

Codegenerator for HMI and SPS

The INSYS AG in Münsingen near Bern in Switzerland, a manufacturer of special-purpose machinery for individual wishes of clients, realized that certain sub-steps during a project realization are repetitive. The expenditure to perform these repetitive standard steps by hand is large and therefore costly.

The aim of this bachelor thesis is to create concepts according to the requirements of the INSYS AG to automate repetitive processes and in order to achieve the highest possible reusability of data.

To fulfil these tasks an analysis of the individual workflows required for project realization of the INSYS AG was done. Therefore, an overview showing what data is gained and where it is gained as well as where the data is needed could be extracted.

Based on these results a new overall concept was created. The project configurator is at the centre of this overall concept. It concentrates information about the machine project. Based on the project configurator are the configuration modules, which implement the required tasks for the individual sub-processes.

To make the overall concept more comprehensible it has been broken down into the following four sub-concepts:

- Concept of the project configurator
- Concept for automated PLC project configuration
- Concept for the automated costing
- Concept for HMI configuration with associated database

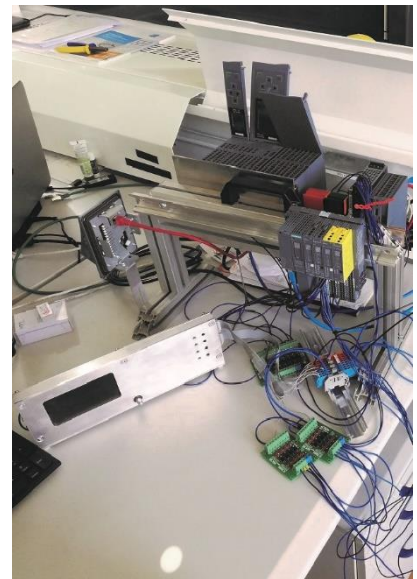
In addition, a prototype of the project configurator and in cooperation with the software developers of the industrial partner a proof of concept was carried out for the concept of automated PLC project configuration. Those both were made to test various technologies and design concepts and to minimize implementation risks for the industrial partner.

The result of this work is the overall concept, which shows how standard tasks in the sub-processes of costing, HMI configuration and PLC project creation can be highly automated. Thus, costs can be saved, errors which otherwise occur due to repetitive manual work can be avoided and standardization across subprocesses can be simplified. In addition, the creation of the project configurator prototype and the proof of concept of the automated PLC project configuration concept generated insights, which will facilitate the implementation of the overall concept for the industrial partner.



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Test environment for the proof of concept for the concept of automated PLC project configuration