

SMErobot™

The European Initiative for Strengthening the Competitiveness of SMEs in Manufacturing



Current Situation

Existing automation technologies have been developed for capital-intensive large-volume manufacturing, resulting in costly and complex systems, which typically cannot be used in the context of small and medium sized enterprises (SMEs). Therefore, manufacturing SMEs are nowadays caught in an 'automation trap': they must either opt for current and inappropriate automation solutions or compete on the basis of lowest wages. A new paradigm of affordable and flexible robot automation technology, which meets the requirements of SMEs, is thus addressed by *SMErobot™*.

Objectives

SMErobot™ will create a radical new robot automation™ concept based on a new family of robots adapted to the needs of SMEs.

The project has the following objectives:

- Development of new robot systems, which adapted to a varying degree of automation and to low automation life-cycle cost.
- Development of new build-operate models, which provide new options for financing and operating robot-based automation solutions for SMEs, considering uncertainties in product volumes and life-times as well as in varying workforce qualification.
- Development of new concepts for the supply chain management of robot automation by focusing on the needs and culture of SME manufacturing.



Innovations

Radical innovations are necessary to fulfill the objectives for small scale robot automation. Thus, inventions concerning new robot kinematics, new robot components, new robot installation technologies, new calibration methods and new programming concepts will realize the following:

- Robots capable of understanding human-like instructions.
- Safe and productive direct interaction between human and robot.
- Three-day-deployable robot systems.

Benefit

Demonstrations of fully functional prototypes will be set up in real SME environments from different SME manufacturing branches, together with SME end-users and SME system integrators. Training and education will be conducted at all levels, from researcher to end-users. The unique composition of the consortium provides a strategic emphasis for maximum European impact on worldwide standards.

SMEs and society will benefit from the combined integration of knowledge along the supply chain of robotic automation, from component manufacturers to end-users, from multi-disciplinary activities to business/financing models, and from fundamental technical research when confronted with SME scenarios. The project management includes dedicated support for SME integration.



Consortium

For the first time, the five major European robot manufacturers have joined forces in *SMErobot™*, in close cooperation with key component manufacturers, leading research institutes, universities and consultants for multidisciplinary RTD, dissemination and training efforts.



The project is led by the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Germany, and co-managed by GPS Gesellschaft für Produktionssysteme GmbH, Germany. Special emphasis is put on the SME needs, which are united within a European Economic Interest Group led by Pro Support B.V., The Netherlands.

The project is designed for the duration of four years and was started on March 1, 2005.

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Contact

Project Coordinator:

Dipl.-Ing. Martin Hägele, M.S.
Fraunhofer IPA
Nobelstr. 12
D-70569 Stuttgart

Germany

Phone: +49 711 9 70-1203

Fax: +49 711 9 70-1008

E-mail: martin.haegele@ipa.fraunhofer.de

Project Management:

Corinna Noltenius
GPS GmbH
Nobelstr. 12
D-70569 Stuttgart

Germany

Phone: +49 711 68 70 31-44

Fax: +49 711 68 70 31-55

E-mail: matthias.hans@gps-stuttgart.de



Further Information

www.smerobot.org