Research program: *"Modeling and simulation of manufacturing systems"*

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RESEARCH PROJECT

The research project aims to develop technologies and solutions to improve the capacity of the modern factories to be flexible, efficient and adequately respond to unpredictable changes in market demand. Modern industries and factories for the production and packaging of products have reached a high degree of automation. In this context, the following innovative features play a vital role:
• The realization of modular mechatronic nodes for reconfigurable production lines for assembly with auto-diagnosis.
• The definition of a new paradigm for industrial automation processes, based on functional connections of hardware (mechanical, electronic systems and power) and software, which can simplify the design process of the production system.
To focus on the issues of integration of the system, this kind of study will be carried out considering possibly software "off-the-shelf" system and hardware already known in industry.
An important contribution to the sustainability of processes and products, taking advantage of the rapid reconfiguration of both the mechanical and automation systems, in collaboration with diagnostic tools to better manage the remaining useful life of plant equipment.