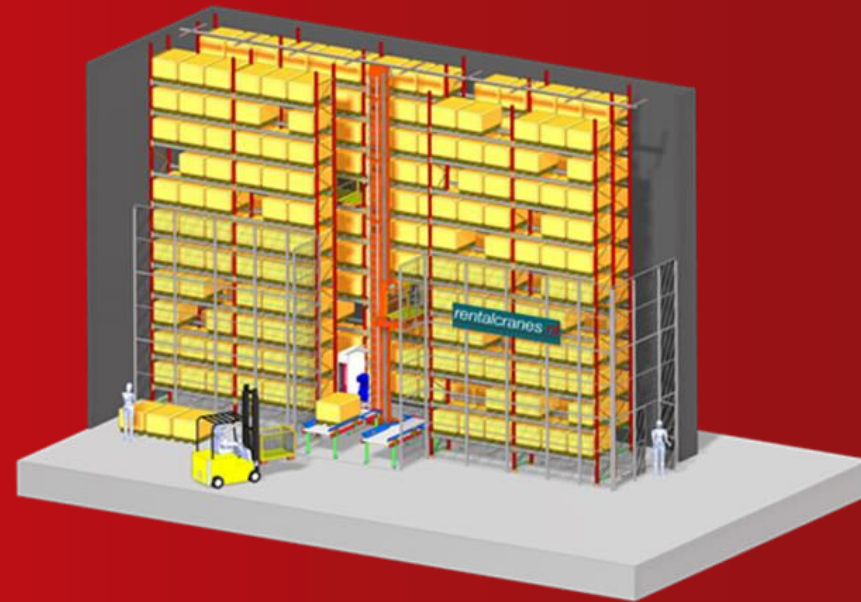


Warehouse automation with Lalesse Logistic Solutions

Product information



- Project references
- Crane types
 - Crane specs
 - LHD's
 - Switch driving
- PLC and Electrical concept
- LogiCS
 - Coming soon



Installed base integrated solutions

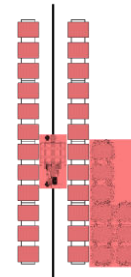


Since 1970 we have more than 50 years of experience in warehouse automation. In our factory we design and build our Lalesse stacker cranes which are installed all over the world. From miniload till stacker cranes and from conveyor till AGV, always the right solution dedicated for your warehouse.

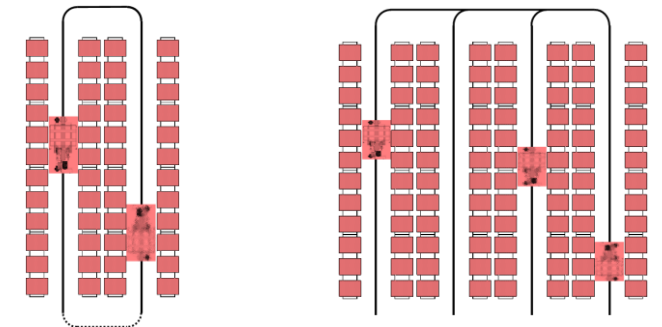
382 Installations



**418 Stacker cranes
straight**



**367 Stacker cranes
curve & switch**





Euroma is a producer of spices, both for the consumer market and for the industry. The customer wanted to build a high bay warehouse with pallets in it, but they also wanted to store bins over the full height of almost 30 meters.

Here Lalesse has built a complete warehouse and made the connection with production. Lalesse has built rack clad racking, delivered stacker cranes, but also delivered two miniloads that drive one above the other to store bins till almost 30 meters height, conveyors for pallets, but also for bins, picking stations and WCS and WMS Euroma.



Merba is a producer of cookies, they produce for numerous supermarkets. Merba had an existing conventional warehouse that they wanted to convert to an automatic warehouse during operation.

Lalesse has built an automated warehouse here in the existing buildings. 9 automatic stacker cranes work here, which 24/7 store the pallets from production and prepare them for shipment. This warehouse was built in during the existing operation including an extensive conveyor system.



Rentall is the largest rental company of sound and video for major events, such as festivals and, for example, the Song festival. They have different (asymmetric) types of expensive equipment to store, often in large boxes. Rentall was looking for a solution for their new warehouse to automatically store all these different loads.

Here Lalesse has automated the entire storage and internal transport with the help of our aisle changing stacker cranes, conveyors, elevators, racking and software.



Wernsing (D), is a producer of potato products for the consumer market. Wernsing was looking for the right solution in terms of storage method for each cold store.

Here Lalesse has built several warehouses with stacker cranes in a cold store application. This concerns straight driving but also aisle changing stacker cranes.



Pré pain is a producer of bake-off bread products, they are the market leader in this. The challenge was to create as many pallet spaces as possible on limited surfaces.

This has been realized with aisle changing Stacker Cranes in combination with shuttles, all controlled by Lalesse it's own WCS software. We have automated various cold stores at their factory in Oldenzaal.



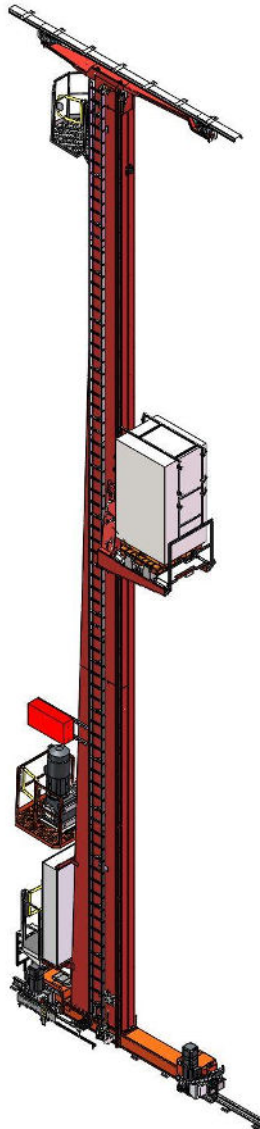
Volkswagen and Porsche, producer of cars wanted to create a buffer for the paint shop where complete chassis of cars had to be stored.

Such large and heavy stacker cranes are not readily available, which is why we have developed special heavy-duty stacker cranes that function to the customers full satisfaction and store the chassis to a great height.

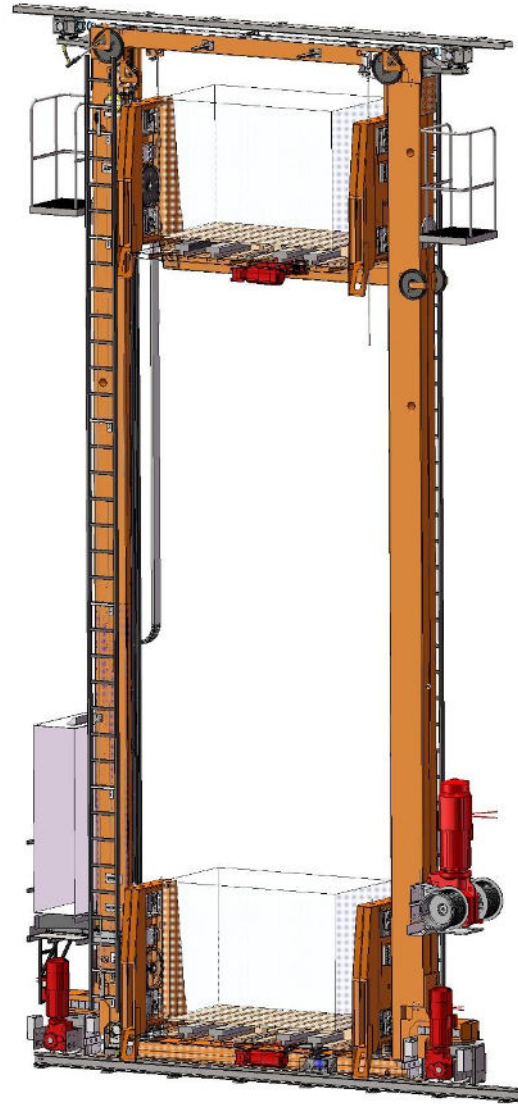




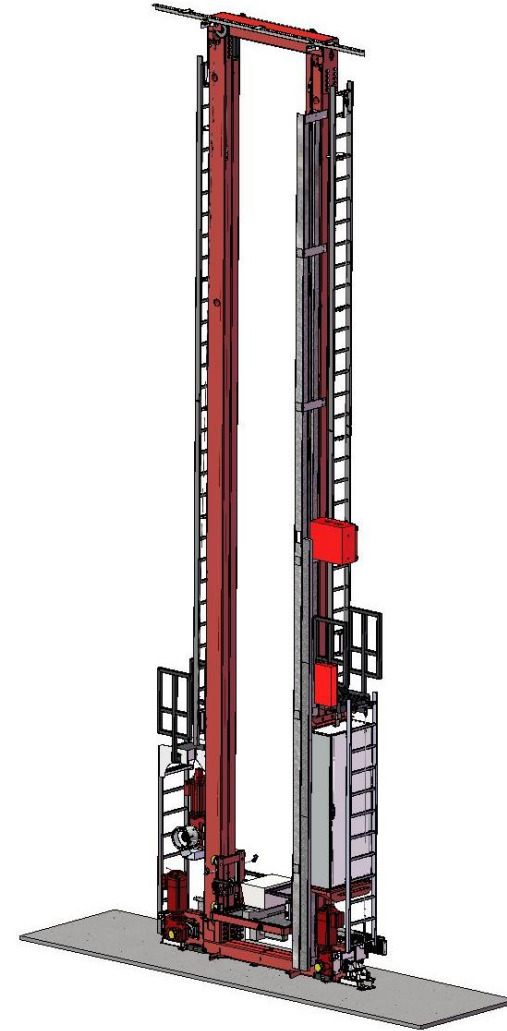
Crane types



Single mast crane
SBA

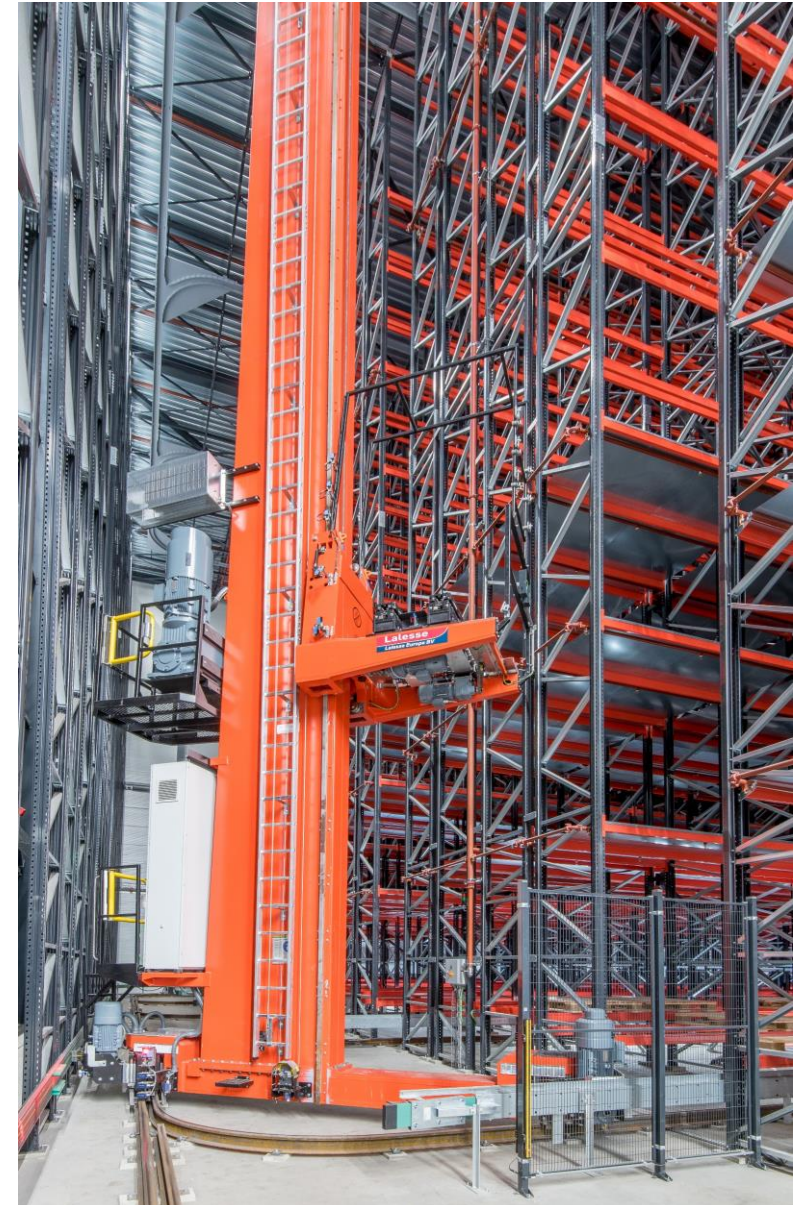


Double mast crane
PCS/PCC

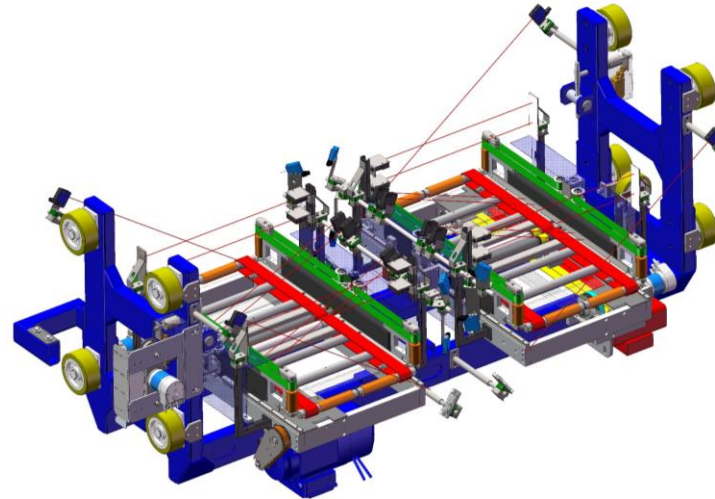
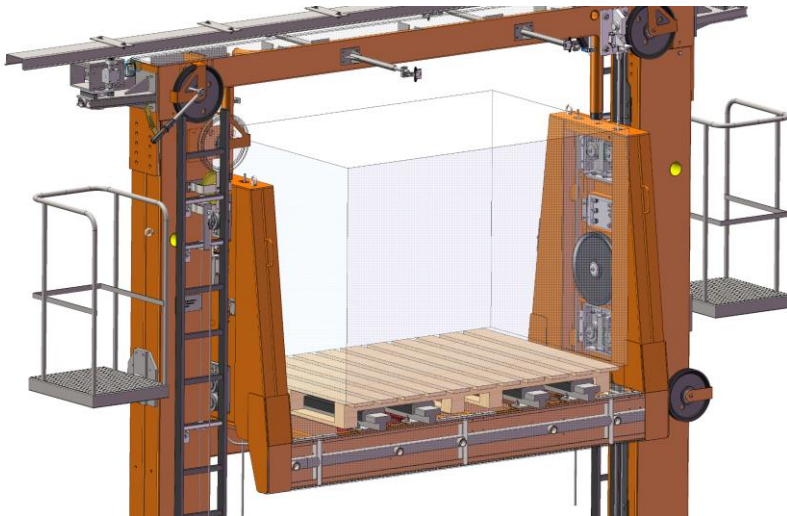


Miniload
ML

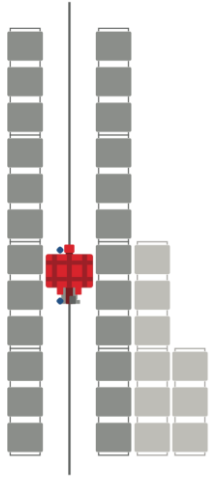
| Crane types | Single mast crane SBA | Double mast crane PCS / PCC | Miniload ML |
|---|-----------------------|-----------------------------|-----------------------------------|
| Straight driving | Yes | Yes | Yes |
| Switch driving | Yes | Yes | No |
| Height range [m] | 32 | 32 | 14 |
| Max load [kg] | 1.250 | 5.000 | 500 |
| Cold store -32 °C | Yes | Yes | No |
| Driving speed max [m/min] | 200 | 200 | 250 |
| Curve driving speed [m/min] | 30 | 30 | n.a. |
| Transfer ail speed [m/min] | 45 | 45 | n.a. |
| Driving acceleration max [m/s ²] | 0,5 | 0,5 | 2.0 up to H=14m 3.0 up to H=7m |
| Hoisting speed [m/min] | 42 | 80 | 120 |
| Hoisting acceleration max [m/s ²] | 0,7 | 0,7 | 2 |



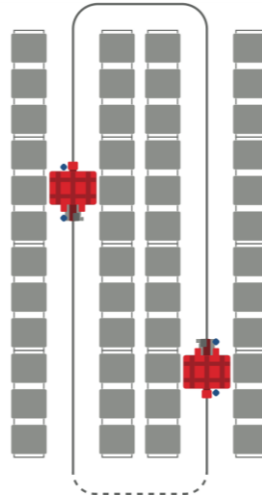
| Load Handling Devices | Single mast crane SBA | Double mast crane PCS / PCC | Miniload ML |
|----------------------------------|-----------------------|-----------------------------|-------------|
| Telescopic fork | Yes | Yes | Yes |
| Telescopic fork double reach | Yes | Yes | - |
| Pallet shuttle | Yes | Yes | - |
| Palles conveyor, chain or roller | Yes | Yes | - |
| Chain/tray retriever | - | - | Yes |
| Box retriever | - | - | Yes |



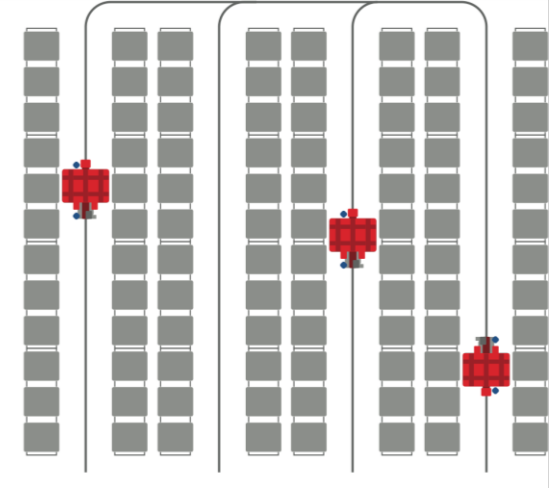
Straight-driving



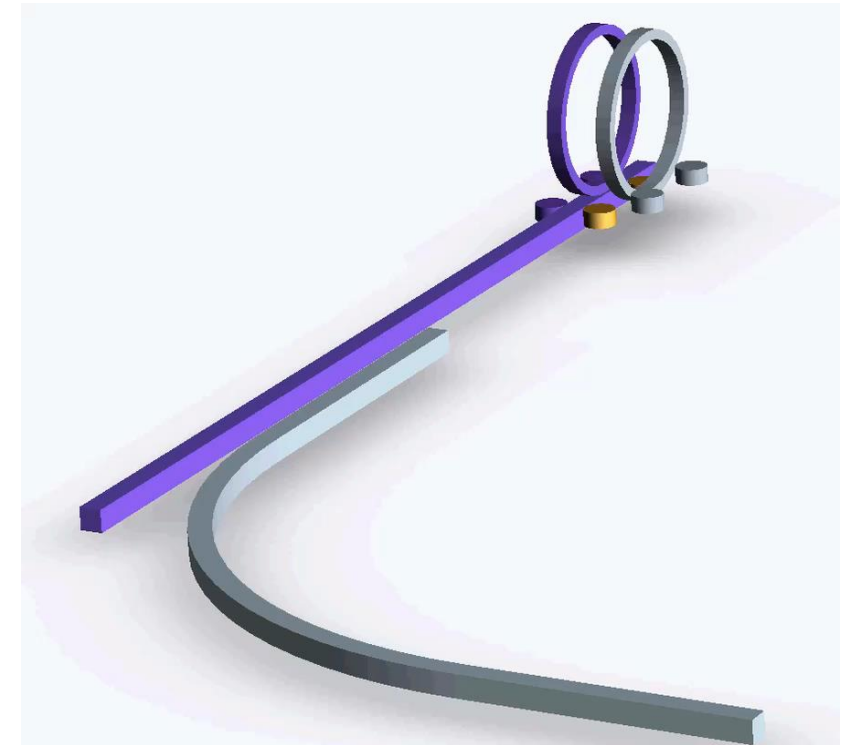
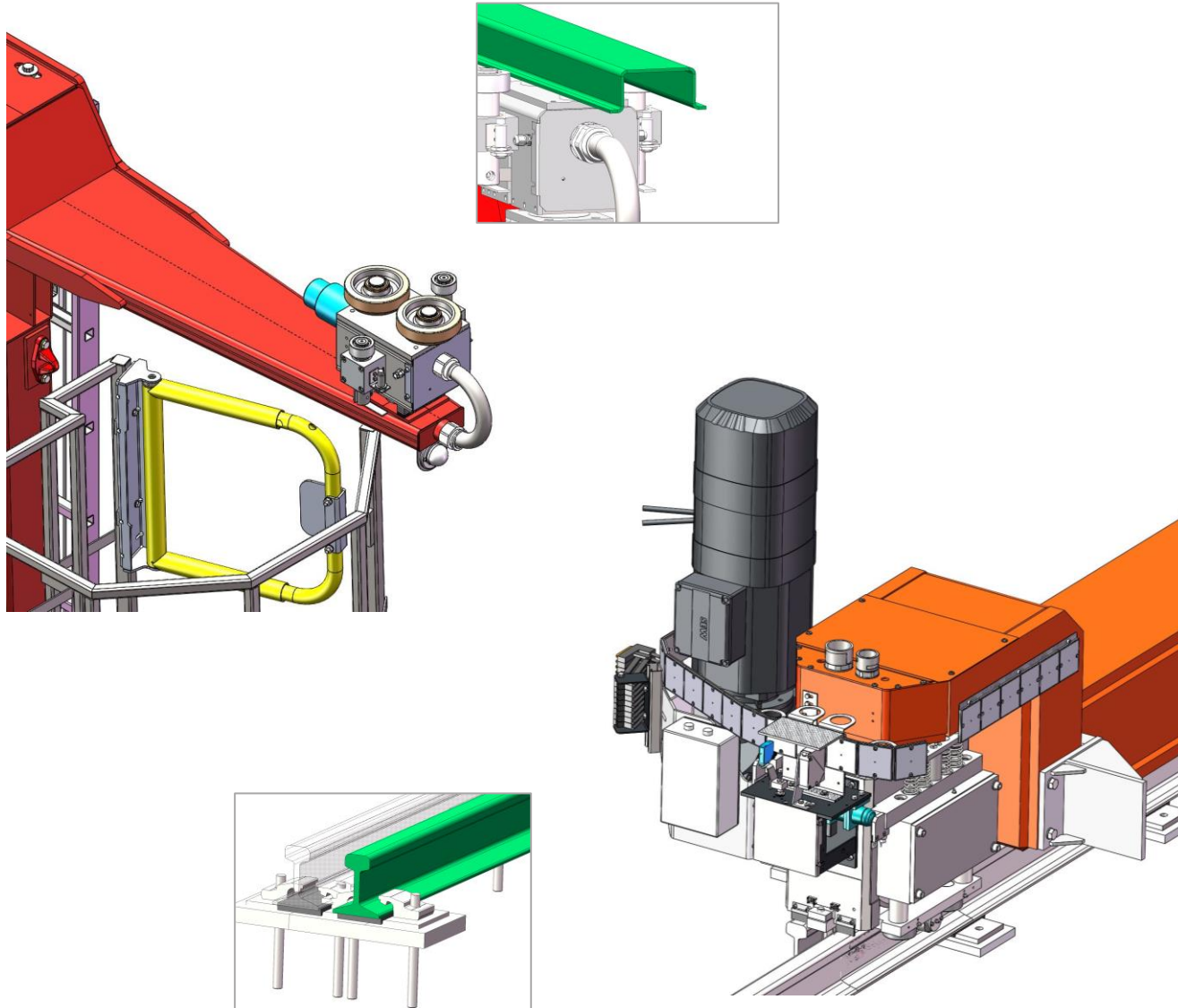
Curve-driving



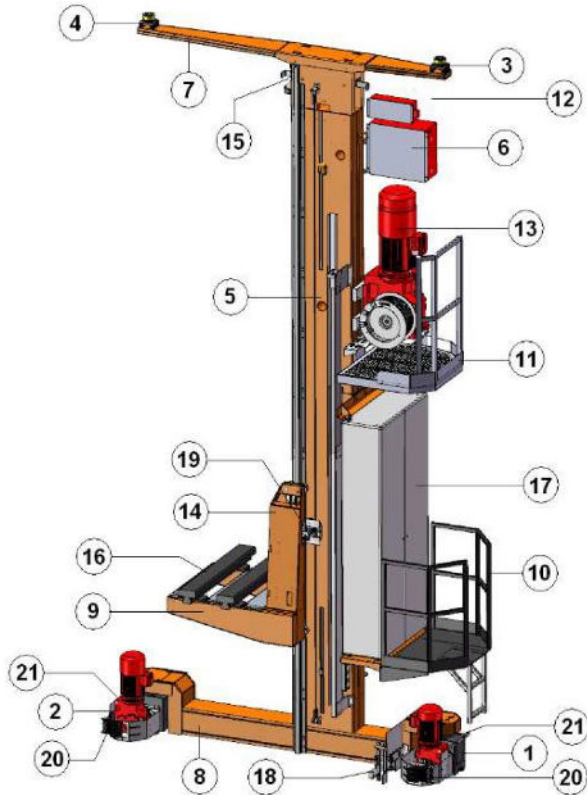
Switch-driving



Switch-driving

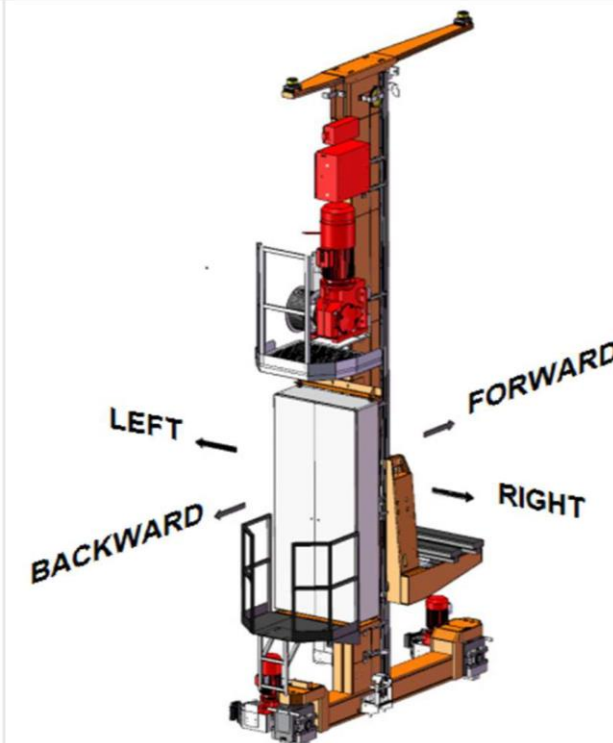


Parts

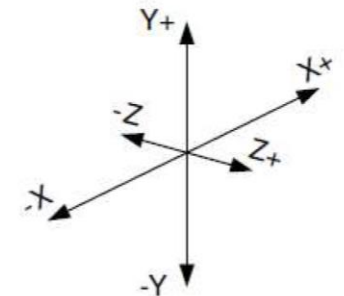


- | | |
|----|------------------------------|
| 1 | Bottom bogie rear mast side |
| 2 | Bottom bogie front load side |
| 3 | Top bogie rear mast side |
| 4 | Top bogie front load side |
| 5 | Mast |
| 6 | Brake resistor |
| 7 | Upper carriage |
| 8 | Bottom carriage |
| 9 | Platform |
| 10 | Platform crane cabinet |
| 11 | Platform hoist unit |
| 12 | Platform mast top |
| 13 | Hoist unit |
| 14 | Catch device |
| 15 | Pulley hoisting cable |
| 16 | Handle unit |
| 17 | Crane cabinet |
| 18 | Horizontal positioning |
| 19 | Vertical Positioning |
| 20 | Current collectors |
| 21 | Anti-collision |

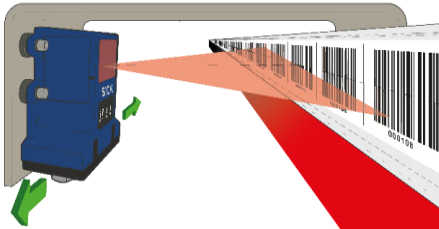
Direction



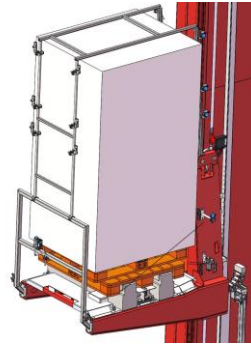
Orientation



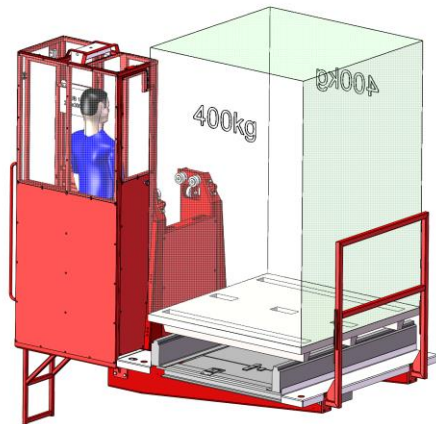
Highlights



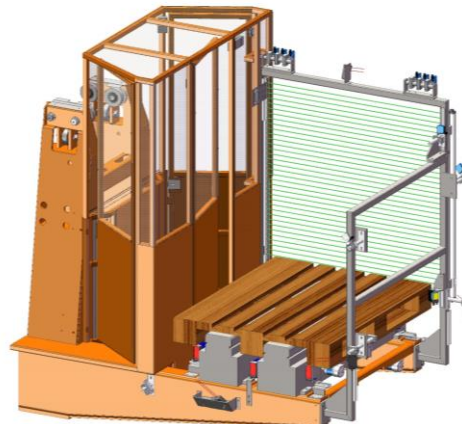
positioning X –Y by barcode



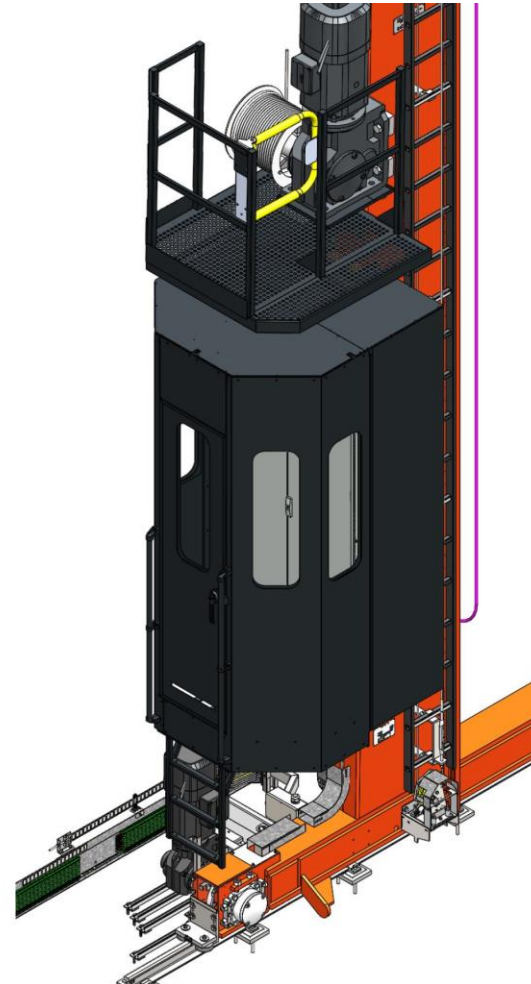
Platform Profile check



Cabin options



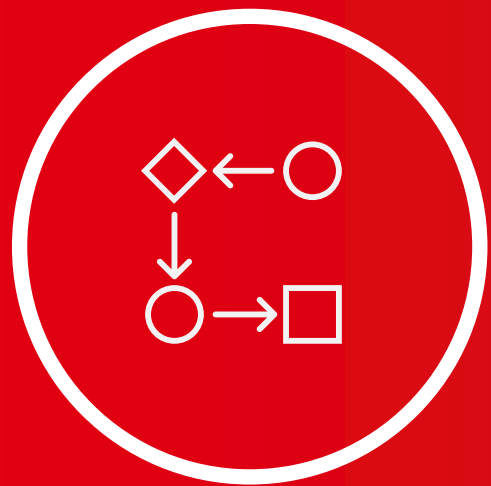
Cold store cabine



Maintenance cabin



Manual mode by mobile panel



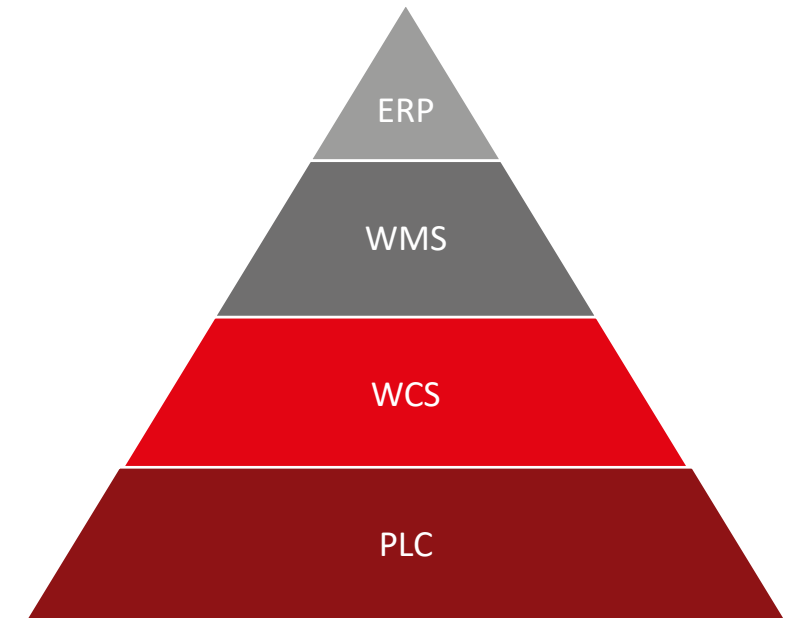
Software & Controls



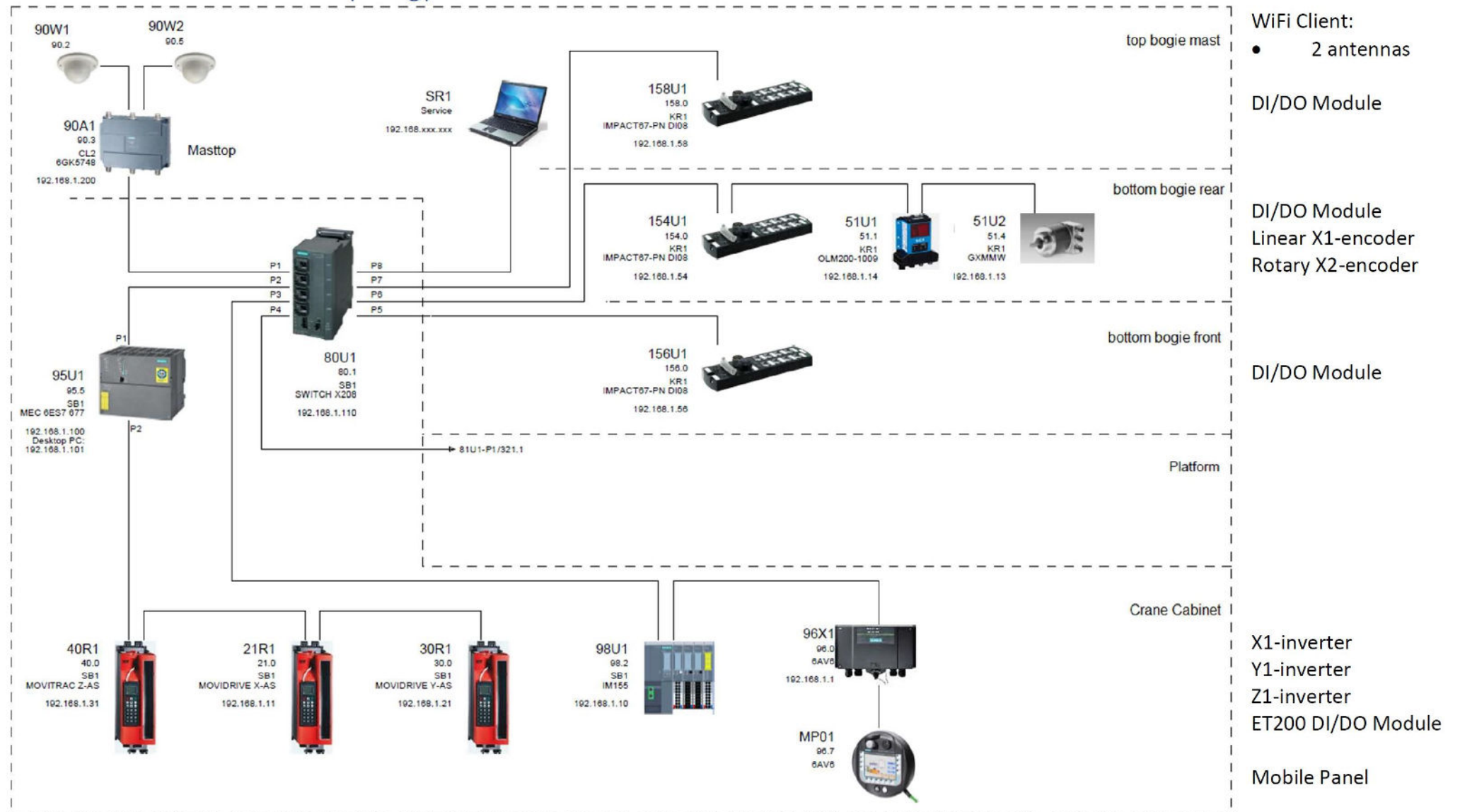
Software and Controls

Intelligent controlling solutions

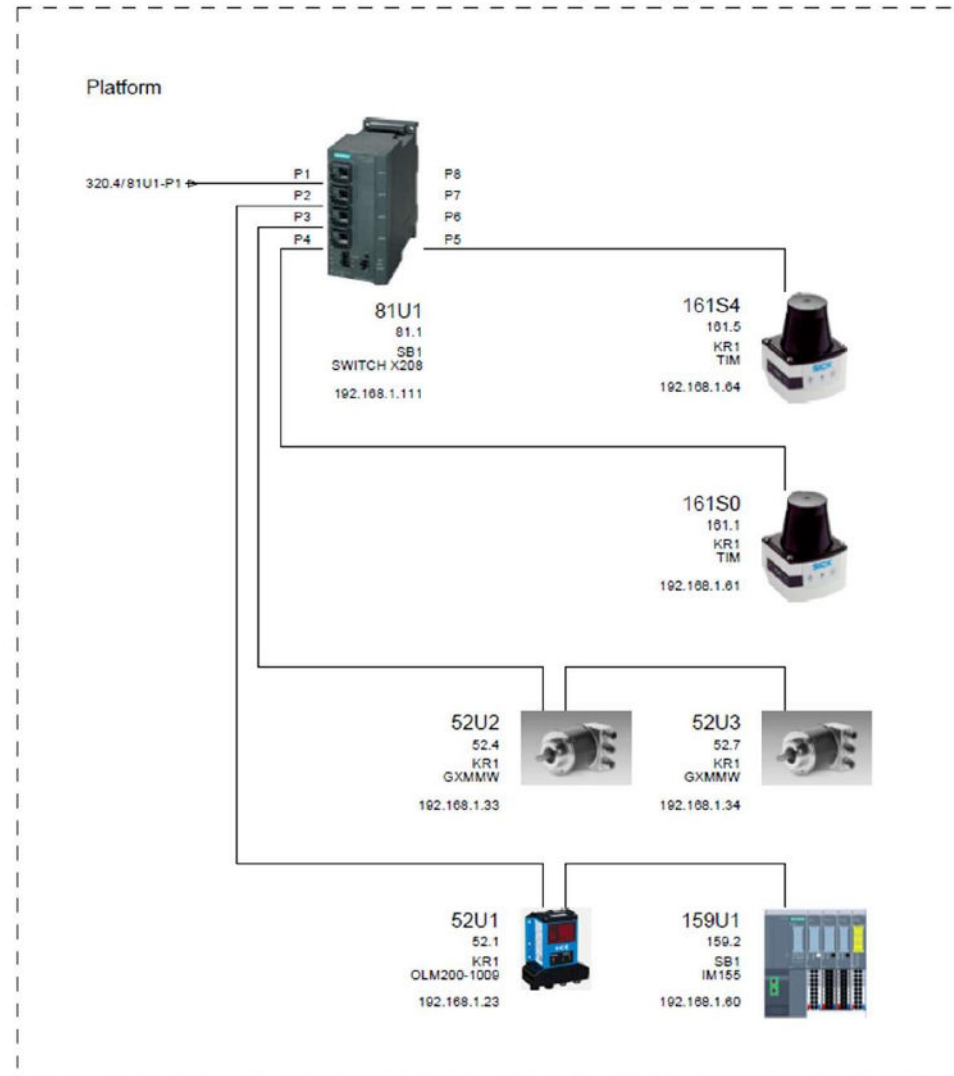
- LogiCS WCS
- PLC & Electrical concept



Crane cabinet Ethernet Topology



Platform Cabinet Ethernet Topology



Switch

Sensors "Pallet present in rack":

- Left
- Right

(optional: Sick TiM sensor is not a ProfiNet module)
(ethernet port available to configure optic field sets)

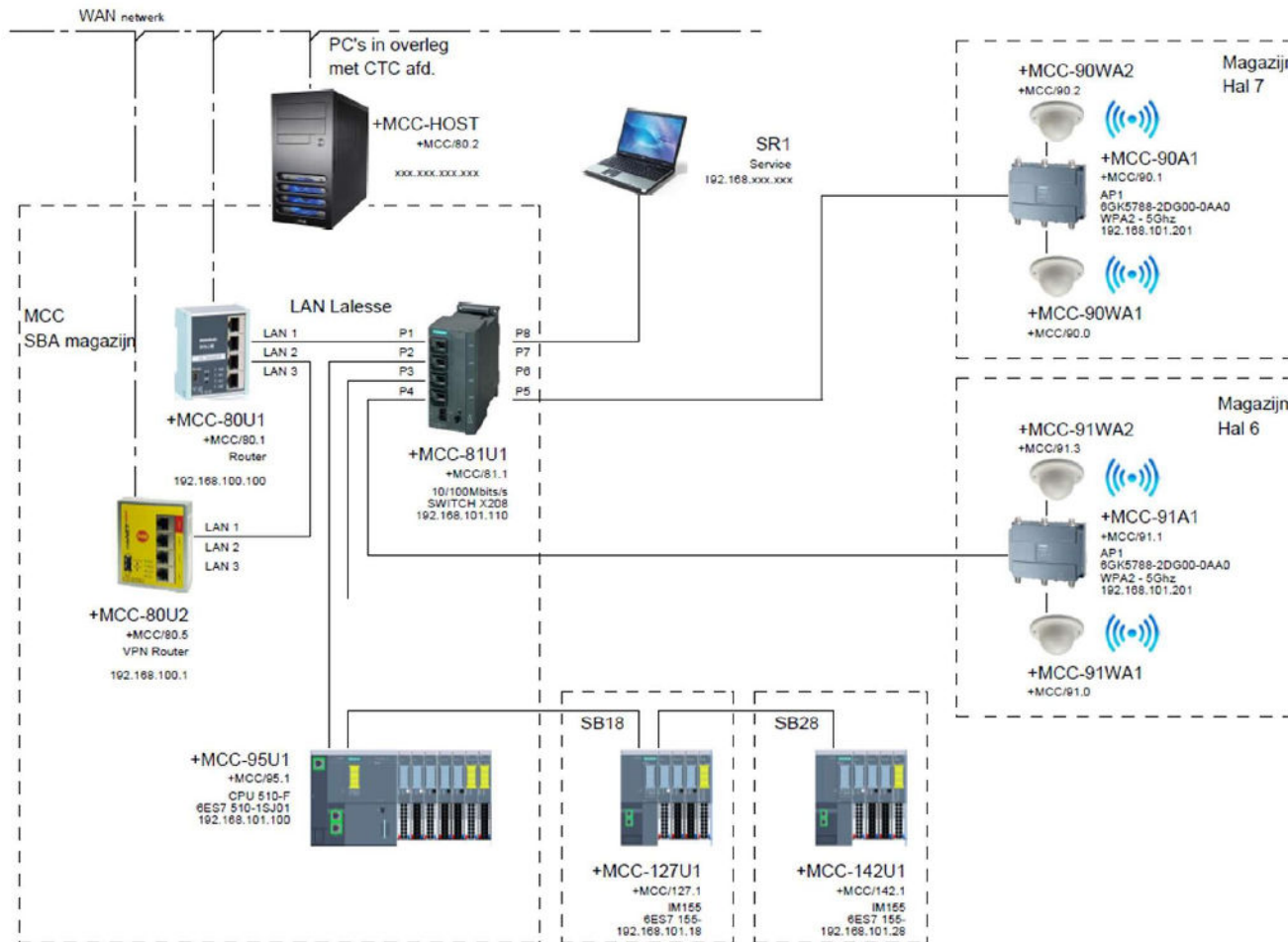
Z1 Fork rotary encoders:

- Z11-encoder Single Deep
- Z12-encoder Double Deep

Vertical linear Y1-encoder

ET200 DI/DO module

MCC Cabinet Topology



WiFi at 5 [GHz] with antenna:

- Omnidirectional at curve projects
- Weak directional at straight projects

AP1 WiFi Access Point:

- 2 radios
- maximum of 3 antennas each radio

AP2 WiFi Access Point

- 2 radios
- maximum of 3 antennas each radio

Siemens CPU1510F

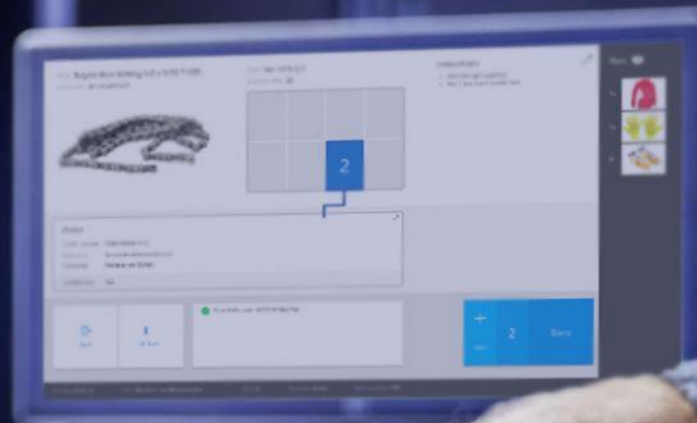
- DI/DO
- SB18: ET200 DI/DO
- entrance door
- SB28: ET200 DI/DO
- escape door
- maintenance area



Lalesse
Logistic
Solutions

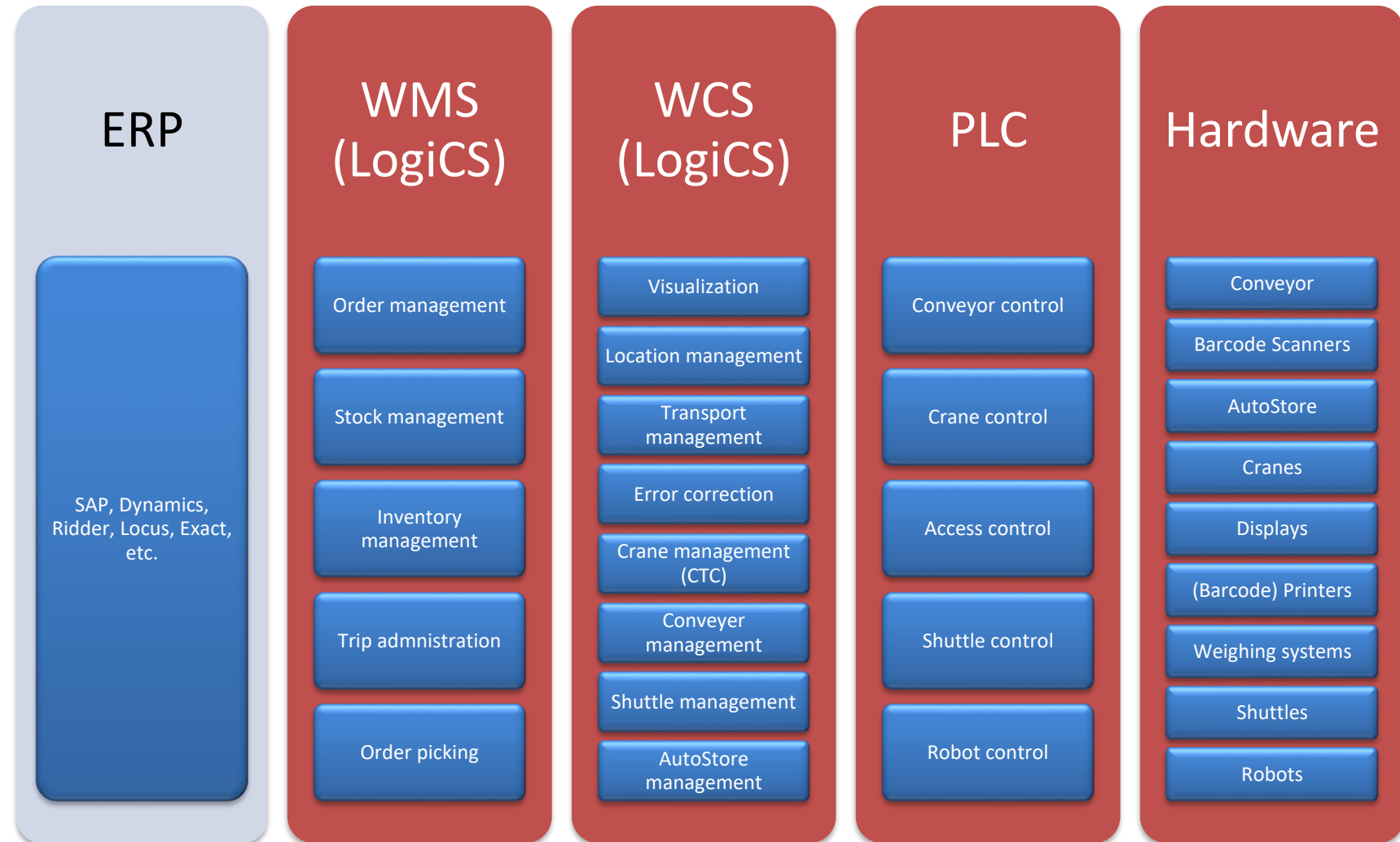
LogiCS user interface
What you see is what you get

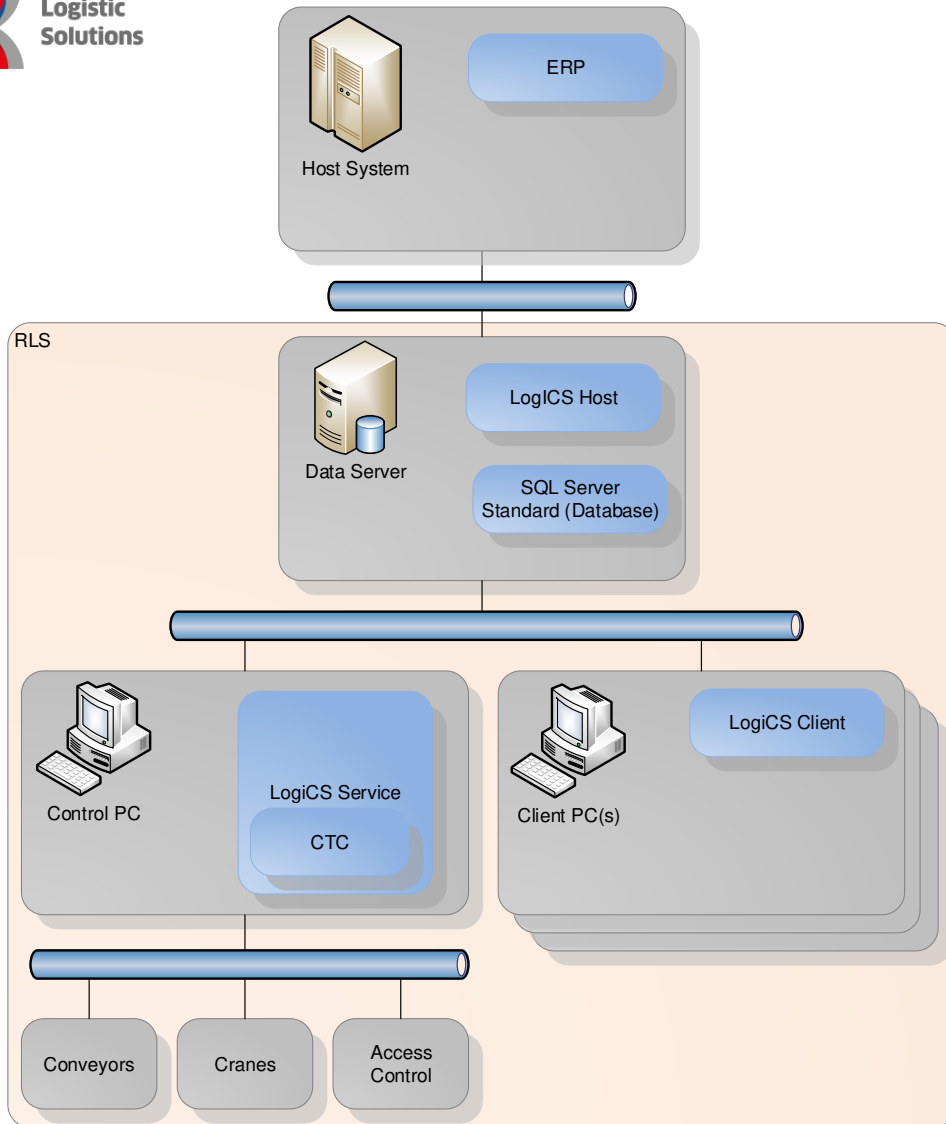
← Back



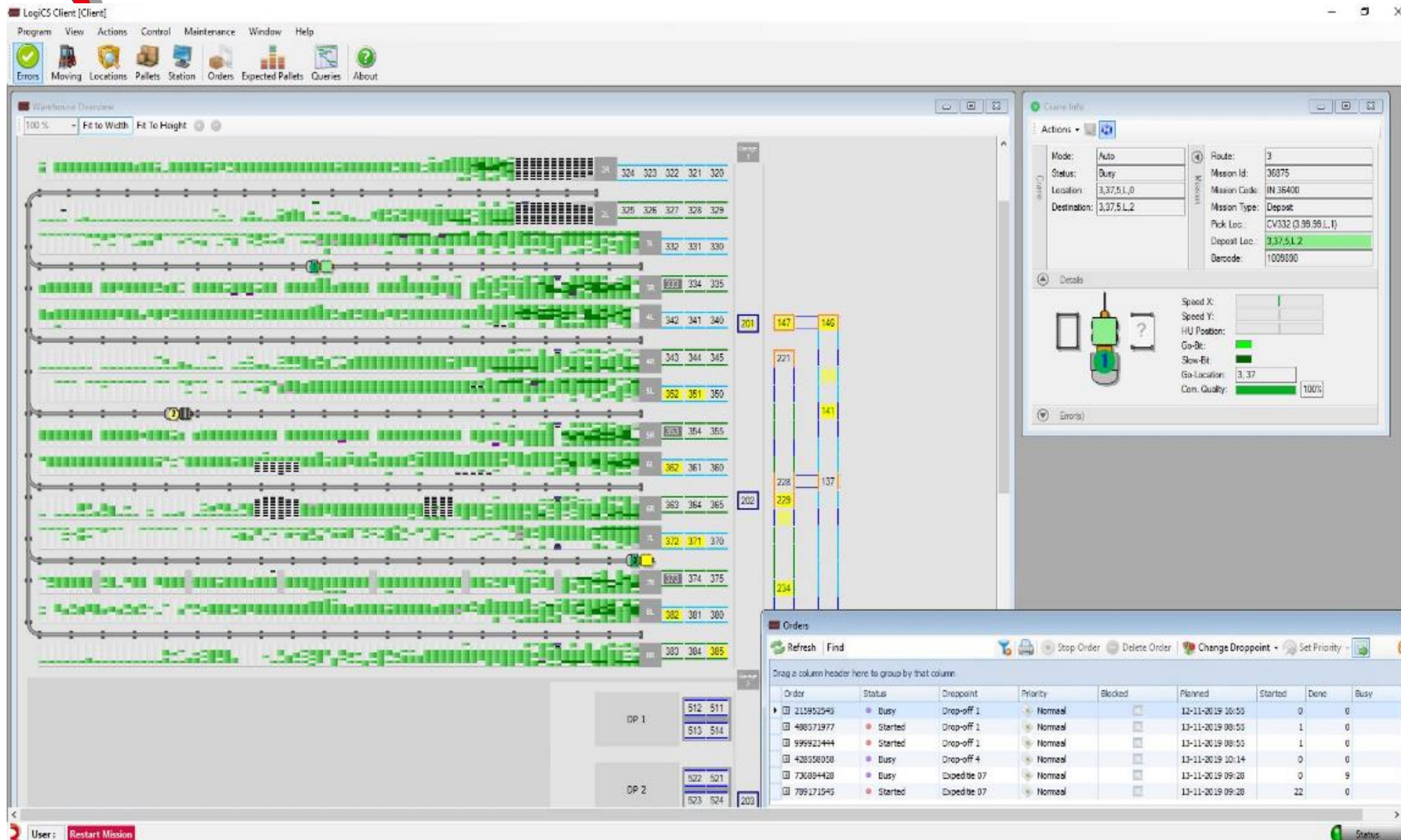
Functionality

- ✓ Wide range of ERP/WMS interfaces
- ✓ Standard WMS functionality on customer needs
- ✓ Visualization of the project specific warehouse
- ✓ First versions created in the 90's, proven for years
- ✓ Simulators for cranes and conveyors





- On-Premise solution
- Customer is responsible for hardware and backups
- Lalesse will install the software on the server(s) and keep it up to date with bugfixes
- Final system configuration is depending on the solutions offered



- Status of the various components.

- Cranes
- Conveyors
- Shuttles
- Locations / Stock
- Semi automatic control / Manual
- Error correction
- Transport unit movement

Overview of

- Orders / Order lines
- TUs (Transport Units) e.g., Pallets / Bins / etc.
- Stock
- Locations
- Crane Missions
- Reporting
- Errors, Error Correction



Our experience

Our references



You can read more client cases here: www.lalessels.com/en/case-studies

Client cases



Beijer Ref



Euroma



Grolleman



B&S



PostNL



AutoStore, racking, conveyor, software

Beijer Ref

Surface area: approx. 3,620 m²

Pallet locations: 7,936 europallets

AutoStore surface: 262 m²

Number of robots: 7

Number of workstations: 2

Number of bins: 10,939

Date of completion: 2017 & 2019



Stacker cranes, mini load, racking (clad rack), conveyor, software

Euroma

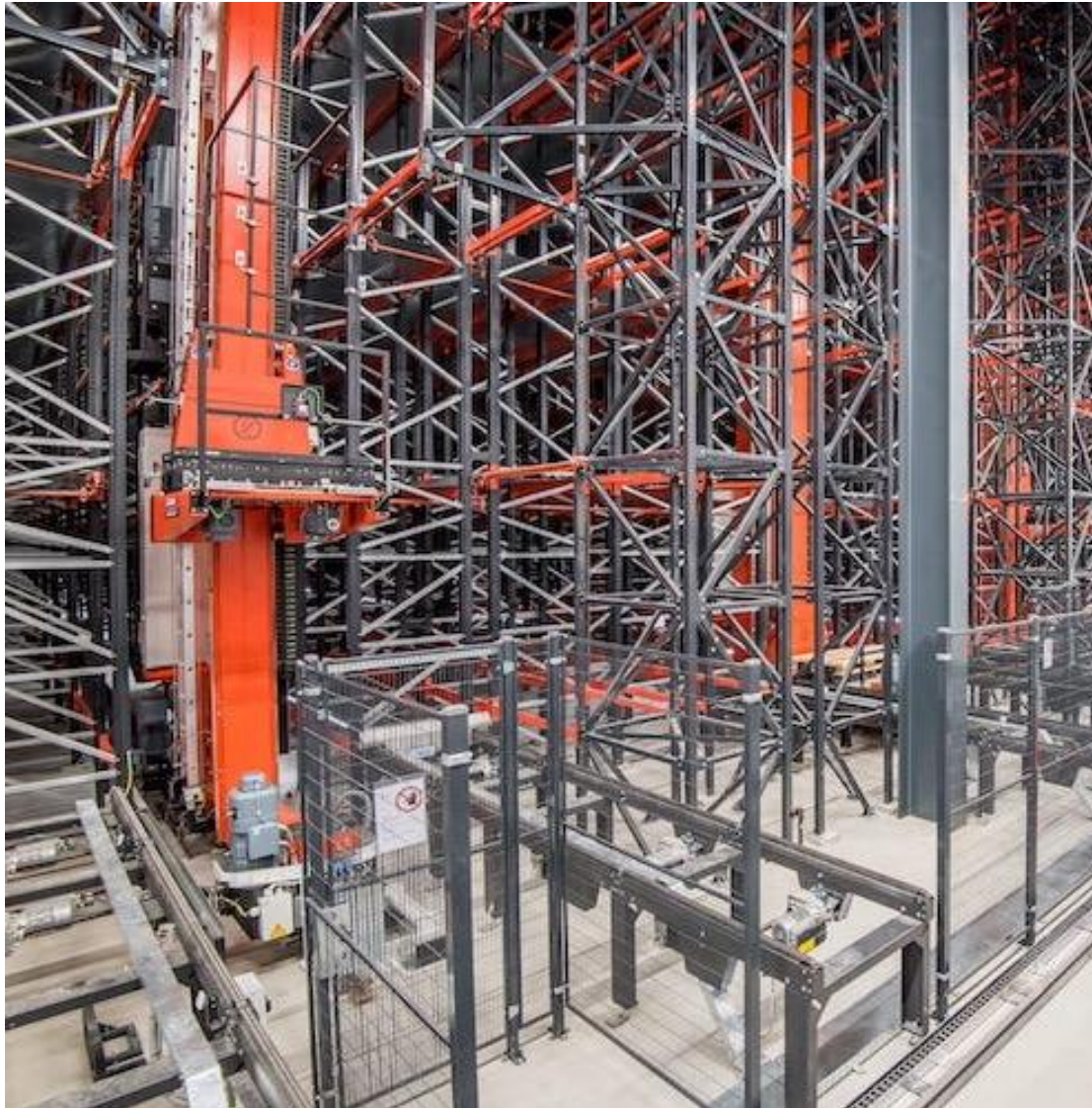
| | |
|---------------------|------------------------------|
| Surface area: | approx. 4,200 m ² |
| Pallet locations: | 18,676 |
| Stacker cranes: | 8 straight-line |
| Miniload: | 2 above each other |
| Miniload locations: | 8,000 trays |
| Conveyors: | pallets, trays, lifts |
| Completion: | 2020 |



Stacker cranes, racking (clad rack),
mobile racking

Grolleman Coldstore

| | |
|--------------------------|------------------------|
| Surface area: | approx. 3,876 m2 |
| Pallet locations: | 16,320 Cheppallets |
| Racking: | 8 aisles of 101 metres |
| Stacker cranes: | 8 straight-line cranes |
| Capacity: | 400 pallets per hour |
| Completion: | 2019 |



Stacker cranes, racking, conveyors, software

B&S

Surface area: approx. 16,000 m²

Pallet locations: 19.200 europallets

Racking: 7 aisles, 22 m high

Stacker cranes: 3 aisle switching cranes

Capacity: up to 45 pallets per hour

Completion: 2019



AutoStore

PostNL

Surface area: approx. 15,500 m²

Height: 9,5 metres high

Number of trays: 21,000

Number of robots: 42

Workstations: 8

Completion: November 2017



Warehouse automation with Lalesse Logistic Solutions

The key to a future-proof business

- General contractor with many years of experience
- Specialist for complete solutions
- One-stop-shop for warehousing solutions



We live smart warehousing.
Challenge us!