



# Flanders Make

FLANDERS  
**MAKE**

DRIVING INNOVATION IN MANUFACTURING

Diana Espinosa  
14 Nov 2023

# How Flanders' 4 strategic research centers kick-start your R&D success

## IMEC

**5.000** researchers

- Micro- and nanotechnology
- Digital technology

## VIB

**1.870** researchers

- Biotechnology
- Life sciences

## VITO

**900** researchers

- Sustainable chemistry, materials and energy
- Land-use & health

## FLANDERS MAKE

**850** researchers

- Product & production technology and processes
- Digital transformation & Industry 4.0



# Close to the industry

FLANDERS  
**MAKE** @ Kortrijk



FLANDERS  
**MAKE** @ Leuven

FLANDERS  
**MAKE** @ Lommel

 EUKA



# Close to the universities

with labs at the 5 Flemish universities

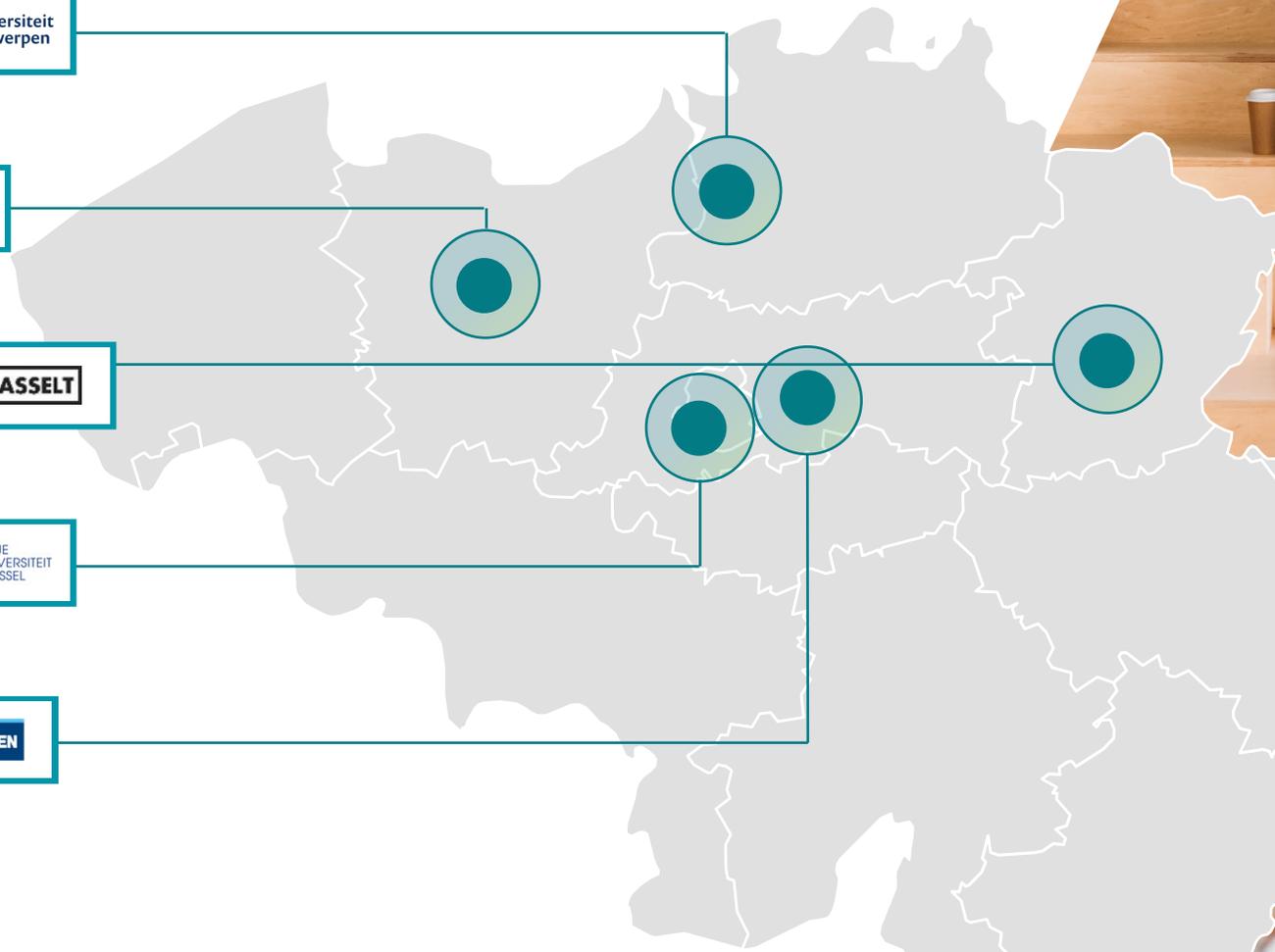
FLANDERS  
**MAKE** @  Universiteit  
Antwerpen

FLANDERS  
**MAKE** @  UNIVERSITEIT  
GENT

FLANDERS  
**MAKE** @  UHASSELT

FLANDERS  
**MAKE** @  VUB  
VRIJE  
UNIVERSITEIT  
BRUSSEL

FLANDERS  
**MAKE** @  KU LEUVEN

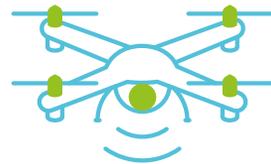


# Research supporting the digitalization of the industry **clustered around 3 competences**



End-to-end design  
operation

Management of  
design complexity



Motion  
products

Validated products  
& product  
architectures

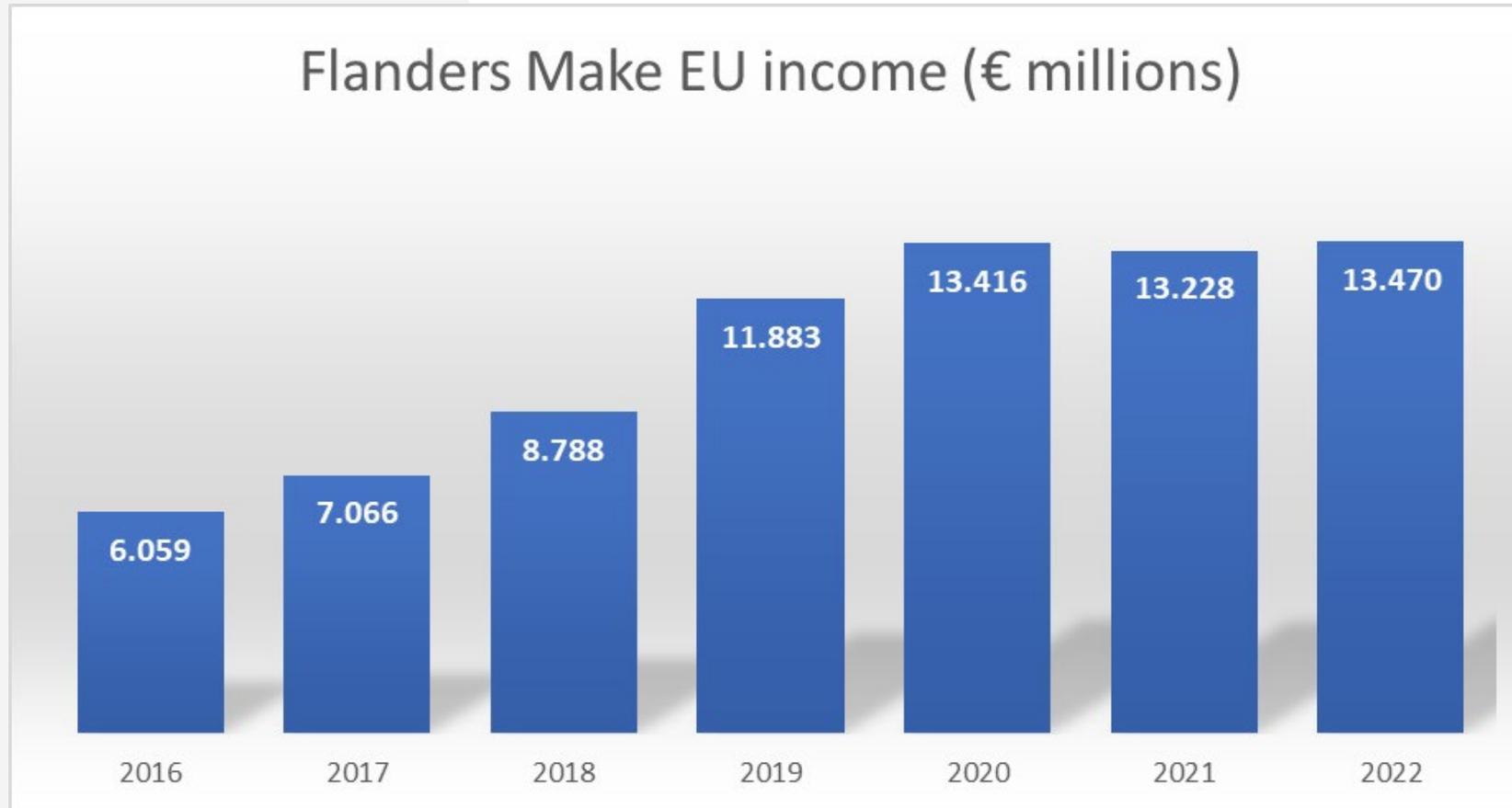


Production

Validated assembly  
solutions, using  
robotics & automation



# European funding trends



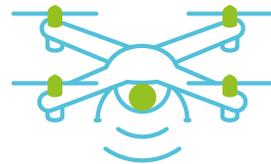
- 58 ongoing European projects (Horizon 2020 & Horizon Europe combined)
- 18 new Horizon Europe projects in 2022

# Research supporting the digitalization of the industry **clustered around 3 competences**



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# Flanders Make Smart Manufacturing



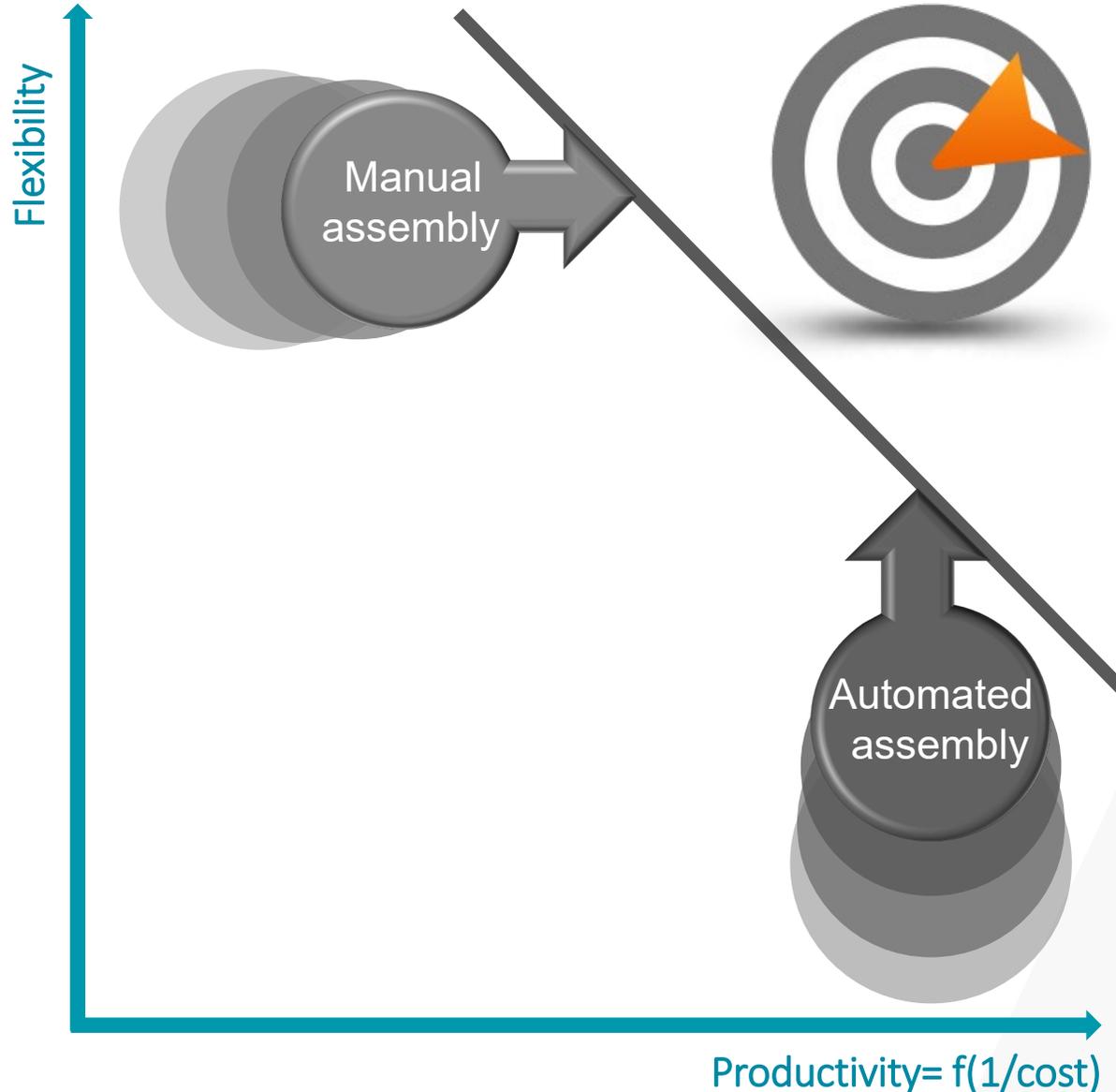
The background features a blurred image of several workers in an industrial setting, likely an assembly line. The image is overlaid with large, semi-transparent geometric shapes in shades of green and teal. A prominent dark green inverted triangle is on the left side. A thin white line forms a large triangle on the right side. The overall aesthetic is modern and industrial.

# **Flexible assembly line Small products**

# Flexible Assembly – Main Current challenge

## Flexibility

the ability of a manufacturing system to change or react to changing circumstances with little penalty in time, effort, cost or performance



## 1 piece flow

at an overall product cost similar to mass production

## Productivity

A measure of the efficiency of a person, machine, factory system,.. in converting inputs into useful outputs

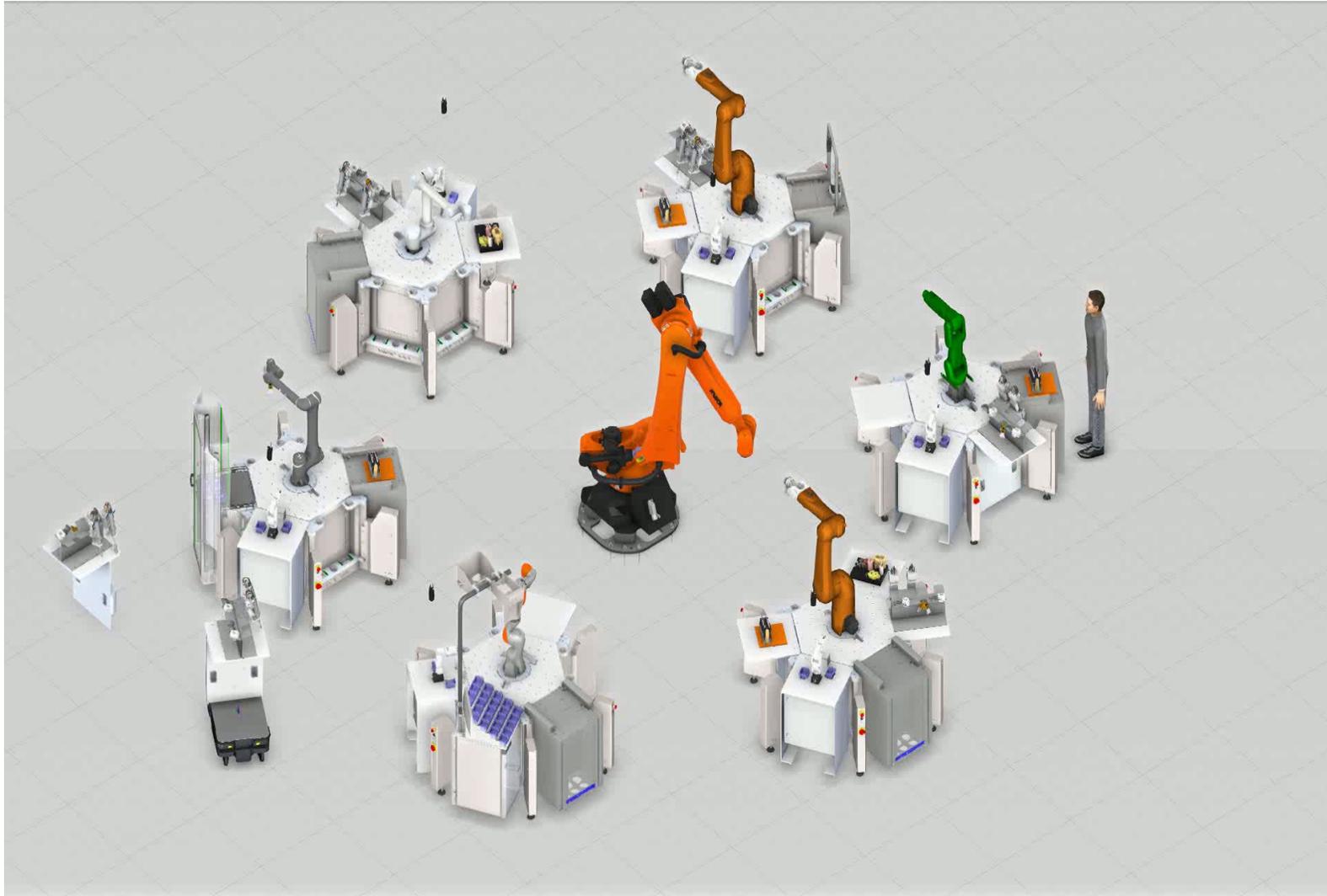
# Flexible Assembly Lab lines for Small and Heavy and Large Products



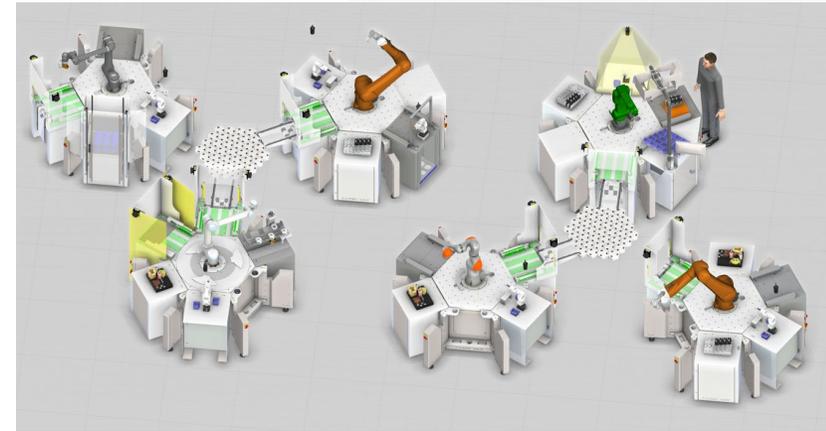
Creating the future of **high mix low volume** manufacturing for **mechatronic products and production systems** sectors through research and innovation in close cooperation with companies from relevant sectors.

- Test and validate new concepts
- Development of technologies based on real production and product data
- Provide a test ground for automation and transport to companies in Belgium and Europe
- Vendor neutral lab which is open to research
- Validation of and integration of current and future research projects

# Flexible assembly line small products



## Flexible line



- Relocatable cells
- Moveable add-ons

# Flexible assembly line small products

## Flexible line Components

Cells



Addons



Transports



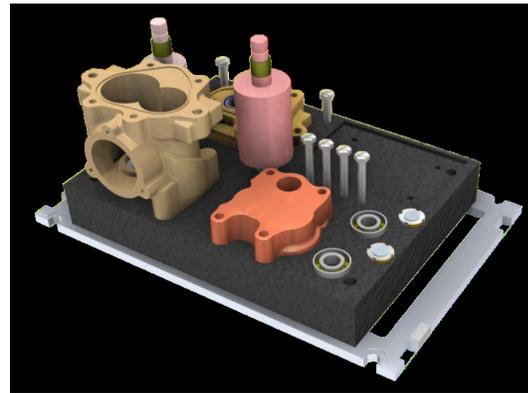
Robot tools



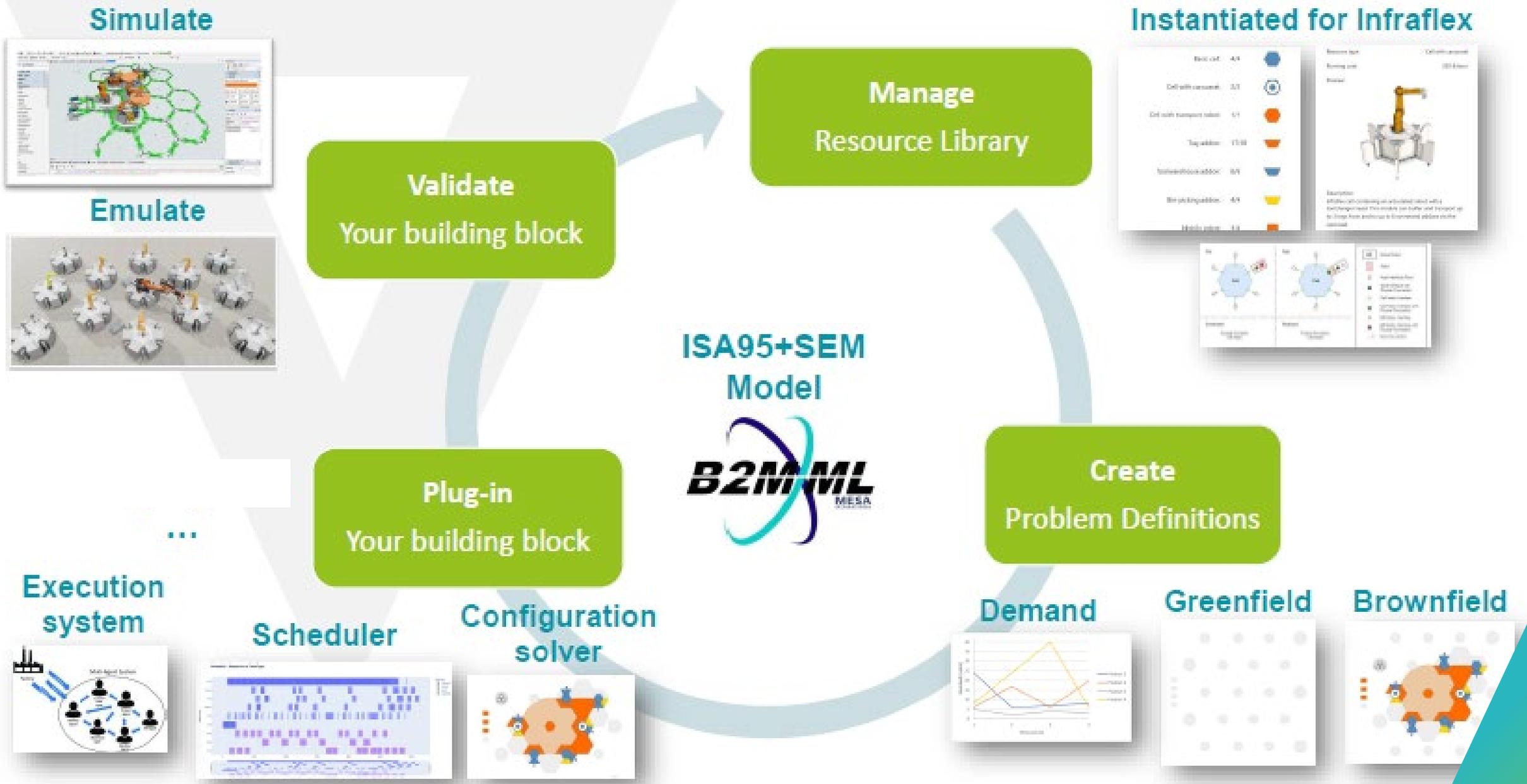
# Flexible assembly line small products

## Small Product

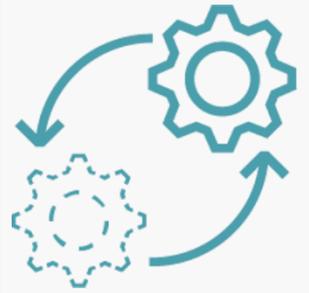
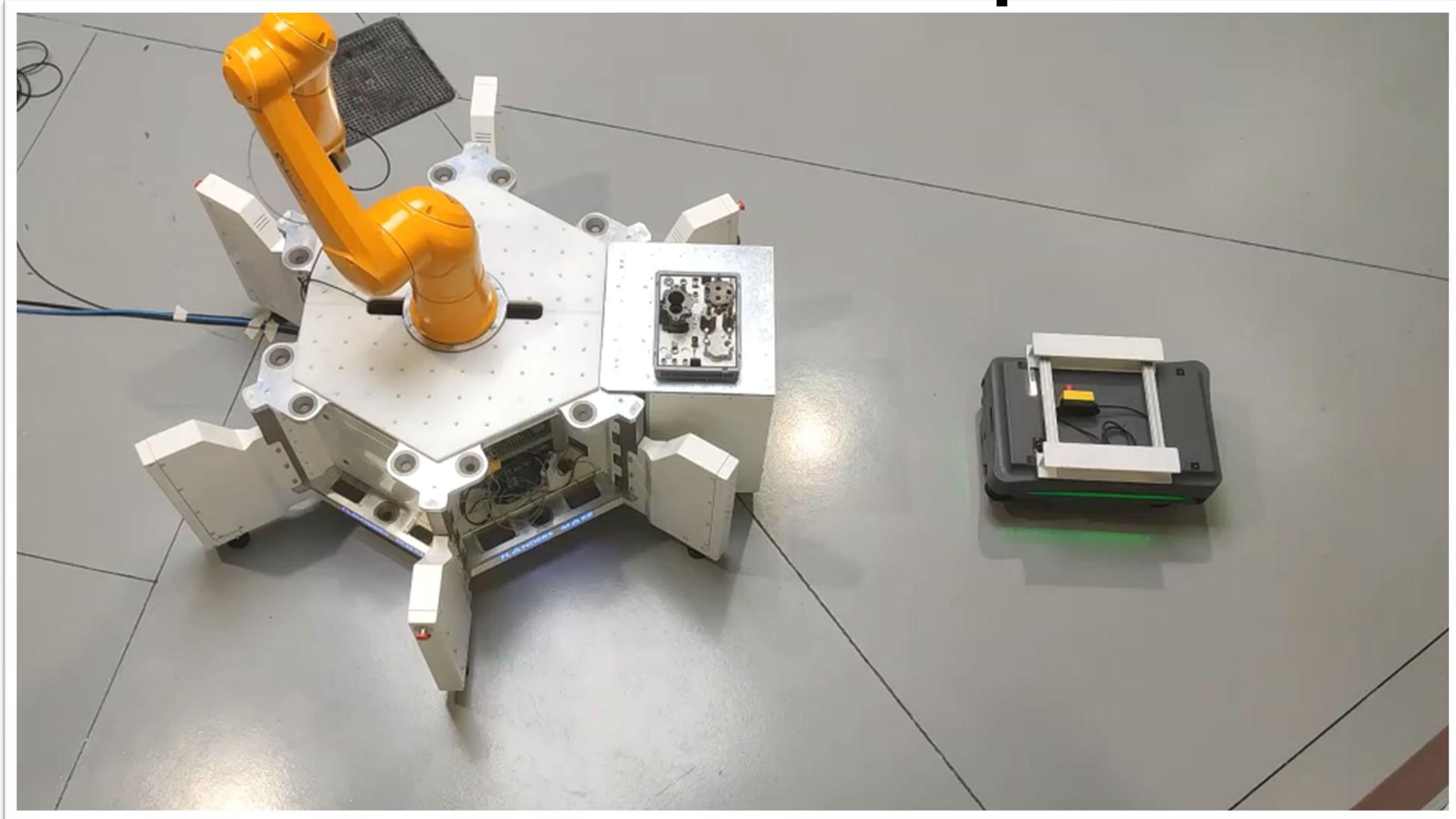
(30cm x 30cm x 30cm and 30kg max.)



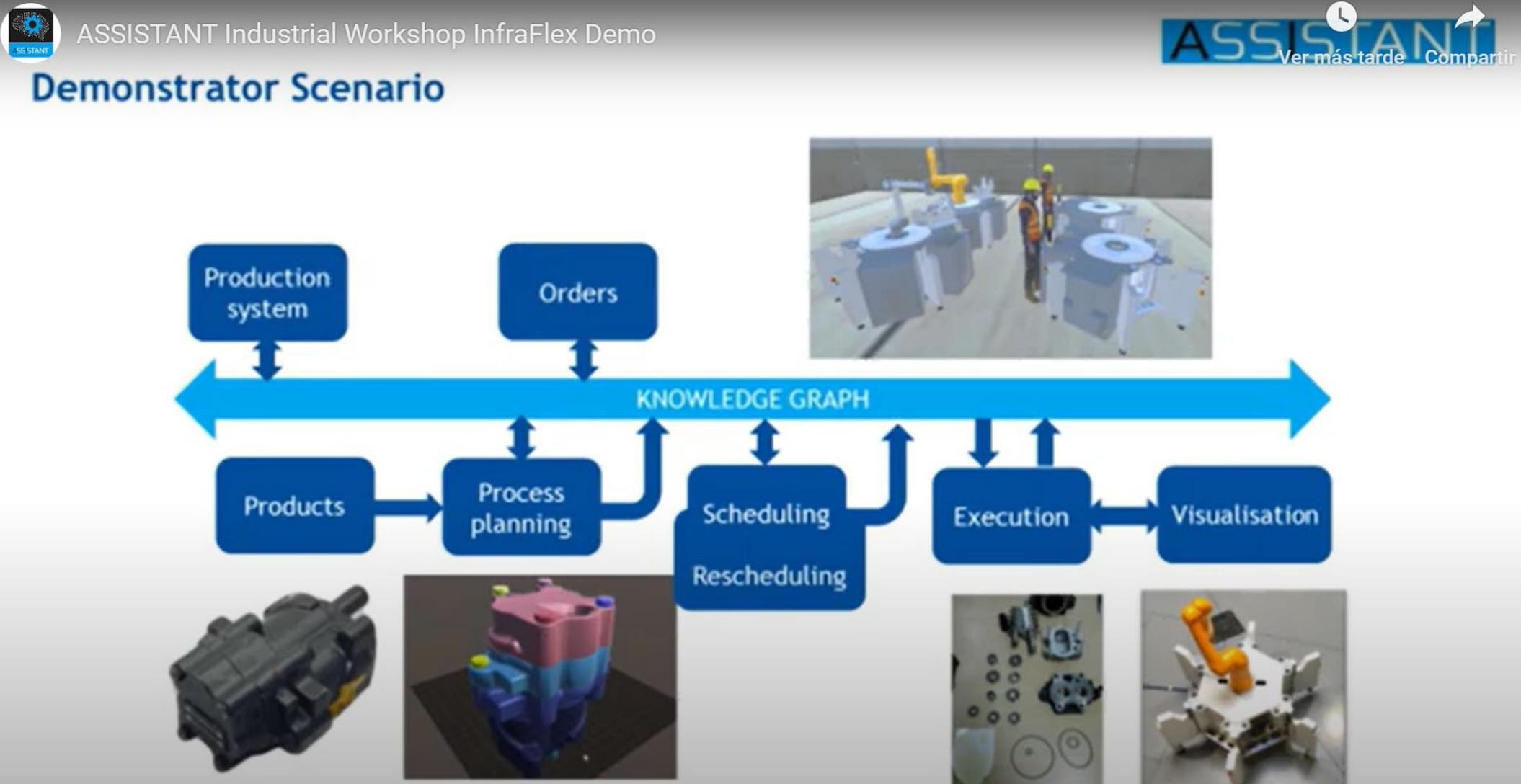
# Flexible assembly line small products



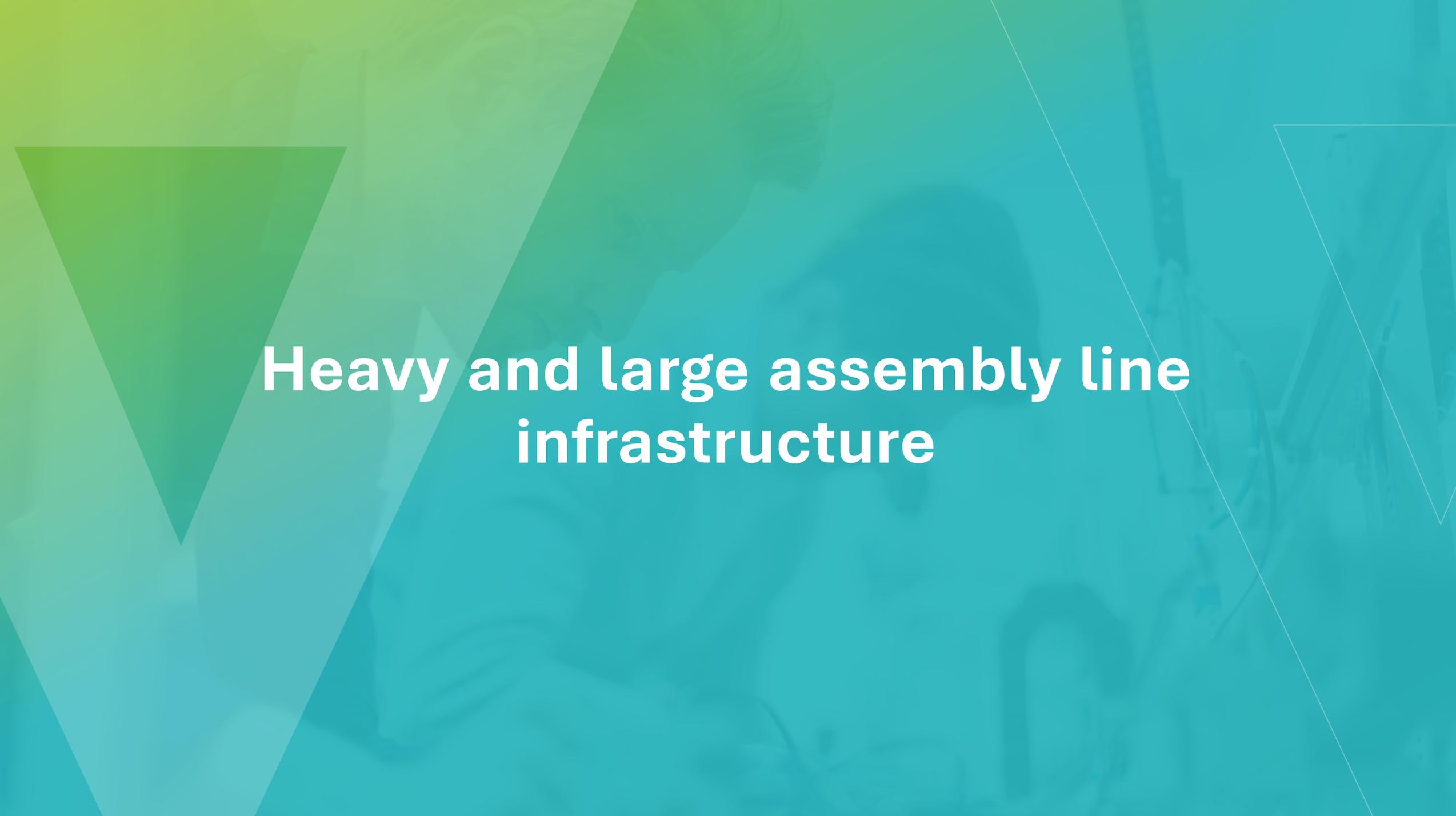
# Flexible Auto-Reconfigurable (dis)assembly infrastructure small products



# Validation infrastructure – Horizon Projects



[Exhibition – Assistant project \(assistant-project.eu\)](http://assistant-project.eu)



# **Heavy and large assembly line infrastructure**

# Heavy and large flexible assembly lab

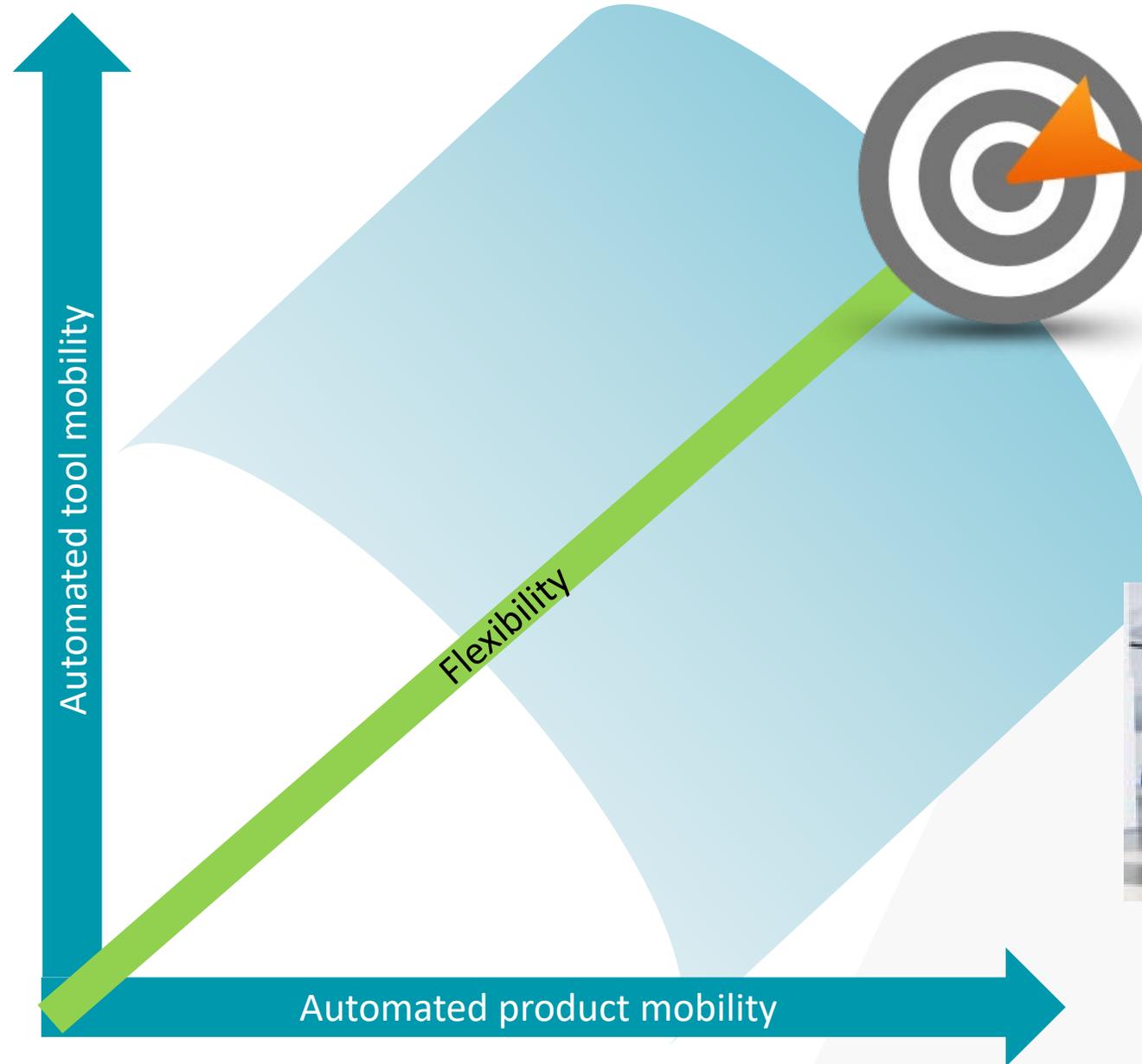


Fixed products + mobile operators

Fixed product flow on rails



# Automated Assembly – Main Current challenge



Low product mobility



High product mobility

# Flexible assembly lines Small and Heavy and large products

## Heavy and large product

5000kg and 3x3x2 m3



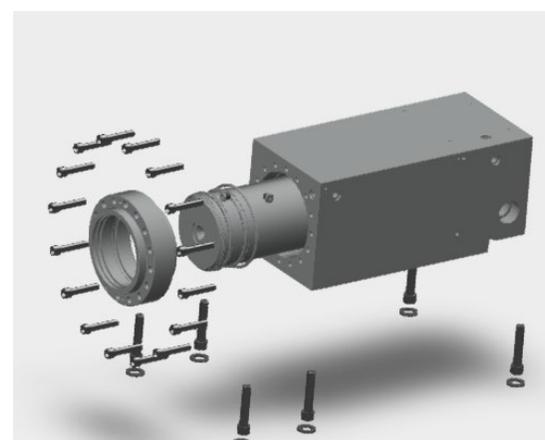
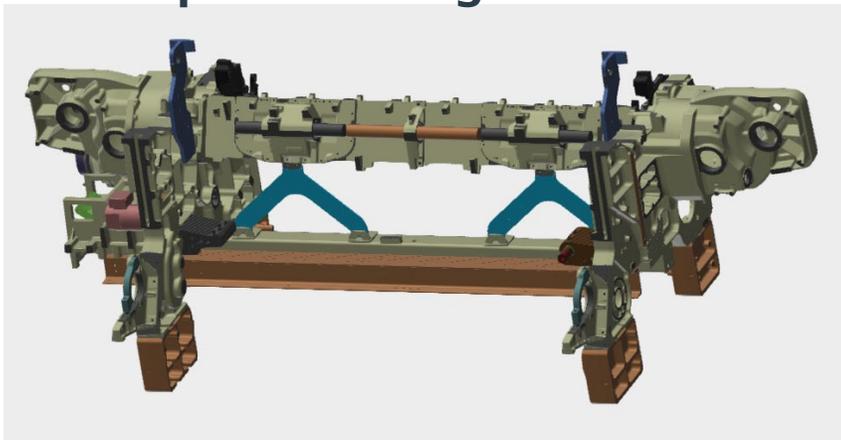
Rapiert weaving machine



Press brakes



Storage electrical cars



3 industrial assemblies

# Flexible assembly lines Small and Heavy and large products





# Horizon Europe

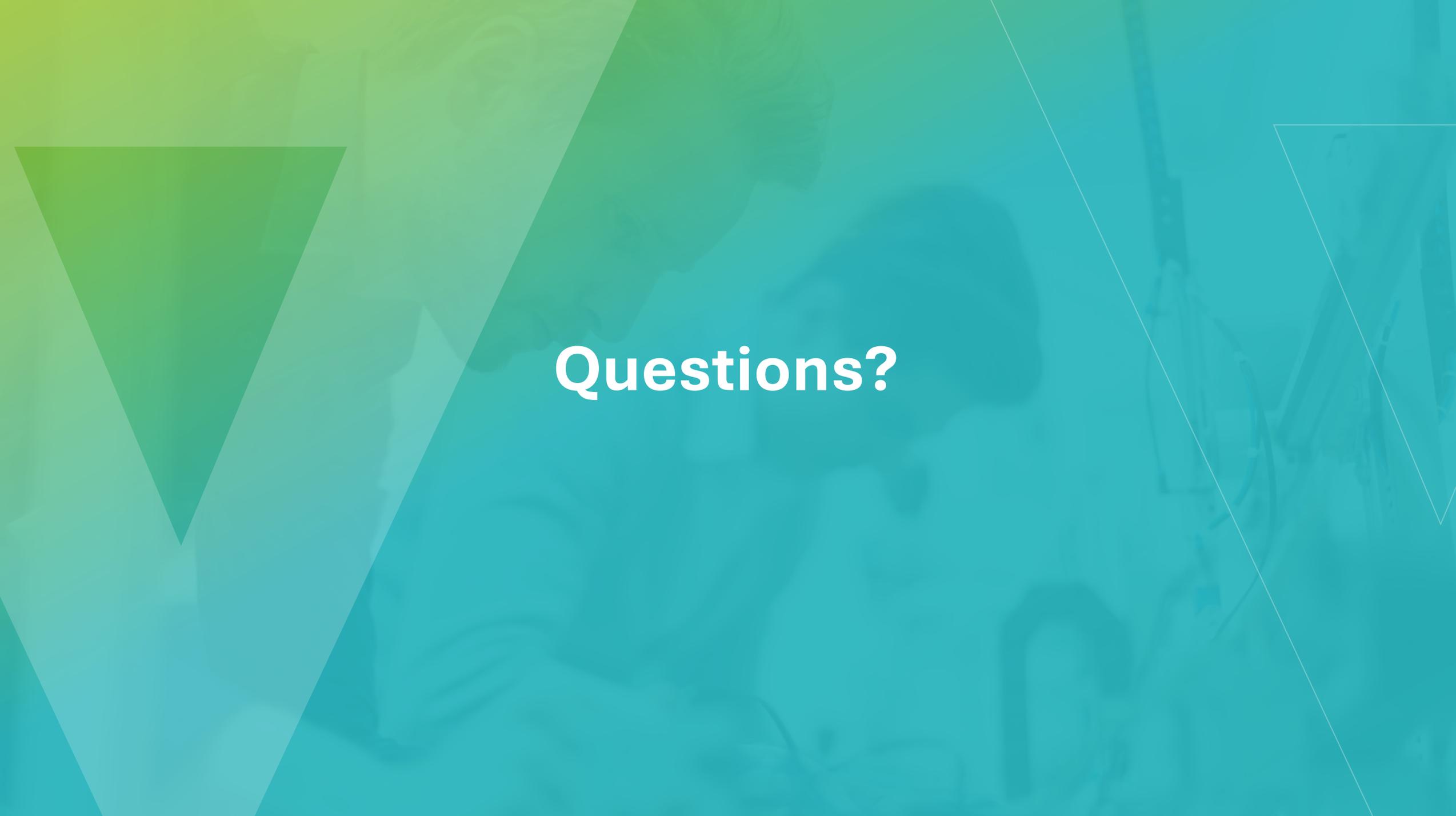
What's in it for you and how can Flanders Make help?

- Envisage **solving your technological challenges in the longer term** to gain competitive advantage;
- **Collaborate and benchmark with top European innovation players** from academia, RTO and industry and create new partnerships;
- Identify **new business opportunities** and extend your market.

## Flanders Make can support you with:

- Identifying **relevant calls** for proposals;
- **Showcasing your use-cases** at EU level;
- Becoming a **partner in top EU consortia** alongside our core-labs.



The background features a blurred image of a group of people in a meeting, overlaid with large, semi-transparent geometric shapes in shades of green and teal. A prominent dark green triangle points downwards on the left side. The word "Questions?" is centered in white text.

**Questions?**



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