OPEN INDUSTRY 4.0 ALLIANCE

MODEL BASED PARAMETRIZATION

The use case „model based parametrization" is part of the bag inflation and blanketing system for single use bags, which is a demonstrator for the pharmaceutical industry. The objective is to show the shortening of engineering and commissioning cycles using model based design („digital twins") to optimize, define and test parameters of a critical control loops during engineering and transmit them for commissioning and reduce waste of resources.

USE CASE LEAD

bürkert
FLUID CONTROL SYSTEMS

MOTIVATION

Nowadays, control loops in process plants are typically using default values or guessed parameters. Once tested to work acceptable during commissioning, they are validated with the SAT of the machine and are set in stone from then on. Any changes become a huge effort and paperwork. Unoptimized control loops waste energy due to pressure drop, consumption of pressurized air or temperature losses. This results also in reduced yield of production plants – every single day during their usage phase.

THE ROLE OF THE OI4

Supporting standards like the Asset Administration Shell (AAS) aligns with the Open Industry 4.0 Alliance's focus on interoperability and digital twin technologies. This approach fosters collaboration across suppliers, streamlining engineering processes and promoting efficient resource use across industrial applications.

VALUE PROPOSITION

Model based parametrization of control loops helps to increase the yield of production plants and to reduce the waste of energy. At the same time, it reduces engineering time and risks. The Asset Administration Shell can help to simulate and optimize control loops that consist out of sensors and actuators from multiple suppliers. The AAS as digital twin enables the documentation and transfer throughout all steps and companies involved in the engineering process of plants and systems.

AAS SUBMODELS USED

DIGITAL NAMEPLATE / HANDOVER DOCUMENTATION / PROPRIETARY

PHASE OF ASSET LIFE-CYCLE

ENGINEERING / COMMISSIONING