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Abstract:

Robotnik Automation, SLL has wide experience in the R&D of field and service robots. Our main research field has been the design of outdoor high mobility platforms. Our rovers have higher mobility than average products, and are able to climb stairs up and down. The integration of our modular arm on the platforms has allowed us to do some research in mobile manipulation. In the last years we have started also the integration of these products in field and service robotics applications. Due to this, we have done also some research in indoor/outdoor navigation and SLAM.

Detailed research information:

Robotnik Automation is a Spanish SME founded in 2002, our main actuation fields are:

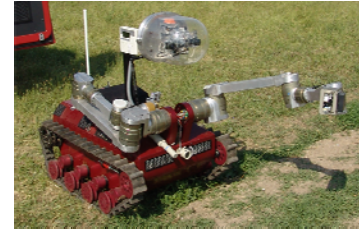
- Robotics and Automation services
- Robotic products development
- R&D

Robotnik has large expertise in the development of AGVs (Autonomous Guided Vehicles) and UGVs (Unmanned Ground Vehicles) and the development of field service robotics applications based on these platforms. Robotnik has currently four UGV/AGV platforms in its catalogue: RESCUER, GUARDIAN, AGVS and ROBOTRANS plus some customer specific mobile robot developments.

Robotnik has also experience in national and international research projects, some of the mentioned robots have been developed in the framework of EU FP6/FP7 projects. In all of them our part has been related with the control, navigation and or development of the specific robot platform.

- MASMICRO: “Integration of manufacturing systems for mass-manufacture of miniature/micro products”. Our main tasks were:
 - Indoor omnidirectional mobile platform for micro-products transport tasks development.

- Micro components handling system development.
- RESCUER: “Improvement of emergency risk management through secure mobile mechatronic support to bomb disposal”. Our main tasks were:
 - Our main task is the software architecture design and control system architecture design of a Mobile Platform for IEDD, EOD and Civil Protection Missions.



- GUARDIANS: “Group of Unmanned Assistant Robots Deployed In Aggregative Navigation supported by Scent detection”. Our main tasks are:
 - Middle sized AGV development, control architecture and final system integration.



- ACROBOTER: “Autonomous Collaborative Robots to Swing and Work in Everyday EnviRonment”. Our main tasks are:
 - Development of a new robotic winding mechanism.
 - Development of the software control architecture and the embedded controller of the robot.
- SRS: “Multi-Role Shadow Robotic System for Independent Living” focuses on the development and prototyping of remotely-controlled, semi-autonomous robotic solutions in domestic environments to support elderly people. The SRS project addresses the research challenges ICT for Independent Living, Inclusion and Governance and Service Robotics for Ageing Well, by demonstrating an innovative, practical and effective service robotic solution for personalised home care.

Robotnik is responsible of the realization of SRS prototypes and demonstrate that the SRS system can be applied to home care applications for aging well. First the software and hardware required for remote UI, communication interface and local manipulation will be modularised and integrated together as “shadow core system”. A full size model called “SRS prototype I” and a compact model “SRS prototype II” will be customised and implemented.

- PV-Servitor: “Autonomous cleaning robot for large scale photovoltaic power plants in Europe resulting in 5% cost reduction of electricity”. Our main tasks are:
 - Outdoor mobility.
 - Sensory control structure.