

Cognitive Interaction in Motion

Partner

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Data

H2020-ICT No 644727
 8 Partner
 4 Countries
 4 Years 2015 - 2019
 7 Mio Budget

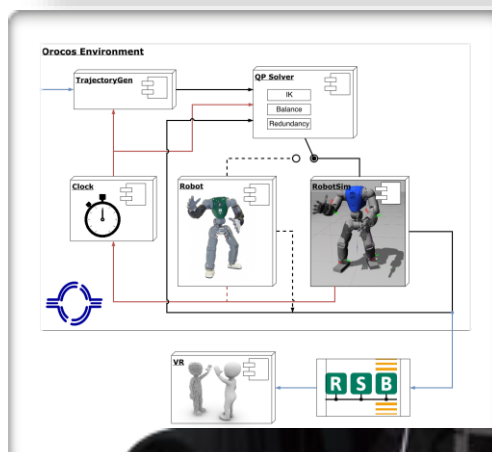
Workpackages

Mechatronics and Impedance Control
 Model Driven Systems Engineering
 Sensorimotor interaction control
 Force and impedance primitives
 Cognitive Aspects of Motion
 Real world experimentation
 Dissemination and exploitation
 Management

Outcomes

new compliant humanoid Robot
 full body compliant control methods
 open source tools for robot programming

Motivation: Human have sophisticated skills like soft catching, sliding and pushing large objects and adapt to partners in constraint walking or in execution of joint manipulation tasks. We refer to this as *cognitive compliant interaction*. Compared to the richness of such behavior, our understanding of robot actions is shallow. CogIMon aims to narrow this gap.



Evaluation & human science: measure feasibility, intuitiveness, efficacy and complexity of the robots' interaction through demonstrations and user studies in real world experiments

Applications

therapeutic juggling for motor rehabilitation
 multi-robot compliant handling of big object manipulation by human-robot teams

Objectives

- develop new compliant humanoid robot
- investigate human force interaction
- transfer human control to full-body robots
- design force control movement primitives
- develop domain specific software language
- create multi-humanoid team-interaction

Target: Step Changes in

full-body variable impedance actuation, adaptability, prediction ability, dependability, flexibility, and enhanced motion