

Project acronym: RODYMAN

Project full title: RObotic DYnamic MANipulation

Grant agreement no: 320992

Starting date: 1 June 2013

Duration: 60 months

Principal Investigator: Prof. Bruno Siciliano (Università di Napoli Federico II)

Host Institution: Consorzio C.R.E.A.T.E.

Programma: "IDEAS" Specific programme European Research Council

The goal of the RoDyMan project is the derivation of a unified framework for dynamic manipulation where the mobile nature of the robotic system and the manipulation of non-prehensile non-rigid or deformable objects will explicitly be taken into account. Novel techniques for 3D object perception, dynamic manipulation control and reactive planning will be proposed.

An innovative mobile platform with a torso, two lightweight arms and multifingered hands, and a sensorized head will be developed for effective execution of complex manipulation tasks, also in the presence of humans. Dynamic manipulation will be tested on an advanced demonstrator which is currently unfeasible with the prototypes available in the labs, where the application scenario is conceived to emulate the human ability to carry out a challenging robotic task. The research results to be achieved in RoDyMan will contribute to paving the way towards enhancing autonomy and operational capabilities of service robots, with the ambitious goal of bridging the gap between robotic and human task execution capability.