



Modellfabrik

“Modellfabrik” was built in 2018 by means of educational projects by students of Technikerschule München. The aim was to provide a wide range of modern industrial technologies at reasonable costs.

Keywords for the applications the students now can work with are:

- object oriented programming on plc in a heterogenous structure of high-end plc (Beckhoff, Wago, B&R, Sigmatek).
- Configuring and using all important modern industrial communication systems as ethernet, TCP/IP, Berkley tcp socket, OPC, REST, MQTT and so on.
- Projecting and programming parts of a MES-System core to realise the MES-strategies done in our lessons.

Modellfabrik consists of a couple of modules. One is built for an e-kanban-process, lotsize 4 and late order binding. Another one realises a small “supply chain” (just-in-time and just-in-sequence) with a separate production plant and an autonom driving supply vehicle. One module is built for putting redundant structures (hot stand by) to practice and a sequencing unit, which can resequence the lot-size 1 process. This year, a delta-robot for reworking purposes, a high-bay warehouse with delta-service and the supplier-hardware for it is being developed.

In the years to come, Modellfabrik will never be finished. As an open platform for continous development and integratrion of new technologies, it will be not only the basis for all our practical lessons, but also an optimal tool for student projects and, not to forget, the continuous further education for the educational staff. Examples in 2019/20 : color recongition for quality control by means of a self-learning, artifical neuron network. Navigation techniques for the supply vehicle, based on acoustic and electromagnetic delay times (indoor gps), Digital twin (based on SolidWorks) for Modellfabrik to simulate MES-processes.

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