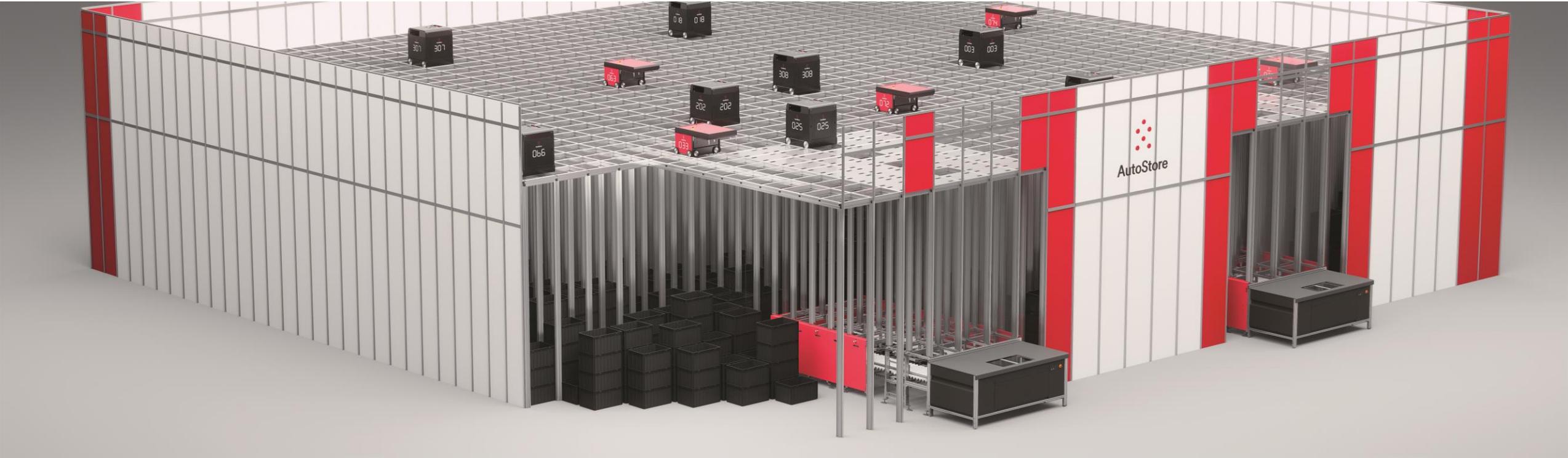


AutoStore

Thank you for the
Robotics award 2020!

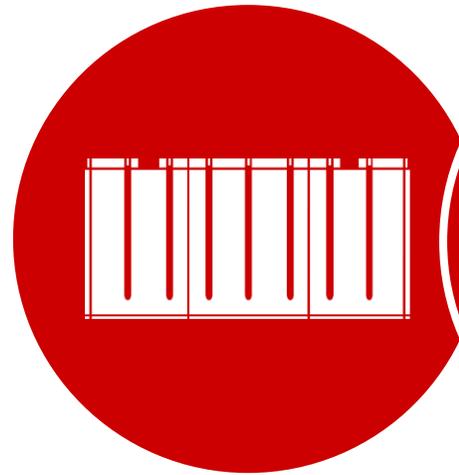
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What is AutoStore?



“Goods to Person order picking, Cube Storage system with highest space efficiency and high operator productivity”

AutoStore Modules | The 5 Modules



Bins

The inventory container of AutoStore

three Bin depth options:

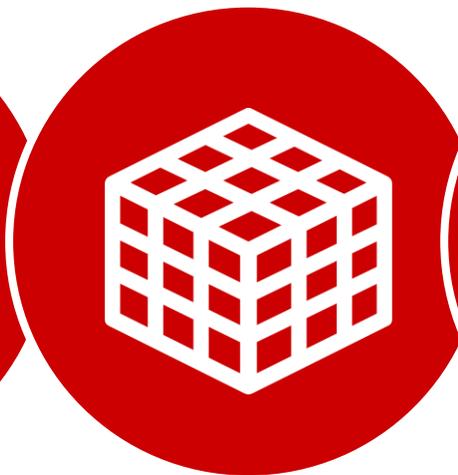
- 220mm (up to 24)
- 330mm (up to 16)
- 425mm (up to 13)

Inner Bin measurements:

- 400 x 600 mm

Bin Payload:

- Up to 30kg

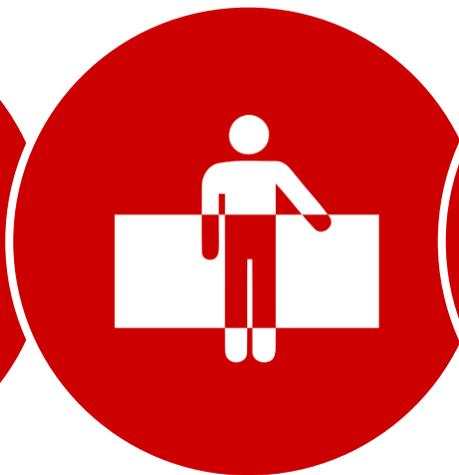


Grid

Self-supported aluminum grid with robot rails

Modular construction kit

Can be build up to 6,3 m



Ports

Where put away, picking and all human interaction is done.

Available Ports:

- Conveyor Port
- Carousel Port
- Swing Port
- Relay Port
- Individual Ports



Robots

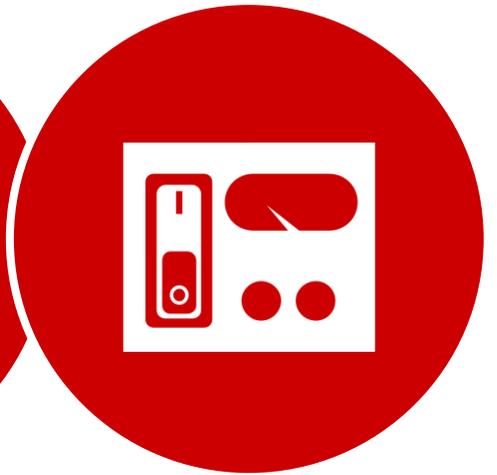
The hard workers that dig, organize transport the bins

Wifi controlled

Battery driven

8 wheel drive:

- 4 drive in X-Direction
- 4 drive in Y-Direction



Controller

The sophisticated brain behind all movement

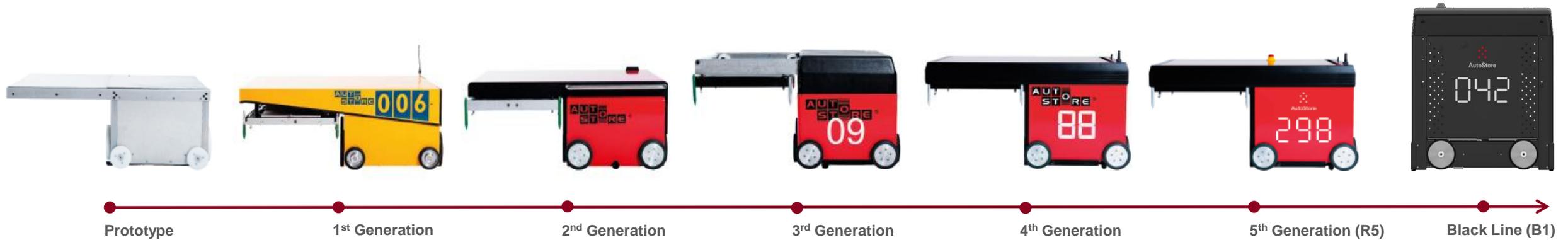
IPC with AutoStore Controls Software

Interfacing with all WMS

Selection of clients



More than 25 years of innovation...



From the mid 90s, Hatteland started the development of the first prototypes of the Cube Storage solution and the first robots saw daylight.

The current 5th robot-generation (R5) is not only successful, it is outstanding reliable

2019 the B1 robot was introduced for more throughput and to carry the 425 mm Bin.

A next step for even more throughput was done in 2020 with the new software architecture “Router”

Introduction at LogiMAT 2019:

B1 Robot



Robot: B1

Developed for more throughput, longer working days and higher bins



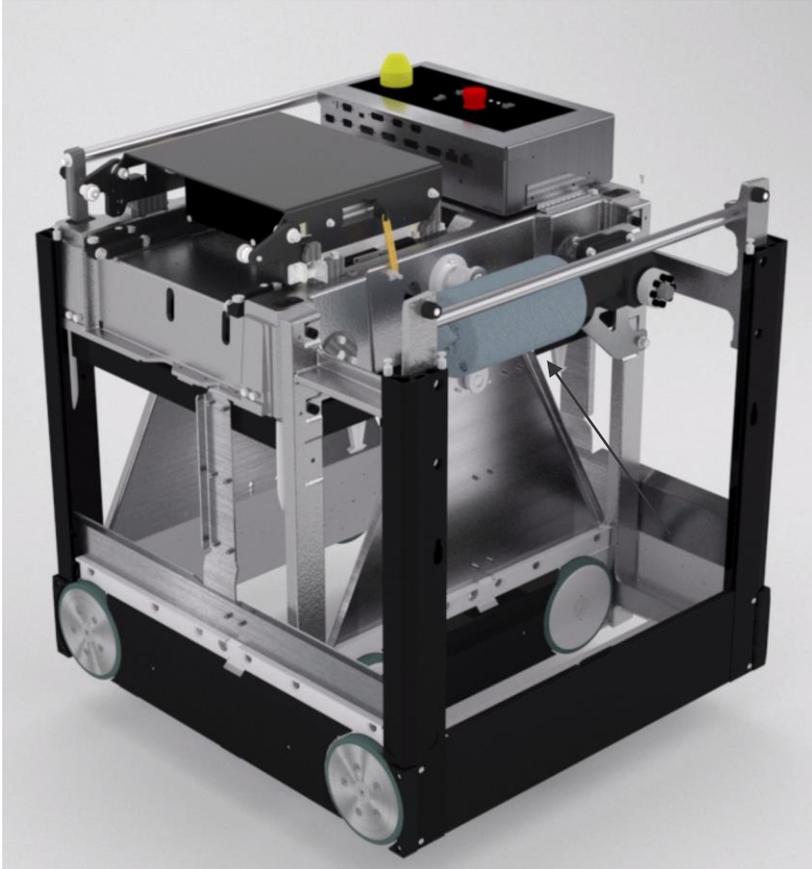
B1 Robots have 75% higher acceleration compared to R5 Robots, enabled by direct drives in each driving wheel.

The average capacity per B1 robot is: **30 b/h**.

➤ New **battery concept**: Battpack solution. Robots exchange their Batteries in less than 20s, this allows a more efficient 24/7 operation.

Less maintenance and less moving parts in the robot, which additionally reduces the noise level even more.

Robot B1: technical details



The upper frame consist of aluminum cast for heigh stability, low weight and long life.

The **operation panel for manual operation** is located on the upper frame.

The Bin is lifted into the **Central Cavity**. This increases the lifting distance, to handle the new 425mm Bins.

The Lift-Motor is located in the ½ cell extension of the robot.

Brushless direct drive motors in each driving wheel, increase the accelaration and speed of the B1 robot.

The B1 Robot uses exchangable Li-Ion Battery-Packs.

B1 is the Robot for operation around the clock



Until B1, 24/7 AutoStore applications needed additional R5 robots to compensate the charging cycles.

B1 works continuously.

Example: B1 changes every 40 minutes the BattPack to keep the average charging level and to utilize the charging stations in an optimal way.

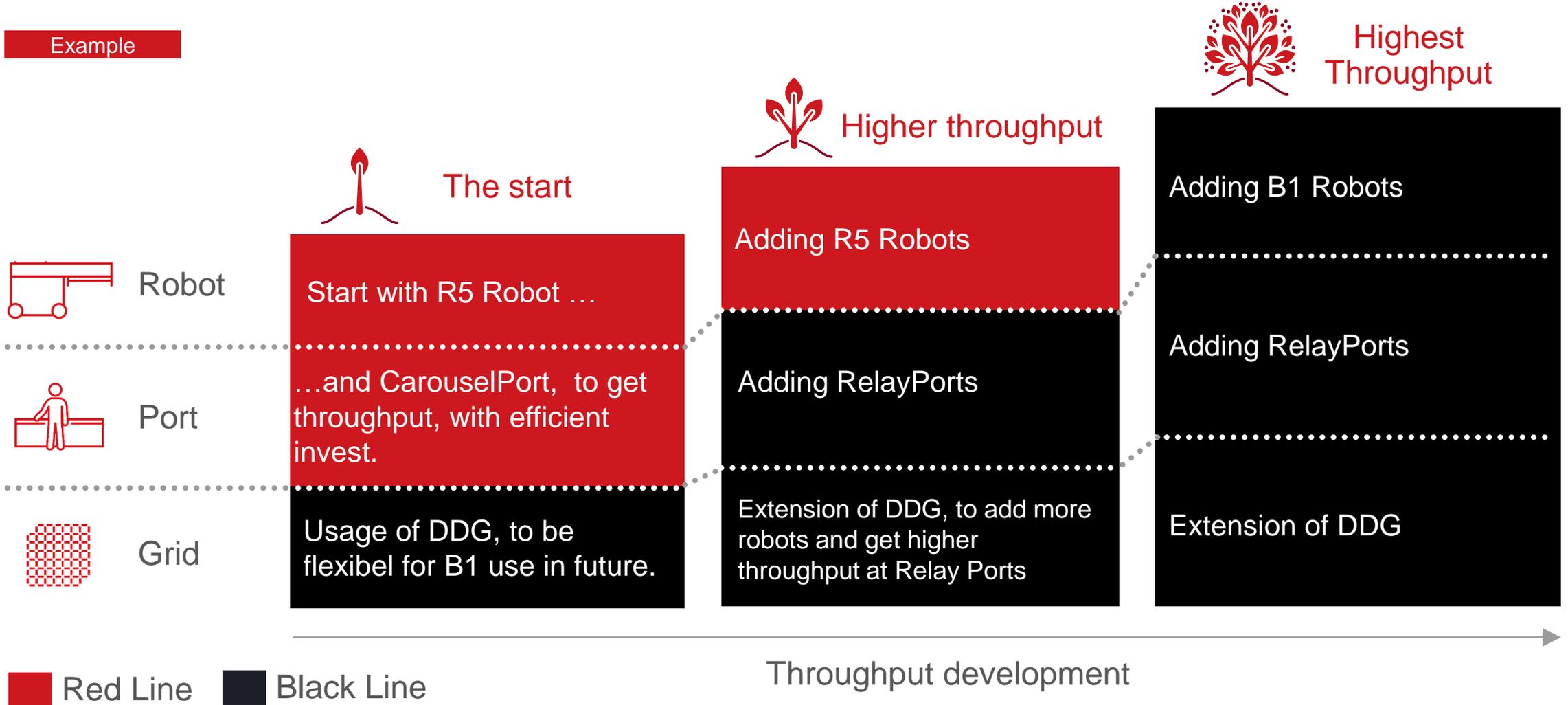


Each exchange takes est. 20s, this is why **B1 Robot is working 99% of time.**

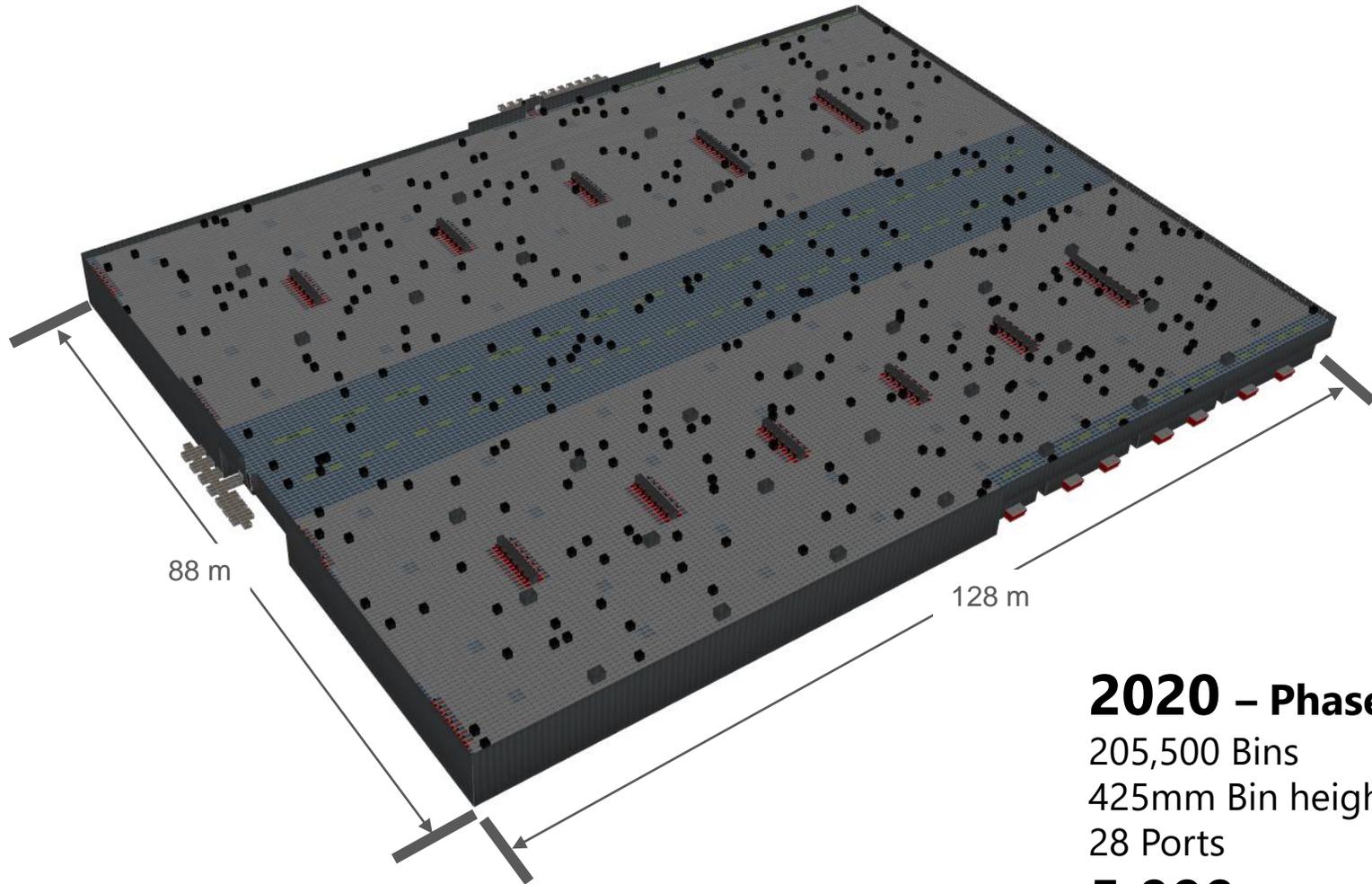
The robot efficiency is much higher in such cases and can be in some cases up to 40%.

This is why 24/7 customers have additional benefit by using the B1 robot.

AutoStore modularity, allows step by step growth into high throughput systems



Black Line largest installation – going live in 2020

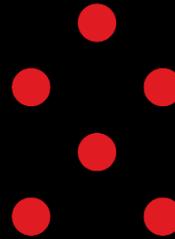


320,000 Bins
11,500 m²
11,000 bph

2020 – Phase 1
205,500 Bins
425mm Bin height
28 Ports
5,000 bph

2022 – Phase 2
320,000 Bins
425mm Bin height
33 Ports
8,000 bph

2025 – Phase 3
320,000 Bins
425mm Bin height
69 Ports
11,000 bph



Danke für Ihre Aufmerksamkeit!

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