

# AI REGIO

*Regions and Digital Innovation Hubs alliance for AI-driven digital transformation of European Manufacturing SMEs.*

## THE PROJECT

The EU-funded AI REGIO project addresses policy, technology and business barriers to support creation and sustainable growth of AI-focused Digital Innovation Hubs (AI DIHs) to support European manufacturing SMEs in their digital transformation. It will build a one-stop-shop platform that enables access to resources for AI-based solutions in efficient and sustainable manufacturing, with particular emphasis on resources that can lower the AI adoption barriers for SMEs.

## OUR ECOSYSTEM

AI REGIO is a collaborative network of 13 regions and their corresponding Digital Innovation Hubs (DIHs) and Competence Centres, which actively involves regional authorities and agencies, with a portfolio of several thousand SMEs representing 15% of EU GDP.

**The Four Motors of Europe regions (Lombardy, Baden-Württemberg, Auvergne-Rhône-Alpes, Catalonia)**, leading edge European regions in terms of GDP, industrialization and innovation, closely collaborate with and transfer knowledge and experience to nine other Vanguard Regions.

AI REGIO conducts 17 DIH and AI-driven Experiments that are grouped into four clusters.



**CLUSTER #1**  
**Product Engineering and Lifecycle Management**

*How AI could support the product lifecycle from its conception to its dismissal in a circular economy perspective.*



**CLUSTER #2**  
**Efficient and Sustainable Manufacturing**

*How AI could support the Twin Transition for Manufacturing Factories of the Future: the Digital and the Green Transition.*



**CLUSTER #3**  
**Quality Control and Predictive Maintenance**

*How AI could support new critical processes in the Factory aimed at Zero Defect and Zero Downtime scenarios.*



**CLUSTER #4**  
**Robotics and Human Interaction**

*How AI could support high-levels of automation and simultaneously develop new roles for humans in an Industry 5.0 scenario.*

The AI REGIO consortium will offer to apply for open calls for 16 more experiments to be launched.  
- Please contact us for more information -

## OBJECTIVES

### • POLICY IMPACT

**Better coordination of regional smart specialisation strategies:** AI REGIO actively involves regional authorities to foster closer cooperation across European regions, EU and non-EU countries to make sure innovations can scale to European and global marketplaces. Next to the Four Motors for Europe movement and nine other Vanguard Regions, it also builds on the I4MS (ICT for Manufacturing SMEs) Community and Innovation Collaboration Platform.



### • TECHNOLOGICAL IMPACT



**Enhancing knowledge transfer across the network of DIHs:** AI REGIO will build on Digital Manufacturing Platforms from previous EU-funded projects such as BEinCPPS, MIDIH, L4MS and AI4EU and help to integrate these into Digital Innovation Hubs offerings. These Digital Manufacturing Platforms will in turn benefit from present Digital Innovation Hubs services regarding their business and social impact challenges. Present AI-enabled technological assets will further be extended.

### • BUSINESS IMPACT

**Upgrade the offering of DIHs by AI-driven applications:** AI REGIO will conduct more than 30 DIH-driven and SME-oriented application experiments under a common unified framework for ethical-social-business impact measurement, assessment and benchmarking. Experiments will further extend the project's present toolkit of 64 AI-enabled technological assets and the DIH offering to SMEs.



## Successfully Accomplished AI REGIO Experiments

### EXPERIMENT 1 - "Smart Predictive Maintenance Toolbox for Drawing Lines of Car Body Element"

This is a DIH-driven experiment in Navarra, ESP, led by Asociación de la Industria Navarra AIN and is focused on introducing Artificial Intelligence techniques in the Predictive Maintenance of stamping presses. The solution of the Experiment will combine different tools for monitoring, self-diagnosis and decision-making aids to improve the operation of the maintenance team.

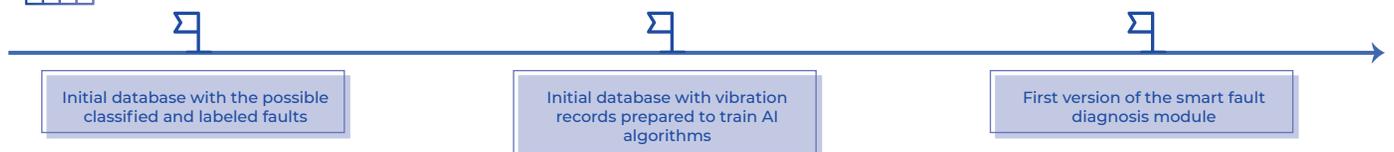
#### Expected Gains:



- Improved reliability and stopping reduction due to unforeseen breakdowns
- Reduction of service costs for the customer & increased competitiveness for the service provider
- Reduction of analysis and diagnosis times by specialized personnel
- Facilitate SME access to this failure prevention technology



#### Progress of the Experiment:



### EXPERIMENT 2 - "Intelligent Computer Vision for Digital Twin and Reinforcement Learning for Assembly Line Balancing"

This is a DIH-driven experiment led by INESC TEC in Porto, PRT and focused on dynamically allocating production resources to manufacturing tasks to better face uncertainties like machine failures and unavailability of operators. The aim is to install an IoT platform and AI demonstrator at the iLab - Industry and Innovation Lab of INESC TEC with 12 demonstrators of concepts and advanced technologies in the areas of robotics, automation, and industrial cyber-physical systems in the form of a show-room.

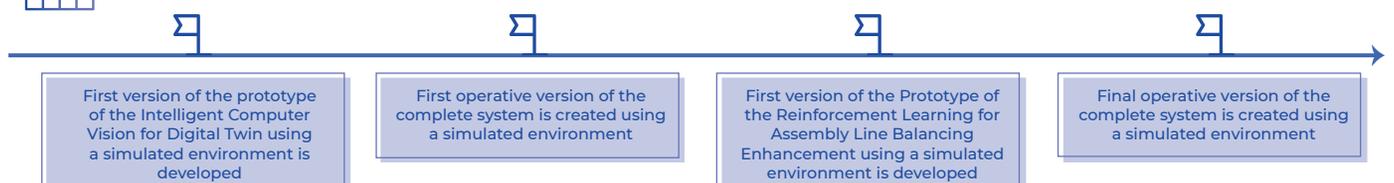
#### Expected Gains:



- Deploy IoT infrastructure augmented with AI to serve iLAB demonstrators
- Increased visibility on the execution of a production schedule
- Increased flexibility and efficiency of a production system
- Increased robustness of operations of robotic mobile manipulators



#### Progress of the Experiment:



## PROJECT COORDINATOR

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