

Mariasteen invests in increasing automation flexibility for its production

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Mariasteen is a manufacturing industry supplier. The West Flanders sheltered workshop has an experienced technical department. Like many other manufacturing companies, they often work on short-term jobs. This results in a higher variety of products, a decrease in repetitive work and an increase in complex work for employees.

Wide range of applications

Mariasteen, like other sheltered workshops, hires people with a cognitive or physical disability. Cobots are one of the many technological solutions Mariasteen is studying to offer people with limited deployability a job. Cobots are already part of the production process at Mariasteen because a cobot can support target groups of employees when their fine motor skills or a steady hand is limited, or when the functionality of one of their hands is missing, or when a third hand is required to perform a task.

The Mariasteen team observed that, once a cobot was integrated in a work cell, this cobot was seldom deployed to perform other tasks in other work cells. The threshold of changing the gripper, the location, etc. was too high. The other tasks also had additional requirements such as sanding applications which require the cobot to adapt their movement based on force measurements and quality checks for which 2D and 3D image processing was necessary.

Three test cases

In order to meet all requirements, Mariasteen, in collaboration with Sirris, researched the market of robot and gripper systems, force, moment and vision sensors, quick-change systems for grippers and docking systems for mobile cobots. The selected concepts were subsequently validated in three test cases.

The test cases were selected by Mariasteen to find optimal support options for the operators performing repetitive, boring or hazardous work or to perform jobs where the high-quality requirements made 100% control essential. The specific cases were the sanding of workpieces using grippers with force feedback via sensors, general quality control on the cobot using a vision system (camera) and increasing flexibility of application via a mobile robot platform.

Mariasteen used the insights gathered from the feasibility studies on these use cases to make strategic decisions on adding cobot applications to the production processes and based on the

knowledge from the use cases Mariasteen developed and implemented new advanced cobot applications.

Authors



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