# RI-MACS

**NMP2-CT-2005-016938**

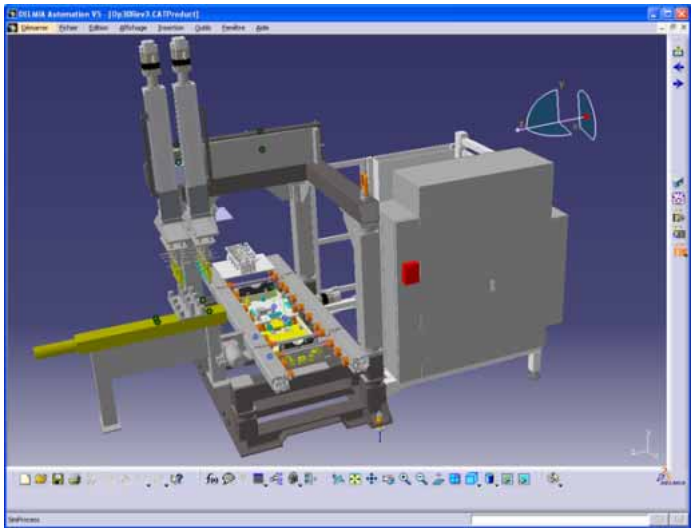
**Radically Innovative Mechatronics and Advanced Control Systems**

## Publishable Executive Summary

***RI-MACS is the acronym for Radically Innovative Mechatronics and Advanced Control Systems. This research program has been set up to define, develop and introduce in the industrial field radically innovative manufacturing technologies. These technologies have been adopted to address a number of issues that are highly affecting the industrial automation field. All the technologies investigated are conform to open architecture standards and feature state-of-the-art ICTs, especially wireless technology, modular mechatronics and virtual engineering environments.***

**Project duration**
September 2005 – August 2008

**Project Partners**
Comau (Italy)
Schneider Electric (Germany)
Delmia (France)
Prodatec (Finland)
ITIA-CNR (Italy)
IPA-FhG (Germany)
Parades (Italy)
Tampere University of Technology (Finland)
University of Loughborough (United Kingdom)
Scuola Superiore Sant'Anna (Italy)



*Virtual Commissioning Tool*

**Project Coordinator**
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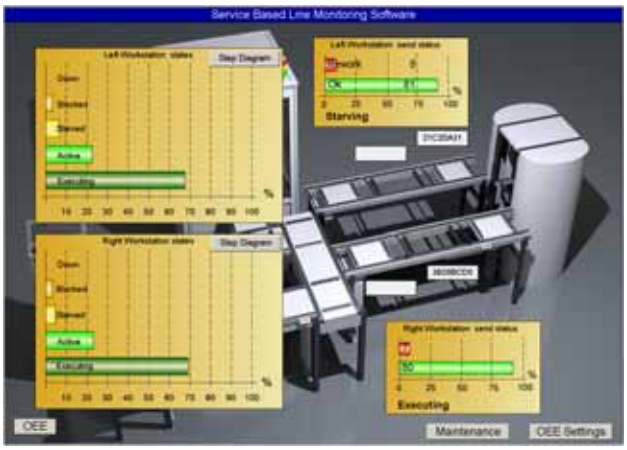
**RI-MACS Project Drivers**

The global competitive environment poses formidable challenges to manufacturing infrastructure. Speed is viewed as the key to being able to respond to continuously changing market demands, time-to-market pressure, plant and equipment costs, and the need to amortize them over ever longer periods.

A recent study has revealed that 30% of the cost of a manufacturing plant over its lifetime is directly attributable to its installation and set-up. Maintenance downtime accounts for another substantial portion of the operating costs. If the plant has to be adapted to new products by changing its process flow and introducing new or replacing obsolete or non-competitive equipment that is provided by different makers, then the downtime and installation costs naturally rise considerably.

The radical innovation at the heart of this research development program is the analysis and the implementation of emerging technologies such as: virtual environment, embedded systems, services oriented applications and industrial wireless applications to better manage the total cost of the plant.




*Web services application*

## The results

The innovative RI-MACS approach extends the use of networked embedded intelligence toward the real-time production control and automation enabling a new range of products and services.

The partners worked to promote, demonstrate, and exploit the project achievements within the relevant industrial sectors and academic domains developing: publications, trainings, promotions and demonstrations, standardisation, and industrial exploitations.

Thanks to the work developed in the RI-MACS project, the partners are able to offer their customers the best ICT technology applied to the Industrial Automation field.

## The Future

The main part of the project partners are continuing the collaboration started during the development of the research project to enhance and to exploit the outcomes of RI-MACS.

Thanks to the positive results reached during the project, the industrial partners are able to promote the RI-MACS based solution to their customers and to continue the development of these innovative technologies, in order to have the state-of-the-art technology in the Industrial field.

### Work Packages

***WP1***
Scientific and industrial requirement analysis and specification assessment

***WP2***
System control architecture

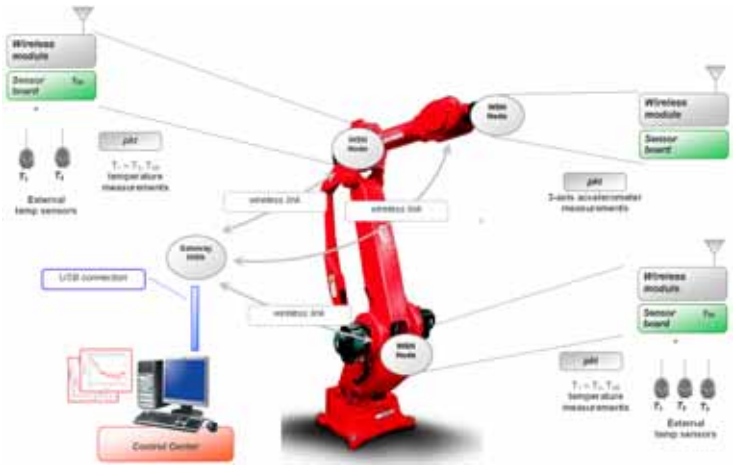
***WP3***
Enabling radically innovative for open automation

***WP4***
Methodologies and tools for agent based embedded control systems development

***WP5***
Validation and test bed

***WP6***
Dissemination and Exploitation management

***WP7***
Project Management



*Robotics WSN application*