



European SMEs Robotics Applications

ESMERA Partner self-description

Introduction of the Institution

IK4-TEKNIKER is a private not-for-profit technological centre that aims at the development and transfer of technology to improve the competitiveness of industry. In line with its missions and origins, IK4-TEKNIKER not only provides companies with technological support, but is also involved in generating new business initiatives, which are usually technological and, often, "spin offs" of the centre itself.

IK4-TEKNIKER has been participating in both national and European projects in the field of Advanced Industrial and Service Robotics focused on developing intelligent robotic applications able to interpret the environment through multimodal sensors, implementing strategies for navigation and manipulation to adapt to changing conditions and allow safe interaction with people. IK4-TEKNIKER has an experienced team consisting of electrical, electronic, mechanical and computer engineers.

IK4-TEKNIKER has extensive experience as coordinator in many European projects such as ROBOFOOT (Smart robotics for high added value footwear industry, www.robofoot.eu), MAINBOT (Mobile robots for inspection and maintenance activities in extensive industrial plants, www.mainbot.eu), CRO-INSPECT (Collaborative Robotic Solution for Advanced Inspection of Complex Composite parts, www.cro-inspect.eu) and FourByThree (Highly customizable robotic solutions for effective and safe human robot collaboration in manufacturing applications, www.fourbythree.eu) as well as participation in other relevant projects in this field, such as X-ACT (Expert cooperative robots for highly skilled operations for the factory of the future), ROBOPARTNER (Seamless Human-Robot Cooperation for intelligent, Flexible and Safe Operations in the Assembly Factories of the Future), MIROR (Miniaturised Robotic systems for holistic in-situ Repair and maintenance works in restrained and hazardous environments, www.mirror.eu) or CUSTOMPACKER (Highly Customizable and Flexible Packaging Station for mid- to upper sized Electronic Consumer Goods using Industrial Robots). The team is currently taking part in EUROC (European Robotics Challenges, www.euroc-project.eu) having reached the final in the two challenges it participates, PICKPLACE (Flexible, safe and dependable robotic part handling in industrial environments,) and GREENPatrol (Galileo Enhanced Solution for Pest Detection and Control in Greenhouse Fields with Autonomous Service Robots,).

IK4-TEKNIKER participates in the euRobotics AISBL and the Spanish robotic platform HISPAROB, being member of its Board of directors.

Role in ESMERA

IK4-TEKNIKER is one of the Competence Centers in ESMERA. Its main role is the management of the Experiments that will result from the Open Calls in both Phase 1 and Phase 2.

As a Competence Center, IK4-TEKNIKER will facilitate the access to its facilities and research means to the Experiments. The most relevant assets are:

- **Robotics Laboratory**
 - 3 Additive Manufacturing robotic cells (ABB robots)
 - Collaborative Dual arm robotic cell (COMAU RML)
 - Bin Picking setup (KUKA KR60)
 - Collaborative robots (UR10, KUKA IIWA, ABB YUMI)
 - Means for HR Interaction (projection system, gesture detection, voice based control)
 - Modular FourByThree Robot
 - Omnidirectional mobile platform
 - Mobile robot for guiding in public sites
- **Vision Laboratory**
 - Different cameras, optics, lighting systems
 - Linear and rotating equipment for part manipulation
- **Workshop** with many different production means: Lathes, Milling machines, assembly workshop, the above mentioned three additive manufacturing robotic cells
- **Mechatronic Design Department**

TEKNIKER can support all application areas addressed in ESMERA:

- **Manufacturing:** key research activity in TEKNIKER. The workshop and Robotics cells can be used by Experiments
- **Energy:** Additional support by the Renovables Energy research team, currently coordinating the H2020 project MOSAIC (MODular high concentration SolAr Configuration)
- **Construction.** Outdoor and indoor testing facilities.
- **Agri-food:** Platform used for pest detection in Greenhouses (GREENPATROL project).
Chemical analysis laboratory.