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# ABB ROBOT: SEMPLICITA', SOSTENIBILITA' E INTELLIGENZA ARTIFICIALE





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## Our Business Areas



**Electrification**



**Motion**



**Process  
Automation**



**Robotics & Discrete  
Automation**





# Robotics & Discrete Automation Business Area

## RA globally in 2023



 **Revenues** \$3.6 bn

 **Employees** ~11 k

### Divisions

- Robotics
- Machine Automation

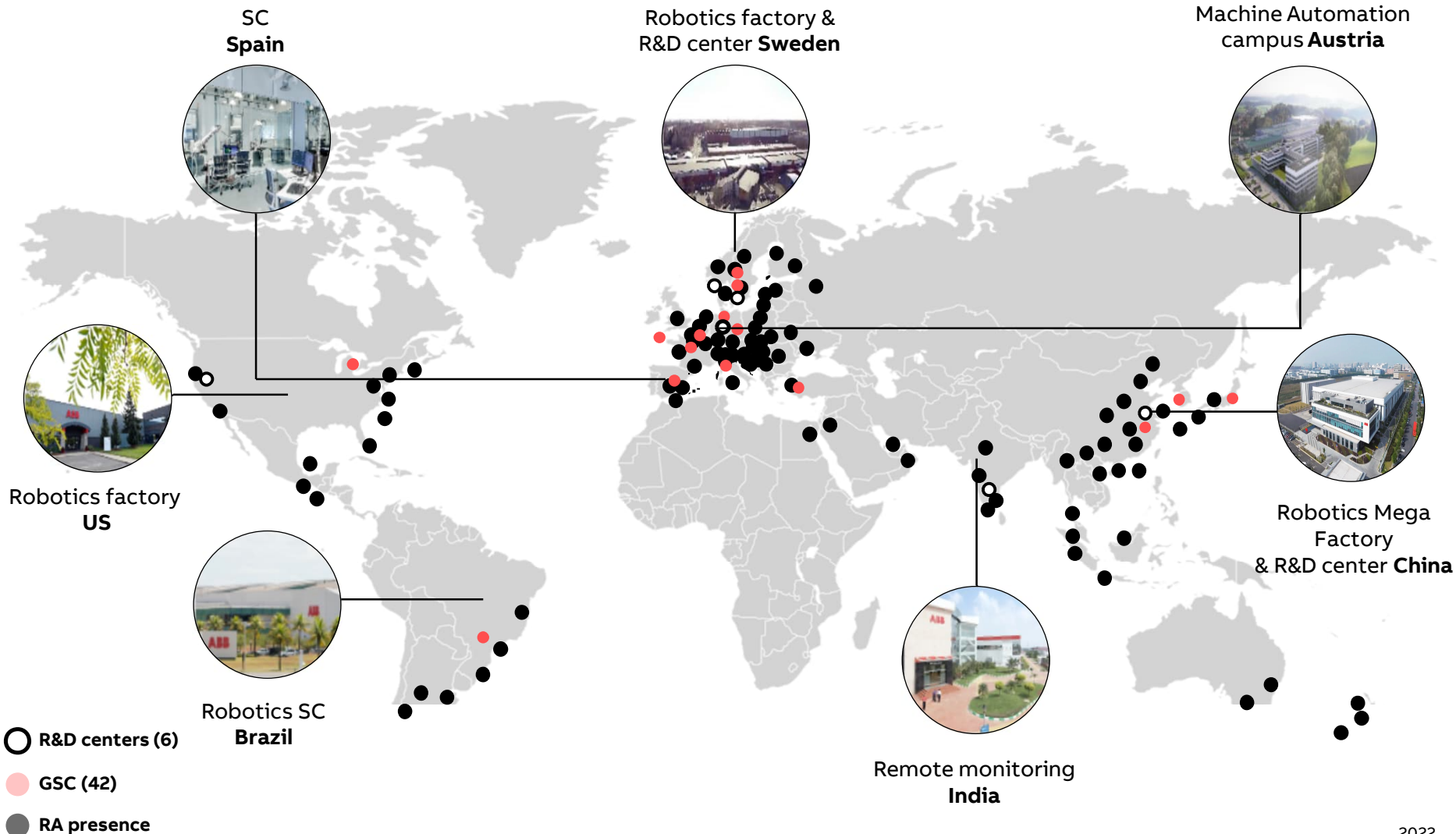
ABB's Robotics & Discrete Automation business area enables companies to become more resilient, flexible and efficient through our value-added solutions in robotics as well as machine and factory automation.

With our integrated automation solutions, our application expertise across a wide scope of industries and our global presence, we deliver tangible customer value.

Our focus on innovation includes extensive work in artificial intelligence, as well as an ecosystem of digital partnerships and the expansion of our production and research capabilities.

# A global player

We are close to customers locally, across the value chain



**42** Global Solution centers

**11,000** Employees

**1300** Service Experts

**50+** Countries

**100+** Locations

Global Service & Sales network



Unique Authorized Value Provider network



# ABB Robotics IT

## Local Presence

### Milano HQ

#### SESTO SAN GIOVANNI ABB Head Quarter

- Sales
- Technical
- Engineering
- Management

### Milano

#### VITTUONE Robotics Technology Center

- Global Solution Center
- Showroom
- Training Center
- Workshop

### Torino

#### Paint System

- Sales
- Technical
- Engineering
- Management

### Napoli

#### CASTELNUOVO DI NAPOLI Sales

### Bologna

#### CASTEL MAGGIORE Sales

Tremezzina



Sesto San Giovanni



Vittuone



Santa Palomba



Genova



Bergamo



Dalmine



Garbagnate  
Monastero



Terranuova  
Bracciolini



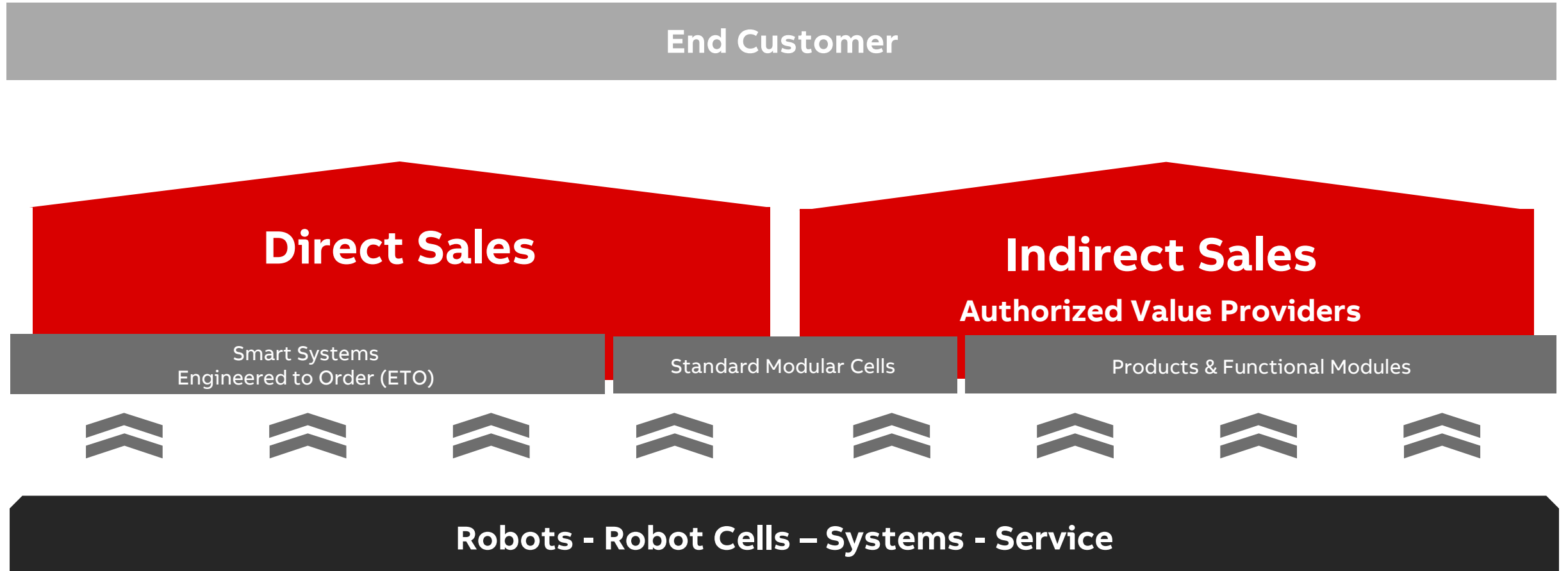
Frosinone



Marostica

# ABB Robotics IT

## Dual channel market approach





# ABB Robotics IT

## Our offer



**Robots & Controllers**



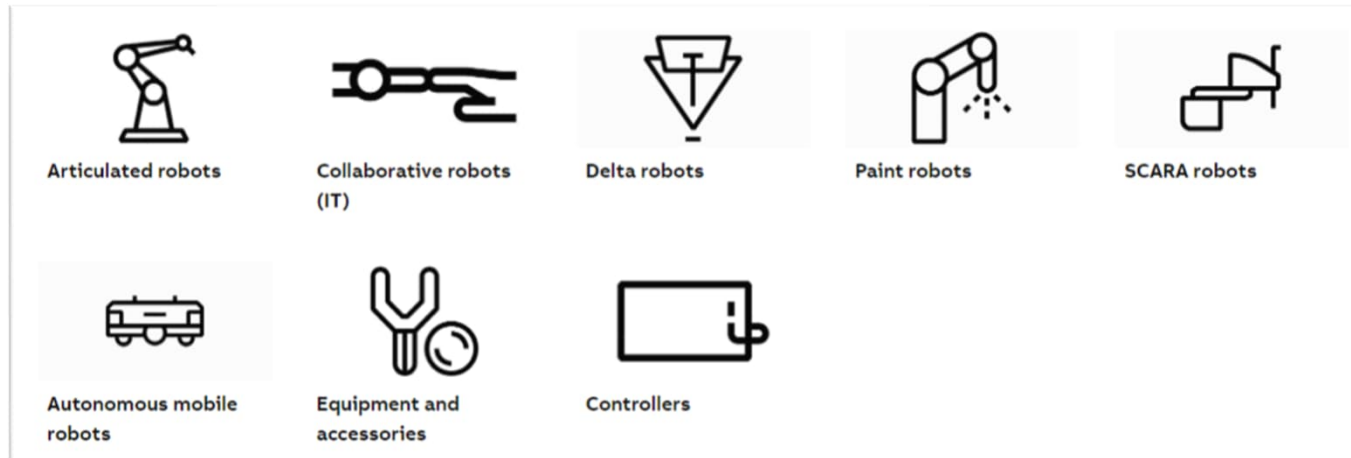
**Software & Digital**



**Solutions**



**Service & Training**

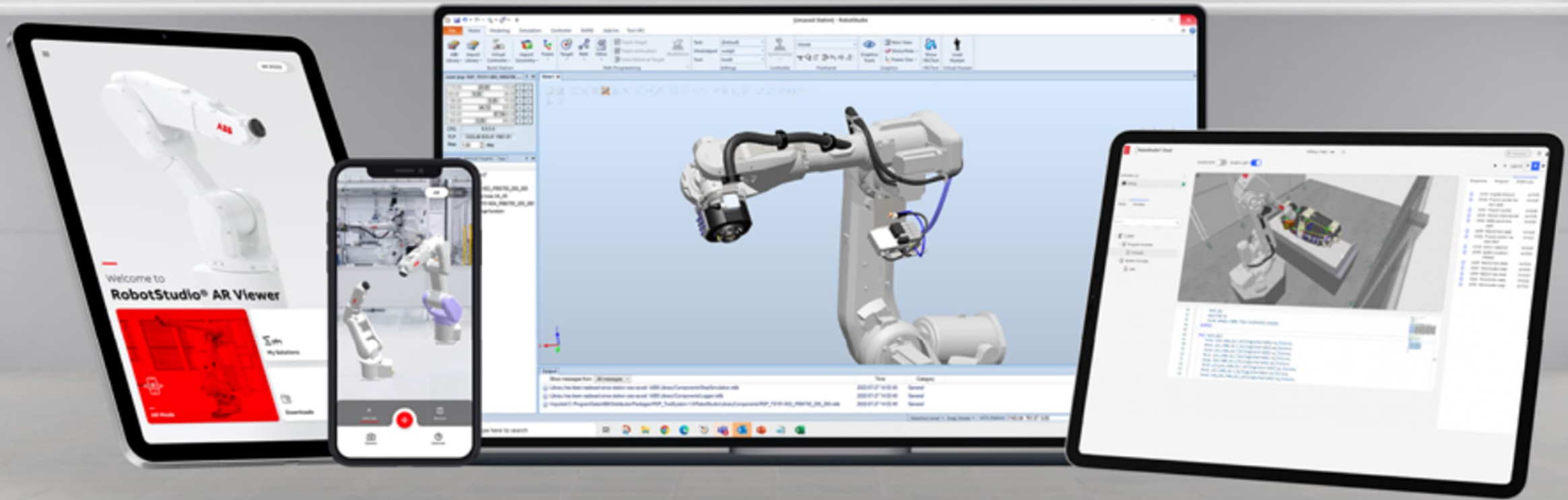


# Robots & Controllers



Il portafoglio prodotti più completo, innovativo e integrato del mercato.... Ma non sarebbe ancora sufficiente !





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## Software & Digital RobotStudio® Suite

RobotStudio® is a software suite that allows you to **program and simulate robot movements offline**, before they are implemented in the real world. This can significantly reduce the time it takes to set up and commission robots.

# RobotStudio®

## Benefits



### Maximize productivity

Program and test in a 3D environment an exact copy of your production cell without disturbing ongoing production.



### Unleash flexibility

Quickly plan and design new robotic solutions to repurpose facilities for product modifications.



### Speed up time-to-market

Reduce downtimes to zero and commissioning times from days to hours.



### Sustainable from the start

Up-front robotics simulation and process optimization leads to minimal energy usage and waste.



Here are the key features of RobotStudio®:

- **Offline programming and simulation:** Create and test robot programs in a virtual environment, without interfering with ongoing production.
- **Virtual controller technology:** Accurately simulates real-world robot behavior, ensuring your program will work correctly once deployed.
- **Collaboration tools:** RobotStudio Cloud allows teams to work together on robot cell designs from anywhere in the world.
- **Augmented reality viewer:** Visualize robots in your actual work environment using a free mobile app.

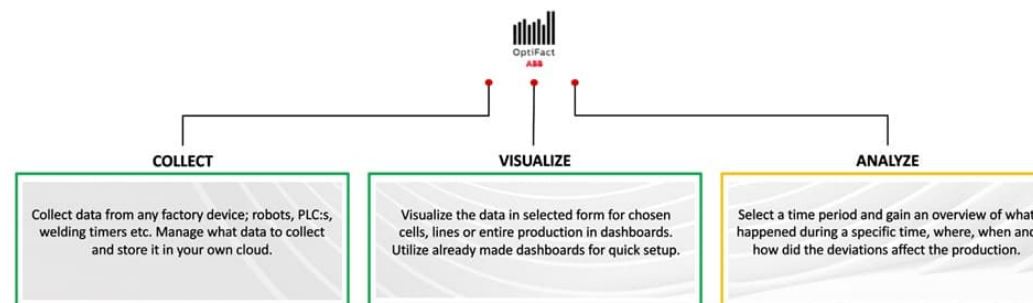
By using RobotStudio®, you can save time and money during the robot commissioning process.



# Software & Digital

## OptiFact™ Digital Platform

OptiFact™ is a modular software platform to **collect**, **visualize** and **analyze** data from any device in production facilities





# Optifact™



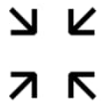
## Productivity

Collect data from hundreds of factory devices to determine key indicators such as cycle time accelerating productivity gains



## Cost-efficiency

Increase the production time by 20% limiting the number of errors in your factory



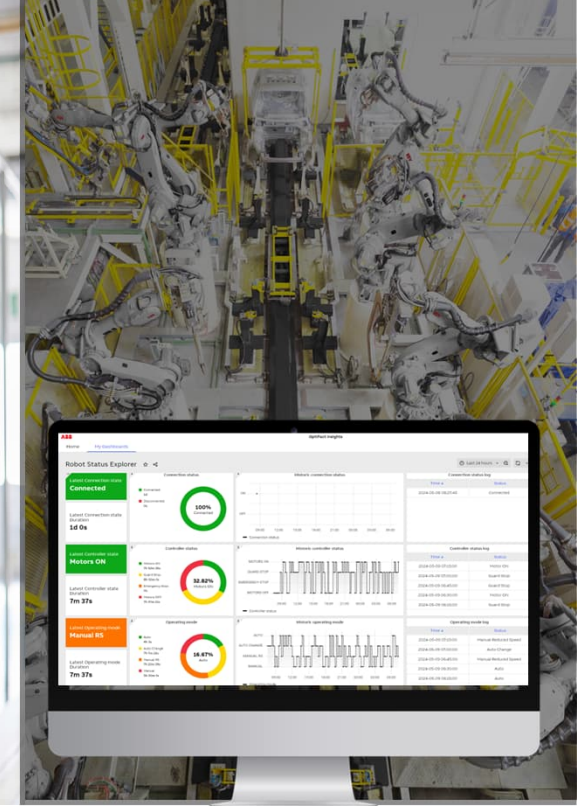
## Quality

Make sense out of your data and unlock up to 25% of your most valuable experts' time



## Simplification

Analyze your data within 3 clicks through a selection of ready-made dashboards or designing your own



Here are the key features of Optifact:

- **On Promise solution:** OptiFact can run disconnected and stay local within the customer IT system. No data must be sent to ABB
- **Data from any device:** OptiFact is not limited to robot data, collect data from any PLC, OPC UA, MQTT devices.
- **Made for Non-programmers:** Enrich your data using Node-Red and Grafana
- **Build your own view and content:** OptiFact lets users build their own **dashboards** and views and add the applications they think are useful freely. It is an open platform

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# OmniVance™ Application cells



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# OmniVance™ Application Cells

Expert robotics solutions  
for next-generation flexibility.

Backed by over 50 years of expertise in robotic automation, ABB's OmniVance application cells help customers unlock new levels of flexibility and simplicity across multiple industries. By combining robot, gripper, controller, software, and other components into a single application-specific solution, OmniVance cells require minimal integration effort. The standardized design of OmniVance cells, coupled with ABB's global footprint ensures quick changeovers, easy expansion, and timely support across multiple sites, globally.



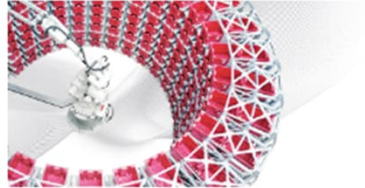
# OmniVance™ Application cells

## Our portfolio



Machine Tool Tending Applications

**OmniVance™  
FlexLoader M cell**



Robotics Storage and Retrieval  
Application

**OmniVance™  
FlexBuffer™ cell**



3D Quality Inspection

**OmniVance™ 3D Quality  
Inspection Application**



Robotic Arc Welding Cells

**OmniVance™ FlexArc  
family**



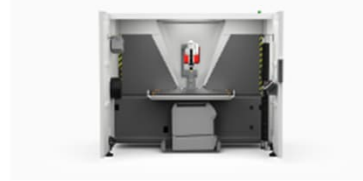
Robotic Machining cells

**OmniVance™ Machining  
Cell**



Robotic Clipping cells

**OmniVance™ Clipping  
Cell**



Robotics Arc Welding Cell

**OmniVance™  
Collaborative Arc  
Welding Cell**



Robotics Machine Tending Cell

**OmniVance™  
Collaborative Machine  
Tending Cell**



# ABB Robotics IT

## Service for robots, cells and robot systems

### Our service portfolio



ABB Robot Service Agreements



Installation and Commissioning



Spares and Consumables



End of life services



Training



Maintenance



Condition-based maintenance



Remanufacturing and workshop repair



Extension, upgrades and retrofits



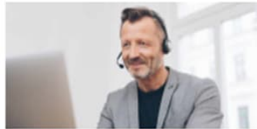
Replacements



Repairs



Connected Services



Technical Support



Buy Back

At ABB we care about the good health of your installed robots. We service what we deliver, from the moment it is installed to the end of its service life. We don't believe in "one size fits all."

**We tailor a service package** in close cooperation with you for your systems, your application cells and of course for your robots.

**We stand ready to help increase** the performance, uptime and lifetime.

**We offer our service globally** with over 1,300 service specialists in more than 53 countries and over 100 locations.

Our promise is that we will provide **world-class services** wherever ABB robots and systems are installed and be one of the main reasons why customers continue to buy from ABB.

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# ABB Robotics IT Training

## Our offering



Teacher-led Training



Online Learnings



Tutorials and How to  
videos



Partner training (login  
required)



[ABB Robotics Training Center | ITALY](#)

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**Benvenuto in  
ABB Robotics Training Center**

# ABB Robotics IT Education



## Impara con ABB

ABB mette a disposizione delle scuole una gamma di prodotti e servizi, dando la possibilità agli studenti di acquisire le competenze idonee spendibili nel mondo del lavoro riguardo due figure professionali molto ricercate: progettista di isole robotizzate e programmatore robot/cobot industriali.

### ABB RoboCup 2025

Dopo il grande successo dell'edizione 2024 e l'hype ottenuto su media e social media, studenti e docenti non vedono l'ora di unirsi a noi nel prossimo capitolo di questa competizione nazionale. E tu?

[Iscriviti all'ABB RoboCup 2025!](#)

### ABB sui libri di scuola

In collaborazione con Hoepli sono nati due volumi, di livello base e avanzato, su percorsi teorico-pratici di robotica industriale e collaborativa pensati per gli istituti di secondo grado.

[Scopri di più](#)

### Per te, un vero corso di robotica

Scopri il futuro della robotica con il corso ABE per studenti e docenti delle scuole superiori. Clicca qui sotto per avere tutti i dettagli e per richiedere tutte le informazioni necessarie per iscriverti e diventare un vero esperto!

[Scopri di più](#)





# Robot ABB & AI

# ABB ROBOT: SEMPLICITA', SOSTENIBILITA' E INTELLIGENZA ARTIFICIALE

## SEMPLICITA'

### RobotStudio's Automatic Path Planning



- Calcola il percorso ottimale dei movimenti robot nella cella in pochi secondi
- Movimenti sempre fluidi e privi di singolarità
- Tempo di ciclo ridotto fino al 50%
- Consumo di energia si riduce fino al 10-15%

## SOSTENIBILITA'

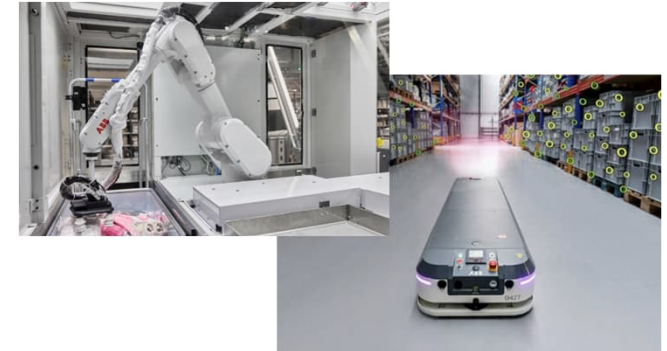
### New generation OmniCore™ controller



- Consumo energetico ridotto consente di risparmiare fino al 20% di energia
- La nostra tecnologia di rigenerazione dell'energia ci consente di recuperare in frenata l'energia altrimenti dissipata

## INTELLIGENZA ARTIFICIALE

### Artificial intelligence in Robotics



- **Item Picker:** Ora è possibile identificare oggetti precedentemente sconosciuti, riconoscerli e associargli specifici punti di presa adatti
- **Visual SLAM** è una tecnologia di navigazione che combina l'intelligenza artificiale e visione 3D utilizzando telecamere standard.

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# ABB ROBOT: SEMPLICITA', SOSTENIBILITA' E INTELLIGENZA ARTIFICIALE

ABB Robotic Item Picker

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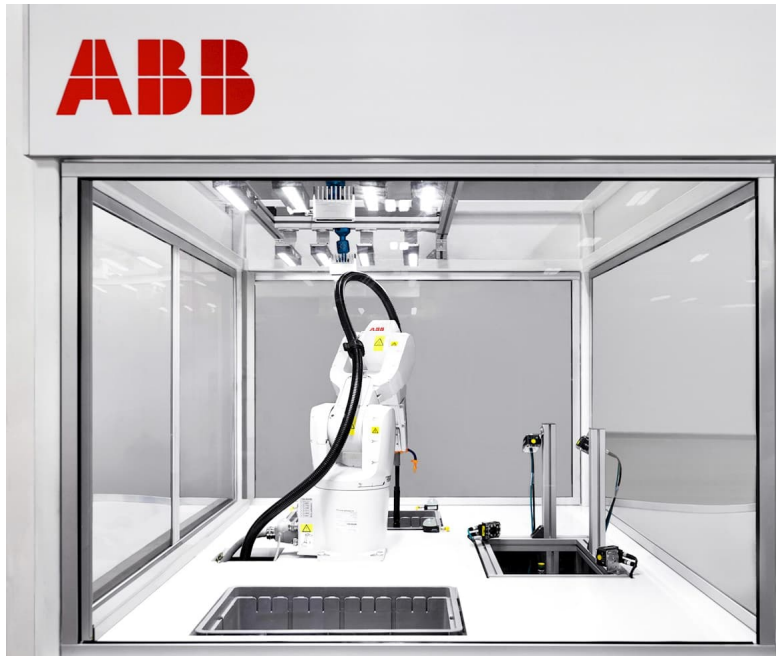
## ABB Robotic Item Picker

Pick and place functional package



# ABB Robotic Item Picker

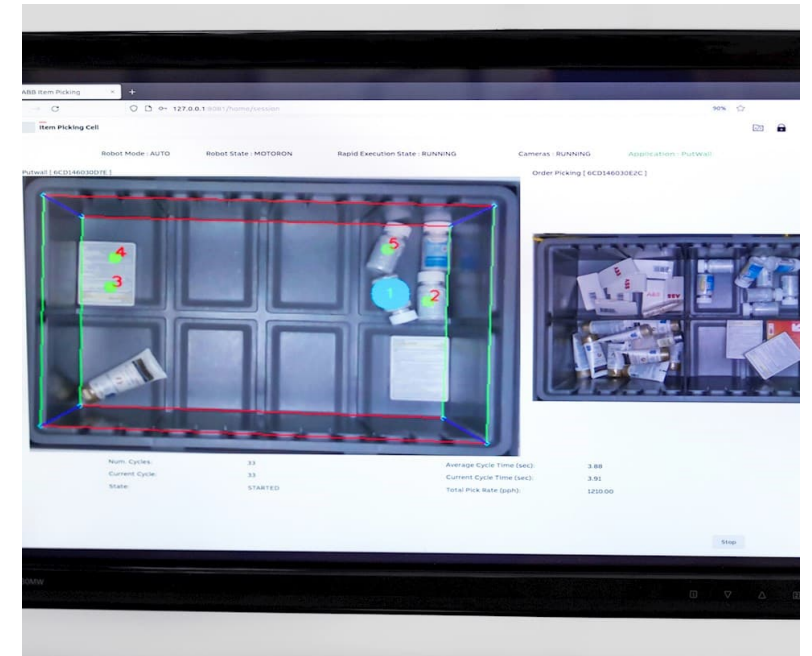
## Simplicity



## Flexibility



## Integration



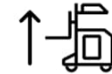
# ABB Robotic AMR Visual SLA



2000 Kg



± 5mm



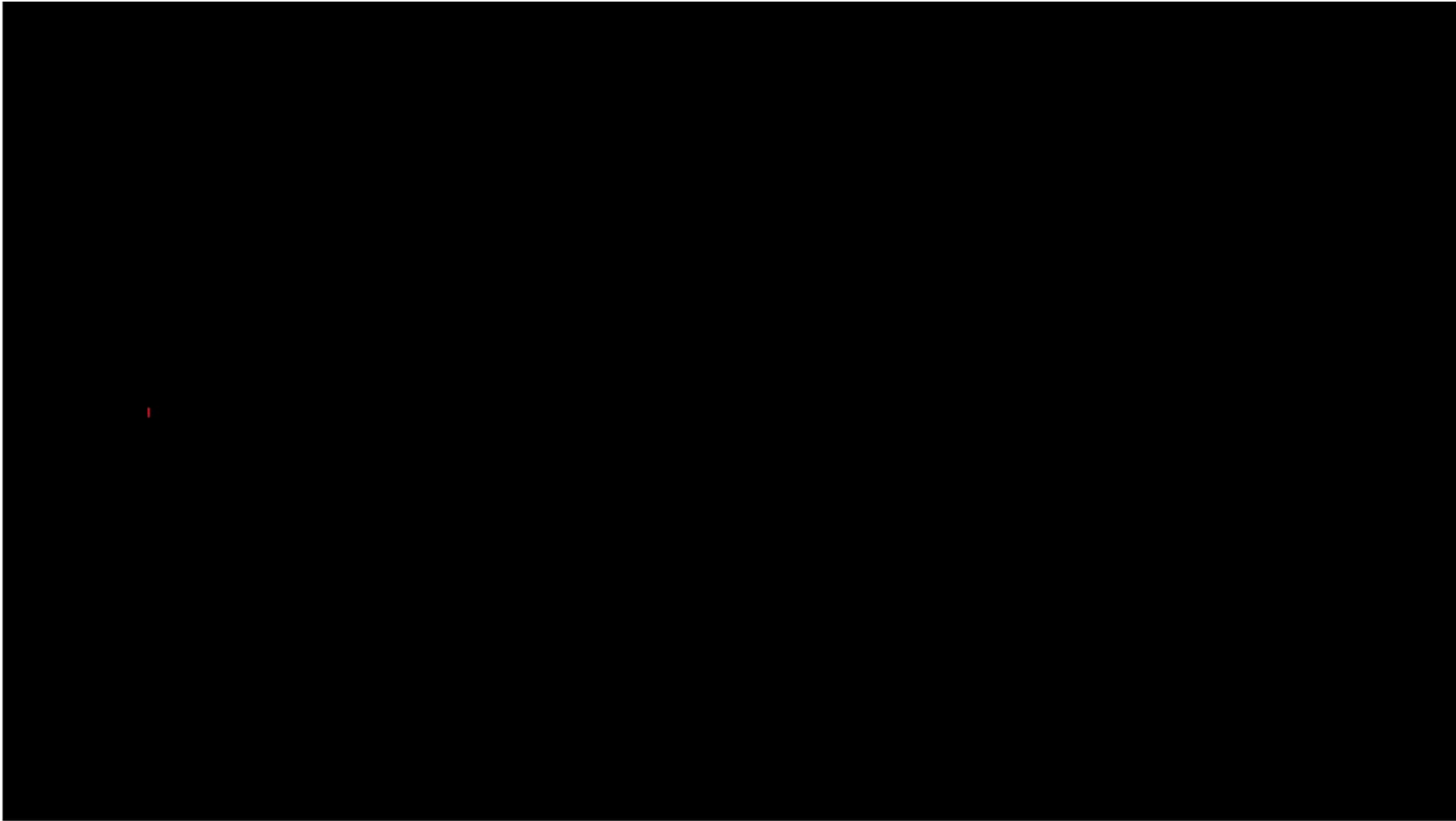
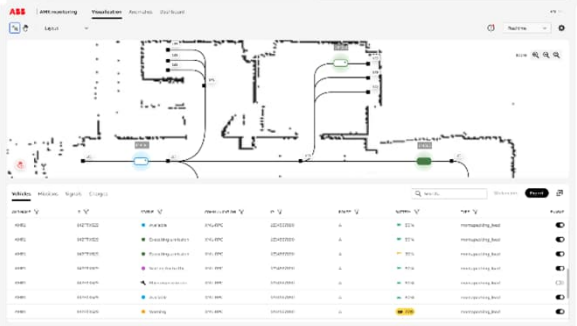
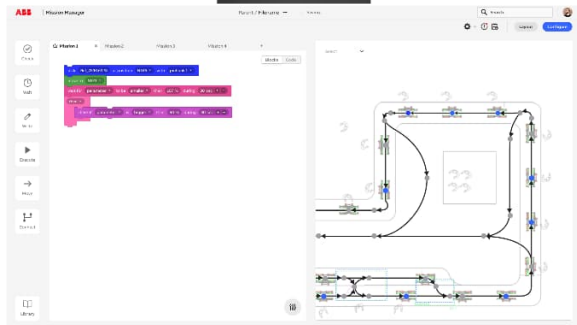
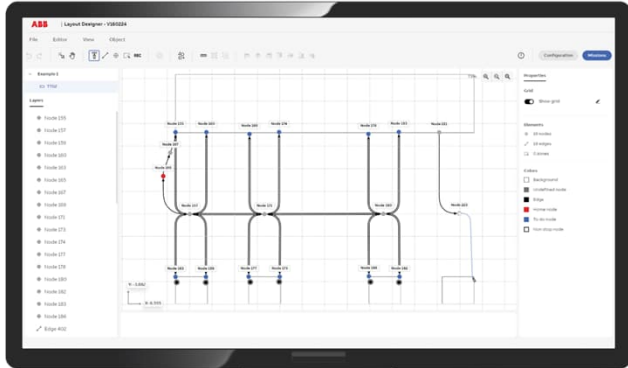
8500 mm



AI enable on Vslam



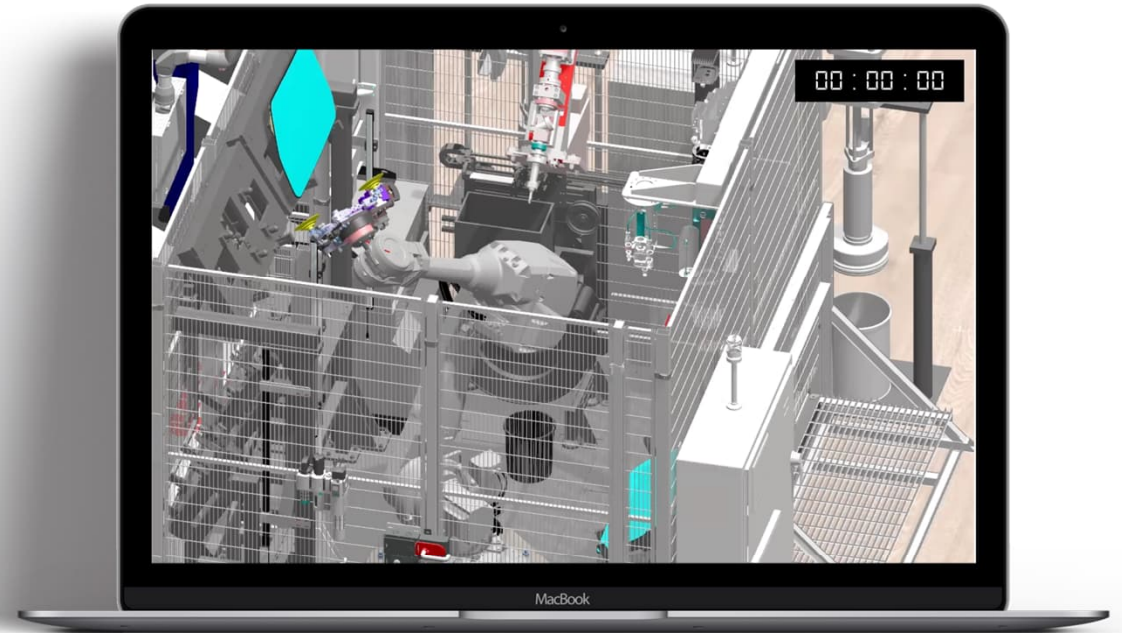
# ABB Robotic AMR Studio



# Automatic Path Planning with RobotStudio®



- Programmed by an ABB engineer in **90 minutes**
- Cycle time **3.24 seconds**
- Mechanical energy consumption **3.6 KJ**



- Generated by Robotstudio in **2 seconds**
- Cycle time **1.70 seconds**
- Mechanical energy consumption **2.3 KJ**



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# **ABB Robot & Soluzioni COLLABORATIVE**

# Key Characteristics of Collaborative Robots

Why they are so popular with users



- Enable fenceless installation
- Safe approachable industrial design
- Comprehensive safety functions toolbox including safe move, safe speed, safe force, safe position, and more



- Quick installation and calibration
- Moving the robot by hand with lead-through
- Easy programming of robot for non-specialists
- Easy to handle for operators



- Light-weight, small footprint robot
- Smaller, leaner installations compared to industrial robots
- Can be easily moved around
- Applicable in a large variety of applications
- Low-Threshold deployment for SMEs
- Ecosystem peripheral components available

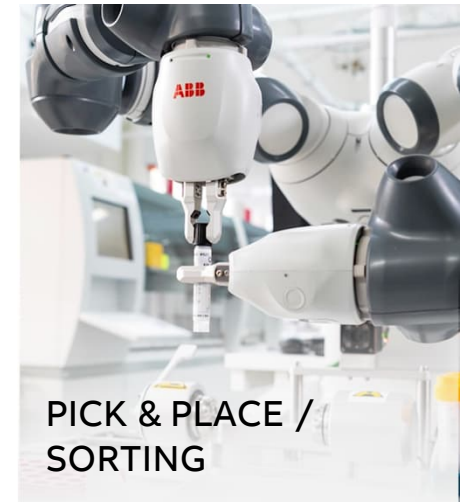
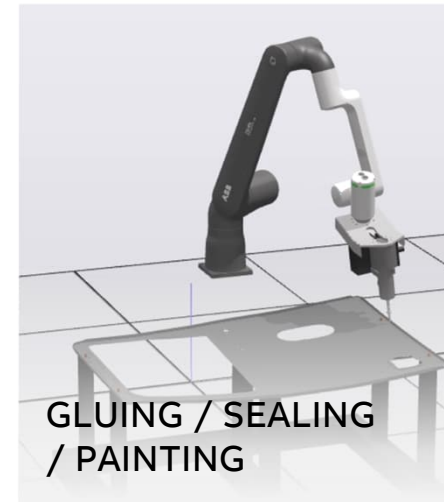
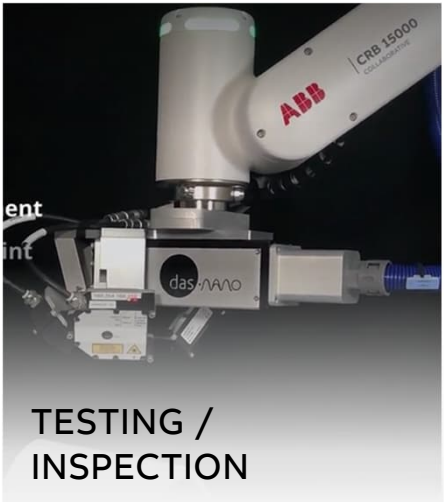
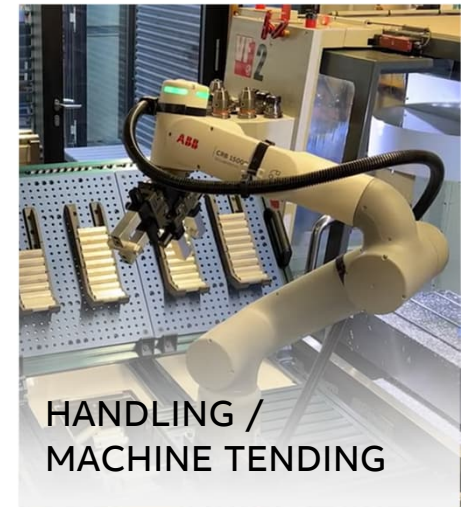
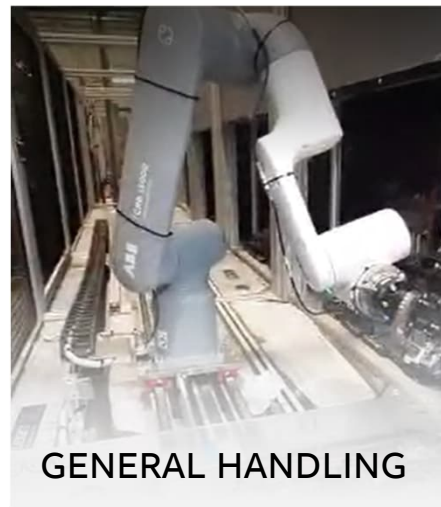
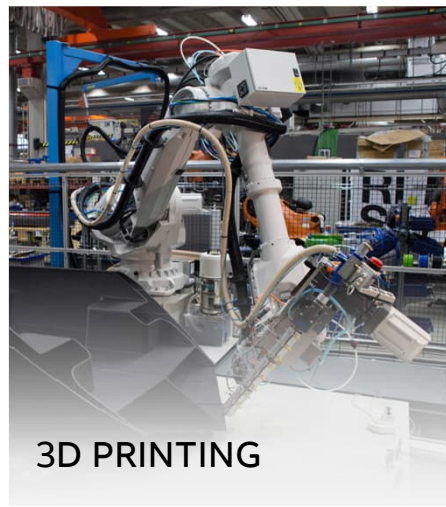


- As high speed as possible while maintaining safety
- High precision for assembly tasks
- Easy to integrate into existing production lines
- Make automation of smaller production batches cost-effective

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# Common cobot applications

Let's discuss together possible deployments and different needs



# ABB's Collaborative Robotics Portfolio

The most diverse product range in the market for all collaboration needs, simplifying...everything



YuMi® IRB 14000/14050



GoFa™ CRB 15000



SWIFTI™ CRB 1100/1300

## Ease-of-use Software



Wizard easy programming



Robot Assist App

## Ease-of-use for developers



Robot Studio



ABB AppMaker



Skill Creator for Wizard





**YuMi®**

# The YuMi® family

The world's first truly collaborative robot. With one or two arms

## Key features:

- 500g payload
- Human-like reach of 800mm with hand (559mm without)
- Extremely agile with 7 joints per arm
- Lightweight arms, soft paddings and immediate collision detection guarantee best in class safety
- Maximum speed of 1,5m/s
- Superior lead through teaching anywhere on the robot
- Standard SmartGrippers with optional integrated camera



# ABB's YuMi® Was Designed to Work Alongside Human Co-workers



- Human-like arm reach and speed
- Lightweight & compact with integrated controller inside “body”
- Fits in spaces designed for manual assembly
- Smart Gripper with integrated servo, vision and vacuum
- 7 axes per arm enable re-orientation in tight spaces
- Dual- and single-arm versions available





**GoFa™**



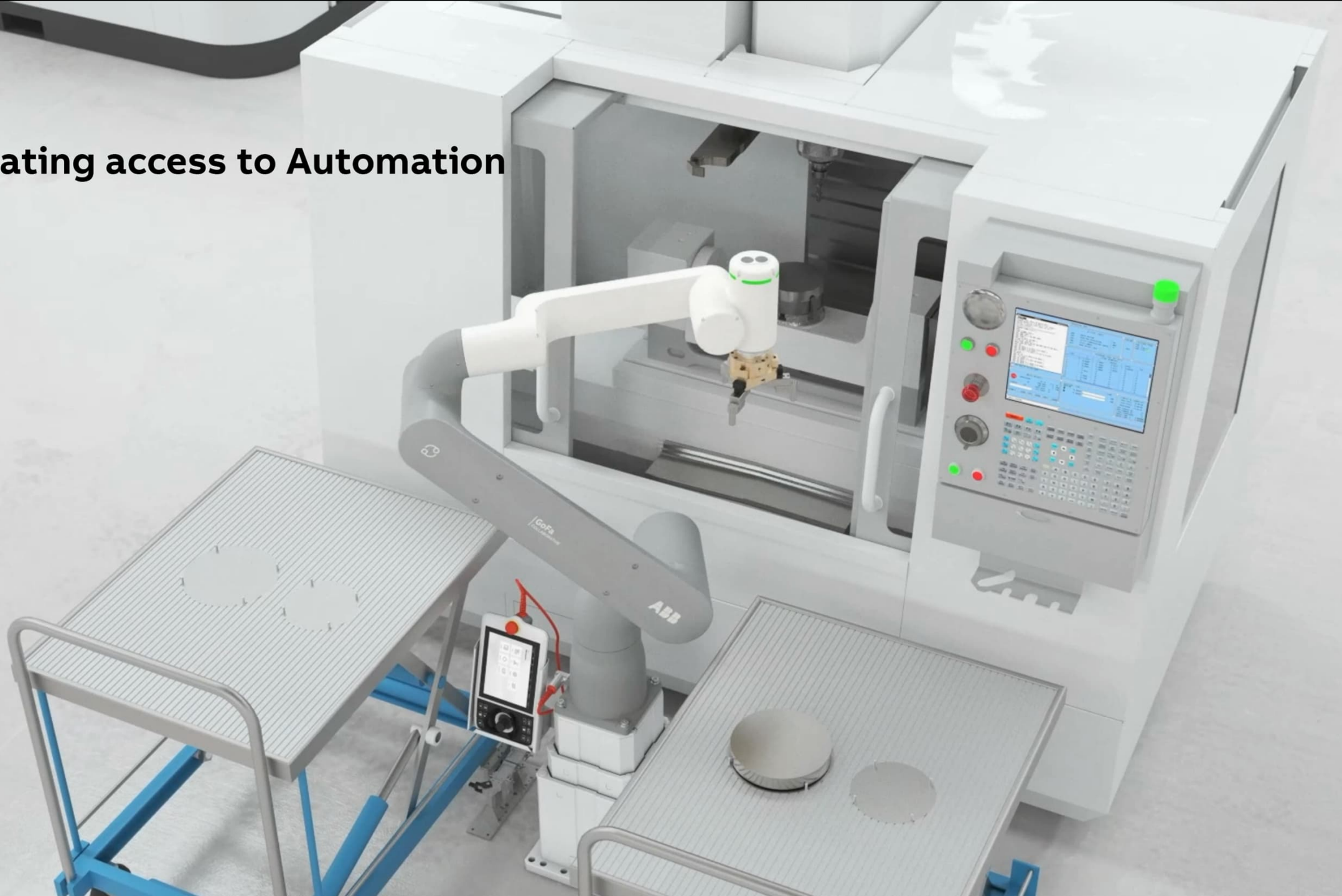
# GoFa™

Adaptive cobot, best in class for payload/reach ratio, pose repeatability, path accuracy, mechanical arm robustness and reliability



	<b>GoFa 5</b>	<b>GoFa 10</b>	<b>GoFa 12</b>
<b>Reach</b>	0.95m (wrist) / 1.05m (flange) 10% longer than competition	1.52m (wrist) / 1.62m (flange) 14% longer than competition	1.27m (wrist) / 1.37m (flange)
<b>Payload</b>	5kg	10kg	12kg
<b>Speed</b>	2.2m/s	2m/s	2m/s
<b>Repeatability</b>	0.02mm	0.02mm	0.02mm
<b>Protection rate</b>	IP 54	IP 67 (water resistant)	IP 67 (water resistant)
<b>Clean Room</b>	Clean room ISO 4	Clean room ISO 4	Clean room ISO 4

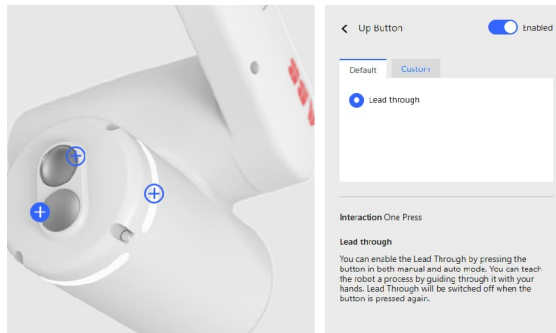
**GoFa**  
**Accelerating access to Automation**



# GoFa™ CRB 15000

## Ease of use features

### ASI (arm side interface)



Status light

2 configurable buttons, for e.g.

- Activating lead through
- Teaching a position
- Opening/closing a gripper

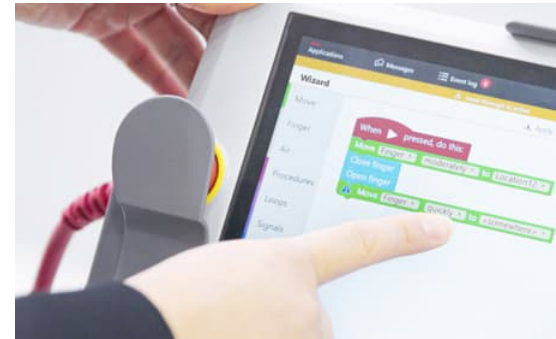
### Lead through



Smooth lead through function

Possible to grab the robot anywhere, no need to hold the lead-through button

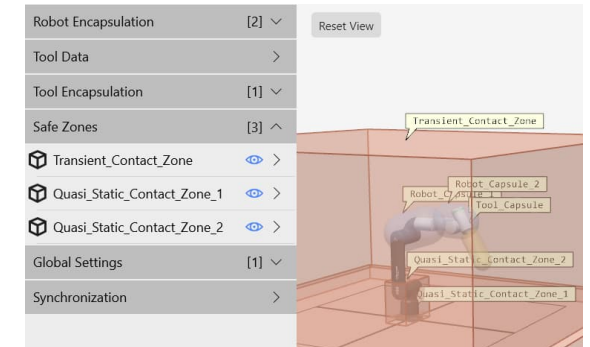
### Wizard



Graphical, intuitive programming interface

Available for Single Arm YuMi, GoFa, SWIFTI and small industrial robots

### Safety configurator



Easy configurator for SafeMove on the FlexPendant

**No robot calibration needed**




SafeMove



# Wizard Easy Programming

Programming using the Arm Side Interface (ASI)

## Configurable buttons



Up Button  
Lead through - one press

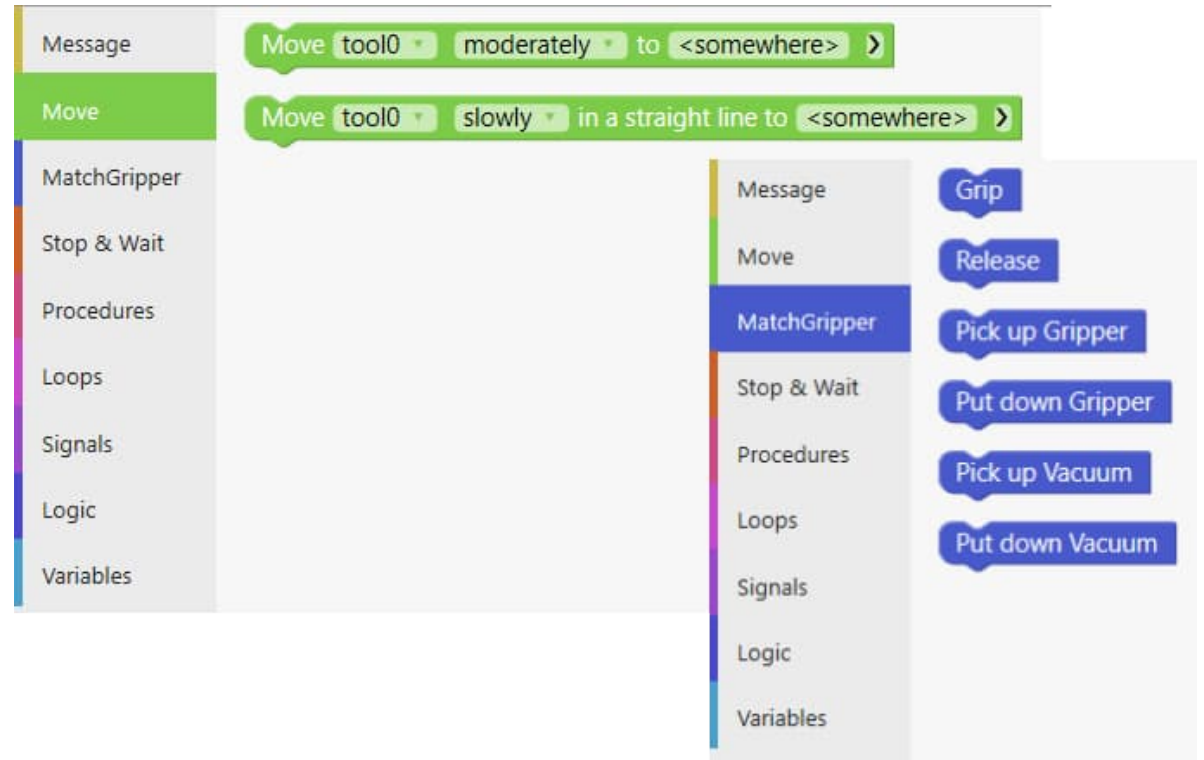
Down Button  
Add a move position - one press

Light indicator  
Enabled

Allow ASI operation in automatic mode (requires safety configuration)

**i** How to enable Lead-Through?

## Standard and custom-made blocks



Message

Move tool0 moderately to <somewhere>

Move

Move tool0 slowly in a straight line to <somewhere>

MatchGripper

Stop & Wait

Procedures

Loops

Signals

Logic

Variables

Message

Grip

Release

Pick up Gripper

Put down Gripper

Pick up Vacuum

Put down Vacuum

---

# Programming using the Arm Side Interface (ASI)

New feature in GoFa to further enhance interaction and ease of use

## App on Flexpendant

- The ASI button can be used to turn on/off the lead-through function
- The ASI button can be used to add program points to the Wizard program
- A robot program can be created in minutes!





**SWIFTI™**

# SWIFTI™ CRB 1300

A lightning-fast cobot that combines industrial-level performance and innovative safety

## Key features:

- 3 variants with reach from 0.9-1.4m and payload from 7-11kg
- Speed up to 6.2m/s\*
- Up to 5x higher repeatability than other cobots
- Clip-on lead through device for each teaching
- Safety laser scanner included
- Simple yet powerful Wizard easy programming
- Integrated compressed air supply
- Industrial robot performance
- IP40 standard protection, IP 67 optional
- Full safety certification

\*This is the max speed, safe collaborative speed will be slower and depends on your application, always conduct a risk assessment for your cobot application.







## SWIFT™ CRB 1100

A lightning-fast cobot that combines industrial-level performance and innovative safety

### Key features:

- 5x higher max speed than other cobots\*
- Up to 10x higher repeatability than other cobots
- Clip-on lead through device for easy teaching
- Safety laser scanner included
- Simple yet powerful Wizard easy programming
- Integrated compressed air supply
- Industrial robot performance
- IP40
- Full safety certification

\*This is the max speed, safe collaborative speed will be slower and depends on your application, always conduct a risk assessment for your cobot application.

# SWIFTI™ CRB

## Ease of use features

### Interaction Light

- RGBW light embedded in the upper arm
- Shows safety scanner status
- Indicator for operator



### LeadThrough Device

- Detachable Lead Through Device
- Flexible mounting
- Easy to connect and remove



### Wizard Easy Programming

- Graphical, intuitive programming interface
- Support all cobots on Omnicore and IRB.
- Step by step tutorial available online



### Integrated Safety Features

- SICK Laser Scanner Microscan 3 delivered with the robot
- Mounting Kit + cables
- Easy SafeMove Configurator on the FlexPendant



SafeMove





# SWIFTI™ CRB 1100/1300

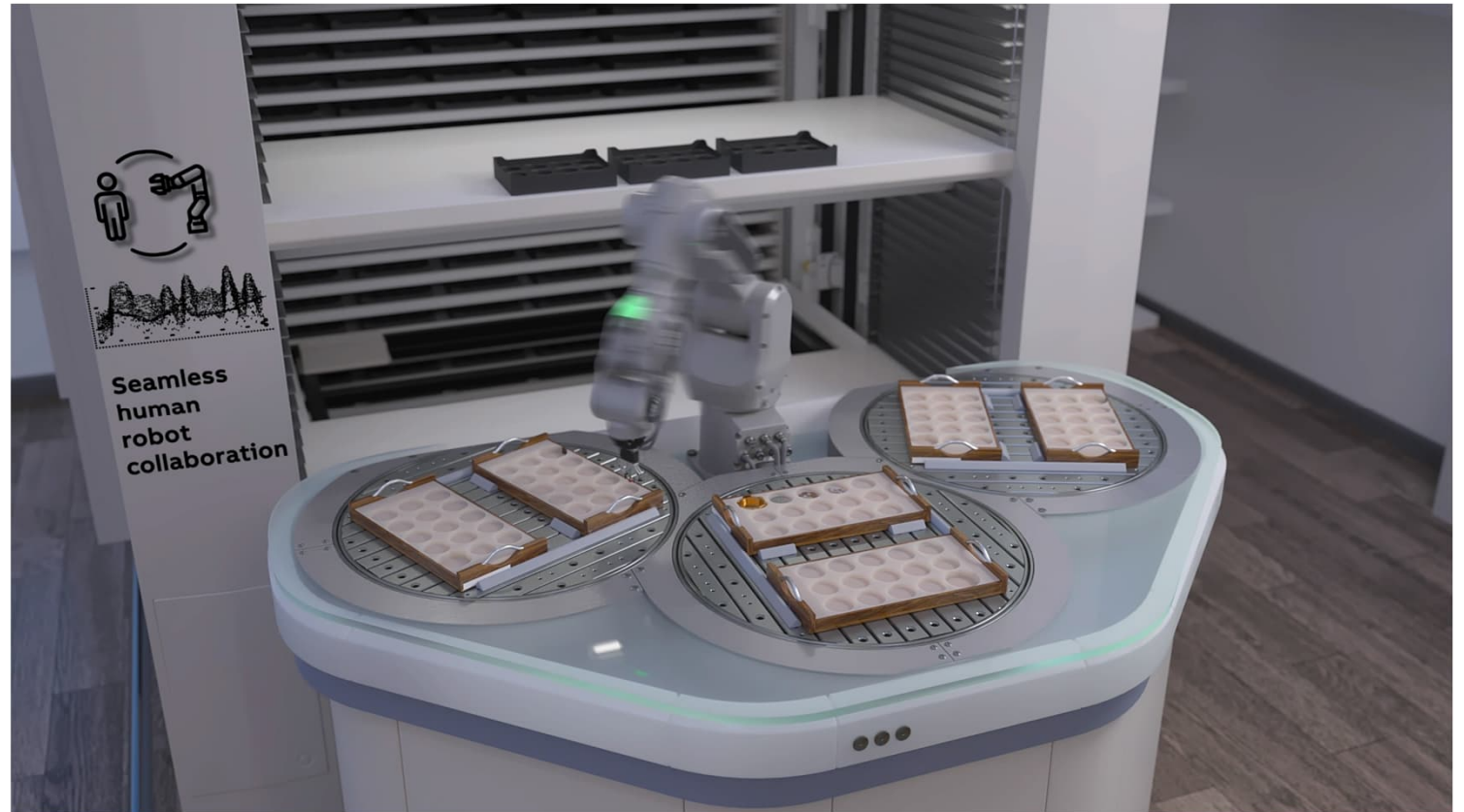
Lead-Through Device – How it works



# SWIFTI™ CRB 1100 – Value for you

## Benefits

- Safety: A moving robot will never collide with a human, thus securing safety
- Ease-of-use: Lead through teaching, Interactive light, Wizard easy programming
- Higher productivity – high speed, high precision
- Small and lightweight robot (21kg), for flexible installation (any direction mounting possible)





# SWIFTI™ - Concept



Seamless human  
robot collaboration



## Palletizing cardboard boxes with CRB 1300



A photograph of a classroom or meeting. In the foreground, a hand in a red sweater is raised. In the background, a teacher in a blue sweater is standing near a whiteboard. The scene is brightly lit, likely by large windows.

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# Questions and answers

**ABB**