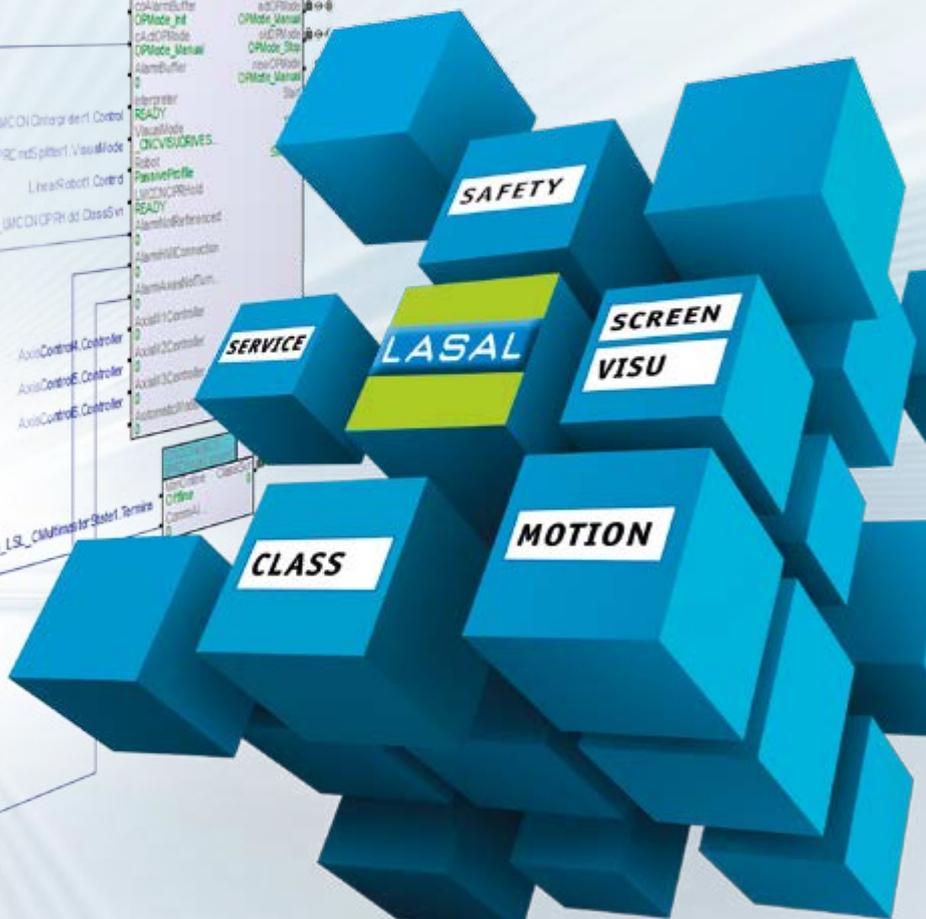
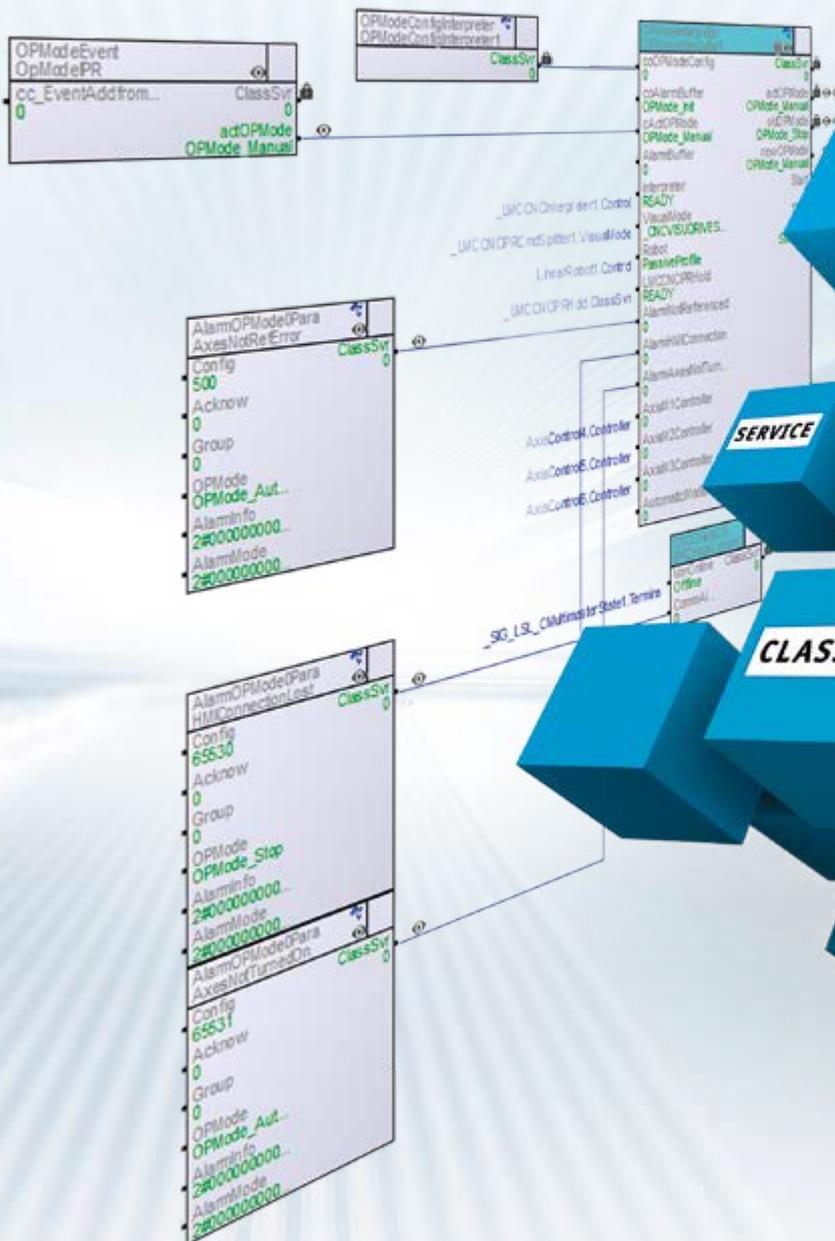


# OBJECT-ORIENTED PROGRAMMING



AUTOMATION  
SOFTWARE  
**LASAL**

FOR ALL PHASES OF AUTOMATION

# ENGINEERING TOOL LASAL

Implement machine applications comfortably and efficiently – with the all-in-one software tool LASAL: Object-oriented programming (IEC 61131-3 standard) combined with graphic representation and extensive libraries make it possible.

## LASAL CLASS

Object-orientation in control programming stands for high flexibility, transparency and quality. With object-oriented programming the modularization of machine functions is also possible in the software. This means that real machine components are represented in the form of software objects. Code and data are combined into logical units and cannot be changed from the outside. The encapsulated objects communicate exclusively via clearly defined interfaces. The code can be written in the programming languages ST, LD, SFC, ANSI-C as well as interpreter.

### LOW CODE AND MODULAR

LASAL stands for less code and less programming. The approach to software design is top-down: starting from the overall project, the required functions and machine components that exchange data are defined. Development then begins bottom-up. Basic functions do not have to be programmed line for line, instead pre-defined software components simplify creating applications.

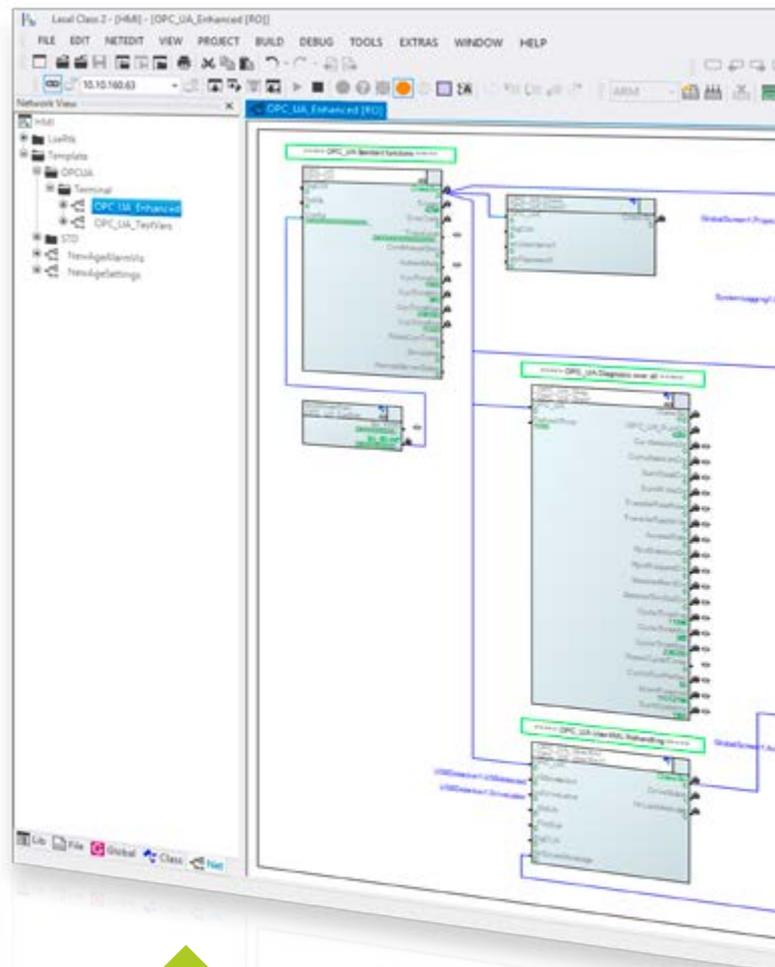
Graphic representation provides operator ergonomics with object-oriented programming. The objects can be combined in a modular system and “wired” via Drag & Drop. Once created and tested, they can be stored in libraries and reused – the software is therewith sustainable.

### SIMPLY IMPLEMENT THE COMPLEX

The high reusability of the encapsulated function blocks saves costs and time. Thanks to techniques such as inheritance, derivation and aggregation, new configurations of components can be implemented with minimum programming. This allows you to get your application operation-ready faster.

Service tools such as online debugging, real-time data analyzer, real-time trend recording as well as LARS for simulating application programs round out the automation software LASAL. Modern server technologies ensure efficient remote access for diagnostics and remote maintenance.

The LASAL Machine Manager provides maximum clarity for multi-CPU applications. It has the flow of data firmly in hand and determines who is allowed to exchange which data with whom.

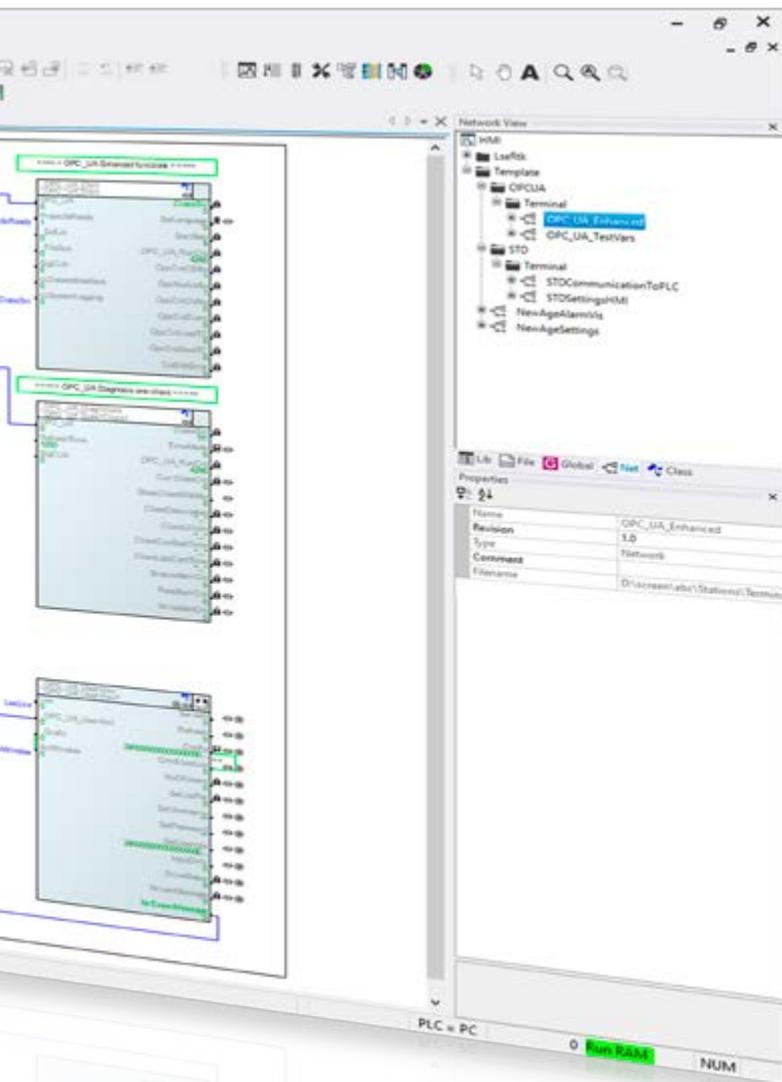


#### EVERYTHING IN VIEW AT ALL TIMES

Thanks to the graphic representation, you maintain an overview even with complex projects: Functionality, inter-relationships between objects, data traffic and interfaces can be easily interpreted.

### AUTOMATICALLY GENERATE SOFTWARE

Whether high-end, midrange or economy model – there is often a single base project for a specific machine. LASAL allows you – practically with the push of a button – to automatically generate the software for different customer-specific configurations (scripting with Python).



## LASAL SPEAKS 4.0

For networked and open communication in the Smart Factory, LASAL offers predefined Add-Ons and packages for implementing OPC UA and MQTT protocols. Manufacturer-independent, flexible data exchange between machines or between machines and primary systems such as ERP, MES, EDGE and Cloud are possible.



## QUICKLY ACHIEVE GOALS

With extensive LASAL libraries, you can create your application software faster and more comfortably. Thanks to predefined standard templates, topic-based packages and function-specific Add-Ons, you can integrate basic as well as special functions into your machine or system software with just a few clicks. Examples are PID controller, data logger, analyzer, temperature monitoring, complex filter and controller modules as well as robot kinematics. Programmers are further supported by tools such as the graphical hardware editor, Matlab Simulink and online debugging tools. Development is reduced by up to 70%.



## COMFORTABLY UPDATE SOFTWARE

With the "Update Tool", you can make program changes that affect among other things, the process, visualization and regulation centrally in one comfortable workspace in the Machine Manager: Simply enter the appropriate command, set the parameters, comment if necessary and then update with the press of a button. 26 basic functions for various commands and functions are available.

## ALL AUTOMATION TASKS

# ON ONE PLATFORM

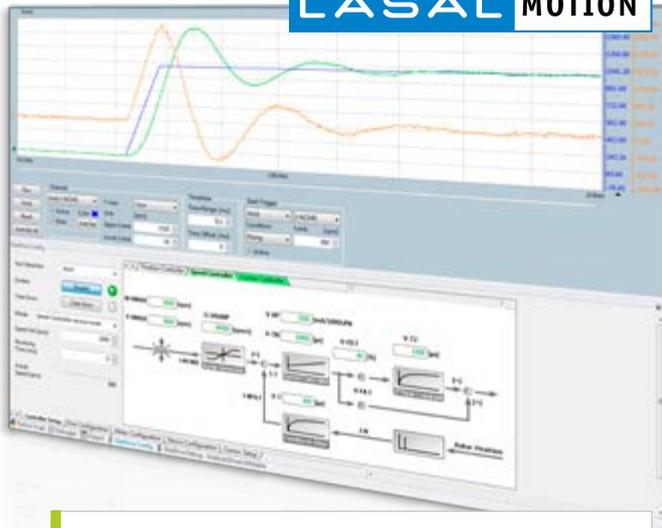
LASAL combines all automation tasks in one modern engineering platform and provides simple handling of modular machine and system concepts: From control programming through

visualization, motion control and Safety technology to service functions such as remote maintenance and diagnostics.

LASAL VISU

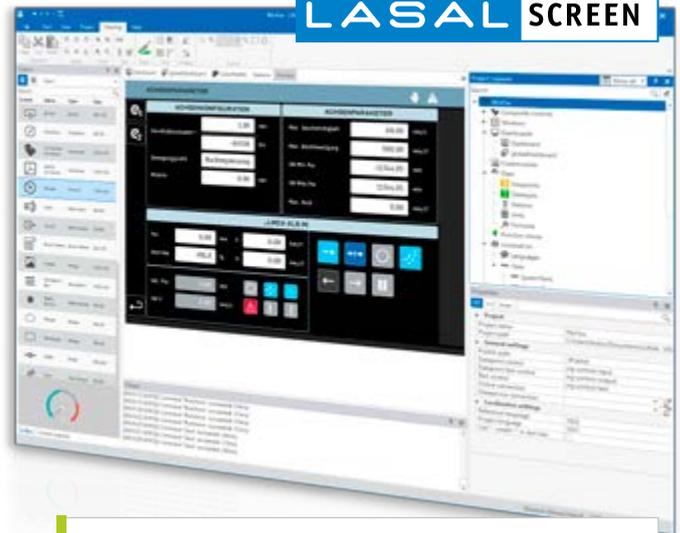
LASAL SCREEN

LASAL MOTION



### EFFICIENT MOTION CONTROL

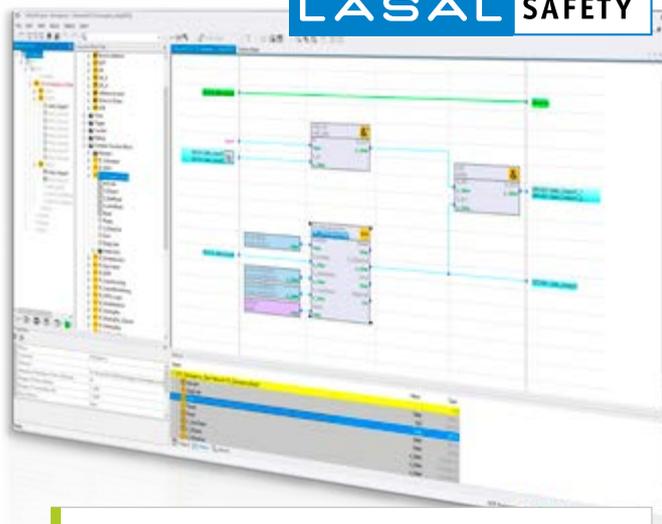
LASAL MOTION simplifies every drive technology task. Even complex axis movement can be implemented without any programming effort.



### COMFORTABLE VISUALIZATION DESIGN

For user-friendly implementation of diverse visualization tasks, LASAL SCREEN and the web-based LASAL VISU Designer (HTML5, CSS3, JavaScript) are provided.

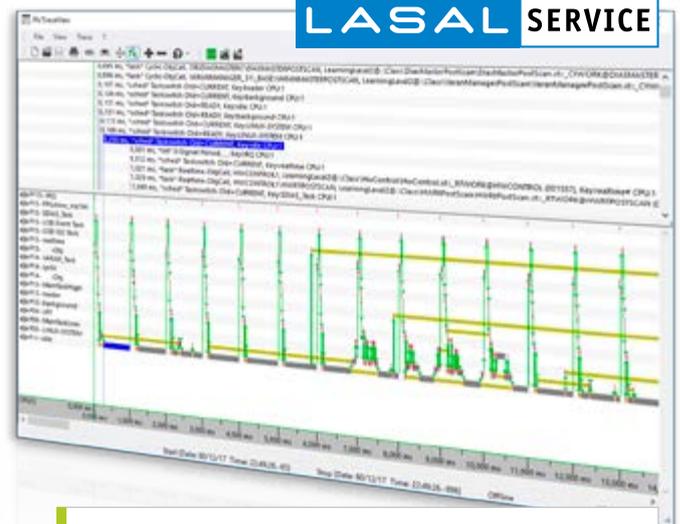
LASAL SAFETY



### SEAMLESSLY INTEGRATED SAFETY

Implement Safety applications comfortably and quickly – with the LASAL SAFETY Designer. Predefined function blocks simplify creating Safety applications.

LASAL SERVICE



### PRACTICAL TOOLS

Whether cross-platform data exchange, software updates or worldwide remote access – LASAL supports you with efficient tools such as debugging, boot stick updates via e-mail.