between orders of different clients (the orders are readjusted on the dock in order to serve a client immediately).</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Truck Load</td>
<td>- The system monitors the loading of the packages of each order onto the transportation vehicle assigned so that shipping errors can be avoided.</td>
</tr>
<tr>
<td></td>
<td>- Management of shipping routes.</td>
</tr>
<tr>
<td>Shipping Documentation</td>
<td>(S) - Unvaluated delivery notes by order or by batched orders. (S) - Report showing differences between the material ordered and material filled.</td>
</tr>
<tr>
<td></td>
<td>(S) - Report of material by container (packing list). (S) - Report of contents of a consolidated shipment so that orders can be manually undone.</td>
</tr>
<tr>
<td></td>
<td>- Relationship of containers, references and orders loaded onto a truck. (S) - Creation of personalized reports.</td>
</tr>
<tr>
<td>Labeling of Goods</td>
<td>(S) - Labeling of containers in standard format. (S) - Labeling of product in standard format.</td>
</tr>
<tr>
<td></td>
<td>- Labeling of container in personalized format. (S) - Labeling of product in personalized format.</td>
</tr>
<tr>
<td>Communications with ERP</td>
<td>- Automatic communication of shipped material to the corporate management system (ERP). (S) - Automatic communication to the ERP of material loaded on the transportation vehicle.</td>
</tr>
</tbody>
</table>
## Tools

The tools function makes it feasible to adapt and personalize the application to the client’s own criteria and required security rules.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of the stations</td>
<td>Option of managing basic blocks and function changes on the system workstations (PC, radiofrequency terminals, etc.).</td>
</tr>
<tr>
<td>Report Designer</td>
<td>The system incorporates a report designer within the application. This allows the client’s information technology staff to adapt existing reports to its needs or create new reports. Personalized and standard reports can be generated at the same time in the same system.</td>
</tr>
<tr>
<td>Label Designer</td>
<td>The system includes a label designer. The client’s information technology staff has the option of adjusting the label formats to their own requirements.</td>
</tr>
<tr>
<td>Security</td>
<td>The system makes it possible to manage users or groups of users, by controlling the access security, use, viewing of certain software options, and operation restrictions for each user. Management of user permissions for a multi-warehouse structure can be configured independently for each warehouse.</td>
</tr>
<tr>
<td>Generic Queries</td>
<td>The system has a large collection of generic queries and reports that could be adapted by the client in accordance with its needs.</td>
</tr>
<tr>
<td>Navigation</td>
<td>Option of acquiring access to different levels of information from the same screen, which makes the software ergonomically friendly.</td>
</tr>
<tr>
<td>Manageability</td>
<td>The system can be used from the radiofrequency terminal, fixed PC position, or used with paper printouts.</td>
</tr>
<tr>
<td>Reports and Statistics</td>
<td>Graphic report designer. The system comes with a graphic reports designer that allows the client to create its own reports from scratch or based on existing reports for the purpose of attaining the most important and useful information at any time.</td>
</tr>
</tbody>
</table>
Hardware Requirements

EasyWMS™ needs the following hardware elements in order to be used.

- **PC, workstation.** This is used normally as a tool for the receiving, shipping, and query processes. Windows XP SP2 or Windows Vista must be installed.
- **Radio terminals.** These are used to perform all of the receiving, storing, order preparation, shipping and recounting operations. Windows CE version 5.0 or higher must be installed.
- **Server.** The EasyWMS™ database is stored on a server. It records, processes, and stores all the transactions that are produced in the warehouse. Windows 2003 R2 Server must be installed.

The EasyWMS™ architecture is developed in three layers:

<table>
<thead>
<tr>
<th>User Screens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software services</td>
</tr>
<tr>
<td>Software logic and data access</td>
</tr>
</tbody>
</table>

Hardware Architecture

EasyWMS™ has been developed under the most modern standards of up-to-date hardware and software. It has a modern client-server architecture, in which the server holds the data and the business rules and the PC client holds only graphic functions to improve the response rate.
EasyWMS™ is a warehouse management software developed entirely by Mecalux. It is a multisectorial warehouse management system intended for businesses of any size that want to improve the management of their warehouse in an optimum, efficient, and integrated manner.

EasyWMS™ is a modular and flexible tool that will optimize automatic or conventional warehouse management processes easily and efficiently. In addition to many other advantages, it will help reduce work time and errors.
The different function levels of EasyWMS™ allows it to be installed in warehouses with very diverse characteristics. The following provides practical case scenarios to illustrate how the software can be applied in different types of warehouses.

> **Practical Case 1**  
**Conventional Warehouse**

**Description:** Medium-size conventional warehouse with a loading and unloading dock for goods. Preparation of orders of whole pallets and loose boxes through picking.

**Solution:** Install EasyWMS™ software level 2; set parameters and configure software to manage the conventional warehouse through radiofrequency. The warehouse is divided into four types of locations: picking locations for the preparation of orders, stock locations for the storage of goods, locations for consolidating orders, and the shipping and receiving area. All the movements and operations of the warehouse are conducted through radiofrequency terminals by hand and through radiofrequency terminals mounted on dollies.

In conventional warehouses whose operations fall under the functions denoted with an (S) on the list, the client can install and self-configure the EasyWMS™ software on its own, due to the installation tool being a standard feature of the software.
> **Practical Case 2**

**Built-in management of boxes and pallets with automatic or conventional multi-warehouses**

**Description:** After the implementation of EasyWMS™ level 2, the client has increased its productivity and needs greater storage capacity for the stock of its product. For this reason, the client acquires a new warehouse annex to store stock and to ship entire pallets.

**Solution:** Install an automatic warehouse with three aisles operated by transelevators for pallets. Implementation of a feeding system with pallet conveyors on rollers and chains. Authorized within the conveyor system are several entry/exit posts for pallets with clearance monitoring to guarantee a correct entry of the pallets into the automatic warehouse. In addition, the system will have a automated work post for the preparation of orders.

EasyWMS™ software level 2 to level 5 can be adjusted for the management of automatic or conventional warehouses. This level allows the client to manage all of the logistic processes of its warehouse: entry and exiting of goods, location of goods in each storage area (conventional or automatic), preparation and consolidation of orders, shipping of the orders, grouped by shipping routes and controlled truckloads.
> **Practical Case 3**

Built-in management of boxes, pallets, and complex container conveyor system in large automatic warehouses.

**Description:** Due to the growth of the business and characteristics related to product distribution, the automatic storage area also needs to grow. At the same time, the handling of containers inside the warehouse must be minimal.

**Solution:** Increase the number of aisles of pallets and boxes in automatic warehouses to allow greater storage capacity. New complex conveyor systems are installed to move both boxes and pallets and several ground levels are implemented to achieve total automation of the transport flow in the warehouse. Picking workstations are added to increase the capacity of filling orders; also workstations for the entry and exiting of goods are added to enhance storage flow and removal of entire containers. The shipping and receiving docks are modified to handle automated loading and unloading of the vehicles.

New configurations and parameter settings of EasyWMS™ software level 5 is applied, so that it can be adjusted to the new infrastructure of the warehouses.
Basic Advantages

- **Productivity.** Reduces the number of operations and increases logistic productivity.
- **Total location monitoring.** The management system provides a graphic image of the warehouse. In this way, it is possible to know in real time the status of the warehouse without the need to physically see it.
- Due to the **order preparation control** in real time, the quality of service is improved and the number of shipping errors is reduced.
- Operator **productivity control**.
- **Monitoring of activity and position** of the resources.
- Permanent **inventory** with its **real valuation**.
- **Elimination of shipping errors** and increased confidence of delivery.
- **Faster preparation and shipment of orders.**
- Improved **delivery time**.
- **Time.** Time spent on a multitude of tasks within the supply chain is reduced, from inventory to preparation of orders to reduced downtime of the operators to the movements for each resource.
- **Resources.** Better use of both physical and human resources.
- **Losses.** Drastic decline in costs associated with losses due to expiration, unknown loss, etc.

Adaptability

- **EasyWMS™** allows **parameters** to be very easily personalized and adapted to a host of needs.
- The system has great **flexibility for warehouse growth**. The client has the option to choose a software level of exact sophistication and then have the confidence that the solution can easily adapt to the growth of the business and to new processes, products, volumes or technologies.
Conditions of Use for the EasyWMS™ License

EasyWMS™ is a logistic software suite owned by Mecalux and protected by international copyright and intellectual property laws and treaties. EasyWMS™ grants a license to the end user only in accordance with the license agreement.

Each installation must be deemed as a universal license that will comprise all the functions and configurations for the correction operation of EasyWMS™. Moreover, the license must be deemed to include both user licenses and workstations that utilize the software. Normally, the software functions with work posts enabled with servers, PC or radiofrequency terminals.

The EasyWMS™ License Use Agreement of grants the end user a personal, nonexclusive and nontransferable license to be used in installations previously agreed upon between the user and Mecalux up to a maximum of work points described in the buy-sell agreement of EasyWMS™ software.

Together with EasyWMS™, the end user receives a license of use to third party software required for optimum operation of the program. This may include products by Oracle, Soti, Bartender or NetSupport. The third party software supplied by Mecalux is subject to a license of restricted use and can be used only in conjunction with EasyWMS™. Copyrights of third party software are owned by those third parties, who have licensed them to Mecalux for embedded use in EasyWMS™.