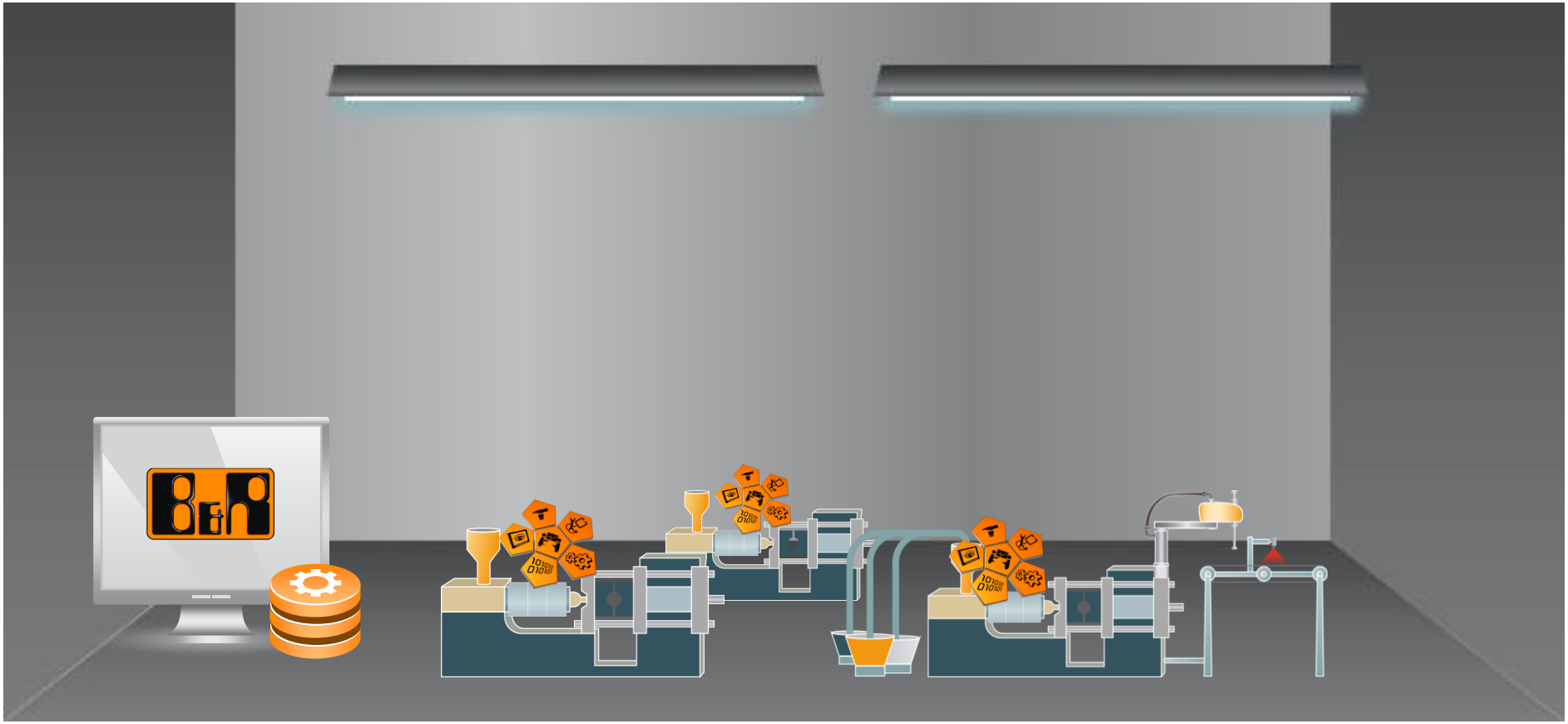
Valg af Automationsplatform

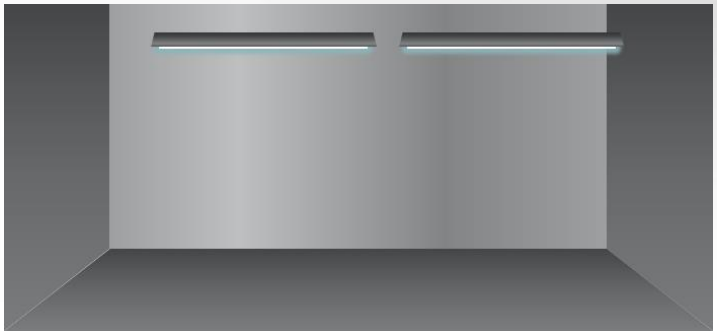
Factory or Machine?

Different Product Segments

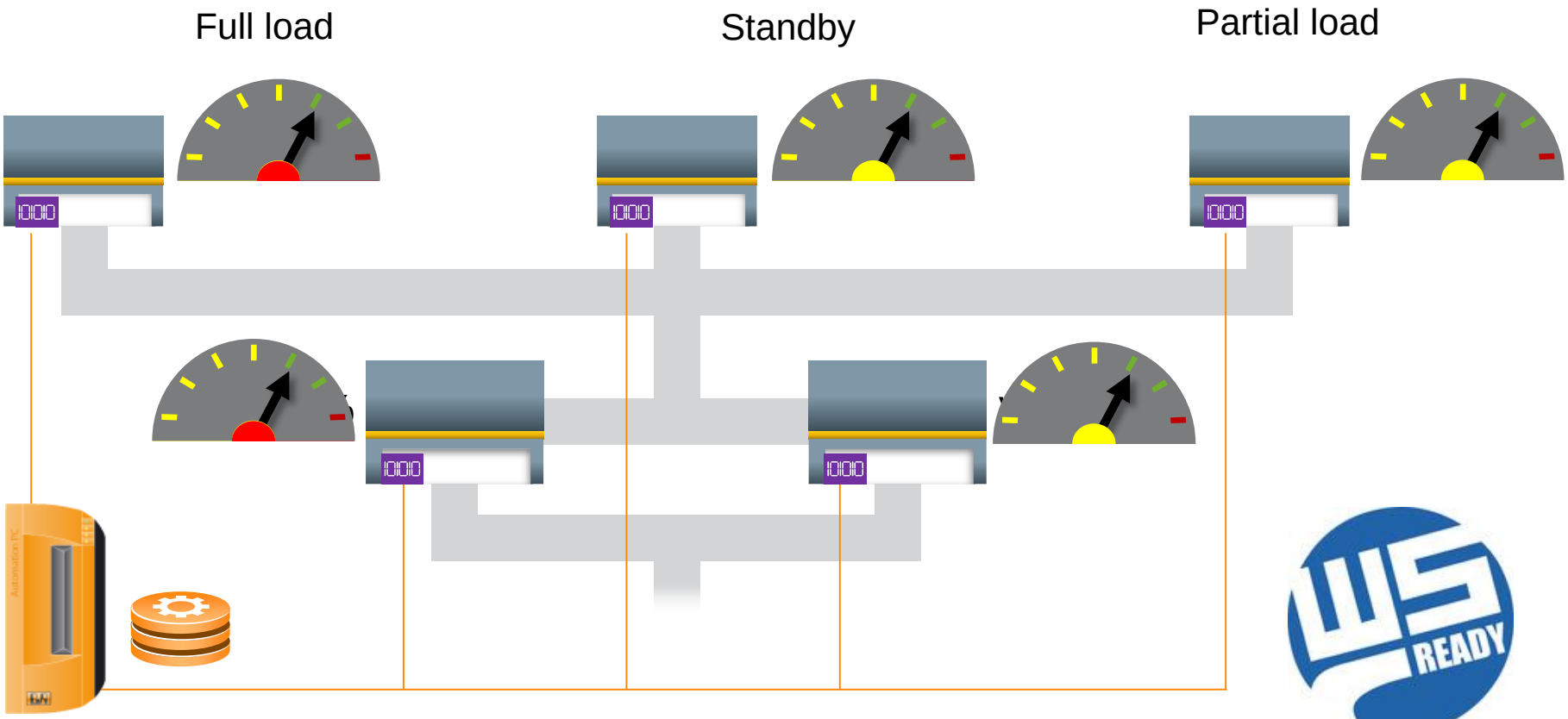


- APROL for Process Control and Factory Automation
- Automation Studio for Machine Automation

Factory Automation



Comprehensive data acquisition



- APROL collects data logs from all machines
- Stored in historical archive

B&R factory automation with APROL

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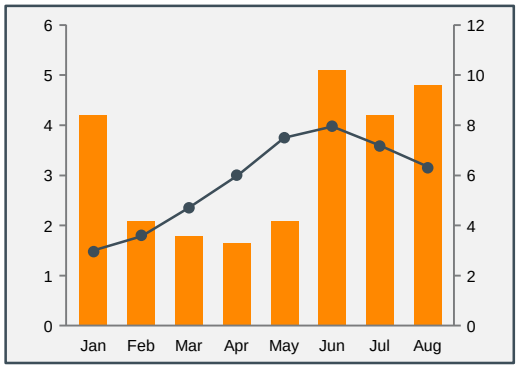
What can we do with the collected data?



PDA functions

Efficient machine diagnostics

Combination trend/alarm

Quality assurance

Material tracking with serial numbers

QC protocols are FDA/GAMP5 compliant

Verified production process

Performance monitoring

Input of material

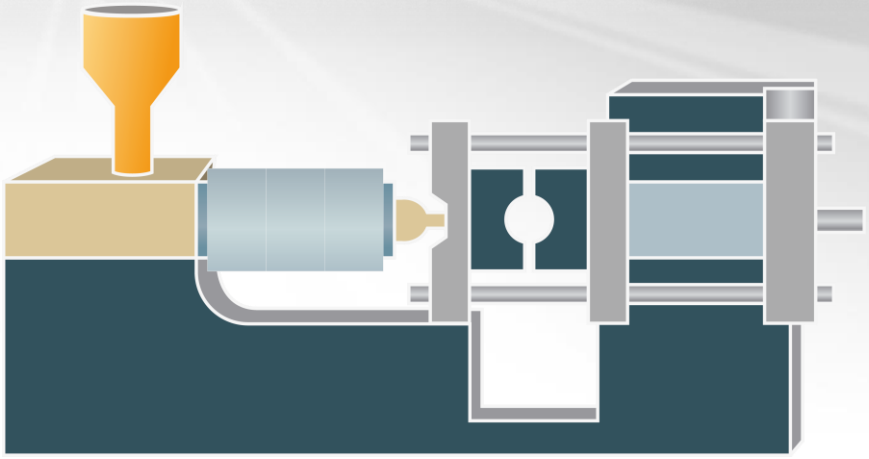
Energy consumption

Production time

Part costs

Strengthened competitive advantage

Machine Automation



Valg af automationsplatform

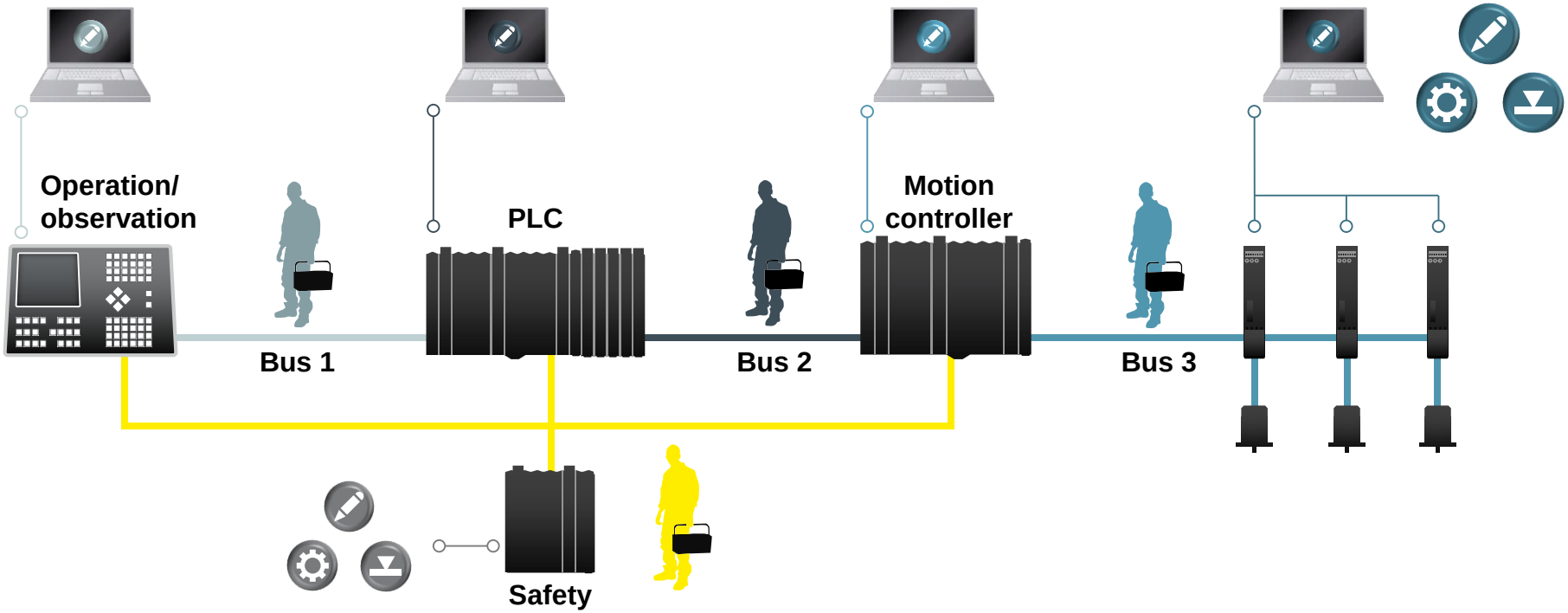
Bliver der mulighed for at få mere fælles og standardiserede udvik-lingsværktøjer

Software der kan afvikles på forskellige fabrikater bliver aldrig ”bare lige”.

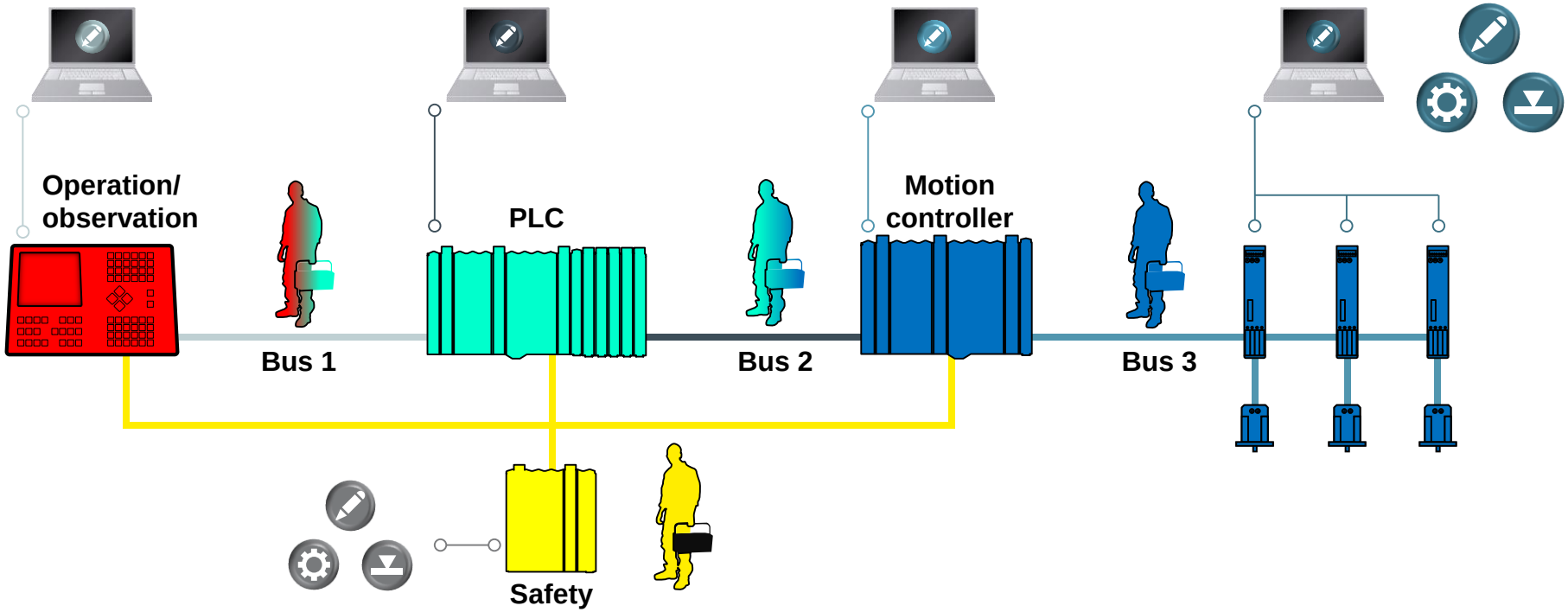
På avancerede systemer vi altid være nogen der adskiller sig fra andre og dette kræver at hele systemet er integreret for at opnå stor perfermens. Hver fabrikant udvikler specielle funktionaliteter der er unikke for deres systemer og derfor er konkurrenceparametre.

Dog vil teknologier som IEC1131, PLC OPEN, HTML5, C/C++ og andre standard værktøjer hjælpe meget på at bruge samme kode i flere systemer.

Traditional automation structure

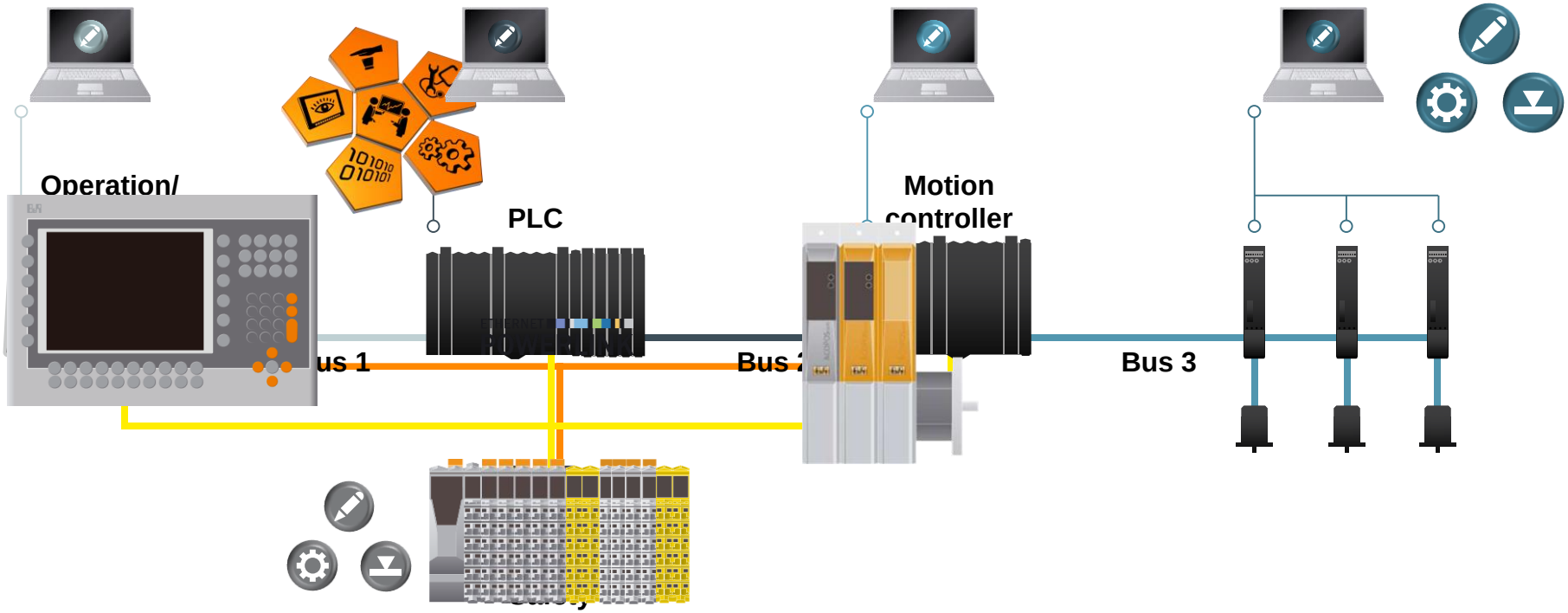


Traditional view of openness



Service and commissioning

Integrated automation



- Simple serviceability (FW/OS download, safety and drive parameters)
- SDM handles all diagnostics (hardware & software)
- Complete access also possible remotely

Scalability+ for intelligent maintenance

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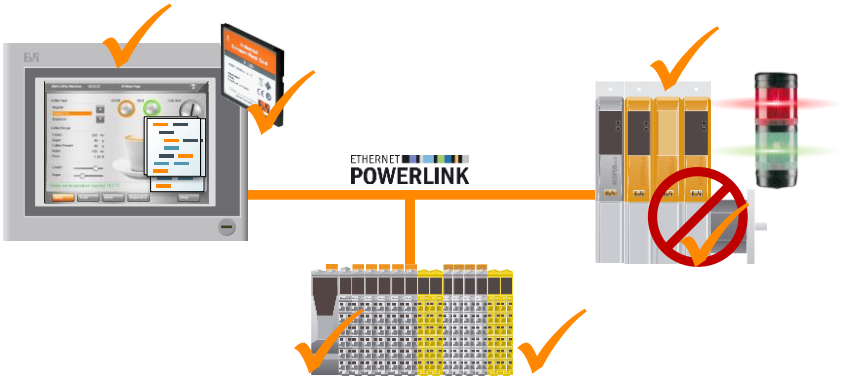
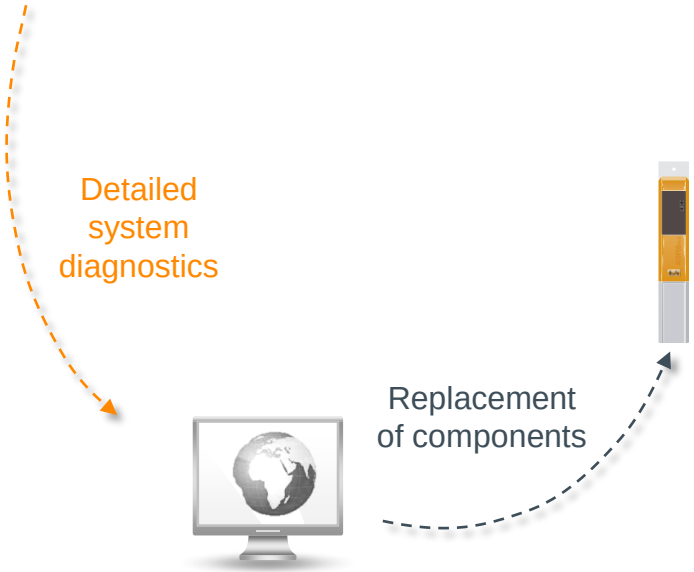
Consistent firmware following upgrades or exchange





All automation components

- HMI application
- Module firmware
- Operating system on the drives
- Safety technology
- Recipe data

Simple and efficient maintenance

- Replacement without reprogramming
- Upgrade of machine functions

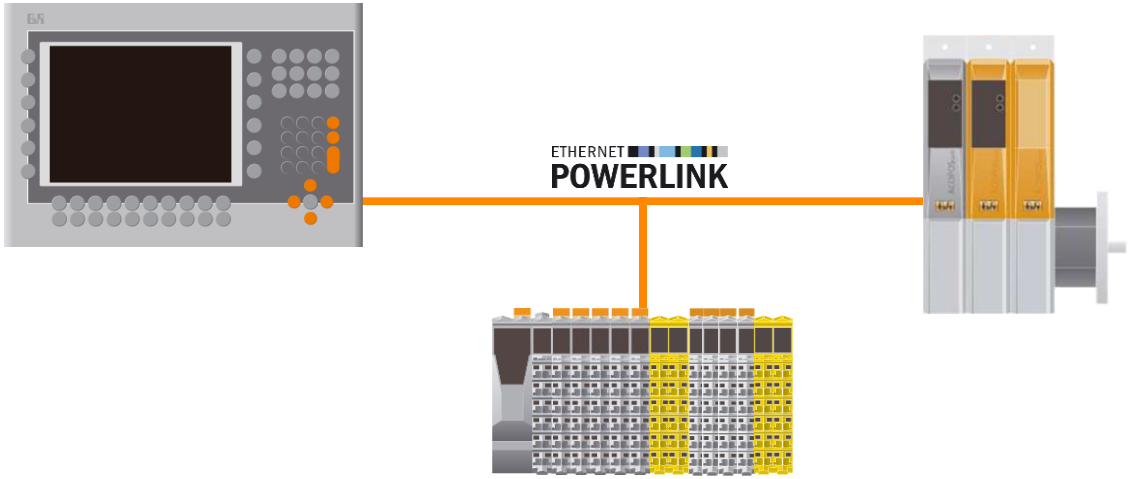
Defined machine status

- After component replacement

Minimum machine downtime

- Automatic initialization process

Integrated automation - Fieldbus Technology



ETHERNET POWERLINK

CANopen

Modbus

PROFIBUS

PROFINET

DeviceNet

EtherNet/IP

ASi

EtherCAT

Automation Studio

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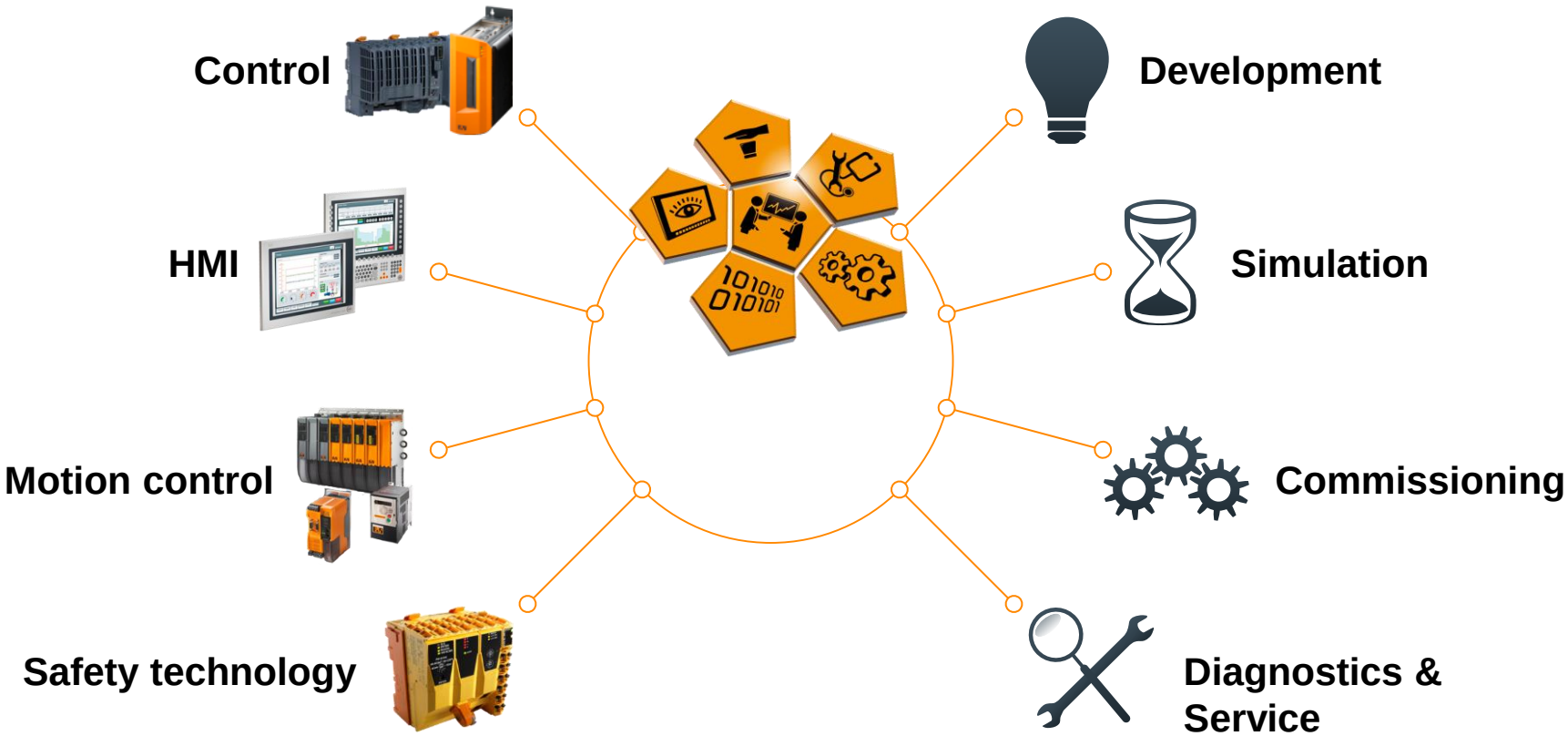
One tool for everything

All products

All tasks



Scalability+ through product diversity

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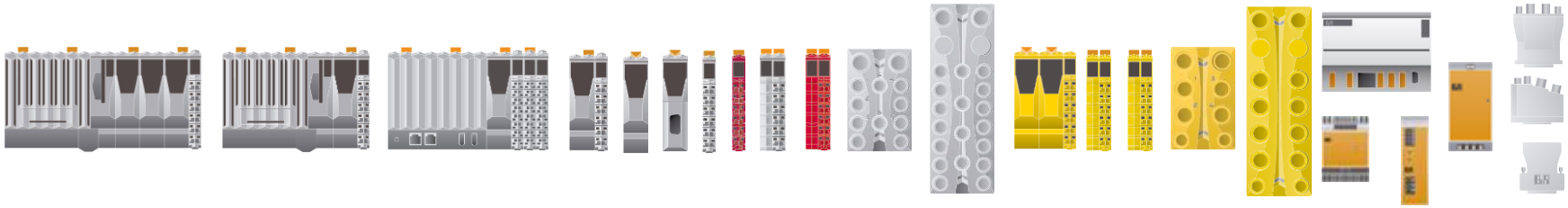
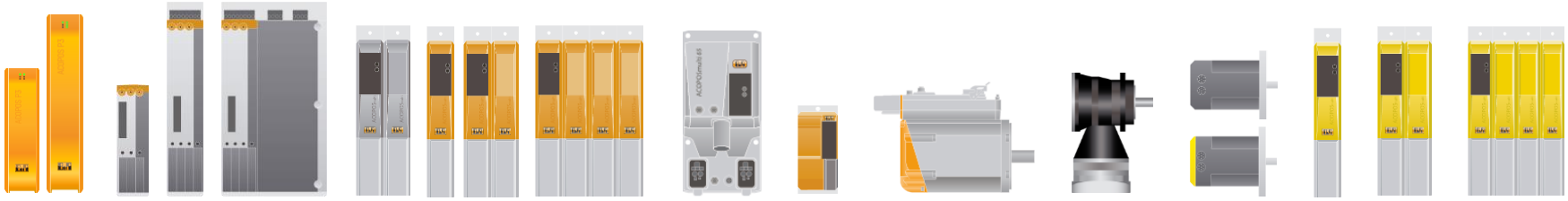
Fully scalable hardware portfolio

Industrial PCs, HMI

Control systems, safety technology



Motion control, safety technology



Simulation

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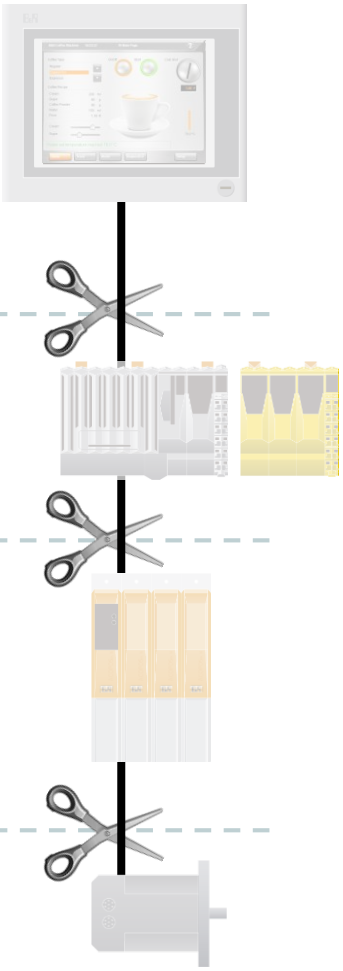
Complete on all layers

HMI

PLC & I/O
Safety

Drive

Motor



Motor

Inertia and temperature behavior

Drive

Entire communication profile

PLC, I/O & Safety

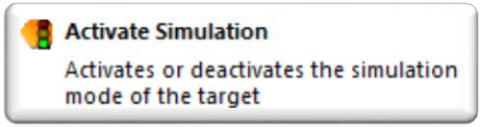
Slow motion and timelapse

HMI

With VNC

No software modification

1-click changeover



Maplesoft
Mathematics • Modeling • Simulation

SIMULINK Enabled
MathWorks Partner

Openness

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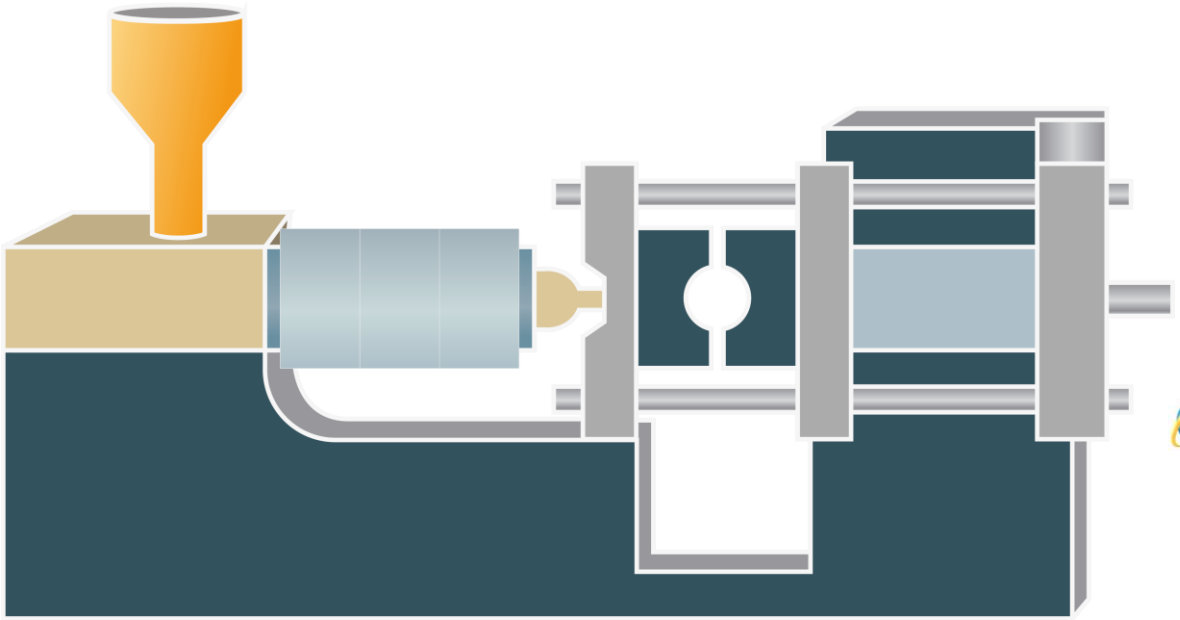
Integrated automation - Open Standards



VxWorks

USB

FTP
CIFS

Microsoft SQL Server

OpenSSL

Web Service

WEBSOCKET

OPC Unified Architecture

XML

VS2012 Team Foundation

Microsoft Visual SourceSafe

SUBVERSION

mercurial

open SAFETY

ETHERNET POWERLINK
open source technology

IEC

PLCopen safety

PLCopen motion control

sourceforge

openPOWERLINK
An Open Source POWERLINK Stack

openCONFIGURATOR
An Open Source POWERLINK network configuration tool

Pre-konfigurerede systemer

Hvad er muligt ift. at få pre-konfigurerede PLC'er til styring af anlæg.

Det er ikke muligt at lave komplette prekonfigurerede systemer til specialmaskiner. Men derimod er det vigtigt at de dele af softwaren der altid er ens, skal være lette at lave.

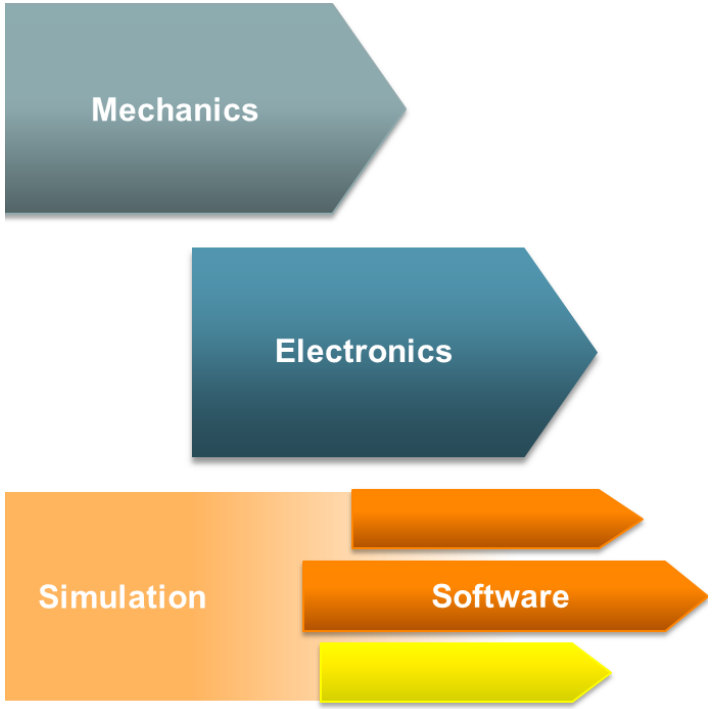
Når programmøren ikke skal bruge tid på disse ting, kan han koncentrere sig om de komplekse ting omkring applikationen.

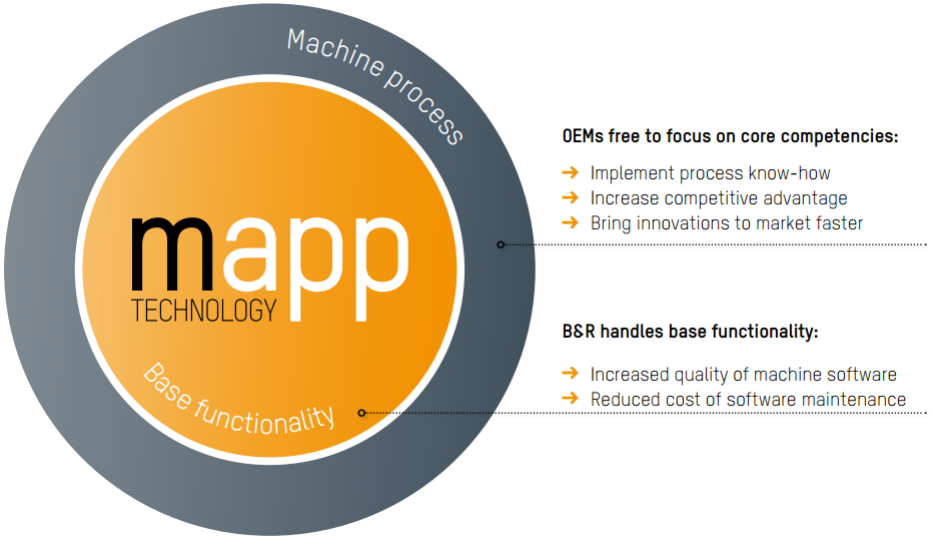
Vi har meget focus på udvikling af applikations softwareblokke.

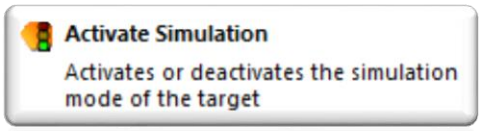
Det går under navnet MAPP teknologi.

Choosing Automation Platform

Time To Market







Choosing Automation Platform

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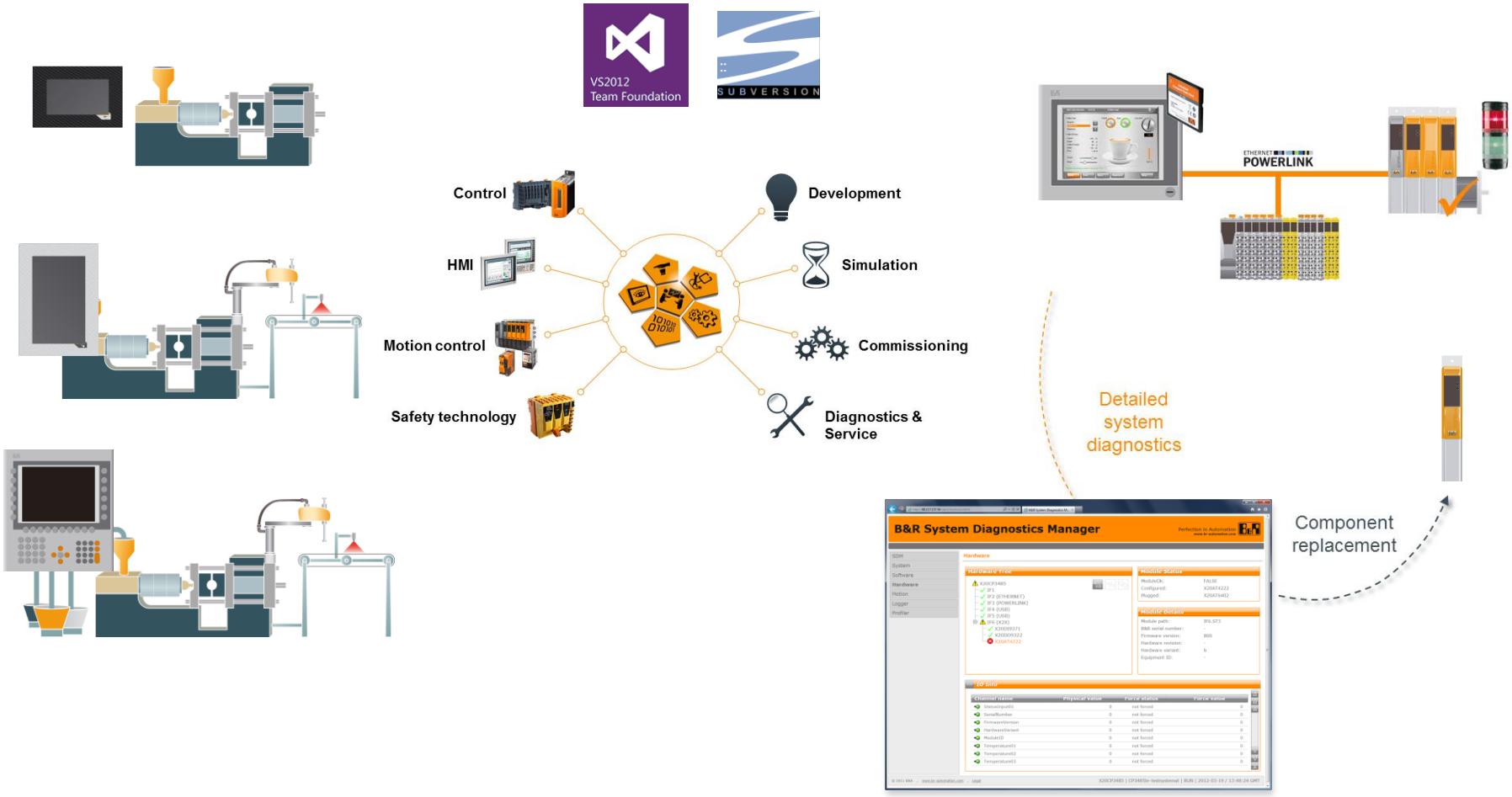
Lifecycle Management - Total Cost of Ownership



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Integreret automation udelukker ikke brug af åbne standarder

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