ECHORD++

The European Coordination Hub for Open Robotics Development

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Experiments Call II Kick-Off

Experiment Presentations

Palma de Mallorca, Spain

3 May, 2016

Bristol Robotics Laboratory

BLUE OCEAN ROBOTICS
- for humans

RUROBOTS
Cognitive Science at Work

SEVENTH FRAMEWORK PROGRAMME

ECHORD++

The European Coordination Hub for Open Robotics Development

FASTKIT

Presentation by Dr. Stéphane CARO - CNRS

FASTKIT

Collaborative and mobile Cable-Driven Parallel Robot (CDPR)

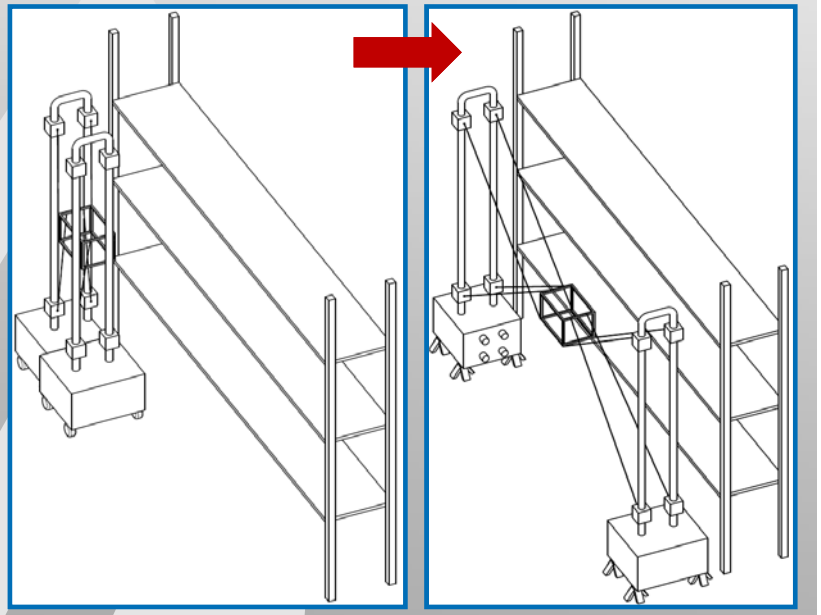
→ Provide the industry with a cost-effective and flexible solution for logistics operations

A 2-STEP EXPERIMENT

> Development of a new collaborative and mobile CDPR ***(12 months)***
> Implementation on an industrial scenario of cognitive logistics robots ***(6 months)***

Based on partners background in mobile cobotics and CDPR :
FASTKIT experiment main objectives

1. Mobile robot and tow will reach autonomously and safely the storage section
2. CDPR will deploy by setting up tow and reach second position according to the range of the rack
3. CDPR effector will execute picking operations by using classical grippers



Novelty & Objectives

- Robot algorithms, software and architecture system for multisensory perception and navigation
- Control and trajectory planning of the collaborative and mobile Cable-driven Parallel Robot
- Modeling and dimensional synthesis of a reconfigurable Cable-Driven Parallel Robot
- Prototyping and implementation on use-cases with defined scenario

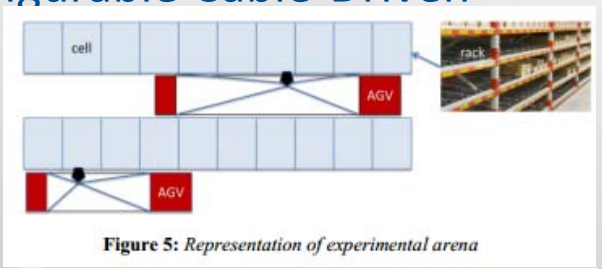
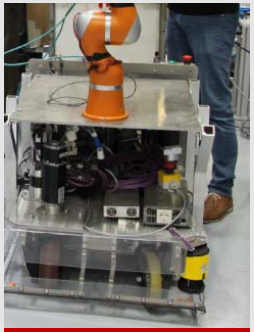


Figure 5: *Representation of experimental arena*



TRL 6

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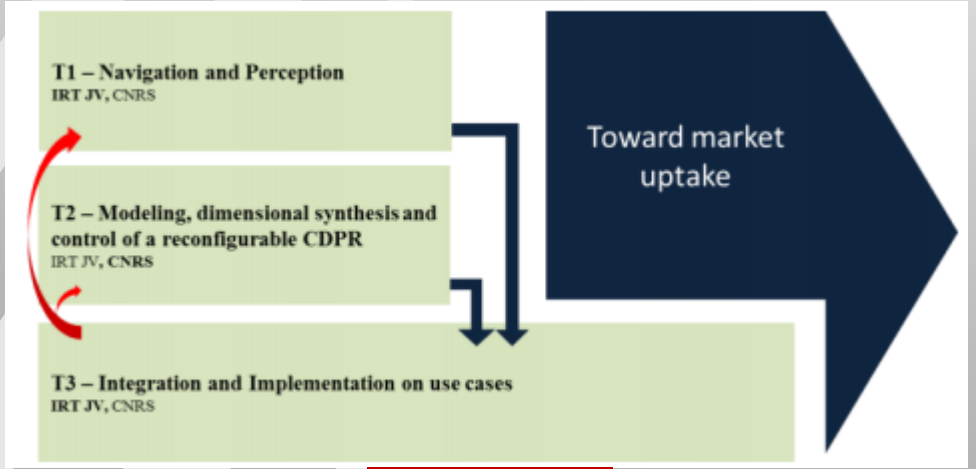
TRL 5



TRL 4

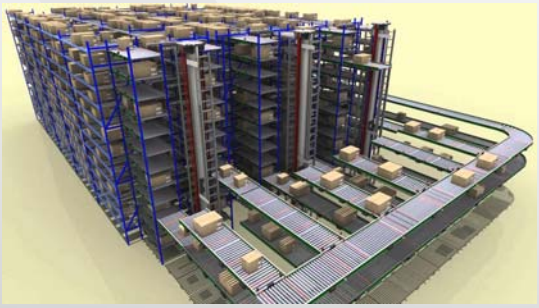
Impact

> Industrial impact

For end-user

Provide a flexible solution to the Industry for kitting operations. Adapted to current industry with storage facilities (automotive/aeronautics focus).

Scenario designed with Automotive industry leader + AGV manufacturer



For AGV manufacturer and IRT JV/CNRS

Value creation through start-up approach

> Economic impact

Easy to deploy and reconfigurable compared to heavy logistics systems

Cheaper and more efficient than mobile cobots

> Technological and Scientific Impact

Development of innovative control laws to manage kinematic and actuation redundancies

- patents, peer-reviewed scientific publications, trade fairs and exhibitions

FASTKIT unique selling points

- Low investment cost
- Easy to install and deployable
  No need for civil engineering!
- Large workspace
- Fast and accurate
- Fully autonomous