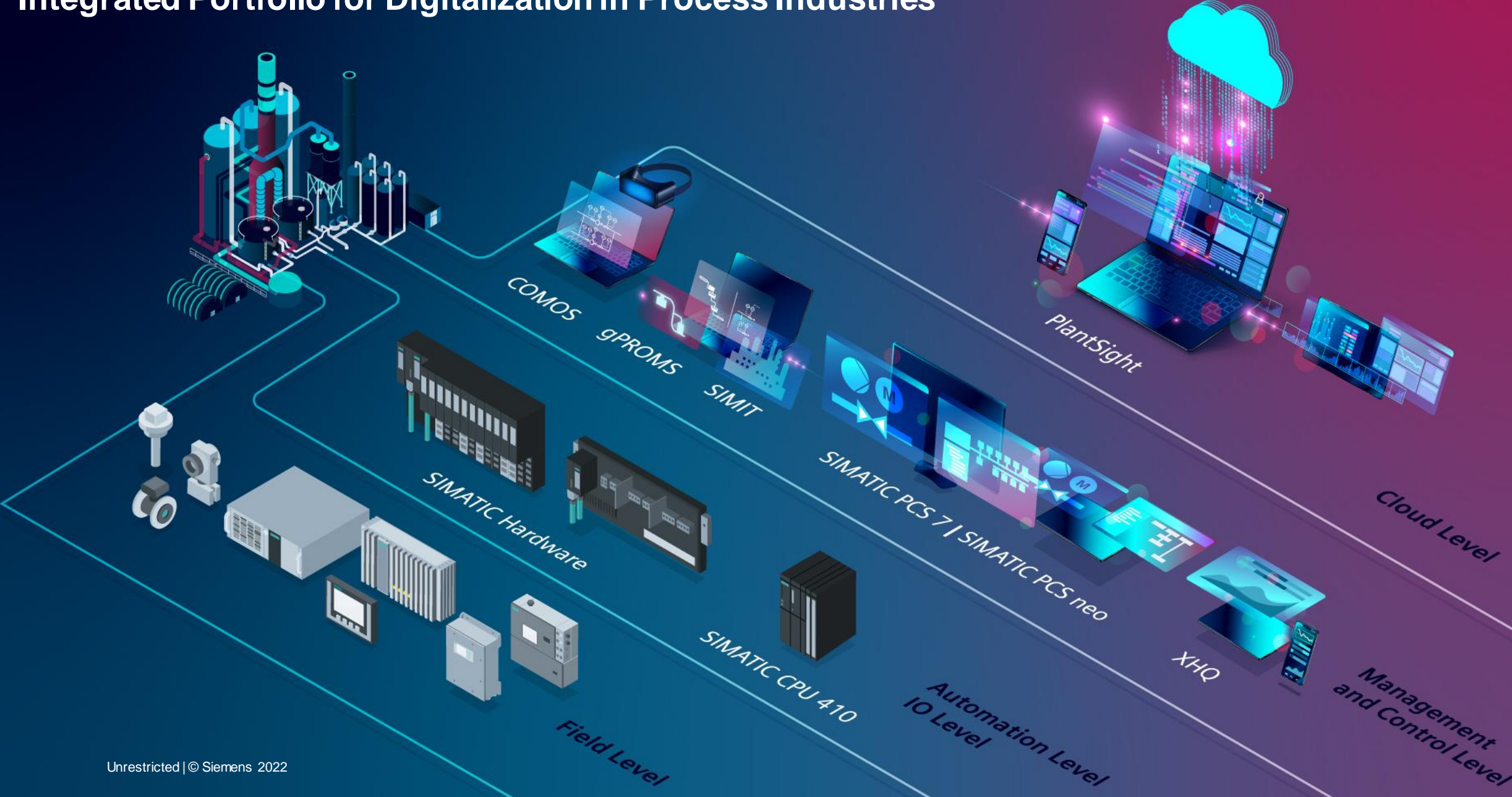




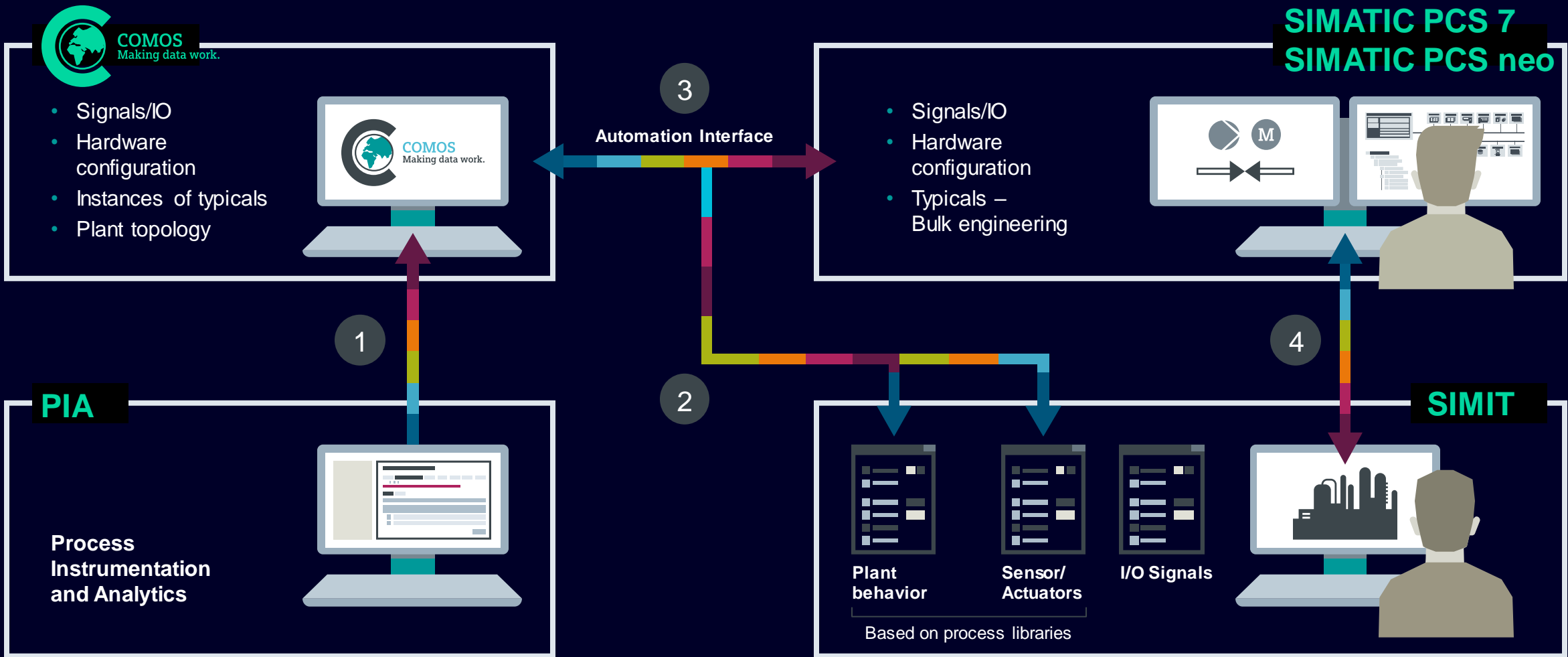
SIMATIC PCS 7

Med fokus på smart instrumentering

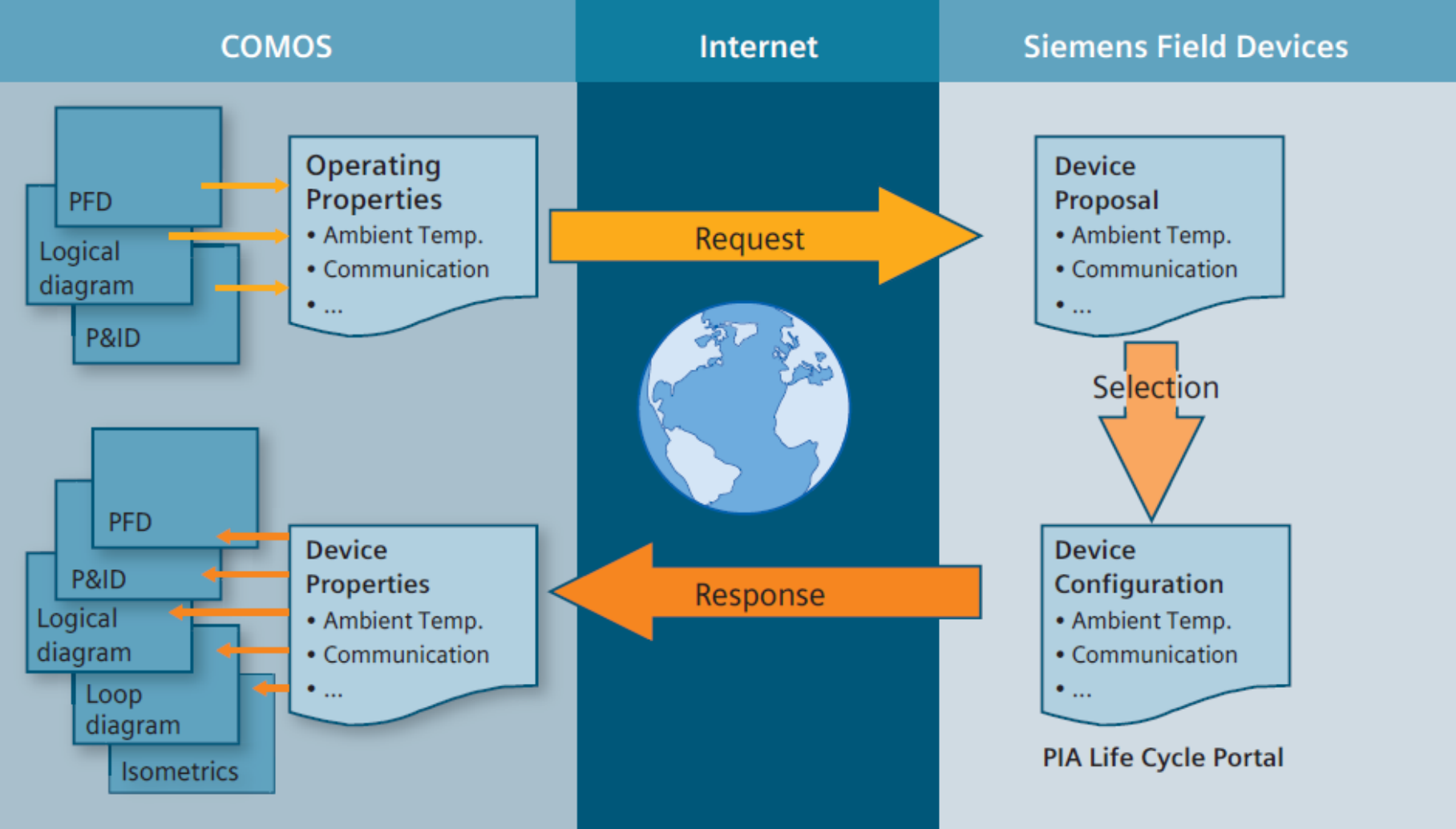
Integrated Portfolio for Digitalization in Process Industries



Integrated Engineering and Integrated Operation with COMOS, PCS 7, SIMIT and PIA Portal



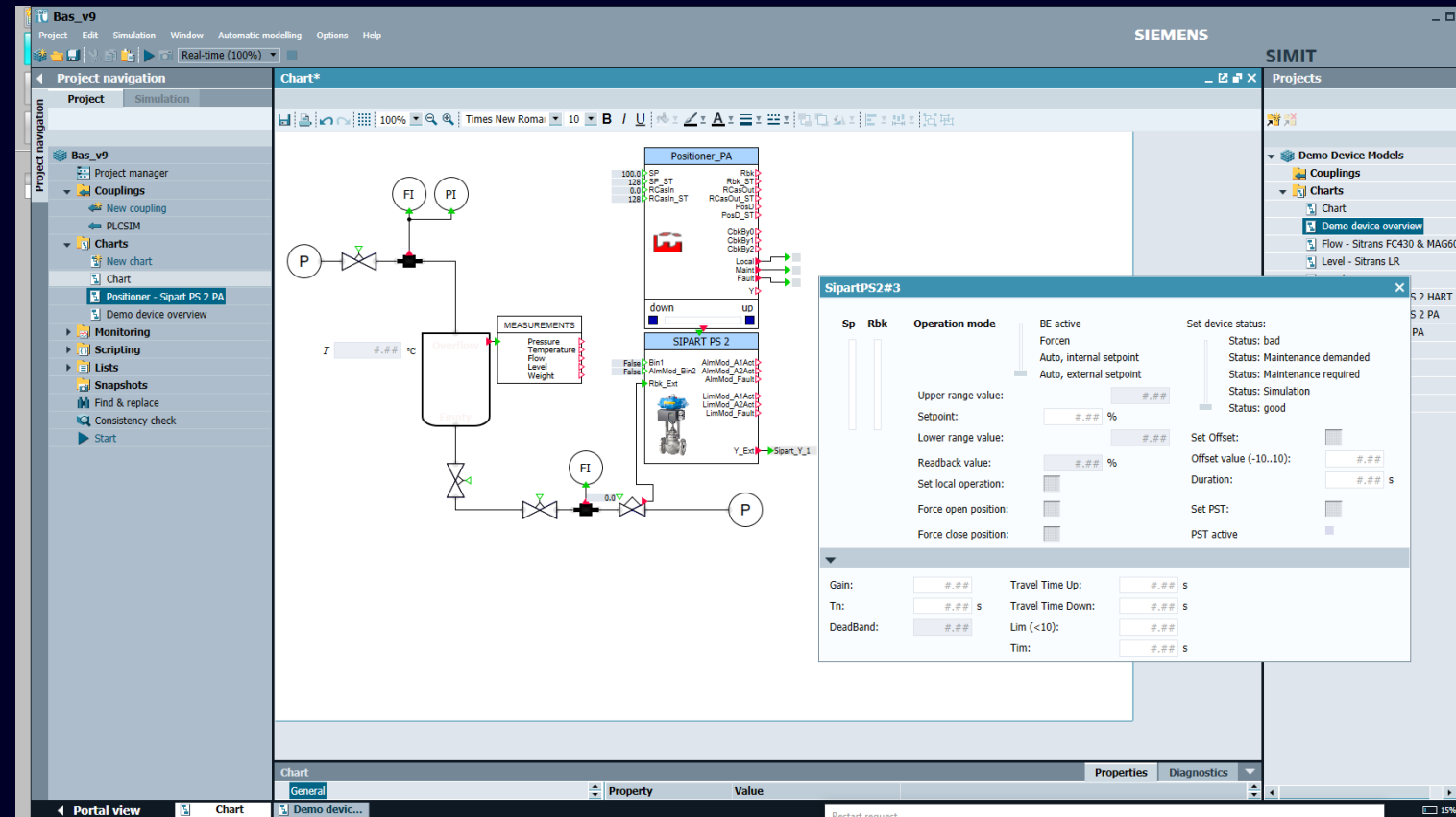
Features COMOS EI&C – Basic Engineering



Digital Twin on device level

Device models

- Higher engineering quality by enabling early detection of errors and more comprehensive automation checks
- Faster commissioning including specific field device functions tested early without final HW

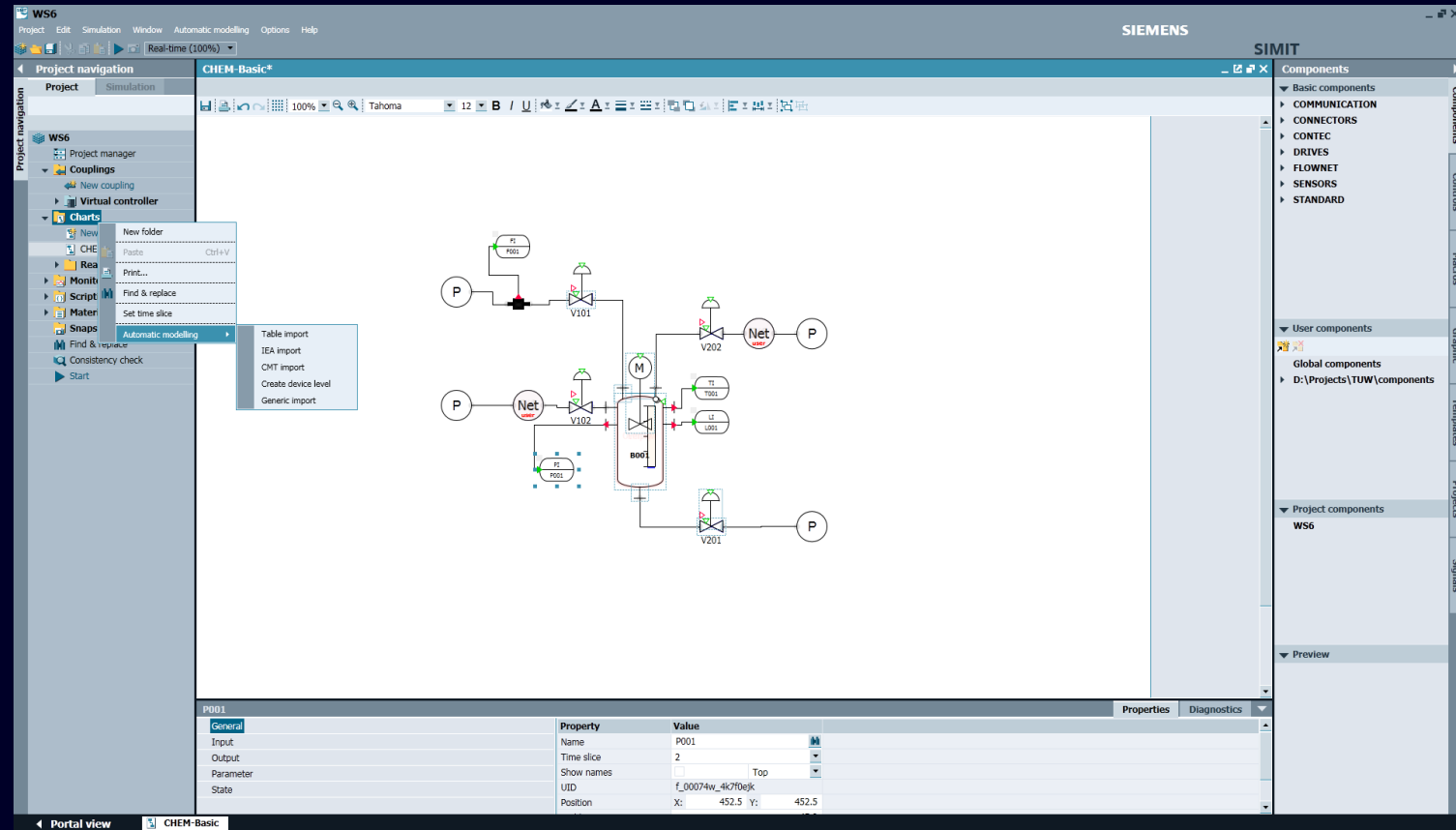


SIMIT

Simulation based Engineering from Virtual Commissioning to Operator Training

Simulation of technical behavior

- Simulation model can be created out of COMOS via the generic import
- Components can be placed via drag-and-drop on diagrams to model the simulation model
- Components can be connected by drag-and-drop



SIMATIC PCS 7 – Hardware

Process I/O with standardized communication



HW Config - [CPU410 (Configuration) -- Bas_v9]

Station Edit Insert PLC View Options Window Help

0 CR3

Slot	Module	Order number	I address
1	PS 407 4A		
2	CPU 410-5H		
	DP		
X1	PN-ID-X5		
X5	Port 1		
X5 P1 R	Port 2		
X5 P2 R	PN-ID-X8		
X8	Port 1		
X8 P1 R	Port 2		
X8 P2 R			
4			

PROFIBUS(2): DP master gateway (1)

ProfNet : PROFINET IO

TT040

SITRANS TH300

- Identification
- Setup
- Maintenance & Diagnostics
- Communication
- Characteristics

Parameter Value Unit Status

SITRANS TH300

Identification

TAG: TT040

Descriptor: TEMPPUCK TH300

Message: MICKE B TEMPTRANSMITTER VIA HART

Installation Date: 3/26/2022

Device

Manufacturer: Siemens

Product Name

Order Number

Final Assembly Number

Hardware Revision

Firmware Revision

EDD Version

Distributor

Fabrication Number

Setup

Mapping of Variables

Primary Variable

Secondary Variable

Tertiary Variable

Quaternary Variable

Sensor

Class

Type

Sensor factor

Sensor Connection

Connection Method

TT040 - Wizard - Quick Start...

Step 1 of 4: Identification

These parameters are used to identify the device. The TAG should be unique in your application. To identify the device and to get all wizard parameters of the device, you can transfer the data from the device to SIMATIC PDM.

Read Data from Device

TAG: TT040

Descriptor: TEMPPUCK TH300

Message: MICKE B TEMPTRANSMITTER VIA HART

Installation Date: 3/26/2022

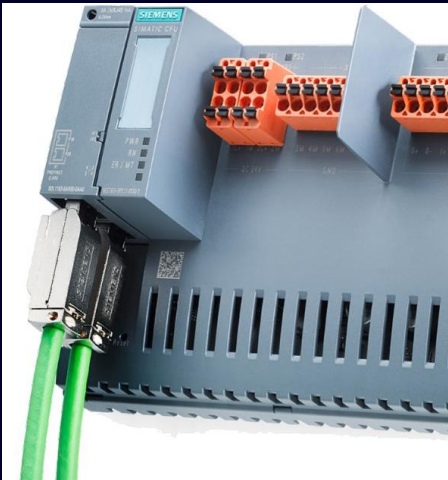
Print

Cancel < Back Next >

FOUNDATION FIELDBUS

Press F1 to get Help.

Compact Field Unit (CFU) - The smart digitalization terminal block



Processcell_A

Diagnostics

SIPART PS2PA (6DR55xx) 5

Message Diagnostic of PA Slave(DP V0) after DP/PA-Link(DPV1)

● Communication via PDM

● Maintenance alarm

● Manual operation

● Configuration changed

● Test mode

● Good

Detailed diagnostics:

>> Maintenance alarm <<
- Device is not ready for operation (not initialized).
The positioner is not initialized.
Positioner does not operate in Automatic mode until it is initialized.
-> Please refer to the operating instructions, chapter 'commissioning'.

>> Local override <<
- Instrument not in 'automatic-mode'.
The instrument is in 'configuration-mode' or in 'manual-operation'.
Device will ignore setpoint from DCS.
-> Switch the instrument to automatic mode if configuration mode or manual mode are not desired.

>> Configuration changed <<
- The device data and the project data are not identical.

Cyclical update

1 d

Last check

2022-03-31 14:45:12

SIPART PS2PA (6DR55xx) 5

Message Diagnostic of PA Slave(DP V0) after DP/PA-Link(DPV1)

Device parameters

Parameters	Value	Unit
TAG	SIPART PS2A PA	
Descriptor	Descriptor	
Message	Message	
Date	01.01.2001	
Manufacturer	Siemens	
Product Name	SIPART PS2 PA	
Order Number		
Serial Number	N1-A304-7511496	
Hardware Revision	FBG 9 LP 3	
Firmware Revision	5.00.02-00 / E1	
EDD Version	21.01.09	
Static Revision Number	8	
Manufacturer		
Actuator Serial Number		
Actuator Type	Electropneumatic	

Unrestricted | © Siemens 2022

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Field Device Integration (FDI) for Process Automation

A new technology, a new standard...

Field Device Integration (FDI) is a new technology and a new internationally standardized solution for **process automation device** and systems **integration** that dramatically simplifies software installation and maintenance as well communication between enterprise level systems and technologies.

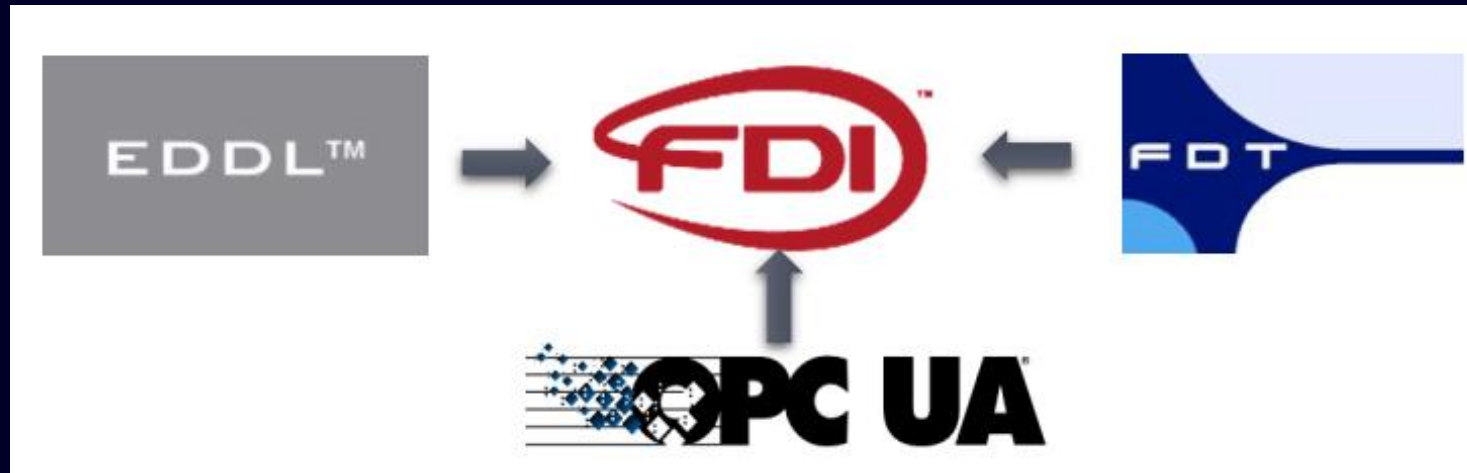
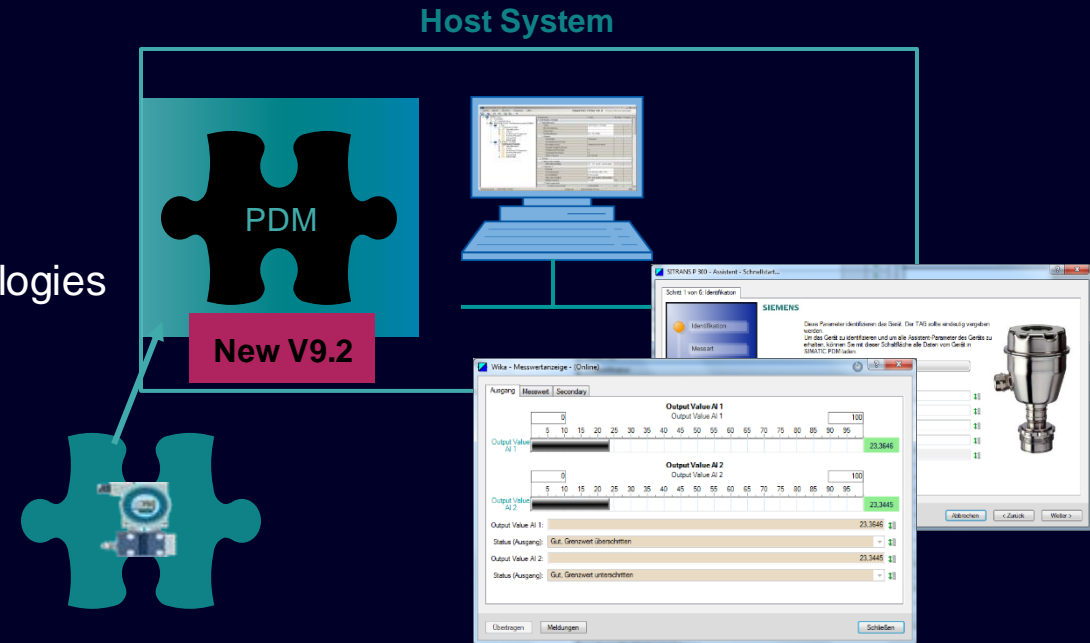
FDI brings standardization to the packaging and distribution of all the software and tools necessary to **integrate** a **device** with a host **system**, thus the tagline:

“ONE DEVICE – ONE PACKAGE – ALL TOOLS”

Key objective of the specification is to combine the simplicity of the text-based EDD technology with the flexibility of user interface programming such HTML5.

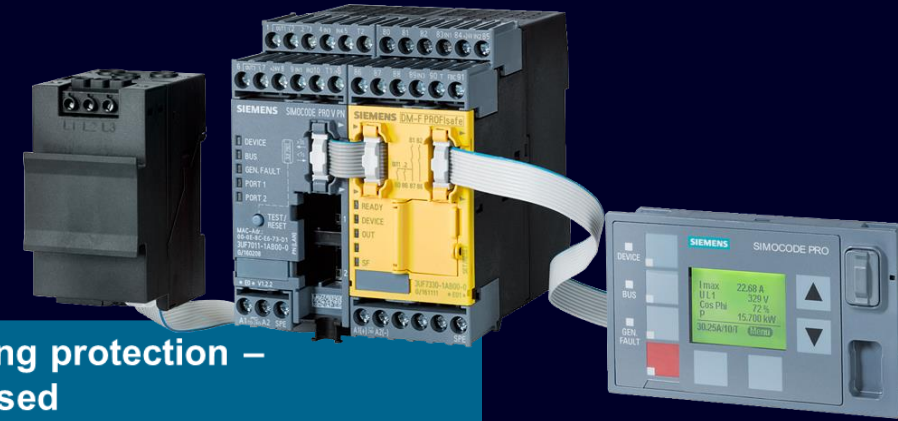
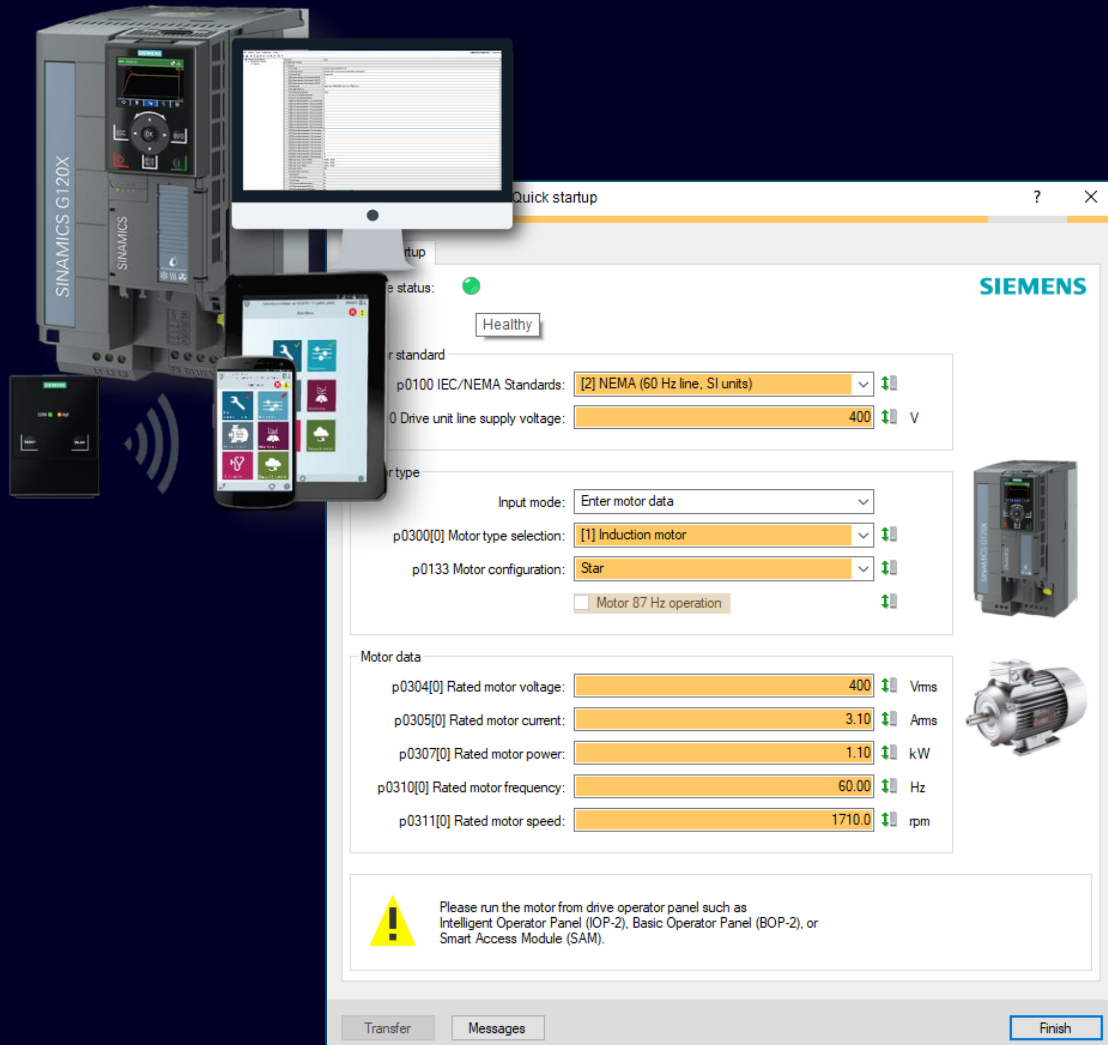
FDI Motivation

- A single technology that leverages the best of both existing technologies
- Enables open architectures (e.g. NOA, I4.0)
 - Standardized access to device information through OPC UA
- Up to date cyber security features
 - Signing, Sandboxing

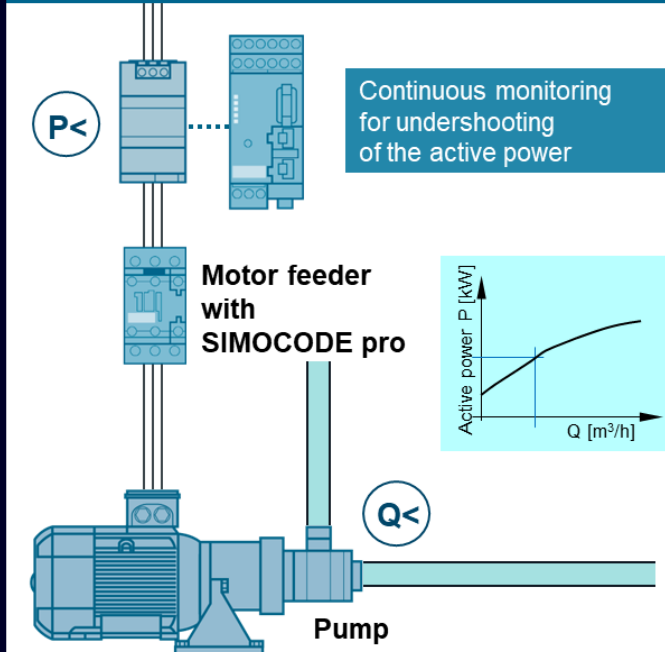


PDM & FDI

Not only for instruments and positioners



Pump dry-running protection – active-power-based



Ethernet-APL - The Communication of the Future in the Process Industry

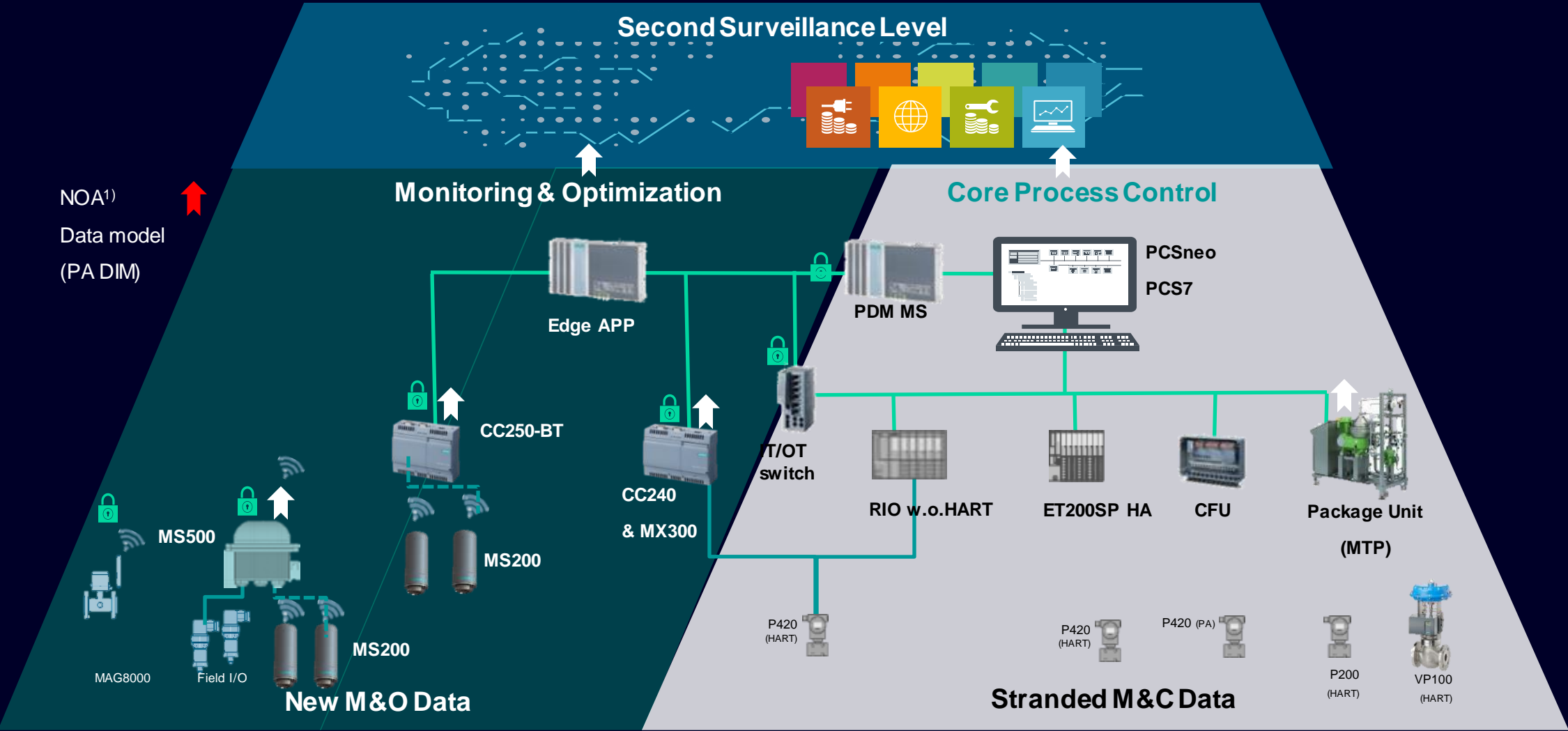


- 2-wire Ethernet for process automation
- Digitalization into Field Level (10Mbps)
- Up to 1000m cables
- Robust incl. power and communication in one cable
- Intrinsically safe
- Standardized diagnosis tools
- Topology & Protocols for Plug'n play connectivity



Customers will benefit due to simplified installation, configuration and maintenance of instruments

Namur Open Architecture (NOA) as driver for Asset Monitoring and Optimization



¹⁾NOA: Namur Open Architecture

Exempel

1. SCM IQ – Smart Condition Management
2. SAM IQ - Smart Asset Management





SITRANS SCM IQ

Smart Condition Monitoring with IIoT Sensors and Machine Data

Customer Situation



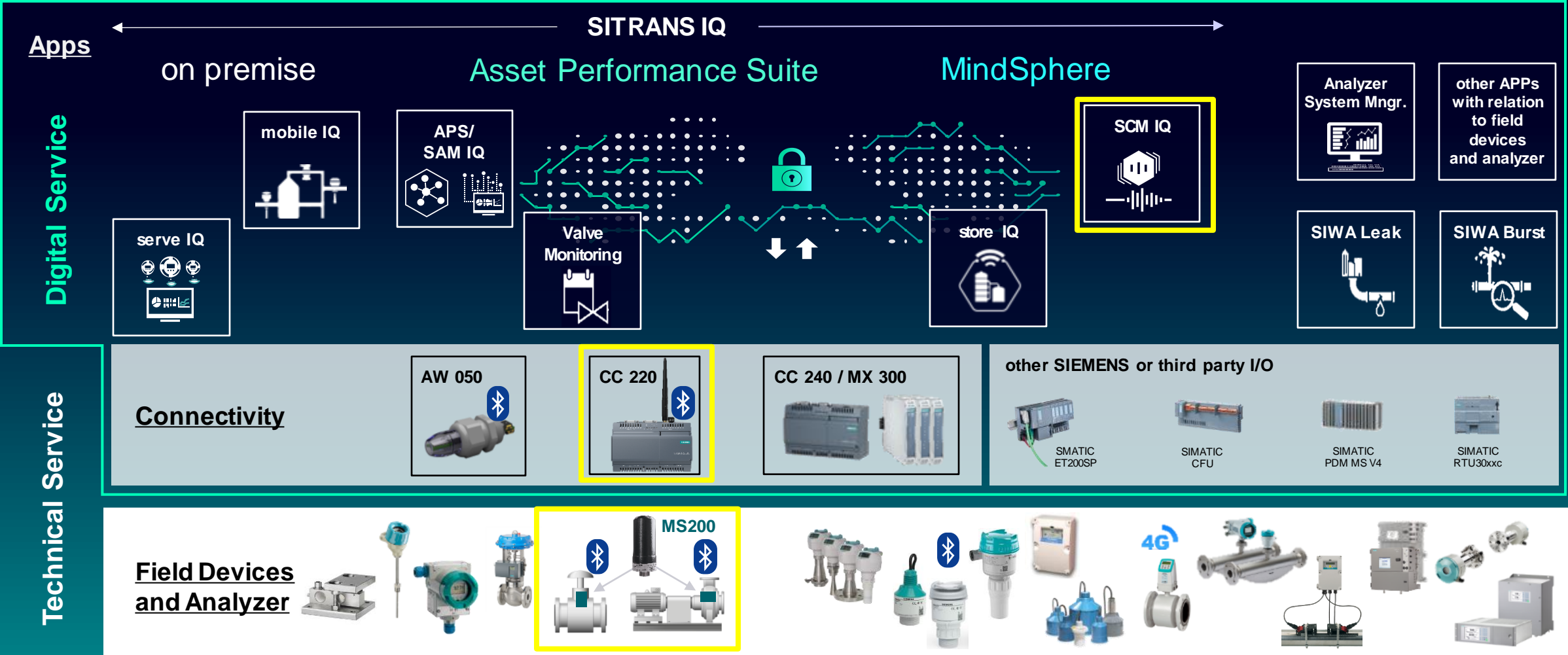
Unplanned downtimes lead to **10 – 30% performance losses** in a production line.



But, smart IIoT solutions can help to **increase performance** of up to **10%**.



SITRANS IQ platform contains connectivity and analytics tools for enhanced performance and reduced downtime



Features – SITRANS MS200

Temperature sensor:

- -30 to 80°C
- resolution of 0.01°C
- repeatability +/- 0.1°C



Vibration sensor:

- 3-axis (13 to 3.3kHz)
- nom. resolution of 0.488mg
- measuring span 16 to -16g



Exchangeable battery

- AA 3,6 V industrial battery
- up to 3.5 years battery life



SITRANS MS200 IIoT multi sensor



- IP68 certified
- integrated antenna
- ruggedized design

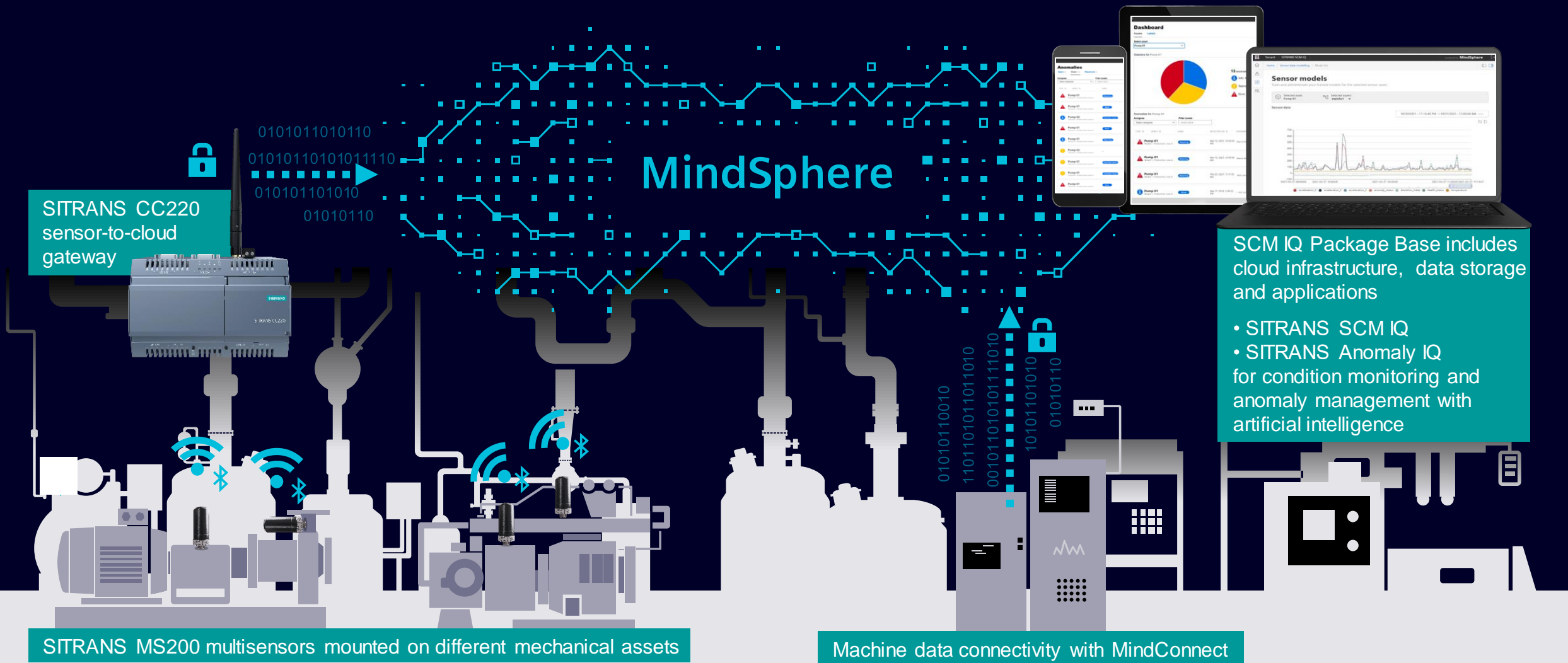


Bluetooth Low Energy:

- sampling rates of 1 transmission/ 100 sec.
- range appr. 30 m



System overview of SITRANS SCM IQ



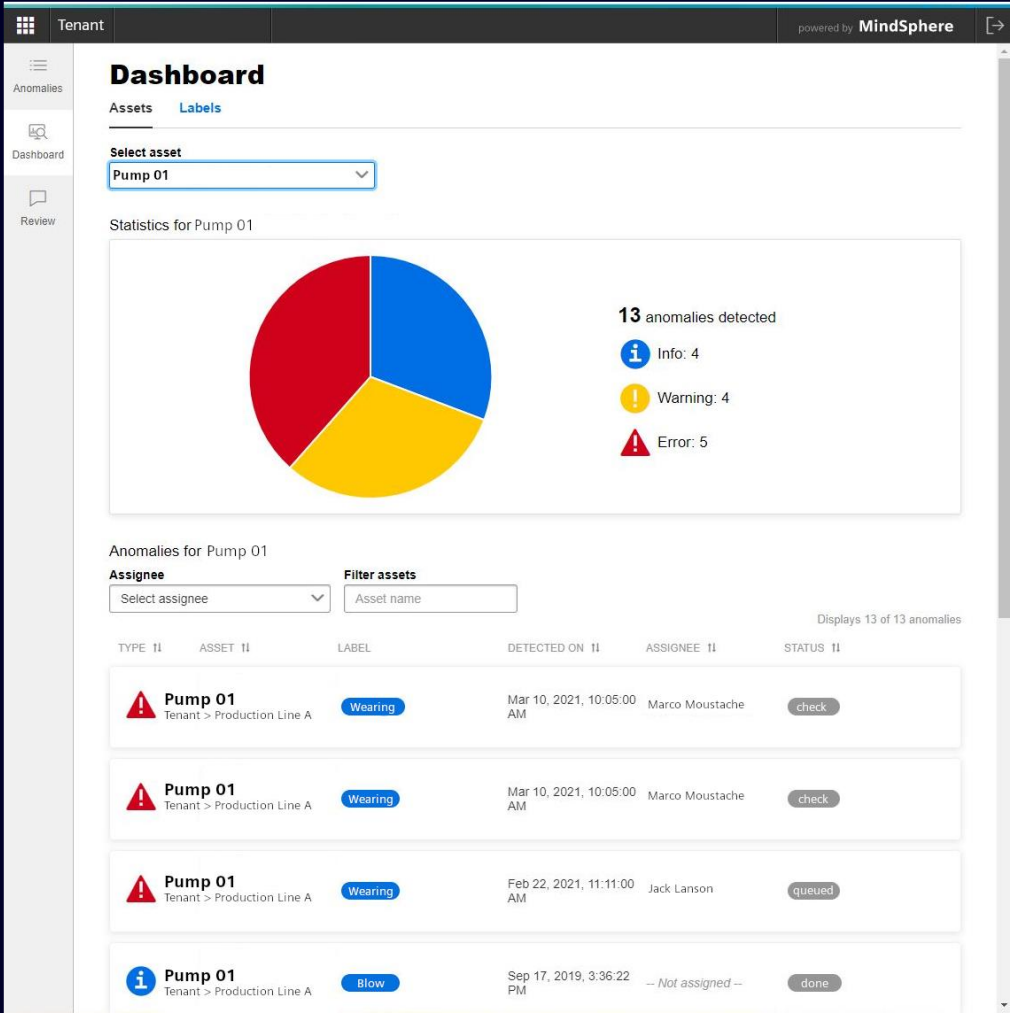
Sneak peak into the apps

SITRANS SCM IQ: Data Modelling



Sneak peak into the apps

SITRANS Anomaly IQ: Dashboard and List View



Tenant powered by MindSphere

Anomalies

Open (5) Done (10) Resolved (5)

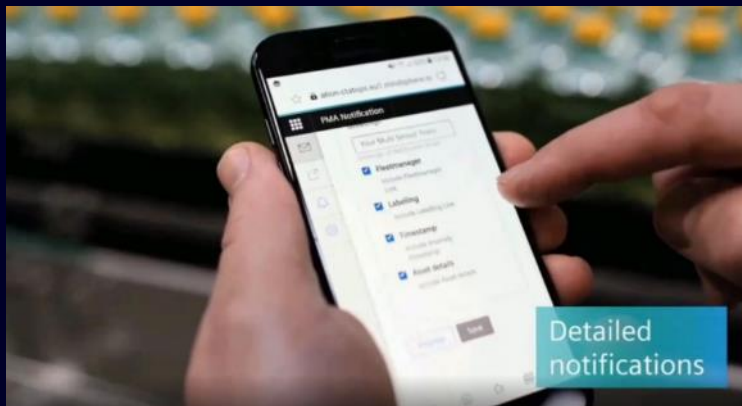
Assignee: Select assignee Filter assets: Asset name

Displays 10 of 10 anomalies

TYPE	ASSET	LABEL	DETECTED ON	ASSIGNEE
Error	Pump 01 Tenant > Production Line A	Wearing	Mar 10, 2021, 10:05:00 AM	Michael Moustache
Error	Pump 01 Tenant > Production Line A	Blow	Mar 10, 2021, 10:05:00 AM	Michael Moustache
Info	Pump 02 Tenant > Production Line A	Gearbox wear	Mar 3, 2021, 3:36:00 PM	Jack Larson
Error	Pump 01 Tenant > Production Line A	Blow	Feb 22, 2021, 11:11:00 AM	Joe Summer
Info	Pump 01 Tenant > Production Line A	Wearing	Sep 17, 2019, 3:36:22 PM	-- Not assigned --
Warning	Pump 02 Tenant > Production Line A	---	Sep 17, 2019, 3:36:22 PM	-- Not assigned --
Warning	Pump 01 Tenant > Production Line A	Gearbox wear	Sep 17, 2019, 3:36:22 PM	-- Not assigned --
Warning	Pump 01 Tenant > Production Line A	Gearbox wear	Sep 17, 2019, 12:10:00 PM	Joe Summer
Error	Pump 01 Tenant > Production Line A	Blow	Sep 17, 2019, 12:10:00 PM	Jack Larson
Warning	Pump 01 Tenant > Production Line A	Gearbox wear	Sep 17, 2019, 12:10:00 PM	Michael Moustache

Turning data into value @Coca-Cola Hellenic Bottling Company

Reference Facts



Prevented 4 major downtimes

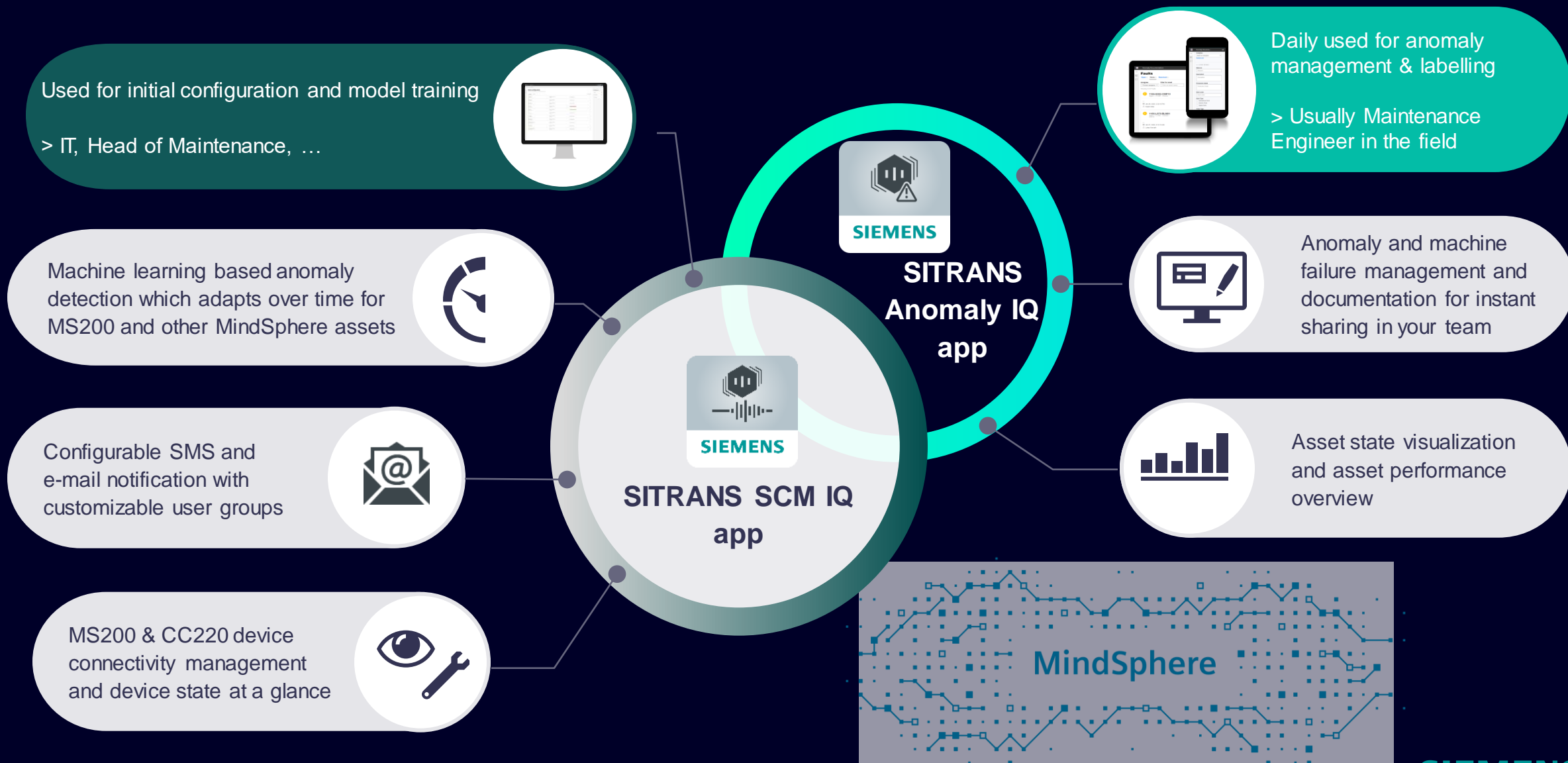
Reduced line downtime by 2%

Return on invest in 6 months

Turning data into value



Summary





SITRANS SAM IQ

Smart Asset Management



SIEMENS

Customer Situation



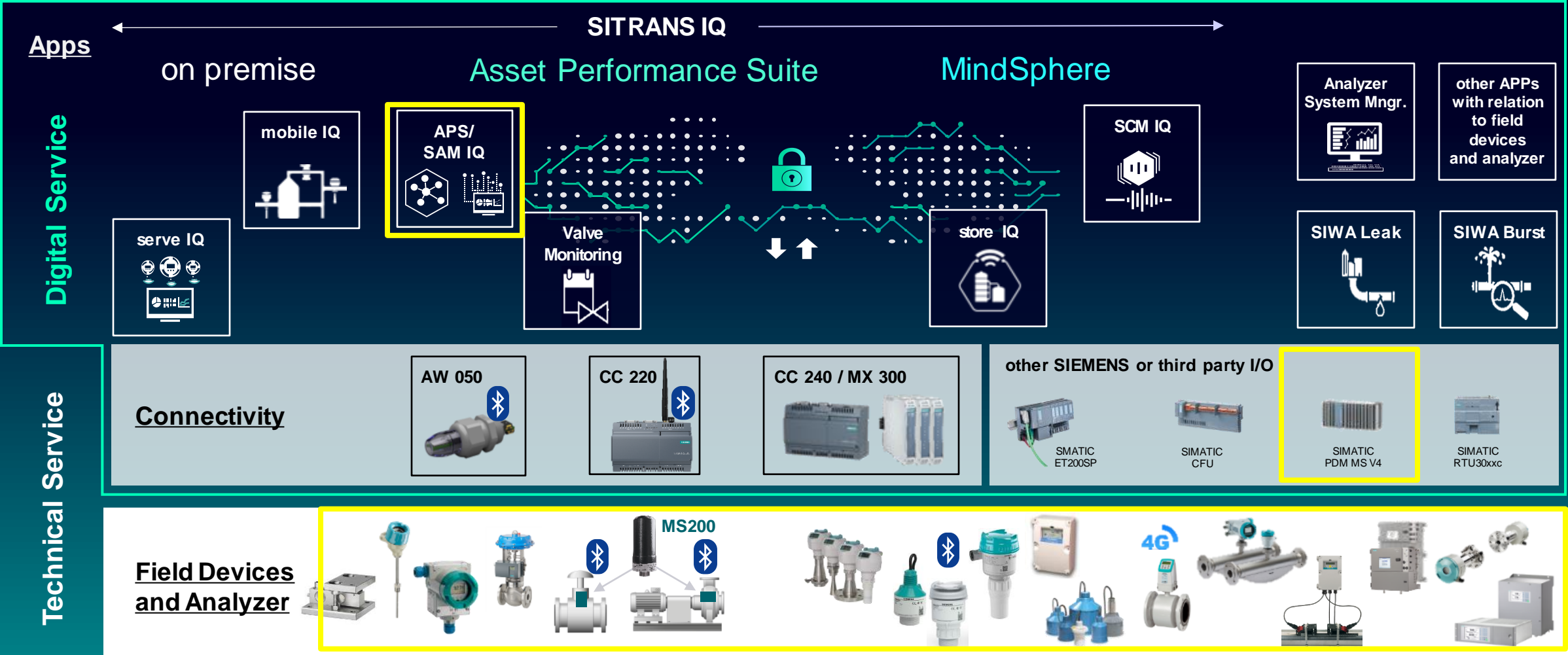
Field devices and actuators are significant for operation and safety of production processes.



But, up to **90%** of field device information in a process plant is unused.

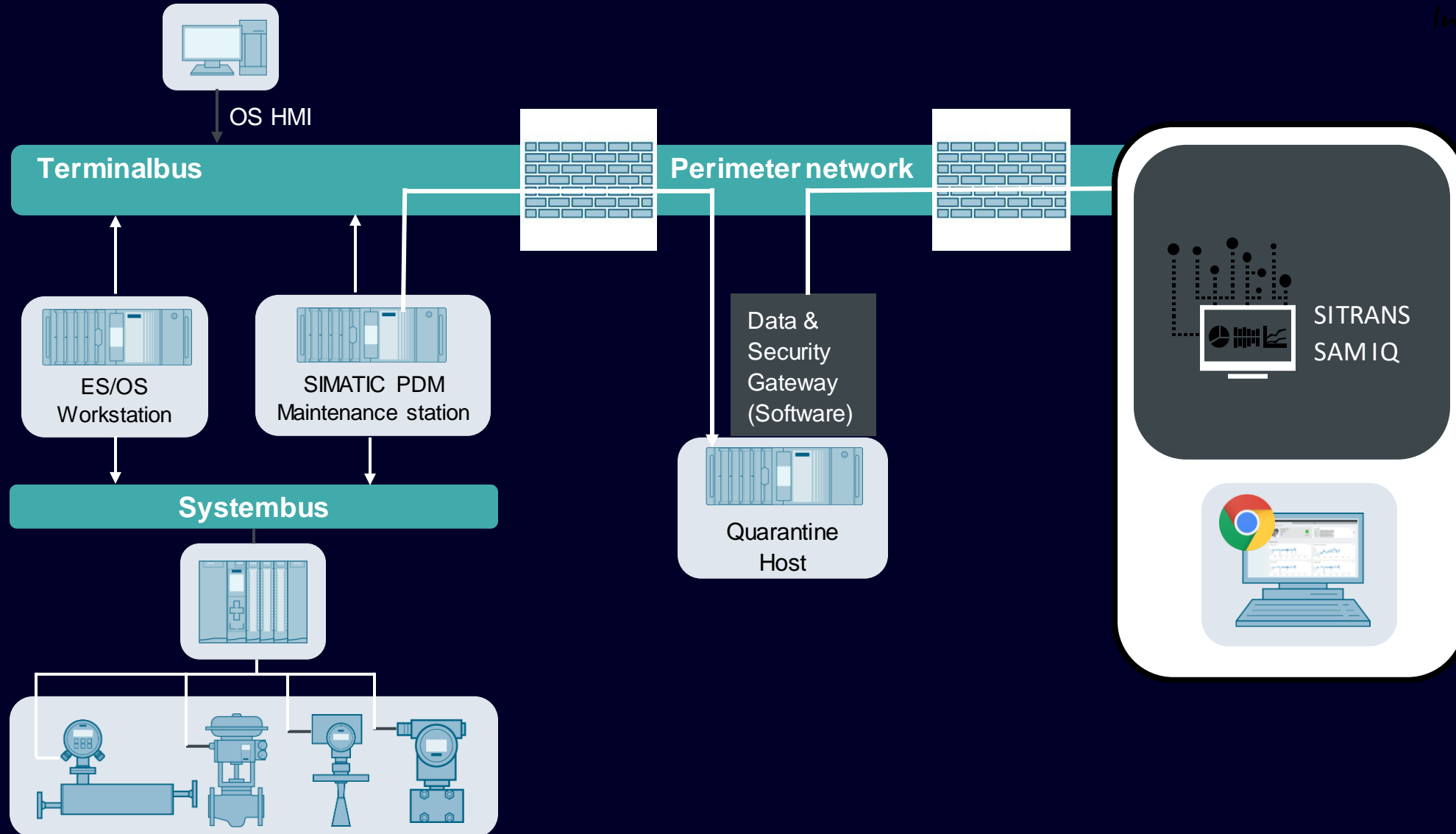


SITRANS IQ platform contains connectivity and analytics tools for enhanced performance and reduced downtime

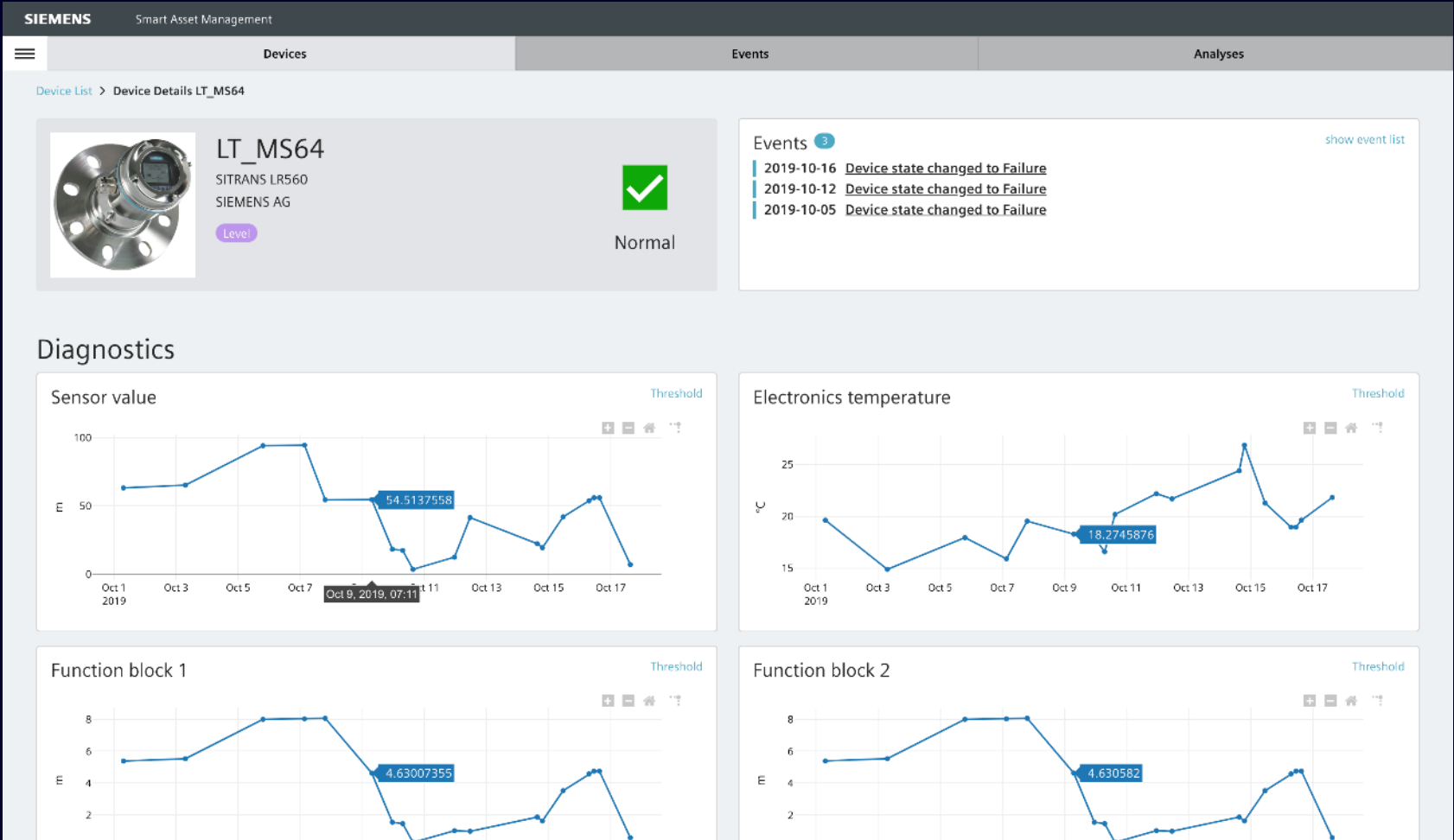


Cloud Installation infrastructure

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Ingenuity for life



SAM IQ – Device detailed view



Detailed monitoring and trending of all process values and diagnostic data



Access to device-specific KPIs



Easy comparison of actual working range with measurement range of the device

Features – Customized Monitoring & Diagnostics

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Key Customer Benefits

SIEMENS
Ingenuity for life

One application for all field devices and protocols



Reduction of maintenance costs through event driven maintenance



**SITRANS
SAM IQ**



Increase plant uptime by avoiding upcoming device failures



Increase transparency of measurement reliability and ensure product & process quality

Dags för frågor ☺



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&
daniel.moertsjoe@siemens.com