

Malmar improves quality and work environment through CPA automation

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Jan Kempeneers

Malmar and Sirris are working on the 'Reconfigurable Cobotic PRODuction Assistant: RECOPRODAS', which will allow Malmar to automate repetitive and manual tasks. This way, operators can focus on improving quality and their work environment will become more human-centered.

Malmar is a metal processing company with locations in Belgium, Lithuania and Latvia. The company manufactures a wide range of products for numerous customers and strives to relieve its customers of all their worries. Malmar consequently has a diverse set of processes at its disposal, such as laser cutting, bending, milling, welding, painting and assembly work.

Malmar wants to produce customer-specific products with ultra-short lead-times. To reach this goal, Malmar envisions to implement cobots to support the technical operators in their job taking over repetitive tasks, while the operator focuses on value-adding tasks (quality control, complex operations, etc.).

Dedicated automation or a fixed cobot at each machine is not feasible given the many different production processes and the job-shop environment with its typical high-mix-low-volume production ?orders.

Automation of high-mix-low-volume production

Goal is to reduce operator workload and repetitive tasks, increase operator involvement and nurture continuous improvement. To enable this Malmar will provide reconfigurable mobile cobotic production assistants (CPA) to its operators. When new products enter the portfolio (requiring new production processes), this assistant should be reconfigured efficiently.

With help from Sirris, Malmar is developing a prototype of this CPA for a scoped product portfolio (after Pareto analysis) and a set of manufacturing processes belonging to one operator cell (bending, tapping and projection welding).

The first concepts for the mobile cobot platform and material platform have been launched for prototyping. They will allow precise and robust docking at the different machines. Also, a novel nut separation and feeding system for projection welding has been developed and is being manufactured for testing.

Preparations for the first demo in Sirris's lab in Diepenbeek are on the way.

Objective

The introduction of reconfigurable cobotic production assistants will ultimately allow Malmar to automate repetitive/manual tasks, such that operators can focus on improving quality. The work environment will become more human-centered, where job content is more attractive and small



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The 'Reconfigurable Cobotic PRODuction Assistant: RECOPRODAS' is one of many demonstrators made possible thanks to the support of the Trinity initiative. The Trinity project focuses on digital technologies and advanced robotics for agile production in future European manufacturing ecosystems.

Project partners: Malmar (project leader), Sirris

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Authors



Jan Kempeneers