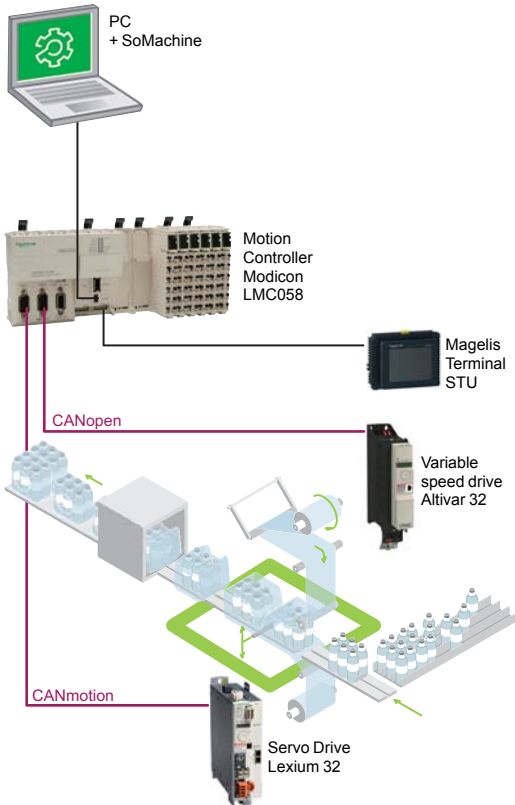


SoMachine software suite

Simplify machine programming and commissioning



SoMachine software platform



Software solution

Presentation

SoMachine is the OEM solution software for developing, configuring and commissioning the entire machine in a single software environment, including logic, motion control, HMI and related network automation functions.

SoMachine allows you to program and commission all the elements in Schneider Electric's Flexible and Scalable Control platform, the comprehensive solution-oriented offer for OEMs, which helps you achieve optimized control solution for each machine's requirements.

Flexible and Scalable Control platforms include:

Controllers:

- HMI controllers: XBT GC, XBT GT/GK CANopen,
- Logic controllers: Modicon M238, Modicon M258,
- Motion Controller: Modicon LMC 058,
- Integrated Controller Card: Altivar IMC,
- I/Os range: Modicon TM2, Modicon TM5 and Modicon TM7 offers

HMI:

- Small Panels Magelis™ STO/STU
- Advanced Panels Magelis™ GH/GK/GT
- Optimum Advanced Panels Magelis™ GTO

SoMachine is a professional, efficient, and open software solution integrating Vijeo-Designer. It integrates also the configuring and commissioning tool for motion control devices. It features the IEC 61131-3 languages, integrated field bus configurators, expert diagnostics and debugging, as well as outstanding capabilities for maintenance and visualisation.

SoMachine integrates tested, validated, documented and supported expert application libraries dedicated to applications in Pumping, Packaging, Hoisting and Conveying.

SoMachine provides you:

- One software package
- One project file
- One cable connection
- One download operation

Visual graphic user interface

Navigation within SoMachine is intuitive and highly visual. Presentation is optimized in such a way that selecting the development stage of the desired project makes the appropriate tools available. The user interface ensures nothing is overlooked, and suggests the tasks to be performed throughout the project development cycle. The workspace has been streamlined, so that only that which is necessary and relevant to the current task is featured, without any superfluous information.

Learning centre

From the home menu, the learning centre provides several tools to get started with SoMachine. An animated file explains briefly the SoMachine interface and concept. An e-learning allows to run a self-training about SoMachine. A third section gives access to several documented examples of simple coding with SoMachine. An intuitive and efficient online help is also available, guiding you to get the appropriate answer.

Projects management

The implemented project management principle allows to browse quickly through the existing projects getting the relevant information without the need to open them before selection.

The user can create a new project, starting from several means: using Tested Validated and Documented Architectures, using the provided examples, using an existing project or start with an empty project. There is quick access to the most recently-used projects.

There is as well a way to start a project from standard project taking advantages of a pre-configured program (task, library,)



Project management

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Project properties

For each project, the user has the option to define additional information, through simple forms. It's also possible to attach documents, a customer picture and a configuration picture.

Configuration

From the graphic user interface, the user can easily build his architecture and configure the devices of the architecture.

Description of the architecture

A graphic editor can be used to assemble the various elements easily by a simple drag & drop. A devices catalogue is displayed on the left of the screen. It is split into several sections: controllers, HMI, Miscellaneous and search.

Configuration of the device

Directly from the topologic view of the user interface, a simple click drives the user to the configuration screen of the selected device.

Programming and debug

Programming is an essential step, and the user has to carefully design it to be as efficient as possible. Advanced control and HMI functions cover all the needs of an OEM engineer in terms of creating the control and visualisation system. Powerful tools allow debug and functional tests such as simulation, step by step execution, break points and trace.

Commissioning

For an easy and fast diagnostic, the menu commissioning allows the user to check the online state of his architecture. Through the topologic view of the configuration, the devices display if you are logged in or not, as well as if they are in run or stop mode.

Documentation

Because a printed file of the project is an important element, it is possible to build and customize the project report:

- select the items to be included in the report,
- organize the sections,
- define the page layout
- and then launch the printing.

Transparency

SoMachine supports Device Type manager (DTM) because it is a field device tool (FDT) container.

With DTM's representing field device in SoMachine, direct communications are possible to every single device via SoMachine, the controller and the field bus (Modbus for all devices and CANopen for the I/O's).

From the SoMachine unique environment, the remote devices can be set-up off-line and tuned on-line.

Dedicated OEM application libraries (AFB libraries)

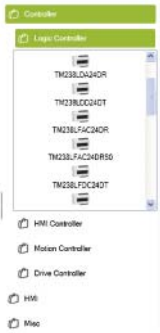
SoMachine can be extended through its solution extension DVD. It integrates tested, validated, documented and supported expert application libraries dedicated to many OEM applications. Their simple configuration speeds up design, commissioning, installation and troubleshooting.

These libraries cover the following applications:

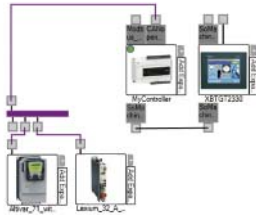
- Packaging,
- Hoisting,
- Conveying,
- Pumping

Tested Validated Documented Architectures (TVDA)

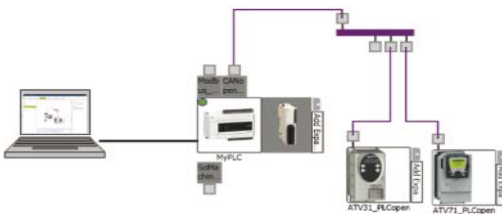
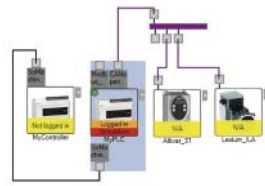
SoMachine provides a variety of preset projects with ready-to-use architectures you can adapt to individual requirements. Some of them are generic TVDA, they are based on controllers configuration. The solution extension DVD brings specific application solutions oriented TVDA's to SoMachine.



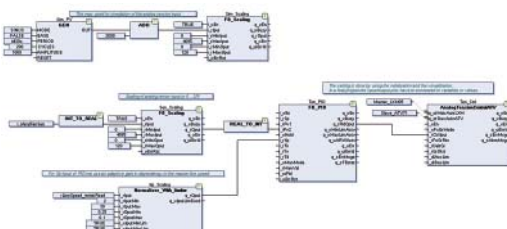
Configuration



Commissioning



Transparency



Application Function Blocks

SoMachine characteristics	
Overview	
IEC 61131-3 programming languages	<ul style="list-style-type: none"> ■ IL (Instruction List) ■ LD (Ladder Diagram) ■ SFC (Sequential Function Chart) ■ ST (Structured Text) ■ FBD (Function Block Diagram) ■ + CFC (Continuous Function Chart)
Controller programming services	<ul style="list-style-type: none"> ■ Multi-tasking: Mast, Fast, Event ■ Functions (Func) and Function Blocks (FBs) ■ Data Unit Type (DUTs) ■ On-line changes ■ Watch windows ■ Graphical monitoring of variables (trace) ■ Breakpoints, step-by-step execution ■ Simulation ■ Visualization for application and machine set-up
HMI-based services	<ul style="list-style-type: none"> ■ Graphics libraries containing more than 4000 2D and 3D objects. ■ Simple drawing objects (points, line, rectangles, ellipses, etc ...) ■ Preconfigured objects (button, switch, bar graph, etc ...) ■ Recipes (32 groups of 256 recipes with max. 1024 ingredients) ■ Action tables ■ Alarms ■ Printing ■ Java scripts ■ Multimedia file support: wav, png, jpg, emf, bmp ■ Variable trending
Motion services	<ul style="list-style-type: none"> ■ Embedded devices configuration and commissioning ■ CAM profile editor ■ Sample application trace ■ Motion and drive function blocks libraries for inverters, servos and steppers ■ Visualization screens ■ Logical encoder
Global services	<ul style="list-style-type: none"> ■ User access and profile ■ Project documentation printing ■ Project comparison (control) ■ Variable sharing based on publish/subscribe mechanism ■ Library version management ■ Energy efficiency machine monitoring
Integrated fieldbus configurators	<ul style="list-style-type: none"> ■ Control network: <ul style="list-style-type: none"> □ Modbus Serial Line □ Modbus TCP ■ Field bus: <ul style="list-style-type: none"> □ CANopen □ CANmotion ■ Connectivity: <ul style="list-style-type: none"> □ Profibus-DP □ Ethernet IP
Expert and solutions libraries	<ul style="list-style-type: none"> ■ PLCopen function blocks for Motion control <ul style="list-style-type: none"> □ Example: MC_MoveAbsolute, MC_CamIn, ServoDrive, ... ■ Packaging function blocks <ul style="list-style-type: none"> □ Example: Analog film tension control, rotary knife, lateral film position control, ... ■ Conveying function blocks <ul style="list-style-type: none"> □ Example: tracking, turntable, conveyor, ... ■ Hoisting functions <ul style="list-style-type: none"> □ Hoisting function blocks: anti-sway, anti-crab, hoisting position synchronisation, ... □ Application template for industrial crane ■ Pumping application <ul style="list-style-type: none"> □ Pumping function blocks □ Application template for booster ■ Energy Efficiency library

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Product offer

SoMachine software is delivered on a DVD, it is a product oriented version that includes all SoMachine features related to generic hardware (M238, M258, LMC058, XBT GC, Altivar IMC), as well as generic TVDA

The solution features are added to SoMachine by installing its solution extension DVD. It includes all SoMachine solutions hardware, plus all the dedicated application libraries and TVDA.

References

- SoMachine is available in 6 languages:
 - English
 - French
 - German
 - Italian
 - Spanish
 - Simplified Chinese.
- System Requirements:
 - Processor: Pentium 4 - 1,8 GHz or higher , Pentium M 1.0 GHz or equivalent
 - RAM Memory: 2 GByte; recommended: 3 GByte
 - Hard Disk: 3.5 GB, recommended: 5 GB
 - OS: Windows XP Professional, Windows 7 Professional 32/64 bytes
 - Drive: DVD reader
 - Display: 1024 × 768 pixel resolution or higher
 - Peripherals: a Mouse or compatible pointing device
 - Peripherals: USB interface
 - Web Access: Web registration requires Internet access
- The documentation is supplied in electronic format: complete on-line help plus complementary documentation in pdf version.

SoMachine software for generic controllers

Supported controllers	TVDA	Reference	
		DVD (1)	Licence (2)/number & type
■ M238	- Optimized HW XBT GC	MSDCHNSFNV31 + Trial licence (30 days)	MSDCHNLMUA /1 (Single) MSDCHNLMTA /10 (Team) MSDCHNLMFA /100 (Facility)
■ M258	- Optimized HW M238		
■ LMC058	- Optimized CANopen M238		
■ XBT GC	- Optimized AS-Interface M238		
■ XBT GT/GK with control function	- Optimized CANopen XBT GC/GT/GK		
■ Altivar IMC	- Optimized CANopen Altivar IMC		
	- Performance HW M258		
	- Performance CANopen M258 - Performance CANmotion LMC058		

SoMachine solution extension for Solution controllers (3)

Added controllers	Added TVDA	Added libraries	Reference (4)
			DVDs and Licence /number & type
■ M238S	- Optimized CANopen Altivar	Hoisting Conveying Packaging	MSDCHLLMUV31S0 / 1 (Single) MSDCHLLMTV31S0 / 10 (Team) MSDCHLLMFV31S0 /100 (Facility)
■ M258S	IMC		
■ LMC058S	- Performance CANmotion		
■ XBT GC with CANopen module type S	LMC058		
■ XBT GT/GK with control function type S	- Hoisting Optimized CANopen M238		
■ Altivar IMC with control function type S	- Conveying Performance CANmotion LMC058		

SoMachine software compatibility and hardware control platforms

Product type	Version
Logic controller Modicon M238	≥ V1.0
HMI controller XBT GC	
Logic controller Modicon M238S	≥ V2.0
Logic controller Modicon M258	
Logic controller Modicon M258S	
Motion controller Modicon LMC058	≥ V3.0
Motion controller Modicon LMC058S	≥ V2.0
HMI controller XBT GT/GK with control function type S, XBT GC with CANopen module type S	
Altivar IMC integrated controller card	≥ V3.1
Altivar IMC integrated controller card with control function type S	≥ V2.0
TM5 CANopen Interface	≥ V3.0
TM7 CANopen Interface block	
Altivar IMC integrated controller card (with patch)	

(1) The DVD is mandatory and delivered with a trial licence.

(2) One of the 3 type of Licences is mandatory.

(3) For this offer, please contact Schneider electric.

(4) Each reference for SoMachine solution software contains: one generic trail DVD, one solution extension V3.1 DVD and one licence.