

## CustomPacker aims at

Developing and integrating a scalable and flexible robotic packaging assistant that aids human workers while packing mid to upper sized and mostly heavy goods.

## CustomPacker at a glance

During the project, different concepts and technological solutions for an adaptable and changeable packaging system using standard components will be designed and evaluated.

A research demonstrator will be set up to provide an integration platform, where the different developed software and hardware components can be tested in a factory-like environment.

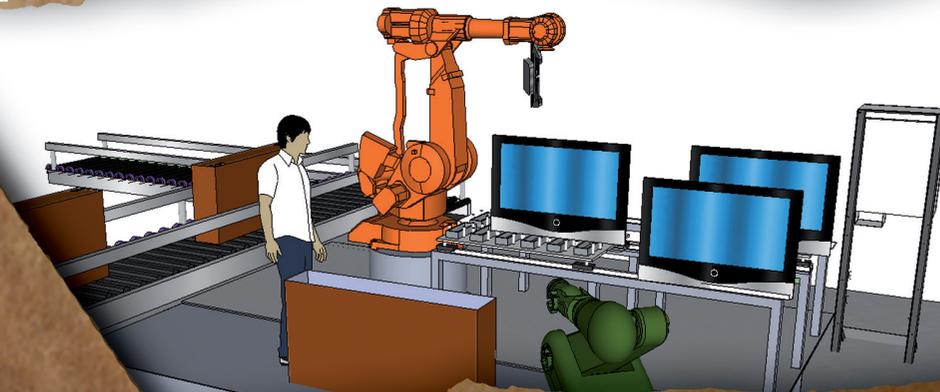
The decrease of the production cycle time in a benchmark scenario with a human-robot co-operation in an industrial packaging line by automating the packaging phase will be measured.

Increased productivity by exploiting direct human-robot cooperation overcoming the need and requirements of current safety regularities.

With an optimization of ergonomic working conditions for humans, a functional demonstration of the installation and a qualitative and quantitative profitability analysis of this project will disseminate the human-robot collaboration to a wide range of European SMEs.

The project results are not only relevant for manufacturers of electronic consumer goods (especially for heavy and/or fragile products, which are up-to-now packed manually) but also for other industry sectors and scenarios.

WWW.CUSTOMPACKER.EU



INFO@CUSTOMPACKER.EU

CustomPacker

Highly Customizable and Flexible Packaging Station for mid- to upper sized Electronic Consumer Goods using Industrial Robots

## Main objectives

**To design** and assemble a robotic packaging workstation mostly using standard hardware components (no need for special solutions).

**To create** a setup for packaging a high variety of products and components (size, weight and form).

**To provide** a scalable system architecture.

**To make** teaching strategies available for the human worker allowing adapting the packaging station to handle and to pack new product

**To open** new ways of how industrial robots are deployed, namely the collaboration of human workers together with robot "co-workers".

**By applying** of highly sophisticated software modules for worker detection and intention recognition, the cycle times can be reduced in order to justify the investment costs for additional complexity.

**To establish** a high degree of safety for the worker, so that flexible human-robot collaboration is possible and no threats for the human worker occur.

**To regard** ergonomic aspects in the human-robot workflow, thus ensuring the sustainability of the worker's physical health.

**To design** a socially acceptable form of human-robot collaboration.

## Key figures

**CustomPacker** is funded under the European Recovery Package, 7th Framework Programme for Research and Development; Factories of the Future.ICT.2010.10-1: Smart Factories: ICT for agile and environmentally friendly manufacturing

**The EC** total contribution is 2.6 Mio € for 36 months (start July 01/07/2010).

**It involves** four academic institutions or public research organizations, two small high-technology enterprises and one large company.

## About the Consortium

**The experienced** international industry-driven consortium will start with a baseline cell layout for a packaging station including industrial robots.

**The project** consortium covers all relevant partners including a robot manufacturer, specialists for robot integration, human-machine interaction, worker surveillance, industrial work flow management, a system integrator, and an end-user for testing and verification for the developed system.

## Scientific objectives

**Direct human-robot collaboration:** A hand in hand cooperation between a human worker and an industrial robot is envisioned by the project.

**Intuitive flexible teaching:** Non-experts in robotics should be able to teach-in different product variants in an appropriate way.

**Universal handling:** A gripping device will be set up, capable of dealing with different types of packages (size, form, weight), focussing on fragile TV sets at the beginning.

## Partners

Technische Universität München, DE

**Coordinator**

Prof. Dr. Frank Wallhoff

PROFACTOR GmbH, AT

Dr. Andreas Pichler

Prof. Dr. Gerhard Rigoll

VTT Technical Research

Ilari Marstio

Prof. Dr. Michael Zäh

Centre of Finland, FI

FerRobotics Compliant

Dr. Paolo Ferrara

Technological Center Tekniker, ES

Aitor Olarra

Robot Technology GmbH, AT

Loewe AG, DE

Hermann Zeuss

MRK-Systeme GmbH, DE

Dr. Peter Heiligensetzer



MRK-SYSTEME GMBH