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# WELDING ROBOT CELL IMPLEMENTATION IN SME-S USING MODULAR APPROACH - CASE STUDY

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## Abstract

Automation of production processes has been gained actuality in SME-s during recent years. Choosing the right strategy and approach for the automation the economy of scale and increased volume of production can be reached.

The automation systems mainly are complex and their implementation is time and resource consuming. In SME-s often the lack of resources and competencies limit the implementation of such systems.

In this article the case study based on robot welding cell implementation in SME-s is shown. Introducing robot welding cells in SME-s is difficult task because the extent of the project and lack of needed competencies in companies. To successfully realize such projects the complex tasks must be divided into smaller and simpler parts using modular approach.

The success of the project can be achieved through the definition of modules/spaces/subjects and the needed competencies and time when all these should appear together. This makes possible to implement project step-by-step (parallel) and by involving the needed resources.

**Keywords:** System implementation, modularization, SME, robot-welding cell

## Introduction

Robots were used long time only for mass production. The tasks done with robots are usually repeating and do not change during the long period of time. Mainly the cycle time and its reduction is the main criterion for such systems.

When implementing the robot in small and medium sized production the criterions are also changing. When the production batches are small then the importance of rapid setup and implementing of new products is more important than only the short cycle-times.

The ideal solutions for this are programmable robots and manipulators when producing small batches and different products. The production of cost efficient and client-based products is important for SME-s although mostly the human workforce used for this. To keep the profitability in world market the need for industrial robots supporting humans in work process has been increased.

## References

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