



PROJECT IN A NUTSHELL

HARTU is an industry-led research project addressing the main challenges of part handling in the manufacturing lines, including gripping, assembly and placement, using innovative and Al-enhanced technical approaches.

The project will apply innovative techniques in industrial case studies to develop tools capable of handling a wide range of products in terms of shape, material and size, enhancing the flexibility, reconfigurability and efficiency of production lines.

OBJECTIVES



Techno-industrial: **Automated grasping**



Techno-industrial: Contact-rich assembly



Techno-industrial: Al-based visual handling



Techno-industrial: **Electro-active soft** grippers



Techno-industrial: **Optimised handling** systems



CHALLENGES AND NEEDS

CONTACT-RICH ASSEMBLY SKILLS

COLLECTING REQUIREMENTS

ADAPTING THE WORK PROCESSES TO NEW TASKS AND

> **MAPPING OPERATE WITH NEW**





USER NEEDS AND

PROCEDURES

COMPETENCIES AND SKILLS REQUIRED TO **SYSTEMS**

SOLUTIONS

GRASP/RELEASE **OPERATION AND PLANNING**

> VISUAL **PERCEPTION**

HUMAN-AI TEAMING MODEL



SOFT GRIPPERS WITH ELECTRO-ACTIVE **FINGERTIPS**

TACTILE/FORCE **PERCEPTION**

PROGRAMMING-BY-DEMONSTRATION

INDUSTRIAL APPLICATIONS



















OMNIGRASP





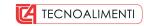


USER-RELATED

STUDIES













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