

Future of Manufacturing With Collaborative Robots

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More than 85 years
of Experience in sensing & control



Founded in Osaka in 1933



Global employees

36,000 across **110 countries**



**Key social
needs &
technologies**

that factory
automation must
address

Shortage of skilled labour

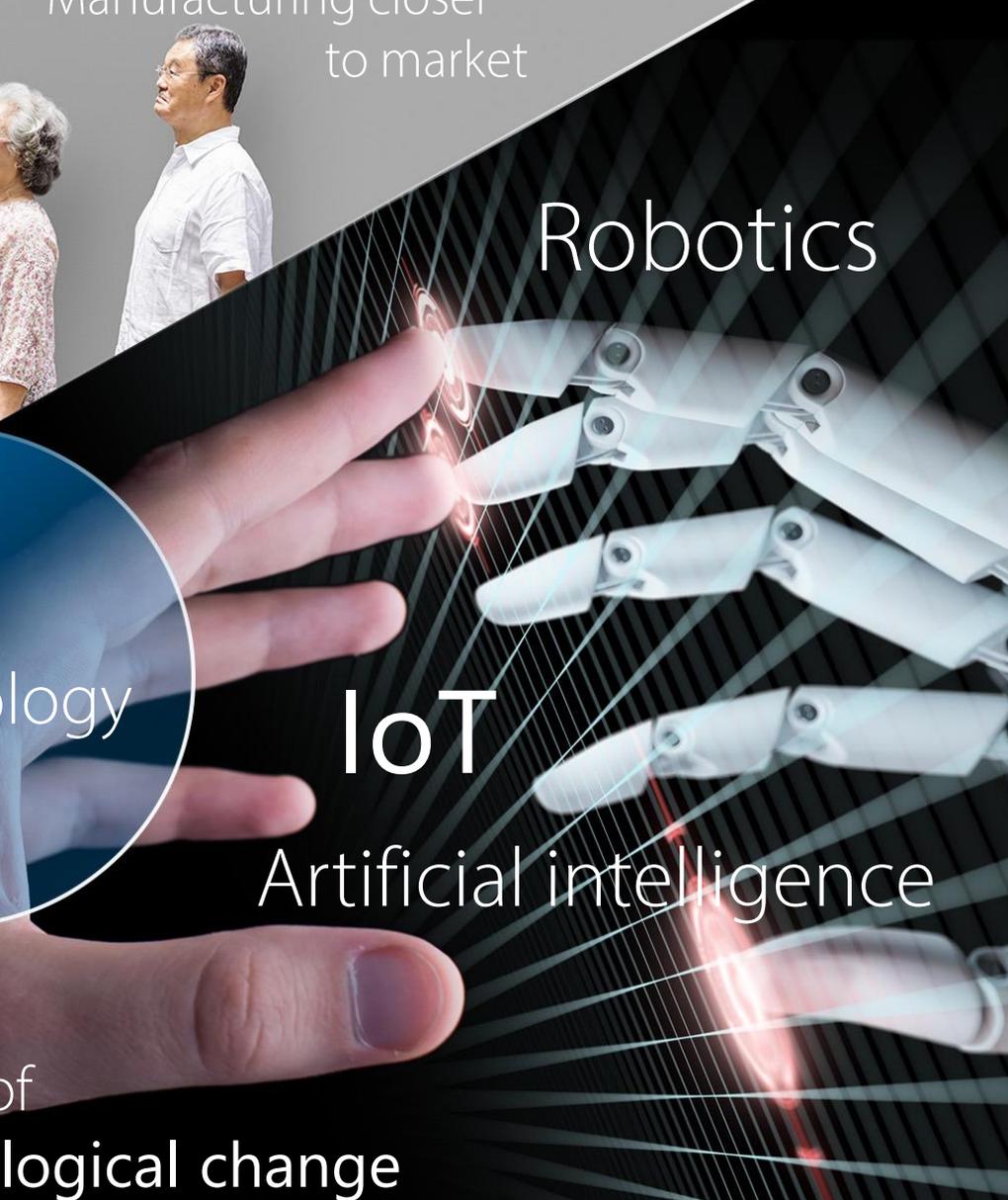
Globalization

Manufacturing closer to market



Social

Robotics



IoT

Artificial intelligence



Environment

Technology



Climate change

Environmental damage

Speed of technological change



Dynamic market

that is constantly
changing



...are more connected



...are more impatient



Consumers



...use many different
purchasing channels



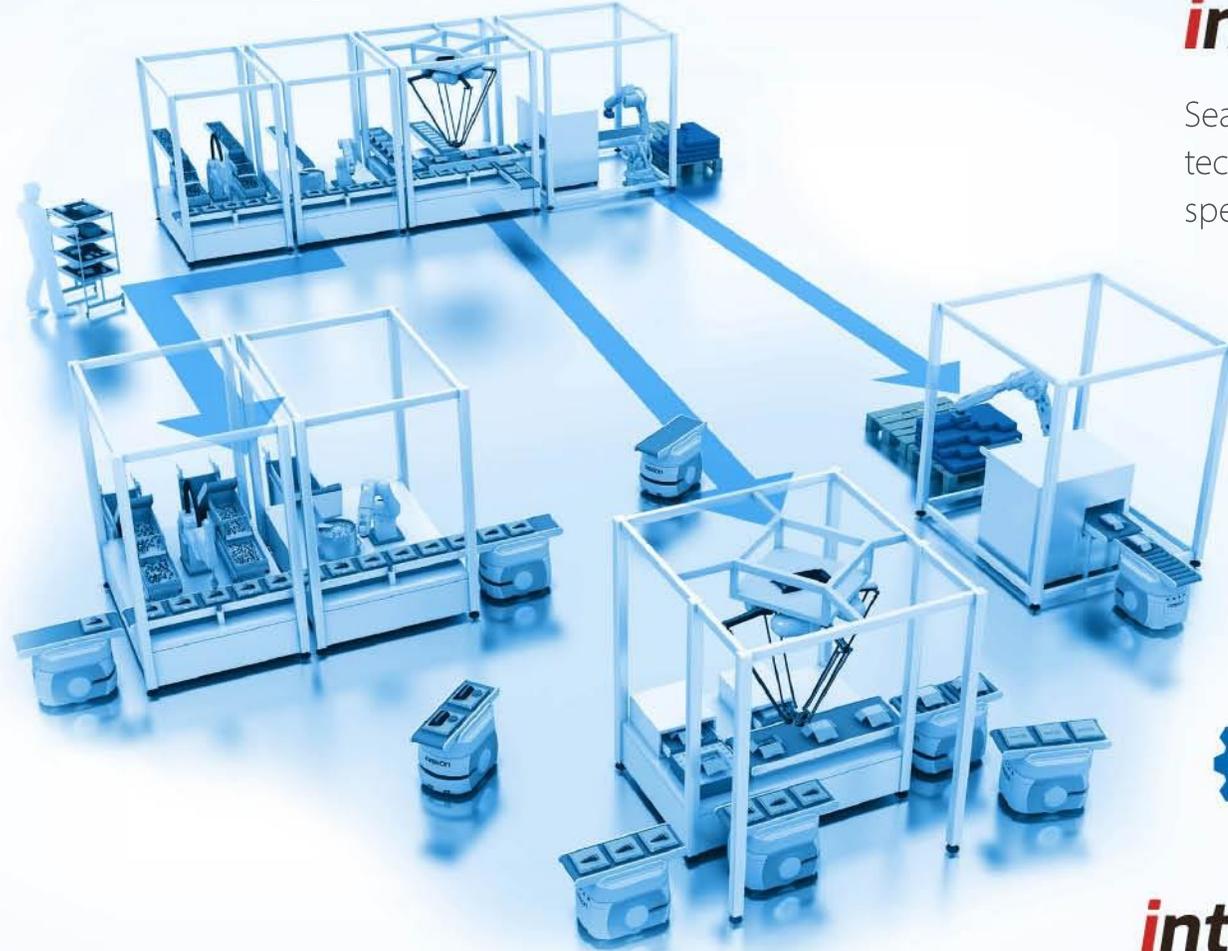
...more demanding



...want more unique requirements

i-Automation!

Creating the future of manufacturing



integrated

Seamlessly integrating different technologies & disciplines with high speed control & accuracy



intelligent

Turning factory floor data in to high value information



interactive

Creating safe & easy interaction between humans & machines

i-Automation!

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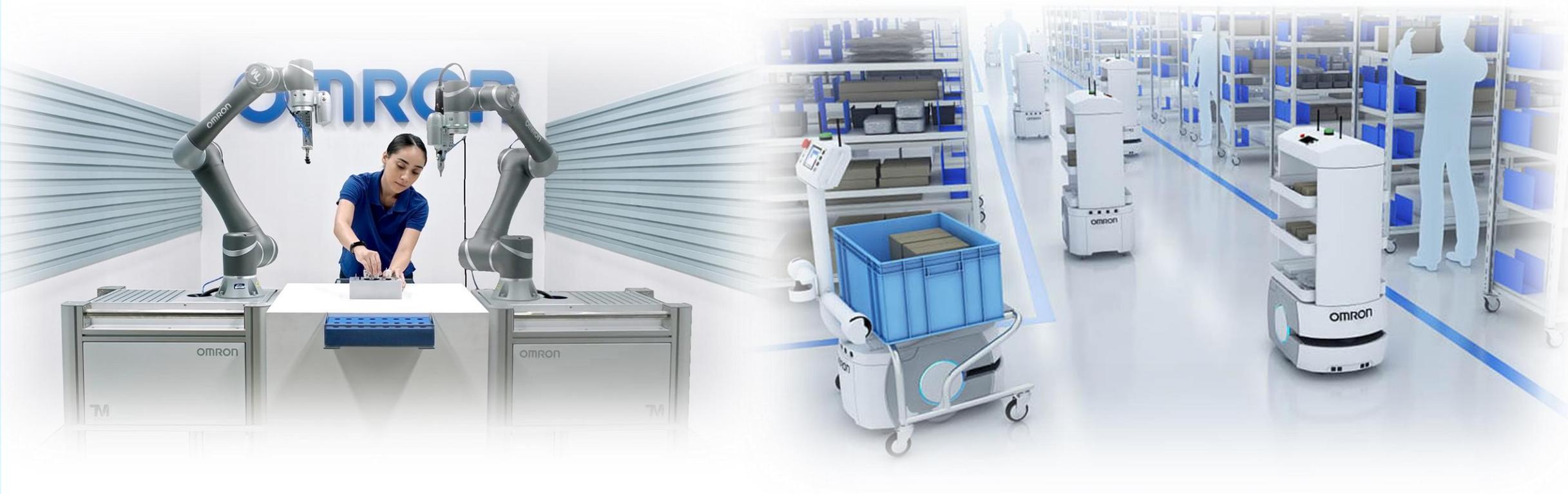
Innovation

Creating the future of
manufacturing

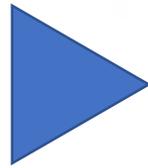
TODAY

Why Collaborative Robots?

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Why Collaborative Robots?





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TM
ROBOT

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TM
ROBOT

Why Collaborative Robots?

1

Safety

- Traditional robots cannot share a workspace with workers due to safety requirements

2

Deployment

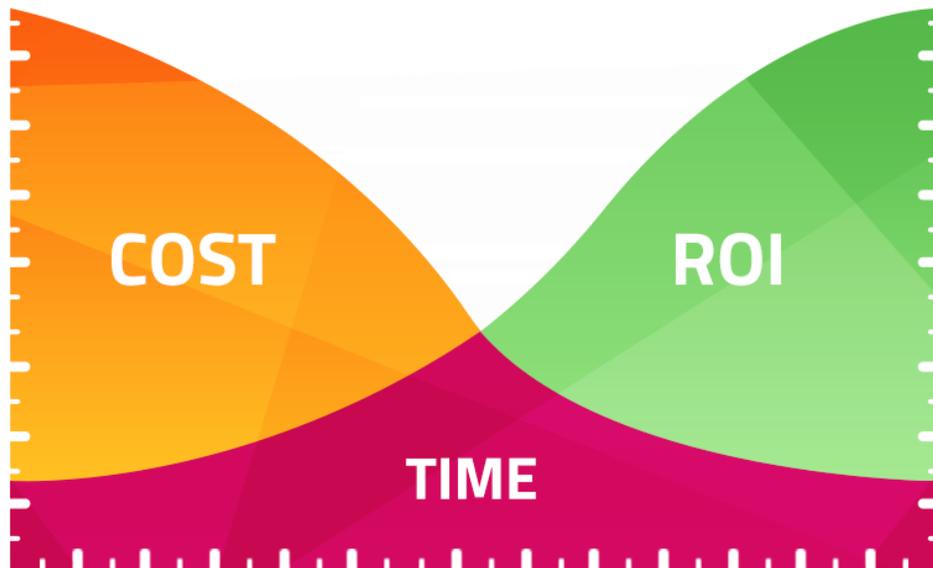
- For many companies, traditional robotic automation is difficult to program and integrate:
 - Programming requires specialized personnel
 - Need for safety cell adds to integration cost
- As result: Long Return on Investment

3

Change-over

- Repetitive tasks in high-mix very low-volume applications are often done by workers due to robots not being cost effective for regular production change-over.

Cobots are designed for Quicker ROI



- 1.) Safety
- 2.) Easy to develop
- 3.) Faster implementation



Same
Function



Different “performance VS complexity” commitment



Same
Function



Different “performance VS complexity” commitment

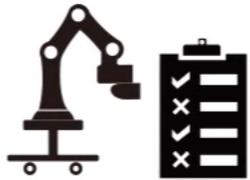
High performance

Complex for non-experts

Lower performance

Accessible for non-experts

Application examples



Quality Inspection



Testing



Screwing



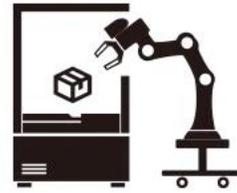
Assembling



Gluing



Loading & Unloading

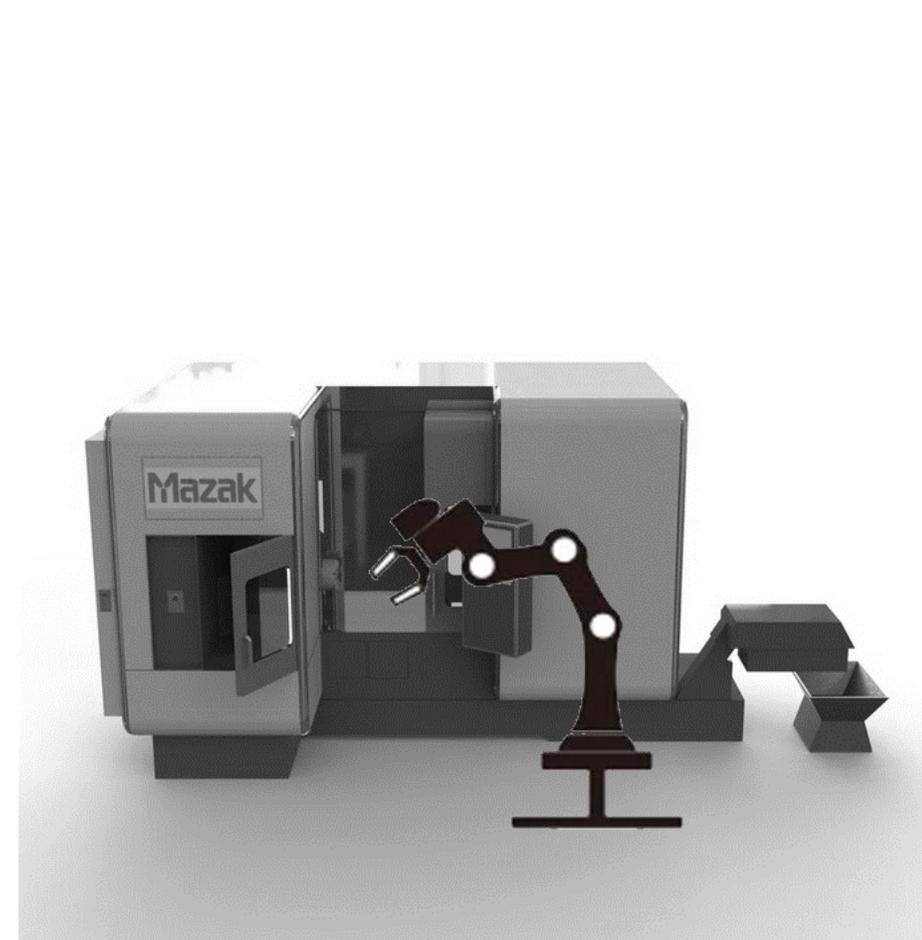
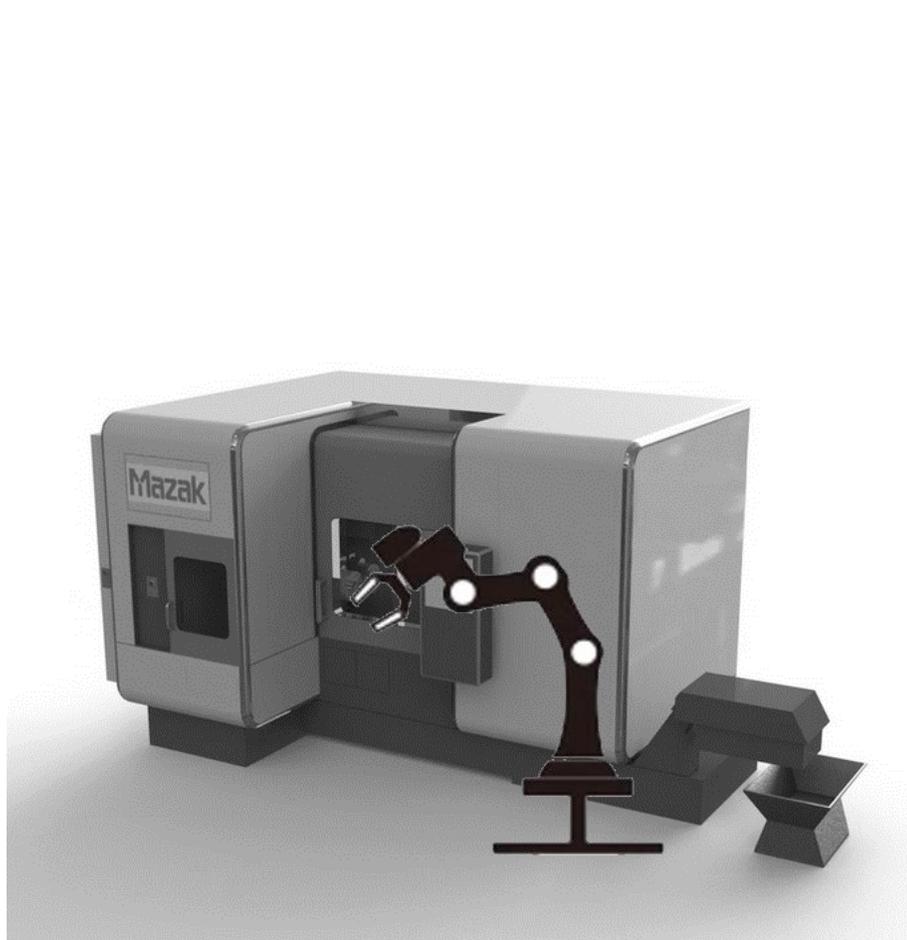


Machine Tending

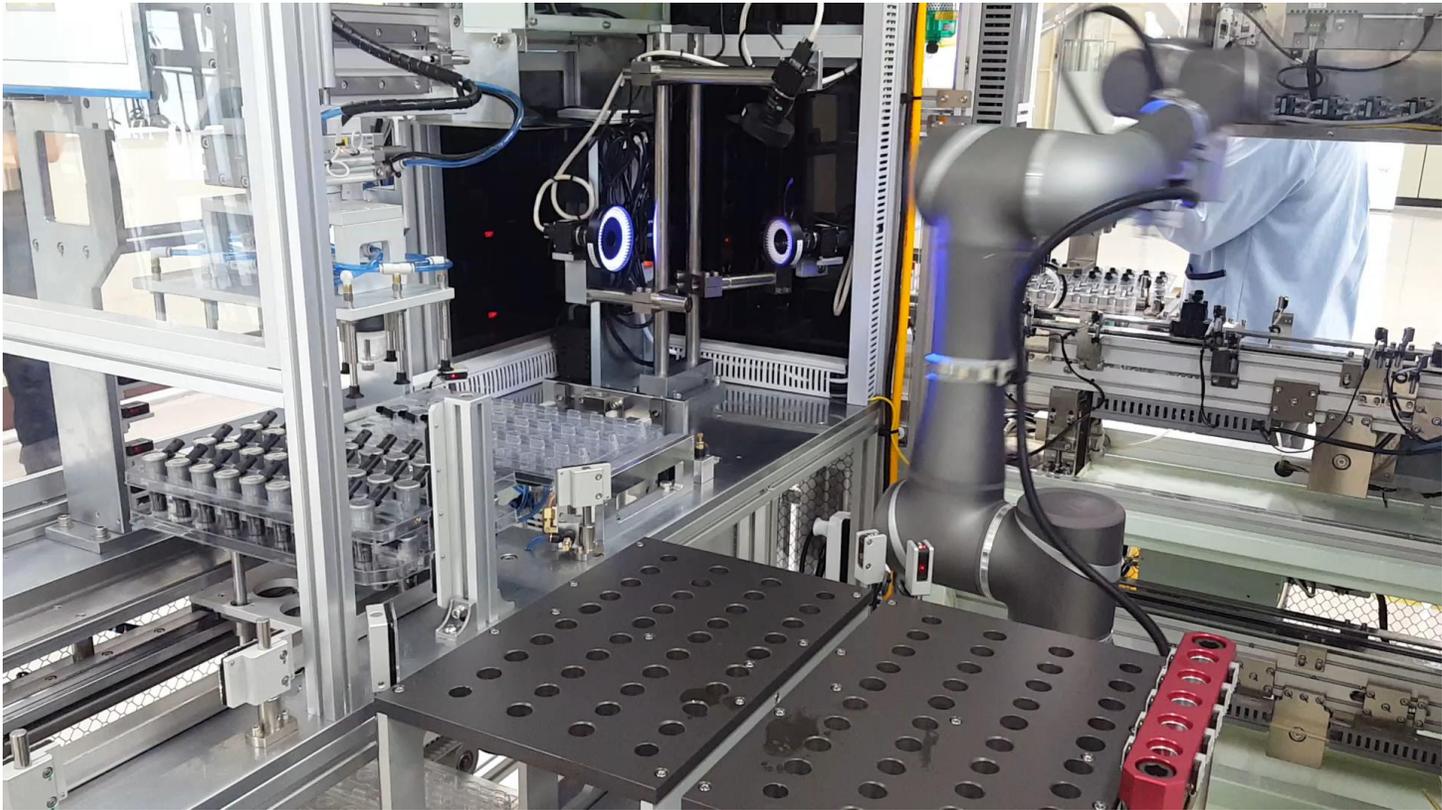


Packaging

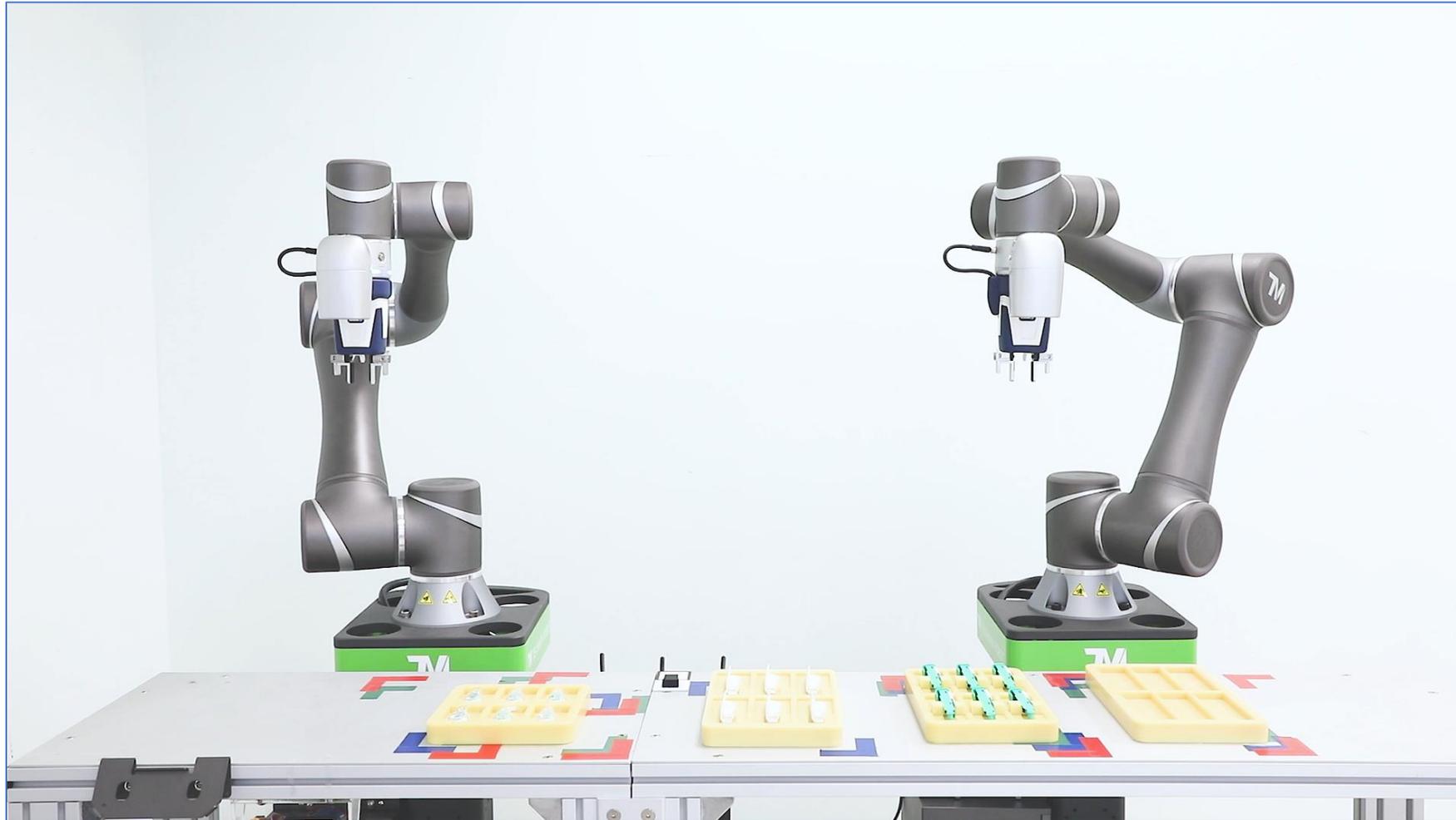
CNC Loading and Unloading



Quality Inspection

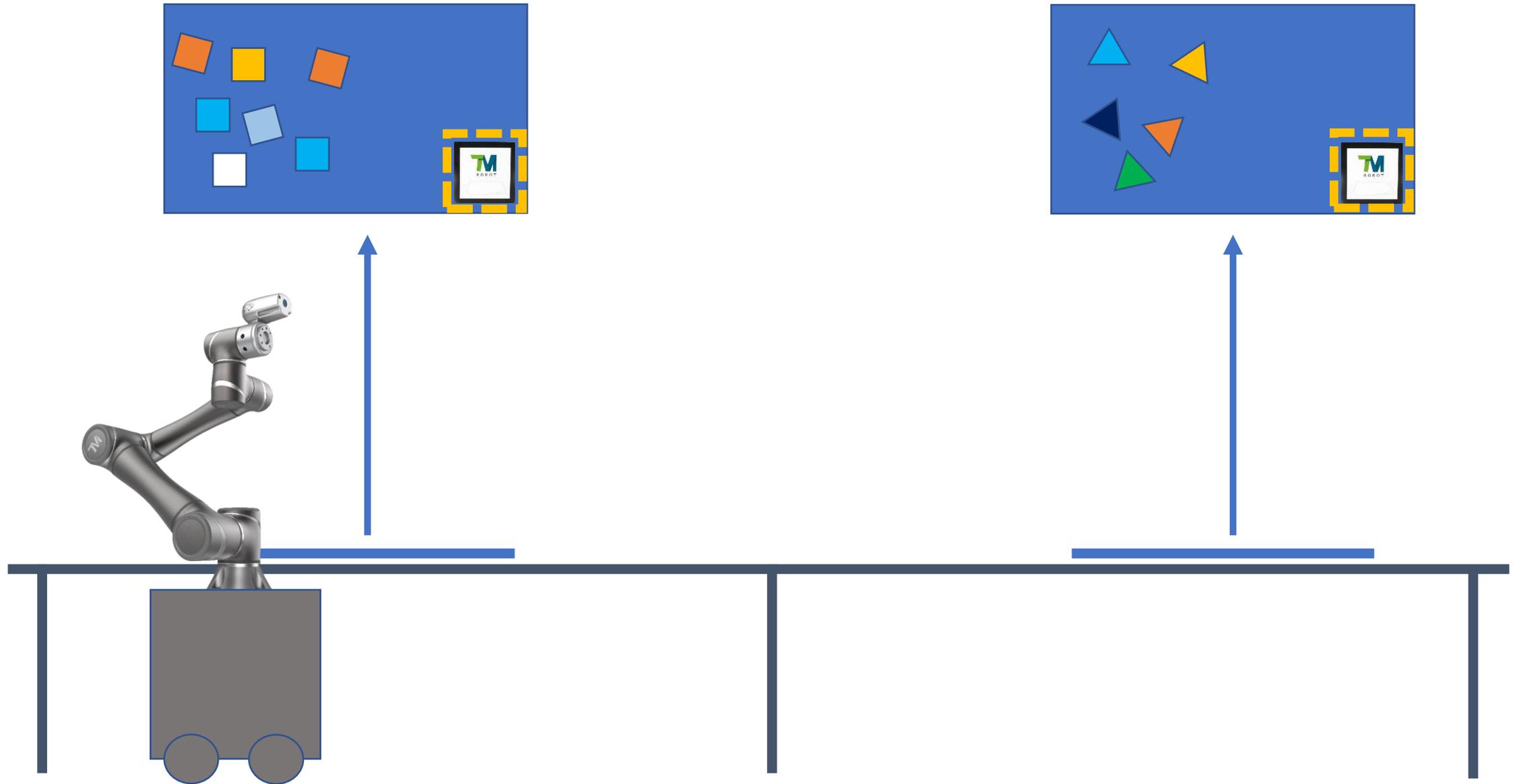


Assembly

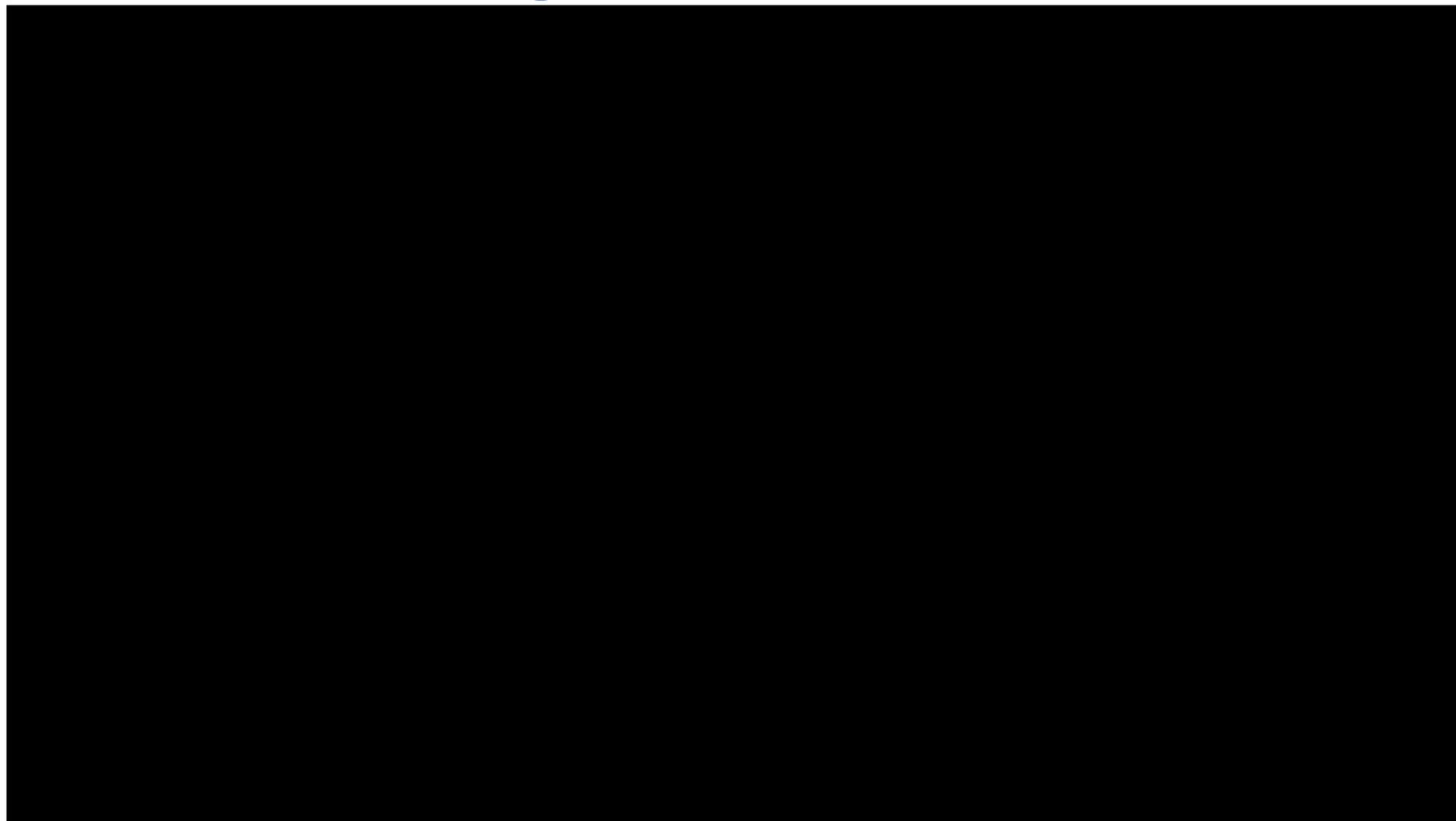


Easy to change Cobot location

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Mobile Bin Picking



It's safe, right?



It's safe, right?



A vertical blue decorative bar is located on the left side of the slide, extending from the top to the bottom.

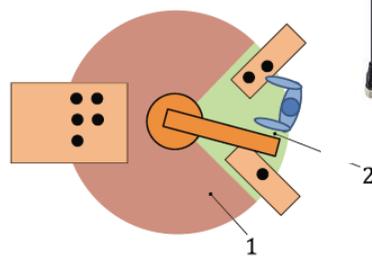
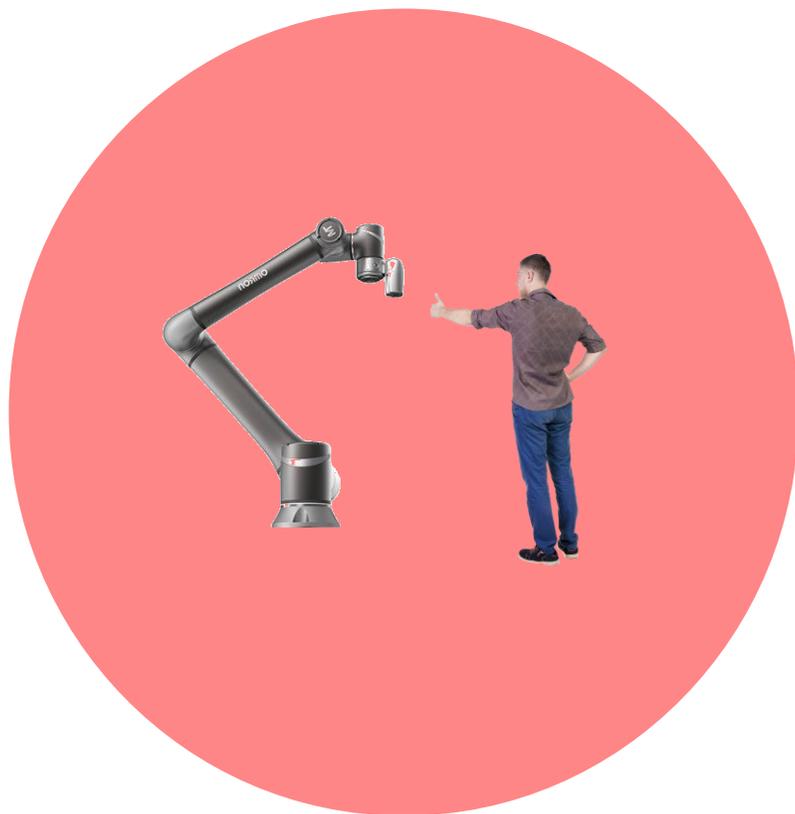
Application needs to be safe!

Risk assessment is always needed!

Collaborative

Sharing the same working area

- ✓ Working at the same time
- ✓ Slow speed

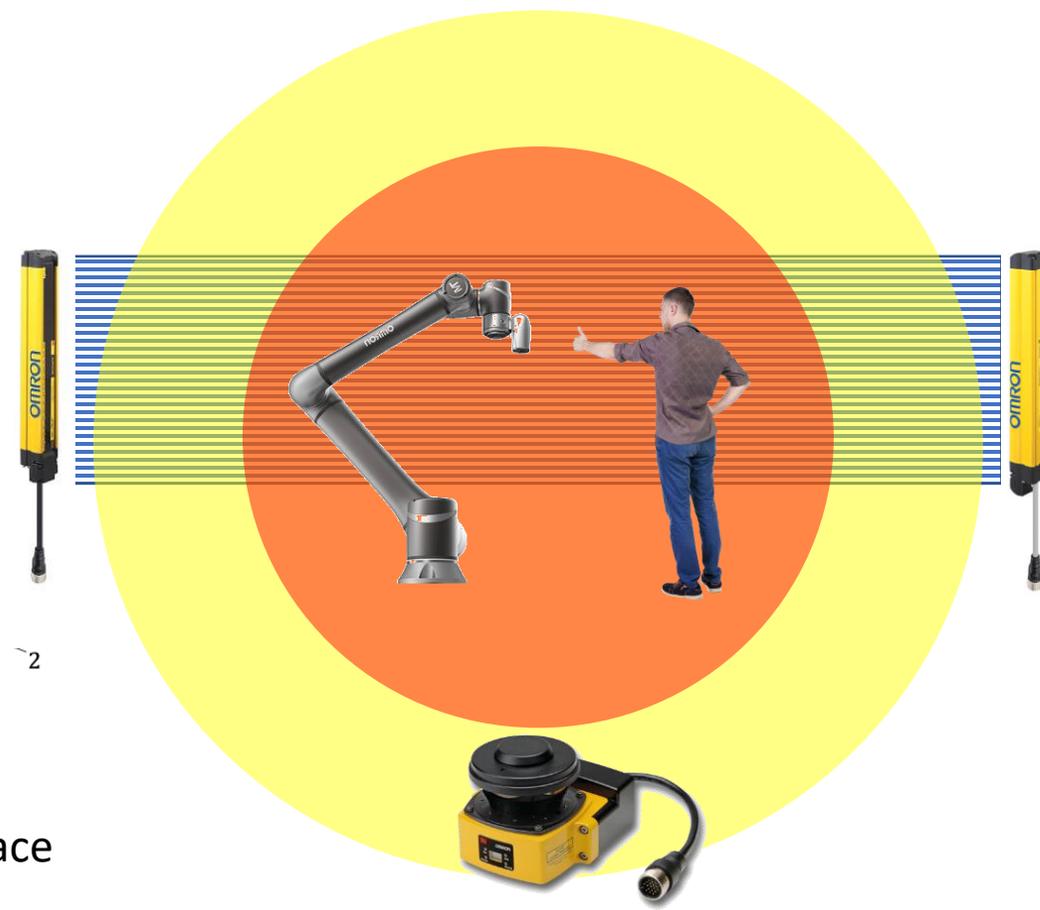


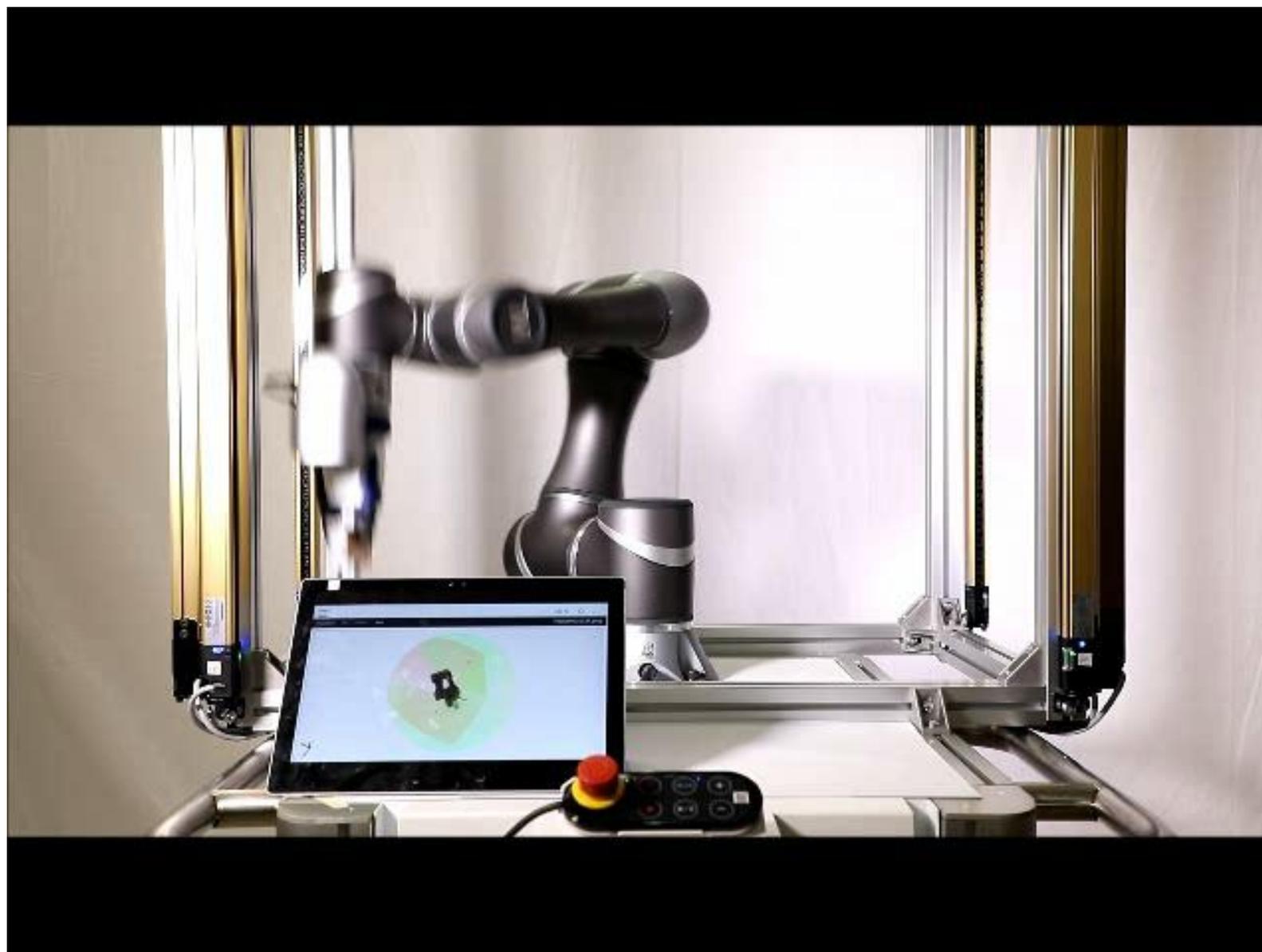
1 Operating space
2 Collaborative space

Cooperative

Sharing the same working area

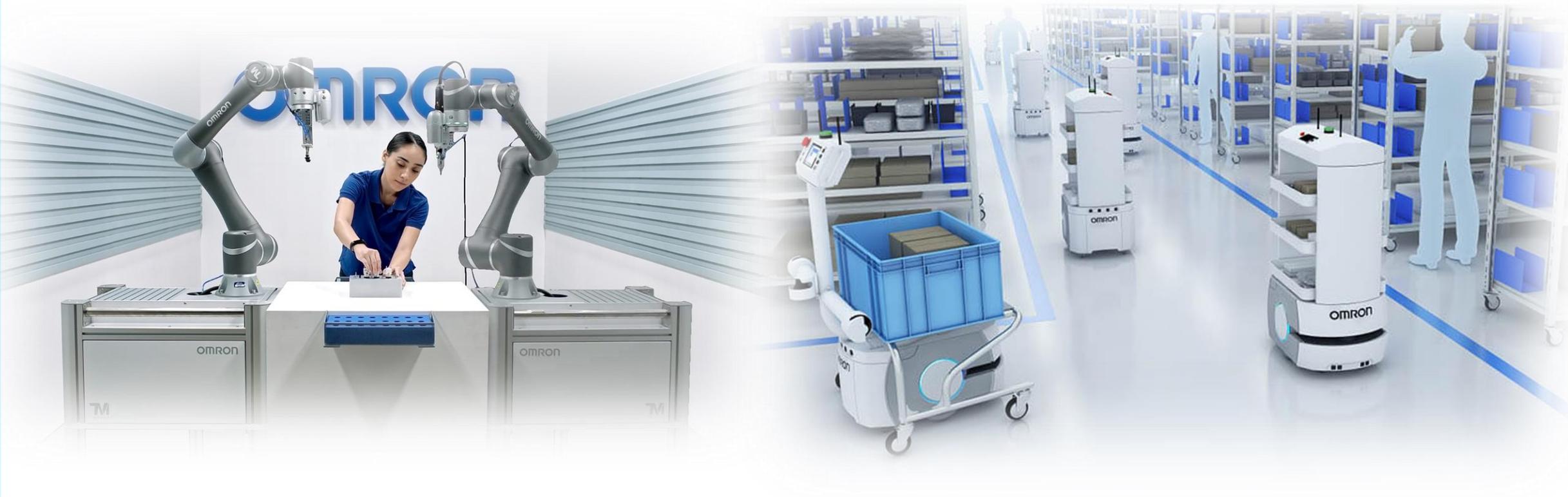
- ✓ Working at the different time





Risk Assessment Services

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Questions?