

A better way

MiR | a better way

Transforming the logistic industry

October 2020

The MiR logo is displayed in a large, bold, white sans-serif font. The letter 'i' is lowercase and features a small dot above it. The background of the slide is a blue geometric pattern of triangles, with a white diagonal cutout in the top right and bottom left corners.

Agenda

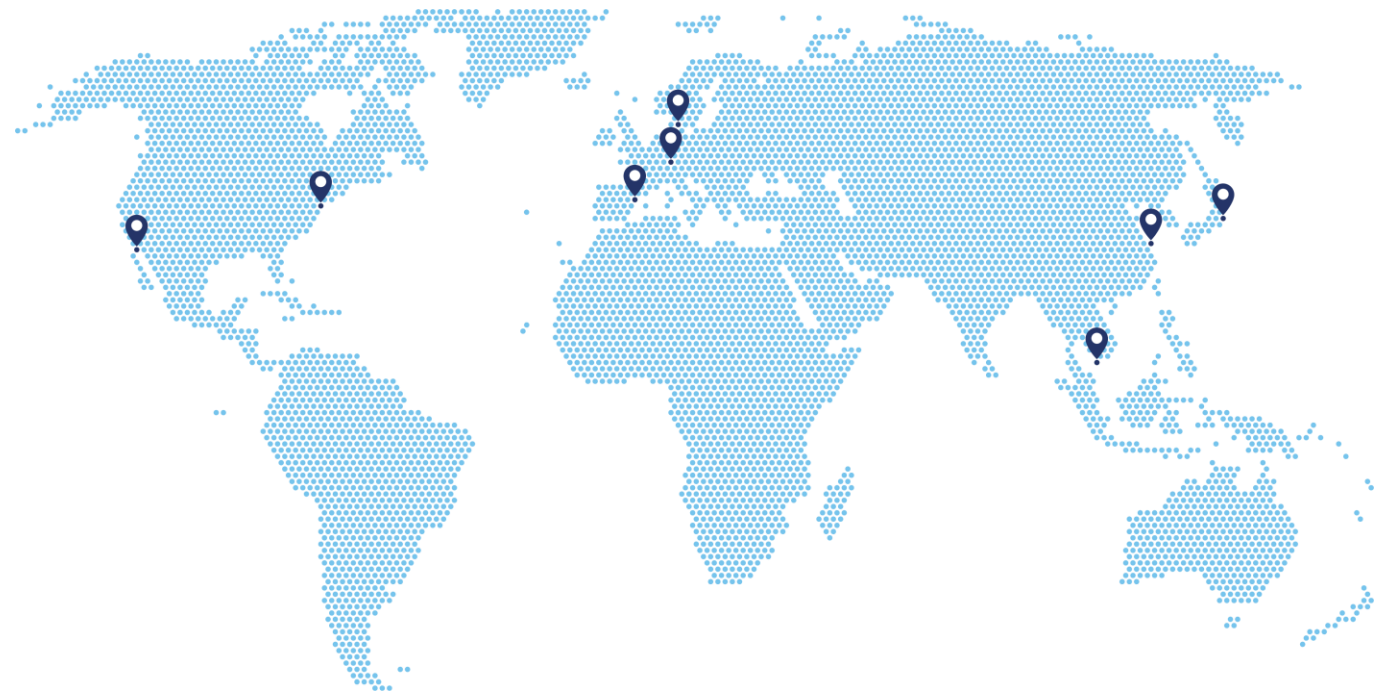
- ▶ **MiR – Mobile Industrial Robots**
- ▶ **Market Challenges and Trends**
- ▶ **MiR Robots**
- ▶ **How AMR in use works**
- ▶ **The MiR Ecosystem**



Overview of MiR

With local sales offices around the world and a global distribution network, we are ready to support your business wherever you are located

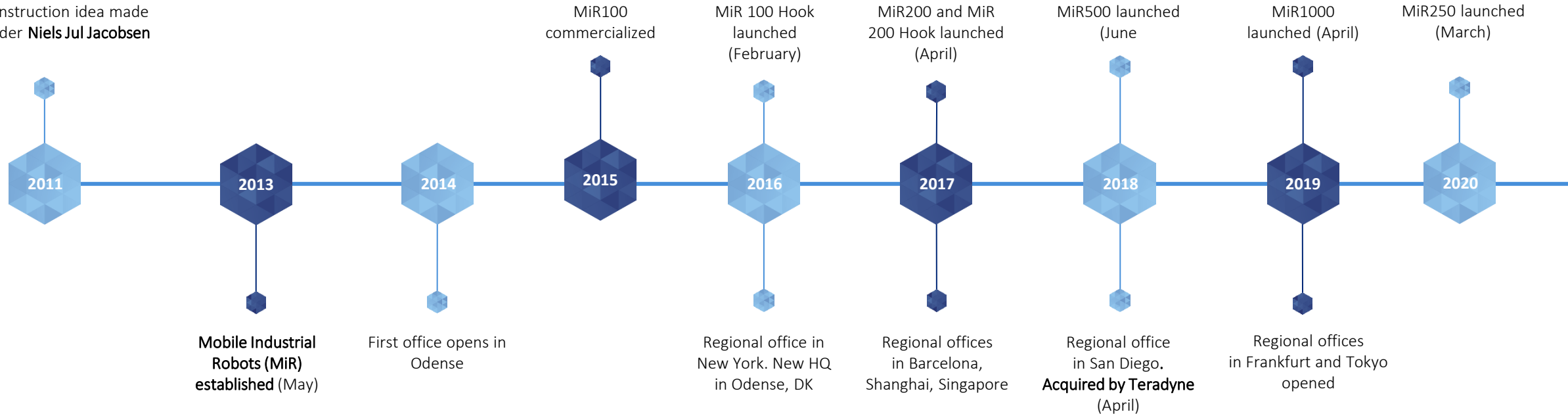
- ▶ 230 employees globally
- ▶ 180 distributors in 55 countries
- ▶ 7 regional offices



Overview of MiR

Product development

First construction idea made by founder **Niels Jul Jacobsen**



Business development

Market challenges and trends

Trends affecting the Logistic industry

Challenges for value creation



Individualization



Cost pressure



**Demand
fluctuation**



E-commerce



Shopper activation



Staff shortage

Source: BVL, Trends and Strategies in
Logistics and Supply Chain Management

Trends affecting internal logistics

Trends challenging value creation across industries

Trend

Challenge

Solution

Rapid growth of new economies and new business models

Global competition puts pressure on continued optimization

Non-value adding material handling must be streamlined

Individualization of consumer needs demands higher variety

High switching cost and non-flexible solutions

Engagement with adaptable, scalable, and open platforms

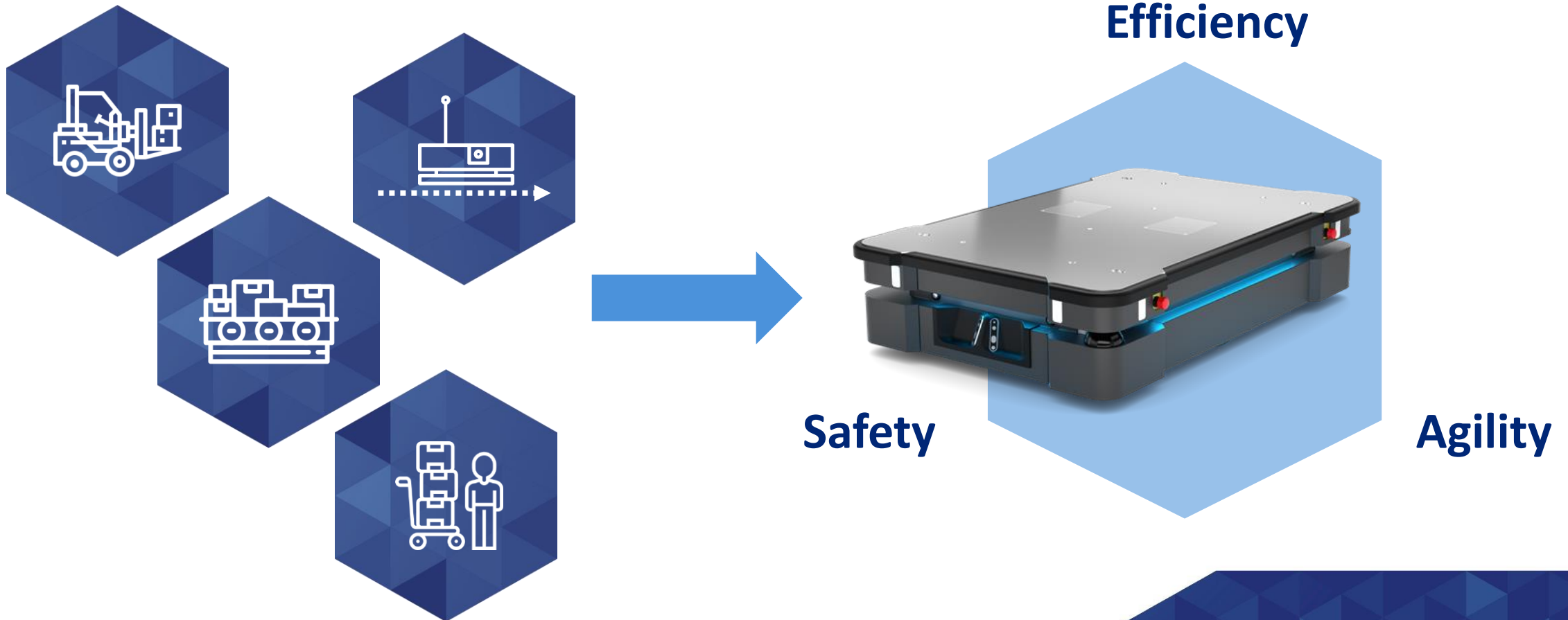
Growing demands and shortage of labor

Increased risk with interaction of machines and people

Higher degree of automation with safe and collaborative robots

Logistics in the Future

AMRs can adapt to constant changing demands



Automating Internal Logistics

Differences in AMR vs. AGV



AMR Autonomous (collaborative) Mobile Robot

- ▶ Trackless, autonomous navigation
- ▶ Travels safely around people and obstacles
- ▶ Easy to expand/change work area
- ▶ Navigates dynamically while planning it's own path and sequence



AGV Automated Guided Vehicle

- ▶ Requires "tracks" – e.g. magnetic stripes in the floor or wires
- ▶ Stops at any obstacle without possibility to change route
- ▶ Expensive and time consuming to expand/change work area
- ▶ Restricted to fixed routes and controlled sequence

MiR robots

MiR250

Exceed expectations

- ▶ Highly adaptable for challenging environments
- ▶ Optimize internal logistics without changing layout
- ▶ Brilliantly simple to setup, for improved productivity
- ▶ Out-of-the-box standard module



Certifications

ESD approved
CE certified



Load weight

250 kg / 550 lbs



Solution Overview



MiR100



MiR200



MiR250



MiR500



MiR1000



MiR Lifts



MiR Charge



MiR Fleet



MiR AI Camera



MiRHook

How **AMR** in use works

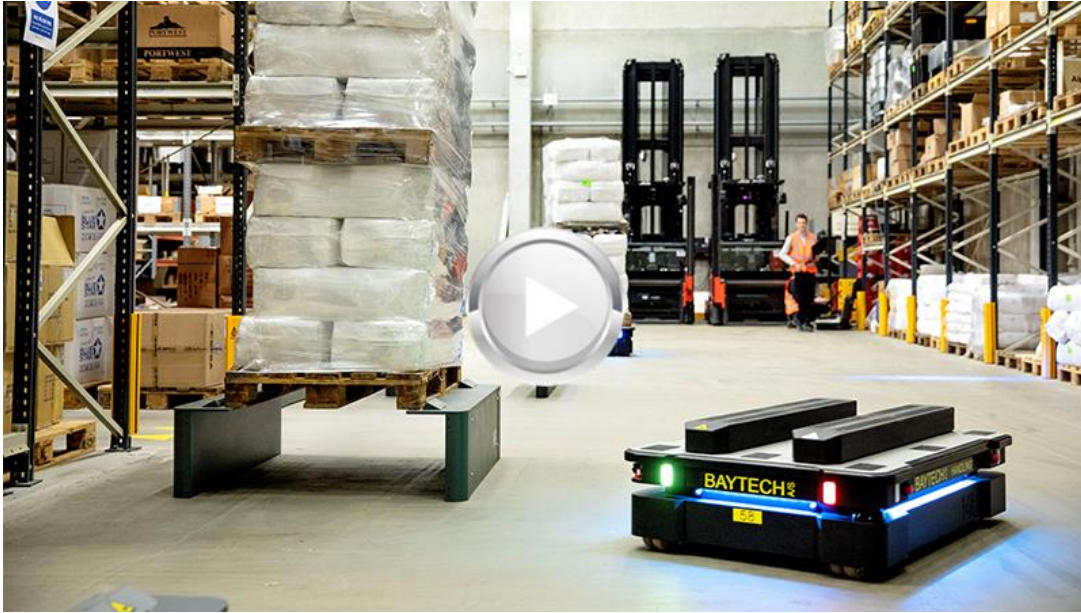
Future material flow



How it works



From principle to real life action



Case: ICM

Three **MiR1000** robots collaborate with people and trucks and save 40 hours a week. Space is limited. Customers are impatient. Competition is fierce. This means that time, personnel and space must be utilized optimally

Solution

- ▶ Workers no longer have to spend time manually moving pallets from a stacker to the aisles in the high-rise warehouse
- ▶ The user-friendly robots has increased capacity and job satisfaction

MiR robots in action



Case: Honeywell

Three **MiR100** robots from Mobile Industrial Robots (MiR) are helping Honeywell Safety & Productivity Solutions keep its manufacturing processes lean and agile and optimizing workflows by automating the transfer of materials throughout the facility.

Solution

- ▶ Phased approach
 - ▶ Started out with one robot operating one line
 - ▶ Optimized with several robots with conveyors operating several lines
- ▶ Flexible and lean production

MiR robots in action



Case: Ford

FORD has deployed three **MiR100** robots, which deliver spare parts from storage to FORD's manufacturing lines in their Valencia plant. Tests conducted by FORD showed that one mobile robot alone frees up to 40-man hours per day.

Solution

- ▶ MiR robots help FORD Spain optimize intra-logistics in its Car Body & Stamping plant
 - ▶ On-time deliveries keep production running
 - ▶ Autonomous navigation in complex environment

MiR robots in action



Case: Visteon

Four **MiR200** robots from Mobile Industrial Robots (MiR) are implemented at Visteon, Slovakia, to save labor costs, and have now become a global standard for Visteon.

Solution

- ▶ The robots have taken over the monotone and simple transportation tasks at three locations
- ▶ Benefits of MiR
 - ▶ Flexibility
 - ▶ Easy and intuitive programming
 - ▶ Very user-friendly
 - ▶ ROI in less than a year

MiR robots in action



Case: Whirlpool

A fleet of **MiR200** robots improves logistics and boosts productivity. Whirlpool has implemented three MiR200 autonomous mobile robots that transport components between the preassembly and assembly lines.

Solution

- ▶ Need for transportation of a huge number of components
- ▶ AMRs provide a completely new way of delivering parts without human involvement
- ▶ Delivering significantly improve safety, avoiding collisions between people and devices

The **MiR** Ecosystem

The MiR Ecosystem



Robots

User-friendly MiR robots enable you to adapt to changing market demands, new products, and new production flows



Top modules

MiR is an open robot ready for endless applications to be integrated



MiRFleet

Optimize their internal transportation with a fleet of MiR robots and easy, centralized, web-based configuration.



Communication

With open interfaces MiR robots can integrate into different solutions and products – from elevators to ERP systems, analytics SW and static installations



Service

With MiR's service agreement, we help you prevent costly downtime and ensure full safety and flexibility

Disinfection



Post Covid-19 adaptation

- ▶ Adapting to a new post-pandemic reality has **increased awareness** and need for **flexible solutions**, especially when it comes to disinfection processes.

Solutions

- ▶ The **flexibility** of the MiR robots have enabled MiRGo partners to offer a variety of **disinfection top modules** which turn a MiR robot into an **autonomous disinfection robot** with UV light, spray disinfection and more.



Questions?

Thank you

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MiR