

4

PILOTS

In order to facilitate the assessment of the performance, transferability, scalability and large scale deployment of the proposed robotic system, the demonstrations will be conducted under **real industrially relevant environments** in four pilot demonstrators involving four **key manufacturing sectors**:

- **Toys:** JUEMA
- **Textile:** DECATHLON
- **Footwear:** PLASTINHER
- **Tyres:** MICHELIN

5

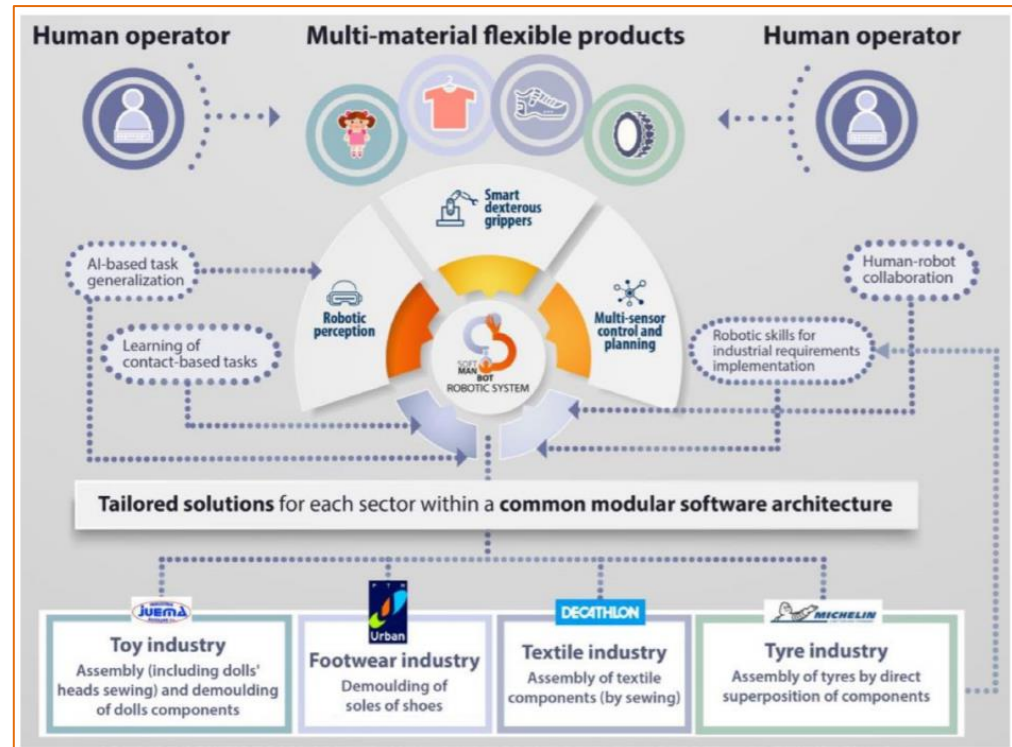
OUR AMBITIONS

- To design a modular and interoperable architecture
- To develop a robotic perception platform
- To develop a multi-sensor planning and control system
- To design and develop intelligent, dexterous and low-cost grippers for deformable object handling
- To deliver an environmental (LCA), economical and social evaluation

The robotic system **will be able to handle soft components with high-levels of robustness and flexibility** by integrating three main pillars:

- a **generic robotic perception** system: sensing algorithm for **tracking precisely the deformable product and the human operator**,
- a **multi-sensor control and planning platform**: advanced control algorithms for shape and contact servoing and AI based task generalization,
- **smart dexterous grippers**: smart mechanical design which will embody grasping/manipulation skills and integrate sensors – mainly tactile – for identifying precisely the contact state between the product and the gripper.

WE ARE DEVELOPING
AN INNOVATIVE
AND UNIVERSAL
ROBOTIC SOLUTION
FOR HANDLING
DEFORMABLE AND
FLEXIBLE MATERIALS
FOR THE INDUSTRY

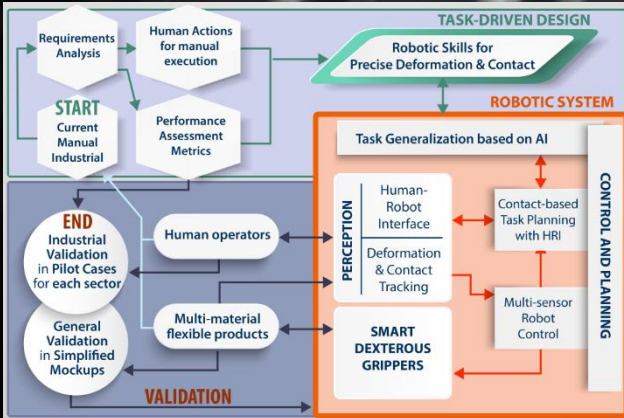


SOFTMANBOT system overview

Robotic manipulation of deformable materials is inherently challenging due to the high dimensionality of the state of the material. These applications require the control of the contact forces, shapes, and precise position of the components.

The SOFTMANBOT project proposes an holistic robotic handling ecosystem, as an integrated, scalable and yet installation-specific solution for the semi-automated manipulation of soft materials in production processes.

11 Partners 4 Countries



Consortium



<http://softmanbot.eu/>
 @SOFTMANBOT_EU
 softmanbot-eu-h2020

Project Coordinator

SIGMA , France
 Pr. Youcef Mezouar (Project Coordinator)
coordinator@softmanbot.eu
 Dr. Juan Antonio Corrales (Technical Manager)
tech.manager@softmanbot.eu

Advanced RoBOTic Technology for Handling SOFT Materials in MANufacturing Sectors

An industrial-end-user driven project that provides an innovative robotic system for the handling of flexible and deformable materials within labor-intensive production processes.

EU H2020 Research and Innovation Action (October 2019 – March 2023)