

### Concept / solution

A motion controller from Schneider (PacDrive) was used to control the logic and drive part of the system. This controller combines classic motion applications with proven PLC functionalities and offers a wide range of interfaces.

In this project, the desired drive and production data are sent via OPC UA to the dashboard application, which is based on "ThingsBoard.io". ThingsBoard.io is an open-source tool, available free of charge in its basic version and still providing all required functionalities. A paid version was deliberately omitted, as it offers extras that are rather unimportant for us, such as free design of frame, logo and graphics.

### Flexible, customized & expandable

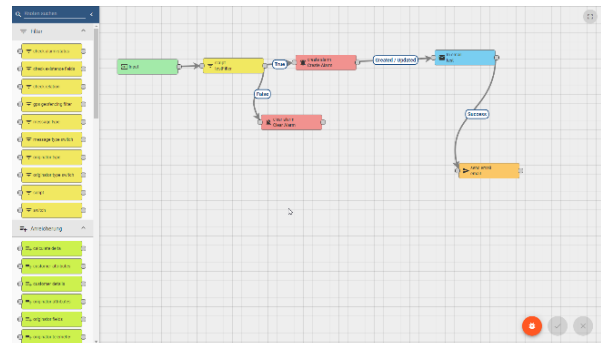
Special value was placed on the independent expandability. The goal was to develop a tool that can be set up independently by the customer and configured user-specifically. To achieve this, an application based on ThingsBoard.io was implemented, which can be operated device-independently in a Docker installation.

**From the IT point of view**, this solution combines relevant advantages such as:

- Open Source
- Customized
- Completely web based
- Device independent (OnPremise / Cloud)
- Connectors for various technologies (OPC, MQTT, BACnet, ODBC, Http, etc.)
- Operation in microservice infrastructure

**For the customer**, the enormous flexibility results in advantages such as:

- Independent compilation of the desired dashboards and charts
- Large selection of widgets and other freely available components
- Creation and editing of control chains
- Definition of message classes
- Definition of users & authorizations
- Configuration of alerting rules
- Creation of additional trend curves
- Data exchange via MSG command



The main **challenges** were:

- Cost-effective yet expandable solution
- Device independent operation
- Capture of high data volumes
- Scalability
- Clearly structured but freely configurable
- Configurable even without IT know-how

