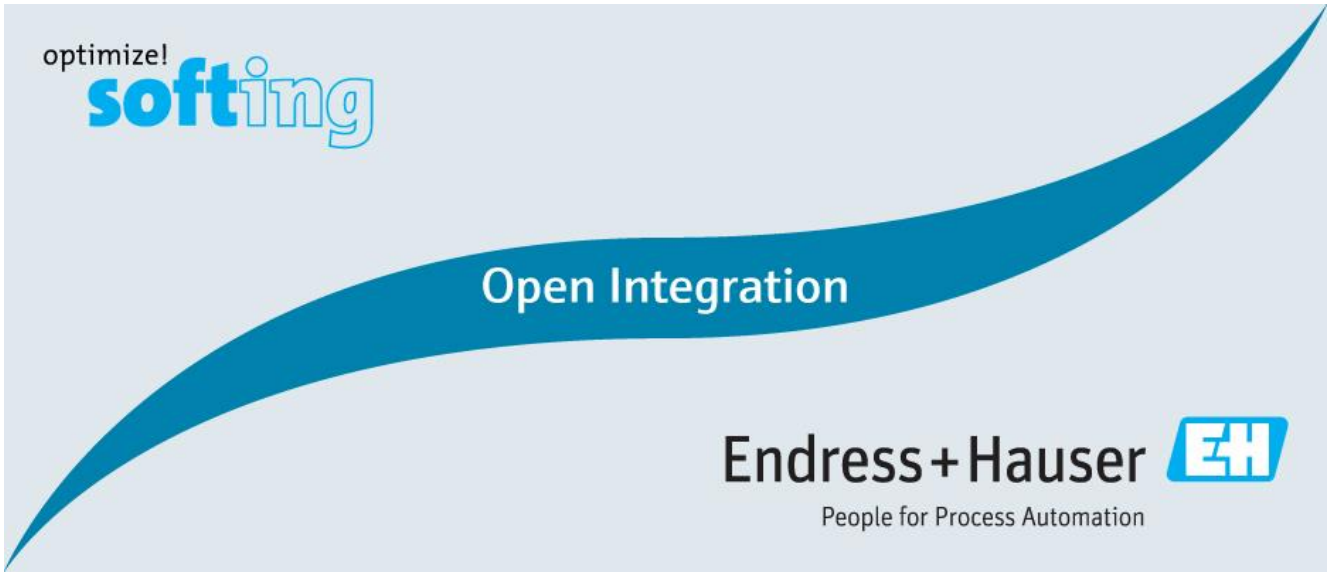
Reference Topology SYT01

Softing smartLink and HART over PROFIBUS for

Siemens ET200M and ET200SP



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1 Document Information

1.1 Purpose and Scope

This document specifies the Open Integration Reference Topology SYT01. All content of this document is jointly developed, reviewed and approved by Softing and Endress+Hauser as a common deliverable of Open Integration.

1.2 Document History

This is version 1.00.00 of this document. Version history:

Version	Released	Description
1.00.00	2022-06	Initial version

1.3 Related Documents

Please refer to related documents as listed below:

Document	Description
SD02926S/04/EN/01.22	Integration Tutorial SYT01
SD02927S/04/EN/01.22	Integration Test Summary SYT01
SD02928S/04/EN/01.22	List of Tested Devices and Versions SYT01

2 Target Market

2.1 Industry Application

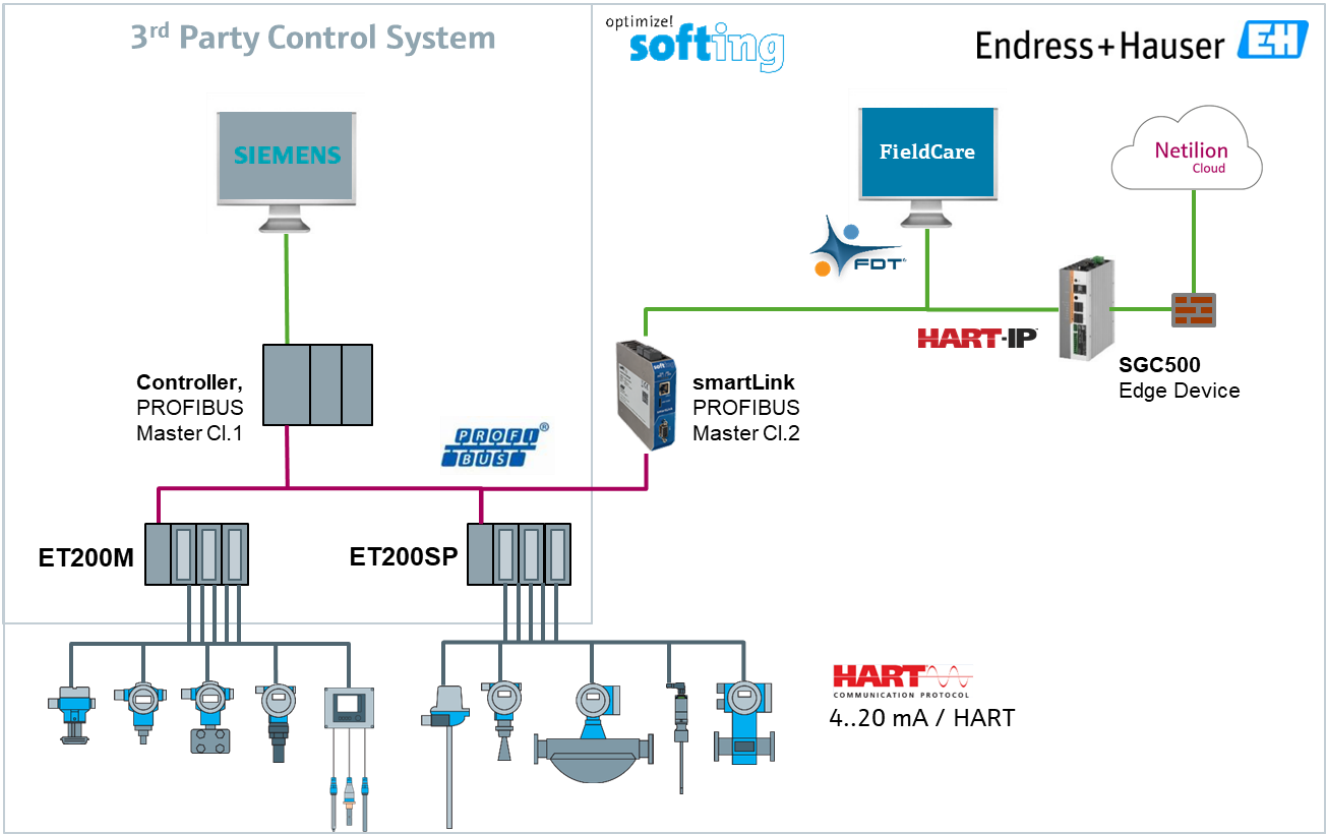
This reference topology adds a second channel for asset management and IoT to a given Siemens control system. The concept is industry agnostic and may be applied in all process plants which are automated with Siemens ET200M or ET200SP Remote I/Os connected to PROFIBUS DP.

2.2 Fieldbus Technology

This reference topology is designed for instrumentation with HART. All HART instruments are connected to Siemens ET200M or ET200SP Remote I/O with HART enabled modules and PROFIBUS DP Interface.

3 Reference Topology

3.1 Overview



3.2 Process Control System

The process control system top left is considered as given and not an integral part of this reference topology. We assume Siemens controllers with Profibus DP interface for connection to the HART enabled Remote I/Os.

Reference hardware:

SIEMENS	Article	Description
S7-300 	315-2EH14-0AB0	SIMATIC S7-300 CPU 315-2 PN/DP

3.3 Field Network Infrastructure

3.3.1 HART over PROFIBUS DP Remote IOs

HART enabled Remote I/Os with PROFIBUS DP interface are mandatory for this reference topology with impact to the integration tests. Following Siemens Remote IOs are used in this reference topology:

SIEMENS	Article	Description
ET200M 	6ES7 153-2BA02-0xB0 6ES7 331-7TF01-0AB0	Interface Module IM 153-2 HART Analog Input SM331, 8 channels
ET200SP 	6ES7 155-6BU01-0CN0 6ES7 134-6TD00-0CA1 6ES7 193-6PA00-0AA0	Interface Module IM 155-6 DP HF V4.2 AI 4xI 2-wire 4..20mA HART Server module

3.3.2 Ethernet to PROFIBUS DP Gateway

The Softing smartLink HW-DP Gateway establishes the second channel for FieldCare and/or Netilion and therefore is the central element for this reference topology, with relevant impact to integration tests.

Reference hardware:

optimize! softing	Article	Description
smartLink HW-DP 	GEA-YN-026000	Access to PROFIBUS networks via Ethernet (PROFIBUS DP Master Class2). Supports 1 PROFIBUS DP segment (RS485).

3.4 Industrial Edge Device

The Endress+Hauser FieldEdge SGC500 is necessary to push field device data in the Netilion Cloud:

Endress+Hauser People for Process Automation	Article	Description
FieldEdge 	SGC500	Industrial edge device for connecting field devices to the Netilion Cloud.

3.5 Field Devices

Open Integration reference topologies always have to be tested versus a selection of relevant field devices This serves to verify that the second channel connection can handle a necessary variety of certified field devices. All field devices are fully compliant to standards but may be implemented versus different version of standards and each field device typically implements only a subset of relevant compliant means.

3.5.1 HART devices

Reference hardware:

Endress+Hauser People for Process Automation	Article	Description	Device Type
Cerabar M 	PMC51	Absolute and Gauge Pressure Transmitter	0x0019
Deltabar S 	CPS11D	Differential Pressure Transmitter	0x1117
Deltapilot S 	FMB70	Hydrostatic Level Transmitter	0x111A

Endress+Hauser People for Process Automation	Article	Description	Device Type
Liquiline M 	CM42	Liquid Analyzer Transmitter	0x11A0
iTEMP 	TMT82	Temperature Transmitter	0x11CC
iTHERM TrustSens 	TM371	Compact thermometer with self-calibration	0x11CF
Levelflex 	CYK10	Guided Radar Level Transmitter	0x1122
Micropilot 	FMR62	Radar Level Transmitter	0x112B
Prosonic M 	FMU40	Ultrasonic Level Transmitter	0x0011
Promass 300 	7F2B	Coriolis Flow Transmitter	0x113B

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