



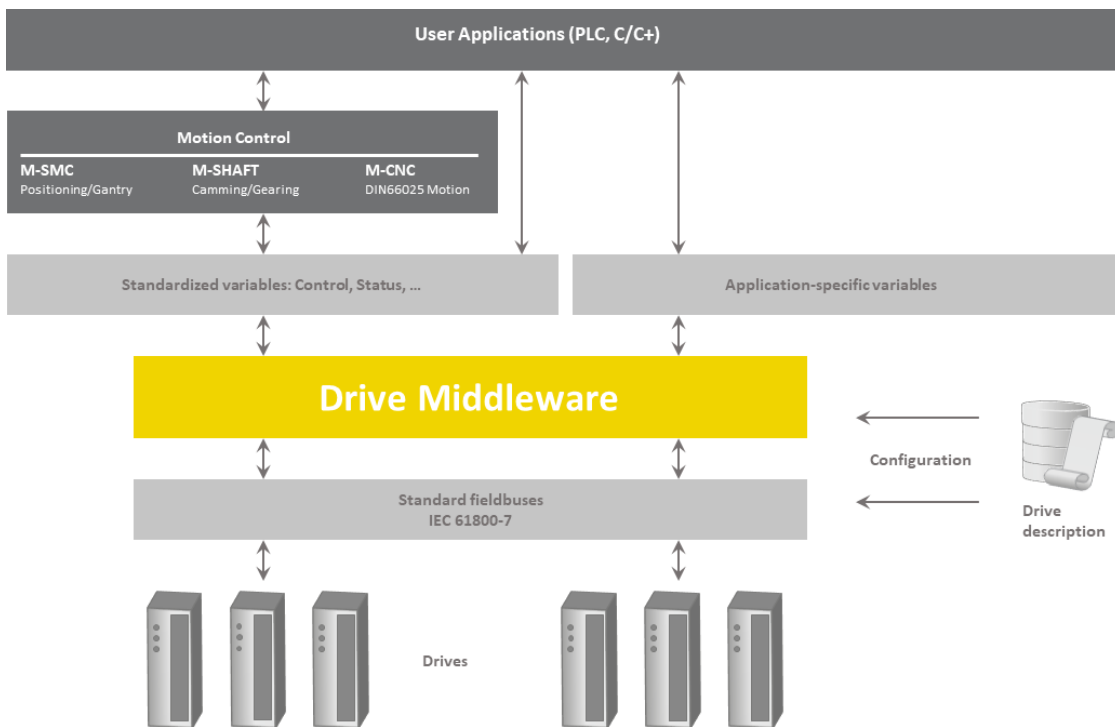
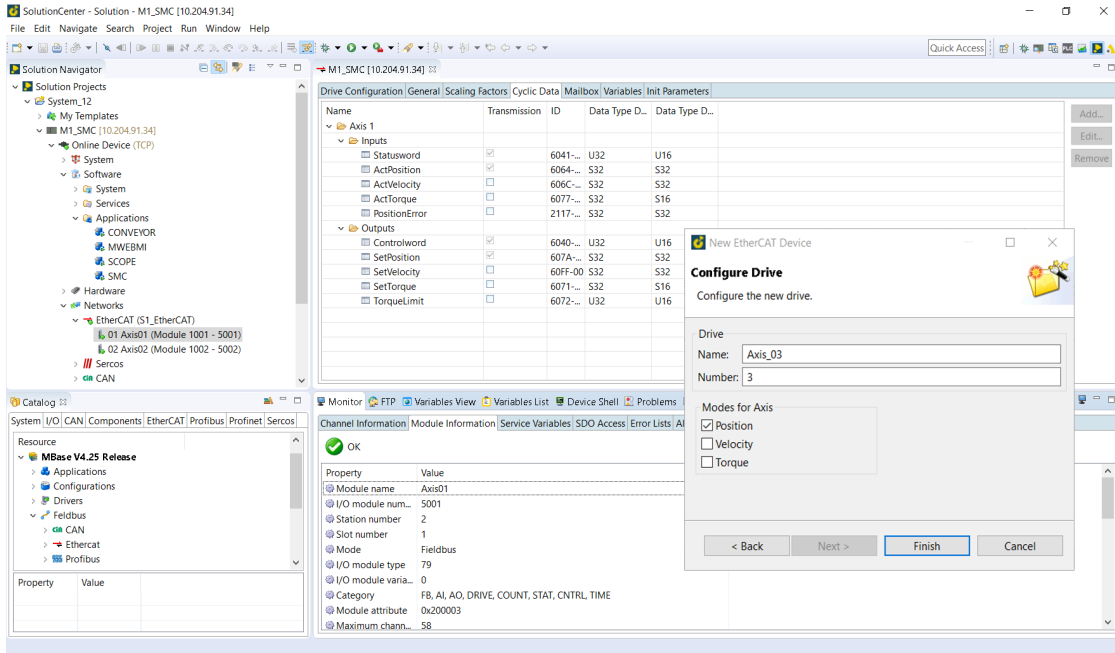
Drive Middleware

Electrical drives are an essential part of several motion applications. Their rapid commissioning and straightforward interchangeability make it possible to adapt machinery easily to customer requirements.

This is made possible by the Drive Middleware (DMW). It communicates with drives over a wide range of fieldbus protocols and controls their status machine. The logic required for this is encapsulated in the DMW. Therefore, the interface to the application program is kept simple and constant.

Features

- Uniform, manufacturer and fieldbus-independent programming of motion applications
- Rapid commissioning through ready-to-use drive descriptions
- Integration in the M-SMC, M-SHAFT and M-CNC Bachmann motion controllers
- Integration in M-Target for Simulink® enables model-based development



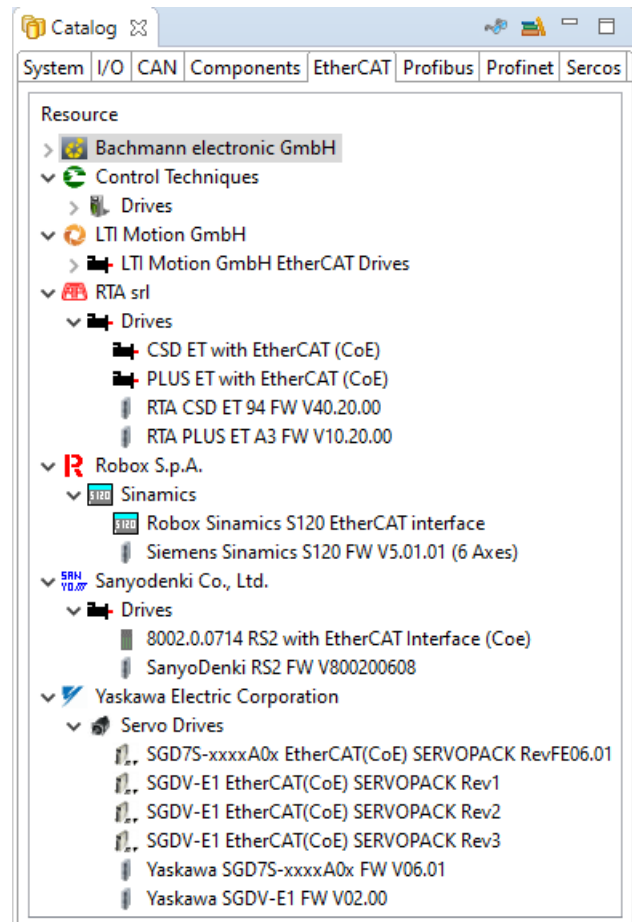
Drive-independent application program

Drive Middleware provides a unified, abstracted drive interface for motion applications. The manufacturer-specific drive control logic is encapsulated in the DMW. Drives can therefore be easily adapted to customer requirements without application changes.

Drive integration directly from the catalog

Drives are fully described via their DMW configuration file. It contains all information, e.g. about data to be exchanged or available operating modes. The DMW file is selected in the SolutionCenter and the drive is then linked and fully operational.

New drives are being continuously added to the catalog. If a required drive is not yet available, this configuration file can simply be added by users themselves.



Drive Middleware

General	
System components	DMW is a driver of the M200 controller. The drive configuration is carried out in the SolutionCenter.
Configuration of the drives	SolutionCenter
Operation	<ul style="list-style-type: none"> By Bachmann motion controller By customer specific application programs programmed in IEC 61131-3, C/C++ or MATLAB®/Simulink®
Product Features	
Abstraction of the drive included	<ul style="list-style-type: none"> State machine Error handler Fieldbus interface
Drive description	Defined via a DMW configuration file. The file can be adapted individually or created by the user.
Available operating modes	These are defined in IEC 61800-7-201 and CiA 402 and consist of: <ul style="list-style-type: none"> Cyclic setpoint definition (cyclic sync position mode, cyclic sync velocity mode, cyclic sync torque mode) Referencing (homing mode)
Functions	
Cyclic data exchange	<ul style="list-style-type: none"> Control word, status word Set and actual values for position, velocity and torque Additional signals can be added by the user as required
Acyclical data exchange	Data is configurable and is exchanged with service data objects (SDO) with the drive.
Initialization of drive parameters	Drive parameters can be set to the required values in different initialization steps. These are sent automatically via SDO.
Scaling of the data	Available for set and actual values
Inversion of the rotation direction	Available for set and actual values
Reference modes	Everything defined according to IEC 61800-7-201:2015
File over EtherCAT	Available depending on drive type
Application integration	
Integrated in Bachmann motion controllers	<ul style="list-style-type: none"> M-SMC M-CNC M-SHAFT
Customer-specific application program	<ul style="list-style-type: none"> Application programs programmed in IEC 61131-3 or C/C++ use DMW interface directly User-defined Simulink® blocks allow a model-based development with MATLAB®/Simulink®
Drive connection	
Fieldbus	<ul style="list-style-type: none"> EtherCAT: Via IEC 61800-7 and CiA 402 profile Sercos 2
System requirements	
M200 real-time system	Bachmann M200 processor modules of the MX, MC, and MH series M-Base from V3.95