

MiR | a better way

MiR

Agenda

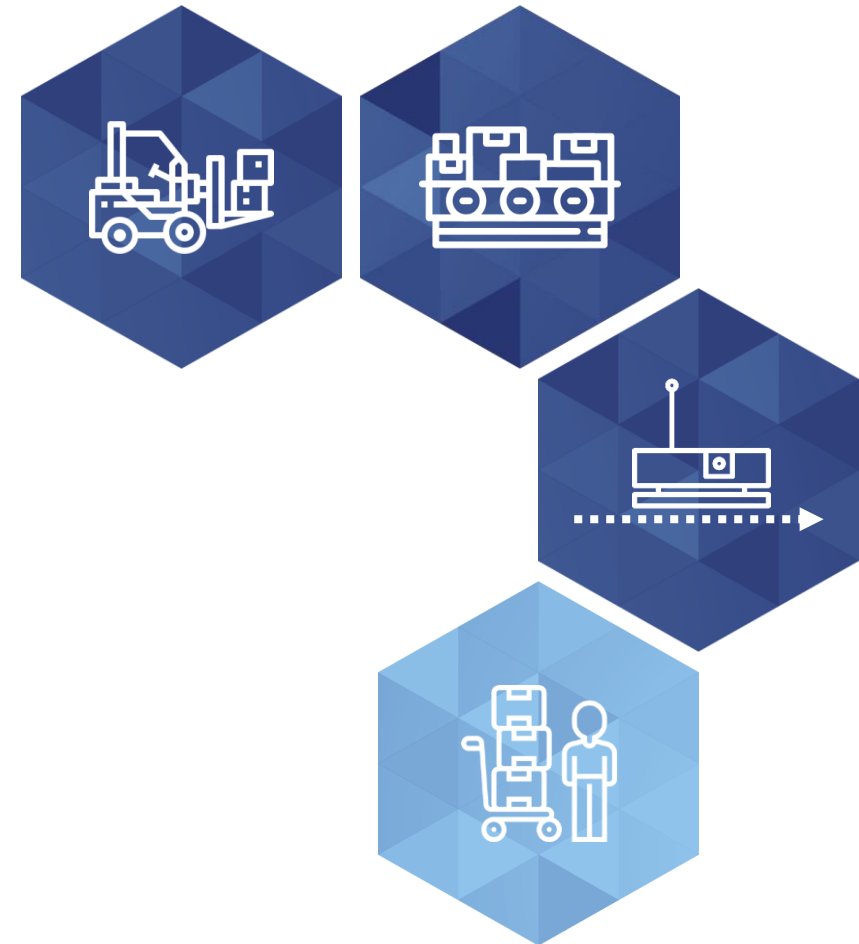
- ▶ **Internal Logistics & Automation**
- ▶ **About MiR**
- ▶ **Solution Overview**
- ▶ **Our Customers**
- ▶ **Details**

Internal Logistics So Far

Internal logistics consume large amount of resources that do not contribute directly to your value creation

Today internal transportation is usually done by:

- ▶ Manned forklifts
- ▶ Static conveyor systems
- ▶ AGVs
- ▶ Usage of special designed trolleys or racks



Megatrends That Affect Internal Logistics

Automate internal logistics

Megatrend	Effect	Concern	Solution
Globalization of markets	Rapid growth of new economies and new business models	Global competition puts pressure on continued optimization.	Material handling is non-value adding activity. Automate it.
Demographic shifts	Population gets older and new work patterns. Migration.	Labor shortage and retention hereof.	Relieve personal of repetitive and dull tasks.
Digitization & Industry 4.0	Enables higher degree of automation and IoT	Need for connectivity between different systems. Increased risk with interaction of machines and people.	WMS and ERP integration. Safe & collaborative mobile robots.
Individualization of consumer needs	Mass customization production setups with higher variety and smaller batches	High switching cost and non-flexible solutions	Engage with an adaptable, scalable, and open platform setup.

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

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A Better Way

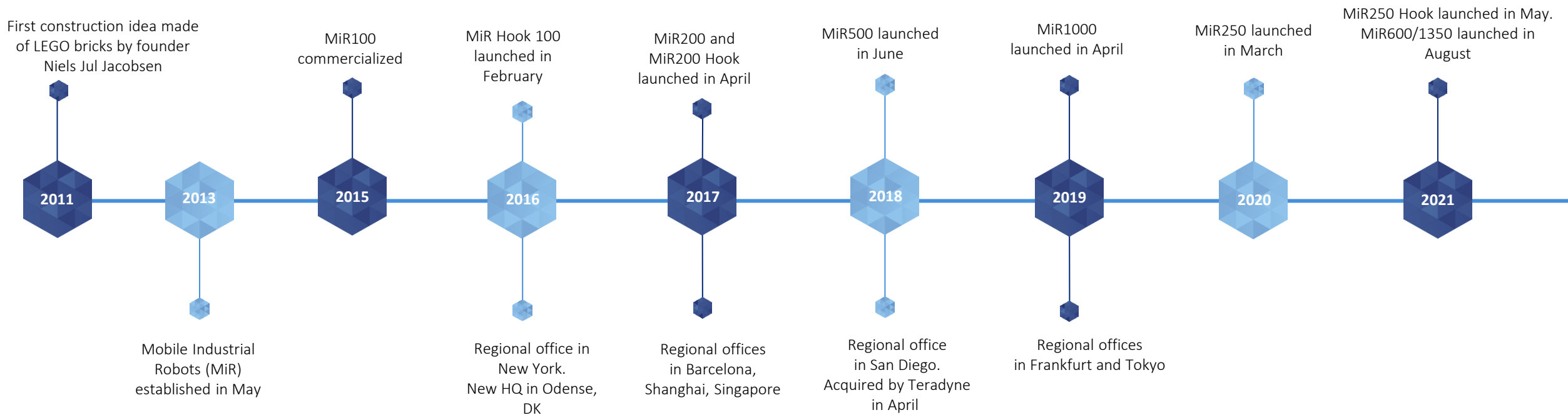
The MiR Value Proposition

With the world's most safe and reliable autonomous mobile robot, MiR is a market-leader dedicated to fully optimizing the efficiency and productivity of your internal logistics. Everything we do is driven by our ingenious take on collaboration, adaptability and performance.



Timeline

Product development

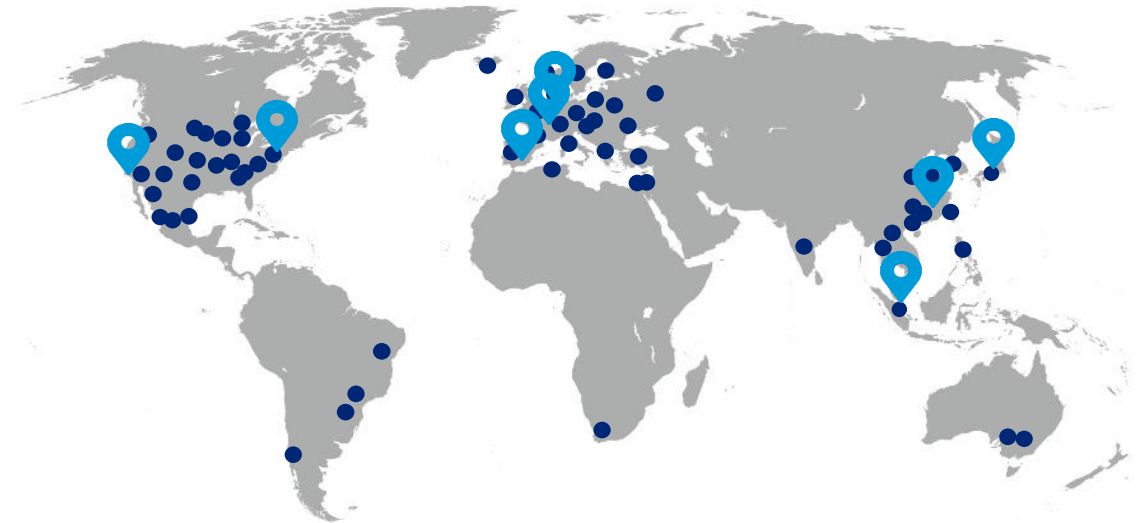


Business development

The Company Today

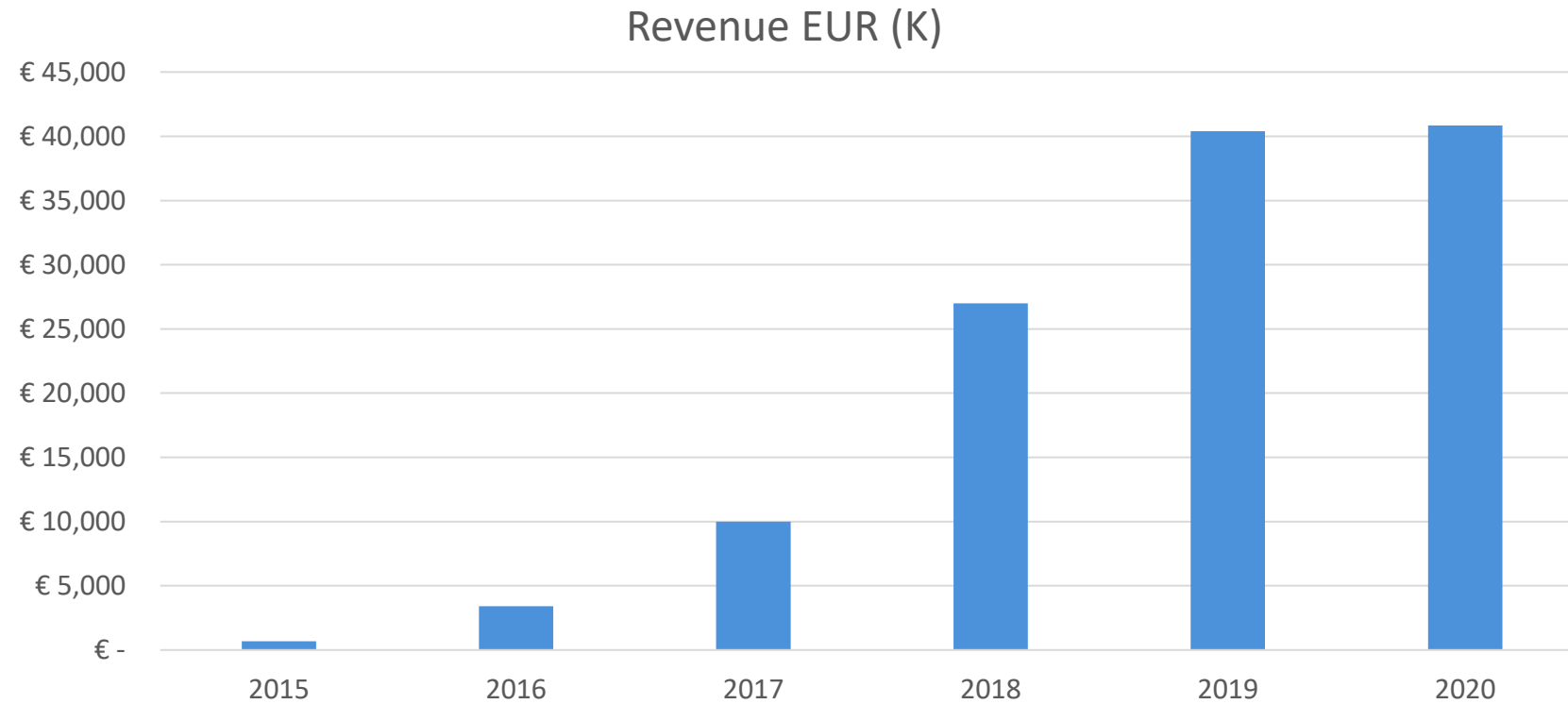
MiR Highlights:

- ▶ 250 employees focused on rapid development and growth:
 - ▶ 30% in R&D
 - ▶ 47% in Sales & Technical Support
 - ▶ 10% in Production
 - ▶ 14% in supporting functions
- ▶ Born global: 200 distributors in 60 countries
- ▶ Local presence: Offices in New York, San Diego, Barcelona, Shanghai, Tokyo, Frankfurt and Singapore
- ▶ Award-winning technology: Winner of multiple international renowned awards



📍 MiR Office • Distributor

MiR Revenue – Fast Market Adoption



Equal to
+5000 robots
sold globally

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Solution Overview

AMRs to transport
small- and medium
sized materials



MiR100



MiR200



MiR250

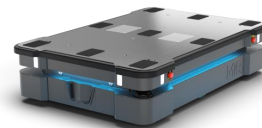
AMRs to transport
heavy loads and
pallets



MiR500



MiR1000



MiR600



MiR1350

Top modules
and
accessories



MiR Lifts



MiR Shelf Carrier



MiR Hook



MiR Charge



MiR Fleet



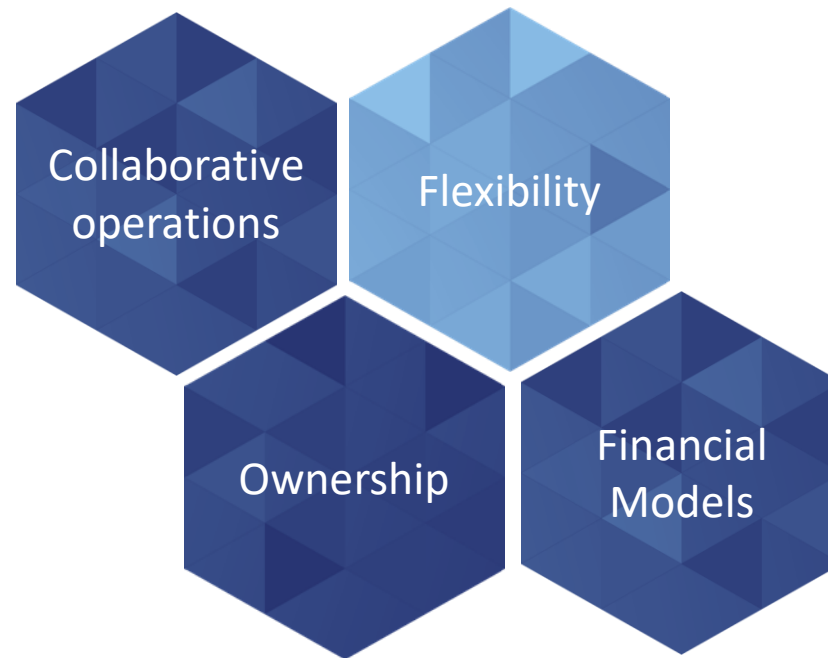
MiR AI Camera

How It Works



Market Needs

How MiR finds a better way to bring value to your business



Collaborative Operations

Safe and user-friendly collaboration with human colleagues



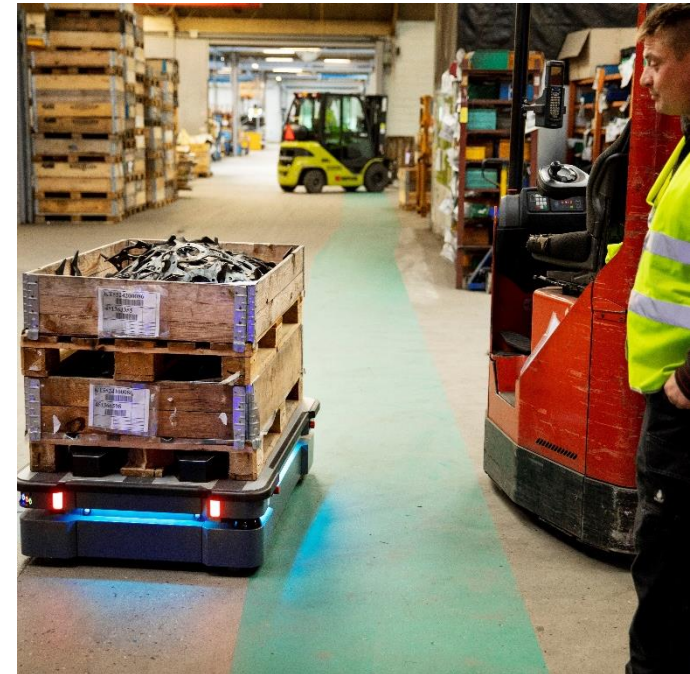
User-friendly interface

- Easily programmed, with no prior experience needed
- Missions can easily be adapted via tablet, smartphone or pc
- Daily users can summon a robot with one click of a button



Works safely alongside humans

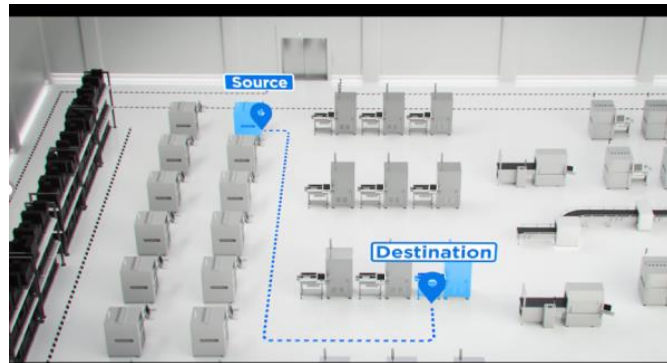
- Safely and efficiently maneuvers around people and obstacles
- Safety stop if someone walks out in front of it
- Complies with relevant safety standards



Improves working environment

- Redeploy human workers for more valuable work
- Reduces work-related injuries

Flexibility



An open interface supports different applications

- Easy to integrate new top modules
- Our online showroom, MiRGo for inspiration
- MiRGo Recommended for proven plug&play top modules

Adaptable & Scalable

- Integrates with existing systems, such as ERP & WMS
- Simple to remap to facility layout changes
- No limit for the number of missions the robot can perform
- Easy to scale your fleet of robots with MiRFleet

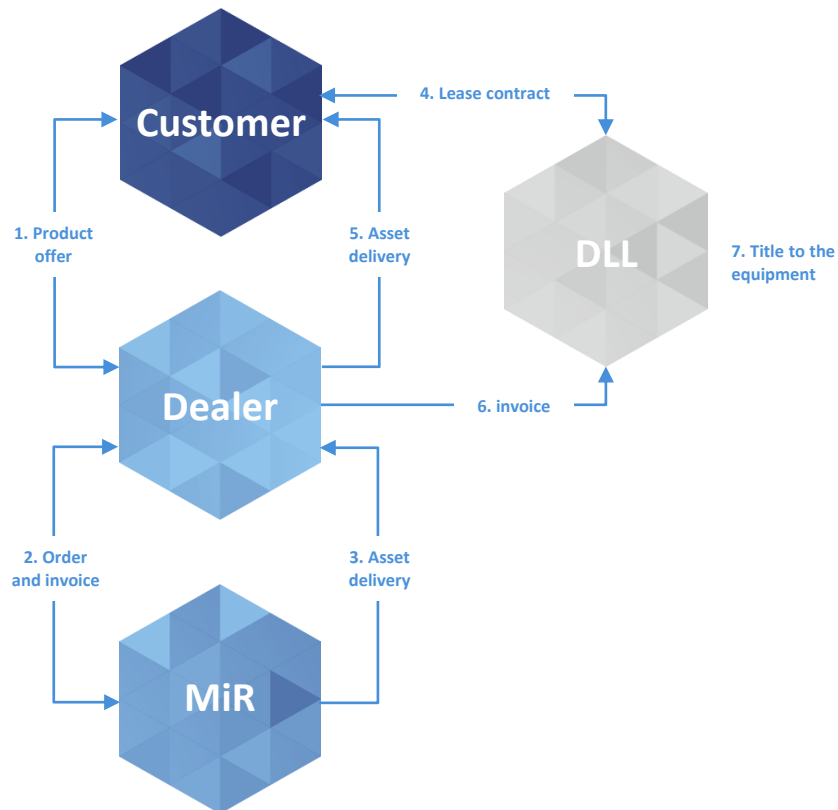
Autonomous Navigation

- LiDAR Slam for simultaneous localization and mapping increases efficiency of navigation
- Avoids production and logistics bottlenecks as the robot reroutes if it meets obstacles

Financial Models

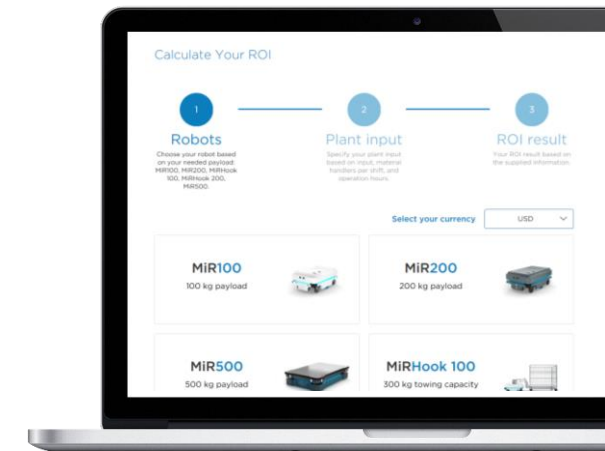
Lease

- Via distributors and external partner*
- Leasing is an operation expense (OPEX) and not an investment (CAPEX)
- No cash-out



Buy (full ownership)

- Easy integration and the benefits of automation results in ROI in often less than a year
- MiR online ROI calculator



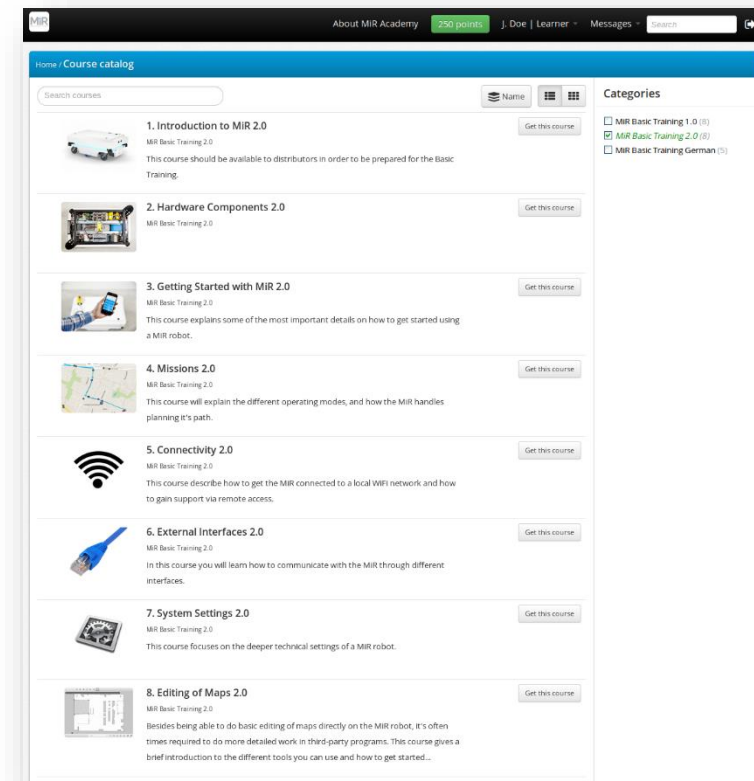
Try the MiR online ROI calculator

*Ask your MiR Sales Rep if leasing is available in your region

Ownership

Easy integration and maintenance allows you to take full ownership of your MiR robots from the beginning

- ▶ No cost associated with altering setups
- ▶ Low total cost of ownership
- ▶ Increased flexibility because you control the robots yourself
- ▶ MiR Academy – free online training tool



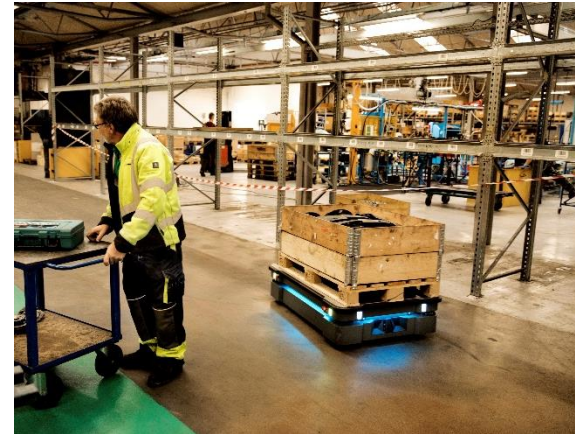
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A Solution For All Industries

Everywhere, where internal transportations take place, MiR robots can optimize the processes

- ▶ Automotive
- ▶ Electronics
- ▶ Third-party logistics (3PLs)
- ▶ Hospitals
- ▶ Food & Beverage
- ▶ Life Science
- ▶ Consumer Goods
- ▶ ...and many more



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Cases

Case Stories



Case: Ford

FORD has deployed three **MiR100** robot, which delivers 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.



Case: STERA

Stera has deployed a **MiR500** autonomous mobile robot to deliver components from the warehouse to the production and finished goods back to the warehouse.



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.

Case Stories



Case: Cabka

A **MiR500** equipped with a MiR500 Lift is a key component in a fully automated production line at pallet manufacturer, Cabka. The MiR500 is loaded with finished pallets by a six-axis robot and transport them from production to a separate staging area as soon as the job is complete, keeping the production floor clear.



Case: Visteon

Four **MiR200** robots with different top modules deliver parts for production and collect waste materials at Visteon. The robots have a ROI on less than a year due to their user-friendliness, fast implementation and the increased productivity



Case: Nidec

To keep production processes lean and stocks low, NIDEC relies on three **MiR100s** equipped with MiRHooks to transport material and empty containers between the warehouse and assembly lines. The three robots drive 11 km/day each.

Case Stories



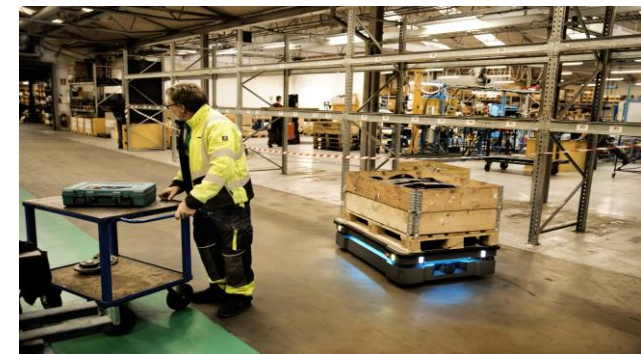
Case: Hitachi

A **MiR200** improves the productivity and safety at Johnson Controls Hitachi. The mobile robot picks up shelving units in the storeroom and carries materials to the production line where it picks up waste packaging. The robot operates during a full 8-hour shift and has eliminated electric trolleys from the factory floor, making it a safer place for all.



Case: Kamstrup

At Kamstrup three **MiR100** robots equipped with conveyors are important factors. They have challenged the traditional conveyor belts in the production hall in which semi-finished and finished items are to be transported between production lines and robotic cells.



Case: Kverneland

Kverneland is using a **MiR500** to reduce the amount of indoor truck driving in order to improve the working environment and productivity.

Questions?

Thank you

MiR