



The AnDy collaborative technologies will be deployed on three types of robots: "cobots", i.e., certified industrial manipulators that can work closely with humans; exoskeletons, i.e., wearable devices that can assist and support the human movement during physically demanding activities; finally, robot "companions", i.e., advanced humanoid robots that can anticipate and assist the humans during cooperative tasks and physical interaction.



www.andy-project.eu

 twitter.com/AnDy_H2020

Contact: francesco.nori@iit.it



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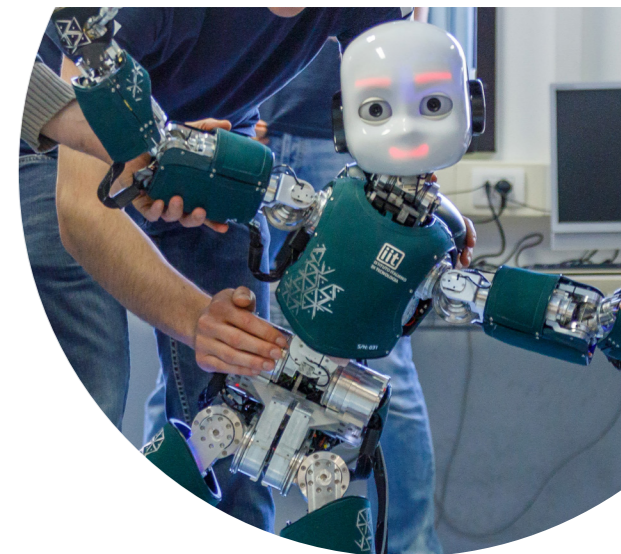
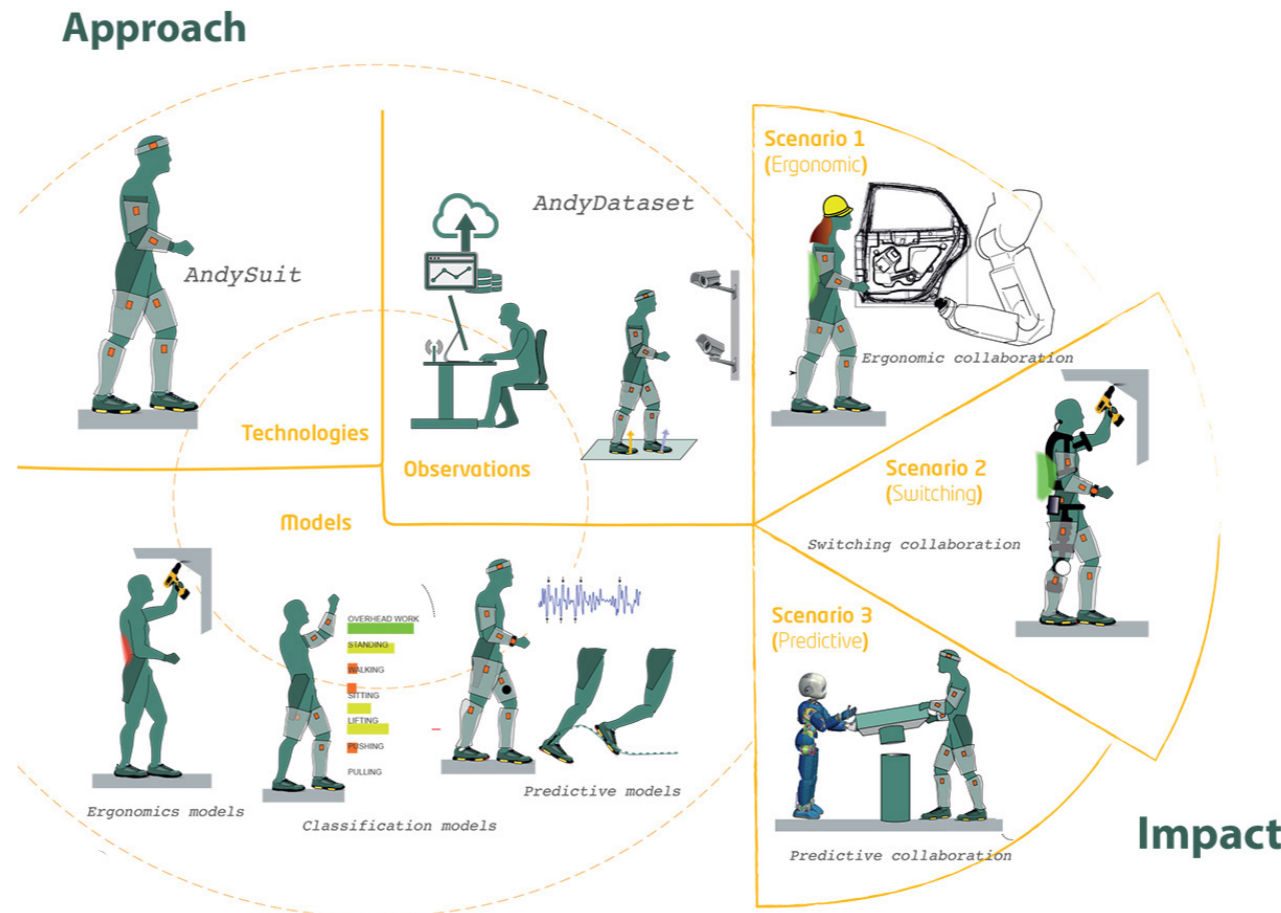
THE CONCEPT

Advancing Anticipatory Behaviors in Dyadic Human-Robot Collaboration

The European project ANDY is coordinated by IIT-Istituto Italiano di Tecnologia and aims at improving the ability of robots in cooperating with humans in industrial and domestic environments, by interpreting their physical demands and reducing their risk of injury. ANDY focuses on one of the main themes of the European Union's industrial roadmap: the innovation of the production lines in the so-called "industry 4.0", leading the design and building of "collaborator" robots worldwide.

The project addresses "collaborator" robots, that is robotic systems that are able to predict and anticipate the human partner's movements. They can assist the human at work and help preventing musculo-skeletal accidents by generating appropriate ergonomics controls.

Such a capability finds application in industrial, service and domestic environments, with benefits for SMEs development and large companies in manufacturing.



AnDy will accelerate take-up and deployment in these domains by validating its progress in several realistic scenarios. In the first validation scenario, the robot is an industrial collaborative robot, which tailors its controllers to individual workers to improve ergonomics.

In the second scenario, the robot is an assistive exoskeleton which optimizes human comfort by reducing physical stress. In the third validation scenario, the robot is a humanoid, which offers assistance to a human while maintaining the balance of both.