



Cobot on a movable platform: a solution for the sheet metal industry

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The automation of many production processes offers enormous advantages, but for many SMEs in the sheet metal industry this remains a challenge. Sirris and the KUL_ACRO research group have developed an innovative solution within the Cook+ ROBUST-project: a cobot on a movable platform. This assistant can easily be adapted to changing needs. The focus lies on automating burdensome and repetitive tasks – often described as ‘dirty, dangerous and dull’ – that offer little satisfaction for the operator.

The first version of this mobile cobot assistant was presented during the Sirris 4.0 Made Real roadshow in Genk on 3 December 2024.

Sheet metal companies: the challenges

In the sheet metal industry it is often a challenge to automate processes. They contend with:

- Small lot sizes
- Large variations in products
- Uncertainty about the order book

This leads to manual processes that demand a great deal of time, while the entire skillset of the operator is not optimally used. This is inefficient for both employees and employers.

Sirris and the KUL-ACRO research group are addressing this problem with the Cooock+ ROBUST project. They are supported in this by around twenty companies in the sector that follow and steer the project. The objective is to investigate and demonstrate solutions that improve production.

What makes the cobot on a movable platform unique?

The mobile cobot assistant, developed on the basis of existing processes in the Sirris lab in Genk, consists of a cobot arm and a mobile platform.

1. **Cobot arm:**

A standard component that is often used and is highly suitable for carrying out the intended tasks.

2. **Mobile platform:**

- Flexible, fast and easy to move between different work stations.
- Equipped with power, compressed air and communication with the work station via quick disconnect connectors.
- To guarantee safety, the safety circuit of the cobot is linked to that of the machines, so that an emergency stop stops both. In addition, its own safety scanners ensure that the cobot slows or stops when people come too near.

The advantages of the movable cobot assistant

Fast and efficient alignment

An important aspect of the cobot assistant is the fast and accurate alignment system for working with machines. A tactile alignment system was demonstrated during the Sirris event. Due to its integrated force sensitivity, the cobot can feel machine parts and calculate a reference axis system (robot frame). In the demonstrator, the cobot uses its gripper to pick up a metal sensor and conduct measurements. After the cobot is moved it maintains a repeat accuracy of ca. +/-1mm within the working range.

In the future other alignment methods, such as a vision system or physical couplings that don't hinder the operator, will be studied.

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Semiautomatic and user-friendly programming

It must not only be easy to align the cobot assistant; it must also be usable for other similar product variants. This requires user-friendly programming of the cobot, so that operators can easily adjust the most important parameters of the process without extensive training. The process is therefore semiautomatic; the cobot does the hard work, while the operator maintains a crucial role in setting the right parameters in the cobots.

Practical tests and further development

The demonstration of the cobot assistant during the Sirris 4.0 Made Real Roadshow evDeent is a first step toward flexible and reconfigurable cobots for SMEs in the sheet metal industry. This sector is still experiencing difficulty benefiting from the advantages of automation at present due to limiting factors such as small lot sizes and a great variation in products.

The next steps of the Cock+ ROBUST project are:

- Selection of the various processes among participating companies for practical tests and proof of concept. These tests contribute to further optimisation of the cobot assistant for use in the workplace.
- Development of a second demonstrator to further optimise the processes for the companies.

Get acquainted with the cobot on a movable platform

Are you interested in this innovative solution and would you like to get acquainted with this cobot assistant? Visit Sirris in Genk during one of the repeat opportunities on 22 January 2025 or 12 February 2025!

[Contact us](#)

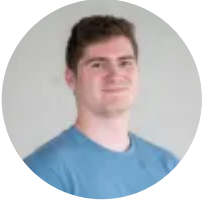
This event took place in the framework of Cock+ ROBUST and was organised with the support of



More information about the project

[ROBUST | Reconfigurable cOBotic prodUction AsSistanT](#)

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