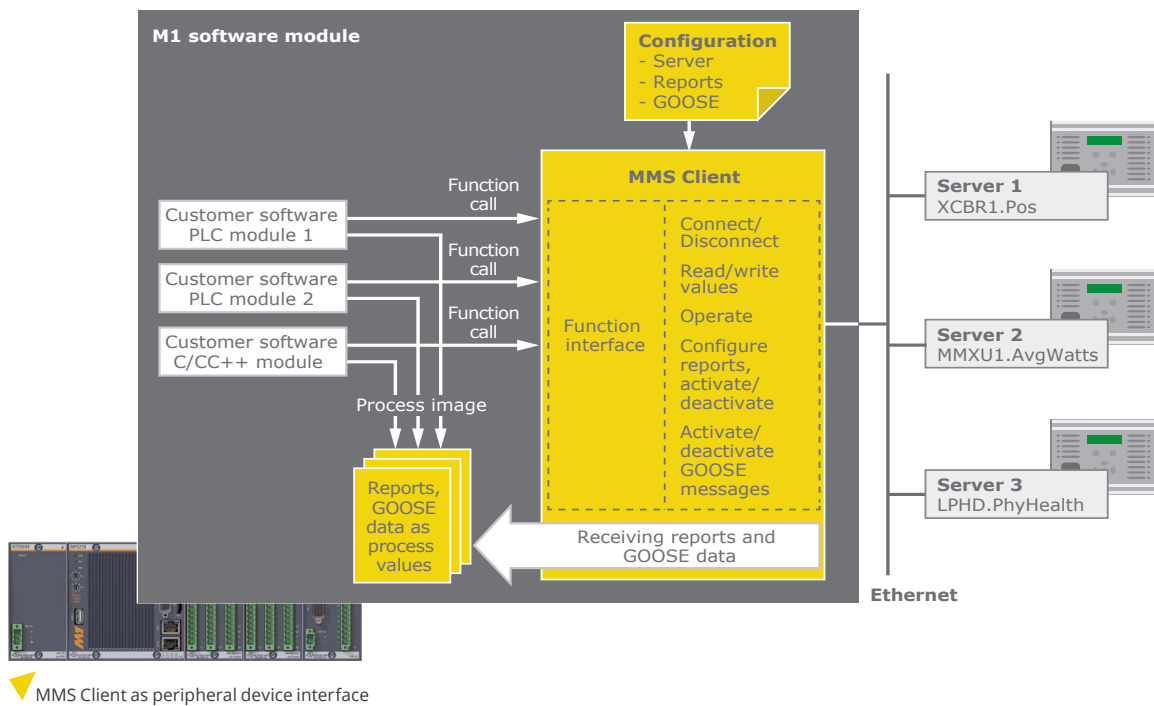## MMS Client

**GOOSE Subscriber / IEC 61850, IEC 61400-25
(Manufacturing Message Specification Client)**

Numerous switching, protective, and measurement devices in the energy technology area are equipped with an Ethernet interface and offer communication in accordance with the IEC 61850 standard. Via this interface, parameters can be assigned for the devices regardless of manufacturer, the devices can be diagnosed, and actual values can be picked up through polling or received per report or GOOSE.

Through the Bachmann MMS Client, the M1 control system is capable of operating and monitoring such devices. The MMS Client behaves on the controller in a manner similar to a fieldbus driver: It supplies actual values of the peripheral devices, which are received as reports or GOOSE messages, directly to the application software. Here they are available in the process image. In the control direction, switch commands, set values, and parameters for the peripheral device can be set directly from the application program.

Item	Item-No.
MMS-Client Download	00017952-xx
MMS-Client RT	00017952-63
MMS-GSV-Client RT	00024328-63
MMS-Client/Server RT	00020316-63
MMS-GSV-Client/Server RT	00026409-63

- No special hardware required, pure software solution for all M1 CPU types except ME203
- It is started as a stand-alone service directly from the application software
- Common operation with other protocols on the same Ethernet port and in the same network
- Configuration via SolutionCenter, no external tools are required
- Operates devices in accordance with IEC 61850 and/or IEC 61400-25 in the same network
- Operating interface for sequential programs (IEC 61131-3, C/C++) via SMI for temporal decoupling
- Library for PLC programming in accordance with IEC 61131-3
- Header file for C/C++ programming
- Commissioning and diagnostics monitor in the SolutionCenter
- Disclosed interface for tools and visualizations
- Report data and Goose messages are available via logical I/O modules for application programs and tools

M1 software module

Configuration
- Server
- Reports
- GOOSE

Customer software PLC module 1

Customer software PLC module 2

Customer software C/CC++ module

Function call

Function call

Function call

Process image

MMS Client

Function interface

Connect/ Disconnect

Read/write values

Operate

Configure reports, activate/ deactivate

Activate/ deactivate GOOSE messages

Reports, GOOSE data as process values

Receiving reports and GOOSE data

Server 1
XCBR1.Pos

Server 2
MMXU1.AvgWatts

Server 3
LPHD.PhyHealth

Ethernet

MMS Client as peripheral device interface

MMS Client (IEC 61850 / IEC 61400-25)	
Usability	
Implementation areas	Operation and monitoring of substations and protection devices in accordance with IEC 61850-7
	Communication with distributed energy resources in accordance with IEC 61850-7-420, e.g. CHP, photovoltaic, thermal storage
	Communication with wind energy devices and plants in accordance with IEC 61400-25, e.g. wind turbines, meteorological measuring in-struments
Scope of delivery	Software components for the controller
	PLC library and C/C++ header for operation of the API
	Test and diagnostics monitor in the SolutionCenter
	User manual
	Sample configuration
	PLC sample project
User interface for IEC 61131-3	Display of data in the process image via report or GOOSE
	Individual read and write commands via non-blocking function blocks (PLC) or non-blocking calls (C/C++)
User interface for C/C++	Non-blocking functions for calls and replies; header file with required definitions

MMS Client (IEC 61850 / IEC 61400-25)	
Features according to IEC 61850 / IEC 61400-25	
Login/logout on the external server with or without password	Associate, Abort, Release
Check connection status	MMS status request
Read value from data attributes	GetDataValues
Write value from data attributes	SetDataValues
Activation and configuration – buffered and unbuffered reports (BR, RP)	Get/SetBRCBValues, Get/SetURCBValues, BRCB etc. Buffered report control block
Generating, deleting, and reading datasets	CreateDataSet, DeleteDataSet, GetDataSetDirectory
Issuing of switch commands (operates)	Select, Select with value, Operate, Cancel, TimeActivatedOperate
	Receipt of information reports as reaction to operates with enhanced security

MMS Client (IEC 61850/IEC 61400-25) / Order codes		
Item	**Item no.**	**Description**
MMS-Client Download	00017952-xx	Software and documentation for the MMS Client. Provides access to external devices over the ethernet interface using the standard IEC 61850 or IEC 61400-25. Without a valid Runtime License the MMS Client runs only temporarily for 2h in demo mode.
MMS-Client RT	00017952-63	License to operate the MMS Client on one controller CPU. Provides communication over the ethernet interface with standards-compliant servers using the IEC 61850 or IEC 61400-25 protocol in accordance with the compatibility documentation.
MMS-GSV-Client RT	00024328-63	License to operate the MMS Client on one controller CPU. Provides communication over the ethernet interface with standards-compliant servers using the IEC 61850 incl. GOOSE subscriber or IEC 61400-25 protocol in accordance with the compatibility documentation.
MMS-Client/ Server RT	00020316-63	License for the combined operation of the MMS Server and Client on one controller CPU. Provides communication over the ethernet interface with standards-compliant remote stations using the IEC 61850 or IEC 61400-25 protocol in accordance with the compatibility documentation.
MMS-GSV-Client/Server RT	00026409-63	License for the combined operation of the MMS Server and MMS Client incl. GOOSE Publisher and Subscriber on one controller CPU. Provides communication over the ethernet interface with standards-compliant remote stations using the IEC 61850 or IEC 61400-25 protocol in accordance with the compatibility documentation.