




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## A step forward to the service robots of the future



**Why should people waste their time executing some repetitive time-consuming everyday tasks which do not require creativity and intellectual capacity? Such a reasoning stands behind Professor Bruno Siciliano's ERC funded project aiming at the creation of a new generation of**

**service robots.**

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At the core of Prof. Siciliano's team work is the construction of a new robot with unmatched dexterity that autonomously performs tasks that could ease people's manual work. With its mobile platform, two lightweight arms and multi-fingered hands, the so-called RoDyMan —the acronym for Robotic Dynamic Manipulation — will be able to perform a number of dynamic non-prehensile manipulation tasks, other than grasping.

RoDyMan will effectively be based on novel techniques for 3D object perception, dynamic manipulation control and reactive planning. By assessing information about the physical properties of the object, RoDyMan will be able to control the sequence of actions in the task, react to unexpected situations and avoid collisions with objects and humans thanks to the multiple sensing capabilities.

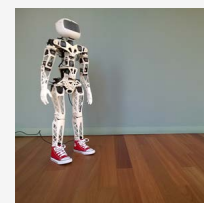
Two years after the start of the project, the research work performed by Prof. Siciliano has progressed well. The construction of the RoDyMan prototype structure is evolving day after day, while techniques are being developed to allow the robot to interact in a dynamic environment with deformable objects such as food or clothes, as well as with soft tissues, like muscles and skin, for medical purposes.

With unprecedented manipulation skills and an enhanced ability to work in human contexts, RoDyMan's future looks bright. From assisting elderly people to repairing a limb, the potential applications of RoDyMan are numerous and could greatly improve our daily lives.

**Project:**

**Principal Investigator:** Bruno Siciliano

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**Host institution:** Consorzio C.R.E.A.T.E.  
**Project:** Robotic Dynamic Manipulation (RoDyMan)  
**ERC call:** Advanced Grant 2012  
**ERC funding:** € 2.500.000  
**Research area:** Physical and Engineering Sciences



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- Funding Schemes
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- FAQ

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- Statistics

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