

Malmar creates human-centred working environment with cobots

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As part of the Trinity RECOPRODAS project, Sirris and Malmar explored how cobots can be used more flexibly as production assistants for the automation of repetitive and manual tasks across multiple processes. In this way, operators will be able to concentrate on improving the quality and making their work environment more human-centred.

Malmar, with operations in Belgium, Lithuania and Latvia, manufactures a wide range of products for numerous customers. To this end, Malmar has diverse processes, such as laser cutting, bending, milling, welding, painting and assembly.

The metal processing company aims to manufacture customer-specific products with ultra-short lead times and, through automation, support technical operators in their jobs by reducing workload and repetitive tasks. This allows them to focus on the tasks that add real value, such as quality control and complex operations, while the engagement is increased and continuous improvement encouraged. Dedicated automation or a fixed cobot at each machine is not feasible given the many different production processes and the shop floor environment with its typical high-mix-low-volume production orders. That is why Malmar wants to make reconfigurable movable cobotic production assistants (CPAs) available to its operators. When the range is expanded with new products and new production processes, it should be possible to efficiently reconfigure this assistant.

Automation of high-mix-low-volume production

Supported by Sirris, Malmar is developing a prototype of a CPA for a specific product range and a series of manufacturing processes which belong to a single operator cell (bending, tapping and projection welding). Besides introducing the cobot other interventions were also required to ensure smooth operation within the production cell, including a new system for the separation and feeding of nuts to a nut projection welding machine. A new nut spring and feed system for projection welding was therefore developed at the same time.

Human-centred work environment

Malmar concluded the RECOPRODAS demonstrator with an Open Day at its production site in Lithuania, where a proof-of-concept of a movable cobot unit was shown, capable of operating a manual thread tapping machine, a nut projection welding machine and a bending machine.

The Trinity project, which focuses on digital technologies and advanced robotics for agile manufacturing and supports demonstrators in this field, was the ideal catalyst for Malmar to realise its idea of a movable and reconfigurable cobot cell in an initial prototype. With the introduction of reconfigurable cobotic production assistants, Malmar can now automate repetitive and manual tasks, allowing operators to focus on improving quality. The work environment thus becomes more human-centred, with more attractive job content and where small series of products can be produced in a cost- and time-efficient manner.

This case is one of twenty inspiring examples of how technological innovation can be put into practice in industry, included in our Annual Report 2022. Curious for more? Then be sure to read the other cases in our Annual Report, let them inspire you and discover what technological innovation can mean for you!

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