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Device Connectivity and Plant Asset Management

Industrial

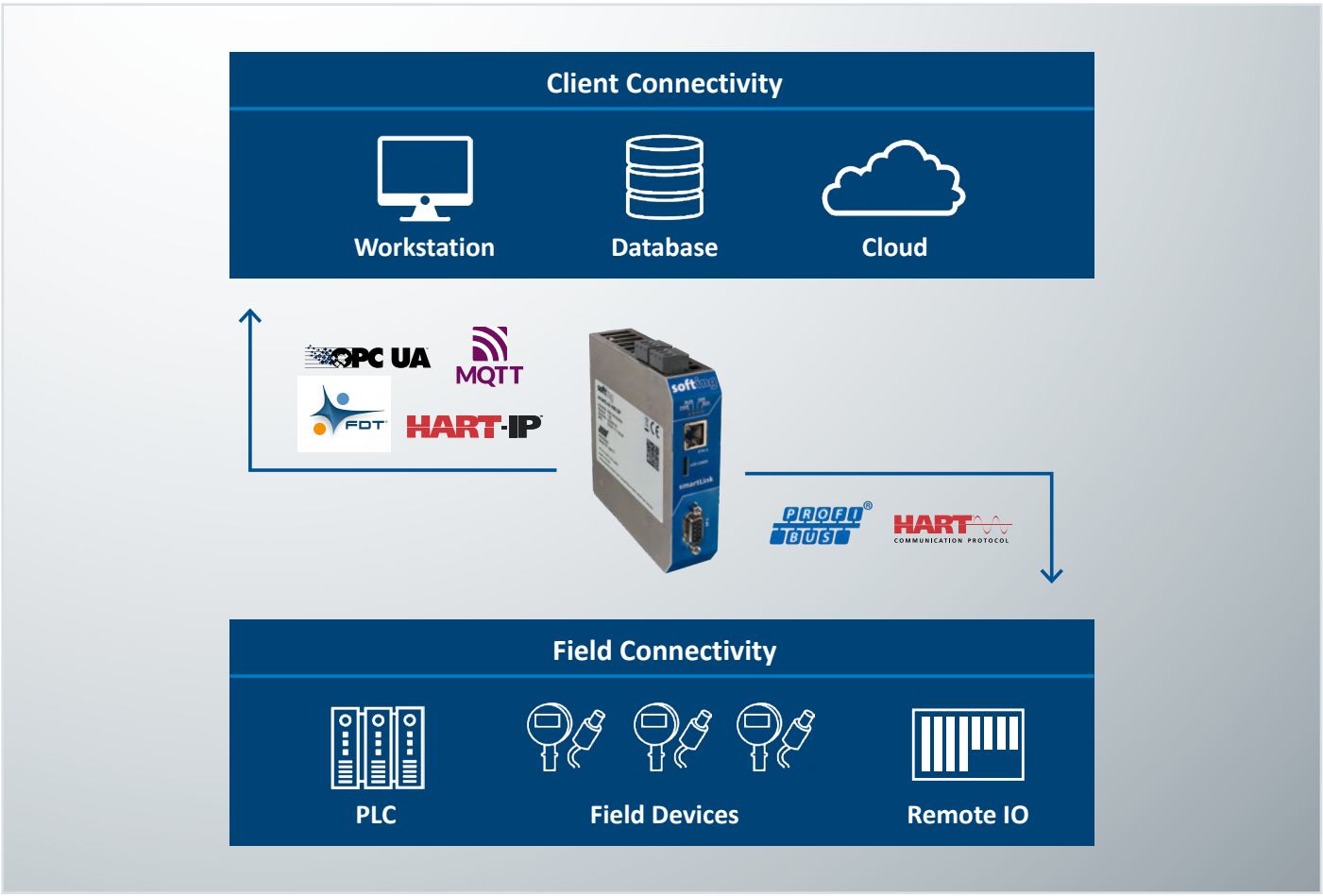
Digital Plant Asset Management

The increasing scarcity of raw materials, the need for greater energy efficiency, and customer demand that is increasingly hard to predict require better performance and more flexibility in industrial production. In addition, the development of Industry 4.0 and the Industrial IoT create a rapidly changing environment for plant operation. Plant managers must find ways to improve productivity and cut operating costs while maintaining their workforce. To meet these challenges, digital plant asset management solutions are the way forward.

The essential precondition for the successful implementation of digital plant asset management and Industrial IoT is a seamless flow of information between production assets and software applications. Production facilities must be networked based on digital communication standards suitable for industrial applications. Secure and efficient device connectivity, the complete access to all data relevant for operation, commissioning, maintenance, and diagnostics, provide the technological foundation for innovative industrial production.

Connection of PROFIBUS and HART Devices to HART-IP, OPC UA, MQTT and FDT/DTM

smartLink HW-DP provides PLC independent access to PROFIBUS DP Networks. It enables plant asset management for field devices using standard industry tools and allows using HART-IP as a standardized format. smartLink HW-DP is a compact tool that can be integrated without interfering with the operation of existing installations. Thus, it enables Industry 4.0 connectivity for new and existing PROFIBUS DP networks.



Configuration, Parameterization and Plant Asset Management Using Standard Industry Tools

- Independent of configuration tools
- Centralized and time-saving parameterization of PROFIBUS and HART field devices directly from the control room using HART-IP and HART over PROFIBUS
- Access to plant asset management applications for field devices configuration based on FDT/DTM and EDDL standards (acyclic master)

Direct Connectivity to PROFIBUS Segments

- Single access point to PROFIBUS DP segments from Industrial Ethernet networks
- Acts as PROFIBUS DP master class 2
- Support of one PROFIBUS DP segments

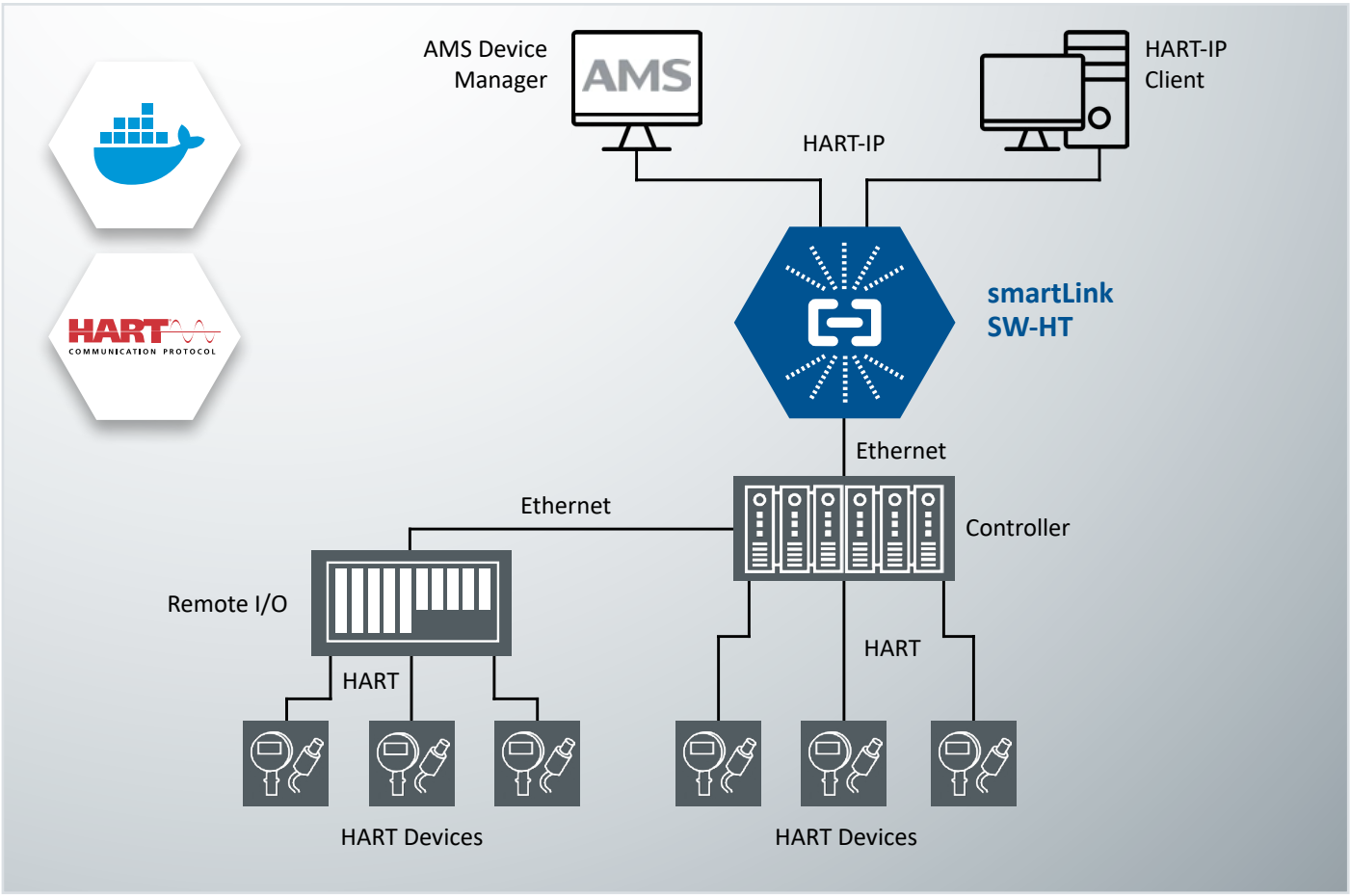
Key Component for Transition to State-of-the-Art Technology

- Re-use of existing PROFIBUS segments without modification
- Access to cyclic and acyclic data via HART-IP and OPC UA

Asset Management

Access to HART Devices from Emerson's AMS Device Manager and Other HART-IP Enabled Applications

smartLink SW-HT is a HART multiplexer that provides a simple and fast access to HART field devices via Emerson's AMS Device Manager or other HART-IP-enabled plant asset management applications without additional hardware. It is a software interface solution for HART devices connected to Allen-Bradley, Schneider Electric or R.Stahl HART IO modules with an integrated HART-IP server for transparent access to the HART devices. smartLink SW-HT enables remote asset management, device configuration and monitoring.



Access to HART Devices Without Additional Hardware

- Use of the existing infrastructure for access to the HART devices
- No additional cost for HART multiplexer hardware
- No installation and maintenance of additional Hardware
- Optional routing of the communication to the Allen-Bradley and Schneider Electric remote I/Os through the controller

Highly Scalable Business Model

- Costs are calculated per HART devices connected to smartLink SW-HT
- Scalable license model based on the number of HART devices to be accessed
- One HART device free of charge

Transparent HART Communication

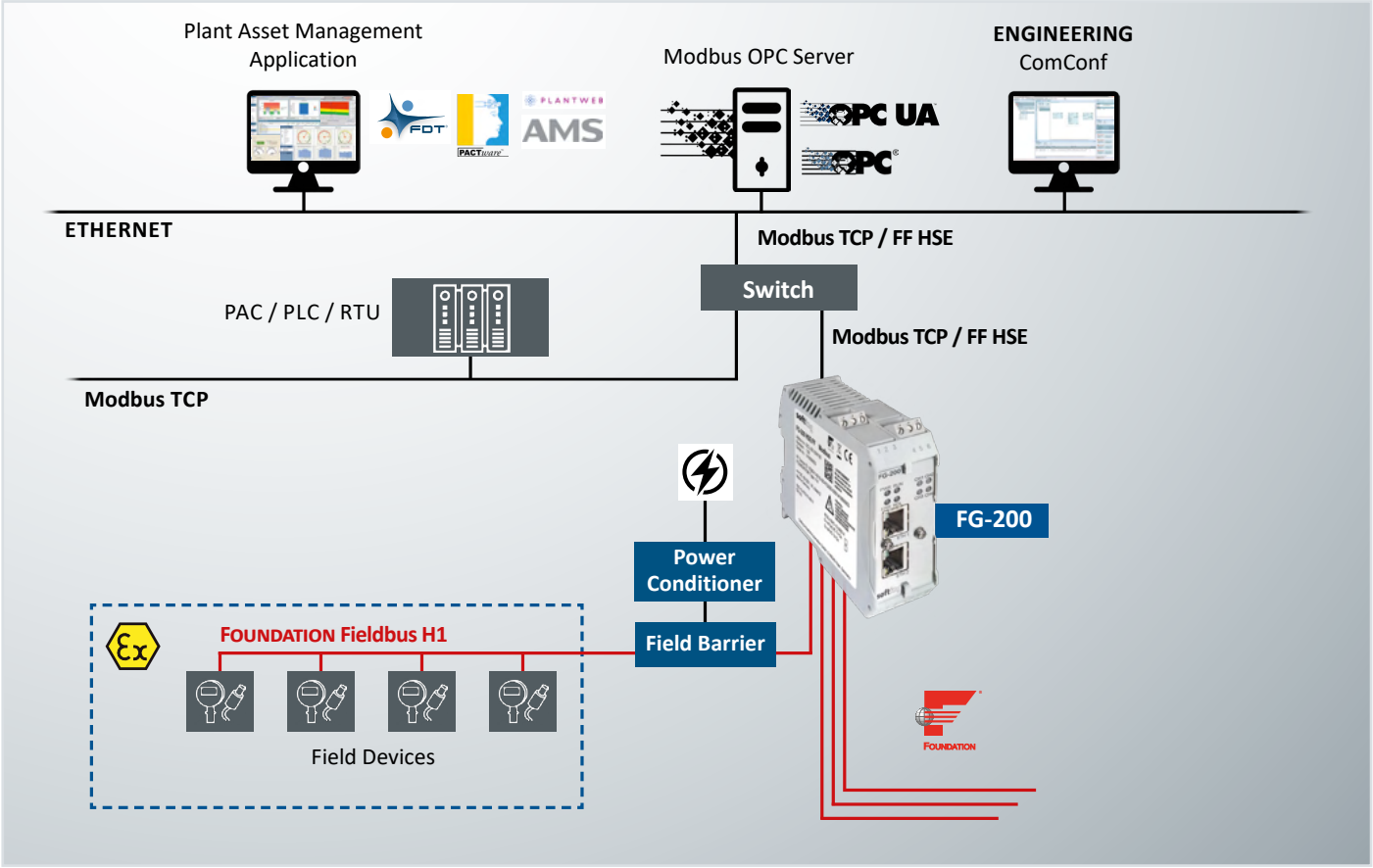
- The HART commands sent to the HART-IP server are forwarded to the HART devices
- No limitation on the supported HART commands
- Use of the open HART-IP protocol

Easy Deployment

- Easy to use on a Windows workstation with the VM deliverables
- Support of Docker and Kubernetes for easy deployment by IT
- Web based configuration software included in the container

Integration of FOUNDATION Fieldbus H1 Segments Into Control Systems via Modbus TCP or FOUNDATION Fieldbus HSE

FG-200 allows integration of up to four FOUNDATION Fieldbus (FF) H1 links into control systems that support Modbus. The FG-200 provides redundancy and is suitable for use in hazardous areas. The device provides fast access to process data while making use of FF advantages like reduced cabling, central field device parameterization, comprehensive diagnostics, or intrinsically safe device segments. It is compatible with the R. STAHL bus-Carrier Series 9419 and Fieldbus Power Supply Series 9412 products for easy commissioning.



CAPEX-efficient Integration of FF-Devices into Modbus Architectures

- Parallel support of up to 4 FF-H1 channels, each for max. 16 field devices
- Fast access to process data
- Suitable for use in hazardous areas
- Easy Commissioning:
  - Optional support of R. STAHL bus-Carrier Series 9419 and Fieldbus Power Supply 9412 products (cabling reduced to a minimum)
  - Modbus data import to web server reducing mapping efforts

Device Redundancy

- Redundancy link enabling device redundancy (D-3 according to FF-593)
- Automatic mirroring of configuration data
- Very fast redundancy switch-over

Suited for Plant Asset Management Tasks

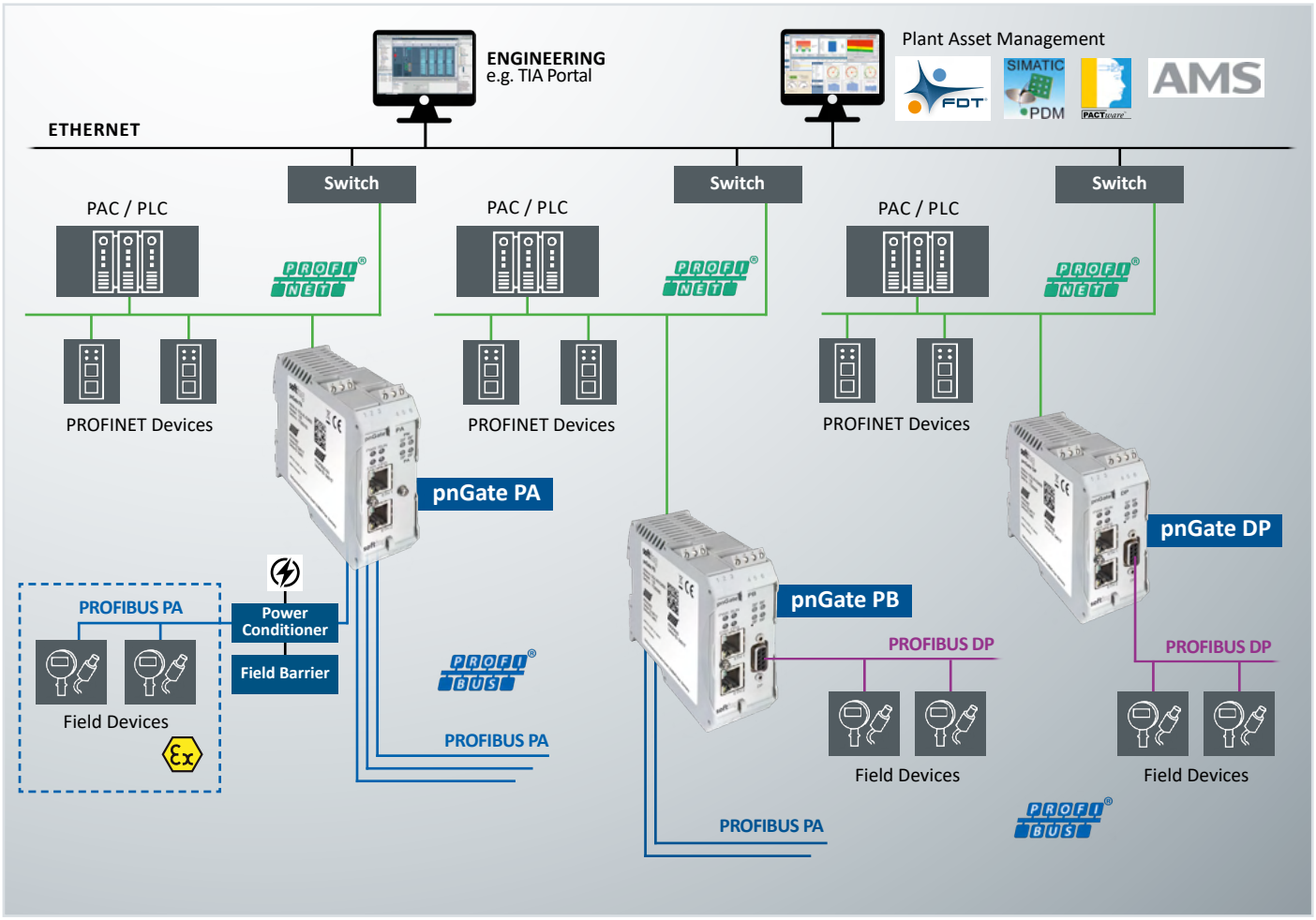
- Visitor mode avoiding interference with network behavior
- Enabling asset management systems (e.g. Emerson's AMS) and Field Device Tool (FDT) frame applications (e.g. SMART VISION, FieldMate, Field Device Manager, FieldCare, or PACTware)

All Necessary Tools Included

- FF Configuration Tool for configuration of devices and cyclic communication
- PACTware for device configuration and basic asset management tasks

Direct Integration of PROFIBUS DP and PA Segments into PROFINET Control Systems

pnGate PB / pnGate PA / pnGate DP allow the integration of up to four PROFIBUS PA segments and one PROFIBUS DP segment into PROFINET systems by virtual mapping. The pnGates reduce the engineering costs since they re-use existing power conditioners in technology upgrade projects. They provide S2 redundancy and enable configuration, parameterization and plant asset management using standard industry tools.



Key Component for Transition to State-of-the-Art Technology

- Simple replacement of installed PROFIBUS DP/PA segment coupler
- Re-use of existing PROFIBUS segments without requiring modification
- Support of MRP and S2 PROFINET redundancy for increased reliability

Direct Connectivity to PROFIBUS Segments

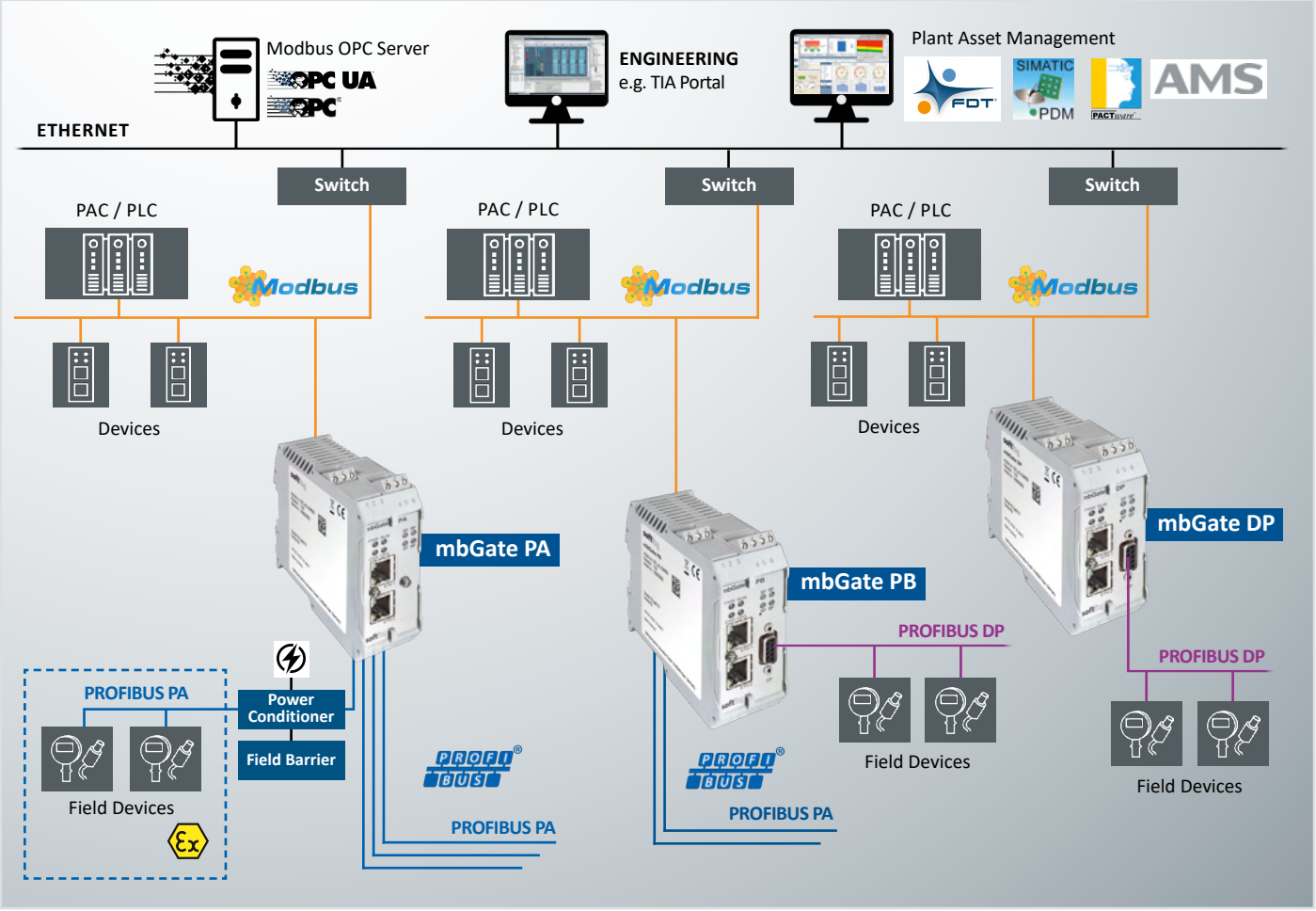
- Single access point to PROFIBUS DP and PROFIBUS PA segments from PROFINET networks
- Acting as PROFINET device, PROFIBUS PA and PROFIBUS DP Master
- Support of 1 PROFIBUS DP segment and up to 4 PROFIBUS PA segments
- Support of up to 64 PROFIBUS devices

Configuration, Parameterization and Plant Asset Management Using Standard Industry Tools

- Support of major PROFINET engineering tools such as TIA Portal, Step7 and PC WORXS
- Included CommDTM allows use in FDT/DTM frame applications
- EDD-based device parametrization using Siemens Simatic PDM
- Maximum flexibility through Configuration in Run support

Simple Connection of PROFIBUS Slave Devices to Modbus Control Systems via Internal I/O Mapping

mbGate PB / mbGate PA / mbGate DP enable integration of up to four PROFIBUS PA segments and one PROFIBUS DP segment into Modbus TCP control systems. They act as Modbus TCP Server and PROFIBUS Master. The gateways help reduce engineering costs since they re-use existing power conditioners in technology upgrade projects. They enable configuration, parameterization and plant asset management using standard industry tools.



Key Component for Transition to State-of-the-Art Technology

- Simple replacement of installed PROFIBUS DP/PA segment couplers
- Re-use of existing PROFIBUS segments without requiring modification

Direct Connectivity to PROFIBUS Segments

- Single access point to PROFIBUS DP and PROFIBUS PA segments from Modbus TCP networks
- Acting as Modbus TCP Server and PROFIBUS PA and PROFIBUS DP Master
- Support of 1 PROFIBUS DP segment and up to 4 PROFIBUS PA segments
- Support of up to 64 PROFIBUS devices

Configuration, Parameterization and Plant Asset Management Using Standard Industry Tools

- Support of major Modbus engineering tools such as Schneider Unity Pro or Siemens TIA Portal
- Included CommDTM allows use in FDT/DTM frame applications
- EDD-based device parametrization using Siemens Simatic PDM

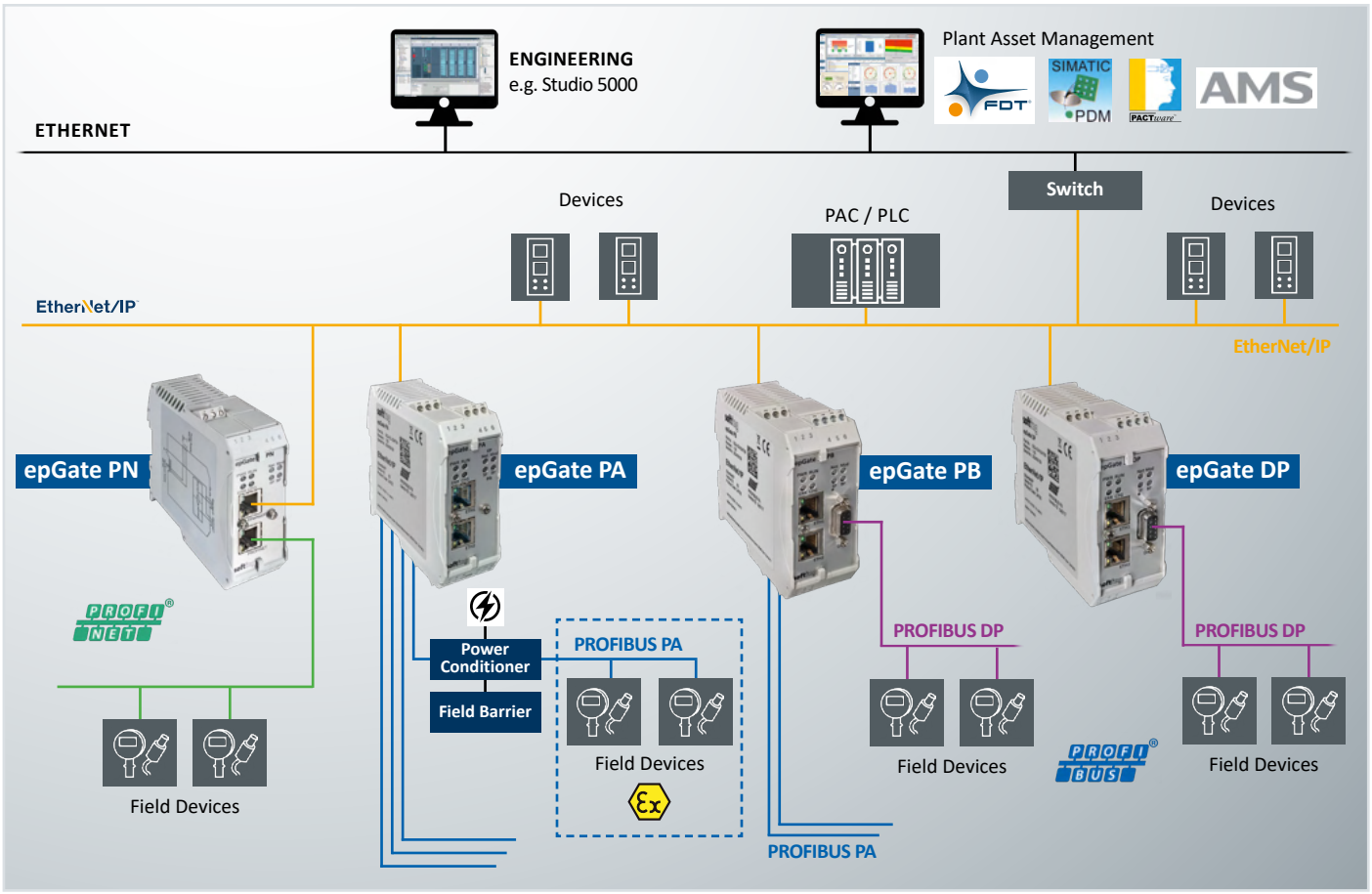
MODBUS/TCP Redundancy

- Support for the use of two redundant PLCs and two redundant gateways
- Easily enabled via licensing
- Full control of redundant operation mode via engineering and PLC

Process Control and Asset Management

Direct Integration of PROFINET I/O Devices or PROFIBUS Slave Devices into Ethernet IP Control Systems via Internal I/O Mapping

epGate PN implements a gateway between an EtherNet/IP scanner (e.g. a Rockwell PLC) and up to 32 PROFINET devices. While the gateway's upper RJ45 socket connects to the EtherNet/IP network as a so-called adapter (slave), the gateway acts as a PROFINET controller (master) through its lower RJ45 socket. This allows for integration of PROFINET devices and subsystems into EtherNet/IP applications.
epGate PB / epGate PA / epGate DP enable integration of up to four PROFIBUS PA segments and one PROFIBUS DP segment into Ethernet/IP systems. The gateways help reduce engineering costs since they re-use existing power conditioners in technology upgrade projects. They enable configuration, parameterization and plant asset management using standard industry tools.



epGate PN – EtherNet/IP to PROFINET Gateway with Controller Functionality

- Connection to the EtherNet/IP network via the so-called adapter (slave); (upper RJ45 socket)
- PROFINET controller (master) functionality (lower RJ45 socket)
- Direct access from EtherNet/IP scanner in the PLC to PROFINET field devices
- Data access of PLC program to PROFINET devices without requiring detailed PROFINET knowledge
- Mapping between the two protocols generated by provided tools

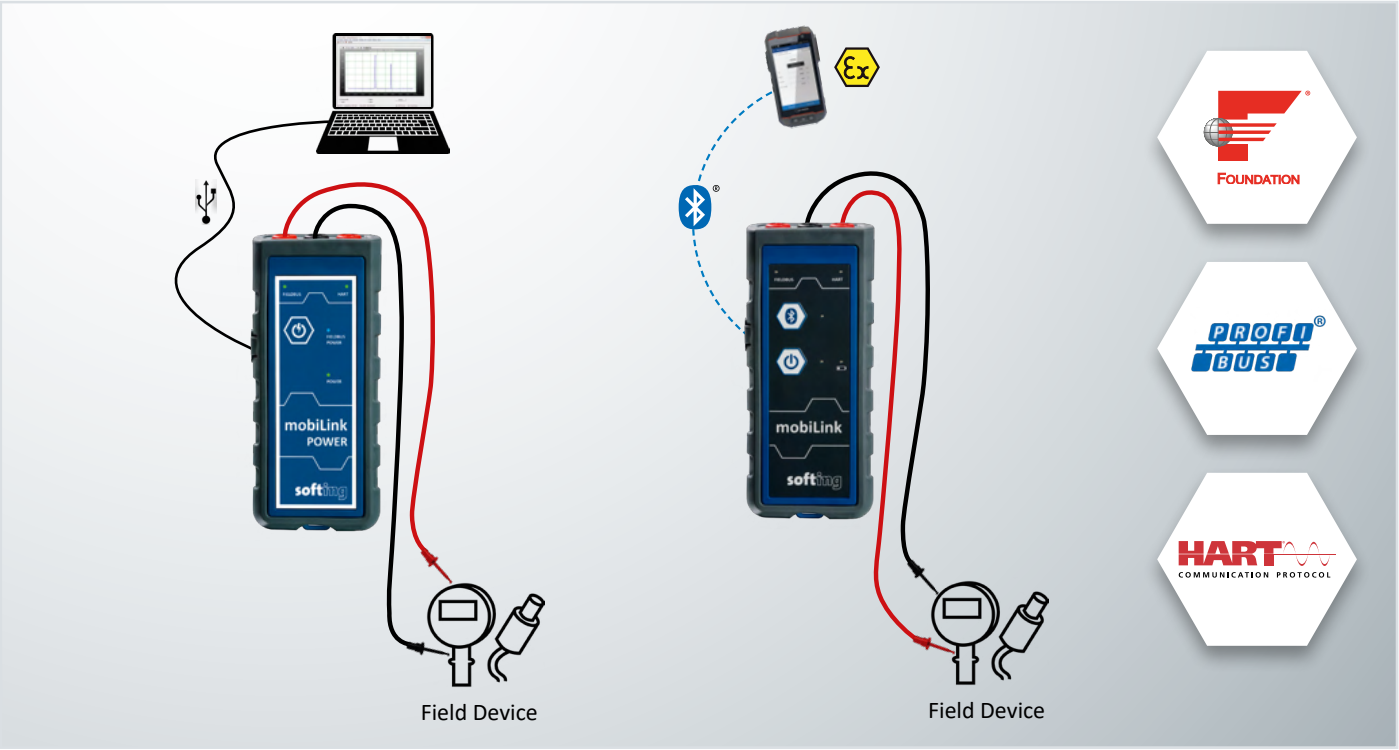
epGate DP/PA/PB – EtherNet/IP to PROFIBUS DP/PA Master Gateway

- Support of common control systems e.g. Emerson DeltaV or Rockwell ControlLogix
- Support of DLR for redundant communication in the ring with EtherNet/IP
- Single access point to PROFIBUS DP and PROFIBUS PA segments from EtherNet/IP networks
- Acting as EtherNet/IP device (adapter), PROFIBUS PA and PROFIBUS DP master
- Support of major EtherNet/IP engineering tools such as Studio 5000 and AMS Device Manager
- Data access of PLC program to PROFIBUS devices possible without extensive PROFIBUS knowledge

Mobile Device Parameterization

Bluetooth and USB Solution for Commissioning, Parameterization, and Maintenance of Field Devices

mobiLink is a mobile USB and Bluetooth interface. The Bluetooth and battery operation enables use with handheld host devices such as tablets and smartphones. mobiLink can be used in a variety of applications since it is compatible with FDT Frame applications and other major engineering tools. Additionally, it is suited for harsh environments (approved by IECEx and EX for Zone 1).
mobiLink Power enables a direct connection to the field device without it having to be located within a functioning bus infrastructure. The integrated power supply eliminates the need for additional components such as external power supply and terminating resistors for commissioning and maintenance of the field devices.



Single Interface for the Major Process Automation Protocols

- HART master, FOUNDATION Fieldbus host and PROFIBUS PA master included in one device

Support of FDT Frame Applications and Major Engineering Tools

- Compatible with Emerson's instrument inspector with the FDI communication server
- PACTware FDT frame application and HART communication DTM included
- Communication DTM for FOUNDATION Fieldbus and PROFIBUS PA (optional)
- FOUNDATION Fieldbus configuration tool (optional)
- Application Programming Interface for integration into engineering

Host communication via Bluetooth or USB

- Built-in batteries and Bluetooth communication enable use of handheld host devices like smart phones and tablets
- USB interface for bench host operation

mobiLink – Bluetooth and USB interface

- Temporary attachment to fieldbus segments or HART loops for individual interaction with field devices
- Fully compliant protocol implementations allow for interference-free access to running plants
- IECEx and EX approval for Zone 1, NEC500 Cl. Div.1
- Suitable for connection to intrinsically safe circuits
- Suited for harsh environment

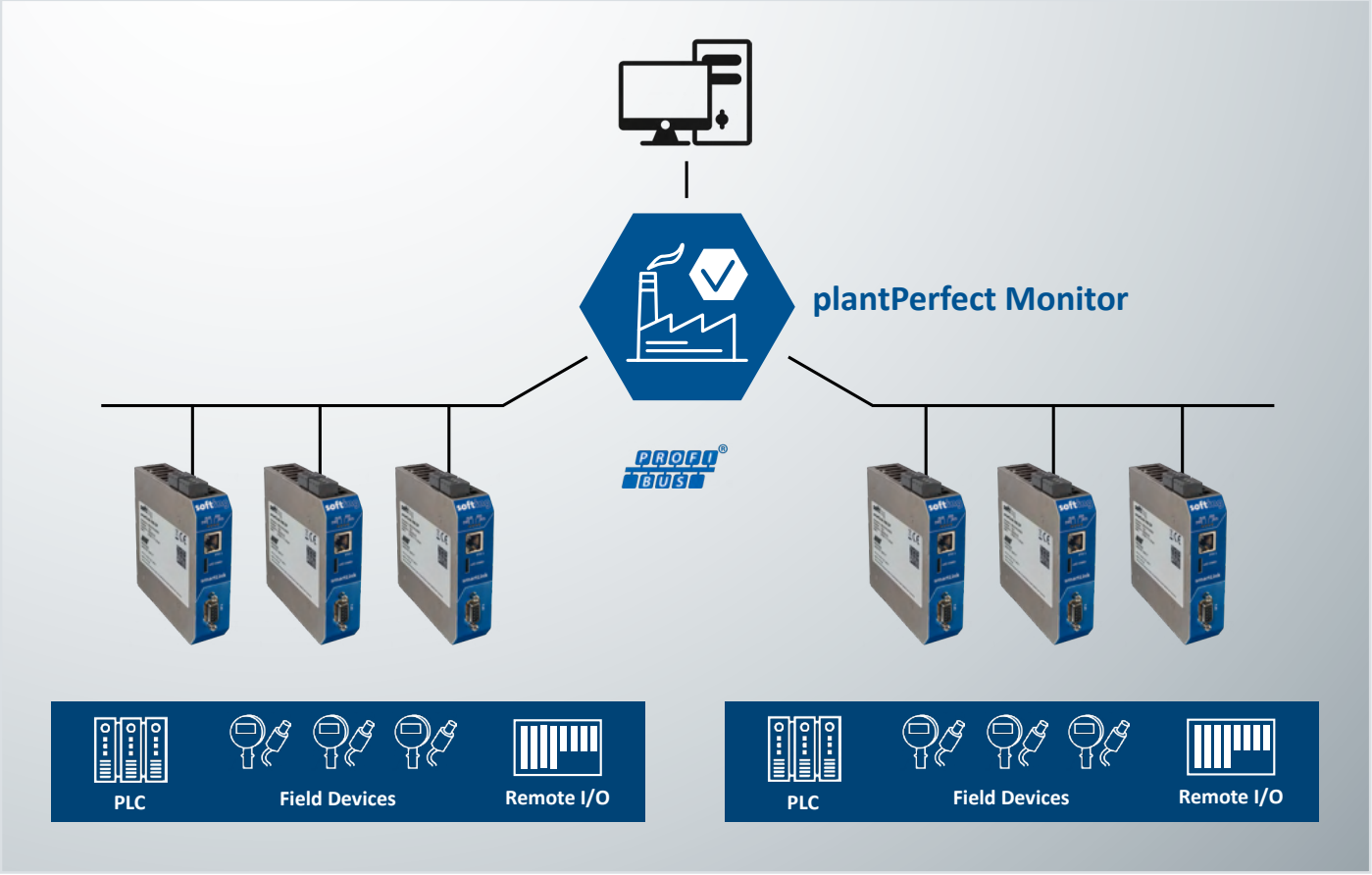
mobiLink Power – USB interface

- Provision of power supply for field devices
- Eliminates the need for an additional power supply and power conditioner for workbench applications
- Power supply via the USB port of the connected computer

Asset Monitoring

Comprehensive Asset and Health Monitoring for Industrial Networks

plantPerfect Monitor provides full information about all installed assets in monitored industrial networks. Geared to plant operators and maintenance personnel, plantPerfect Monitor is an all-in-one, easy-to-use solution for permanent asset and health monitoring. Based on state-of-the-art technology it easily meets the requirements of modern day, fully flexible and scalable business solutions.



Comprehensive Presentation and Evaluation of Asset and Health Data

- Provision of data on asset management, network communication, network configuration, and diagnostic messages
- Personalized experience through fully customizable dashboards
- Support of PROFIBUS
- Preparation of standardized exports

Seamless System and Process Integration

- Web-based access
- Deployable in any scenario, on premise or in the cloud
- Easy maintenance through containerized architecture

Fully flexible and scalable

- Web-based frontend
- Free test version available
- Subscription-based business model
- Pricing according to number of devices
- Connection to third-party systems through standardized information model

Softing Expertise

Digital data exchange based on industrial communication standards is a core competence of Softing. From an early stage, we focused our attention on technologies relevant to process automation and ex-capable hardware. Softing experts contributed substantially to the specification of e.g., PROFIBUS and FOUNDATION Fieldbus. To this day, Softing is actively involved in the technical workgroups of the FieldComm Group, PROFIBUS & PROFINET International, and the OPC FOUNDATION.

The innovation potential of Industrial IoT solutions has broadened our range of activities. Among other projects, we were involved in the definition of the Namur Open Architecture (NOA). Softing also pays attention to the integration of connectivity products into IT environments for efficient operation, thus ensuring the scalability and security of complex solutions.

Based on this technological know-how, we offer innovative and reliable connectivity products for plant asset management and Industrial IoT solutions and act as a strategic partner for plant operators and system integrators.

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