



TRANSPORT & LOGISTICS





Inkoop



Supply Chain



Logistiek

Maak deel uit van de grootste end-to-end supply chain community van het land en haal zo het beste uit jezelf én je organisatie! Supply Chain Masters staat als partner naast iedere professional doorheen zijn/haar carrière van junior profiel, mid-level, senior tot C-level.

Netwerk events

Dag van Supply Chain Masters (vroeger Dag van Inkoop), Supply Chain Awards, Procurement Excellence Award, round tables, ontbijtsessies, ...

Gecertificeerde opleidingen & kennisdeling

Als lid geniet je steeds van een stevige korting op onze opleidingen.

Ledenactiviteiten & werkgroepen

Via fysieke en digitale activiteiten georganiseerd rond actuele & relevante thema's krijgen onze leden de meest recente inzichten binnen het vakgebied. Maak deel uit van onze werkgroepen en werk mee aan de verdere professionalisering van jouw vakdomein inkoop, supply chain of logistiek.

Ontdek ook:





The Digital Age of Warehousing: *Leveraging Digital Tools for Cost & Efficiency Improvement*



Meer info via

✉ info@supplychainmasters.be

☎ 03/286 80 90

🌐 www.supplychainmasters.be



Maak deel uit
van onze online
community

 **SupplyChain
Masters** Strong in
connecting minds





AI value cases in warehousing & Shipping

Bart Gadeyne - Optioryx



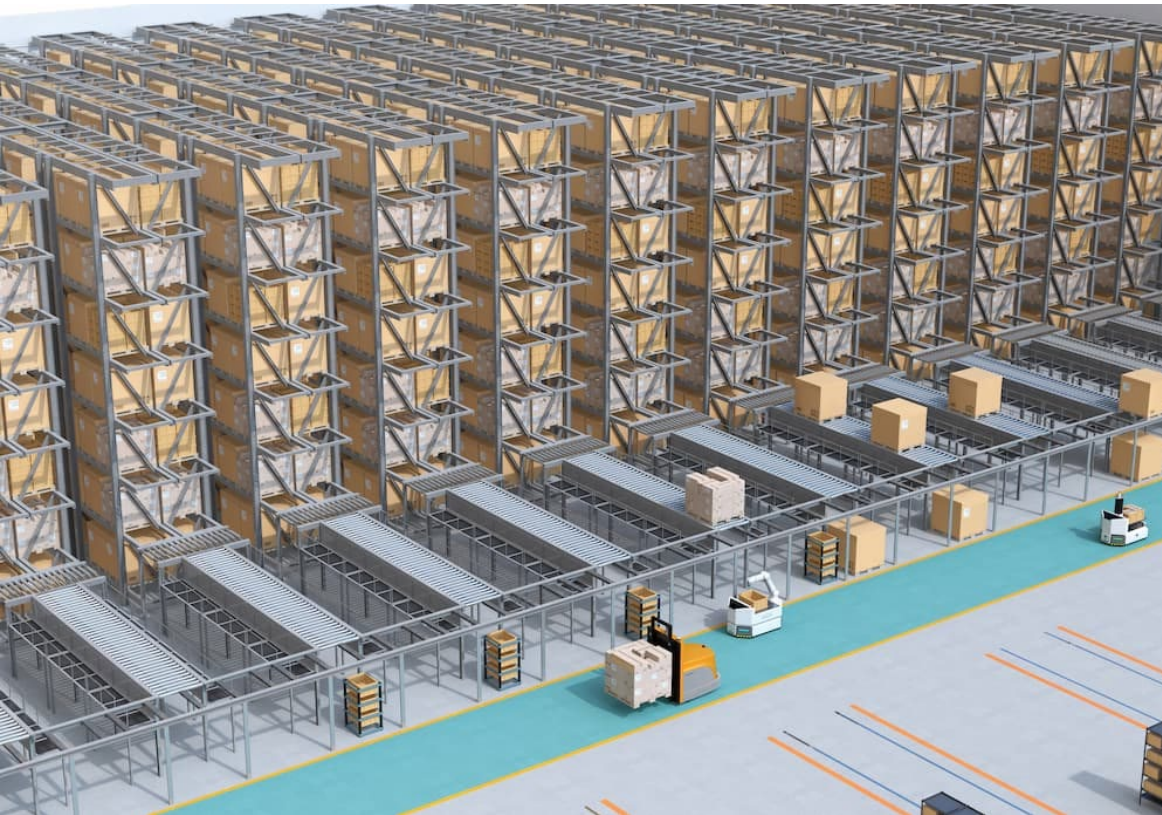
AI value cases in warehousing & shipping

Bart Gadeyne
Founder @ Optioryx



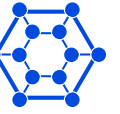


Automation



AI & optimization





Reference cases

 **Bleckmann**

GXO

MAERSK

VAN MOER
Logistics

DSV

h@llmark
 *consumer services*

RHENUS
LOGISTICS

stow 

Canon

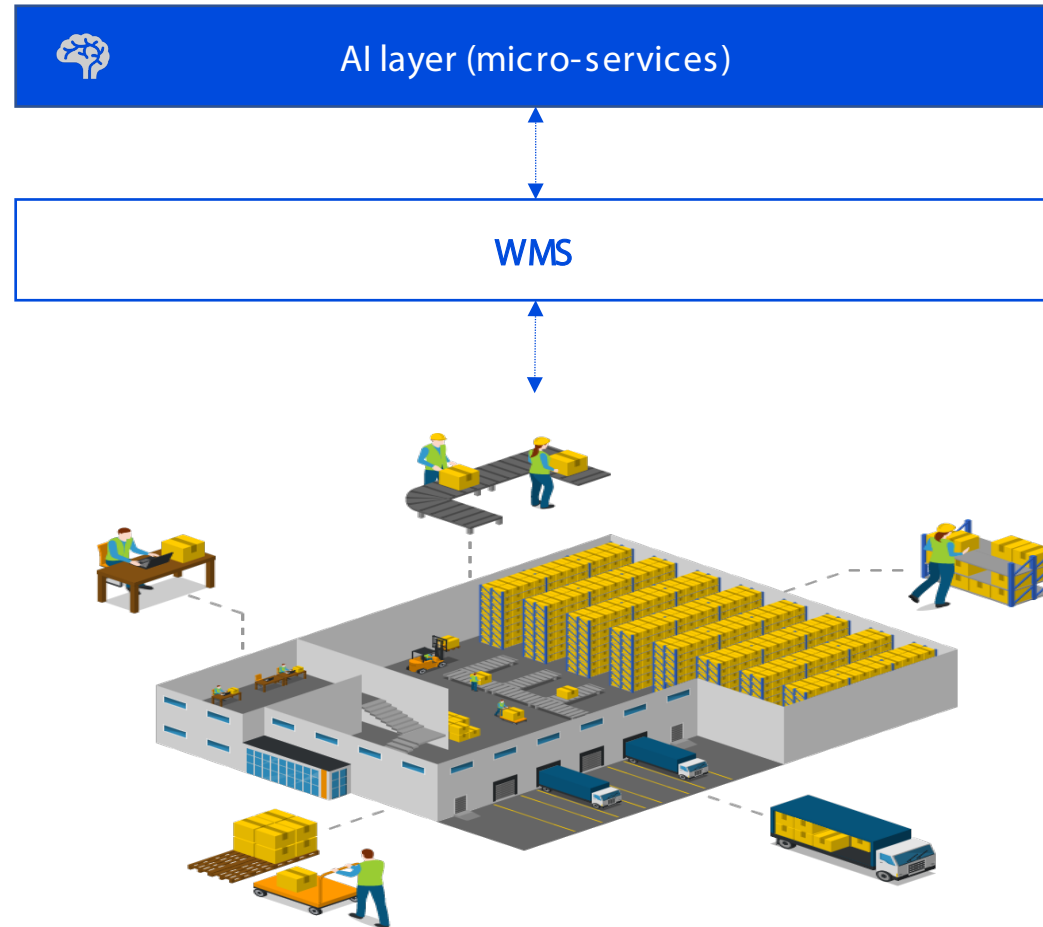
 **Hive**

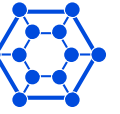
 **BME**

Johnson & Johnson

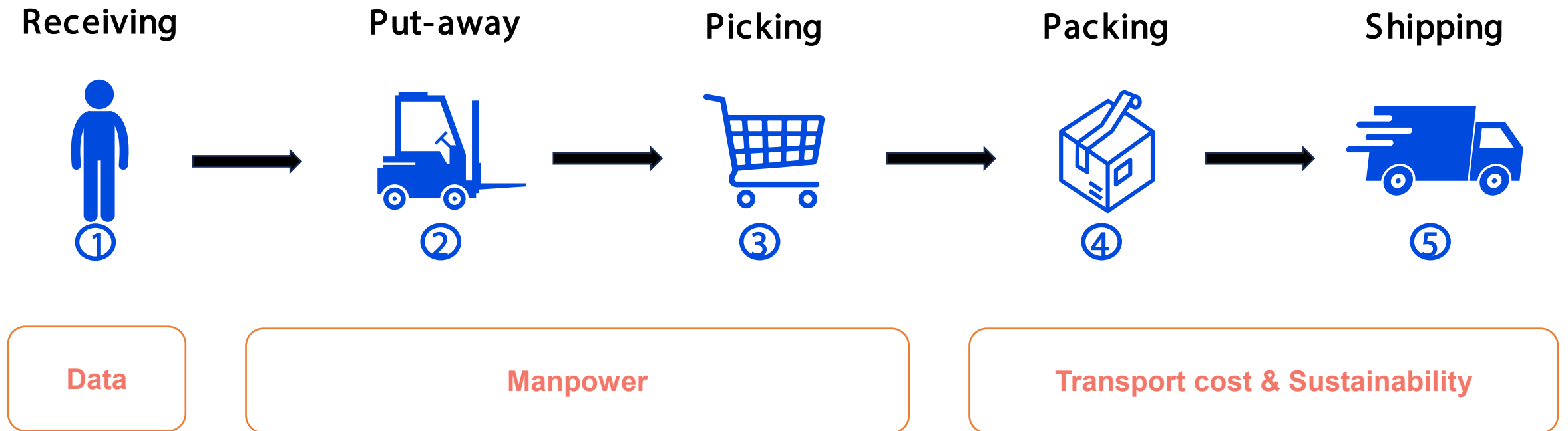


Supercharge your WMS





Processes where value is lost



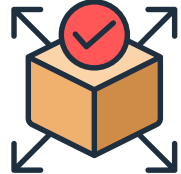


1

Starting with the **data**

Dirty Dimensional Data

leads to a **30%** increase in operational costs




Storage space utilization



Inventory accuracy



Picking efficiency



Cartonization



Truck load planning



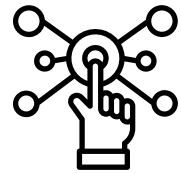
Damages



Shipping cost calculation



Shipper - Carrier disputes



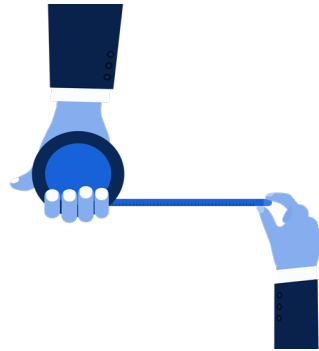
Digitization





Current solutions

Manual dimensioning



Error-prone

Static dimensioning

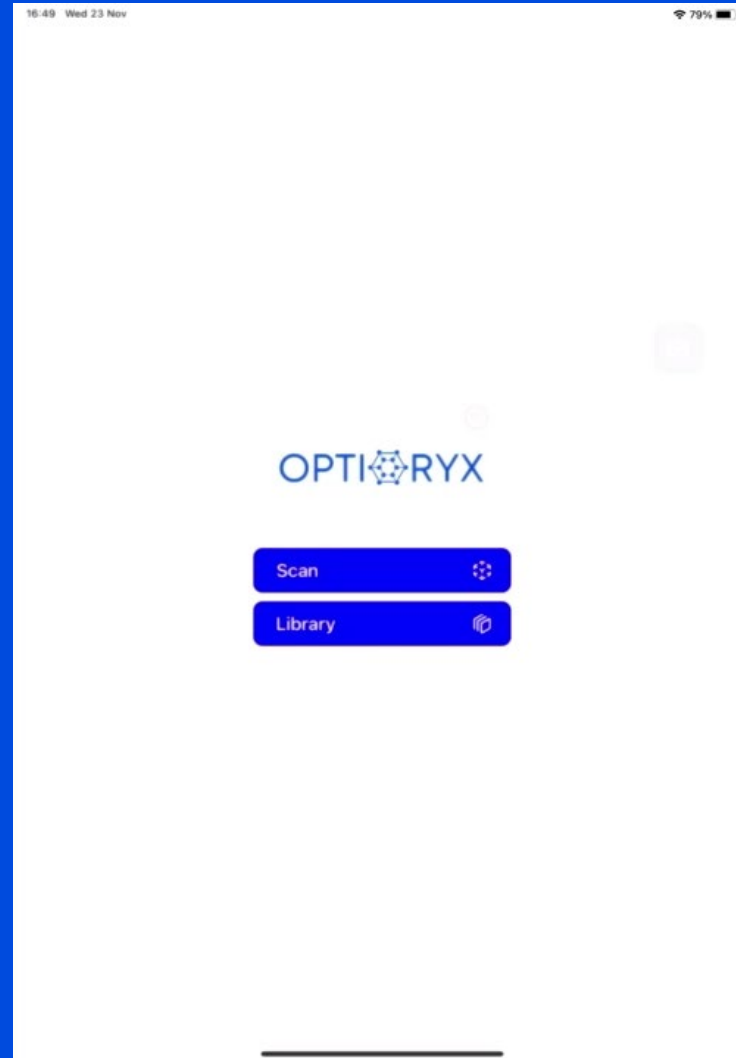
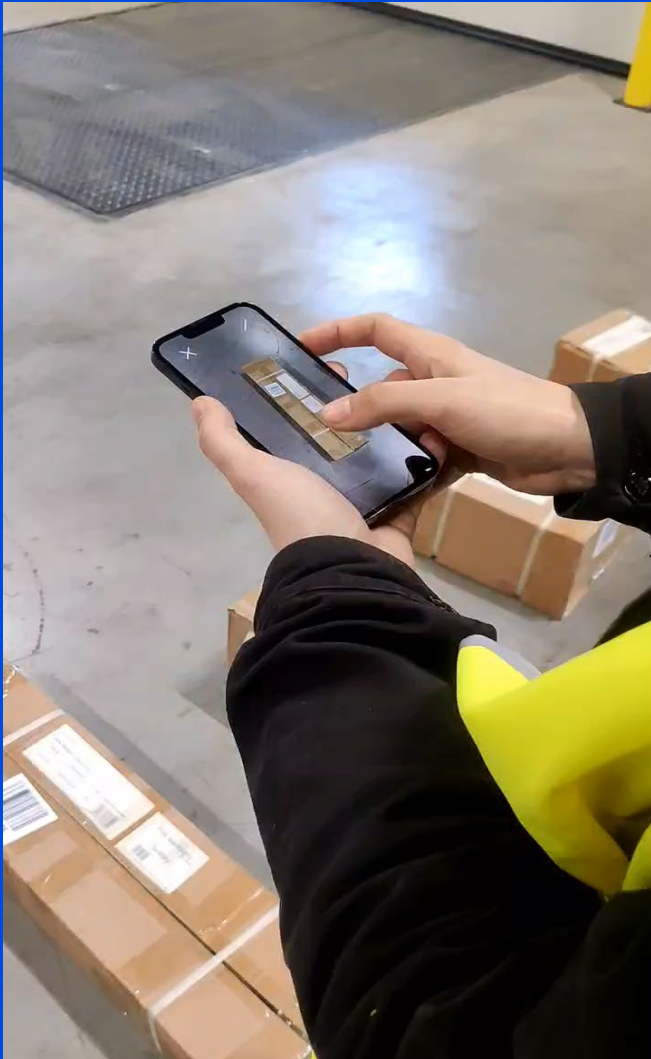


Expensive
Not mobile
Time-consuming
Small or big
objects



1

The first mobile SKU & pallet dimensioning app



Easy setup, low threshold

- Available in App Store
- Pay per use
- Customizable flow
- Easy data transfer

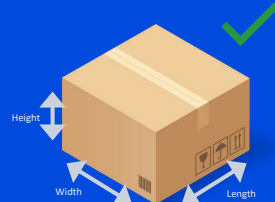
Features of dimensioning app



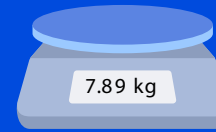
Fully customizable flow



Barcode scanning



Dimensioning



Weight registration



Constraint information



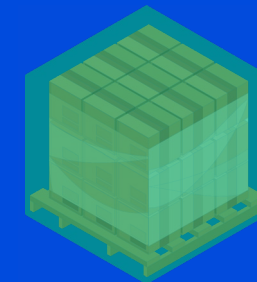
Indicate if SKU



Or master carton



Pictures before transport



Proof of measurements

① Summary - Dimensioning app

- Used during **inbound & outbound**
- Benefits of accurate master data
 - Indirect: unlocks optimization in pick, pack & load processes
- Comparison to alternatives
 - Faster than manual measuring
 - Mobile
 - No upfront cost
 - Free trial
- Implementation time: **1 minute**





2 Slotting



Slotting

- Avoid long pick distances
- Free up storage space

Classic Go-To strategy: ABC analysis

AI can handle much more complexity and patterns

- **Item correlation** in order patterns
- **Multiple locations** per product
- Picking restrictions (based on weight, dimensions, fragility)
- Sprinklers
- Chemical products

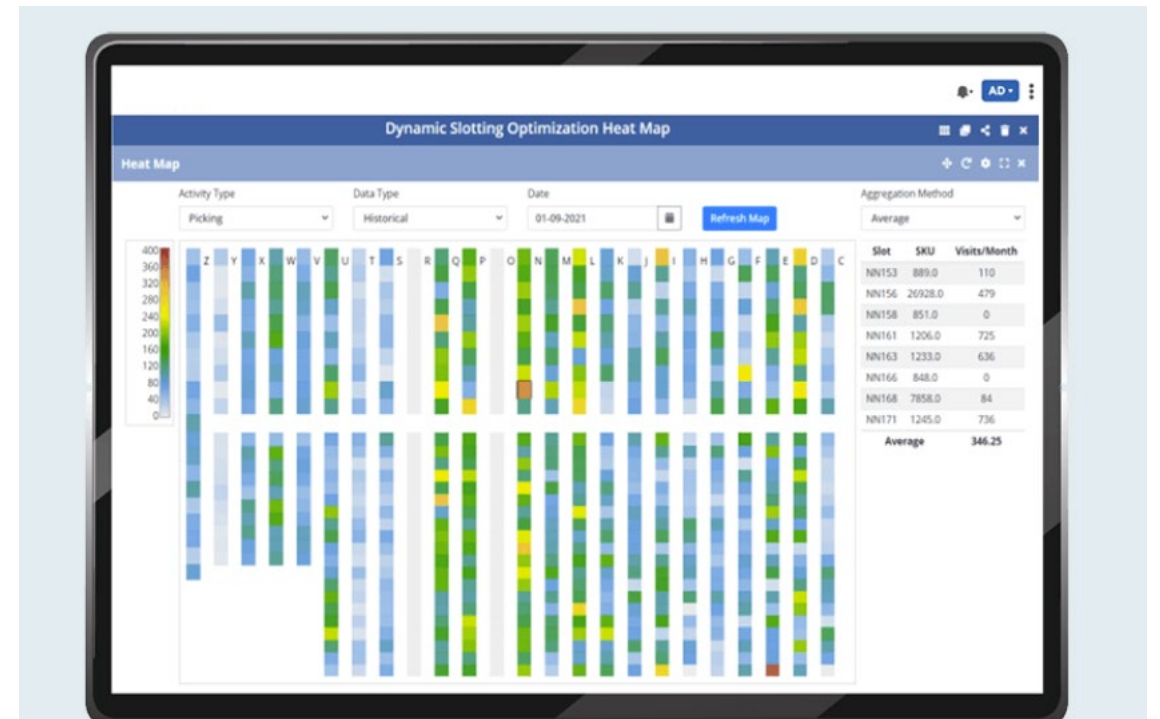


②

Slotting optimization

Use cases

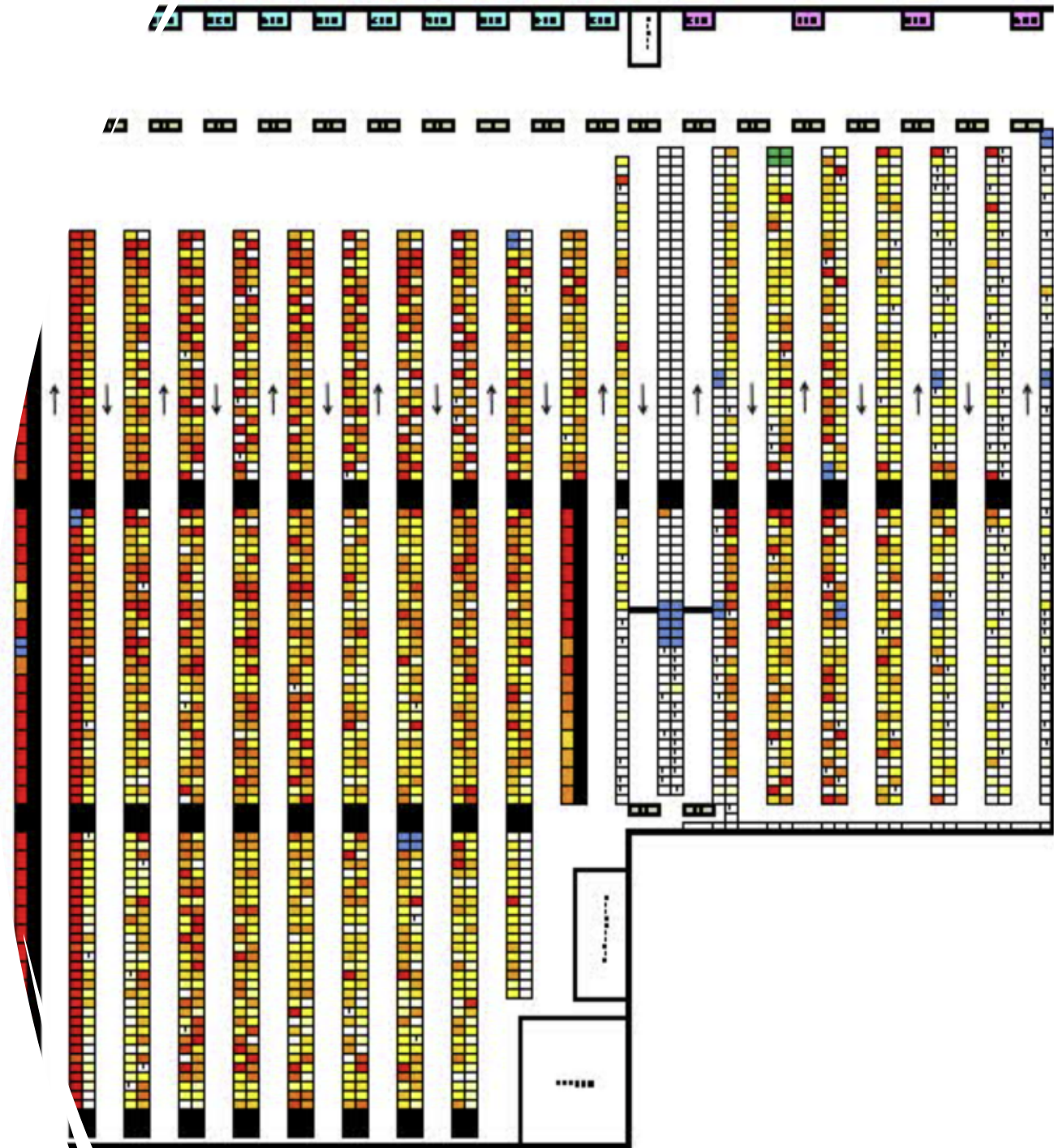
- **Replenishment**
 - SKU replenishment + x available slots
- **Re-slotting**
 - Time for x SKU location swaps
- **Housekeeping**
 - Free up locations by rearranging SKUs



2

Summary – Slotting optimization

- Benefits
 - Reduce walking distance: 20-35%
 - Avoid congestion
 - Get the most out of your warehouse space
- Implementation time: 1 week – 1 month





3 Picking

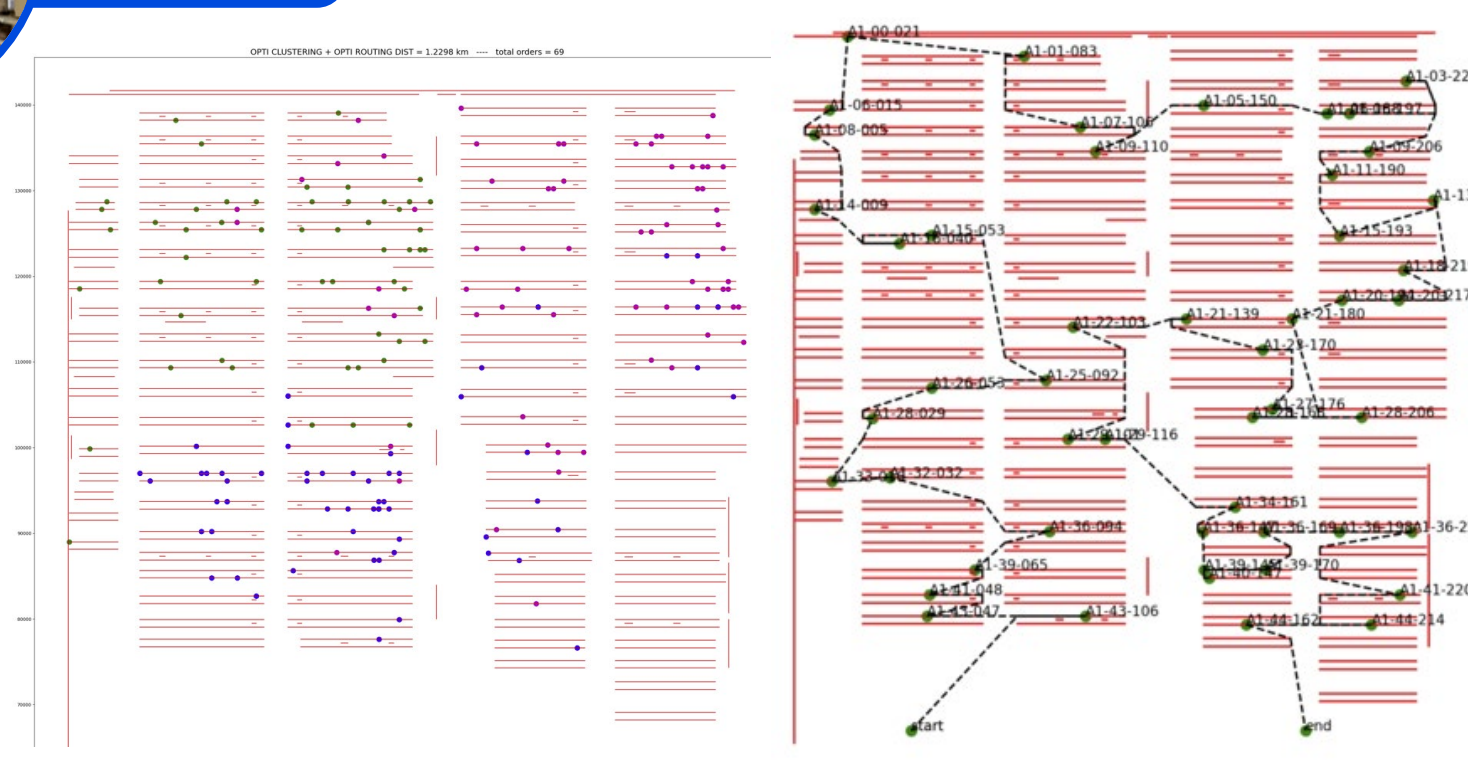


Order clustering & sequencing

3



Picking



Reduced pick distances by 20-50%



3

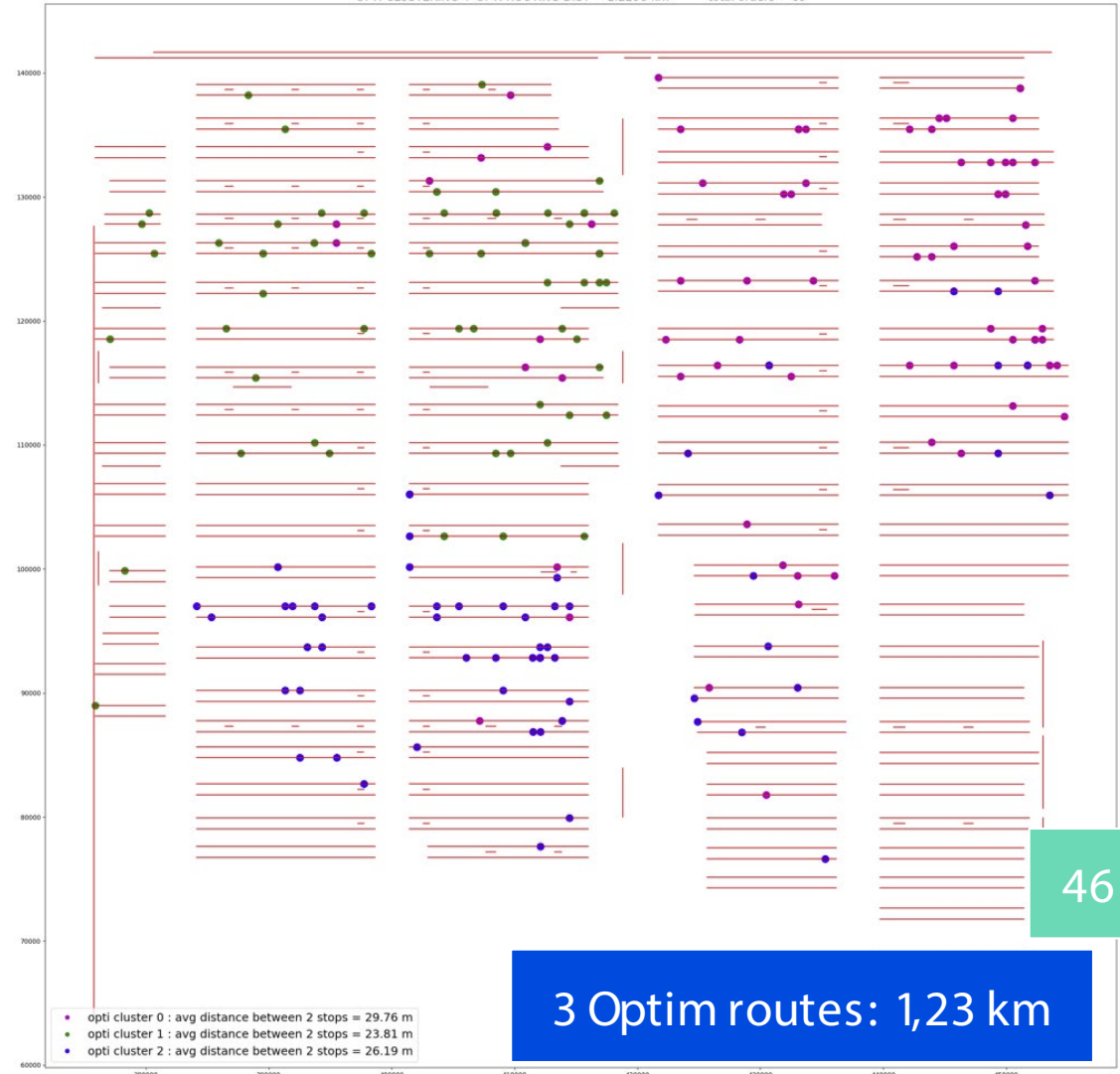
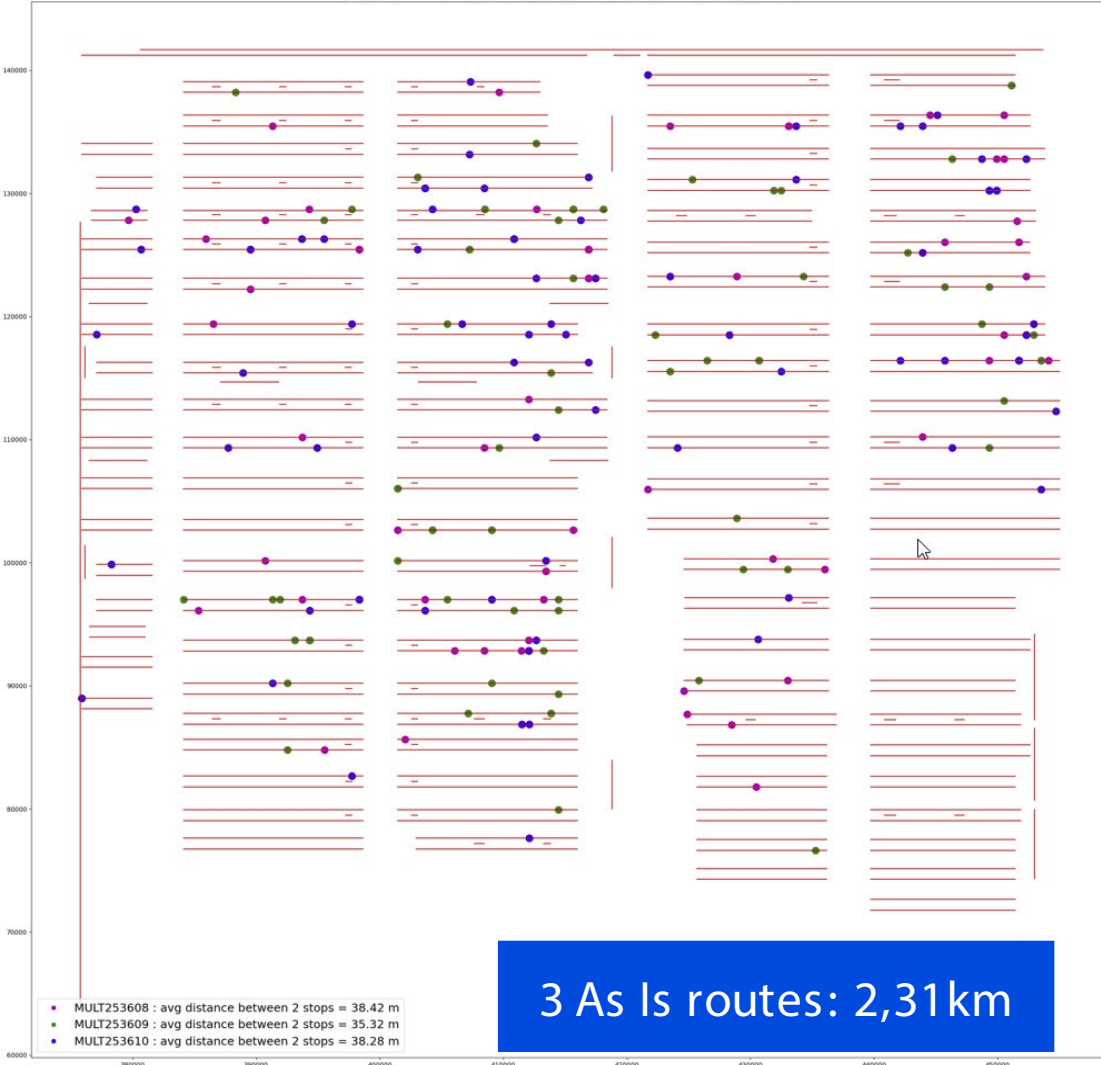
Smart order grouping

WMS result

Optimized result

AS IS CLUSTERING + AS IS ROUTING DIST = 2.3087 km ---- total orders = 69

OPTI CLUSTERING + OPTI ROUTING DIST = 1.2298 km ---- total orders = 69



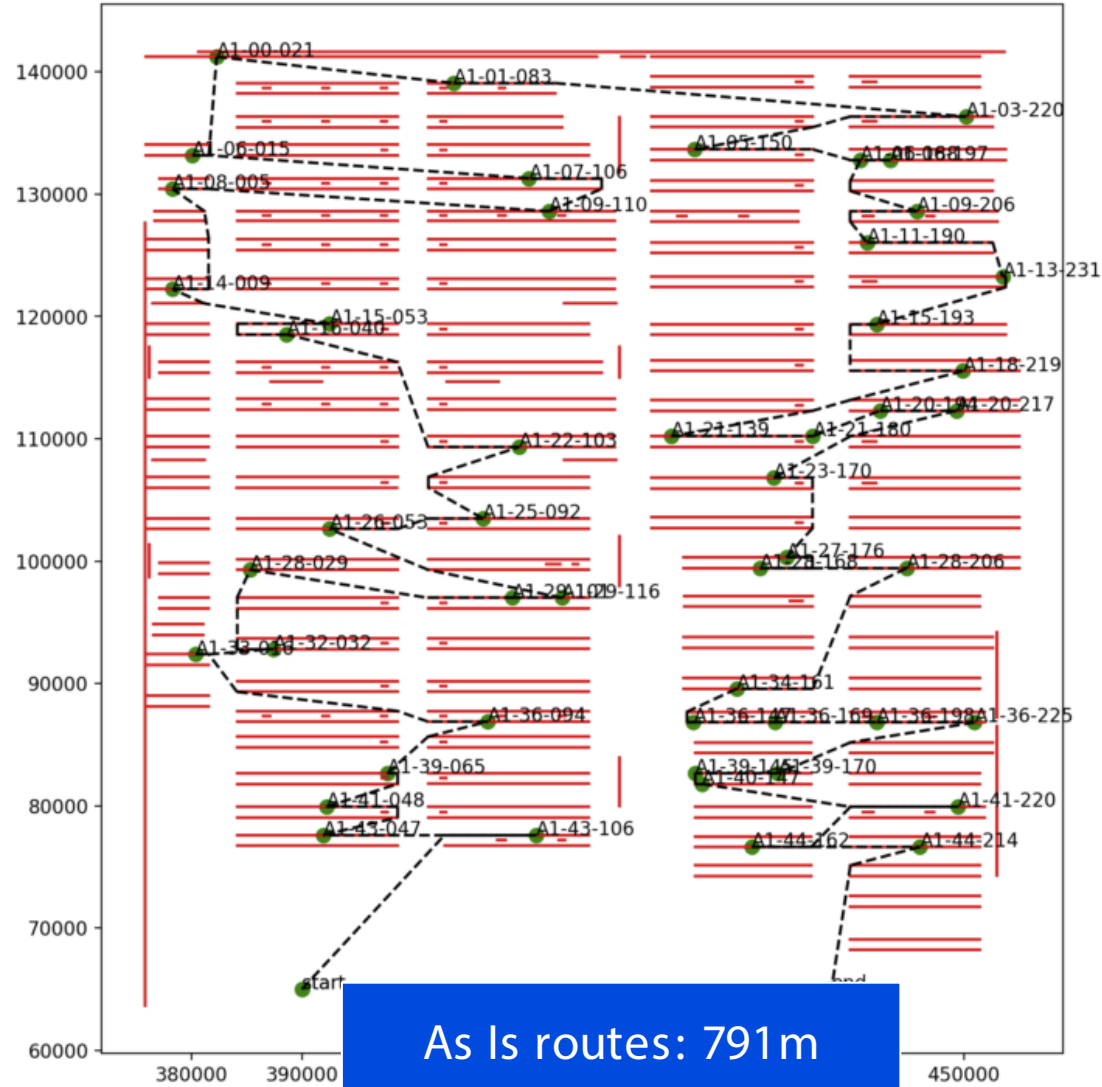


3

Pick Path optimization

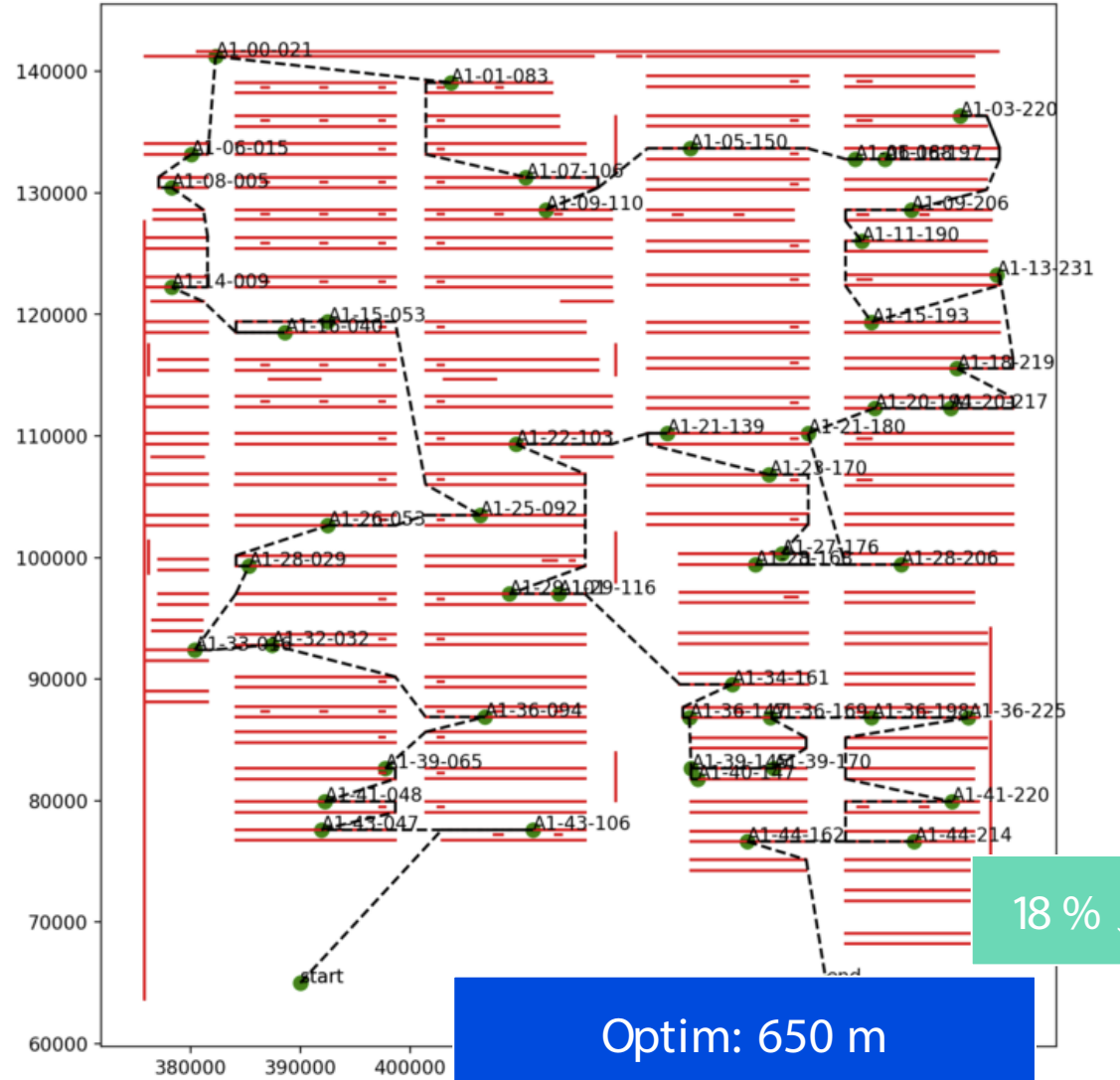
WMS result

As-is distance = 791979.3035888672



Optimizes result

stance = 650123.7396240234





Digital twin: warehouse layout

OPTIMORYX

Home

Editor

Toggle Grid

Rack

Width

50

Height

50

Hallway

Direction

Two-way

Width

500

Height

50

Start or end Location

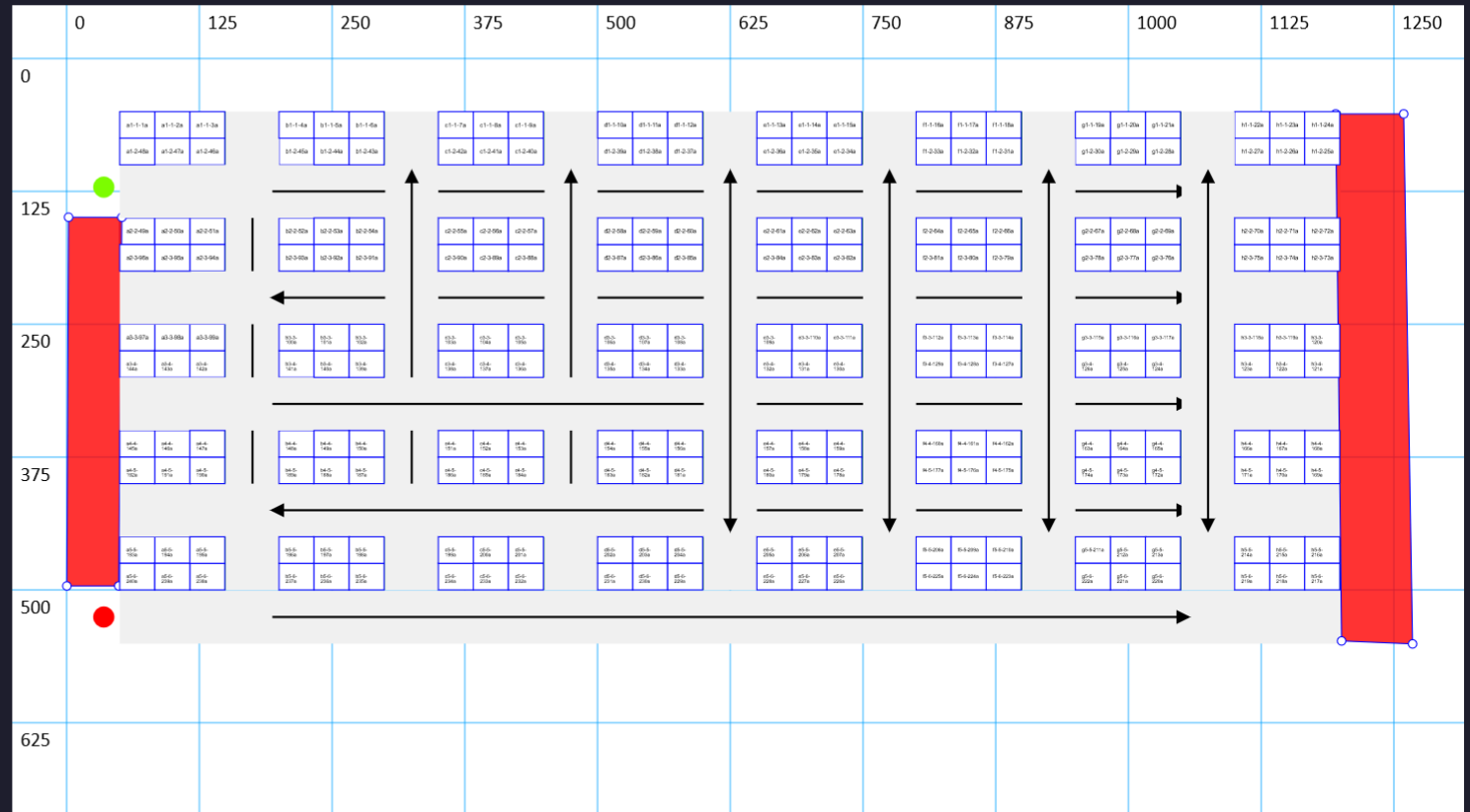
Location

Start

Name

Obstacle

Draw Obstacle



Key data source for unlocking optimization potential



3

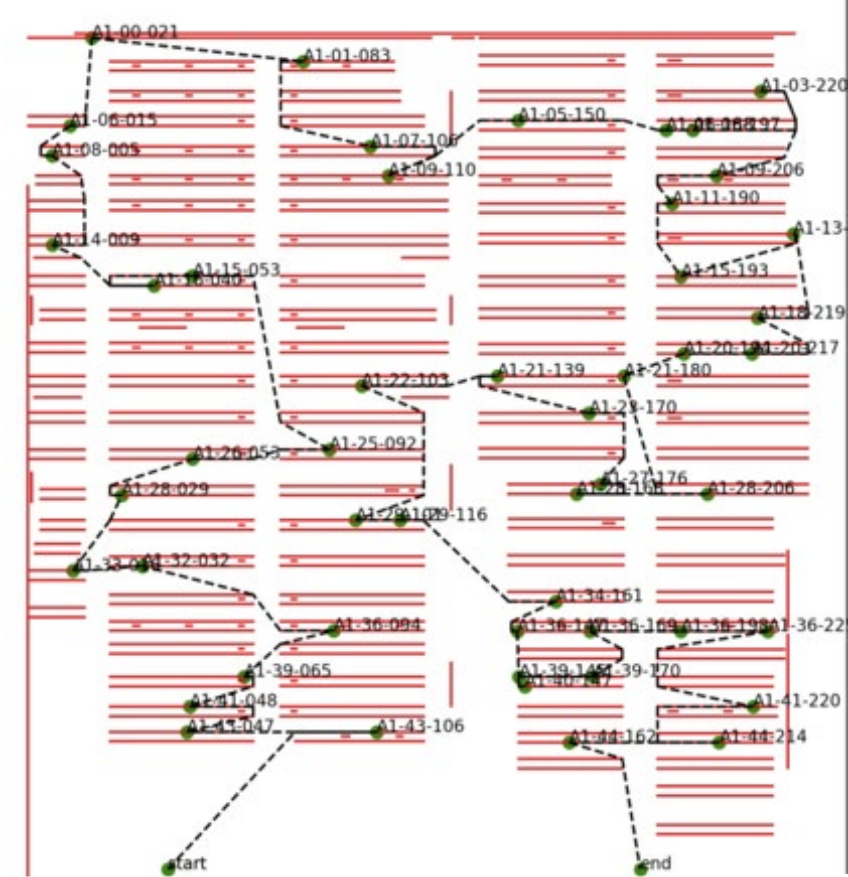
What is the impact of?

- Changes in your **warehouse layout**
 - One-way vs two-way aisles
 - Create an extra aisle (splitting a long rack)
- Using other trolleys
 - 10 totes instead of 20 totes
- Changes in **slotting parameters**
 - 2 instead of 1 location per SKU

The CHATGPT of warehousing

Summary – Picking optimization

- Walk distance reduction
 - Smart clustering: **20-35%**
 - Pick path optimization: **10-20%**
- Implementation time: **1 week**
- Typical customers (high # picks)
 - Fashion logistics
 - Spare parts
 - Omnichannel

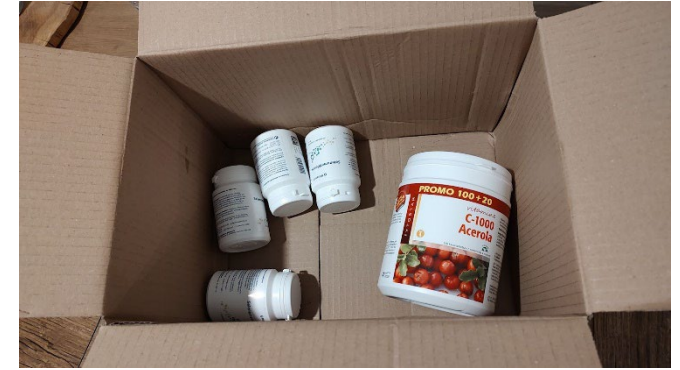




④ Packing & stacking



Some examples





STATISTICS

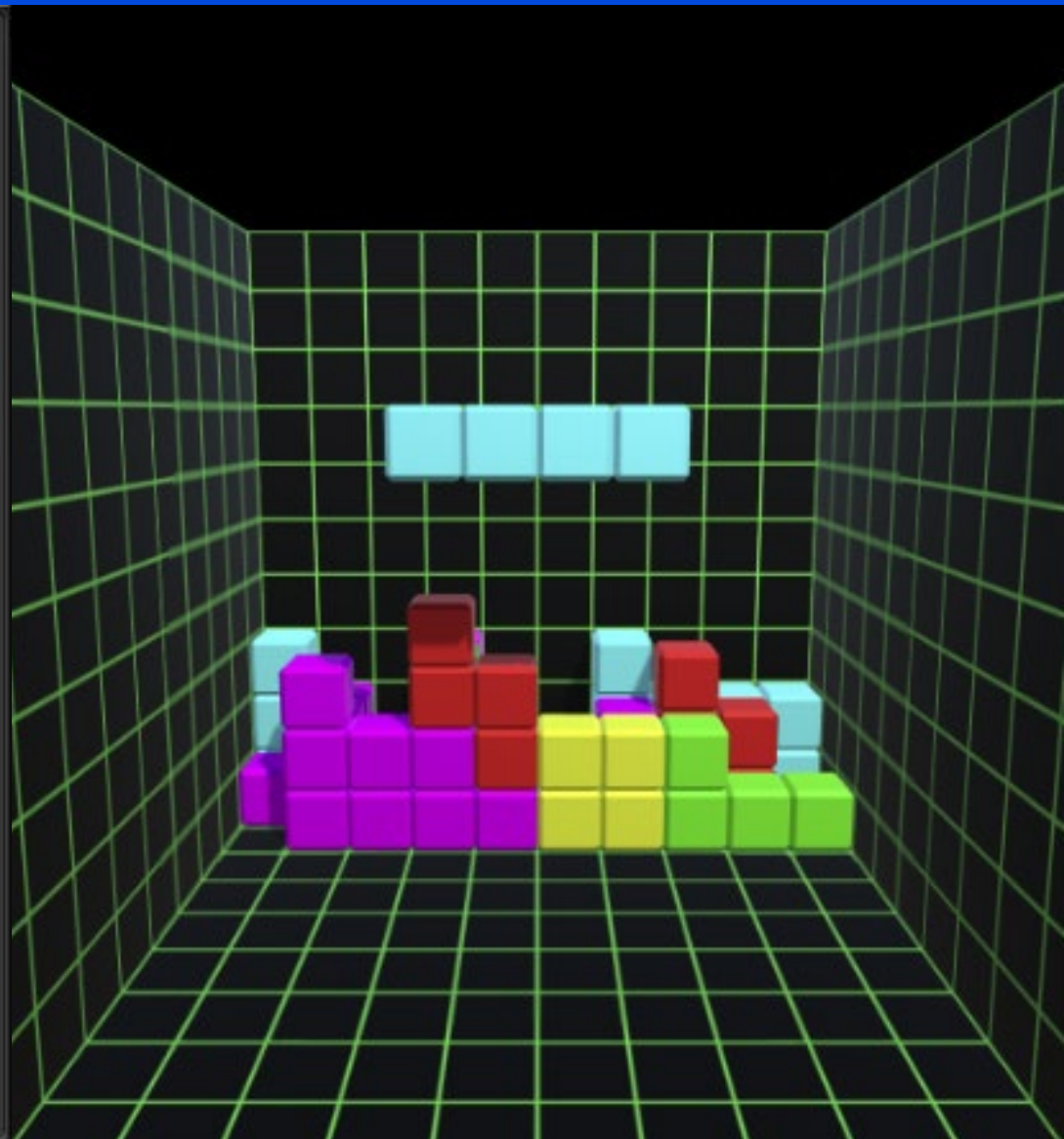
	6
	9
	6
	13
	9
	10
	8

SCORE: [1361]

NEXT:

LINES: [0]
LEVEL: [1]
MUSIC: [A]

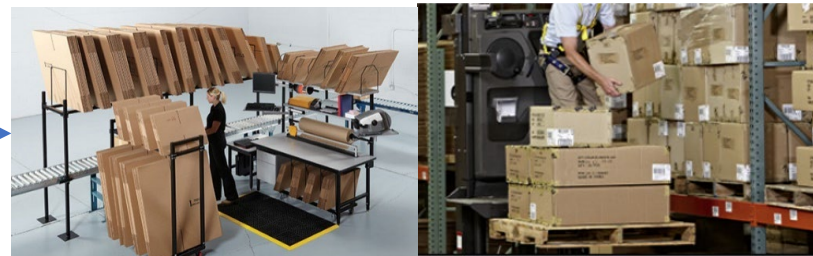
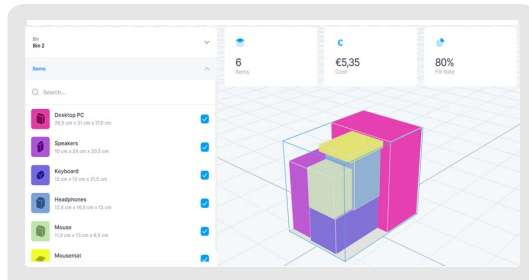
TETRIS²





④ 3D stacking optimization: boxes/pallets

Live picking and packing instructions



- Optimal box(es) per order
- Calculate shipment cost (webshop/SO creation)
- Nr of pallets/order -> carrier

- 10%
Transport cost

- 30%
Air

+ 15%
Fill rate

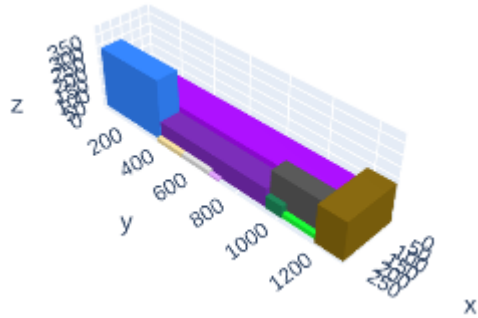


4

Optimal packing can be counter-intuitive

HU x
Saving = 46,95€

As Is

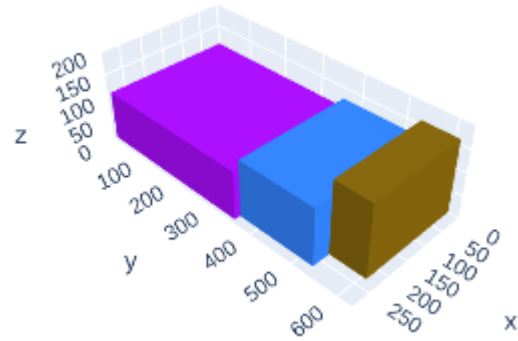


Volume = 0,14196 m3
Weight = 9,580 kg
Volumetric weight = 28,392 kg
Tpt € = 116,35€

€ 116,35

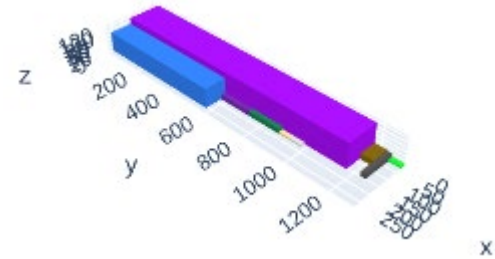
Exploit transport rates!

Optim



Volume = 0,03654 m3
Weight = 4,47 kg
Volumetric weight = 7,308 kg
Tpt € = 31,98 €

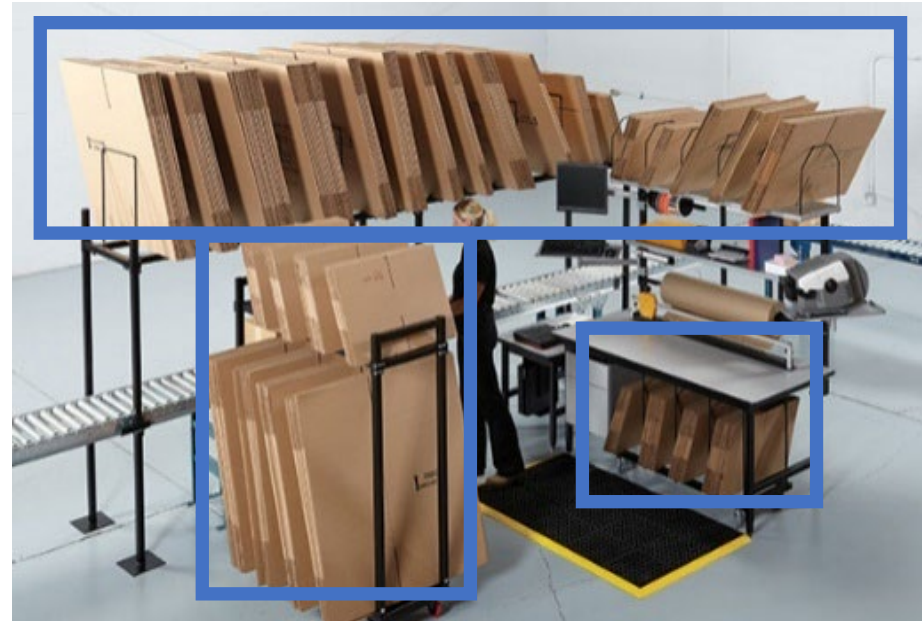
€ 69,40



Volume = 0,04732 m3
Weight = 5,11 kg
Volumetric weight = 9,464 kg
Tpt € = 37,42 €



What shipping boxes should I buy?



How many box types?
Which dimensions?

What fits my order/item profile?
How to align with my transport rates?

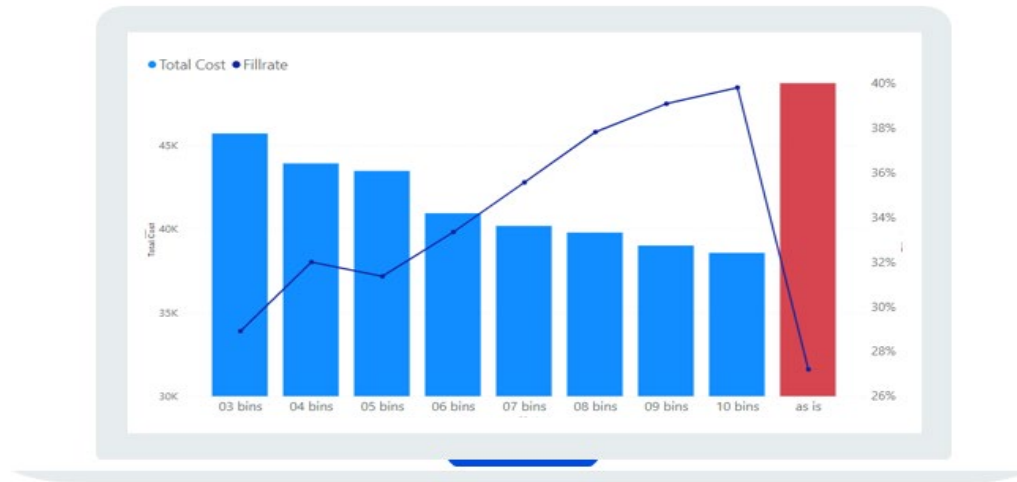


4

Box Range optimization

We calculate the **optimal shipping boxes and dimensions** for your distribution center, by minimizing the **TCO of packing**

- Transport cost
- Packaging cost, including quantity discounts
- Sustainability
- Operational efficiency



Optimised Scenarios

Select All Select All Optimized

9 Bins Details >> fewest cartons

	€9,33K Transport	€722,81 Packaging
Fill Rate: 50,53%	2.014 Boxes Used	3,2 Items / Order
	1,007 Boxes / Order	2,000 Orders

16 Bins Details >> greenest choice

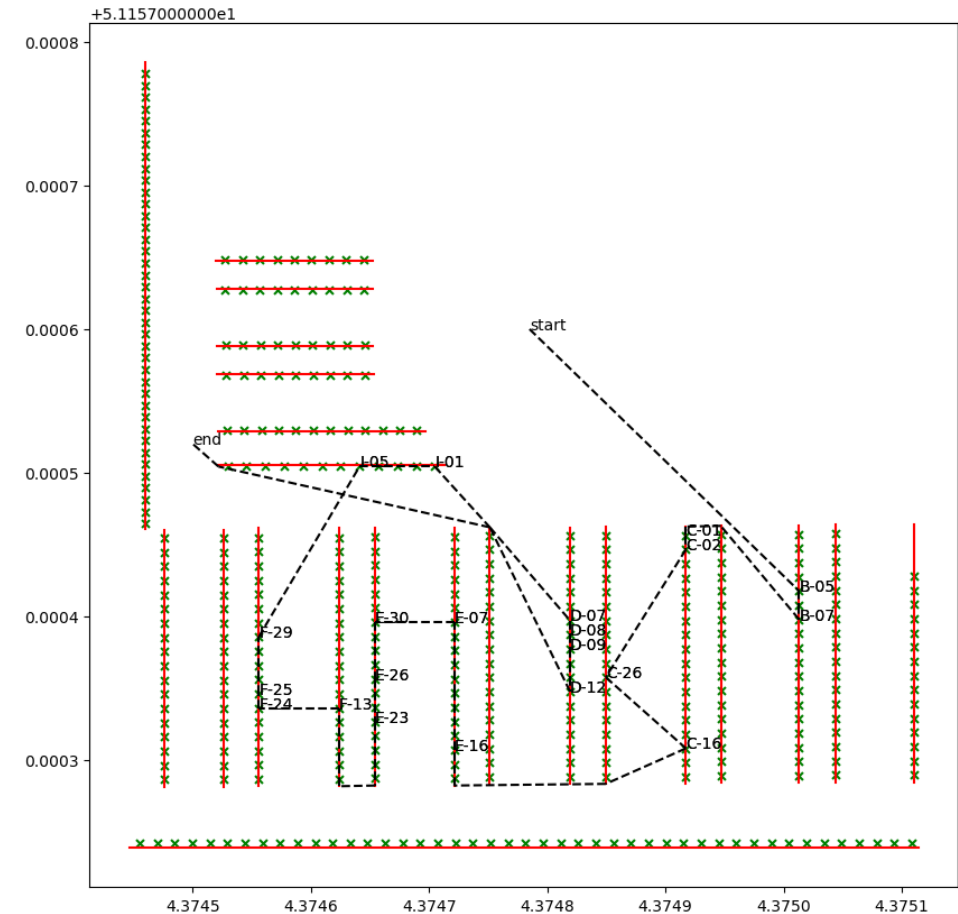
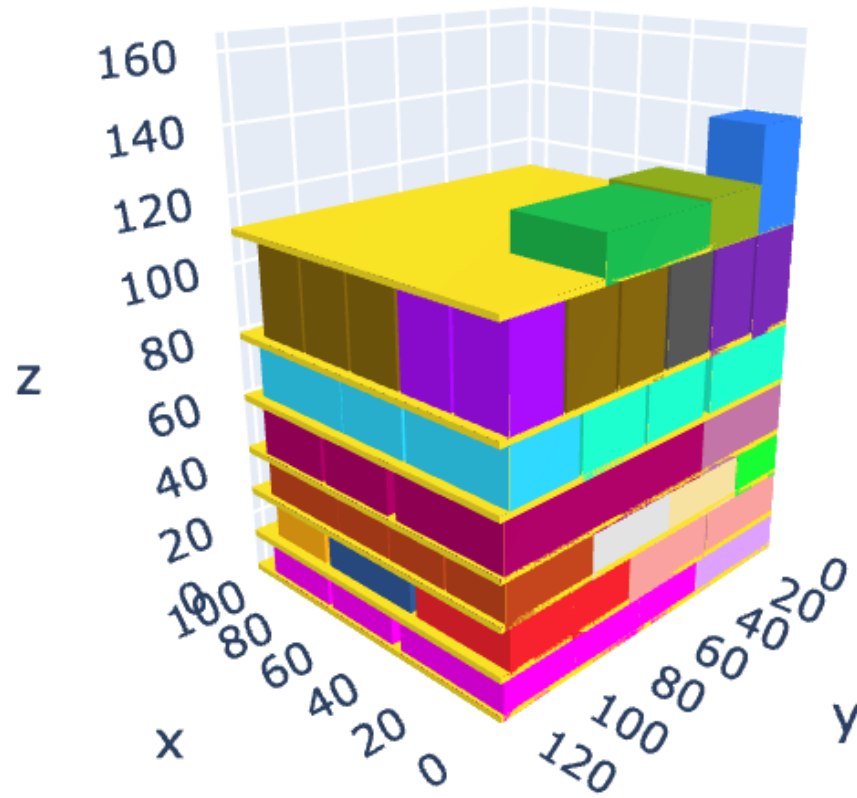
	€9,13K Transport	€690,42 Packaging
	2.022 Boxes Used	3,2 Items / Order
	1,011 Boxes / Order	2,000 Orders

You are paying **5-12% too much** on **Transport, Packaging cost and Fill rate** if you don't buy the right boxes



3 4

Stacking & Picking combined



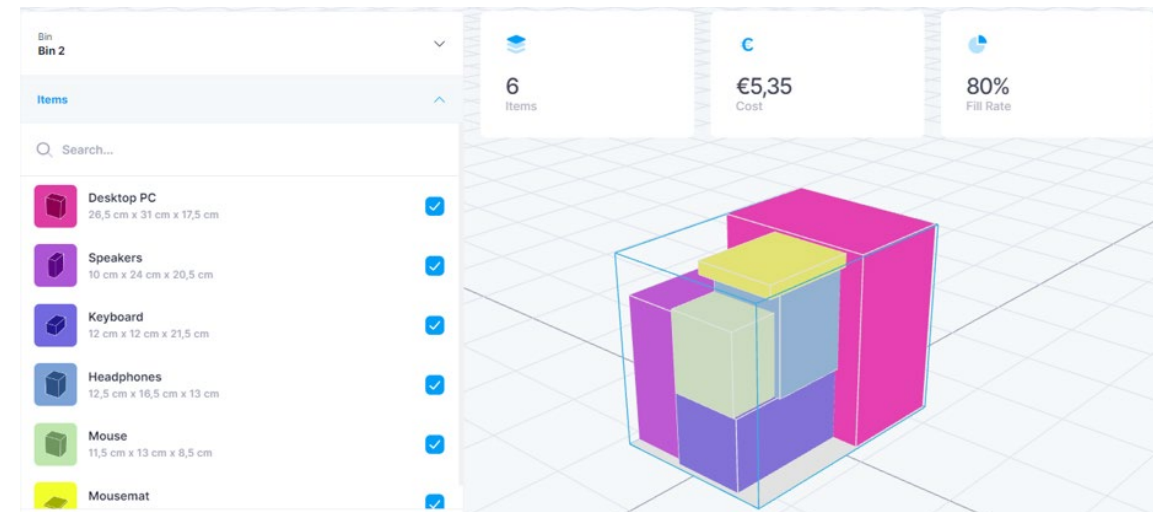
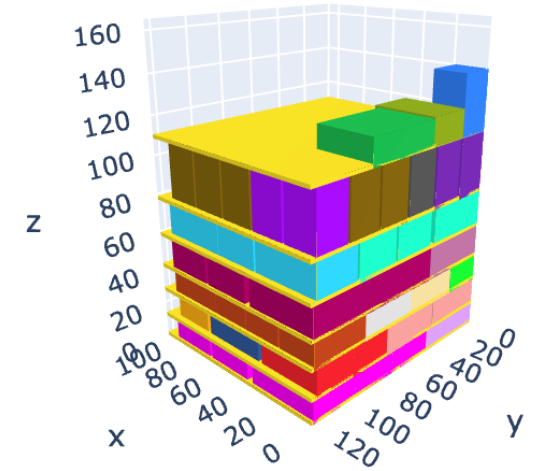
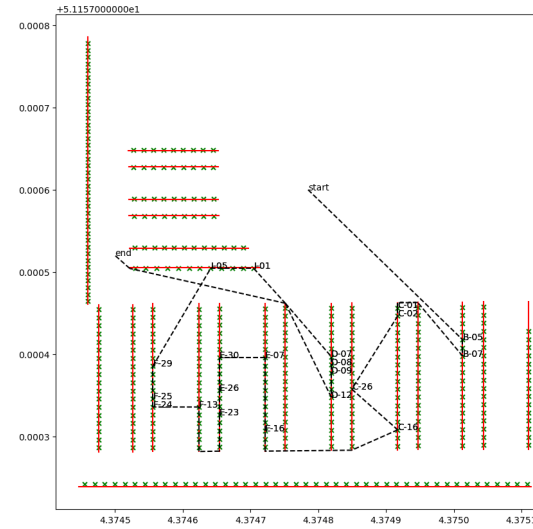
Build **stable pallets** while **minimizing walk distance**



4

Summary – Stacking optimization

- Benefits
 - Ship less air
 - Save transport cost
 - Less damages
 - Higher picking productivity (pick&pack combined)
- Implementation time: 1 week – 2 months
- Typical customers
 - Omnichannel
 - E-com fulfillment
 - Retail
 - Website basket checkout





Truck load building



COLBU_20240911_135429 | 0002074444

How many containers/trucks do you need?



Scenario locked. Changes can't be submitted to SAP

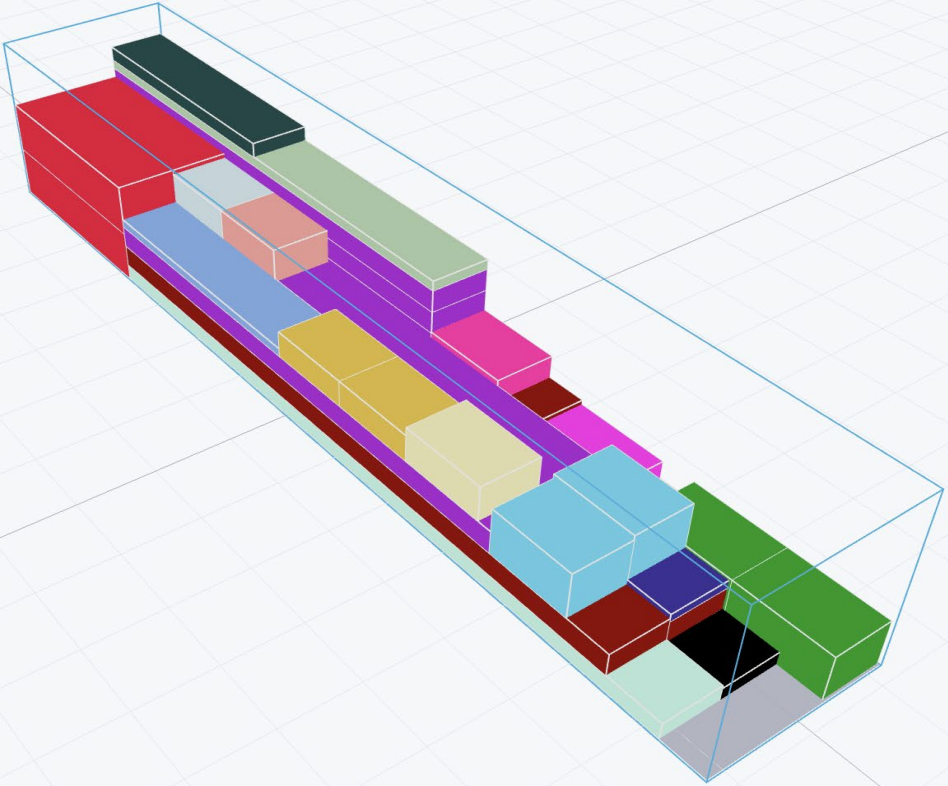
09.10.2024

- STANDARD - 1**
2.410 x 2.650 x 13.600 mm
100%
- STANDARD - 2**
2.410 x 2.650 x 13.600 mm
62%

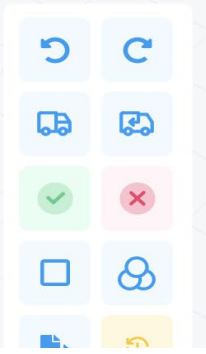
Truck KPIs

2 total trucks | 38,1K kg total weight | 1 total delivery dates

 13,6X2,4 Load Meters	 47% Volume Fill	 100% Weight Fill	 31 Packages	 23,5K kg Net Weight	 120 mins Estimated loading time	 2,2K kg Max weight per load unit	 14,9K kg Front Axle Weight
------------------------------------	-------------------------------	--------------------------------	---------------------------	-----------------------------------	---	--	--



Add an extra truck
Unfitted



Gain time by automating manual planning

How many containers/trucks do you need?



OP

MPS_20240913_134711 | 0002075043

Overview

Deep Dive

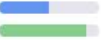
Scenario locked. Changes can't be submitted to SAP

09.10.2024



STANDARD - 1
2.410 x 2.650 x 13.600 mm

86%



Truck KPIs

1 total trucks

20,1K kg total weight

1 total delivery date



12,9X2,4

Load Meters



50%

Volume Fill



86%

Weight Fill



30

Packages



20,1K kg

Net Weight



120 mins

Estimated loading time



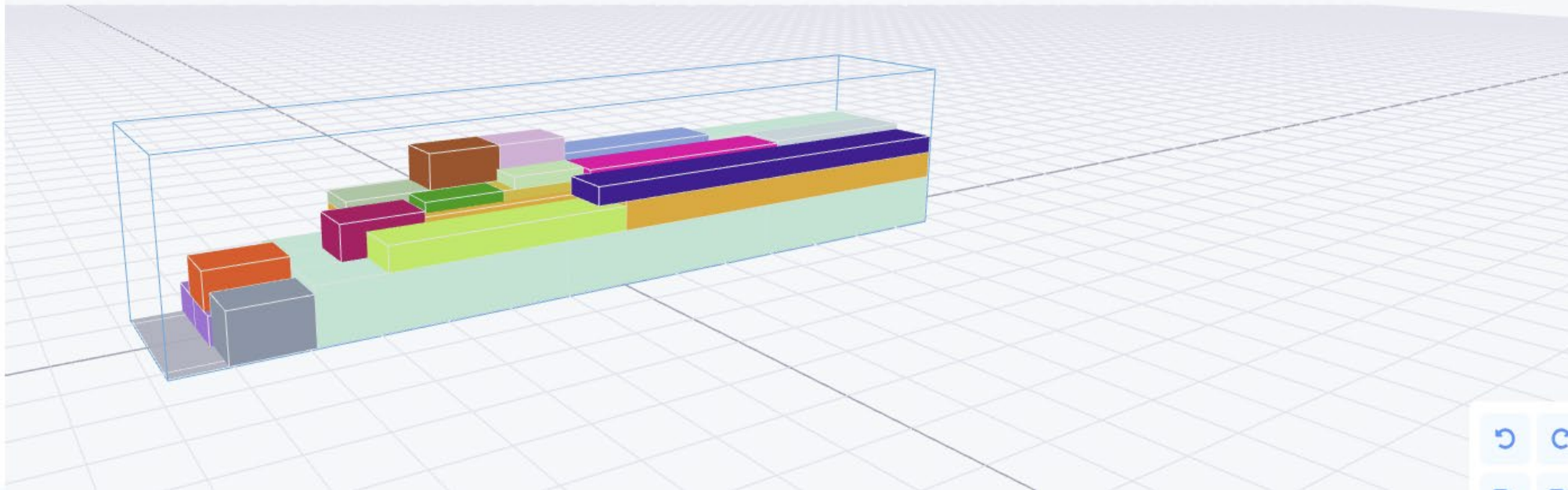
1,9K kg

Max weight per load unit



13,9K kg

Front Axle Weight



Gain time by automating manual planning

- 1** Upload Files
Provide bins and orders
- 2** Parameters
Configure packing parameters
- 3** Order Terminology Linkage
Link Your Order Terminology To Ours
- 4** Bin Terminology Linkage
Link Your Bin Terminology To Ours
- 5** Validation
Fix Your Mistakes (If Any)

Upload Files

If you need more info, please consult our [documentation](#)

Orders

 Drop your orders file here or click to upload.
Supports .json, .csv, .txt, .xls, .xlsx

Bins

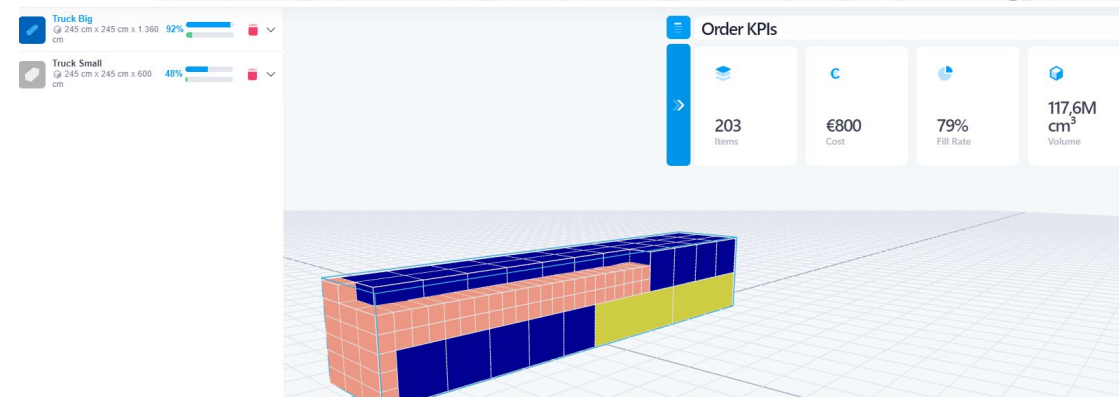
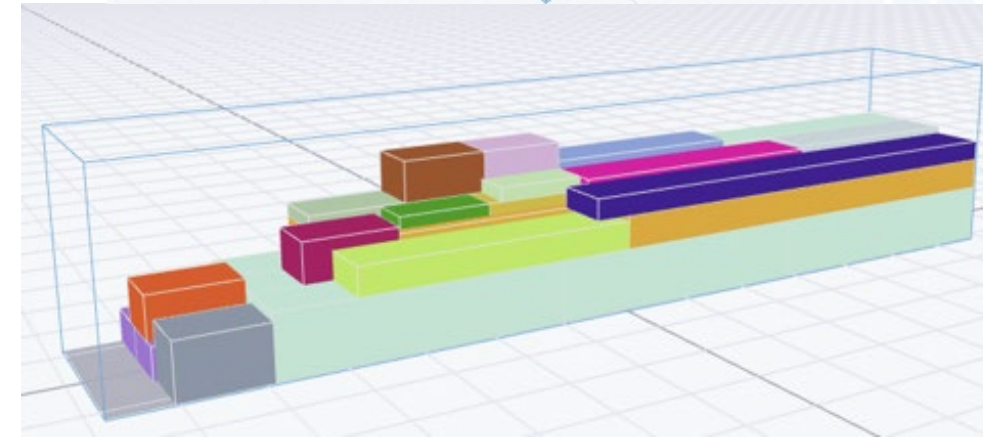
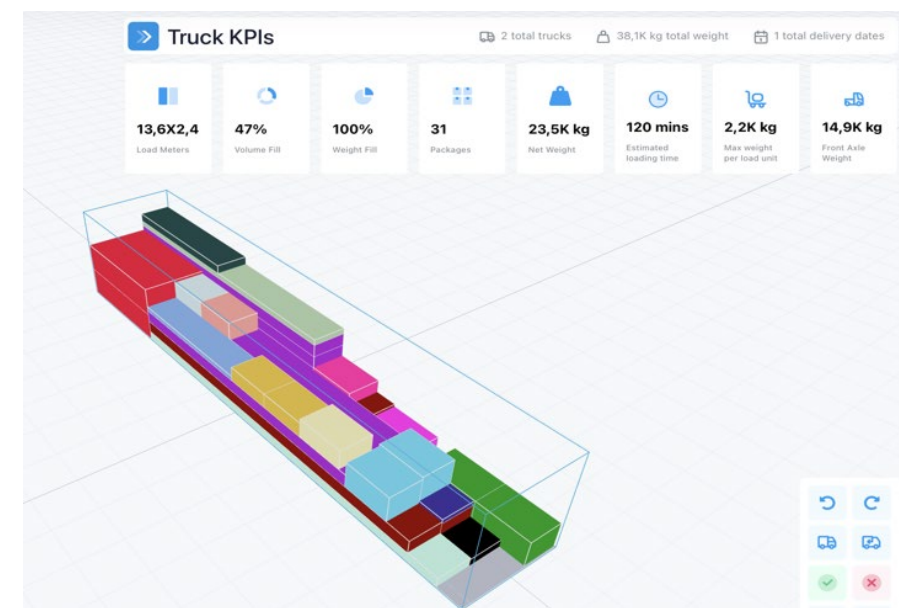
 Drop your bins file here or click to upload.
Supports .json, .csv, .txt, .xls, .xlsx

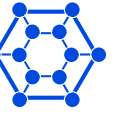
Continue >

4

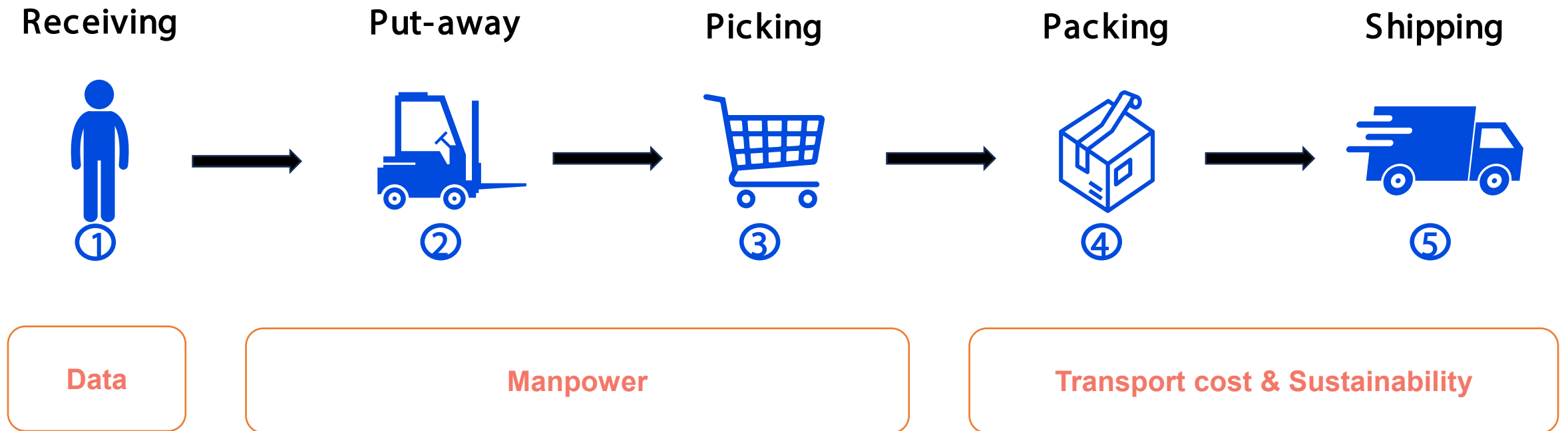
Summary – TLB optimization

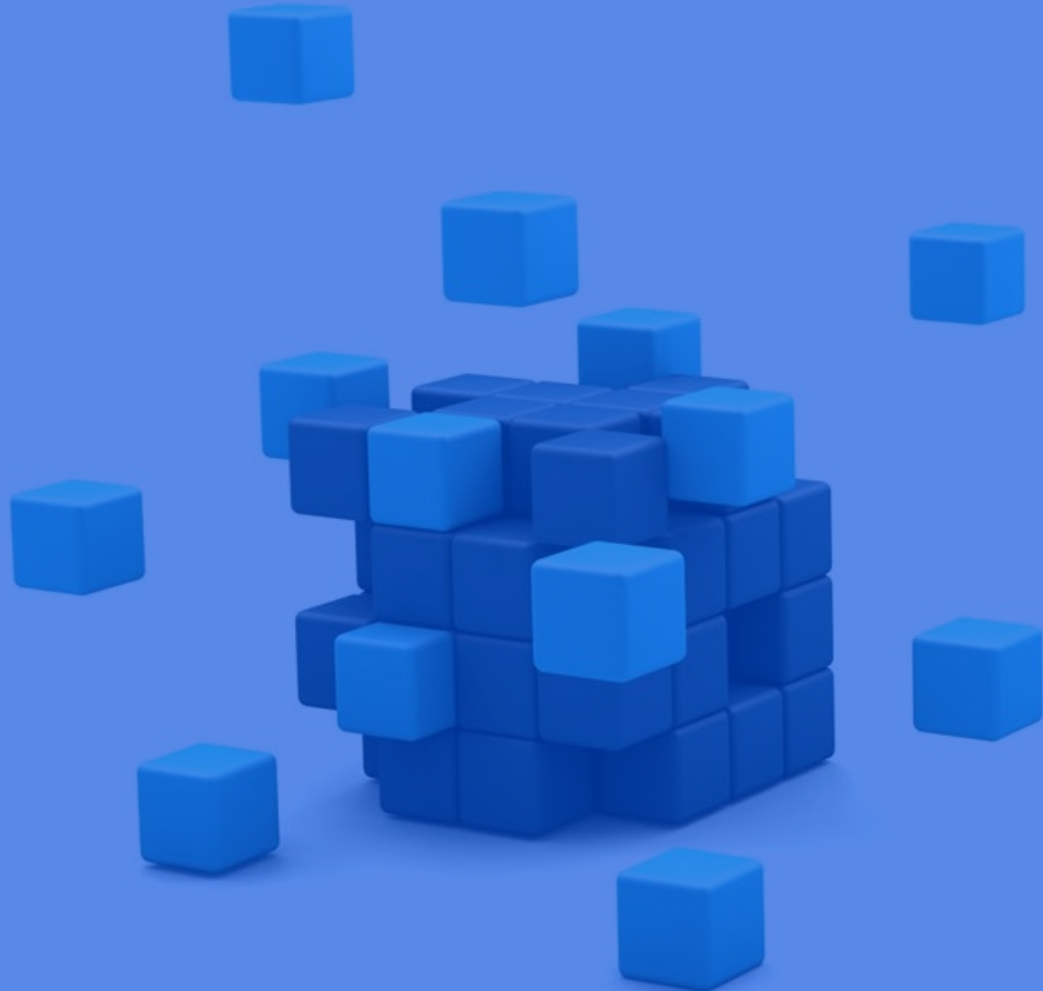
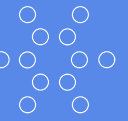
- Automated & optimized planning
 - Lower transport cost
 - Planning time gain
- Implementation time: 2-3 months
- Typical customers: heterogenous products





Processes where value is lost





Ready to boost your logistics?

Contact

Bart.gadeyne@optioryx.com

+32 472 715128

Stand: 1026 Fabriek Logistiek

Meer info via

✉ info@supplychainmasters.be

☎ 03/286 80 90

🌐 www.supplychainmasters.be



Maak deel uit
van onze online
community

 **SupplyChain
Masters** Strong in
connecting minds





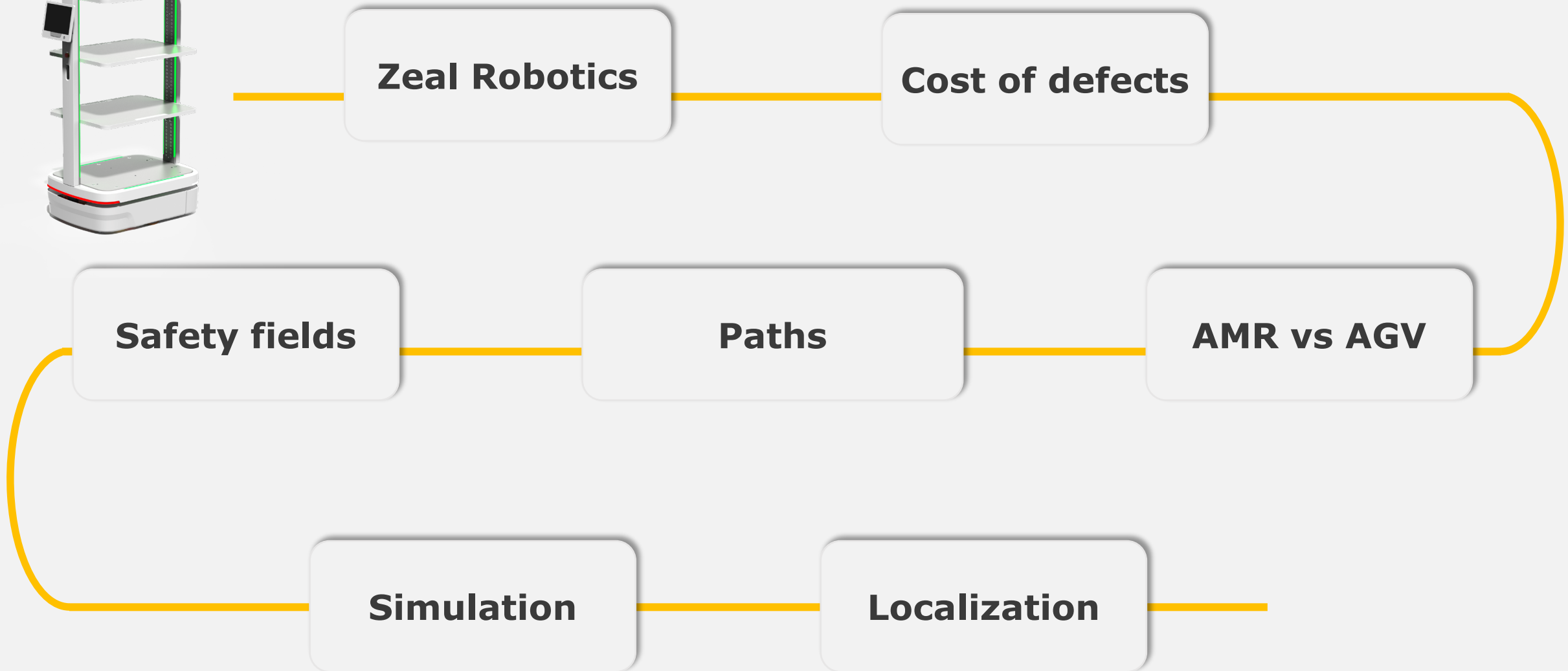
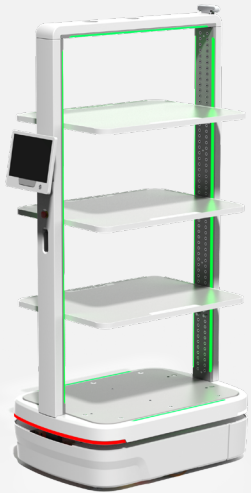
Digital tools for autonomous mobile robots

Yasim Coene – Zeal Robotics



Digital tools for autonomous mobile robots (AMRs)

How AMR solutions use digital tools to improve cost & efficiency from project initiation to operations



Founded in
January 2022

Located in
Belgium

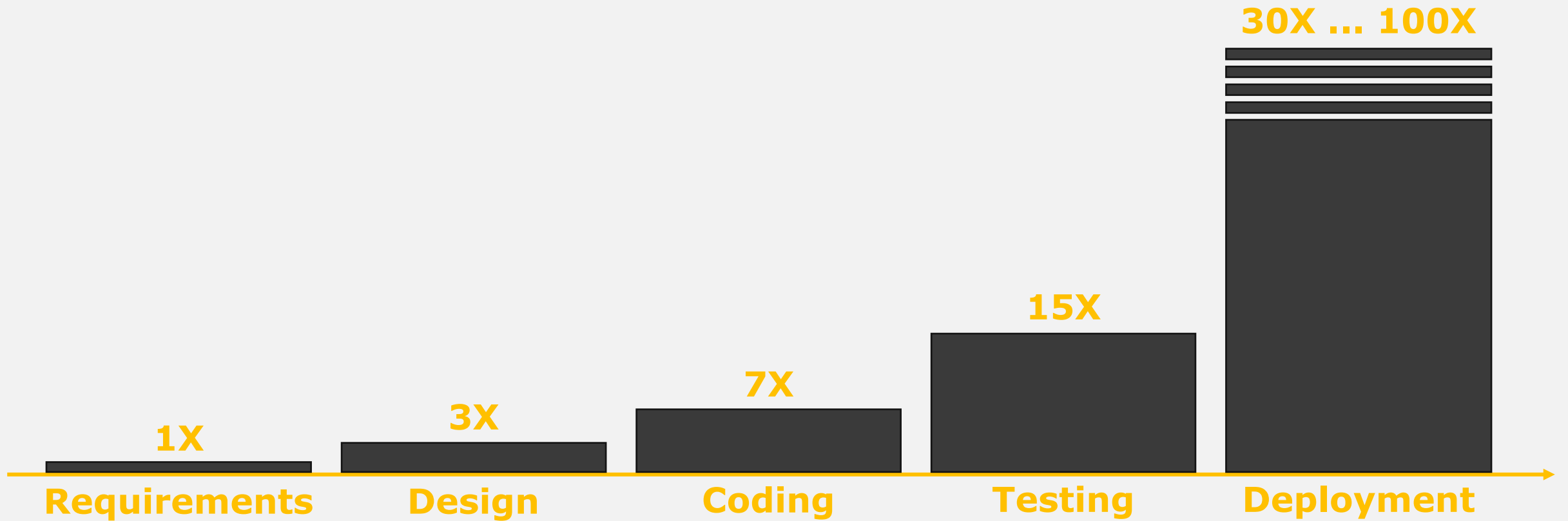
Incubators
imec.istart

Team count
3

Experience
Colruyt Group, Mabo
SSI Schaefer, Motum



Cost of defects



AMR vs AGV

Navigation



Reliability



Flexibility



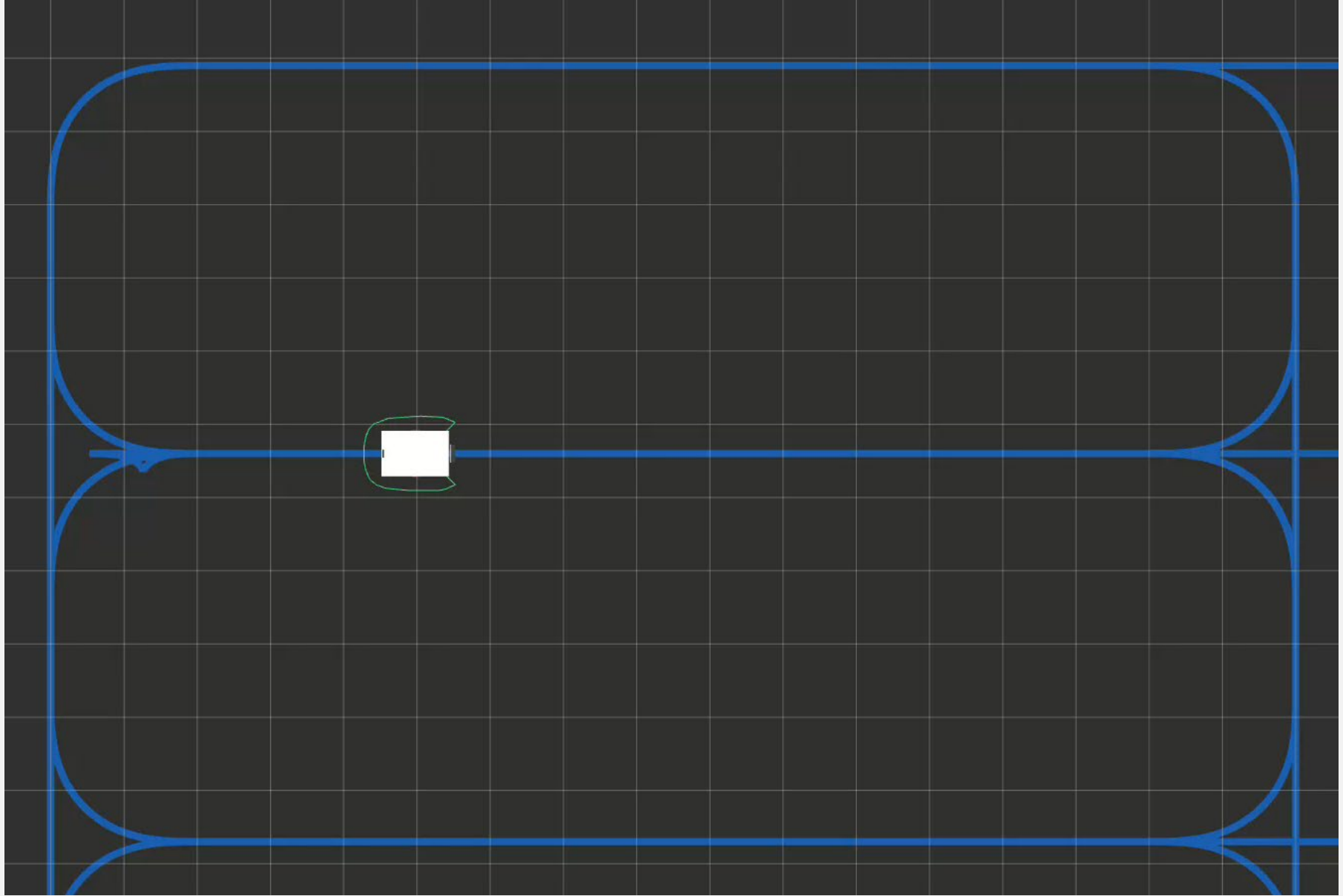
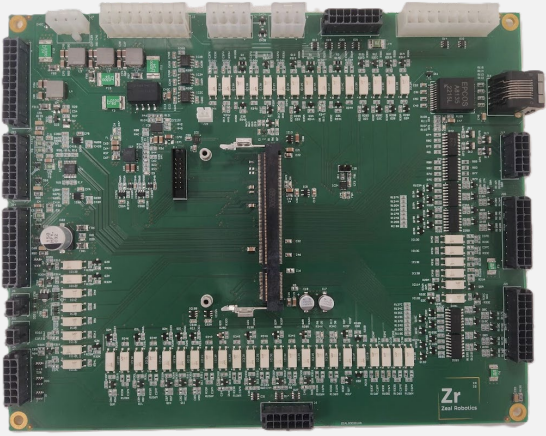
Safety



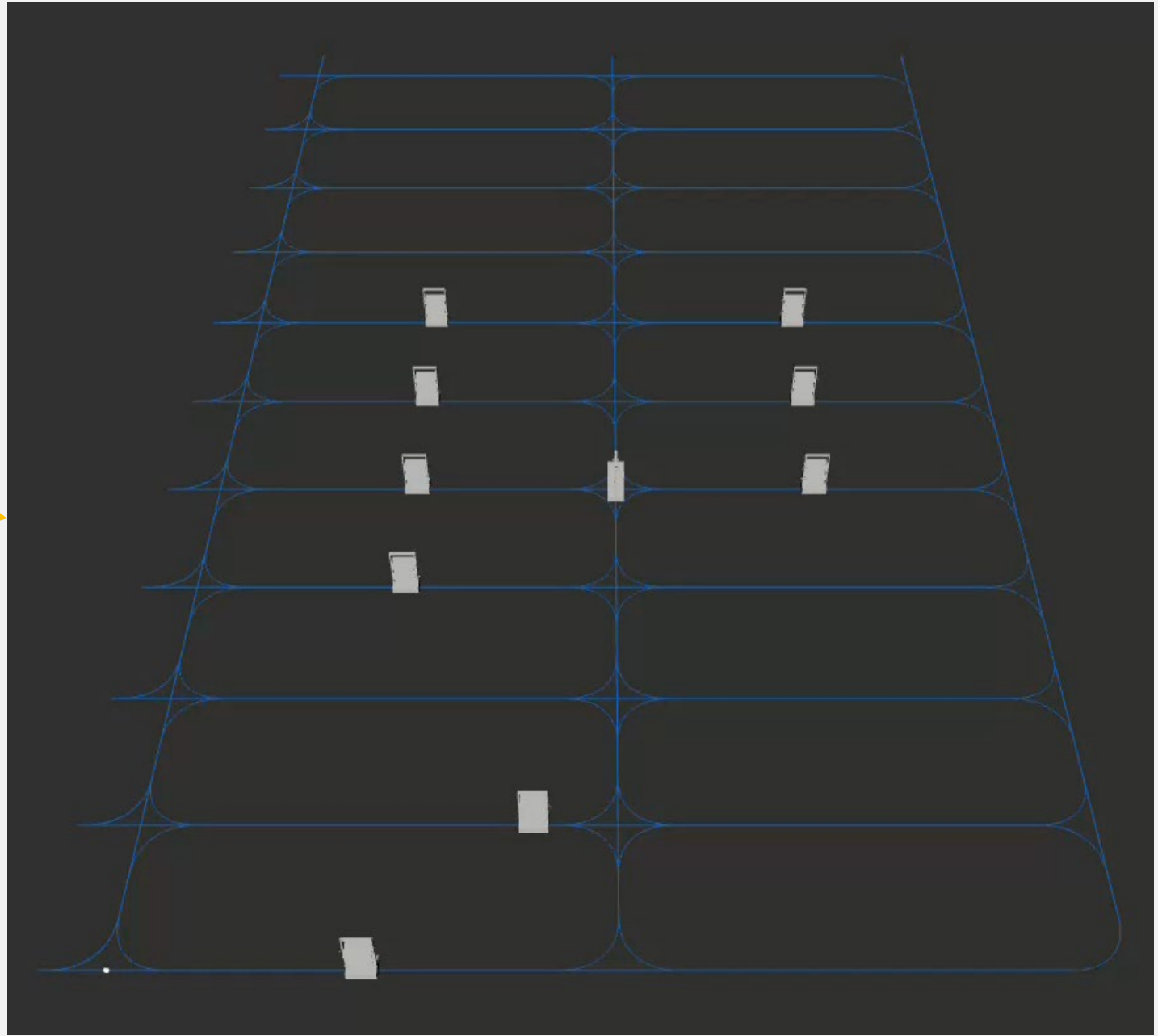
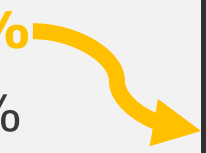
Deployment

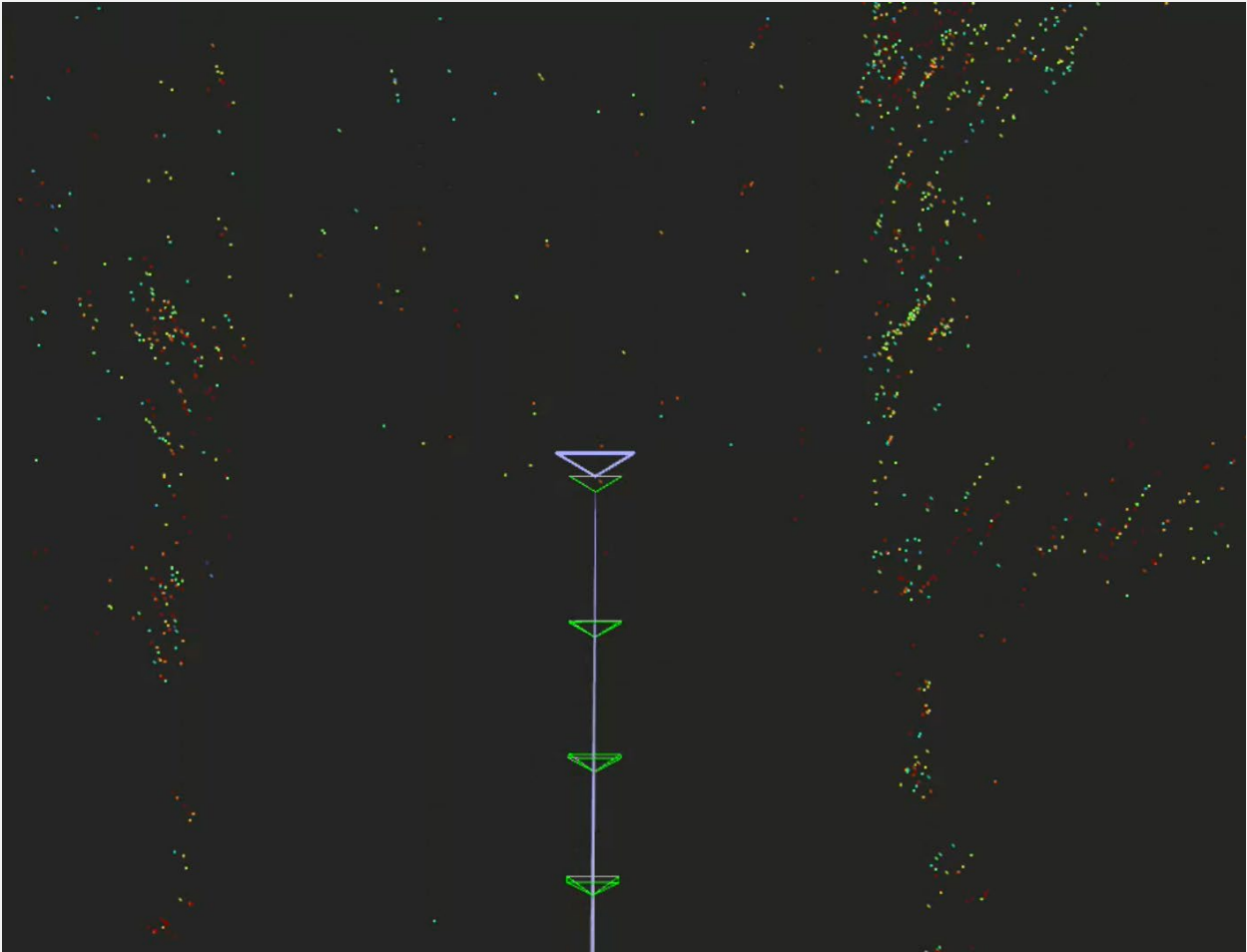


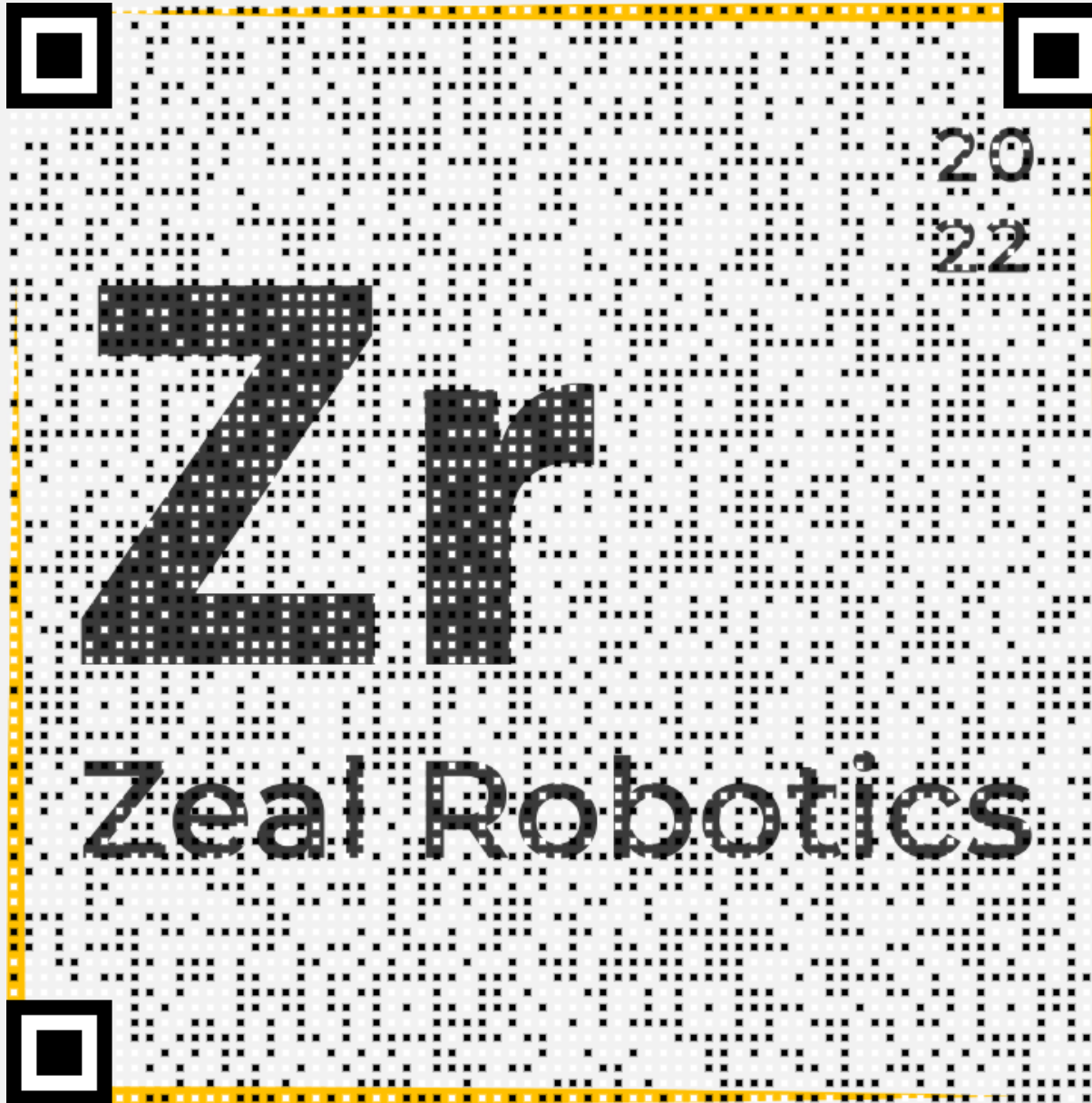
Costs




AMRs	Paths	Orders	Congestion
20	21;2	200	18%
10	11;2	100	15%
10	11;3	100	11%
10	11;4	100	8%
5	6;2	100	8%
5	6;3	100	7%







Scan to see
Zeal Runner
in action

 www.zealrobotics.com

 www.linkedin.com/company/zealrobotics

Meer info via

✉ info@supplychainmasters.be

☎ 03/286 80 90

🌐 www.supplychainmasters.be



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connecting minds



A man and a woman are standing in a warehouse, looking at a tablet. The woman is on the left, wearing glasses and a light blue shirt, holding the tablet. The man is on the right, wearing a dark blue t-shirt, with his hand on his hip. The background shows stacks of boxes and warehouse equipment. The lighting is a mix of warm orange and cool blue.

Leverage Vision technology and AI operationally in Warehousing

Stijn Vantilt

Meer info via

✉ info@supplychainmasters.be

☎ 03/286 80 90

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A man and a woman are standing in a warehouse, looking at a tablet. The woman is holding the tablet and pointing at the screen. The man is standing next to her, looking at the screen. The background is filled with stacks of cardboard boxes. The lighting is dim, with a blue tint.

ZERO-emissie transport tegen 2050

Peter Lagey - Ziegler

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**Een CO2-arme Supply Chain is een verrijking
voor iedereen!**

David Vanhuysse - Carglass

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A man and a woman are standing in a warehouse, looking at a tablet. The woman is holding the tablet and pointing at the screen. The man is standing next to her, looking at the screen with a smile. The background is filled with stacks of cardboard boxes.

Naar ZERO in wegtransport Daan Peeters – Volvo Trucks

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Altachem kiest voor binnenvaart & spoor!
Business case door Multimodaal Vlaanderen & Altachem

Ilse Verdonck – Multimodaal Vlaanderen
Frederik Noppe - Altachem