MOOG

Shaping the way our world moves™

MOOG PRODUCT PRESENTATION

SOFTWARE MODULES

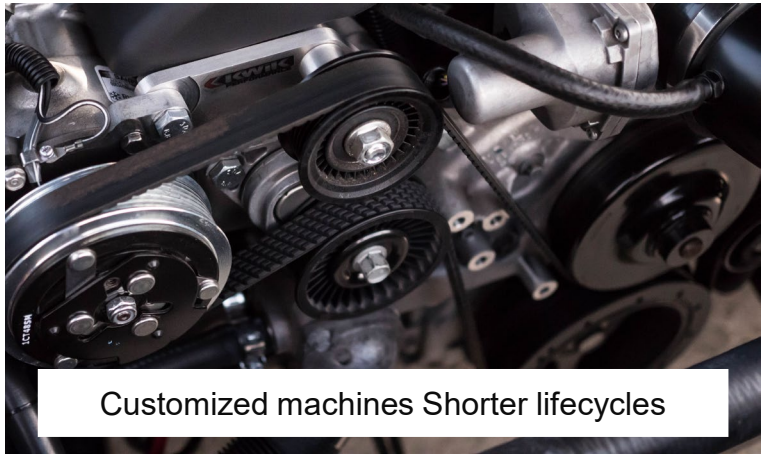
Marketing I May 2024 I Version 1

INCREASING CHALLENGES FOR MACHINE OPERATORS & OEMS

MARKET TRENDS

Energy Efficiency

Digitalization (I4.0, IIoT)



Customized machines Shorter lifecycles

INCREASING CHALLENGES FOR MACHINE OPERATORS & OEMS

Previous Next

TODAY'S CHALLENGES

Energy Efficiency

Mixed Technologies

(EH, EM, EAS)

Digitalization (I4.0, IIoT)

Increased Complexity

(control, components, data)

Customized machines Shorter lifecycles

Fast & Efficient Product Development

SOFTWARE SOLUTIONS TO MASTER THE CHALLENGES

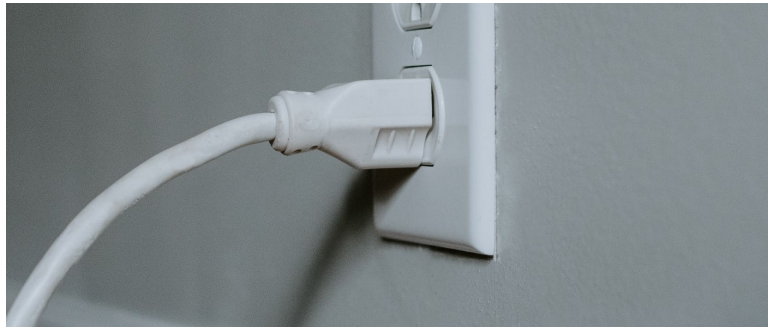
DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

MODULAR PORTFOLIO +

EASY IMPLEMENTATION +



DEALING WITH MIXED TECHNOLOGIES

- Simplified architecture +
- Flexible choice of PLC +
- Best-fit Technology +
- Low Investment +

ACCELERATION OF DEVELOPMENT

YOUR BENEFITS

REDUCTION OF COMPLEXITIES

- + Application Know-How
- + Faster Commissioning
- + Ready to Use
- + Less Downtime

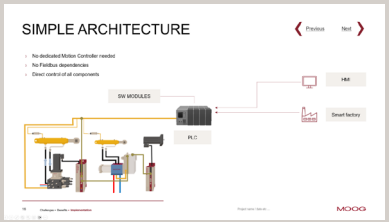
DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture −

› Multi-platform



Flexible choice of PLC +

Best-fit Technology +

Low Investment +

YOUR BENEFITS

+ Application Know-How

+ Faster Commissioning

+ Ready to Use

+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

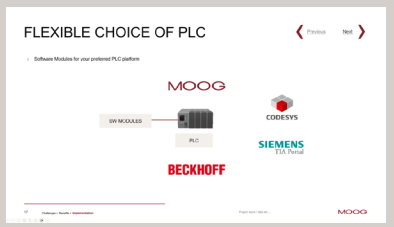
ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture +

Flexible choice of PLC −

- Multi-platform
- Technology open



Best-fit Technology +

Low Investment +

YOUR BENEFITS

\+ Application Know-How

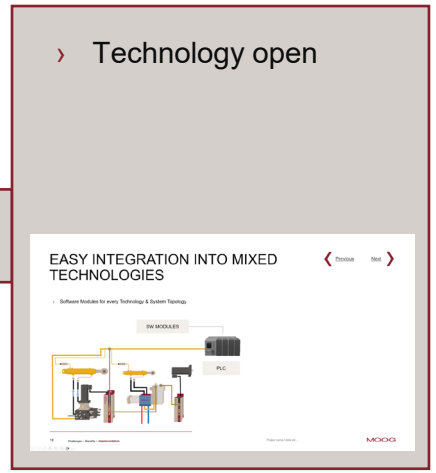
\+ Faster Commissioning

\+ Ready to Use

\+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

- Simplified architecture +
- Flexible choice of PLC +
- Best-fit Technology –
- Low Investment +



ACCELERATION OF DEVELOPMENT

YOUR BENEFITS

REDUCTION OF COMPLEXITIES

- \+ Application Know-How
- \+ Faster Commissioning
- \+ Ready to Use
- \+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture +

Flexible choice of PLC +

Best-fit Technology +

Low Investment –

› Pay per machine

YOUR BENEFITS

\+ Application Know-How

\+ Faster Commissioning

\+ Ready to Use

\+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

- Simplified architecture +
- Flexible choice of PLC +
- Best-fit Technology +
- Low Investment +

ACCELERATION OF DEVELOPMENT

YOUR BENEFITS

- Less PLC hardware
- Condition monitoring
- Regular updates

REDUCTION OF COMPLEXITIES

- \+ Application Know-How
- \+ Faster Commissioning
- \+ Ready to Use
- – Less Downtime

DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture +

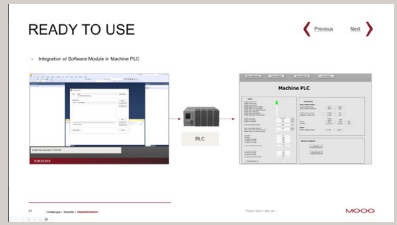
Flexible choice of PLC +

Best-fit Technology +

Low Investment +

YOUR BENEFITS

› Regular updates
› Simple user interface



\+ Application Know-How

\+ Faster Commissioning

− Ready to Use

\+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture +

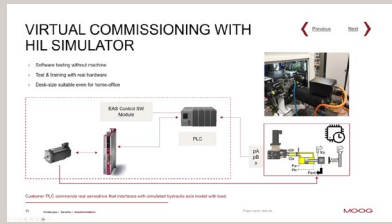
Flexible choice of PLC +

Best-fit Technology +

Low Investment +

YOUR BENEFITS

- Simple user interface
- Simulation tools
- Virtual Commissioning



\+ Application Know-How

− Faster Commissioning

\+ Ready to Use

\+ Less Downtime

DEALING WITH MIXED TECHNOLOGIES

ACCELERATION OF DEVELOPMENT

REDUCTION OF COMPLEXITIES

Simplified architecture +

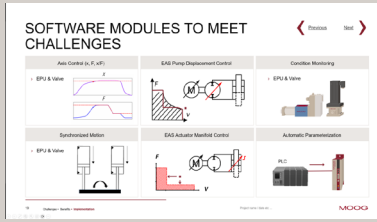
Flexible choice of PLC +

Best-fit Technology +

Low Investment +

YOUR BENEFITS

- Fits Moog Hardware
- Simulation Tools
- Technical Support



− Application Know-How

\+ Faster Commissioning

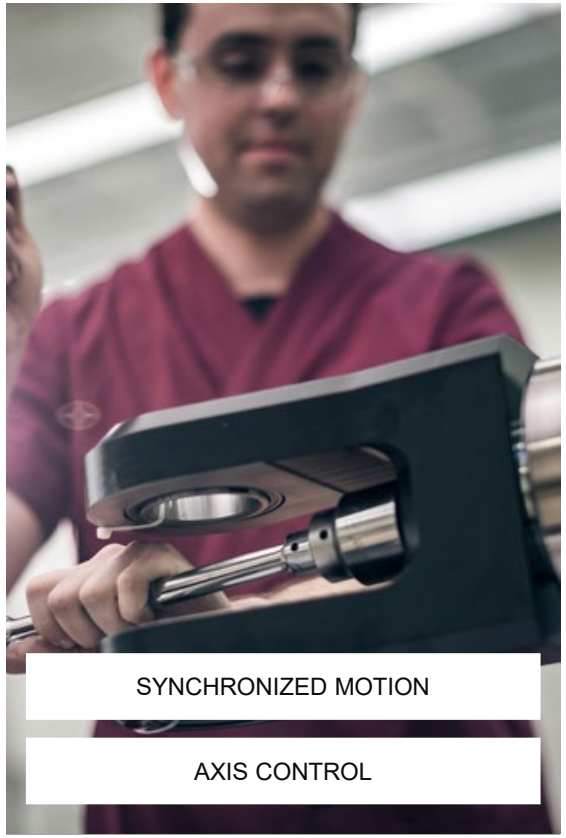
\+ Ready to Use

\+ Less Downtime

EPU & VALVE

EAS

TECHNOLOGY OPEN

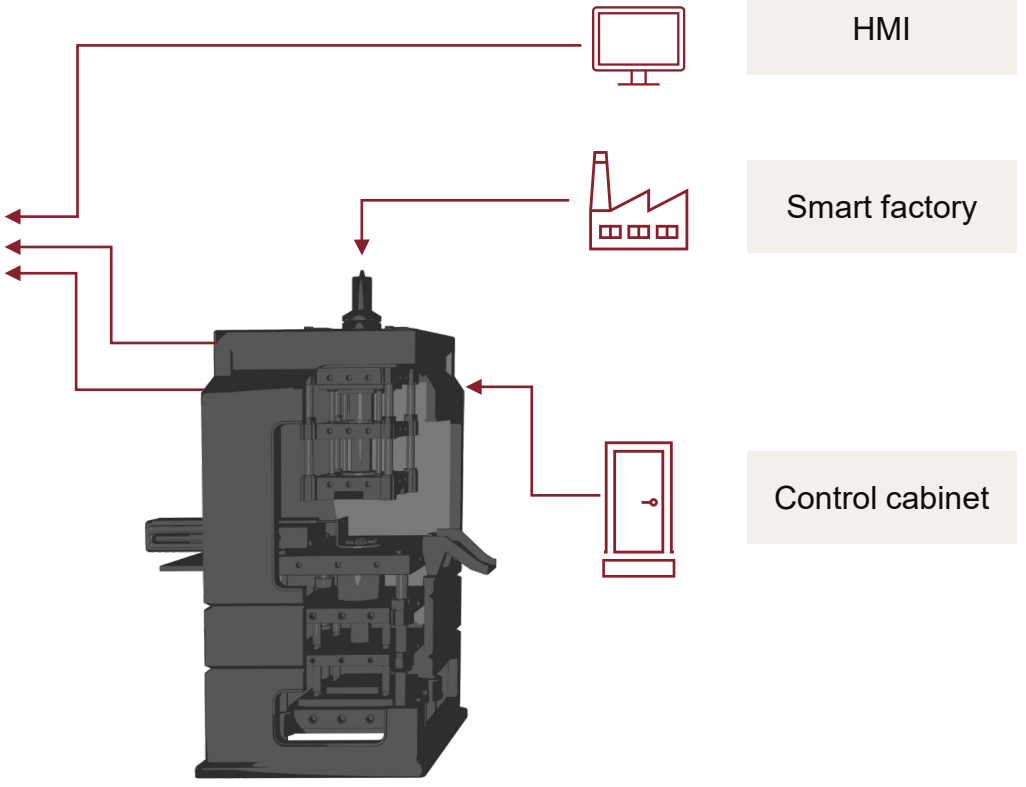


PLC & DRIVES

SW MODULES

Process Control	Motion Control	Material Handling
HMI	Tool Handling	Safety
IoT Edge	I/O	Auxiliary Systems

PLC



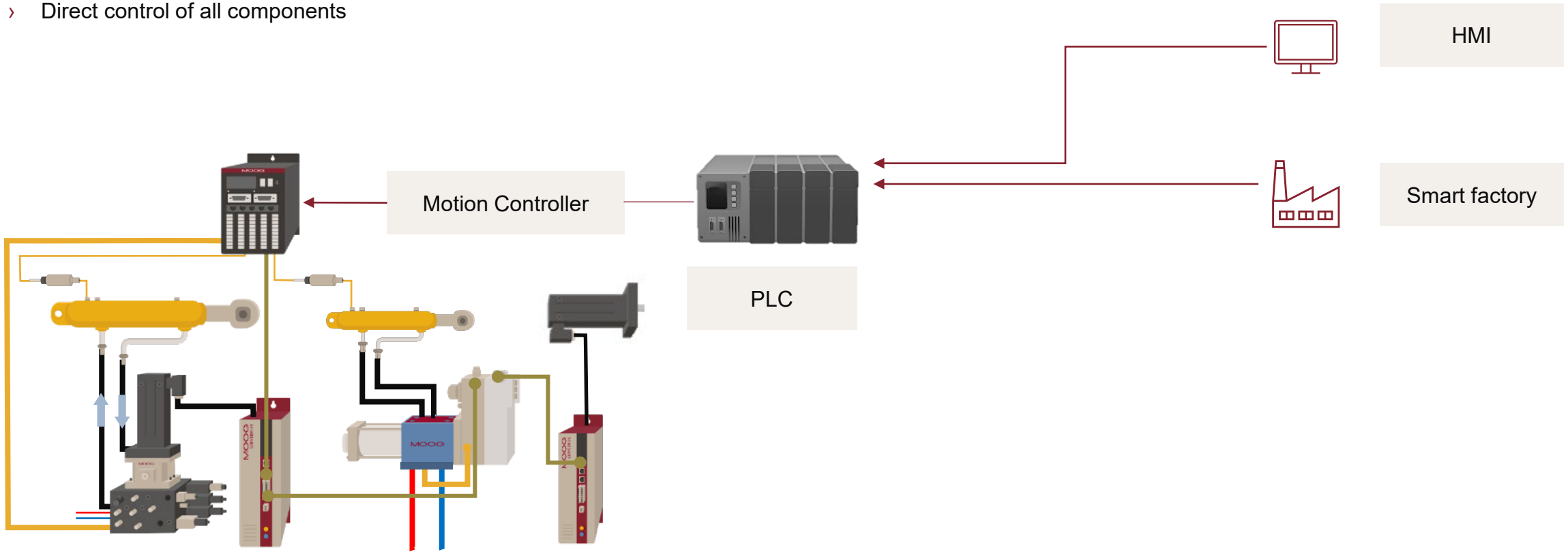
HMI

Smart factory

Control cabinet

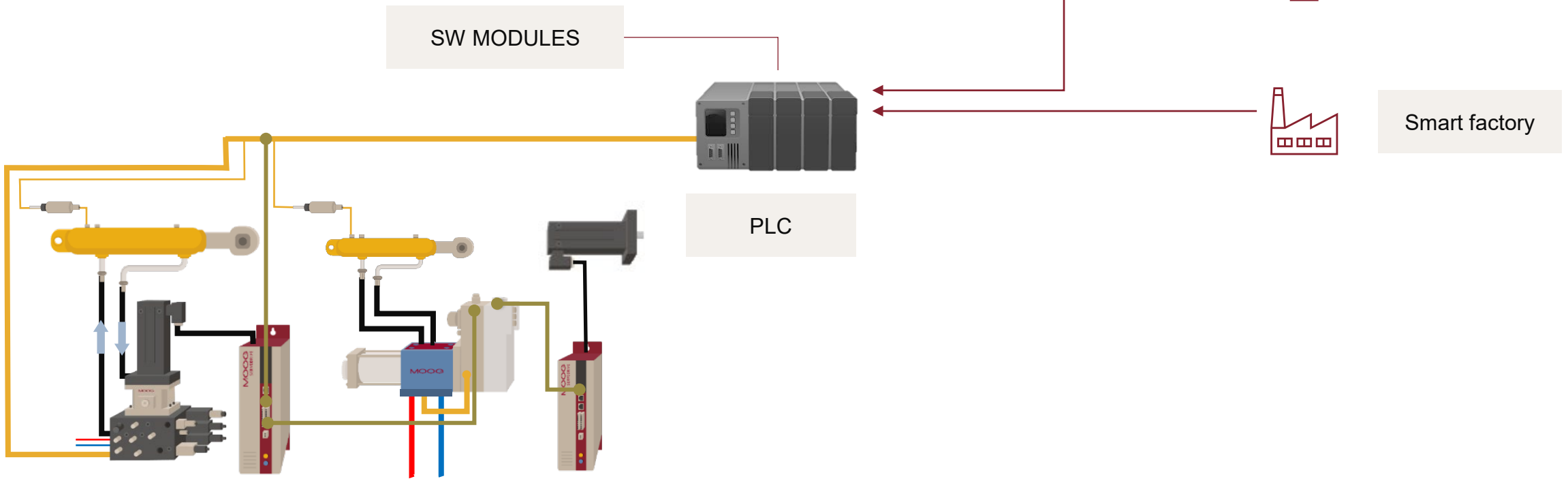
SIMPLE ARCHITECTURE

- No dedicated Motion Controller needed
- No Fieldbus dependencies
- Direct control of all components



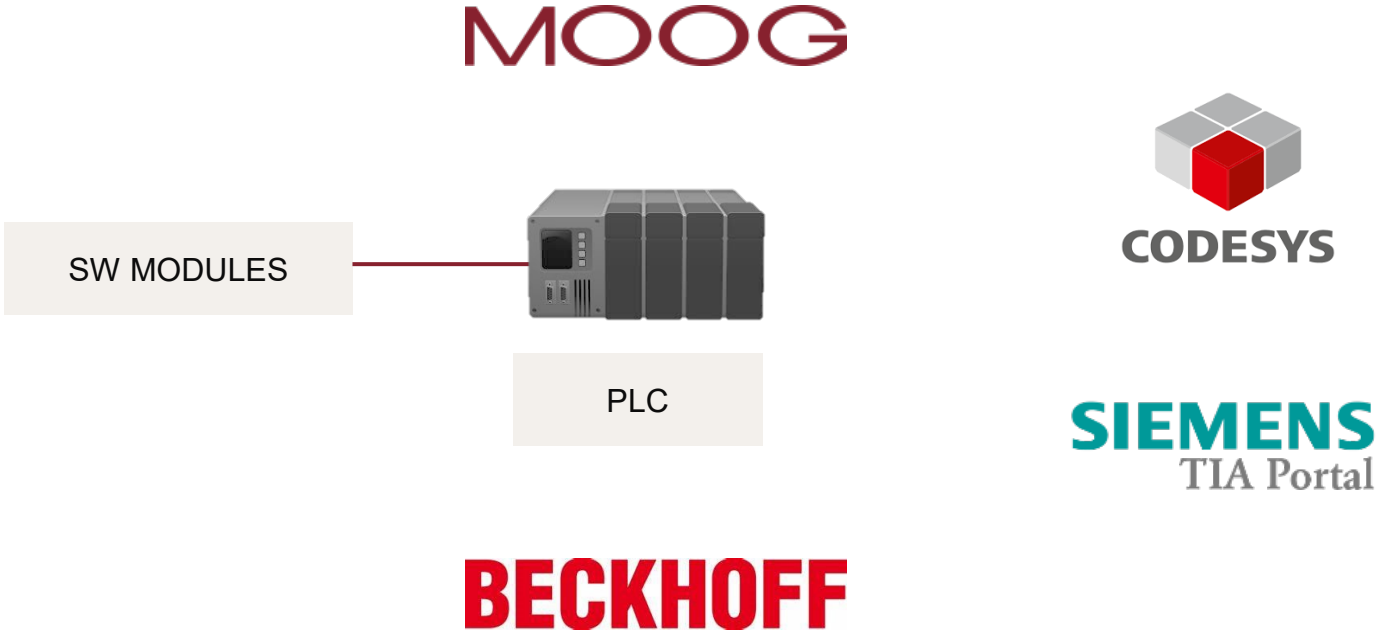
SIMPLE ARCHITECTURE

- No dedicated Motion Controller needed
- No Fieldbus dependencies
- Direct control of all components



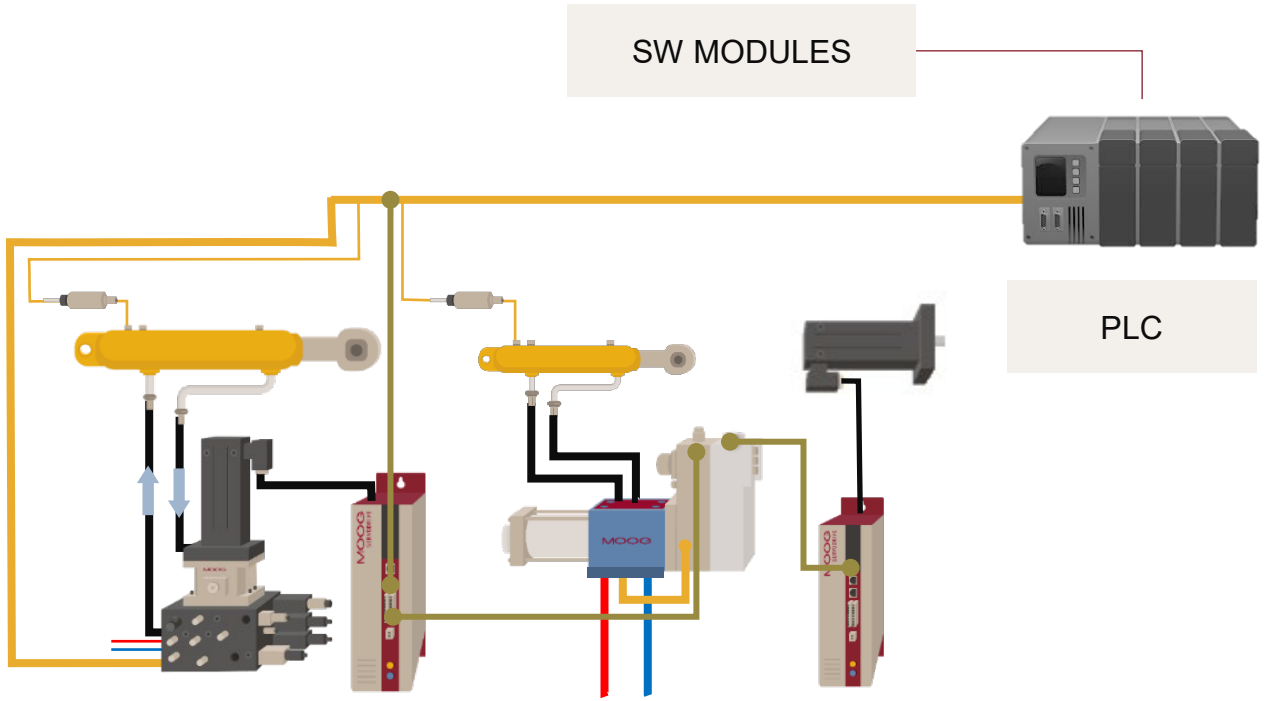
FLEXIBLE CHOICE OF PLC

› Software Modules for your preferred PLC platform



EASY INTEGRATION INTO MIXED TECHNOLOGIES

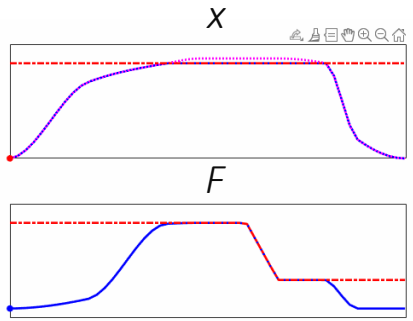
› Software Modules for every Technology & System Topology



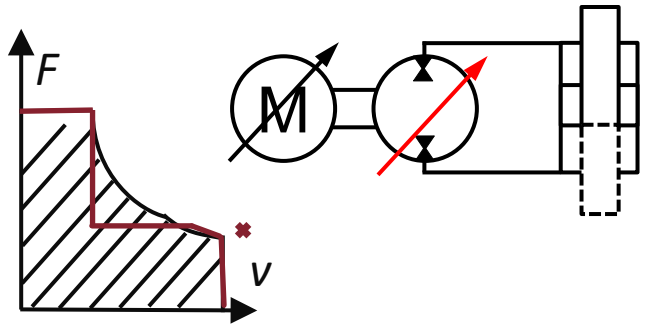
SOFTWARE MODULES TO MEET CHALLENGES

Axis Control (x, F, x/F)

› EPU & Valve

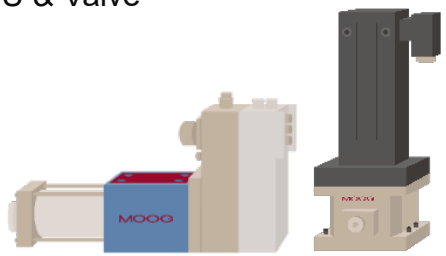


EAS Pump Displacement Control



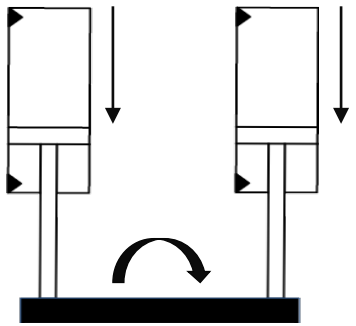
Condition Monitoring

› EPU & Valve

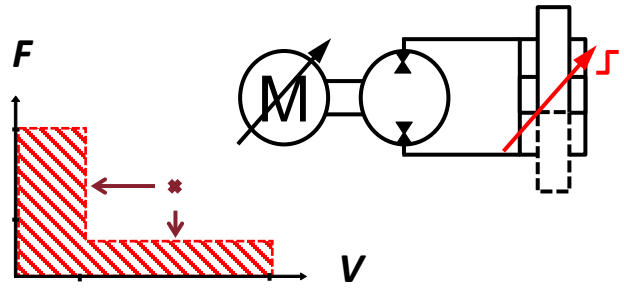


Synchronized Motion

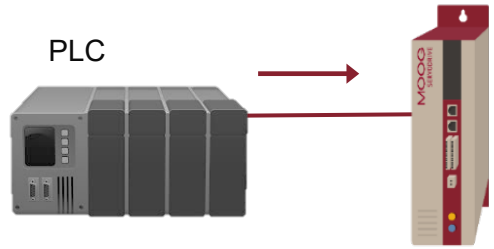
› EPU & Valve



EAS Actuator Manifold Control

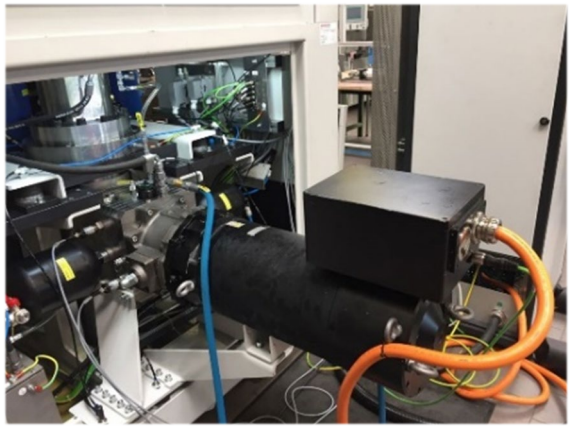


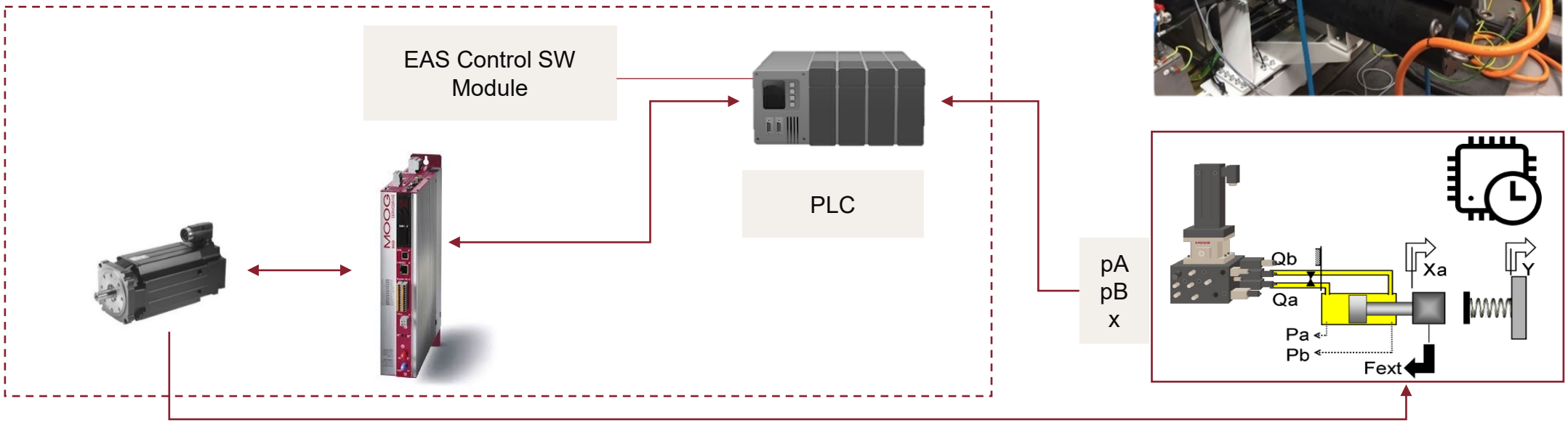
Automatic Parameterization



VIRTUAL COMMISSIONING WITH HIL SIMULATOR

- Software testing without machine
- Test & training with real hardware
- Desk-size suitable even for home-office

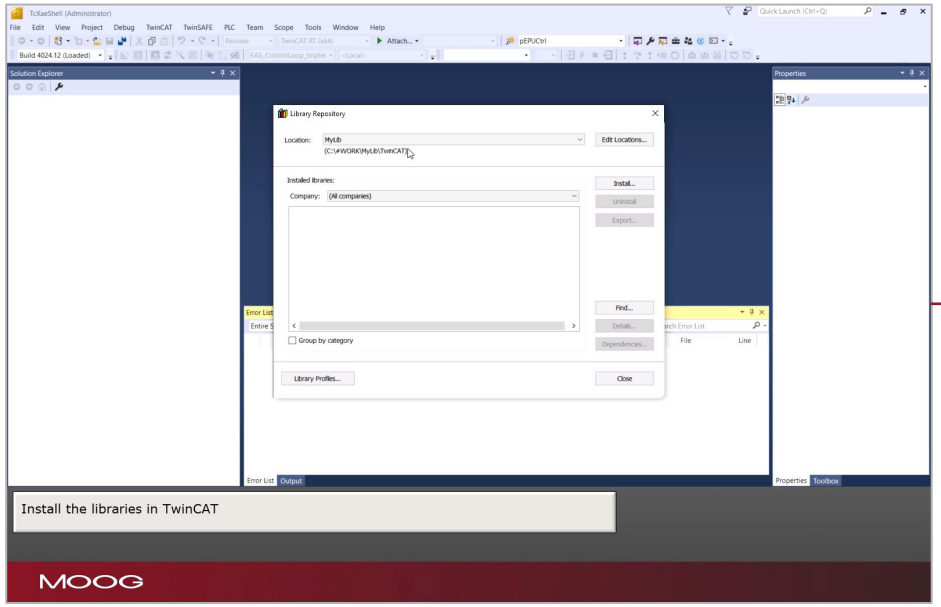




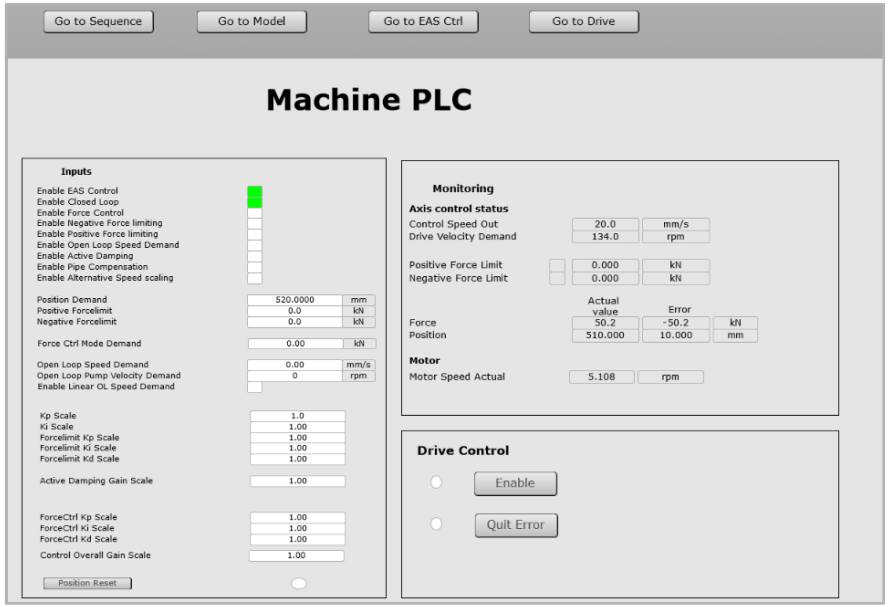
Customer PLC commands real servodrive that interfaces with simulated hydraulic axis model with load.

READY TO USE

› Integration of Software Module in Machine PLC



PLC



WHAT'S YOUR CHALLENGE?

- MIXED TECHNOLOGIES?
- NEW MACHINE GENERATION?
- SLOW PRODUCT DEVELOPMENT?
- COMPLEXITY?
- UNKNOWN INTERFACES?
- MISSING SW EXPERTISE?