Alhona Logistics Library

Virtual Factory

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Summary

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02 Main objects

03 Starting information

04 System Modeling

05 Performance indicators

06 Use cases

07 Who is this library for?

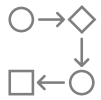
1 Value proposition

Do it yourself

Offer the **user** the ability to create **agile and modular** simulation environments for automated logistics processes, such as automated warehouses or sorters.

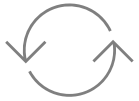
Library based on SIEMENS software (Tecnomatix Plant Simulation)

User-focused development, no programming knowledge required.



Agile and modular design, designed to adapt quickly to changes.

Custom reports



Updated library with the requirements of our customers.

2 Main objects

WMS

It manages product storage strategy in aisles

Inbound Gate

It manages the reception of products and/or product containers

Site Manager

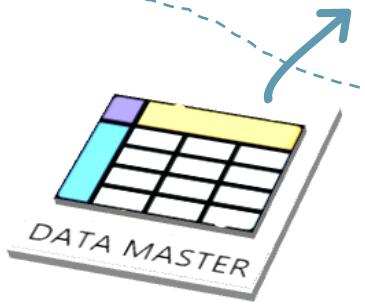
Routes products through the different elements of the model using conveyors or AGVs

Outbound Gate

Removes products and/or product containers

STATION

Processes products at picking, palletizing, detoting or other stations



Unifies the definition of master data, such as product or order data, that is commonly used for the entire model.

Collects information from the statistics of each object and generates a report with the simulation results.

3 Starting information

PRODUCTS

- Product ID
- Containers
- Dimensions
- Units per container
- Units per pick

STOCK

Product Arrival Frequency or Planning

Warehouse capacity

Storage strategy

TIMES

Product transport, unloading and loading times.

Picking, palletizing, detoting times, etc..

DEMAND

- Order frequency or planning
- Delivery time
- Orderlines

PROCESS

Layout

Transport routes

LIBRARY ITEM LEGEND:

Data Master

Layout

Inbound Gate

Site Manager

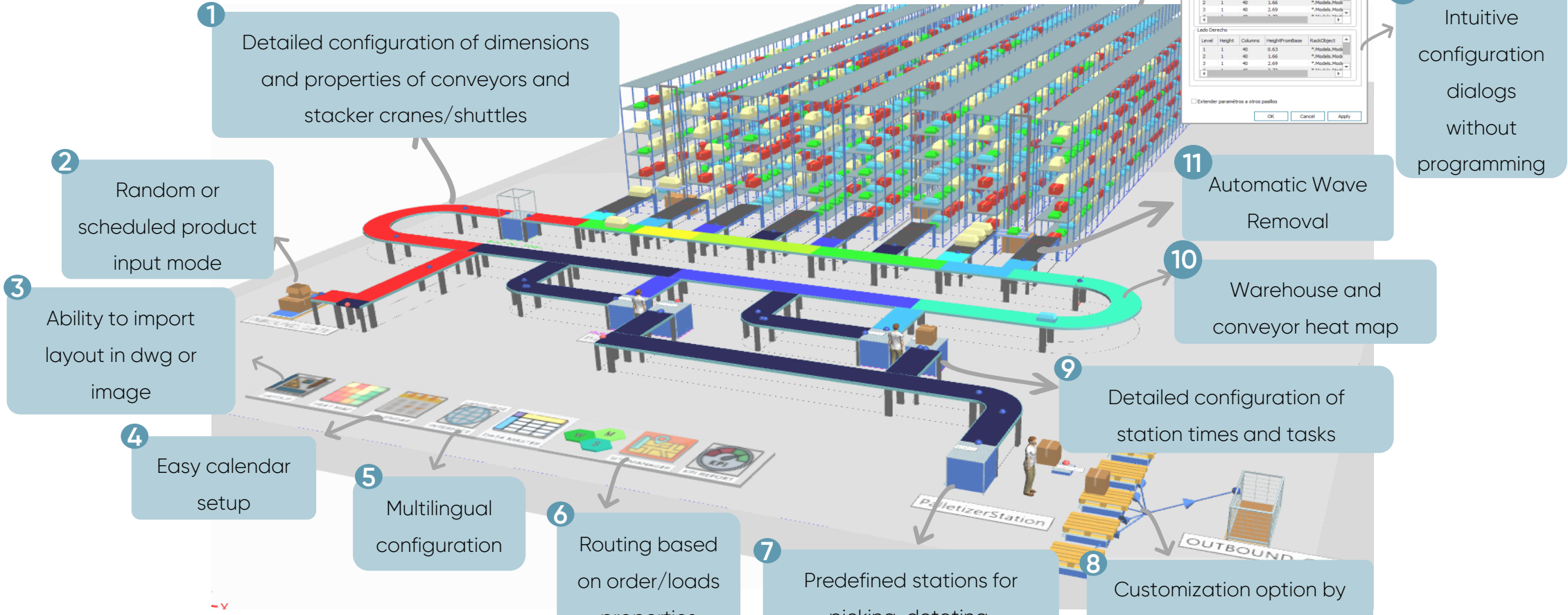
Racklane

Sorter

WMS

Station

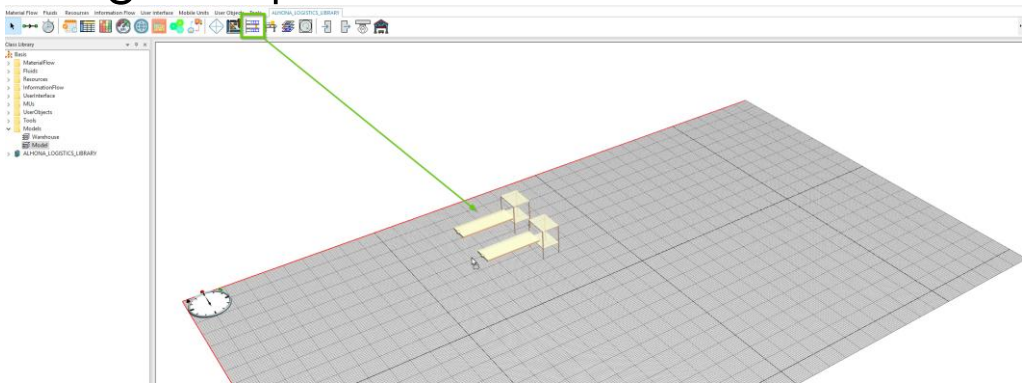
4 System modeling



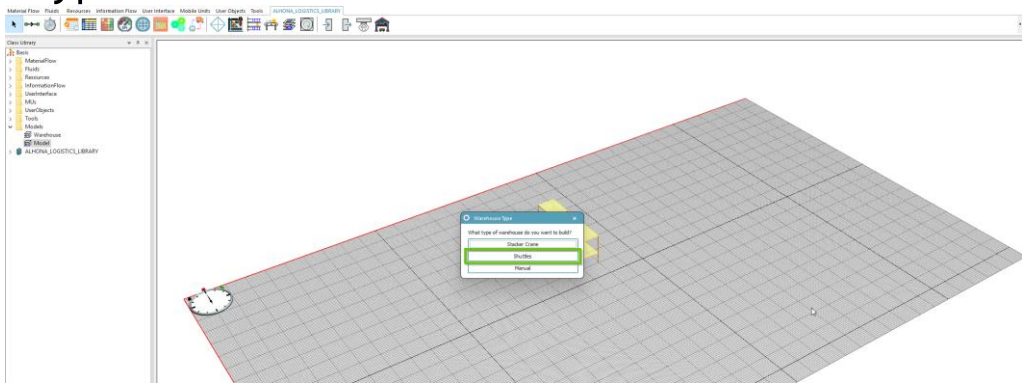
4 System modeling

How to use

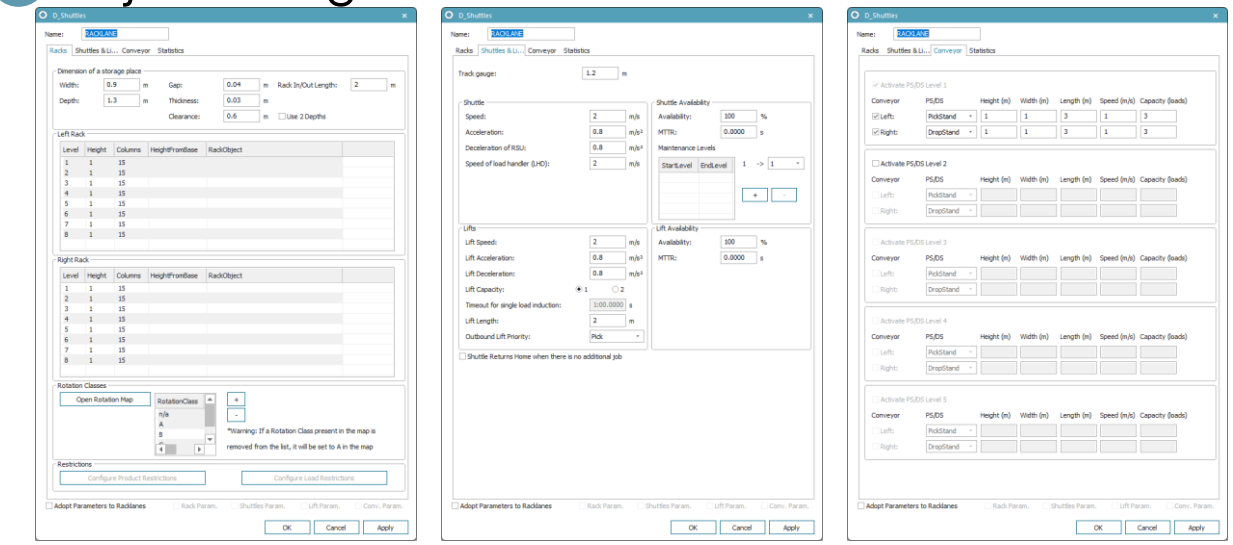
1 Drag & Drop



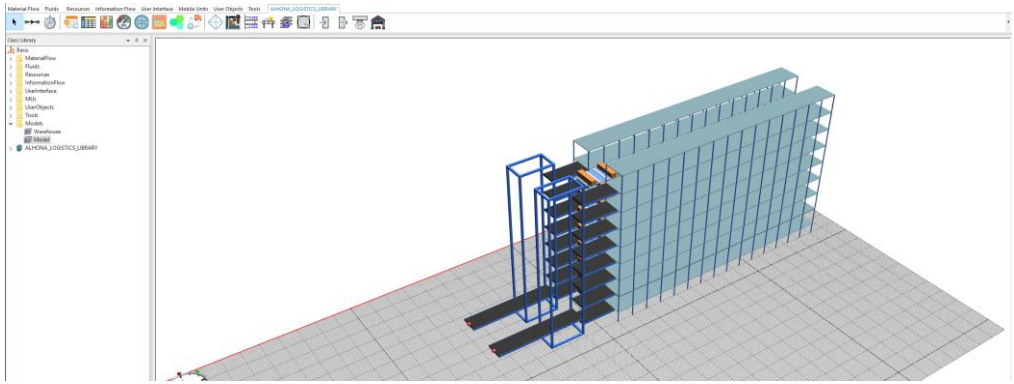
2 Type Selection

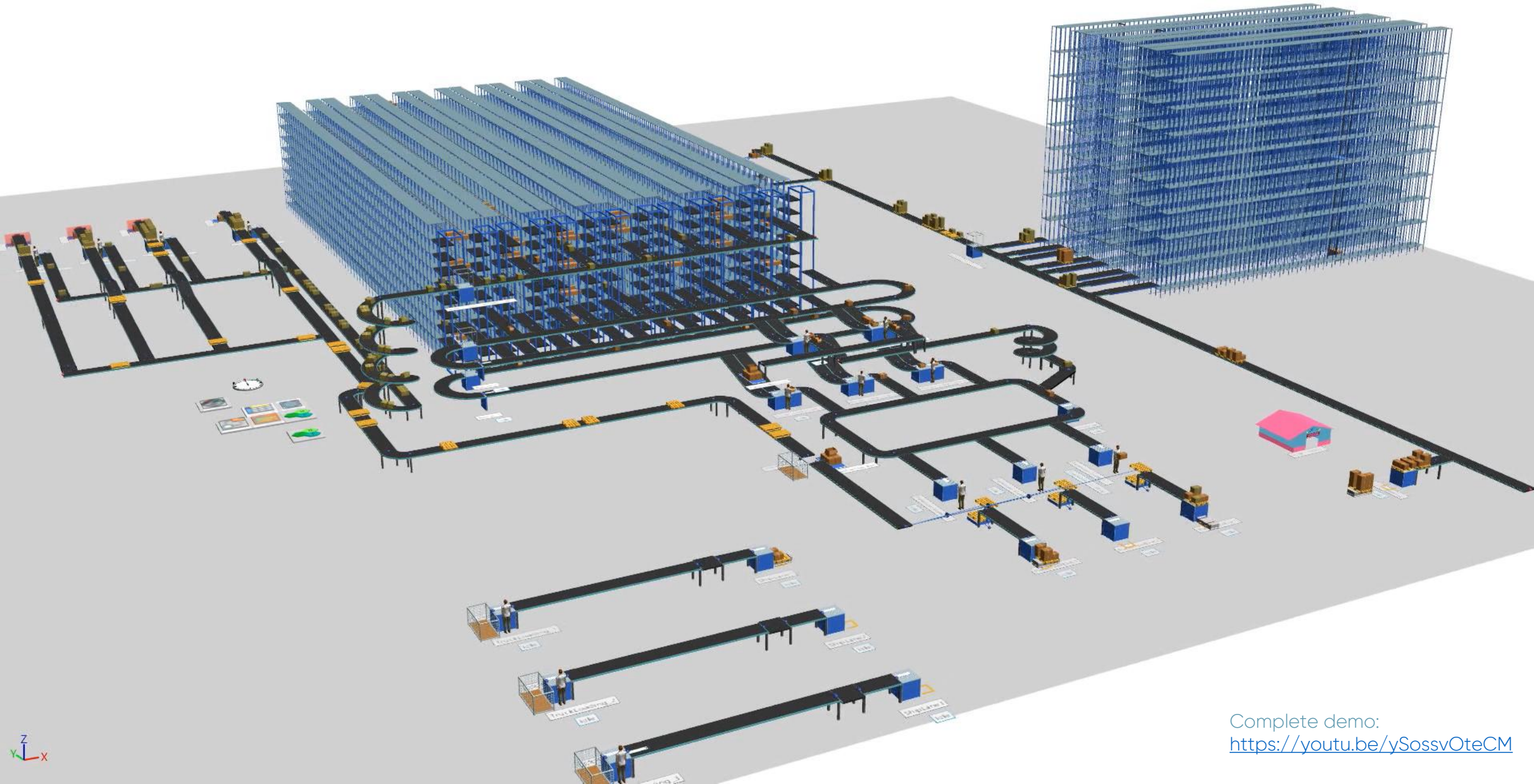


3 Object configuration



4 Working object





Complete demo:
https://youtu.be/ySossvOteCM

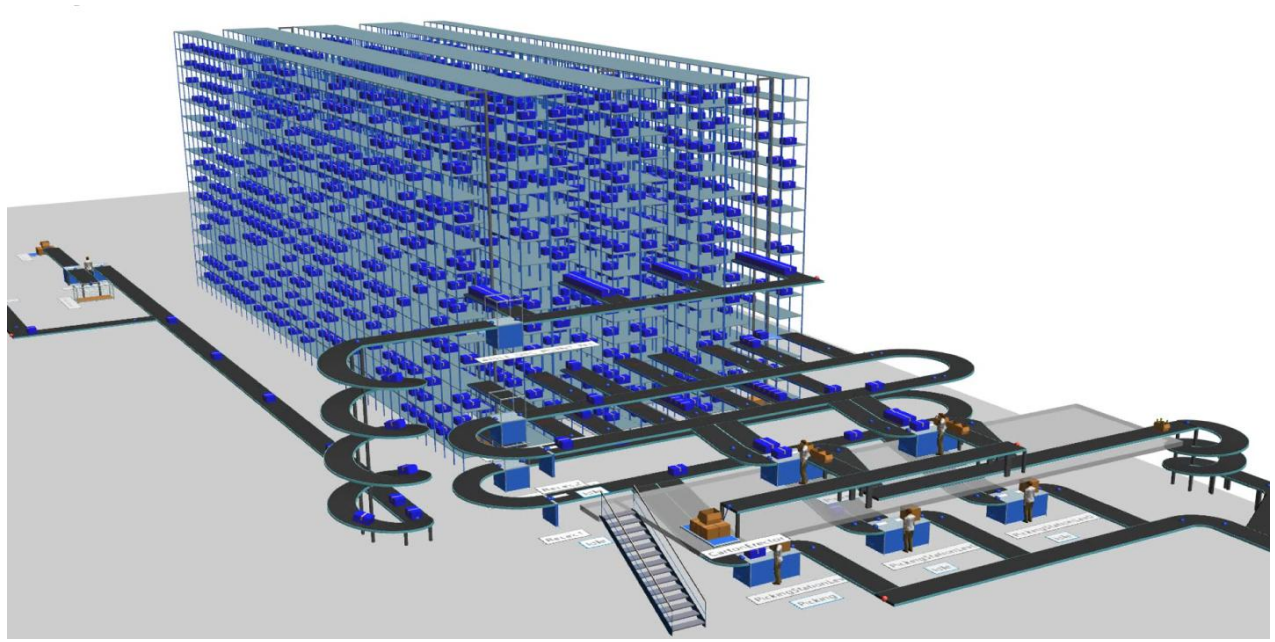
5 Performance indicators

KPIs	Objectives
Warehouse Occupancy	**Maximize** your occupancy without impacting product flow
Rack Service Unit (RSU) Performance	**Maximize** your utilization without impacting order demand
Performance of picking, palletizing and detoting stations	**Maximize** your utilization without impacting order demand
Quantity of products processed at the entrance and exit of the facility	**Assess** the capacity and feasibility of the facility
Sorter and shelves heatmap	**Balancing** product flows

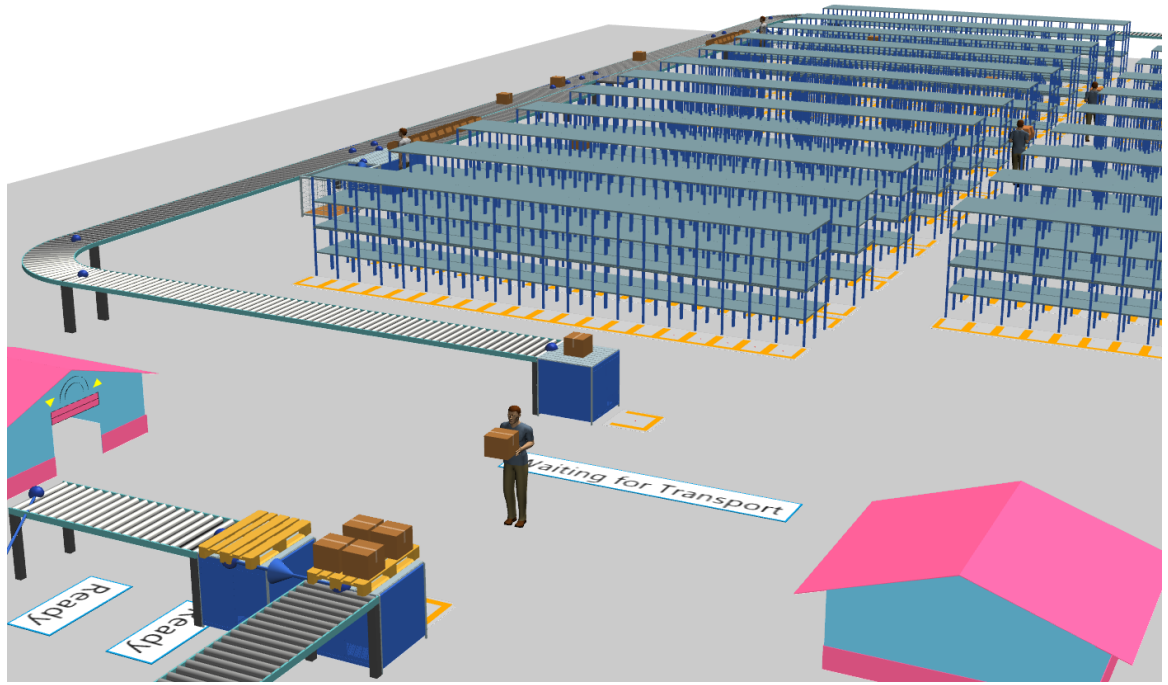
6 Use cases

- Full operation of automated (shuttles & stacker cranes) or manual Warehouses w/ Receiving, Picking & Palletizing, using units, boxes, crates & pallets.

AUTOM. WAREHOUSE (STACKER CRANE)

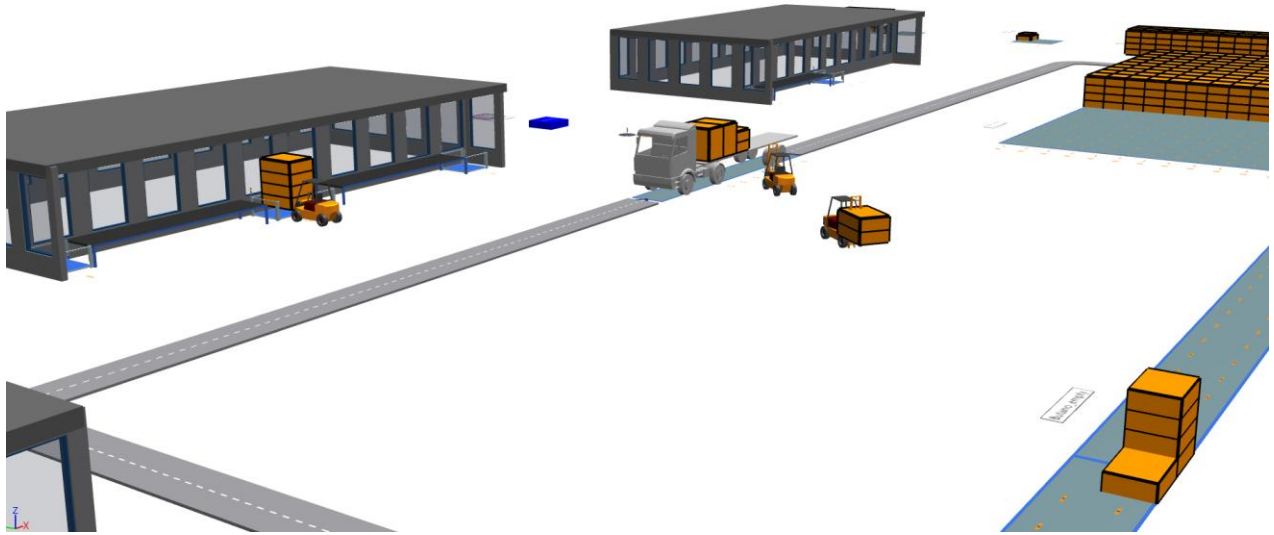


MANUAL WAREHOUSE



AUTOM. WAREHOUSE (SHUTTLES)

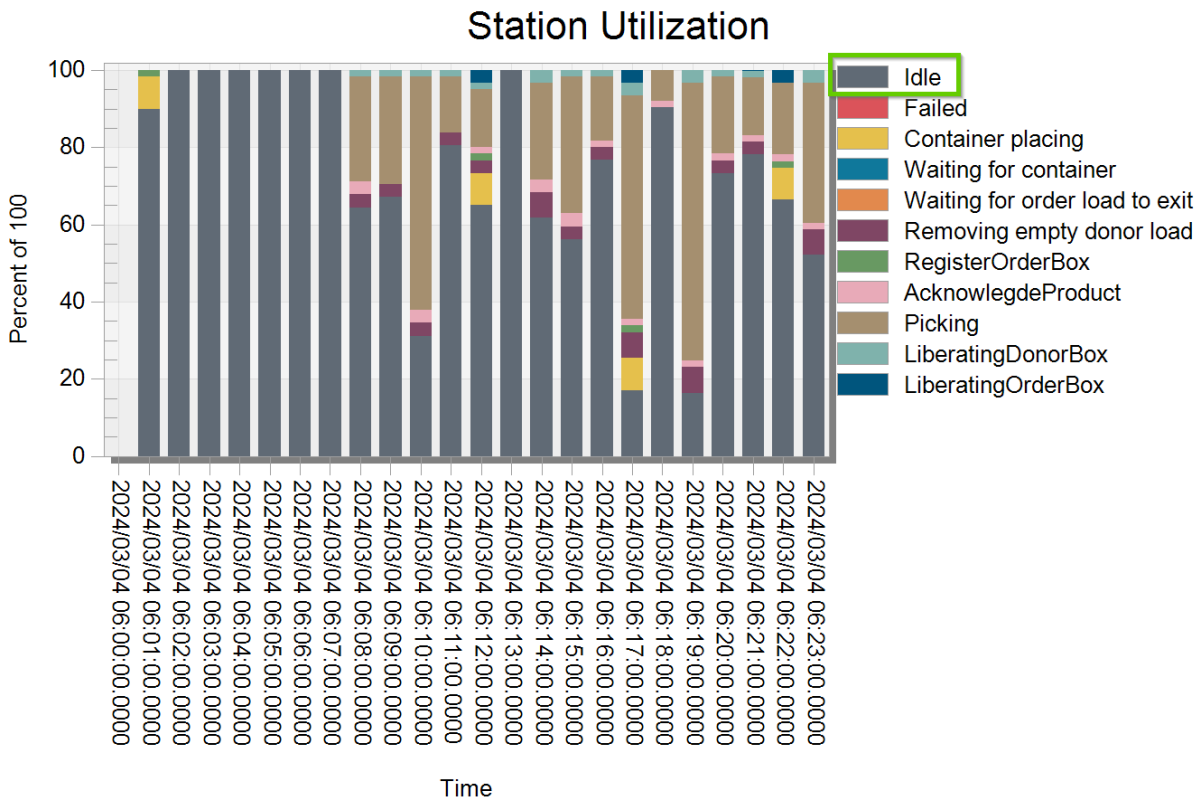
FORKLIFTS



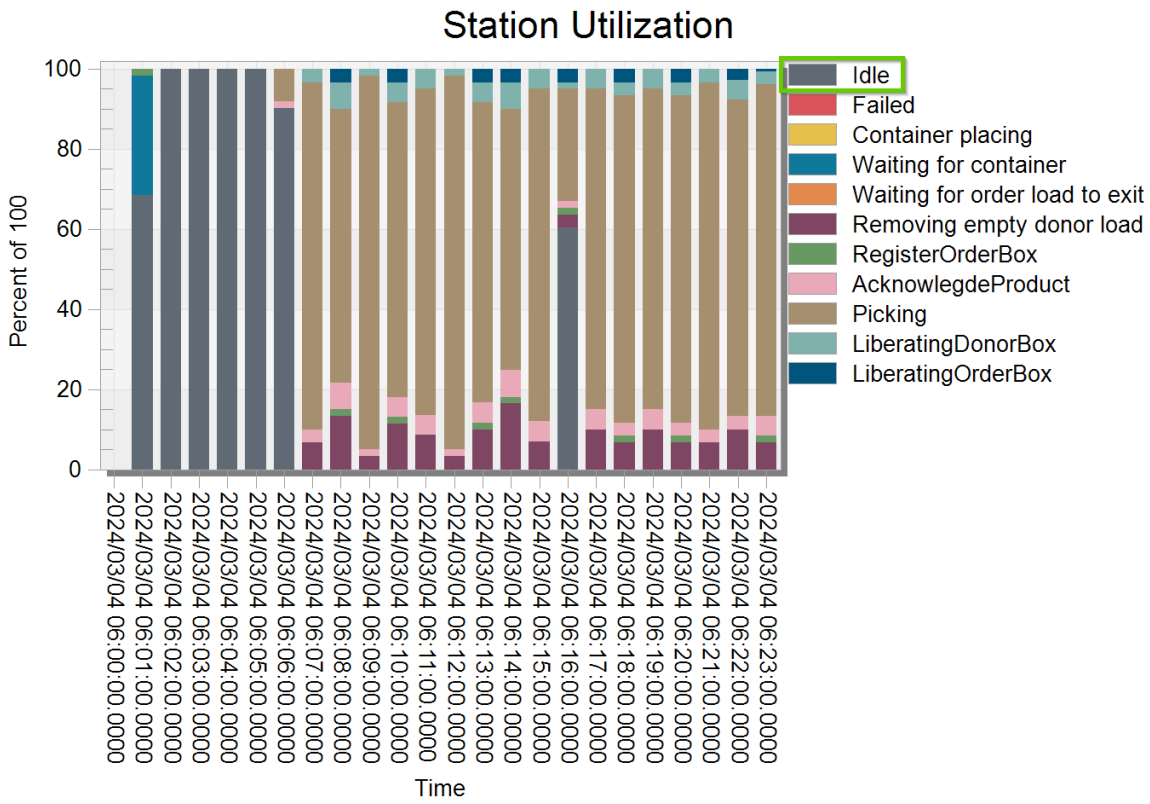
6 Use cases

- Full operation of automated (shuttles & stacker cranes) or manual Warehouses w/ Receiving, Picking & Palletizing, using units, boxes, crates & pallets.
- Resource dimensioning: detect inefficiencies when planning the number of racks, workers or stations to be used.

UNDERUTILIZED RESOURCE



FULLY USED RESOURCE



6 Use cases

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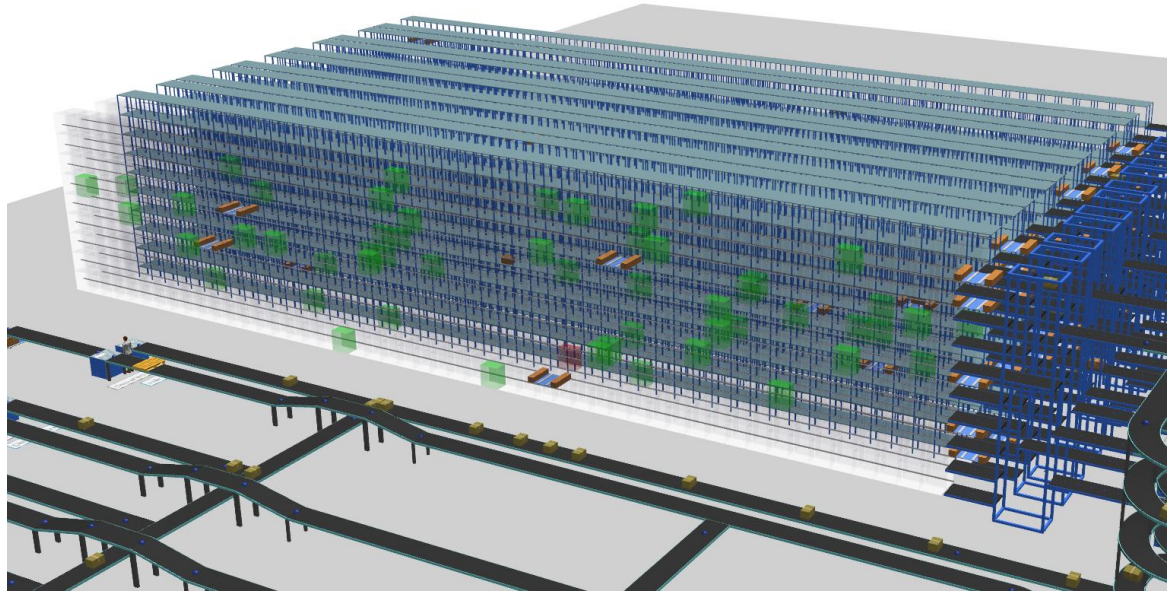
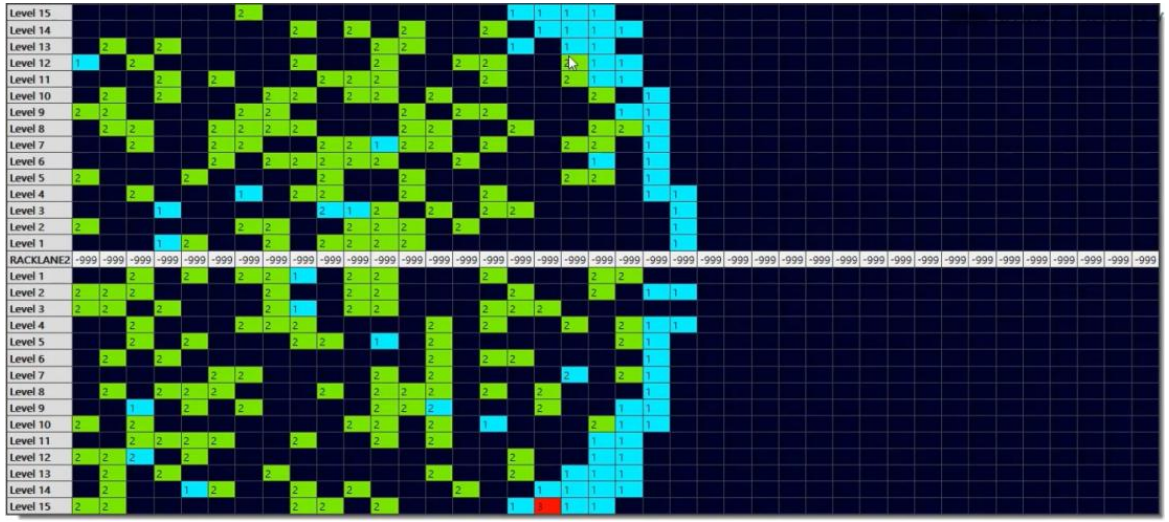
- Resource dimensioning: detect inefficiencies when planning the number of racks, workers or stations to be used.
- Stock tracking: define ABC rotation to products and assign specific locations in the racks to see how the system performs along with heat map.

CUSTOM ABC MAP

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Left Level 9 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
2	Left Level 8 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
3	Left Level 7 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
4	Left Level 6 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
5	Left Level 5 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
6	Left Level 4 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
7	Left Level 3 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
8	Left Level 2 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
9	Left Level 1 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
10	Left Level 9 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
11	Left Level 8 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
12	Left Level 7 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
13	Left Level 6 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
14	Left Level 5 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
15	Left Level 4 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
16	Left Level 3 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
17	Left Level 2 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
18	Left Level 1 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
19	CENTER LANE	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
20	Right Level 1 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
21	Right Level 2 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
22	Right Level 3 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
23	Right Level 4 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
24	Right Level 5 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
25	Right Level 6 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
26	Right Level 7 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
27	Right Level 8 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
28	Right Level 9 Depth 1	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
29	Right Level 1 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
30	Right Level 2 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
31	Right Level 3 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
32	Right Level 4 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
33	Right Level 5 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
34	Right Level 6 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
35	Right Level 7 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
36	Right Level 8 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C
37	Right Level 9 Depth 2	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C

HEAT MAP





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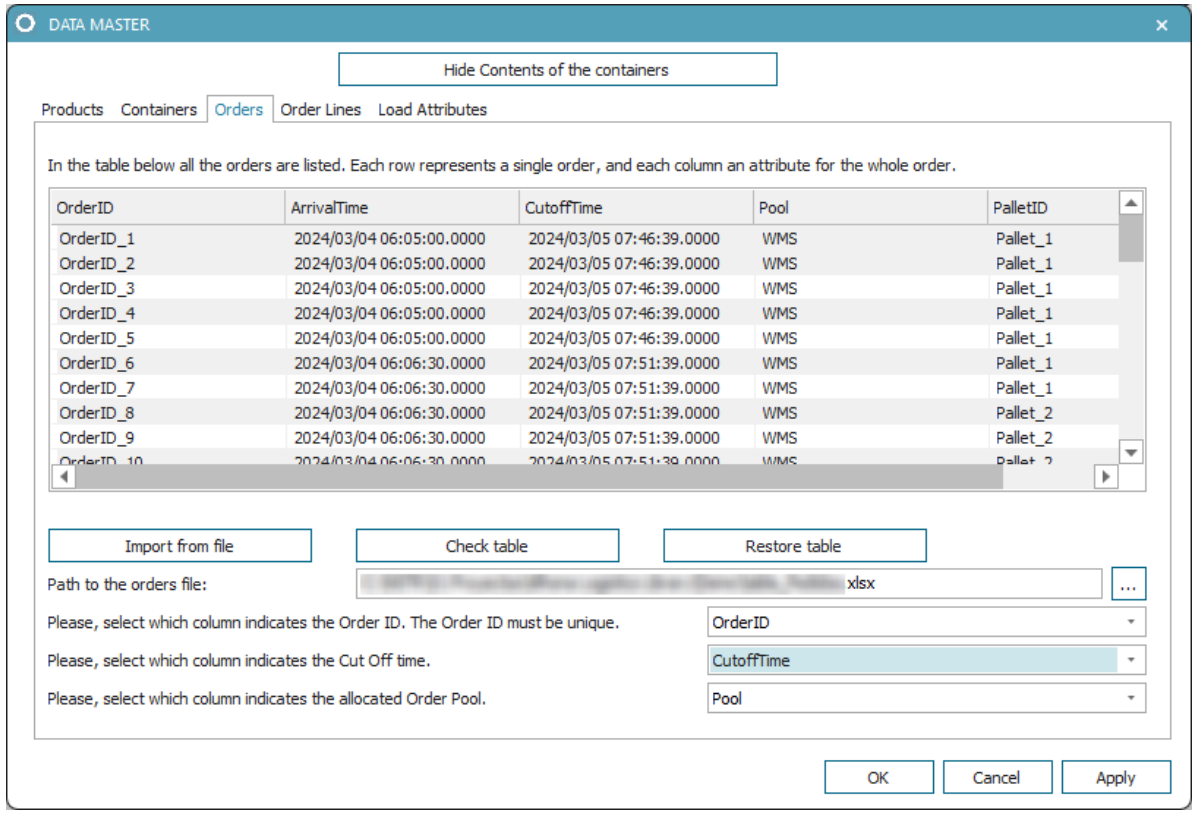
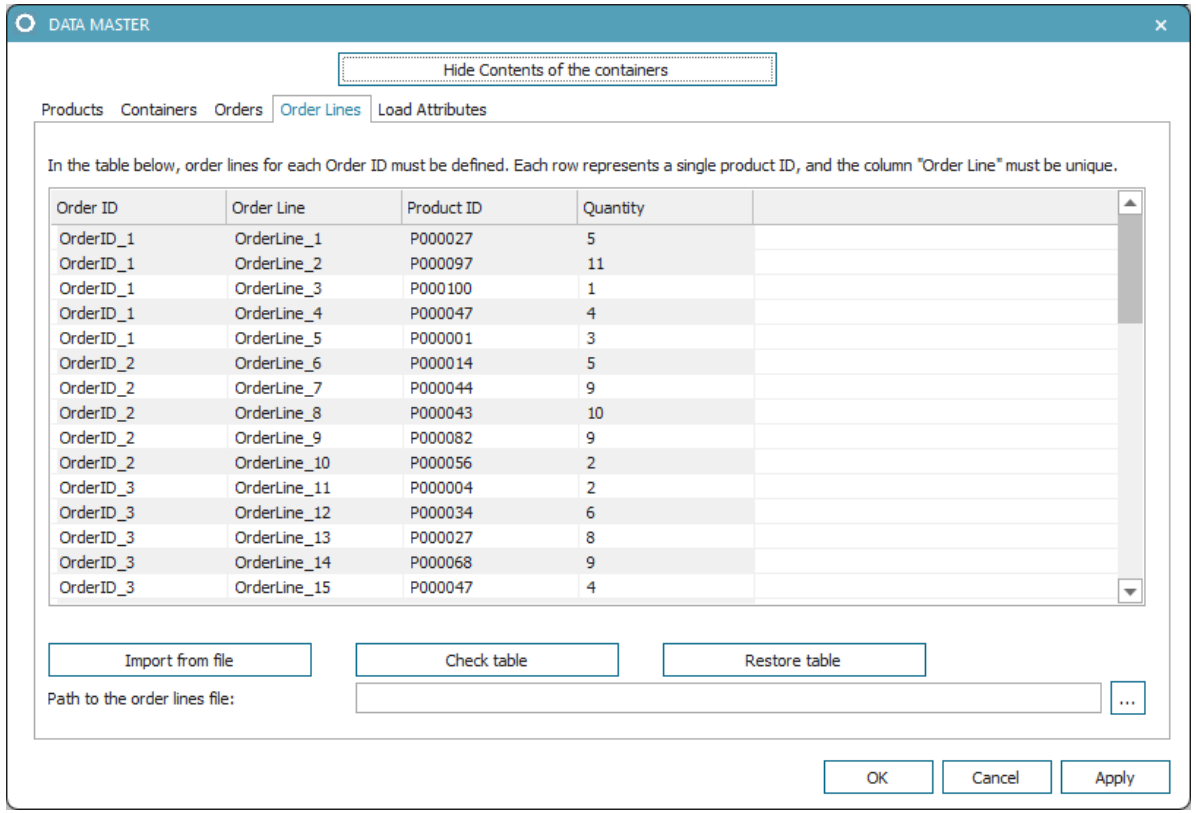
- Resource dimensioning: detect inefficiencies when planning the number of racks, workers or stations to be used.
- Stock tracking: define ABC rotation to products and assign specific locations in the racks to see how the system performs along with heat map.
- Order planning: fill in an order schedule and get a forecast on how the system will work.

CUSTOM ORDER SCHEDULE



CUSTOM ORDERLINES



7 Who is this library for

As stated, the **user** does not have to have any programming skills or knowledge on the use of simulation, that is why this user-focused library may result useful for the following profiles:

SALES ENGINEERS
Who need to show a potential customer a quick moving mockup of the final site.

DESIGN ENGINEERS
Who need to validate the design of a solution and get useful insights without a dedicated simulation team.

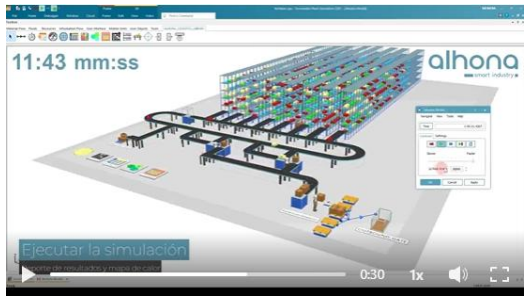
SIMULATION ENGINEERS
Who can deploy a base functional model within minutes and work in a more efficient way.

MANAGERS
Who can test theoretical scenarios in order to improve or optimize production.

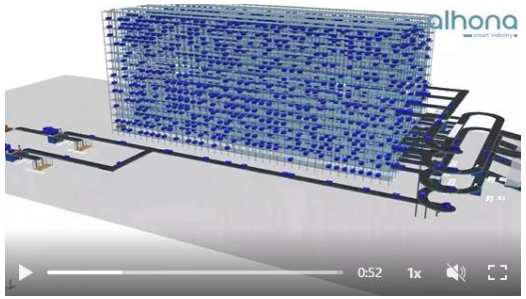
ON-SITE PERSONNEL
Who can use the model to forecast resource allocation and the impact of changing some parameters without real life risk.

Additional information

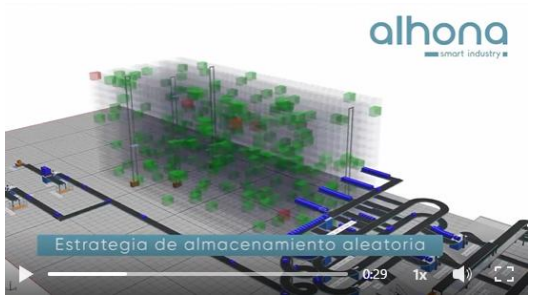
LOGISTICS-ORIENTED SIMULATION LIBRARY



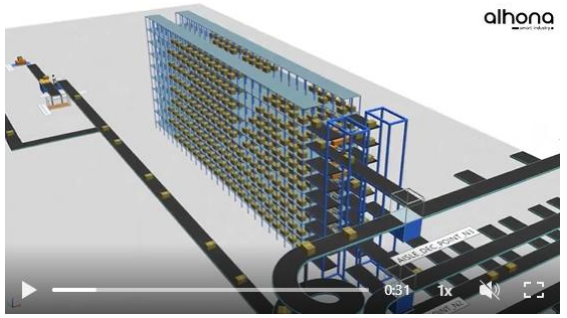
AUTOMATIC WAREHOUSE LIBRARY



LIBRARY CAPABILITIES: HEATMAPS



LATEST NEW FEATURES



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