

TOWARDS SAFE AND COLLABORATIVE CABLE-DRIVEN PARALLEL ROBOTS

ROCABLE PROJECT

ROCABLE addresses safety issues specific to CDPRs and aims to develop guidelines and tests leading towards CDPRs sharing a part of their workspace with human operators. ROCABLE will identify the relevant standards and directives to use CDPRs co-existing with human operators; develop safety-related software/hardware to manage the CDPR emergency stop.

TECHNICAL AND ECONOMIC IMPACTS

- Achieving workplace-sharing industrial applications for CDPR
- Raise awareness of safety issues in the parallel robot community

BUDGET

150 K€

KEYWORDS

Cable Driven Parallel Robots ; Cobotics ; Safe robotics

RESEARCH THEMES AND EXPERTISES

Adaptive and smart manufacturing systems
Cobotics

EQUIPMENTS

FASTKIT-PACE robot
ROCASPECT robot

PARTNERS

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INDUSTRIAL CONTEXT

Nowadays, CDPRs have not yet penetrated the industry. The fact that they can span such large workspaces is a major reason not to install them, since those large areas are to become safeguarded inaccessible zones.

INNOVATIVE FEATURES

- Develop safety-related software/hardware functions to manage the CDPR emergency stop.
- Perform test protocols in order to quantify the usability domain and the validity of safety solutions for identified risks.
- Analysis of cable failure consequences and empirical measurements of cable lengths and tensions that could lead to the early identification of cable deteriorations.

INDUSTRIAL APPLICATIONS

CDPRs have the potential to open new market segments: they're energy efficient and relatively cheap with a large workspace and they can take advantage of the free volumes above 2m in factories.

We selected two novel CDPR industrial applications with very high potential to market as long as safety solutions are validated: CDPR for logistics and CDPR for inspection.



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