



Agile, Human-centric and Real-time Open Source Technologies advancing Industrial HRI in Europe.

Project Introduction

arise-middleware.eu

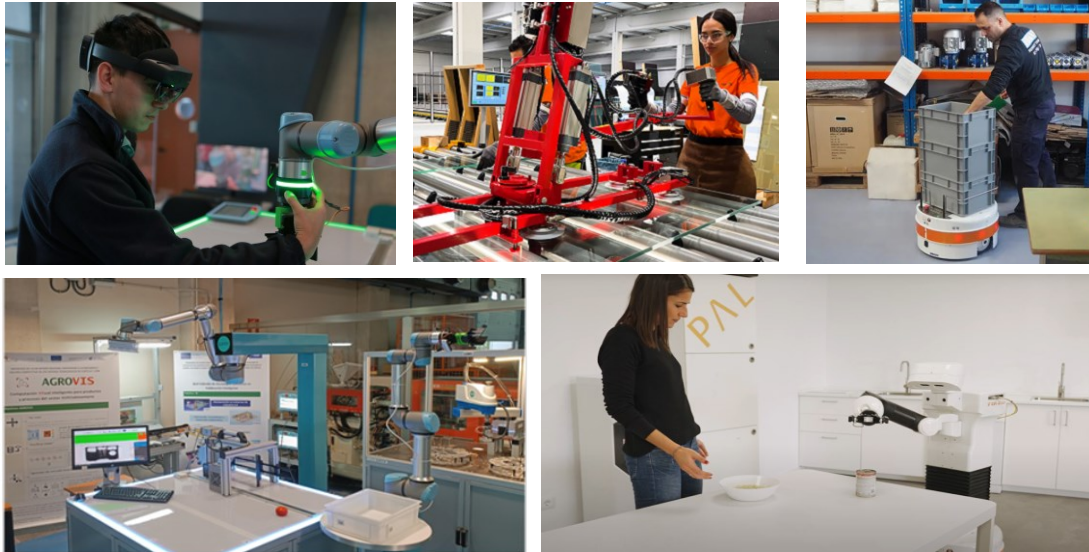




ARISE

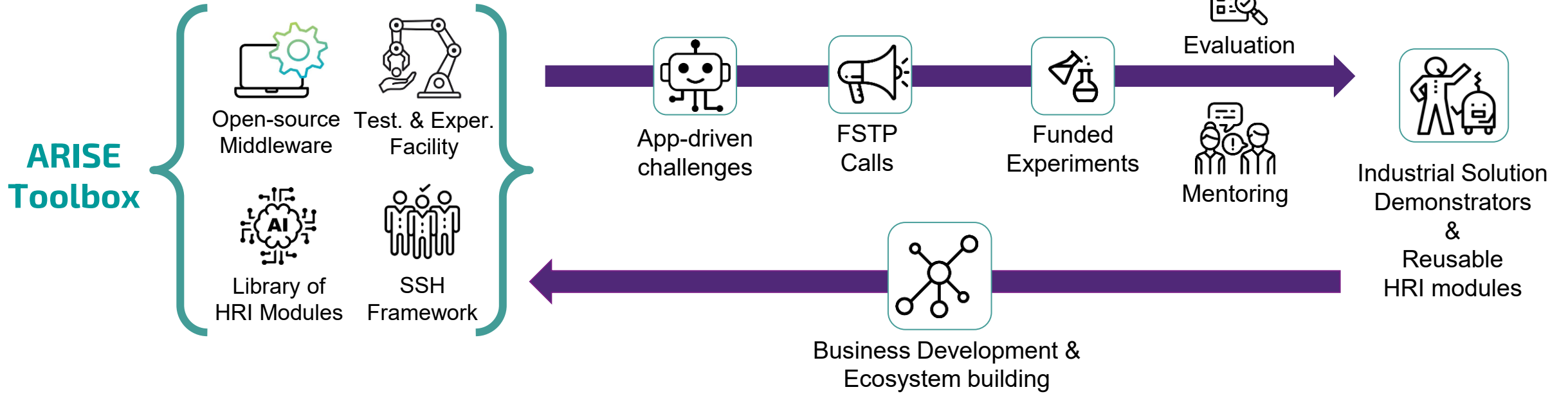
- Horizon Europe Call: **HORIZON-CL4-2023-DIGITAL-EMERGING-01-02**
- **Budget:** 10M€, over 5M€ for open calls
- 10 partners involved

Keywords: Robotics, middleware, HRI, human-centric aspects, AI Features





ARISE Life Cycle and Roadmap





Challenges and Testing and Experimentation Facilities (TEFs)

TEF1

CARTIF

CH1- Dismantling and assembly
High-value products

CH2-Complex Product Picking
Industrial Warehouses



TEF2

INTELLIMECH®

CH3- Flexible Collaborative
robots- Assembly and Packing

CH4-Smart Programming-
Robotic kitting assistant



TEF3

PAL

CH5- Enhanced robots functionality
through multimodal HRI interactions

CH6- Fetch and carry tasks
Healthcare environments



TEF4

**POLITECNICO
MILANO 1863**

CH7- HRI for improving the efficiency
of workers in high precision tasks

CH8-HRI for improving ergonomics
in high precision tasks





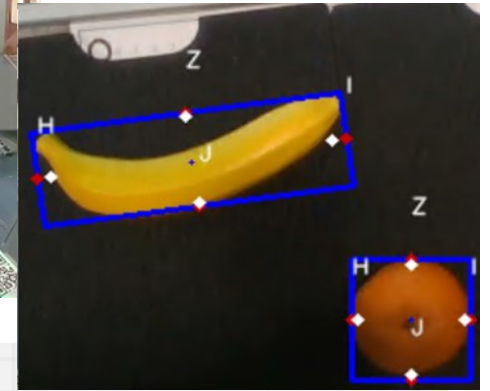
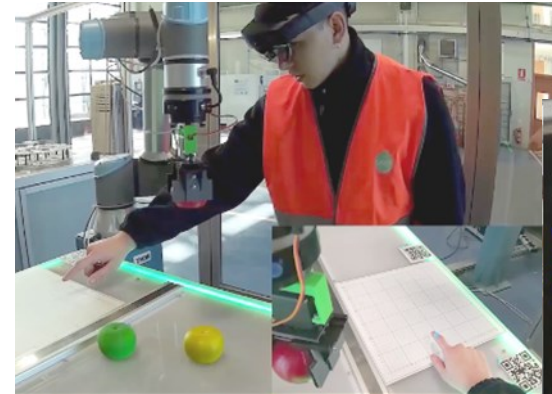
Integrating GenAI for Robotics (HRI)

TEF1

CARTIF

CH1- Dismantling and assembly
High-value products

CH2- Complex Product Picking
Industrial Warehouses



- GenAI can provide robots the ability to understand high-level nat. language commands and respond → more effective collaboration (HRI)
- Transforming the information (speech) into instructions for the robot.
- The expected result is to have a seamless interaction between operators and robots using natural language.
- Future possible directions include other types of inputs such as images or gestures (this last one using the benefits of ROS4HRI).

```
Hello robot
```

```
1 {
2   "intent": "GREET",
3   "source": "MODALITY_SPEECH",
4   "modality": "MODALITY_SPEECH",
5   "priority": 128,
6   "confidence": 1.0
7 }
```

Missing 'data' field

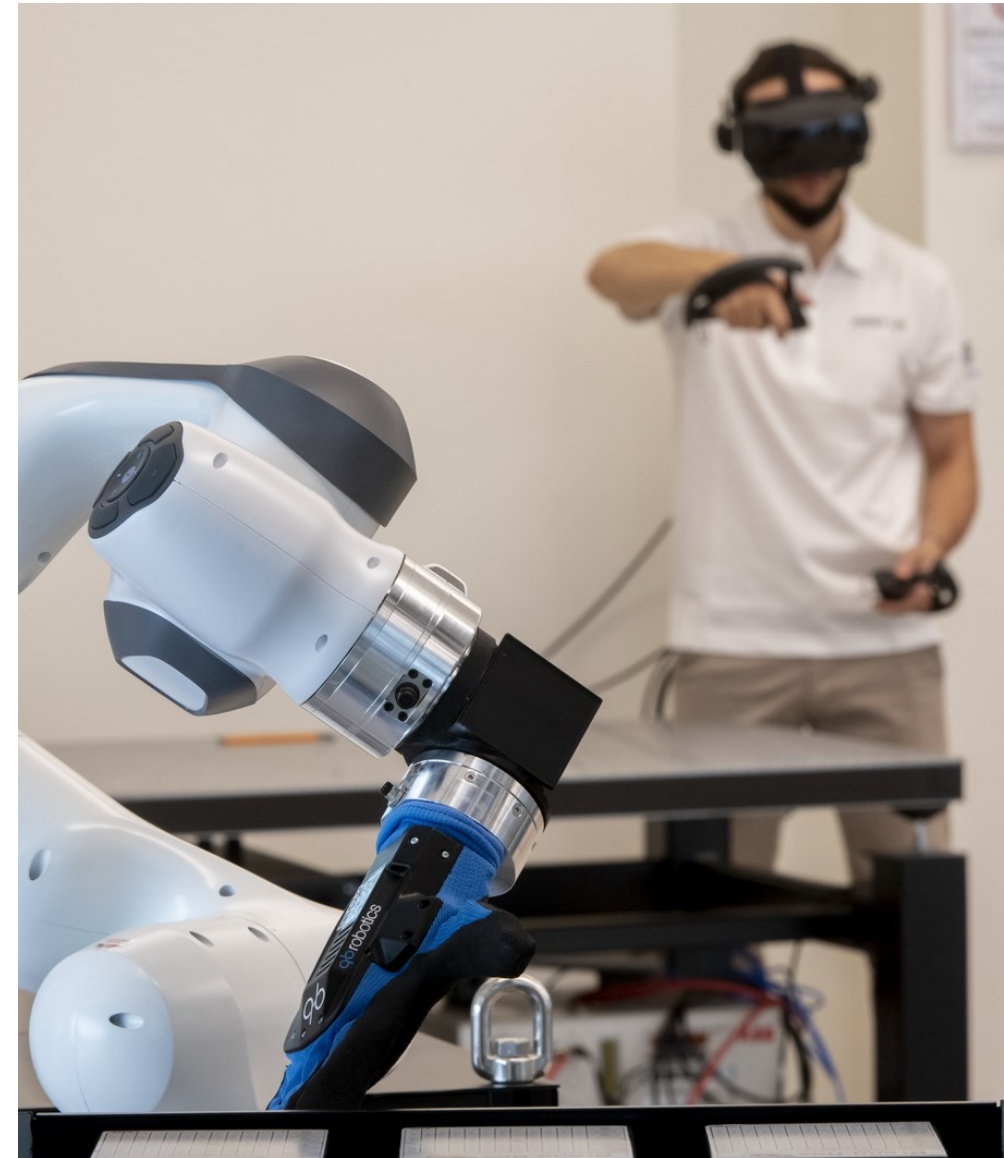
PROMOTERS



PARTNERS



CHAMPIONS



OUR USE-CASES



FLEXIBLE ROBOTIC
WORKSTATION



ROBOTIC
ASSISTANT



LOGISTIC 4.0



ROBOT AVATAR FOR
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ACTIVITIES



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Thank you !

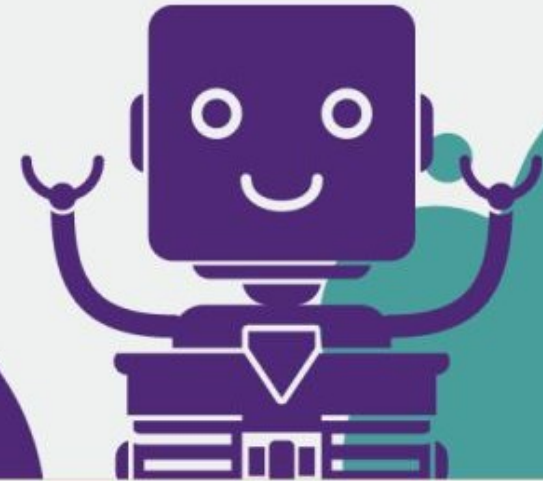
“We want to develop a new open middleware that helps European companies to generate robotic applications in an agile and robust way respecting ethical and security standards to contribute to competitiveness of European companies.”

Web ARISE

<https://arise-middleware.eu/>

7 NOVEMBER, 10:00 CET

FREE WEBINAR



Learn how to
receive up to
€200.000!