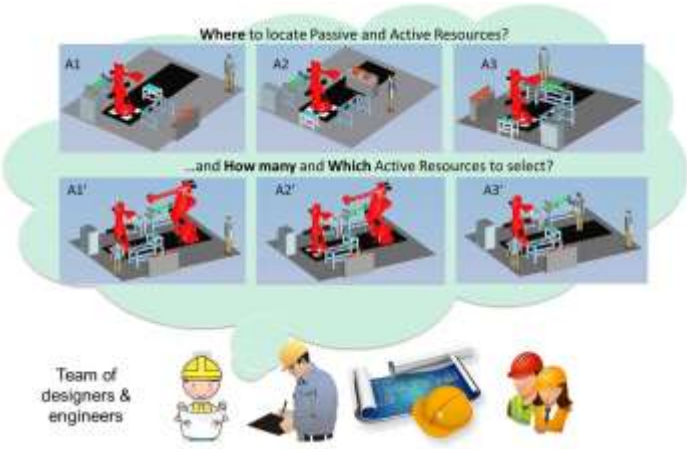
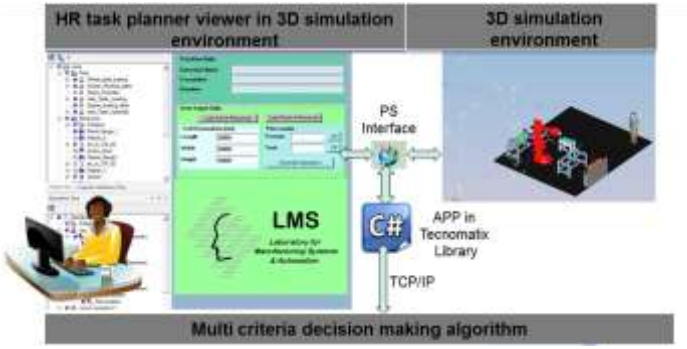
Use case 9: Dynamic task planning & work re-organization

Problem/goal	Support production designers during the manufacturing system design process
Potential users	SMEs that need novel solutions for optimizing their production while automating the design process.
NACE	29.3 Manufacture of parts and accessories for motor vehicles
Description	Demonstration of an intelligent decision-making framework for active and passive resources allocation in a workcell, rough motion planning of human and robot operations and initial task planning. Multi criteria decision making modules integrating 3D graphical representation, simulation and embedded motion planning is used to validate alternative workplaces layouts and task plans.
Hardware	High performance computer
Software	Open source software (ROS), Siemens - Process Simulate
Standards	Considered: ISO/TS 15066:2016, ISO 10218-1/2
Possible benefits	Minimize the time required as well as the effort for multiple iterations between the designers, process engineers and system integrators. The solution will address the issue by gathering in a tool all this knowledge and providing feedback to the human within a short time frame (some minutes instead of 1-month work).
Partners	LMS – University of Patras, Greece
More info	https://www.youtube.com/watch?v=0asQ5HYwe2g





Intelligent heuristics integrated with 3D simulation tools