



Fast installation makes robotics affordable for small companies

Small and medium-sized enterprises in Europe mostly refrain from using advanced robot technology. The EU-project Factory-in-a-Day aims to change this by developing a robotic system that can be set up and made operational in 24 hours and is flexible, leasable and cheap. The project has a budget of 11 million euros for four years, 7.9 million of which will be funded by the European Union as part of the FP7 programme 'Factory of the Future'. The international consortium comprises 16 partners and the coordinating university is Delft University of Technology (TU Delft). The project will start on 8 October 2013 with a formal kick-off meeting in Delft.

Whether it be the packing and quality checking of fruit, the polishing of steel moulds or the filling of a spray-painting machine, all these processes have one thing in common: they are usually done manually. The reason for this is that no robot or automated process is available for these tasks that can do the job as well and as efficiently as a human worker. Currently, setting up a robotic system for these complex tasks can take months and the costs involved are prohibitive. SMEs usually only have small production batches due to seasonal on-off production, which means these large investments rarely pay off. State-of-the-art systems do not provide the flexibility they need to stay competitive in a global market. For these reasons SMEs in Europe hardly use advanced robot technology.

Within 24 hours

The Factory-in-a-Day-project will provide a solution to these problems: a robot that can be set up and operational in 24 hours. SME companies can use the robot for a specific job and their staff can learn how to work closely together with the robot and thus optimize their production. "With the technological and organizational innovations of the Factory-in-a-Day project, we hope to fundamentally change the ways in which robots are used in the manufacturing world", says project coordinator Martijn Wisse, Associate Professor at TU Delft.

How does it work?

What will such an installation day look like? First of all, before the robot is actually taken to the SME premises, a system integrator analyzes which steps in the process can be taken over by the robot. In most cases the repetitive work is done by the robot while the human worker carries out the more flexible, accurate tasks and deals with problem-solving.

Customer-specific hardware-components are 3D-printed and installed on the grippers of the robot. The robot is then brought to the factory and set up, and any auxiliary components such as cameras are also set up in the unaltered production facilities. The robot will be connected to the machinery software through a brand-independent software system. After that, the robot is taught how to perform his set of tasks, for example how to grasp an object. Therefore, the operator will physically interact with the robot. A set of

predefined skills will be available, rather like Apps for smart phones. Finally, the robot is operational and the human co-workers receive their training -- all in just 24 hours.

As the robot will be operating without safety fences, which is not the rule in most industrial applications, a number of safety-related precautions will be developed.

Factory in a Day

The Factory-in-a-Day project falls within the research theme 'Robots that Work', one of the three main themes of the TU Delft Robotics Institute.

The project has an overall budget of 11 million euros, 7.9 of which will be funded by the European Union in the framework of the FP7 programme called 'Factory of the Future'.

The international consortium comprises 16 partners and TU Delft will take on the role of coordinating university. The technological innovations will be provided by leading-edge research institutions and universities in the field of robotics: Fraunhofer IPA and IPT, Technische Universität München (Germany), the Katholieke Universiteit Leuven (Belgium) and the Centre National de la Recherche Scientifique (France).

Furthermore, small and medium-sized companies from the Netherlands (Factory Control), Germany (Unicam Software GmbH), Spain (PAL Robotics), the UK (EMP Tooling Service Ltd) and Denmark (Universal Robots) will also participate in the project as partners, providing technological solutions and demonstrating the feasibility of the project idea. Other industrial partners are Lacquey BV (Netherlands), Materialise NV (Belgium), Philips Consumer Lifestyle BV, Randstad Nederland BV, Siemens Industry Software (France) and Siemens AG (Germany).

More information

Please contact Martijn Wisse: M.Wisse@tudelft.nl

Phone: +33 (0)6-27045453 / +33(0)15-2786834.

www.factory-in-a-day.eu