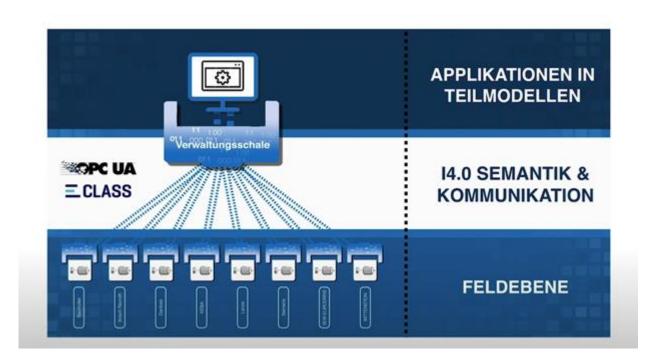
## Factsheet Demonstrator Drive 4.0



## Orchestrate the core components

- Flexibility through manufacturer-independent standardisation of data and function interfaces
- Optimisation during the development of the machines, commissioning, maintenance and production support over the lifetime of the machine
- Capture and manage all necessary data for the entire product life cycle
- Interchangeability of components with simultaneous avoidance of costly adaptations of systems or system interfaces to manufacturer-specific data structures

Drive 4.0 demonstrates the cooperative capability of electric drives and enables additional functions, such as that of an oscilloscope. Manufacturers, mechanical engineer and operators benefit from consistent and interoperable access to information and functions throughout the entire product life cycle thanks to the technology-neutral management shell.

## Interoperability of electric drives

Drives are the core component in industrial production. In combination with sensors and software, they enable the digitalisation of the production process and thus the transparency of technical processes. However, data and functions are only provided by drive manufacturers in a proprietary manner. The use of the management shell, which is based on OPC UA and international ECLASS standards, enables manufacturers, machine builders and operators to have consistent and interoperable access to information and functions.

## Standardised interface to different drives

A demonstrator was set up to check the interaction between drives from different manufacturers and to push and test the further development of the data and information models. The aim was to implement the data structure and information models created, to show the cooperative capability of electric drives and to demonstrate additional functions made possible by Industry 4.0 drives.

Eight manufacturers of drive technology have jointly evaluated the technological implementation of features and functions for drives based on practical applications. First, the functions oscilloscope, fault memory, maintenance chronicle, energy management and auto-tuning with guided commissioning were described independently of the manufacturer. The data was used to put a demonstrator into practice together with various manufacturers. This contains drive systems with a rated power of approx. 1 kilowatt each. The drives are connected via Ethernet to an OPC UA client, which displays the information transmitted by the drives via a monitor. The Ethernet connections can be disconnected and reconnected at any time and communication is automatically established.

In order to represent electric drives in terms of their properties at information level, the characteristics relevant to the entire life cycle must be identified and specified. The data of a drive is stored in a technology-neutral management shell. The respective management shells are modelled to the OPC UA communication standard. In this way, the already existing proprietary features and functions of the eight drives are provided in an Industry 4.0 compliant format.

The manufacturer-independent standardisation of data and function interfaces leads to flexibility, and with the unification of functions, optimisation is made easier for mechanical engineers during the development of machines, commissioning, maintenance and production support over the life of the machine.

