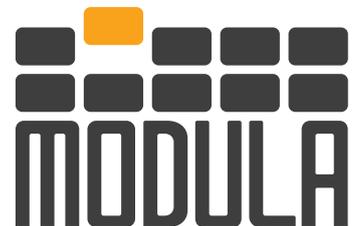


# Modula Software

Think Vertical, Think Modula



# WAREHOUSE MANAGEMENT SYSTEM

Modula WMS (Warehouse Management Software) is the system designed and developed by **Modula SpA** to provide a complete warehouse management tool. The system is based on the relational database Microsoft SQL Server.

Modula WMS makes it possible to manage a warehouse in real time through **a PC interface**, ensuring constant communication and data exchange with the application that manages the automatic storage system.

By configuring the **connection between the WMS and the company's ERP** (host), it is possible to exchange the data necessary for managing the warehouse (item database, order list, statistical data etc.).

The application contains a list of machines (automatic storage systems), which contains the data related to each automatic storage system configured.

The automatic storage systems are divided into **ULs (load units)** which in turn are divided into **compartments**. In automatic vertical storage systems, the (logical) ULs correspond to the trays present in the machine, while the compartments configured in the WMS can be related to customized logical sections not necessarily corresponding to physical sections of the trays.

The items are placed in the compartments, exactly in the same way as the material is physically stored in the ULs. The logical location must be stored in the application and this procedure is called **mapping**. Once these procedures have been completed, the WMS knows exactly where the items are located and can thus manage their **movements** and update the **inventory**.

The operator does not need to know the location of the items any longer: their code is sufficient. Thanks to a specific software package, the WMS also makes it possible to manage manual storage systems, which can be configured like automatic storage systems.

## INSTALLING THE WMS

The Modula WMS is installed by IT specialists through a wizard, following a rapid guided procedure. The system is ready for use immediately after the installation of the software on the server and the clients, if any, and the configuration of the warehouse.

Modula WMS uses the **free Express version of SQL**, which does not require any licence but must be used exclusively by Modula WMS. If desired, the customer can purchase the licences of more complete and updated versions of the database engine.

## INTEGRATING THE WMS WITH THE COMPANY'S ERP

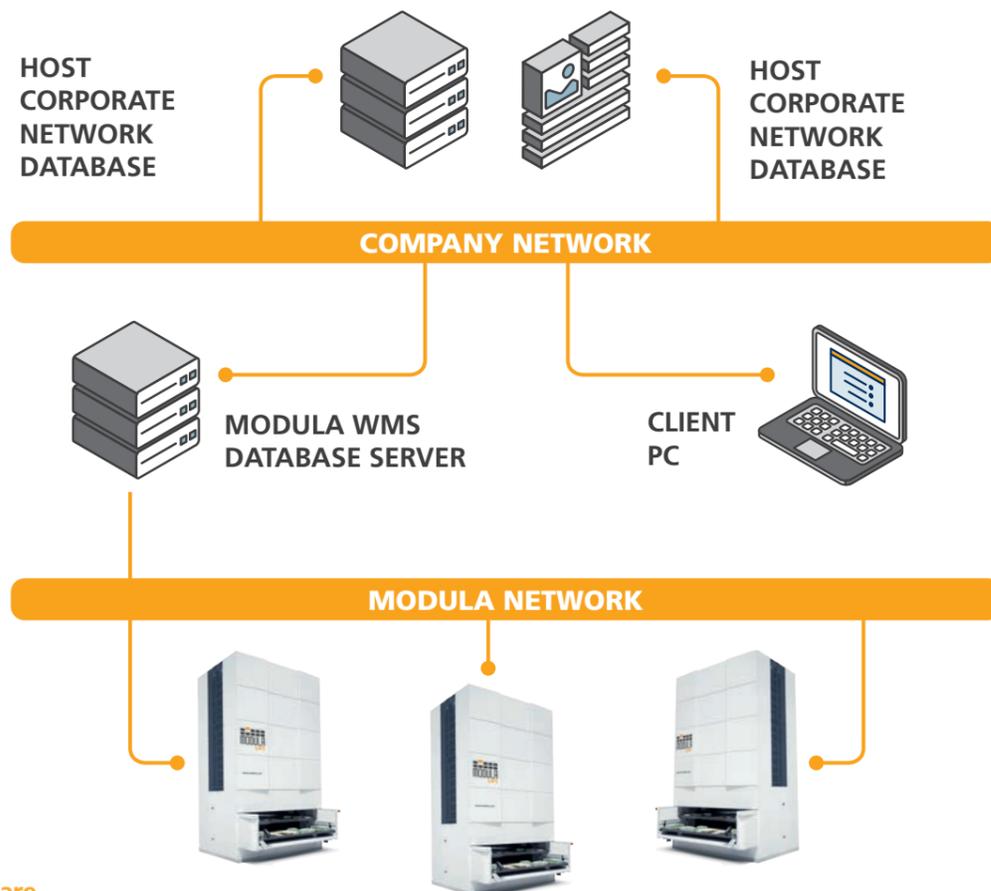
Our WMS packages come ready to be connected to any ERP through a series of interfaces.

For the integration with the company's ERP, Modula provides blueprints for the creation of standard interfaces with protocols such as ASCII, ODBC, XML, and Webservice of the Restful type.

## TRAINING

The personnel in charge with the use of the software will receive adequate basic training after the installation and first configuration of the warehouse.

Further more exhaustive training sessions can be provided upon request.



# MODULA WMS SOLUTIONS FOR YOUR COMPANY

WMS is available with different warehouse management functions, grouped in packages which offer diversified options according to the intended use. Each package gives access to a set of specific functions.



## MODULA WMS BASE

**MODULA WMS BASE** is our entry level package and makes it possible to manage one or more warehouses/storage systems.

This package can manage a maximum of 3 workstations, including 1 server.

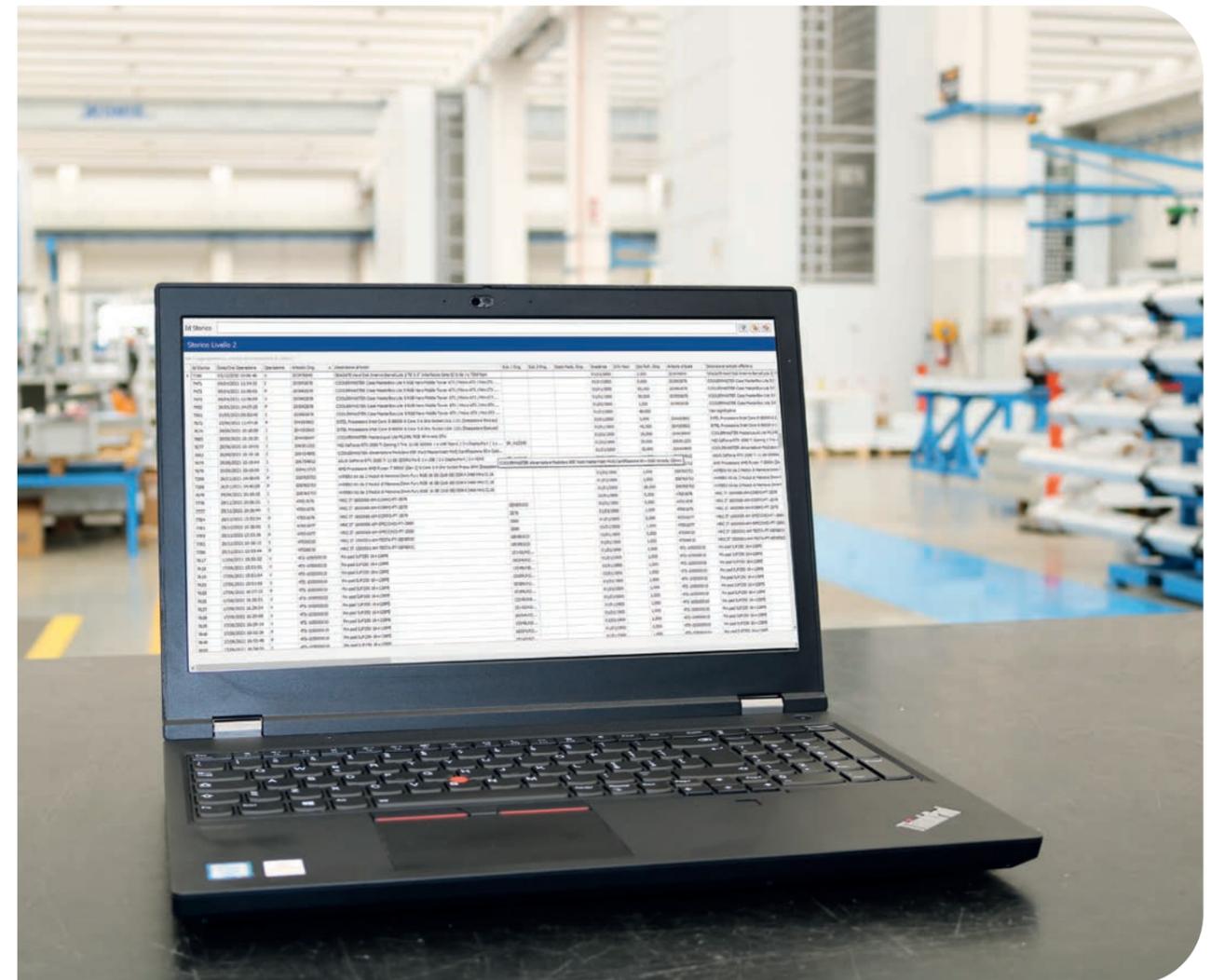
### Functions

- Item database
- **Compartments** (locations in the storage system), managed through a graphic tool
- **Stock management** based on volumes
- Material handling with **picking/placing orders**
- Material handling with **immediate requests**
- **Users:** three access levels (Operator, Manager, Advanced)
- **Manual data import and export** through communication with the company's ERP via exchange of fixed format ASCII files
- Advanced security management with **restricted access to specific items** and trays based on the user's access level
- Material handling record
- **Physical warehouse inventory.**



## MODULA WMS BASE

For those who start using a WMS system  
**NOT INTEGRATED WITH THE ERP OR OTHER SYSTEMS**



REMOTE ASSISTANCE VIA





# MODULA WMS PREMIUM

**MODULA WMS PREMIUM** is our complete package for warehouse management. All the functions of the BASE package and many more.

## Functions

- Automatic item-compartment matching and **dynamic management** of locations
- Management of **lots**
- Full management with automatic **import/export tracking** with ASCII, ODBC, XML file formats and Webservices of the Restful type
- Management **based on material status**
- Management **based on expiry date**
- Advanced management of **users** through configuration of enabled procedures for each user
- Management of materials **based on FIFO** (First Input First Output) or subcode priority (for example, items can be picked giving priority to those with the lowest and therefore oldest lot code)
- Management of requests for immediate processing **based on justification**
- Management of subcodes
- Entry warnings
- Creation of orders on the WMS with barcode reader

- **Production date/time**
- Automatic printing of **reports** after order processing has started
- Advanced import-export **management**
- **Identification labels** for compartments X, Y, Z
- Returning **material**
- Compartment location **code**
- Management of **shipments**
- **Logical movement** of materials between compartments
- Types of **package**.

## STATISTICAL ANALYSIS AND CUSTOMIZED REPORTS

- Complete management of warehouse statistics
- Customization of print reports through print management tools
- Customization of label printing layout through dedicated tools.

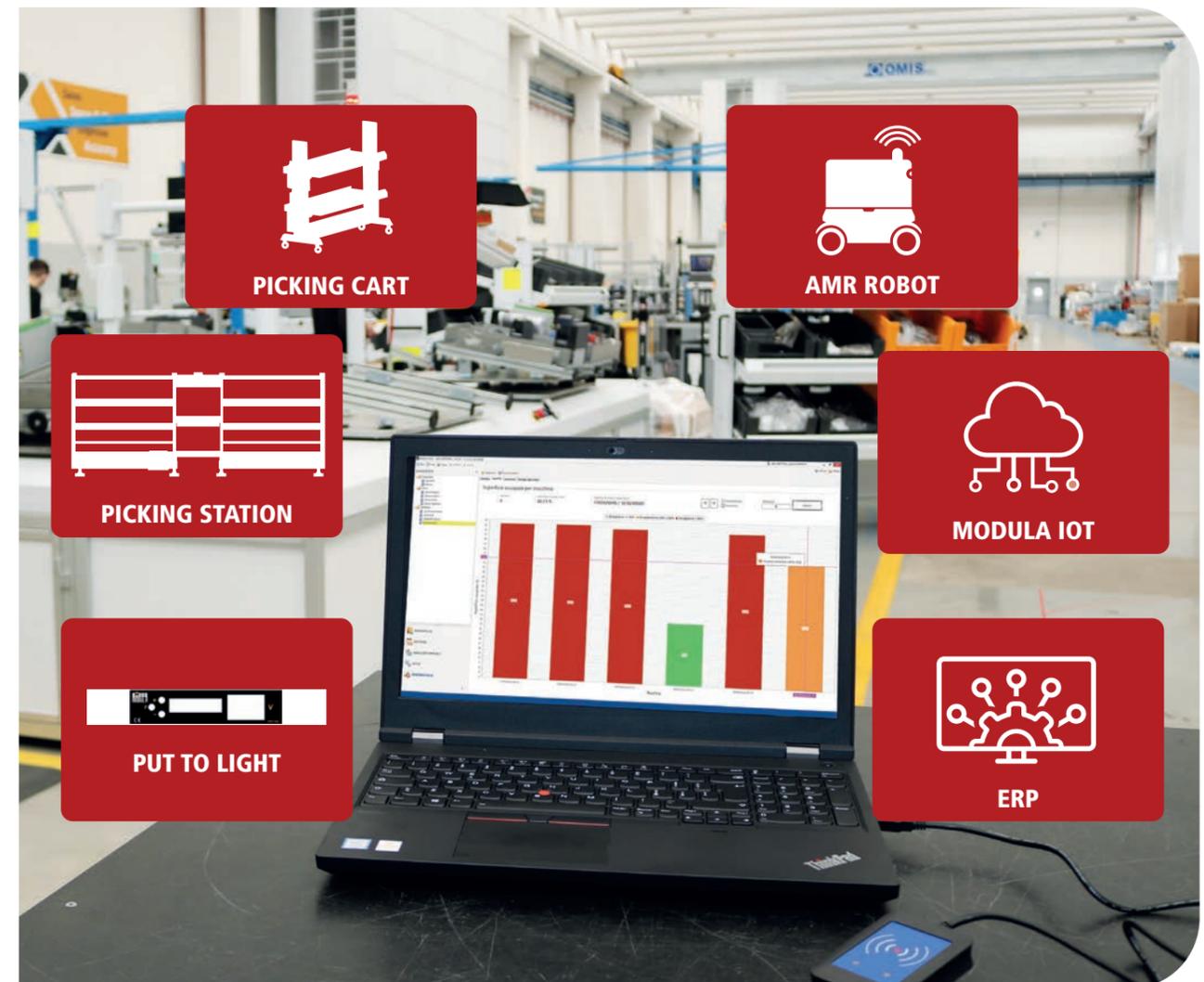


REMOTE ASSISTANCE VIA



## MODULA WMS PREMIUM

For those who need a **COMPLETE, EXPANDABLE WMS SOLUTION, SUITABLE FOR INTEGRATION WITH THE COMPANY'S ERP SYSTEMS**



SUITABLE FOR **CONNECTING THE WAREHOUSE TO THE MODULA WEBANALYTICS:** THE WEB PORTAL WHERE **ALL INFORMATION** REGARDING THE **WAREHOUSE ACTIVITIES** CAN BE VIEWED AND KEPT UNDER CONTROL.

IF YOU ALREADY HAVE AN **INTERNAL DATA COLLECTION SYSTEM**, IT WILL BE POSSIBLE **TO COLLECT MODULA'S DATA** GATHERED BY THE WMS VIA THE **OPC/UA PROTOCOL**.



# MODULA WMS PREMIUM



## ADDITIONAL PACKAGES

The Modula WMS Premium package can be completed with specific packages offering special functions that will make your WMS more efficient and improve your productivity.



### ADVANCED PICKING MANAGEMENT

This module provides advanced functions intended to improve picking and placing operations.

- Management of packing lists
- Management of assembly kits
- Management of shipping areas
- Automatic creation of compartments during placing operations
- Management of serial numbers (management of multiple serial numbers for the same item code associated with a specific compartment)
- Management of order consolidation areas
- Management of items based on package (packaging unit).

The advanced picking module is an essential tool for managing shipping areas and picking aids such as the picking cart and the Put to Light.



### ADVANCED DATABASE MANAGEMENT

This module extends the functions related to the management of the item database.

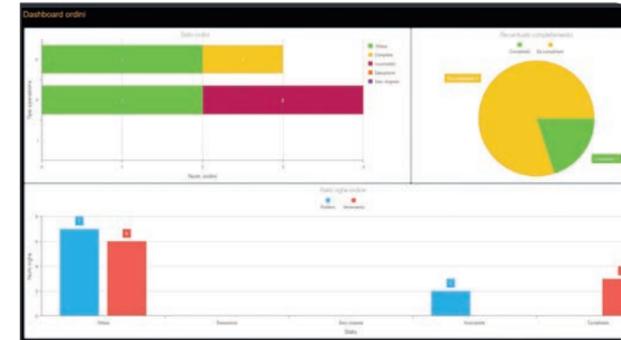
- Management of predefined orders that can be replicated as required
- Matching of images and item codes
- Grouping of item codes into families to define shared characteristics
- Grouping of item codes into categories to facilitate consultation and search
- Extension of fields to be used for item databases, orders and order lines through additional attributes
- Management of multiple alternative codes
- Management of borrowed material picking
- Advanced management of "under stock" issues.



### DASHBOARD

The Modula dashboard is a digital dashboard which can be configured with various Widgets for displaying the Modula system performance data.

It provides real-time information on order status, item and picking statistics, and many other data through a simple interface that can be accessed via web from a PC or mobile device. The dashboard displays the data acquired from the Modula WMS, however it is also possible to configure external data sources.



### IDOC: SAP PROTOCOL

Data are exchanged between SAP WM and Modula WMS (ASCII format) via IDOC, assuming that SAP contains the WM module.

The Modula WMS must be viewed by SAP as a black box where the requests and the related results are sent via IDOC.

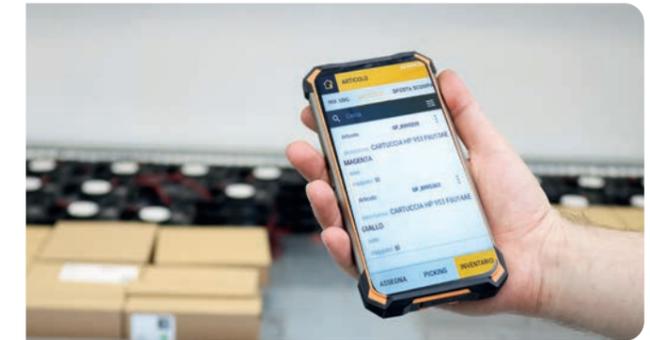


### MOBILE PICKING APP

Mobile Picking app for Android devices makes it possible to work with absolute mobility on all the manual storage systems managed through the Modula WMS.

With the intuitive user interface picking and placing operations can be carried out with just a few clicks. If necessary, it is possible to use the barcode reader or the terminal camera.

The application can be installed on any Android device, from version 8 to version 12.



### MANUAL STORAGE SYSTEM

This module allows the manual areas to be managed through software with the following functions:

- Management of manual storage systems through an intuitive graphic tool
- Management of the picking activities in the manual areas
- Management of material split between different areas based on the handled quantities
- Management of material refilling in different areas based on the minimum stock levels that can be defined for the different areas
- Management of the entry area.

# DOES YOUR COMPANY ALREADY USE A WMS? OUR SOLUTIONS FOR YOU.

WMS Driver and WMS Link are conceptually similar solutions based on which the company's ERP manages the warehouse completely, provided that the ERP can manage the automatic storage system logistically.



**MODULA DRIVER** is used for high-level warehouse management through **material handling orders** (picking, placing or inventory). These orders are typically sent via an intermediate database or text file: in practice, **lists of trays to be handled with associated picking data**.

Modula Driver does not manage item databases, stocks and storage locations (compartments), as these tasks are carried out by the company's ERP, but ensures that **the host system knows the exact location of the items to be picked or placed**.

For each operation, the host also sends information regarding the tray (UL) to be handled and the Driver simply transfers the data.

When the Driver receives a request from the ERP, the operator can view the received orders **from the Modula console and decide which of them to process**.

The Modula console, on the picking page, shows the data of each operation that must be confirmed by the operator as soon as it has been completed. If the order is changed or if all of the required material is unavailable, the operator can only vary the confirmed quantity.

Once the order has been completed, Modula Driver can send the result of the operation back to the ERP, which resumes control and proceeds with its workflow.

- With Modula DRIVER it is possible to manage:
- order preparation areas (even with the addition of the Put to Light accessory)
  - warehouse records/statistical data.

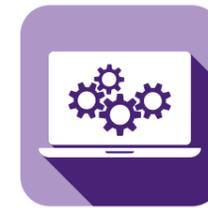
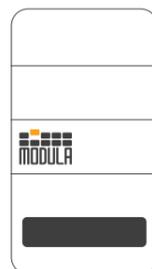
## EXTERNAL WMS



ITEM TRAY QUANTITY

The WMS sends information on the trays to be handled

## MODULA DRIVER



## MODULA LINK

**MODULA LINK** is a software tool that enables an **external Host system to control one or more Modula storage systems at low level using** a set of commands managed via communication on a TCP/IP socket channel. Modula Link is the communication server: **it opens a TCP port (configurable) and waits to receive commands**; when it receives a valid command from the external Host system, it processes it and responds. Modula Link can be parametrized to manage commands from a single client (Mono-Client Communication) or from several clients (Multi-Client Communication). When the management system must call a tray, it uses the appropriate command.

As soon as the tray is ready in the bay, **Modula notifies the management system**, which at the end of the operation can send the tray return command.

The Modula receives only one request to call a tray, the console shows the ready tray but does not provide any other information to the operator: it is the ERP that must show the operator the activities to be performed and ask for the relative confirmation. The picking tool is usually an RF terminal, or less frequently, an external PC.

With precise, real-time control of the warehouse, the ERP can be equipped with a whole range of advanced logistic functions.

## EXTERNAL WMS



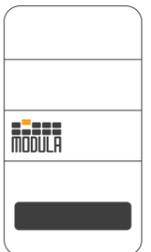
STATUS CALL RETURN

The client fully controls the machine

## MODULA LINK



MACHINE CONTROLS

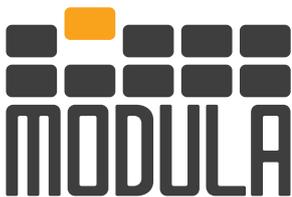


	Modula DRIVER	Modula LINK
External control PC	Necessary	Necessary
Warehouse activity management	Via Modula console	Via external tool (RF terminal, PC or other)
Management of accessories	LED bar/ Alphanumeric LED bar Laser pointer / Badge reader / EKS system Barcode reader / Label printer / Put to Light	Alphanumeric LED bar Laser pointer / Badge reader EKS system / Put to Light
Communication	Via tables or text files or Api (Webservice)	Via socket

# MODULA WORLD



Modula is present in 5 continents with dealers and branches located in over 50 countries



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