Agenda

Softing Industrial Company Overview

Product Portfolio

Selected Solutions

Selected Partnerships and Case Studies

Softing AG – Business Units

Automotive

Solutions for ECU diagnostics, measurement technology and related communications

IT Networks

Measuring devices to test, qualify or certify copper or fiber optic wirings of IT network systems

Industrial

Software and hardware for integrated industrial production

Automation Networks

Industrial IoT

Technology Integration

- Headquartered in Haar near Munich, Germany
- Revenue 2023: ~ 112 million EUR
- ~400 employees (annual average)
- Local presence through own staff in Germany, USA, Italy, France, Austria, Spain, India, China
- Global network of distributors

Industrial Automation Market Segments
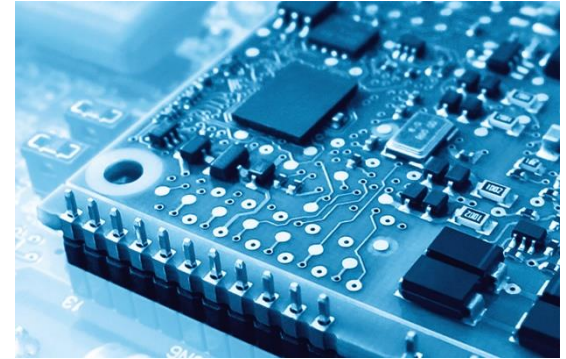
Automation Networks

- Machine connectivity for HMI, SCADA, MES, and other applications

- Device connectivity for plant asset management and for control

Industrial IoT

- Machine- and device connectivity for IoT and cloud platforms

- Deep integration with IT for management and operation

Technology Integration

- SDKs for OPC UA client- and server development

- Boards and communication stacks for field devices

References

Partner- and Memberships

Industrial Automation	ABB	EMERSON Process Management	EH Endress+Hauser People for Process Automation	RA Rockwell Automation	Schneider Electric	SIEMENS
Industrial IoT	aws	Azure	cedalo	portainer.io	WAGO IoT Partner	
Consulting & Services	Anotherware	Computacenter Services & Solutions	INFOSYS ONLINE	JPEMBEDDED Embedding ideas		
Memberships	EtherCAT	FIELDCOMM GROUP MEMBER	ISO	ODVA	OPC FOUNDATION MEMBER	
	OPEN INDUSTRY 4.0 ALLIANCE	PI PROFIBUS · PROFINET	VDMA	ZVEI:		

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Softing Industrial Company Overview

Product Portfolio

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Controller & Machine Connectivity

Connectivity for any kind of application and solution environment, brownfield or greenfield, requiring access to tooling machine- and PLC data

- Communication software and gateways to access controller and machine data for production monitoring, production control, process optimization and IIoT


Applications

Controller
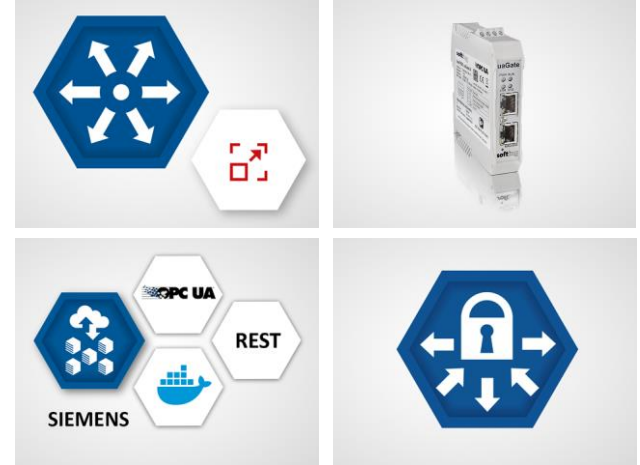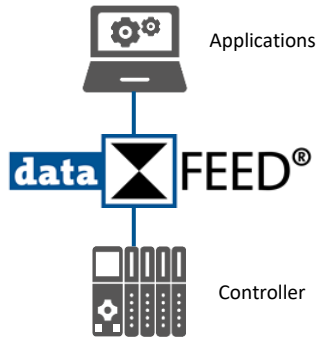
Product Lines

- dataFEED OPC Suite, Secure Integration Server

- edgeConnector, edgeAggregator, edgePlug

- edgeGate, uaGate, eATM

Device Connectivity

Connectivity products for digital plant asset management applications and process control

- Gateways, communication software and mobile interfaces to access field device data from applications for device parameterization, asset management, asset monitoring, process optimization and IIoT. Gateways and switches to connect field devices to Ethernet-based control systems.
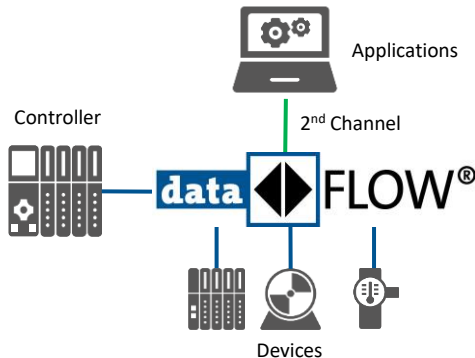
Product Lines

- smartLINK HW-DP, smartLINK SW-HT, smartLink PN

- epGate, mbGate, pnGate

- aplSwitch Field

- mobiLink

Network Monitoring

Monitoring production assets and industrial communication networks with controllers and field devices

- Full information about the health of the monitored industrial communication networks and all installed assets

- Monitoring of Profibus networks

- Easy-to-use for shopfloor personnel

Product Line

- plantPerfect Monitor
  (in combination with smartLink)

Network Diagnosis
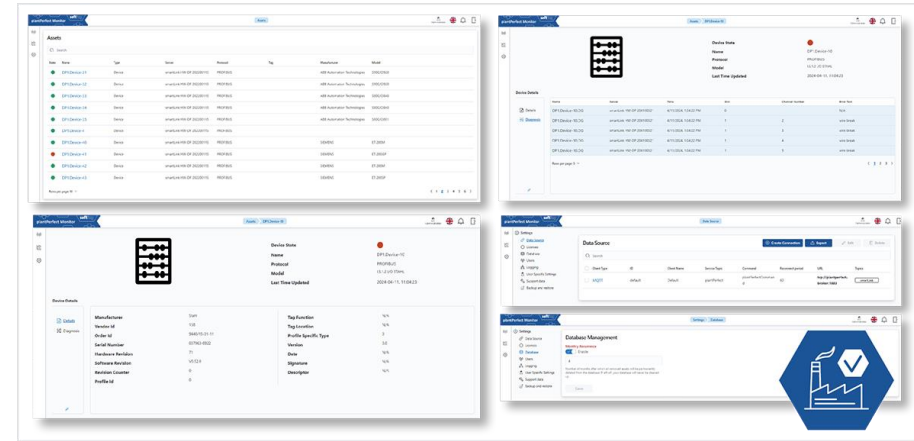
Tools and mobile device for signal and protocol analysis of industrial communication networks

- For automation network trouble shooting, including PROFIBUS DP networks

- For acceptance testing of Ethernet-based industrial communication

- Standardized acceptance reports in accordance with the recommendations of PROFIBUS & PROFINET International (PI)

Product Lines

- Profibus Tester

- Analyzer IE

Technology Integration

Embedded modules and communication software for the integration of industrial communication protocols into field devices, controllers or applications

- Complementary services, including training, workshops and integration support

- Softing Industrial also provides services to manufacture devices for customers (ODM business)
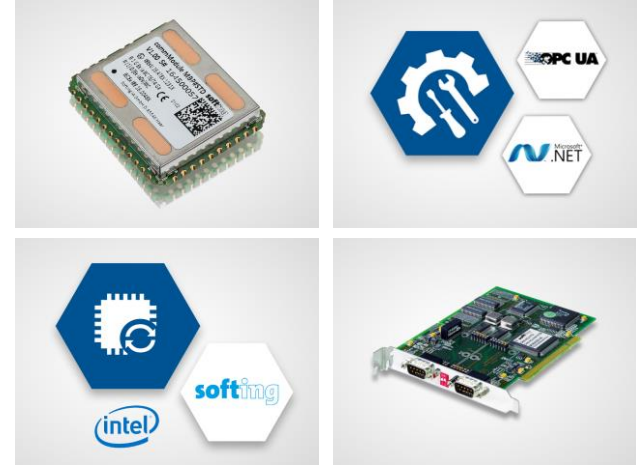
Product Lines

- OPC UA SDKs (client and server development, binary and source code)

- Communication stacks (PROFINET, EtherNet/IP, EtherCAT, Modbus/TCP, FF, PROFIBUS PA)

- FPGA-based communication subsystems (for Intel/Altera, and for AMD/Xilinx)

- Embedded communication modules (Ethernet, Ethernet-APL, MBP), for PROFINET, EtherNet/IP, EtherCAT, Modbus/TCP, FF, PROFIBUS PA

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Controller- and Machine Connectivity

Solution

- Access controller and machine data from applications for production monitoring, production control, production data acquisition, process optimization and IIoT
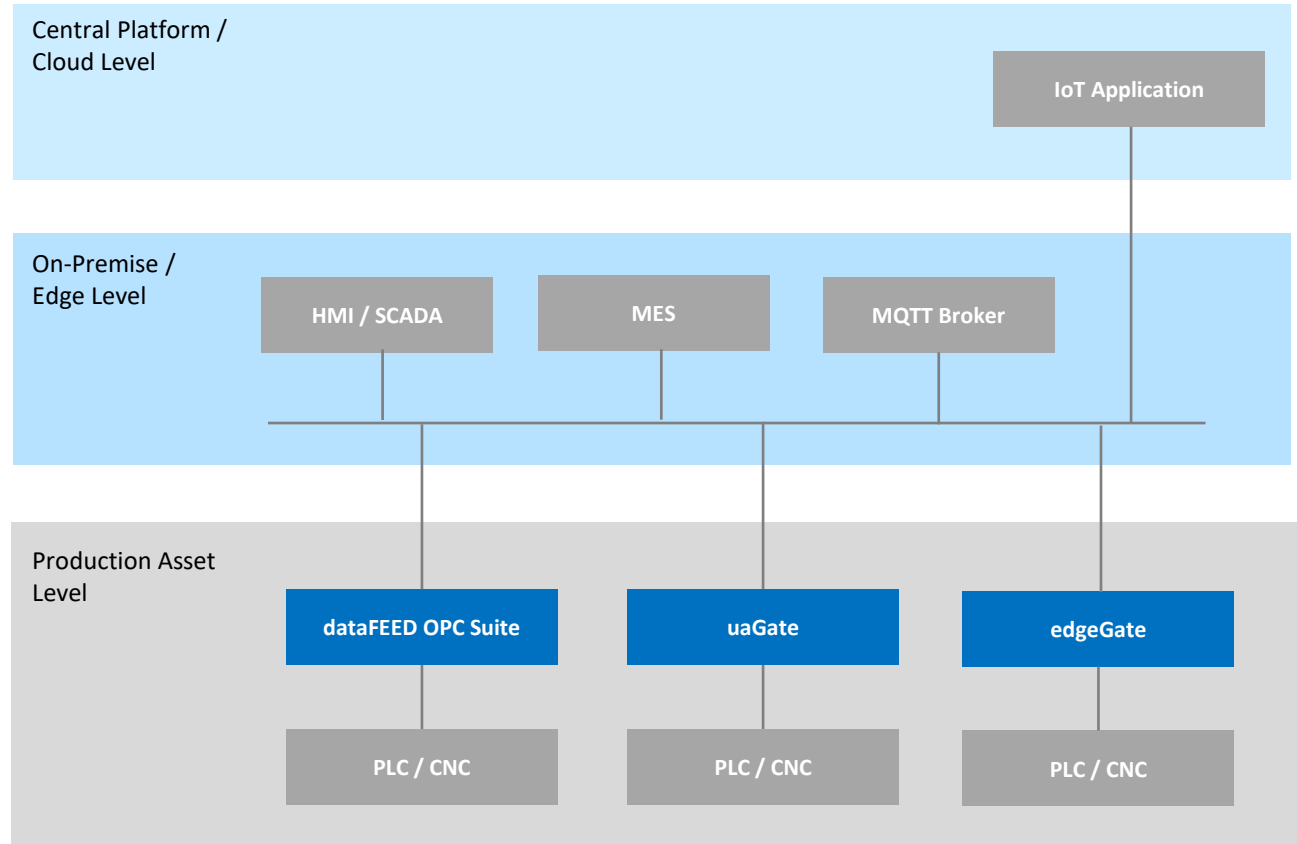
Softing Products

- dataFEED product family (Windows applications)

- uaGate product family (appliance)

- edgeGate product family (appliance)

Key Features and Benefits

- Easy-to-use for shopfloor personnel, no IT skills required

- Industrial-grade products, mature and proven
  (+15.000 installations in production environments around the globe)

Project Examples

- American Food Giant

Central Platform / Cloud Level			
			IoT Application

On-Premise / Edge Level			
HMI / SCADA	MES	MQTT Broker	

Production Asset Level			
dataFEED OPC Suite	uaGate	edgeGate	
PLC / CNC	PLC / CNC	PLC / CNC	

Device Connectivity for Digital Plant Asset Management

Solution

- Access smart field device data from applications for device parameter setting, asset management, asset monitoring, process optimization

Softing Products

- smartLink product family

Key Features and Benefits
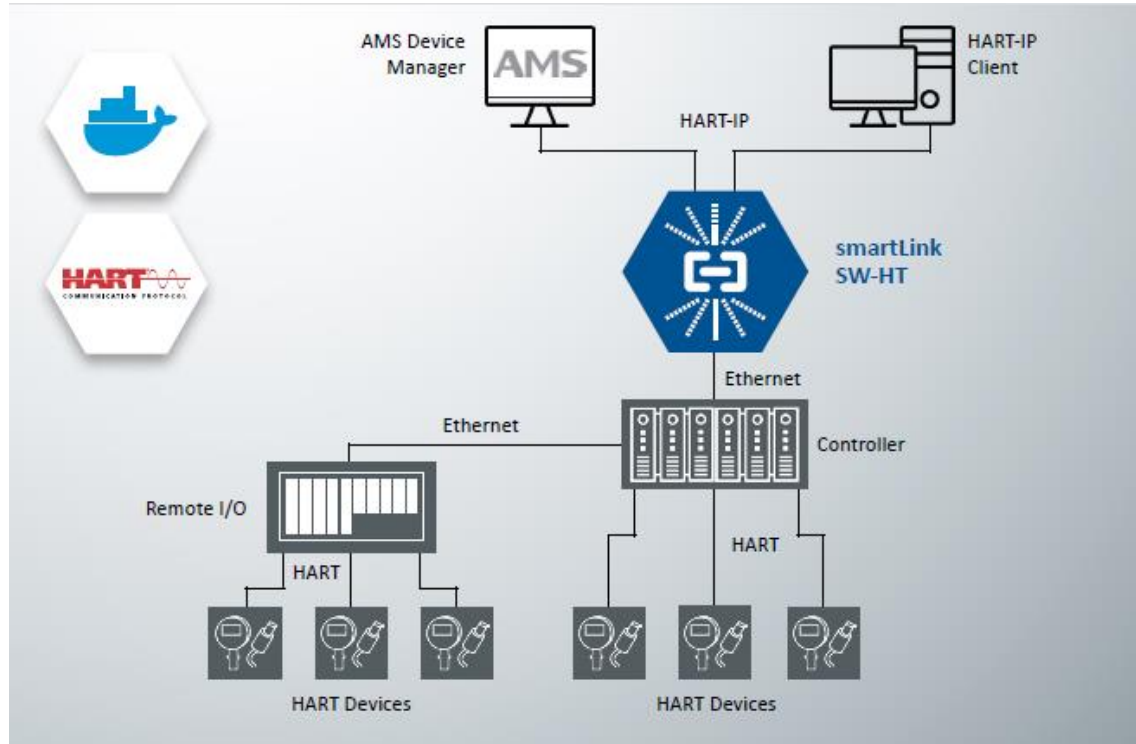
- Support for HART, Profibus and Profinet devices

- Broad range of supported PLCs and Remote IOs (e.g. connecting HART devices via Allen-Bradley PLCs to Emerson AMS Device Manager)

- Cost-efficient, industrial-grade, proven in large scale projects

Project Examples

- Pioneer in Energy Industry

- FPSO vessel for oil field development

More Information

- Here

Example with AMS Device Manager

Process Control

Solution

- Integration of field devices into PROFINET-, Ethernet/IP- and Modbus/TCP control systems
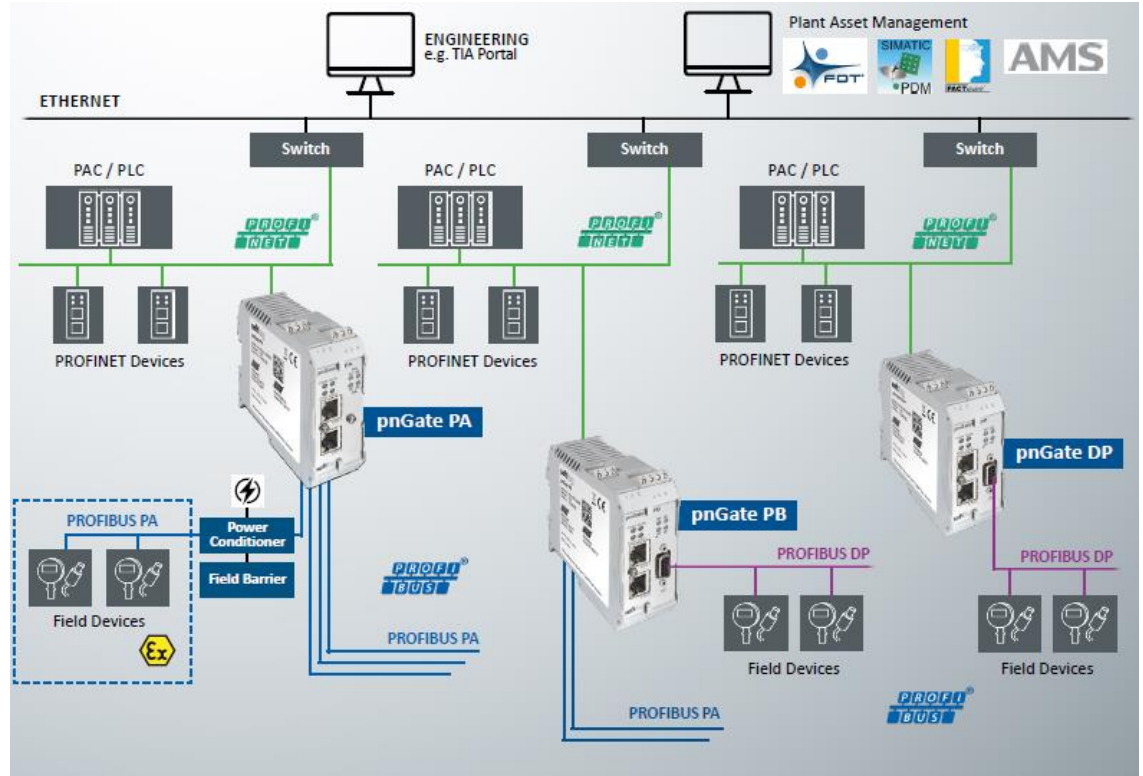
Softing Products

- pnGate product family
- epGate product family
- mbGate product family

Key Features and Benefits

- Support for Profibus PA, PB, DP devices
- Network segments with field devices can be reused without any changes
- Simple and easy-to-install

Project Example

- Gostol Group

Example for PROFIRNET control systems

Controller- and Machine Connectivity (Industrial Edge)

Solution

- Access controller-, machine- and device data, managed centrally

Softing Products

- Containerized software modules
- edgeConnector and edgeAggregator
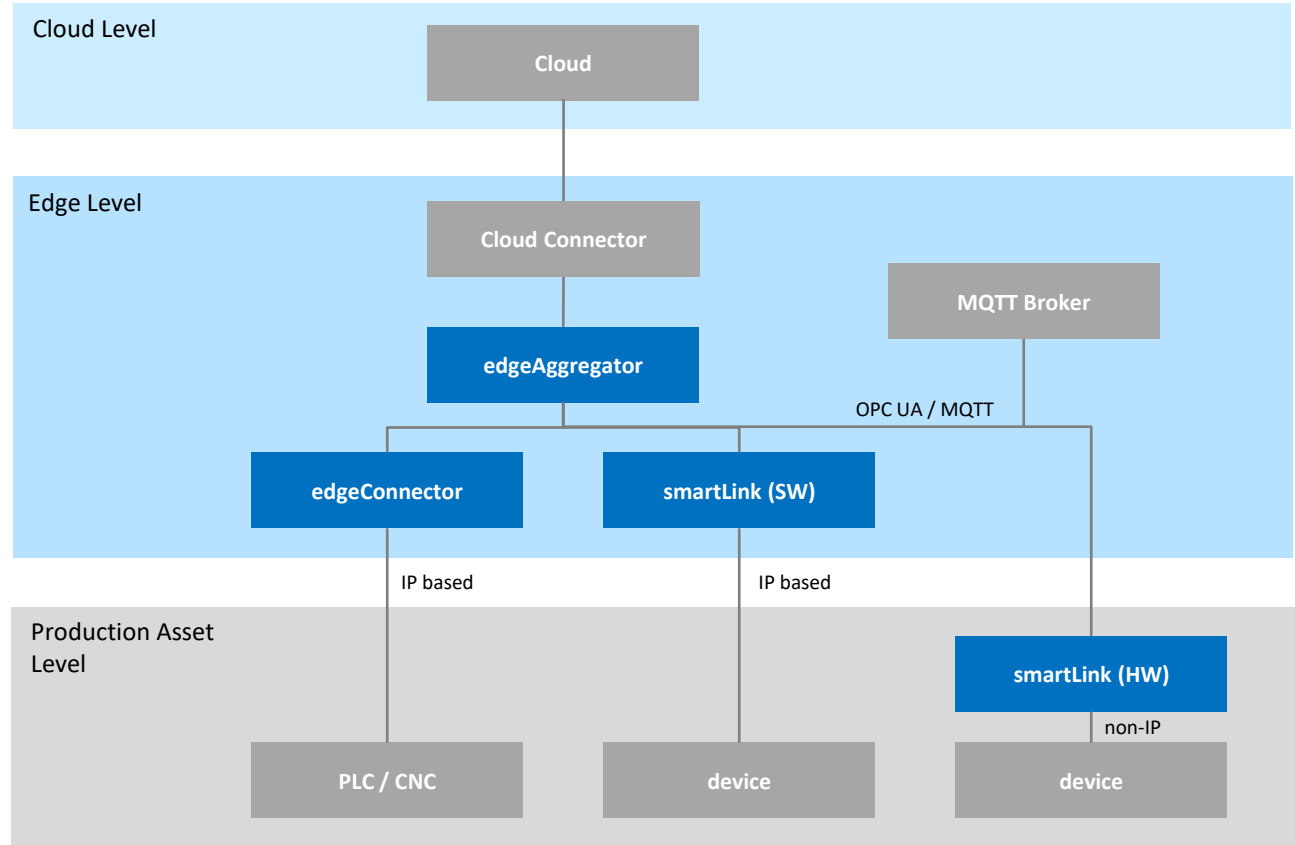- smartLink

Key Features and Benefits

- "best-of-breed" connectivity, integrate with open and standards-based system architectures
- IT driven management and operation
- Integrated GUI

Project Example

- Volkswagen AG (DPP project)

More Information

- Here

Cloud Level

Edge Level

Production Asset Level

Cloud — Cloud Connector — edgeAggregator — MQTT Broker — edgeConnector — smartLink (SW) — smartLink (HW) — PLC / CNC — device — device

OPC UA / MQTT — IP based — IP based — non-IP

Namur Open Architecture (NOA)

Solution

- Connectivity compliant with NOA reference architecture for process industries

Softing Products

- dataFEED products
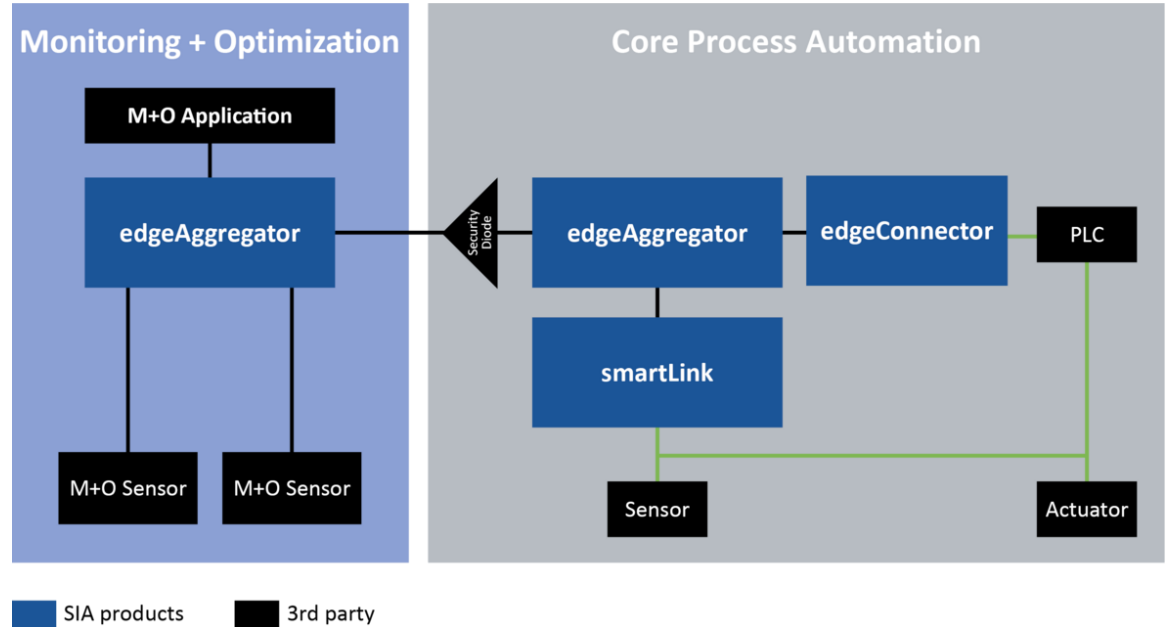- smartLink product family

Key Features and Benefits

- Controller- and device connectivity
- Mapping of data sources into PA-DIM information model
- OPC UA server aggregation
- Choice between Windows applications, Docker container, or hardware products

Project Examples

- Böhringer-Ingelheim

More Information

- Here

Agenda

Softing Industrial Company Overview

Product Portfolio

Selected Solutions

Selected Partnerships and Case Studies

Endress+Hauser

Softing products complementing the Endress+Hauser portfolio:

Digital Plant Asset Management
Access to HART field devices for Endress+Hauser Fieldcare SFE 500 Plant Asset Management application
- smartLink HW-DP

Digital Plant Asset Management
Access to Endress+Hauser's HART, PROFINET devices connected to 3rd party Plant Asset Management applications
- smartLink HW-DP
- smartLink HW-PN and smartLink SW-PN
- smartLink SW-HT

Mobile Device Parameterization
Mobile and USB interface for HART, Profibus PA, and Foundation Fieldbus devices for FieldXpert SMT70
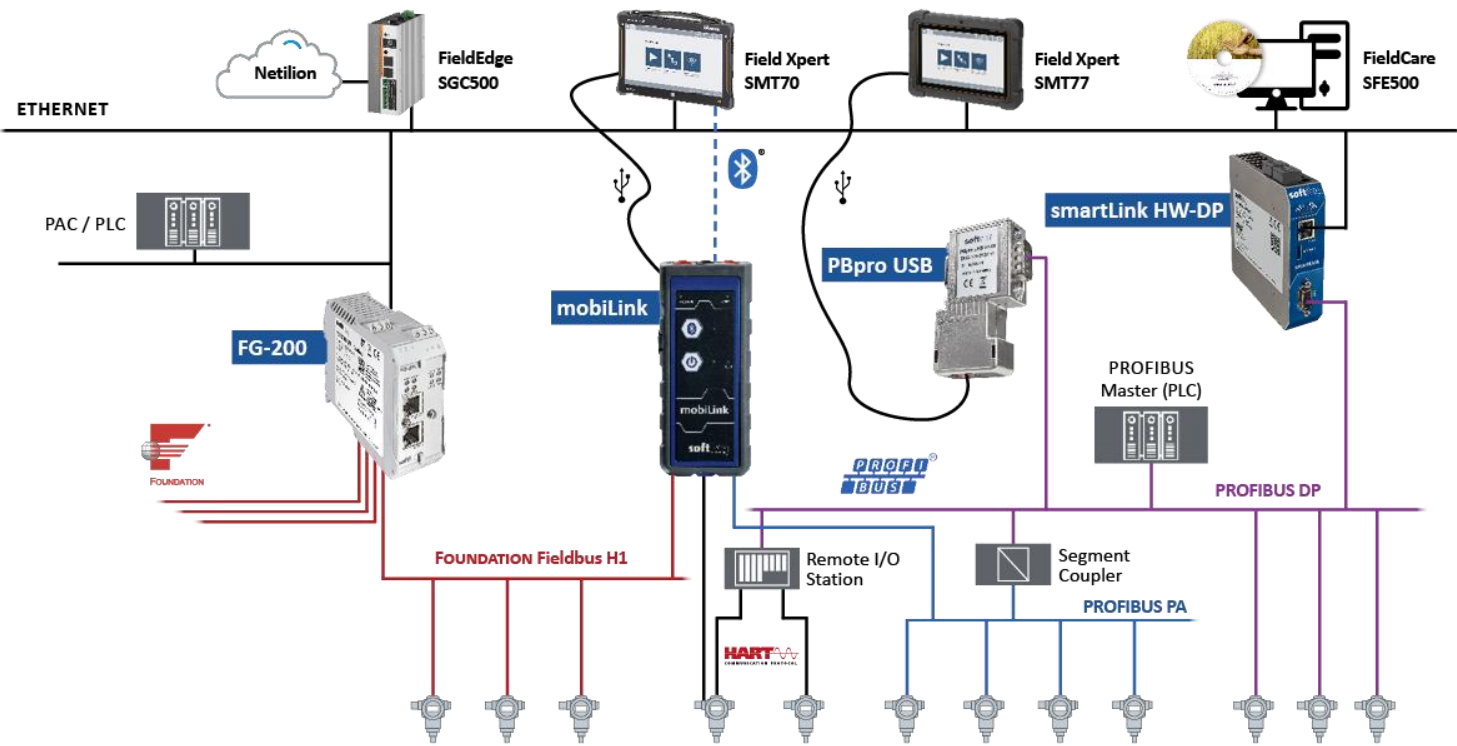- mobiLink and mobiLink Power

Process Control
for Endress+Hauser field devices (HART, Profibus PA, Foundation Fieldbus)
- pnGate PA, epGate PA
- FG200

Endress+Hauser

https://industrial.softing.com/expertise/automation-partners/endress-hauser-connectivity-solutions.html

Rockwell Automation

Softing products complementing the Rockwell Automation portfolio:

Process Control
Multi-protocol process control through Rockwell's Allen Bradley control systems
- epGate PA, epGate PB, epGate PN, epGate DP

Digital Plant Asset Management
Access to HART devices connected via Allen Bradley Remote I/Os and PLCs
- smartLink SW-HT

Controller- and Machine Connectivity / Industrial Edge
Connecting Rockwell's Allen Bradley PLCs to shopfloor applications and MES
- eATM tManager CompactLogix
- eATM tManager ControlLogix
- dataFEED OPC-Suite
- edgeConnector Allen-Bradley, edgeAggregator

Schneider Electric

Softing products complementing the Schneider Electric portfolio:

Process Control
Multi-protocol process control through Schneider Electric control systems
- mbGate PA, epGate PA, mbGate PB, pnGate DP
- FG200

Digital Plant Asset Management
Access to HART devices connected via Schneider Electric Remote I/Os and PLCs
- smartLink SW-HT

Controller- and Machine Connectivity
Connecting Schneider Electric PLCs to shopfloor- and IoT applications
- uaGate MB
- edgeConnector Modbus
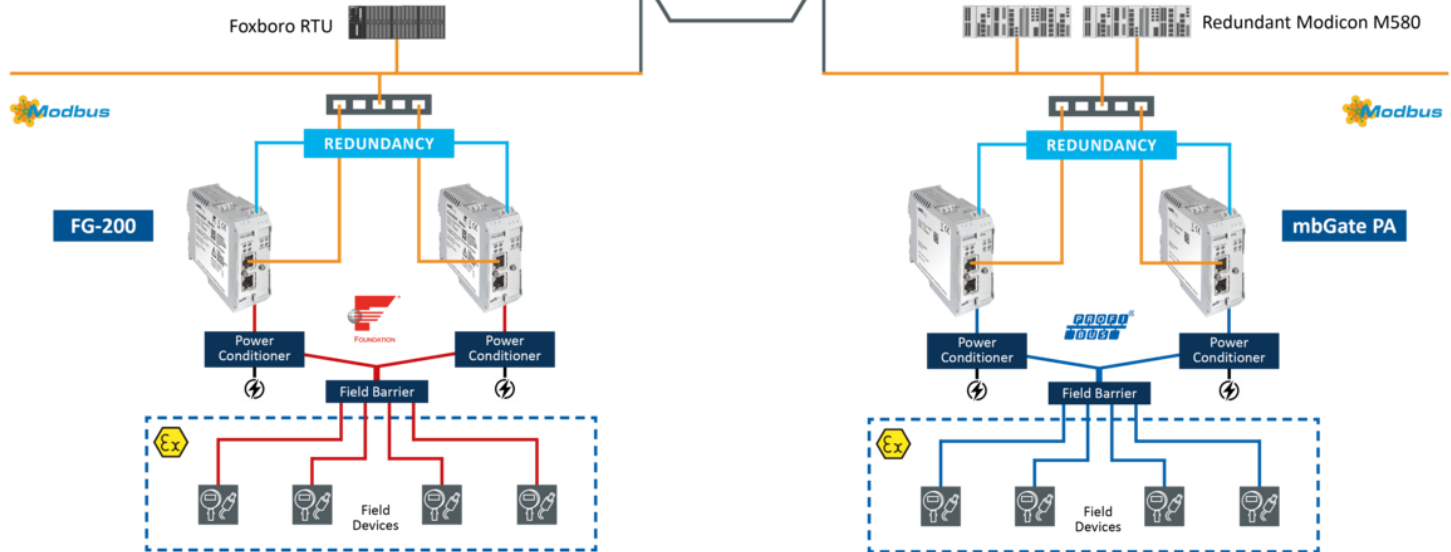- edgeGate
- dataFEED OPC-Suite

Schneider Electric

Connect Foundation Fieldbus H1 field devices to Foxboro SCADA RTUs solutions with Modbus/TCP

for Oil & Gas Applications

Foxboro RTU

Modbus

FG-200

REDUNDANCY

Power Conditioner

Power Conditioner

Field Barrier

Field Devices

EcoStruxure
Innovation At Every Level

Connect Profibus PA field devices to EcoStruxure Modicon M580 solutions with Modbus/TCP

for Mining, Mineral Metal & Water / Wastewater Applications

Redundant Modicon M580

Modbus

mbGate PA

REDUNDANCY

Power Conditioner

Power Conditioner

Field Barrier

Field Devices

https://industrial.softing.com/expertise/automation-partners/schneider-electric-connectivity-solutions.html

SIEMENS

Softing products complementing the Siemens portfolio:

Digital Plant Asset Management

Access to HART devices connected via Siemens Remote I/Os and PLCs, including FDT applications

- smartLink HW-DP
- smartLink HW-PN, smarLink SW-PN
- smartLink SW-HT

Controller- and Machine Connectivity / Industrial Edge

Connecting Siemens PLCs and CNC machines to shopfloor and IoT applications

- uaGate, edgeGate
- dataFEED OPC-Suite, Secure Integration Server
- edgeConnector, edgeAggregator

Process Control

Multi-protocol process control through Siemens control systems

- pnGatePA, epGate PA
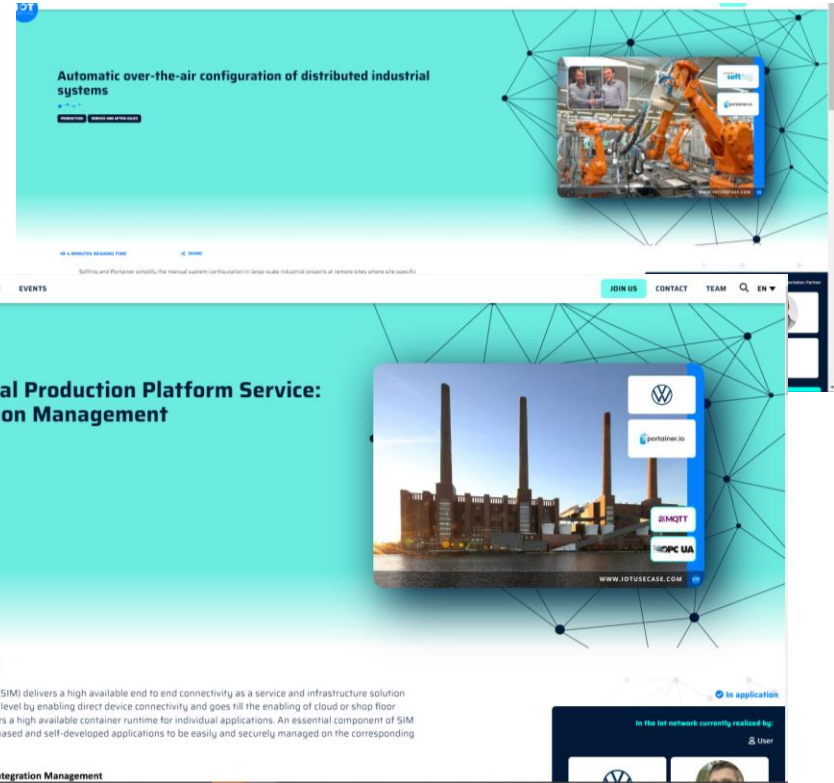- FG200

Portainer.io

Partner Offer
- Portainer platform for container management across Kubernetes and Docker

Softing Industrial Offer
- Machine- and Device Connectivity
- edgeConnector product family
- edgeAggregator
- smartLink software products

Milestones
- Member in Portainer IoT partner program
- Joint customer Volkswagen AG (DPP project)

https://iotusecase.com/en/use-cases/volkswagen-digital-production-platform-service-shopfloor-integration-management/
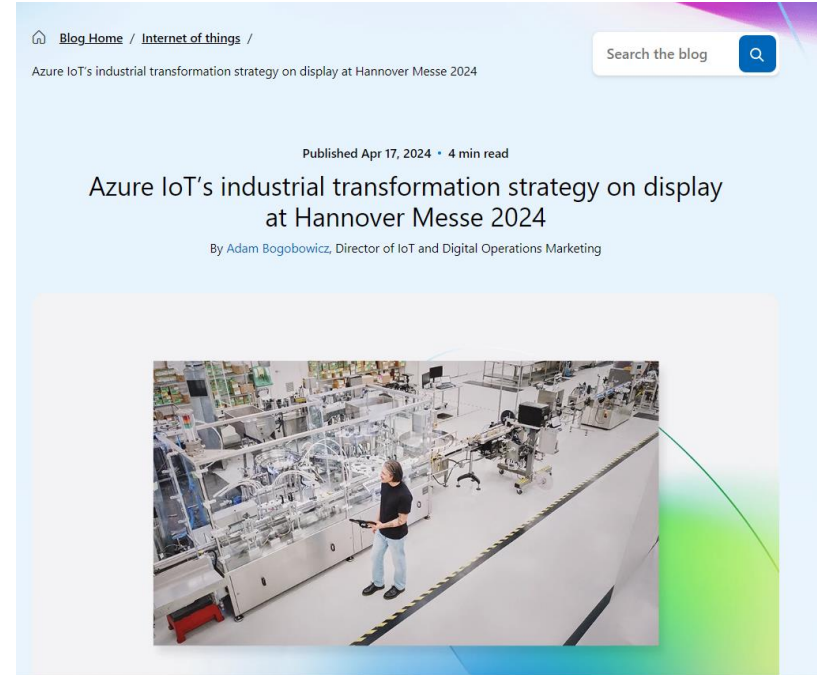
Microsoft

Partner Offer
- Microsoft Azure Cloud platform

Softing Industrial Offer
- Machine- and device connectivity
- dataFEED products
- smartLink product family

Milestones
- First joint demo at SPS 2016
- Recent validation of edgeConnector products with Azure IoT Operations, launch partner at HMI 2024
- Joint activities in OPC Foundation

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By Adam Bogobowicz, Director of IoT and Digital Operations Marketing

Azure IoT's industrial transformation strategy on display | Microsoft Azure Blog

Unlocking industrial data for AI: Microsoft partners with leading connectivity providers - Microsoft Community Hub

American Food Giant

Global digital factory project at 150+ locations, connecting applications running on-prem and in the cloud

American Food Giant

Situation

Background

- Renowned American multinational food giant specializing in confectionary, food and beverage products

- Plant operations in more than 150 locations globally

- Four IoT applications defined at project start, mix of on-prem and cloud-based deployment (for eg., comparability of product sites and identification of weak performers)

Business need

- Cloud-based solutions shall be deployed whenever possible (reduced CAPEX)
- Future-proof architecture, customer plans to add more applications and to migrate on-premise solutions to cloud with same components for machine connectivity
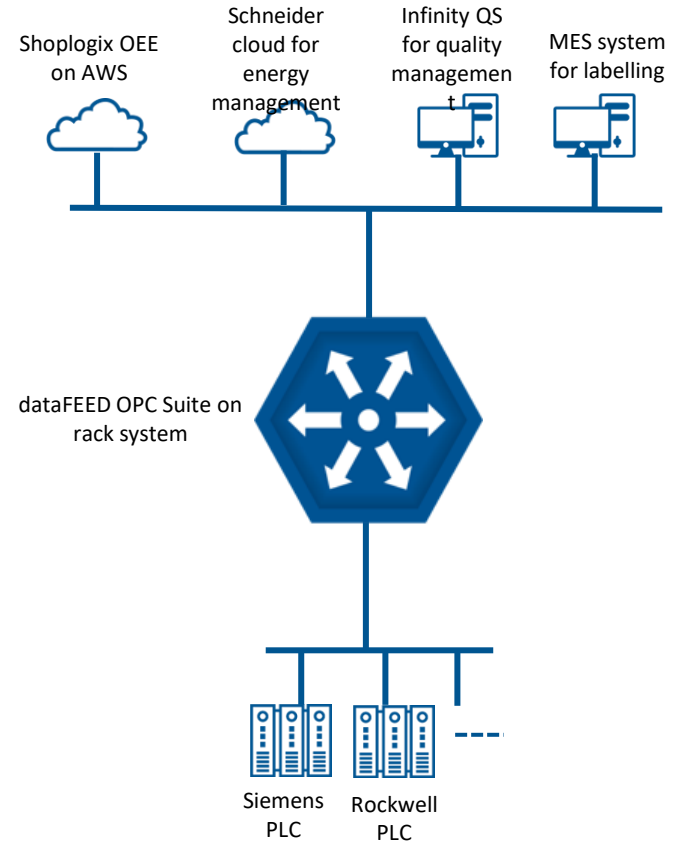
Technical requirements

- Heterogenous brownfield: Mix of Siemens-, Rockwell- and other PLCs
- Use OPC UA standard to interface with software applications
- Deploy machine connectivity on standardized rack system, to be rolled-out at all locations

American Food Giant

Solution

- Softing dataFEED OPC Suite and OPC Tunnel used to acquire data from PLCs

- Connecting Shoplogix OEE application running on AWS, Schneider application for energy management and Infinity QS for quality management

- Connectivity with package labelling application planned (production critical process requiring SLA, under discussion)

- Pre-assembly of rack system with dataFEED and other components by third party system integrators

Benefits

- Cost-efficiency (same machine connectivity shared across multiple applications, shared across all locations)

- Future proof architecture based on standards

- Easy to use for shopfloor personnel

- No changes to automation network or PLC

Shoplogix OEE on AWS

Schneider cloud for energy management

Infinity QS for quality management

MES system for labelling

dataFEED OPC Suite on rack system

Siemens PLC

Rockwell PLC

A Pioneer in Energy Industry

**Plant Asset Management with AMS Device Manager
for HART Devices – Three Refineries, USA**

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A Pioneer in Energy Industry

Situation

Background

- A global energy company headquartered in the US involved in the exploration, production, refining, and transportation of oil and gas, more than 40.000 employees worldwide
- Using Emerson AMS Device Manager for digital plant asset management, wishes to connect additional HART devices
- Initially deployed at three production sites. Central team defines the solution architecture; evaluates and selects products for all sites
- IT-driven project and system architecture

Business need

- Implement plant-wide diagnostic tools that tap into the heartbeat of the operation and bring machine and process statistics into focus
- Cut down on operations costs by incorporating condition-based maintenance based on equipment performance data
- IT security critical

Technical requirements

- HART devices are connected directly to Rockwell PLCs, or via remote I/Os
- Instrumentation data needs to be communicated to AMS Device Manager via HART-IP
- Connectivity solution shall be installed via VMs (virtual machines) on vSphere (Vmware)
- Single Sign On (SSO) support for configuration

A Pioneer in Energy Industry

Solution

- Customer decided to use Softing smartLink SW-HT with VMware installation
- smartLink SW-HT enables communication with instrument configuration and diagnostic data between HART I/Os and AMS Device Manager
- Customer initially deployed smartLink SW-HT as a pilot installation at one production site
- Deployment at two more production sites planned, connecting 8000 instruments in total

Benefits

- Ease of use of smartLink SW-HT
- Good scalability, simple and automated deployment
- smartLink SW-HT meets all mandatory security requirements
- Suitable for large organizations

Machine Builder Food and Beverages
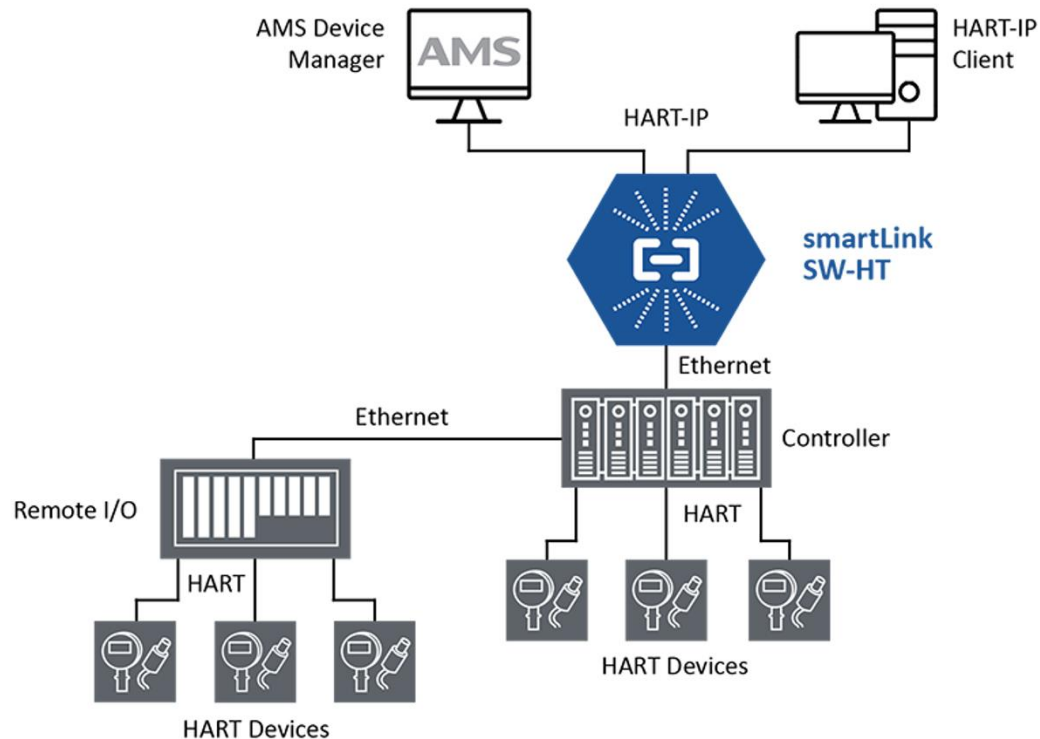
Machine modernization with Profinet Controller, maximizig reuse of existing automation network components

Machine Builder Food and Beverages

Situation

Background

- Global provider of integrated industrial solutions for middle-sized and large industrial bakeries
- Wants to modernize machines, in particular use modern state-of-the-art PLCs

Business need

- A complete redesign of the automation network and a selection of new vendors and components for all automation network components would be too costly.
- So the customer would like to maximize reuse of selected and proven components.
- Components need to be readily available, give the current status of the industry with supply chain issues.

Technical requirements

- The customer decided to use new Siemens S7 PLCs. .
- A Lenze frequency converter connecting Profibus devices shall be reused. However, the frequency converter does not support Profinet.
- The Lence frequency converter needs to be connected by a Profibus master.

Machine Builder Food and Beverages

Solution

- The customer decided to use Softing's pnGate DP products.

- pnGate DP acts as Profinet device for the new Siemens S7 PLC, and as Profibus DP master for the Lenze frequency converter

- Profibus DP network below Lence frequency converter can be reused "as-is", while new Profinet devices can be connected in parallel.

- pnGate DP will be deployed with all new machines.

Benefits

- pnGate DP enables simple and easy-to-install retrofit installation of modern Siemens S7 PLC while Profibus DP segment can be reused without any changes

- pnGate DP helps to reduce total cost for modernization project

- The customer can work with available componets

Ethernet

Switch

Siemens S7 PLC

PROFINET

pnGate DP

Lenze frequency converter

PROFINET Devices

PROFIBUS

Profibus DP

Profibus Devices
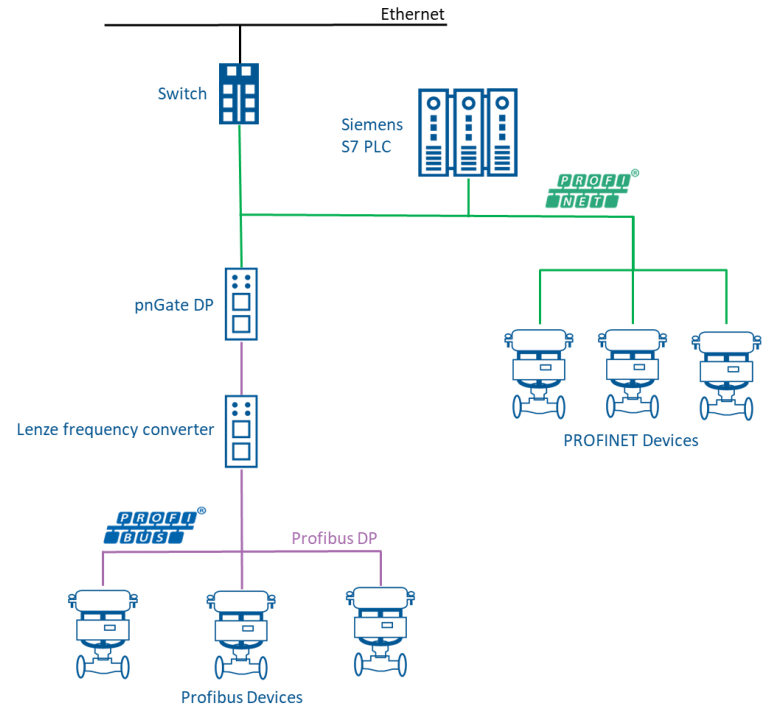
Automotive OEM: Automated Filling Station

Bi-directional communication with shop-floor controllers for MES-type application, based on open and standardized architecture

Automotive OEM: Automated Filling Station

Situation

Background

- Automotive OEM plans to update filling station application
- In a first step, deployment in one location. Other locations to follow.
- In parallel, the customer is working on a largescale deployment of cloud-based IoT platform. Ideally the solution architectures are compatible.

Business need

- Customer does not want to deploy proprietary hardware for the new filling station application.
- Instead, the customer decided to build the new filling station solution based on the new and open IoT platform architecture, using standardized interfaces and protocols.
- The new solution shall be designed such that it scales easily.
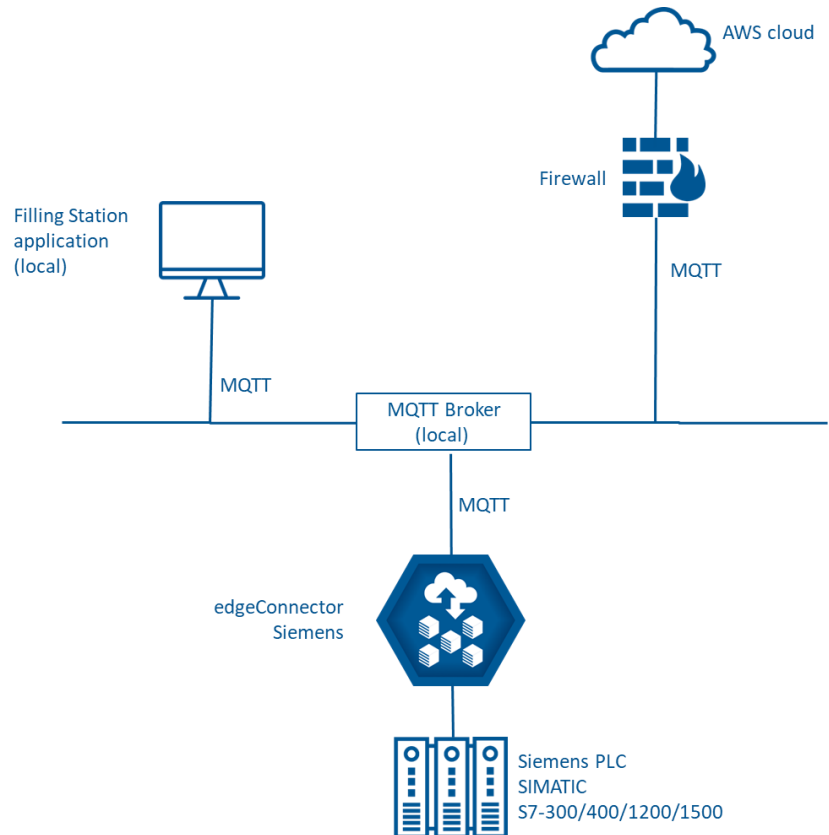
Technical requirements

- Gateway component must support MQTT, for communication with local MQTT broker
- Bi-directional data exchange, to implement MES-like functionality
- Access to machine data from Siemens S7-300/400 PLCs (majority), plus a small number of Siemens S7-1200 PLCs
- Security requirements, incl. user management with LDAP

Automotive OEM: Automated Filling Station

Solution

- For a roll-out of the new filling station application, the customer decided to deploy 50+ instances of Softing's edgeConnector Siemens running on standard IPCs.

- The customer uses the container management platform Red Hat OpenShift to manage the installation. For PoCs and test installations, the customer also uses portainer.

Benefits

- Robust machine connectivity, bidirectional for MES-type application.
- Flexible architecture based on standards, no vendor lock-in
- Connectivity with PLCs can be management by standardized and well-known IT tools
- Easy to scale and to migrate to other locations

AWS cloud

Firewall

MQTT

Filling Station application (local)

MQTT

MQTT Broker (local)

MQTT

edgeConnector Siemens

Siemens PLC SIMATIC S7-300/400/1200/1500

Thank you!

Softing Industrial Automation GmbH
Richard-Reitzner-Allee 6
85540 Haar
Germany
eMail: info.automation@softing.com

industrial.softing.com