

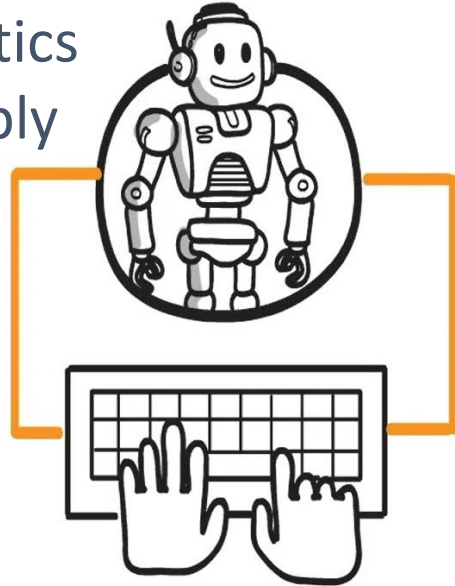
# **METRICS PROJECT**

**1<sup>st</sup> ACRE workshop**

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# MATCHING SUPPLY AND DEMAND IN AI AND ROBOTICS THROUGH COMPETITIONS

AI and  
robotics  
supply



Black-box, non convex,  
evolutionary systems



Need: evaluation of AI and  
Robotics

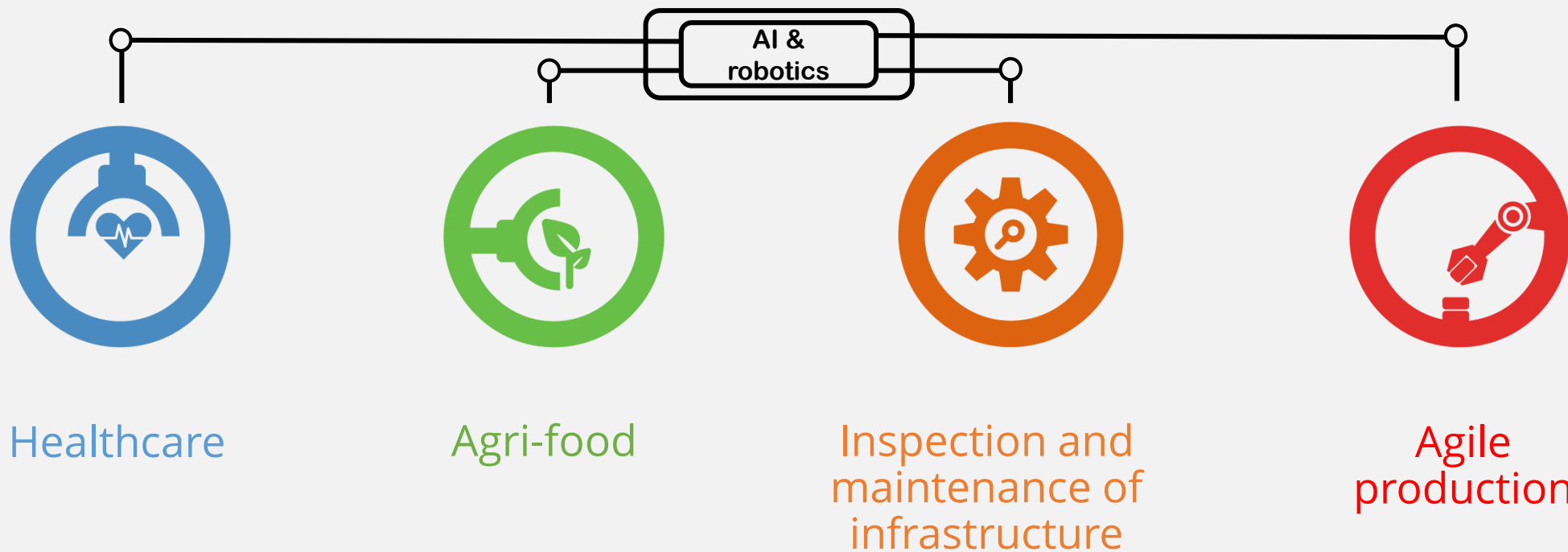
AI and  
robotics  
demand



Trustworthy and efficient  
functionalities

# H2020 METRICS PROJECT

The aim of the project is to organize challenge-led robotics and AI competitions in four priority areas identified by the European Commission.



# METRICS OBJECTIVES

1

## Development of the Evaluation Framework

Evaluation framework based on **metrological principles** ensuring repeatable measurements and reproducible experiments

2

## Organization of the 4 competitions

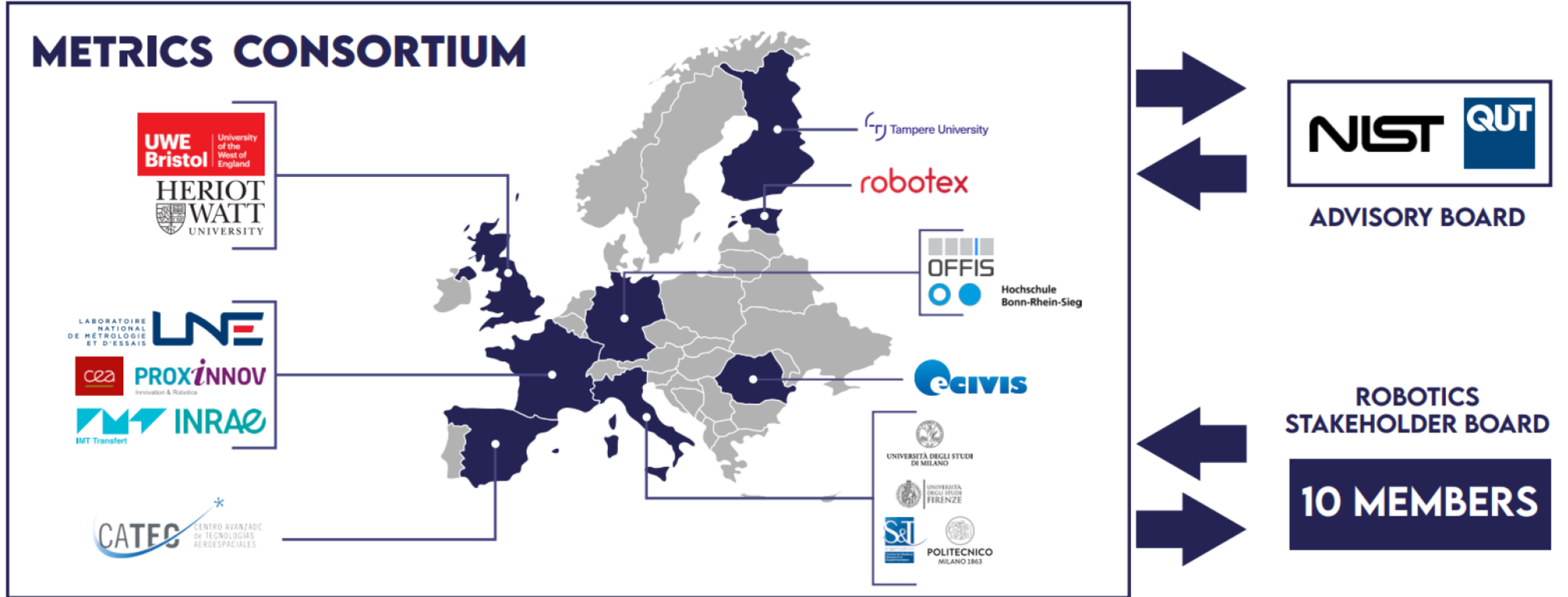
Combination of evaluations of **AI modules and entire robots**



3

## Consolidation of the European robotics and AI community

Collaborations with **DIH and external sponsors** to ensure industrial relevance

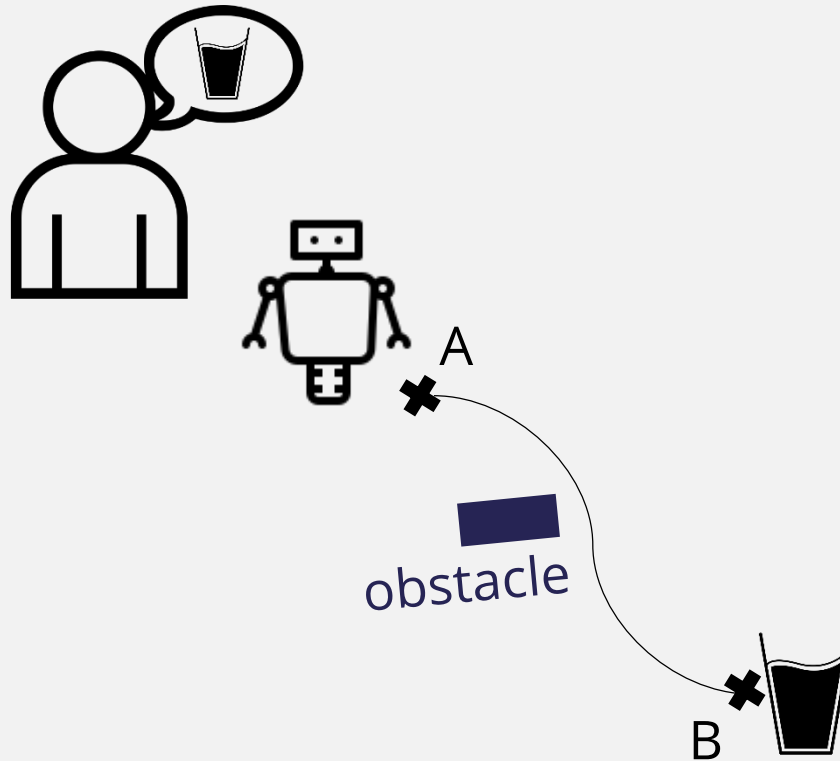


METRICS consortium relies on the collaboration of **17 partners from 8 EU countries** (Estonia, Finland, France, Germany, Italy, Romania, Spain, United Kingdom), which will contribute to strengthening the European AI and robotics communities, including in EU Widening countries

# FUNCTIONALITY AND TASK BENCHMARKS

## Task benchmarks (TBM)

TBM1 : To fetch for a glass of water when asked



## Functionality benchmarks (FBM)

FBM-1 : To understand fetching orders  
FBM-2 : To detect obstacles  
...  
FBM-N : To grab a drink



# METRICS COMPETITIONS



**HEART-MET**  
Healthcare

## Assistive robots

1. Assess activity state
2. Item delivery
3. Area coverage
4. Prepare drink
5. Receive and transport drink



**RAMI**  
Inspection and  
maintenance

## Inspection autonomous robots

1. Submarine: pipeline area inspection and intervention
2. Aerial: punctual and repetitive inspection in difficult access areas



**ACRE**  
Agri-food

To be seen today...



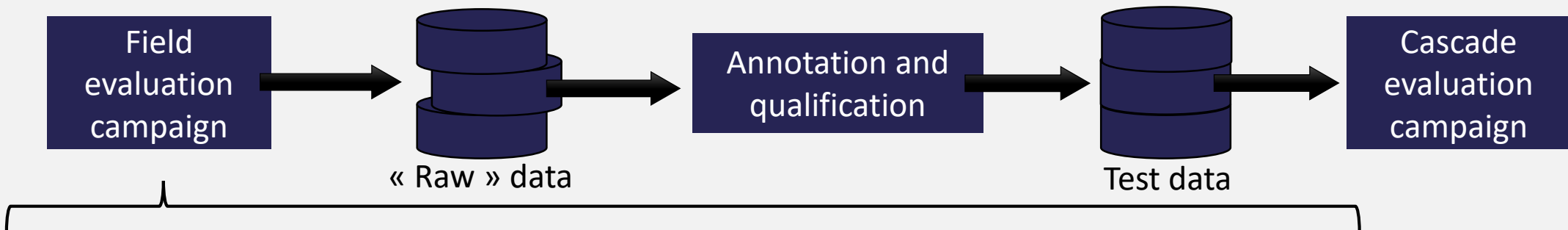
**ADAPT**  
Agile production

## Collaborative assembly robots

1. Collaborative programming for assembly
2. Collaborative assembly of complex parts

# FIELD AND CASCADE EVALUATION CAMPAIGNS

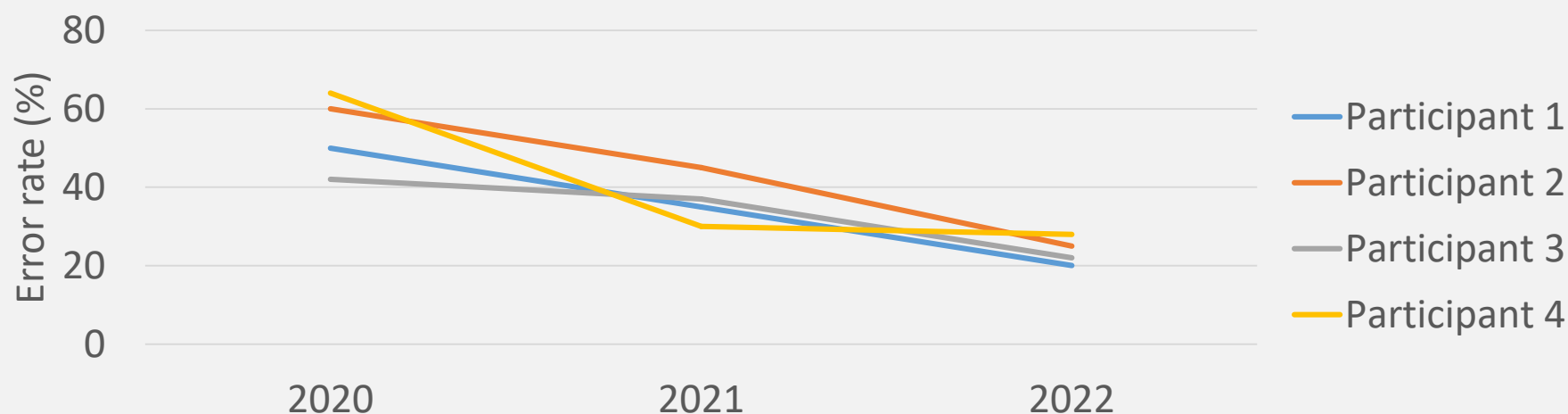
- The data used to evaluate the AI algorithms of the robots during the cascade evaluation is the one which is collected during the field evaluation





# FIELD AND CASCADE EVALUATION CAMPAIGNS

- Field and cascade evaluation campaigns are going to be organized as follows:



# HOW TO GET INVOLVED?

## As a participant:

- **What:** take part in one of the METRICS competitions by registering your technological solution to the corresponding evaluation campaigns (a robot for field evaluations and/or an AI algorithm for cascade evaluations).
- **Why:** take advantage, free of charge, of the evaluation tools made available by the consortium, test your system, position it in relation to those of the other participants and set up new collaborations.
- **How:** contact the coordinator of the corresponding competition (e.g. [acre@metricsproject.eu](mailto:acre@metricsproject.eu) for the agri-food competition).

## As a sponsor:

- **What:** help us drive the competition through sponsorship (cash or in-kind contribution) as well as active involvement in the definition of the scenarios, evaluation criteria and judging of the competitions.
- **Why:** a unique opportunity to shape the competition challenges, rules and evaluation criteria to make them meaningful to your business current and future needs in robotics.
- **How:** contact the METRICS coordinator at [info@metricsproject.eu](mailto:info@metricsproject.eu).

# THANK YOU

[www.metricsproject.eu](http://www.metricsproject.eu) | [info@metricsproject.eu](mailto:info@metricsproject.eu)

