

SITRANS SCM IQ

Sales Slides (SITRANS CC220 Release 2.0, July 2023)

Smart Condition Monitoring with IIoT Sensors and Machine Data

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SIEMENS

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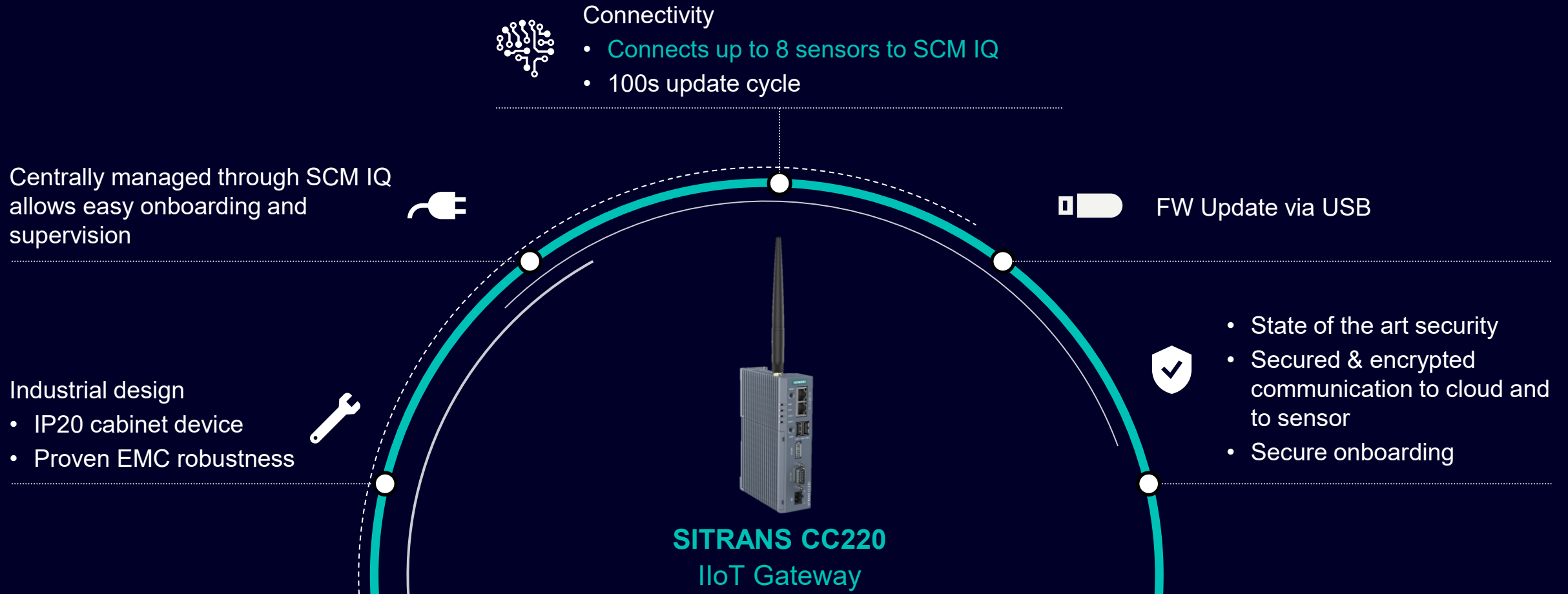
SIEMENS

News

Overview about latest HW and SW features

SITRANS CC220 (7MP2200-2CB05-2AA1)

Industrial gateway for collecting and transmitting sensor data to cloud



● NEW in R2.0

SITRANS CC220 (7MP2200-2CB05-2AA1)

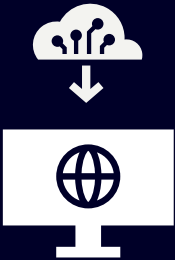
Straightforward firmware update with USB stick

1

Download latest FW from SIOS and copy it to a USB stick (flash drive)



SIEMENS Industry
Online Support

**2**

Plug the USB stick into the gateway for secure FW update

**3**

Follow the FW update process indicated by LEDs on gateway and in the SITRANS SCM IQ application.



SITRANS CC220 (7MP2200-2CB05-2AA1) Commissioning with improved LED behaviour

We enhanced the visibility of the current state of SITRANS CC220 by incorporating new LED blinking patterns:

Onboarding Key State:

clear differentiation between reading or writing the onboarding key.

Network state:

Clear visibility into the network state, conveying information about both the establishment of a network connection and the presence of a cloud connection.

Troubleshooting:

extensive insights into trouble states, visualized through 4 LEDs.



SITRANS CC220 (7MP2200-2CB05-2AA1)

User Journey during onboarding process

State	Description	User 1 LED	User 2 LED
1	not onboarded Waiting for onboarding / USB pendrive	flashing (slow)	slow off
2	not onboarded USB pendrive detected → writing public key	continuous on	flashing (slow)
3	not onboarded Public key written → waiting for onboarding credentials	continuous on	off
4	not onboarded USB pendrive detected → reading onboarding credentials	continuous on	flashing (slow)
5	operating Onboarding credentials read, accepted and successfully applied -> no connection to network (Gateway, DNS)	continuous on	flashing (fast)
6	operating Onboarding credentials read, accepted and successfully applied -> no connection to Internet (SITRANS SCM IQ)	continuous on	flashing (slow)
7	operating Onboarding credentials read, accepted and successfully applied, communication to SCM IQ established, operation	continuous on	continuous on

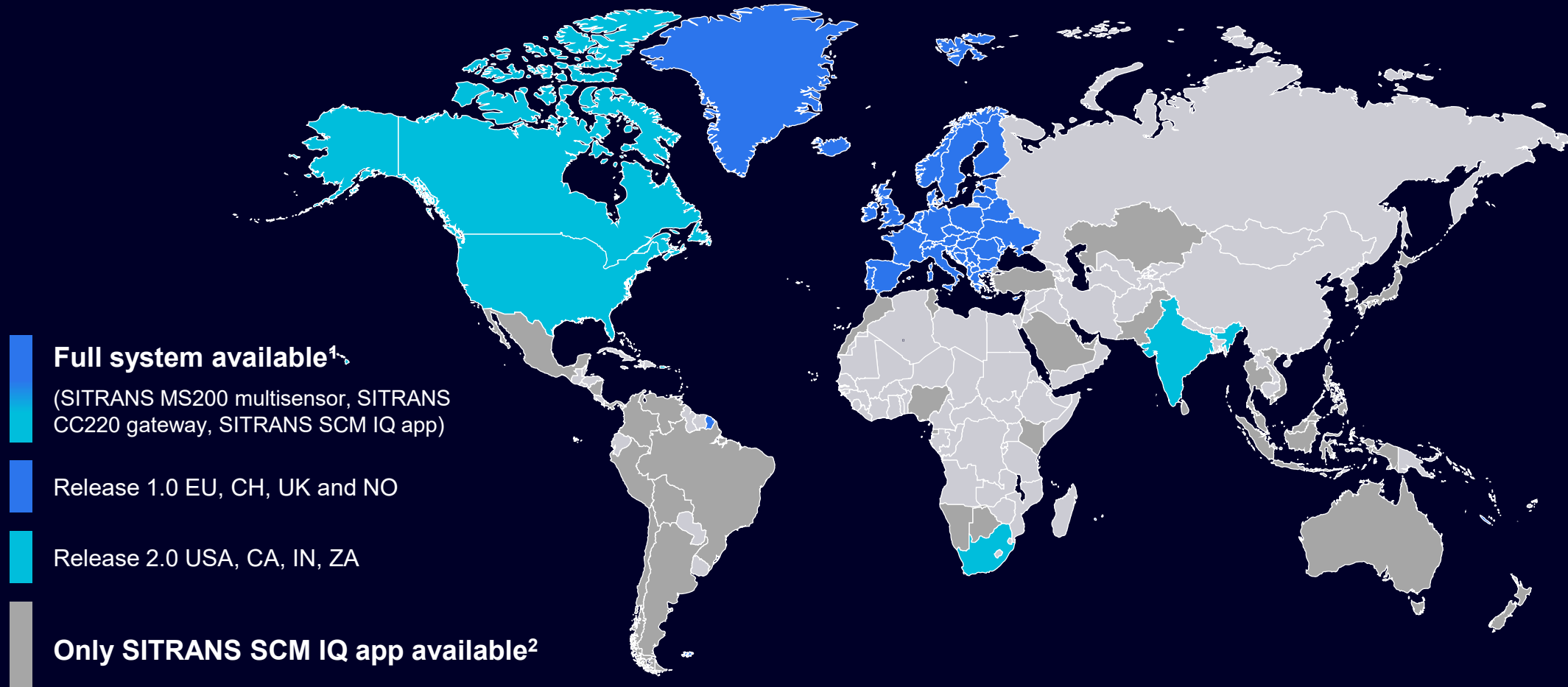
■ ■ ■ LED is continuous on
▨ ▨ ▨ LED flashing (slow, fast)

PWR green and STAT flash green during booting, not indicating onboarding progress



Regional availability with release 2.0 (July 2023)

New: USA, CA, IN, ZA



¹ Radio approval application for additional countries based on business potential

² Anomaly detection of generic machine data, Insights Hub Region EU1

SITRANS SCM IQ additional AI training improvements

Automatic idle state recognition

Train a new model
Select the desired parameters for your new model.

Model information

Model name *
Autoencoder CNN
Please provide a name for the model

Description
Custom model description
Optional description of the model

Template in use
Anomaly Detection CNN - Multisensor

Training optimization

Aspect variables (3 of 3)

- msdata1
 - acceleration_X (DOUBLE, 1g)
 - acceleration_Y (DOUBLE, 1g)
 - acceleration_Z (DOUBLE, 1g)
 - anomaly_status (INT, -)
 - deviation_index (DOUBLE, -)
 - health_status (INT, -)
 - temperature (DOUBLE, °C)
- mskpis

Acceleration (1g)
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
12.7.2023 - 00:00:00

Model idle time **READY**

Provides a short description of the sensor.
Idle time enable

Template Anomaly Detection CNN - Multisensor
Template version -

Training optimization **Active**

Last updated
Jun 08, 2023, 10:49:40

Created
Jun 08, 2023, 10:45:44

Training periods
1. Jun 07, 2023, 06:55:18 - Jun 07, 2023, 15:36:51

Total training time
8 h 41 min 33 sec

Datapoints
1. msdata1:acceleration_X
2. msdata1:acceleration_Y
3. msdata1:acceleration_Z

New option „Training optimization“

During training “unnecessary data” like when a switched off asset is now conveniently removed fully automatically!

“Active”-badge indicates activated training optimization.

SITRANS SCM IQ with additional KPI

Asset ON/OFF indicator



New variable in each MS200 data set:
the KPI “asset_state”

It will be installed the first time you open
the SITRANS SCM IQ 1.5 App.

It automatically detects whether
the monitored asset is running or not,
and gives back a value for it

0 = not running

1 = running

SITRANS SCM IQ offers System performance monitoring “Offline” notifications

Configure user group Test Group
Enter all information needed for your user group

▼ User group information

Enter name *
Test Group

Users
Geetha ⊗

Notification options

- Email notification
All users of this user group will receive an emi
- Notify connection interruption
All users of this group will receive notification

▼ Connection notification template

Subject of the connection notification *
SITRANS SCM IQ: Device Offline

Notify connection change after
1h 4h 24h

Define the time delay in hours between the connection interruption and the notification

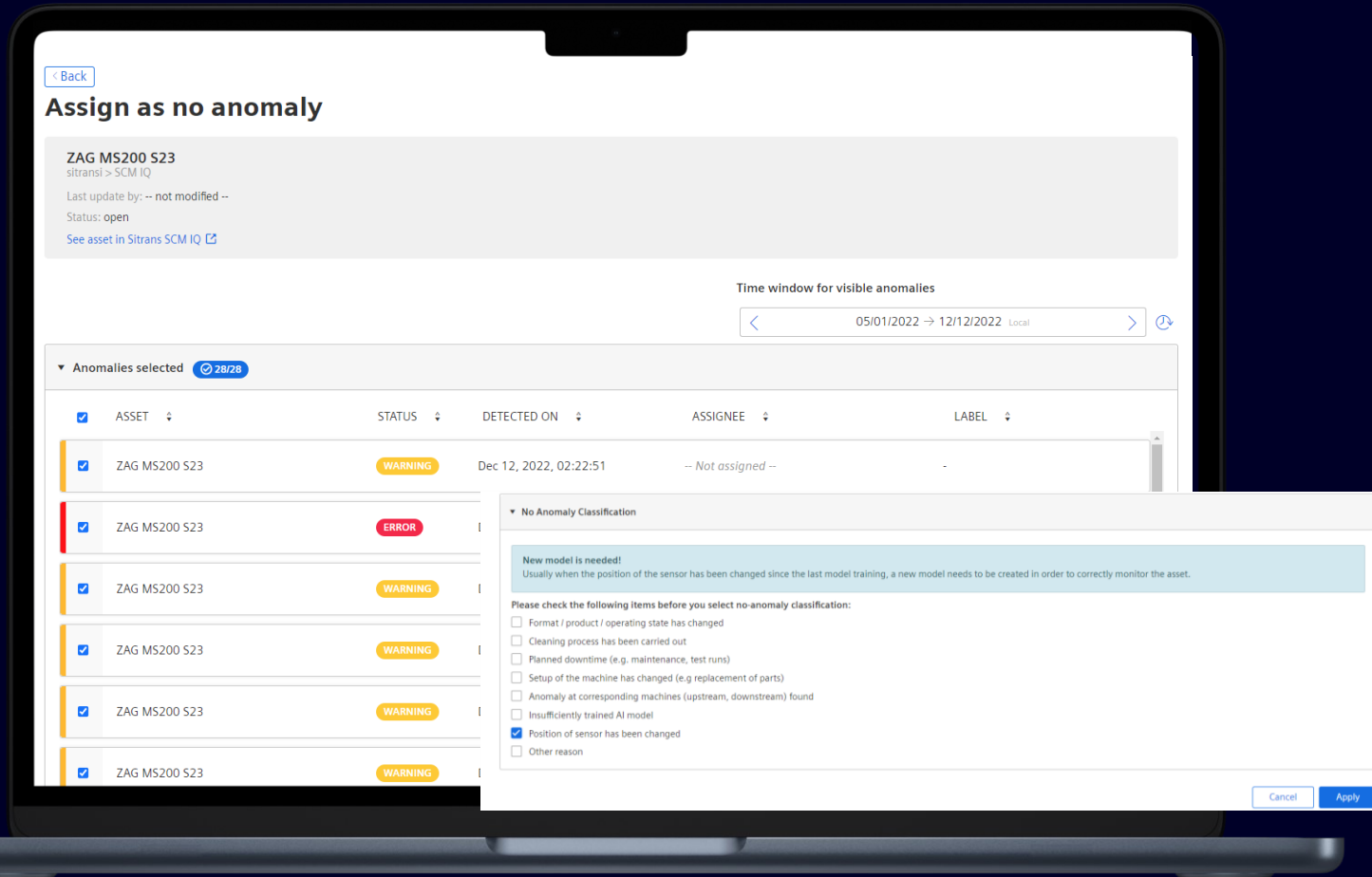
Save Cancel

If you want to get notification on your devices having trouble connecting to the internet, you now can.

Set the time interval after which you want to be notified: from 1 hour to 24 hours.

SITRANS Anomaly IQ with user interface improvements

Anomaly bulk handling



The core of SITRANS SCM IQ solution is to get smarter over time.

Sometimes anomalies are detected that are not based on a changed asset condition but e. g. an “untrained operation state” or a loosened sensor.

To make this known to the system you can now conveniently close anomalies in a “bulk handling mode” instead of going one by one.

Also: get recommendations on which measures to take based on your input!

1 Introduction

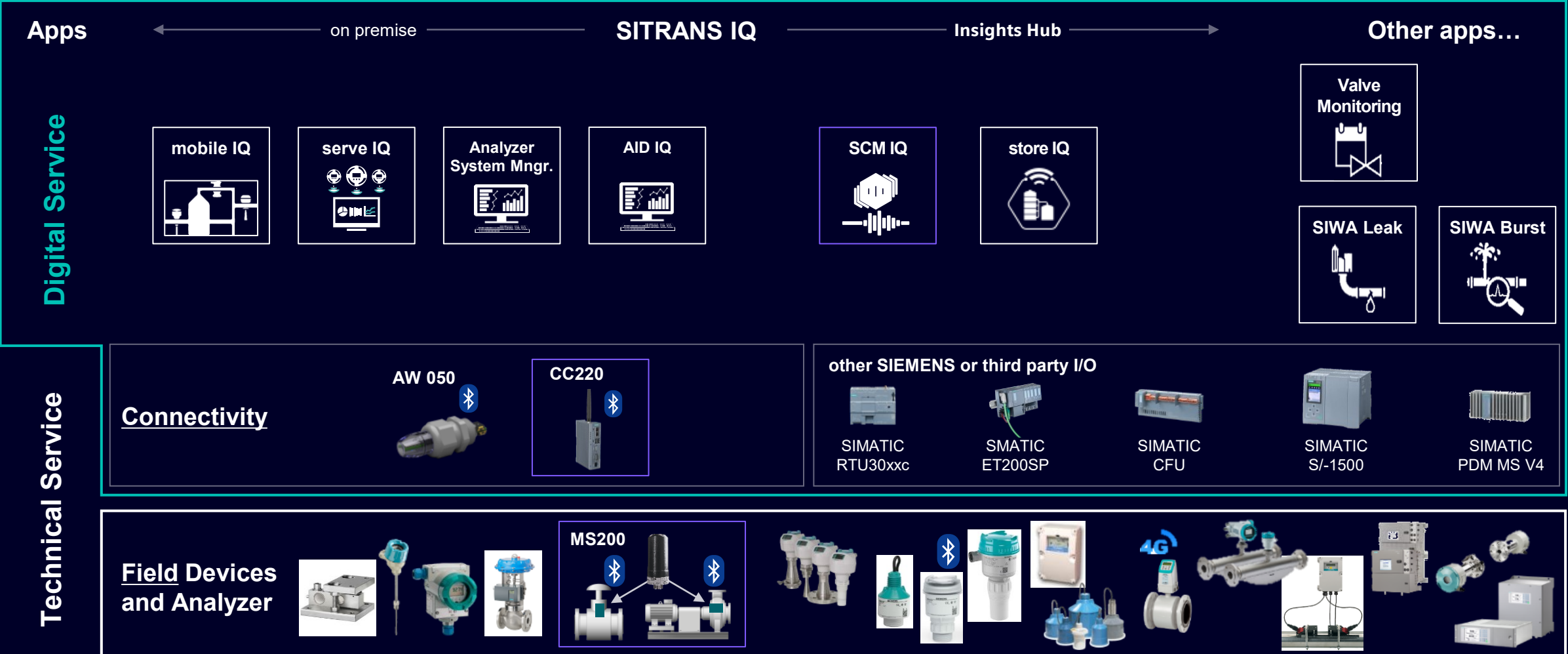
“Get to know SITRANS SCM IQ and its background”

Measurement intelligence

We are the senses of our customers' operations transforming data into sustainable customer value.



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



SITRANS SCM IQ – Introduction Video



[Link German](#)



[Link English](#)

The next level of productivity in a digital plant will reduce your OPEX expenditures in all areas



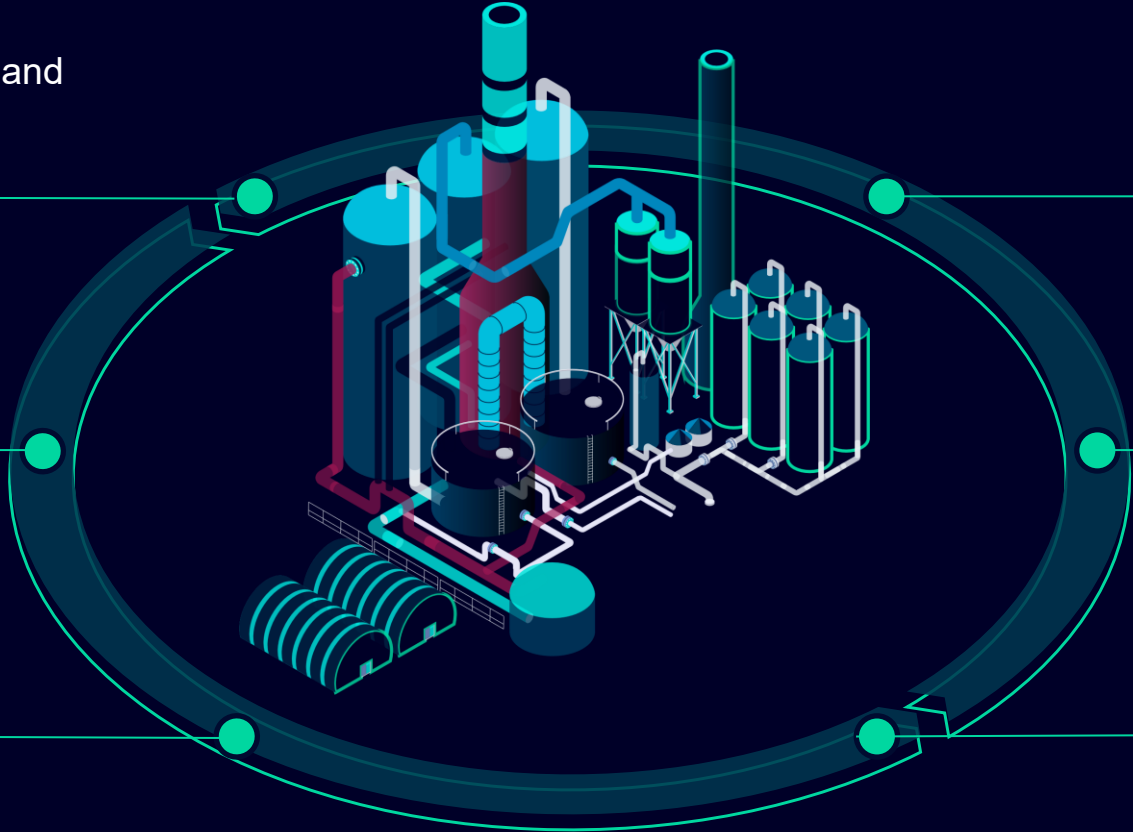
Reduce maintenance cost and unplanned downtime with Predictive Maintenance



Improve inventory and logistics management



Protect people, assets, environment



Track and trace to improve product quality



Increase product yield and quality with advanced process control




Reduce energy consumption and CO2 emission



Connectivity and Mapping of second data channel and M&O data are key to enable new applications and services

Connectivity Layer

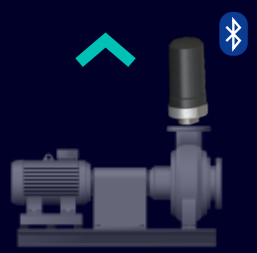
Light weight access, semantics, management and condensing of noncore process control data



Monitoring & Optimization


IIoT Multi Sensor

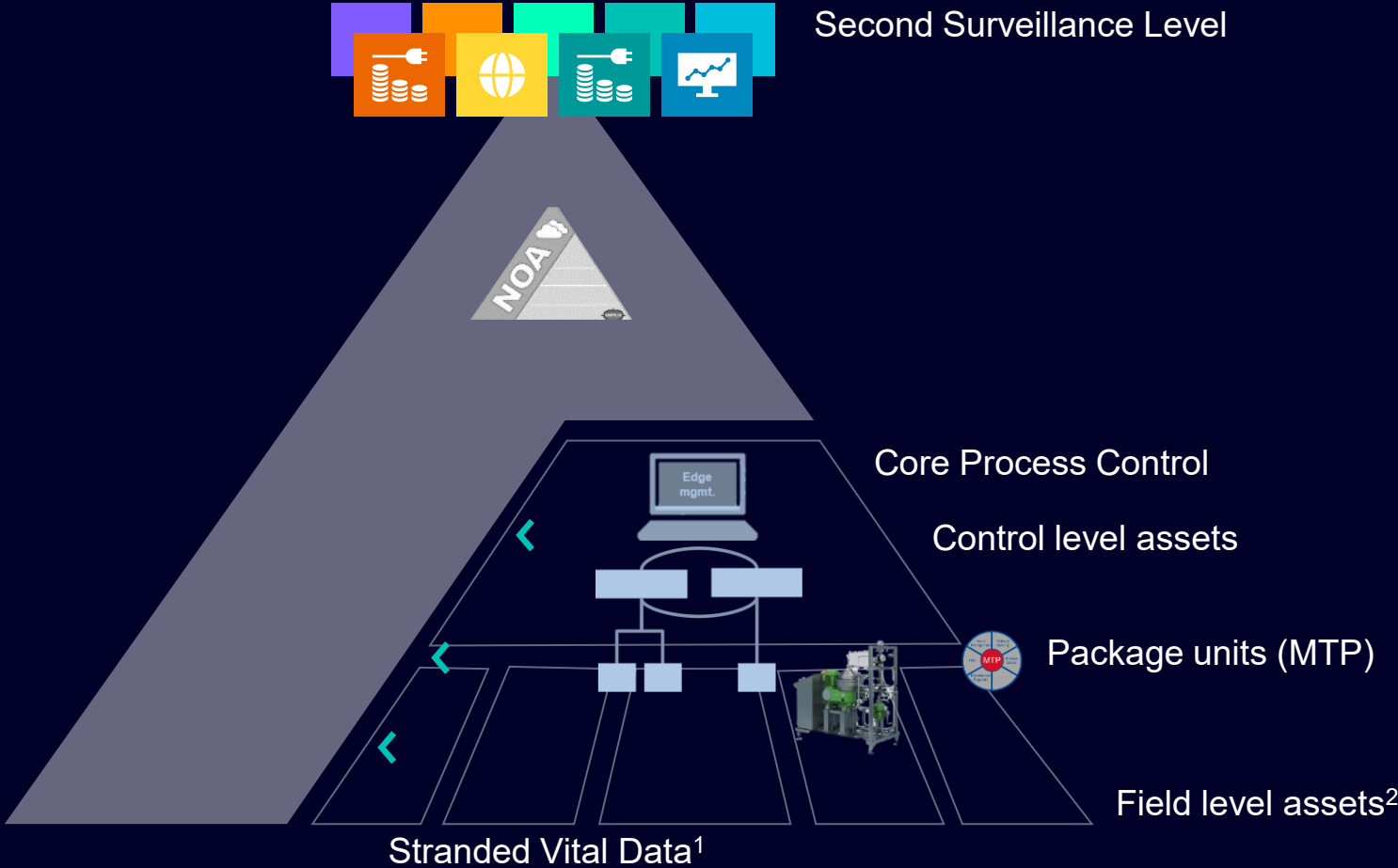
- Vibration, B, T
- Energy



Smart Sensor

- LR100
- MAG 8000 4G/NBIIoT





Options for second data channel | 1 e.g unique ID, FW, status, diagnosis, auxiliary values | 2 Critical assets e.g., rotating equipment, sensors, analyzer

Predictive Maintenance & Inventory Management

A huge market for IIoT sensors and digital services

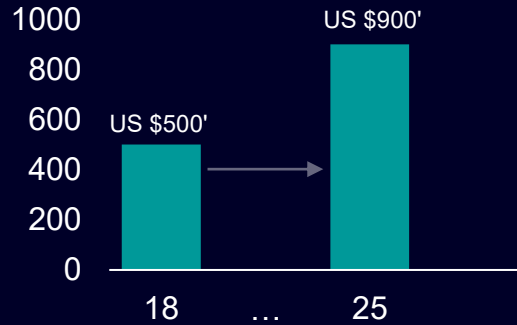
Insights Hub



Simple
data availability

Distributed IoT sensors

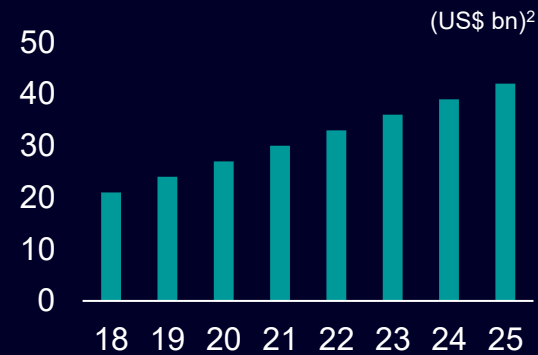
Inventory Management



Plant
Asset Management Chemie¹

This significant market growth is enabled by IoT solutions that take advantage of hyperscaling cloud infrastructure providers.

This facilitates cost effectiveness and spur market growth.



Global Infrastructure
Asset Management Market



Complex
AI data analysis

Numerous IoT sensors and brownfield connectors

Predictive Maintenance

¹ ARC Advisory Group, Market Forecast Group Figure 4 – 8, 2014 | ² Grand View Research 2020, Infrastructure Asset Management Market, 2019

2 Customer situation

“High maintenance cost of aging assets with little data to plan the right actions”



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%.

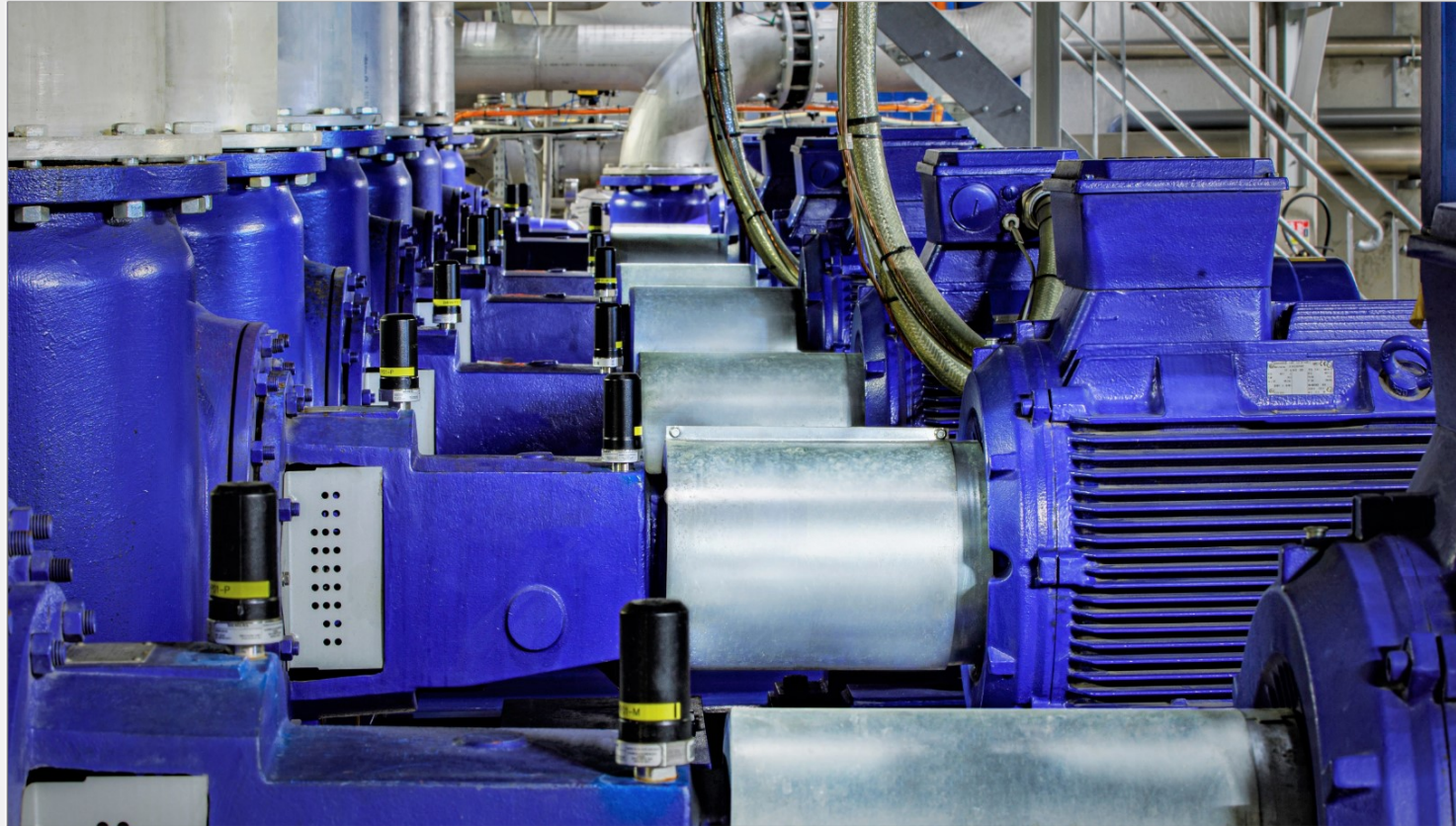
Customer Challenges within maintenance



3 Customer benefits

“Scale step by step with small investments and leverage AI driven out of the box solution”

Turning data into value @Siemens Manufacturing Haguenau “Mechanical assets learn to speak”



[Article](#)

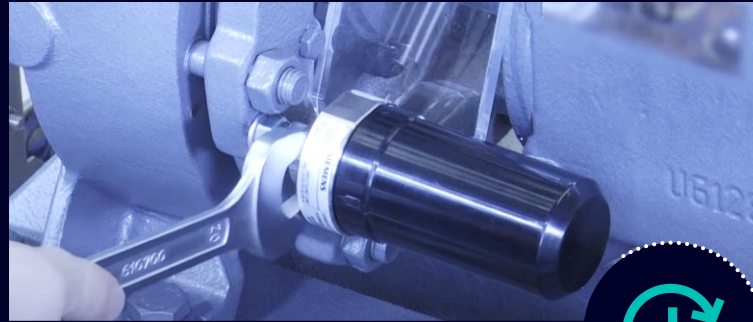


[Reference](#)

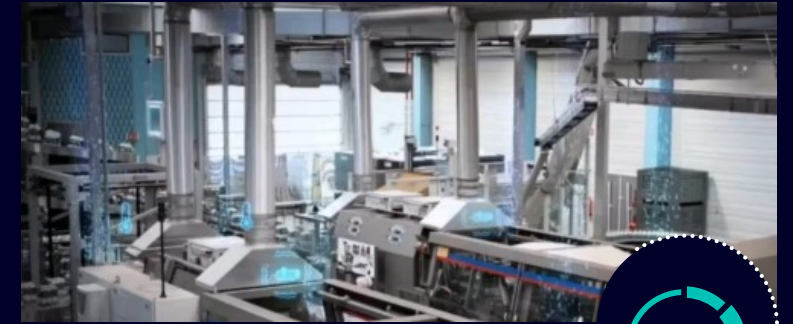
All Benefits at a Glance



Low investment and operating costs



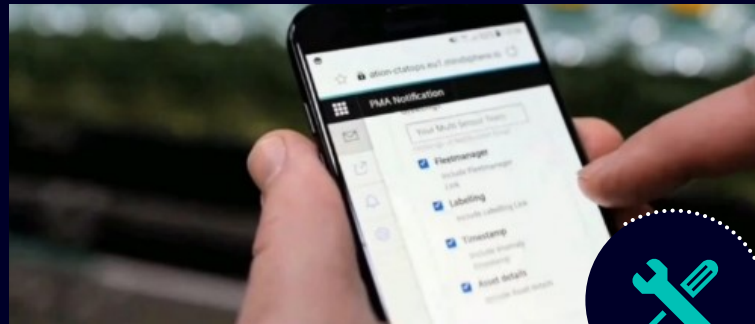
Easy installation and user friendly AI-enabled anomaly detection



Increased plant performance by avoiding unplanned downtime



Secure & open ecosystem:
Quickly adaptable to new business challenges (not a stand-alone solution)

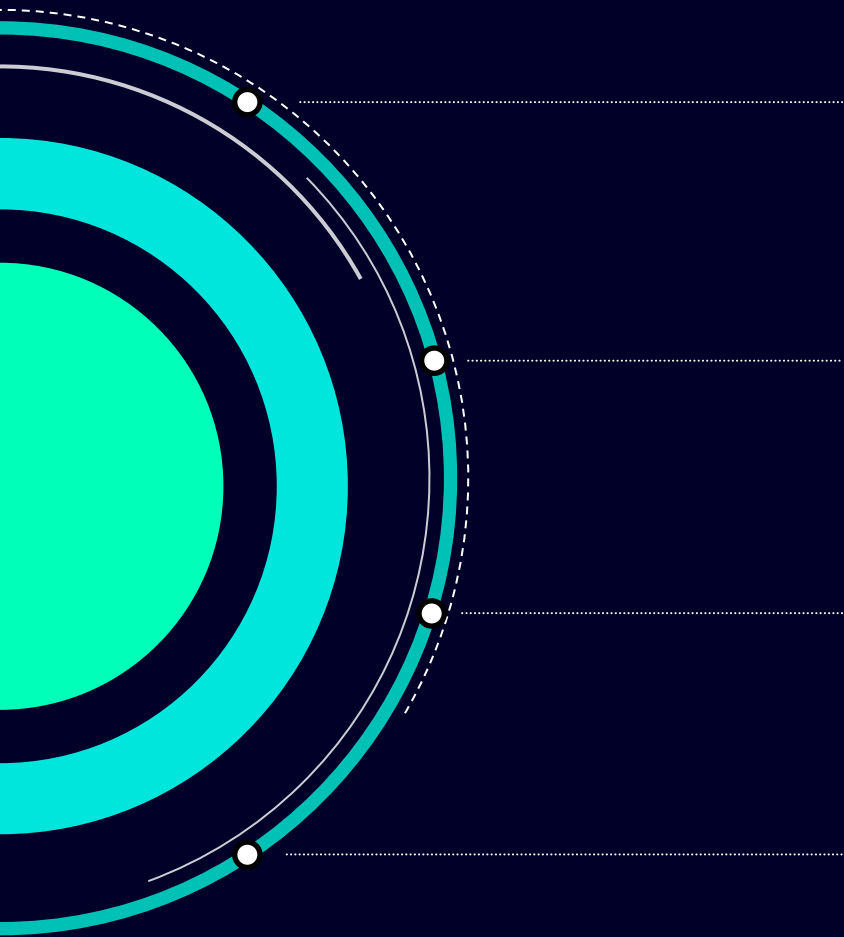


Optimized, event-driven maintenance management



System scalability from very small installations to extensive plant monitoring

SITRANS SCM IQ ...



... has a **proven** ability to detect anomalies based on **raw vibration and other machine data** combined with **artificial intelligence**



... is **simple** to install, **quickly** in operation and with replaceable batteries to **lower service and operation costs**



... manages your assets in a **collaborative way** and **make knowledge accessible** and transferable easily in maintenance teams in our **open ecosystem Insights Hub**



.... applies to any rotating equipment and other assets to build up a **closed loop** maintenance strategy based on a system that automatically learns from user input

SITRANS SCM IQ

The toolbox for your closed loop maintenance strategy



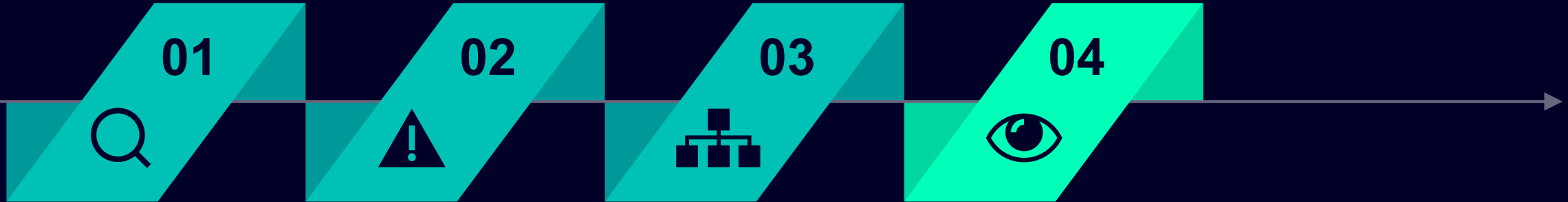
Human factor essential

- For interpretation and plausibility check of machine learning model results, e.g., anomalies
- Interpreting data results with regard to business and production process



Highly data-driven

based on labeled and classified data



Anomaly Detection

to start with little data

Anomaly Notification

service-based on detected anomalies

Anomaly Management & classification

while gaining more data

Anomaly Prediction for remaining useful lifetime based on regression

Current release

Product Outlook

4 System Overview

“Combine IIoT Multisensors and AI with high scaling flexibility and out of the box functionality”

Insights Hub



**SITRANS SCM IQ
App**



**SITRANS CC220
Gateway**



**Machine data
connectivity**

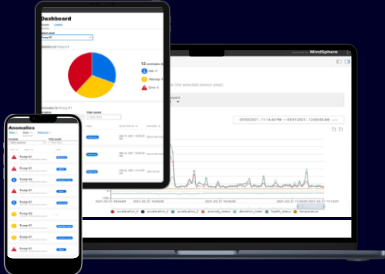
**SITRANS MS200
Multisensor**



System overview of SITRANS SCM IQ

Insights Hub

SITRANS CC220
sensor-to-cloud
gateway



SITRANS SCM IQ & SITRANS Anomaly IQ
for condition monitoring and anomaly
detection with artificial intelligence.

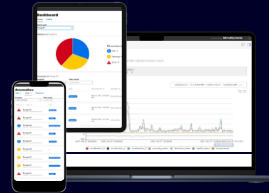
SITRANS MS200 multisensors mounted on different mechanical assets

Machine data connectivity with Insights Hub Connectivity

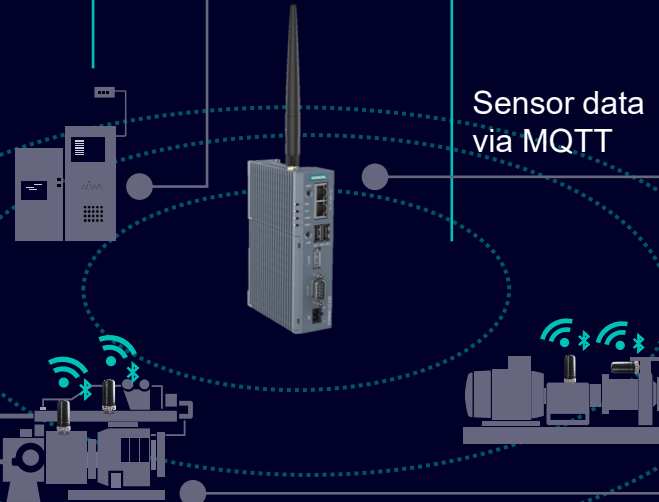
System overview of SITRANS SCM IQ

Insights Hub

Generic machine data via Mind-Connect



Sensor data via MQTT



Cloud App (SITRANS SCM IQ)

- Cloud-based infrastructure in Insights Hub
- Data storage and sophisticated analysis included in SW package
- Continuous asset supervision based on AI with machine learning
- SITRANS SCM IQ app for system configuration and notification setup
- SITRANS Anomaly IQ app for anomaly management and continuous learning

Generic machine data integration

Shop Floor connectivity with MindConnect

Gateway (SITRANS CC220)

- Connects up to 8 multisensors SITRANS MS200 to one gateway
- Scale your network based on demand by adding more gateways
- Easy firmware update

Multi Sensor (SITRANS MS200)

- Ruggedized field sensor for vibration and temperature measurement
- Highest sample rate of 1/100s for accurate asset monitoring
- Generalized approach to measure a broad variety of vibrating equipment
- Replaceable batteries for minimal cost over lifetime

SITRANS MS200 (7MP2210-2AB21-2AB1)

The IIoT multi sensor for harsh environments

Exchangeable battery

- AA 3,6 V industrial battery
- Up to 3.5 years battery life
- Spare battery:
7MP2210-2AB21-2AB8

- IP69 certified
- Integrated antenna
- Ruggedized design

● NEW



Temperature sensor:

- -30 to 80°C
- Resolution of 0.01°C
- Repeatability +/- 0.1°C



Vibration sensor:

- 3-axis (13 to 3.3k hz)
- Nom. resolution of 0.488mg
- Measuring span 16 to - 16g
- Analyzed frequencies: 13 hz - 3.3 k hz



Bluetooth Low Energy:

- 1 fingerprint (77ms)/-
100 sec
- Range approximately
30 m



SITRANS MS200
IIoT multi sensor

SITRANS CC220 (7MP2200-2CB05-2AA1)

Industrial gateway for collecting and transmitting sensor data to cloud



Connectivity

- Connects up to 8 sensors to SCM IQ
- 100s update cycle

Centrally managed through SCM IQ allows easy onboarding and supervision



FW Update via USB

Industrial design

- IP20 cabinet device
- Proven EMC robustness



- State of the art security
- Secured & encrypted communication to cloud and to sensor
- Secure onboarding

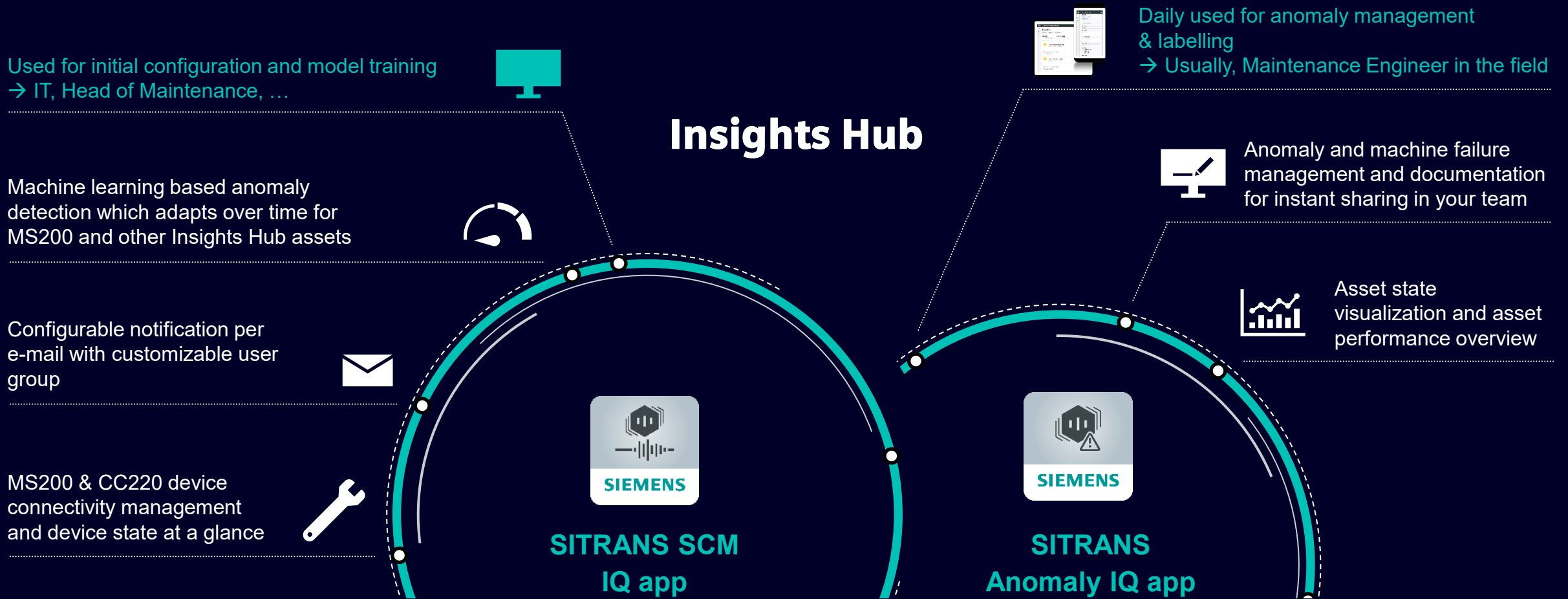


SITRANS CC220
IloT Gateway

● NEW in R2.0

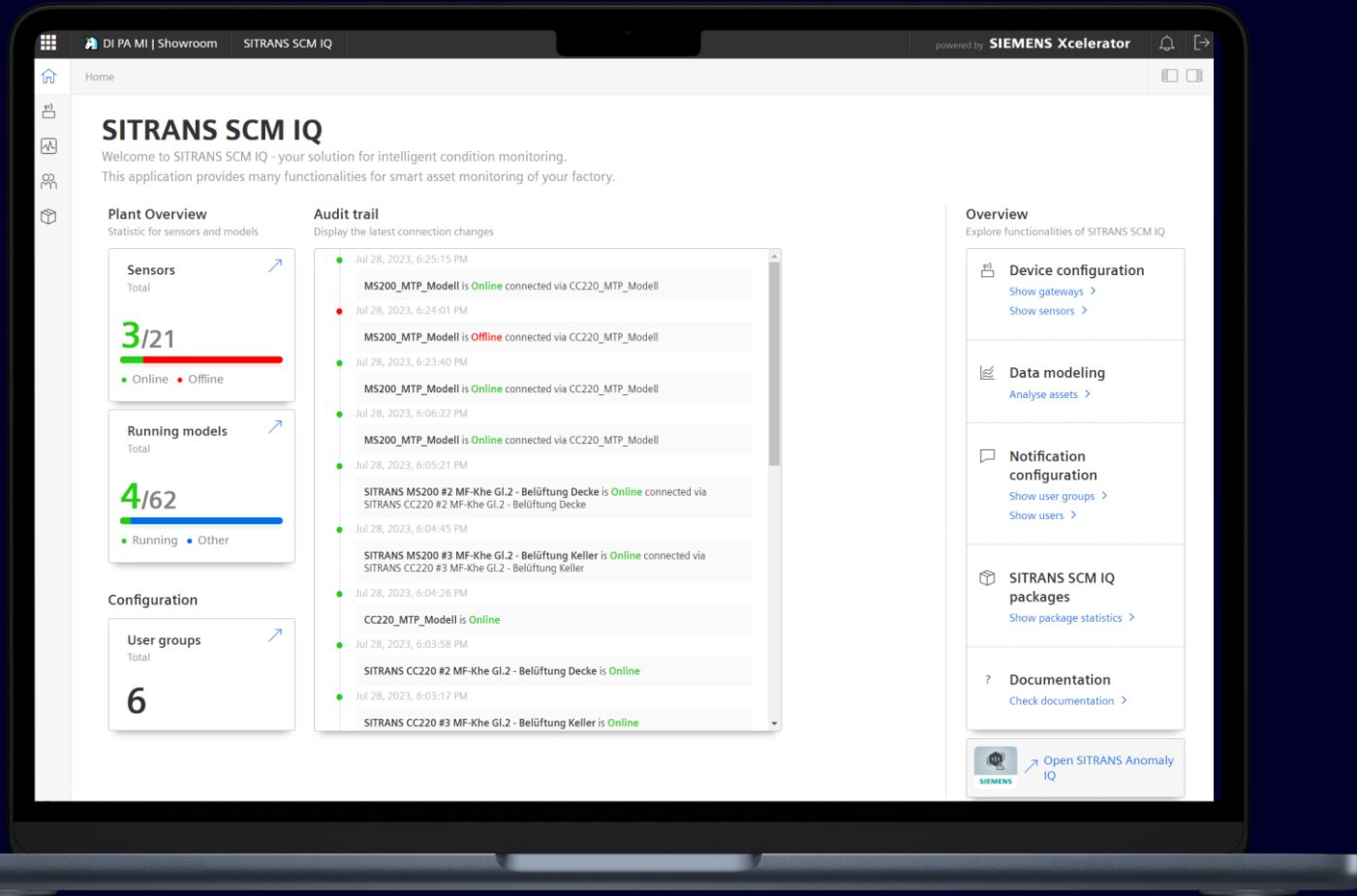
SITRANS SCM IQ app (Product-ID DEPCBAA11)

Condition monitoring with artificial intelligence

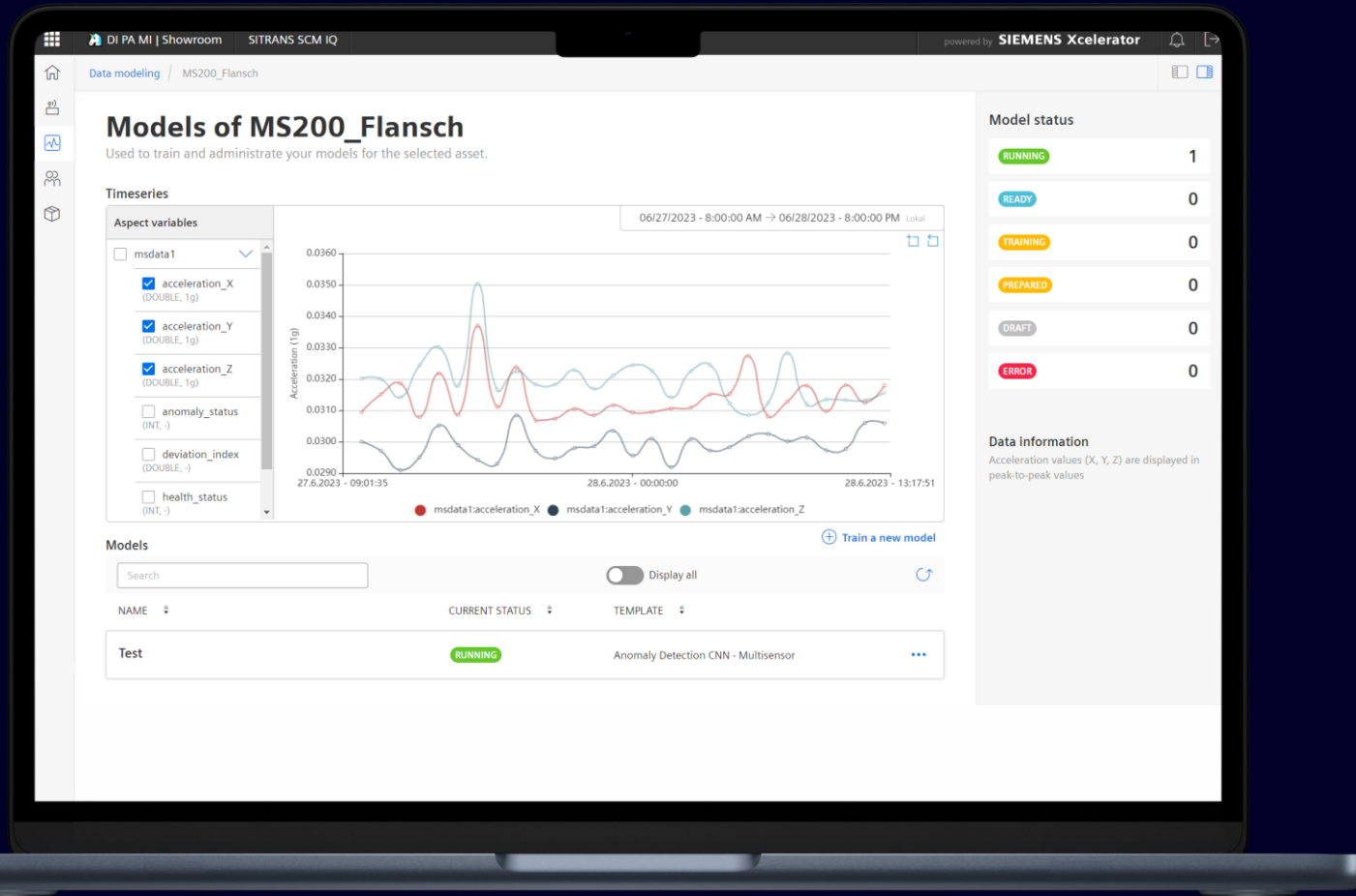


SITRANS SCM IQ

Homescreen



SITRANS SCM IQ – Visualization & AI Data Modelling for multi sensor SITRANS MS200



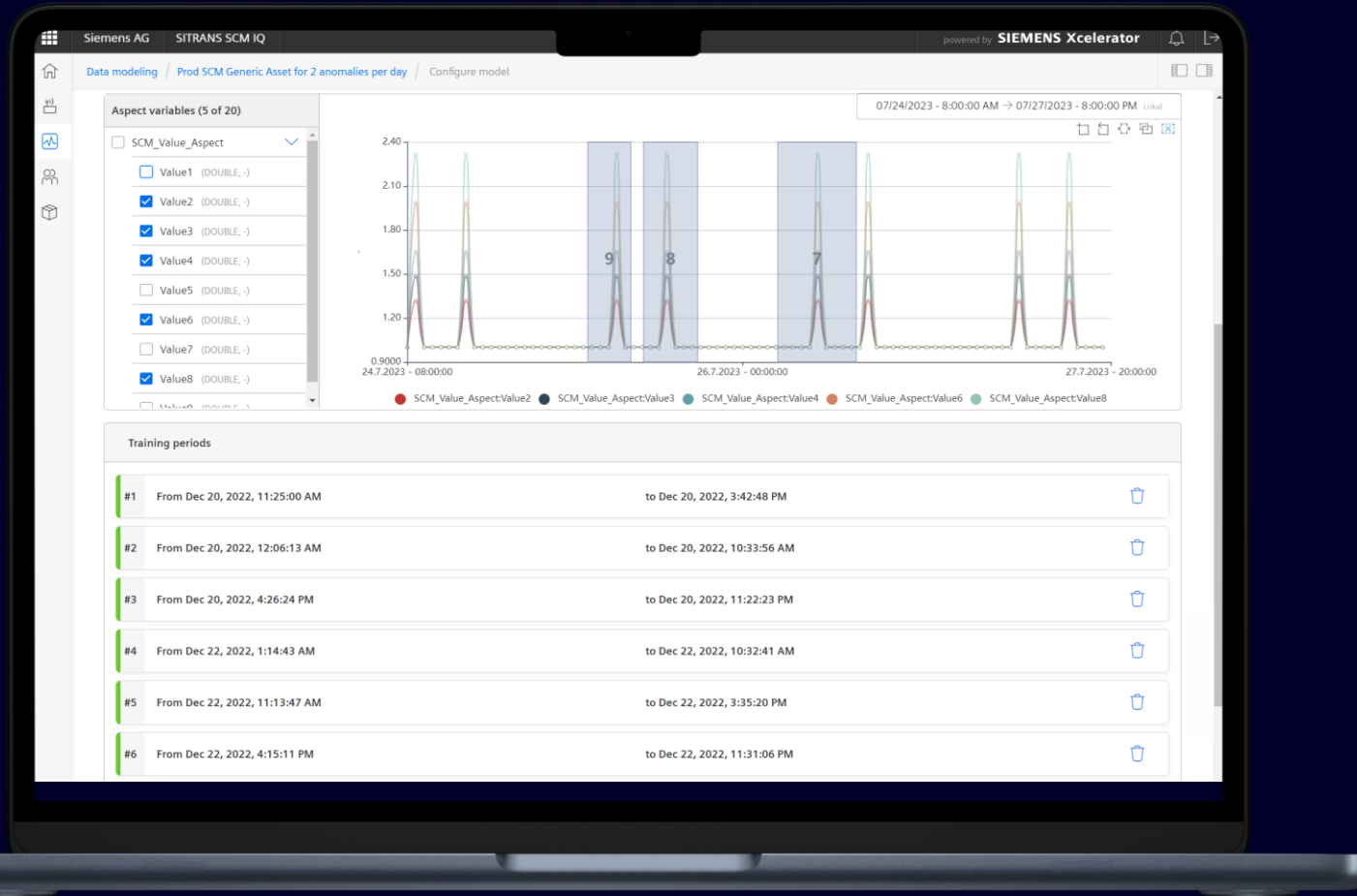
View x, y, z acceleration, temperature, asset state, anomaly status and deviation index

Detailed vibration visualization for quick anomaly check

Easily select time frames when asset was in good condition to train the AI

SITRANS SCM IQ

Visualization & AI Data Modelling for generic machine data



Select multiple time frames where asset was in good condition

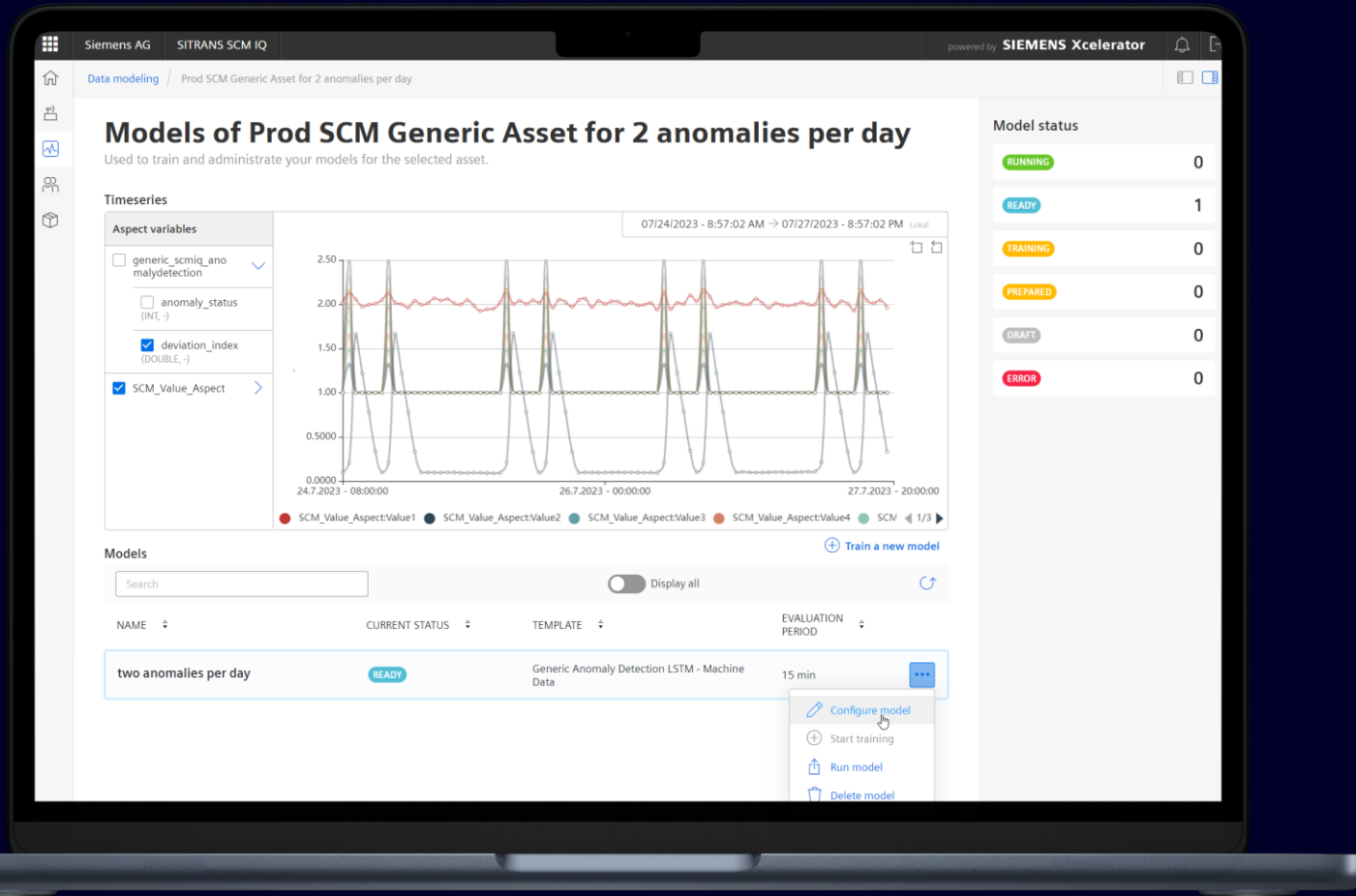
View behavior of any machine data input

Select your inputs freely from existing Insights Hub Assets

Up to 20 inputs supported

SITRANS SCM IQ

Retraining of AI Data Models



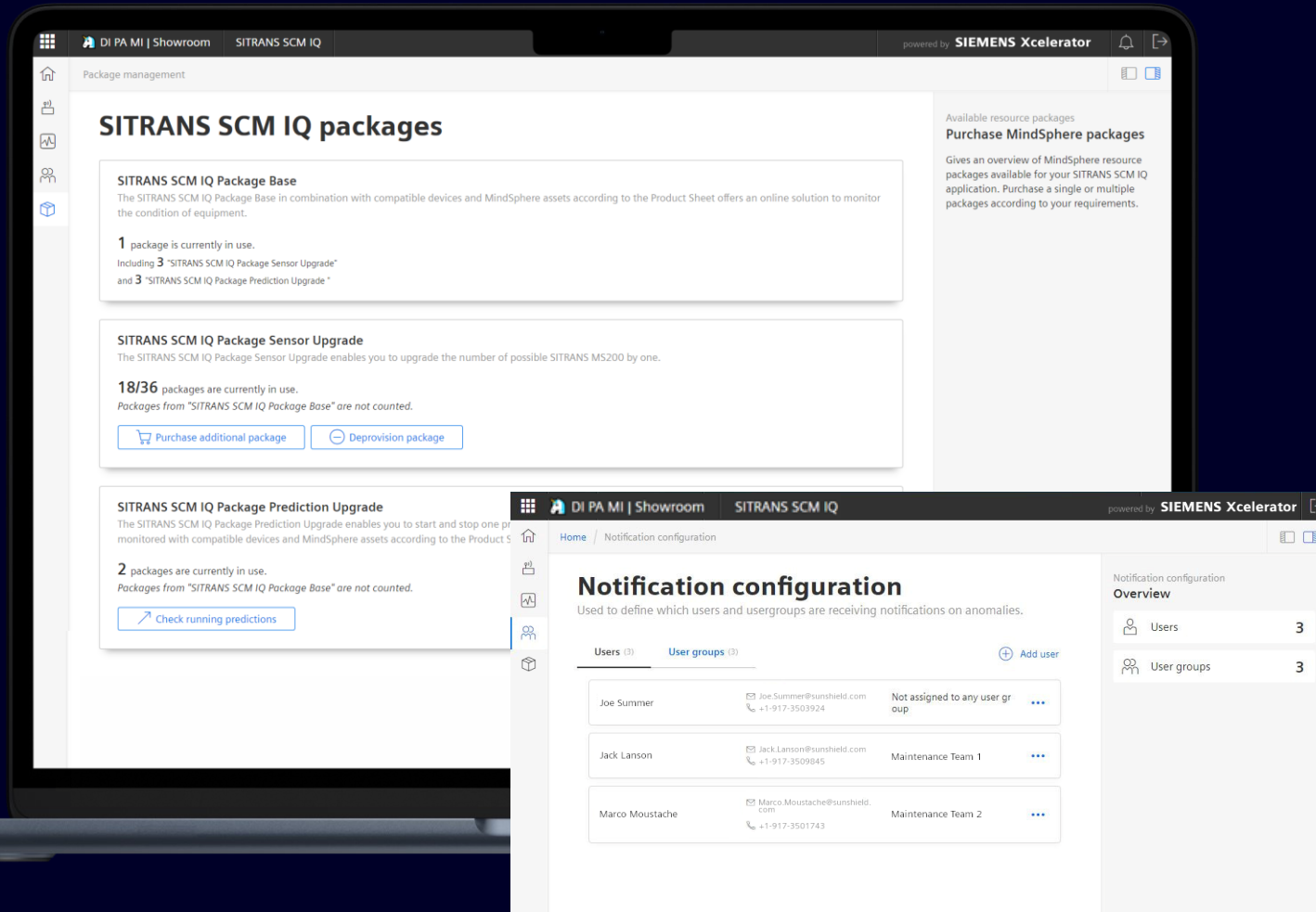
Edit and change training periods of models to retrain existing model

Edit and change input variables of Machine Data models to retrain existing model

Allows an incremental improvement of AI model over time

SITRANS SCM IQ

Package Overview and Notification Configuration



Configuration of user groups and notifications

Full transparency & convenient overview on activated package upgrades

Direct purchase and deprovision of sensor extensions

SITRANS Anomaly IQ Dashboard and List View

Dashboard

Statistics for "MS200_Flansch"

6 anomalies detected

- Info: 0
- Warning: 3
- Error: 3

Anomalies for "MS200_Flansch"

Assignee: Select assignee | Filter assets: Asset name | Displays 6 of 6 anomalies

ASSET	STATUS	DETECTED ON	ASSIGNEE	LABEL
MS200_Flansch	WARNING	May 31, 2022, 11:02:18 AM	Niklas Fragenstein	Gearbox Wear
MS200_Flansch	ERROR	Apr 21, 2023, 10:28:46 AM	Melanie Moustache	Wear Bearing

Anomalies

Select assignee | Search anomaly

Open (14) | Done (2) | Resolved (4)

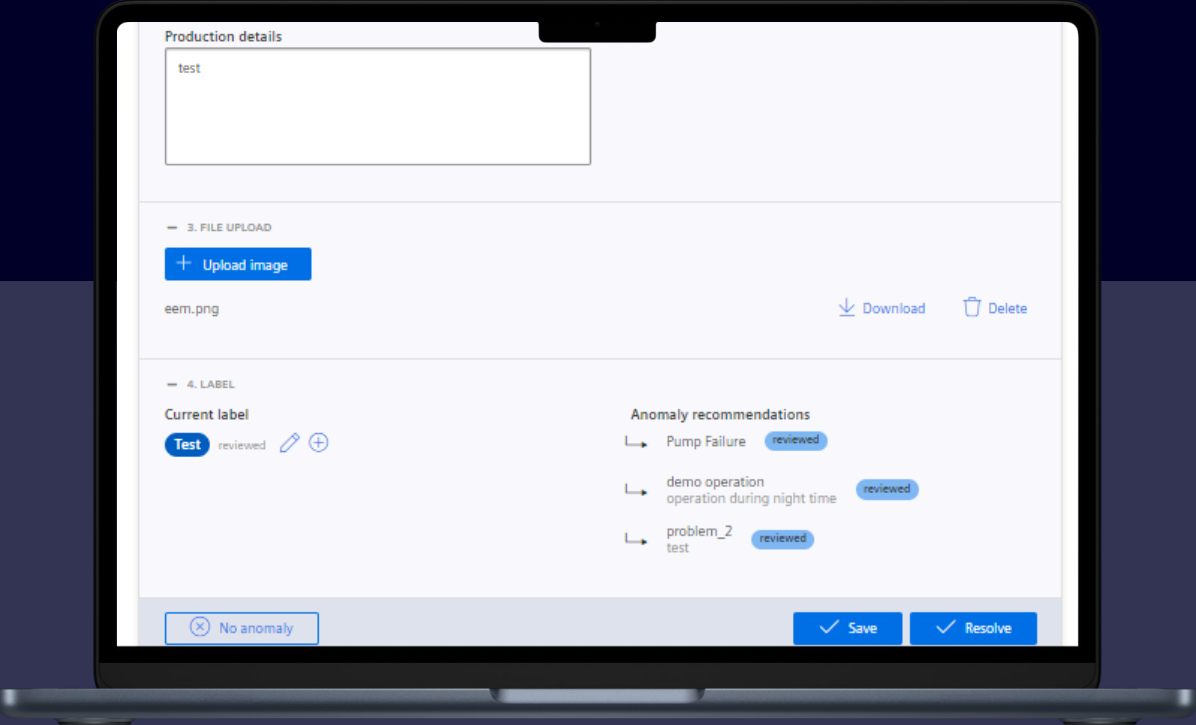
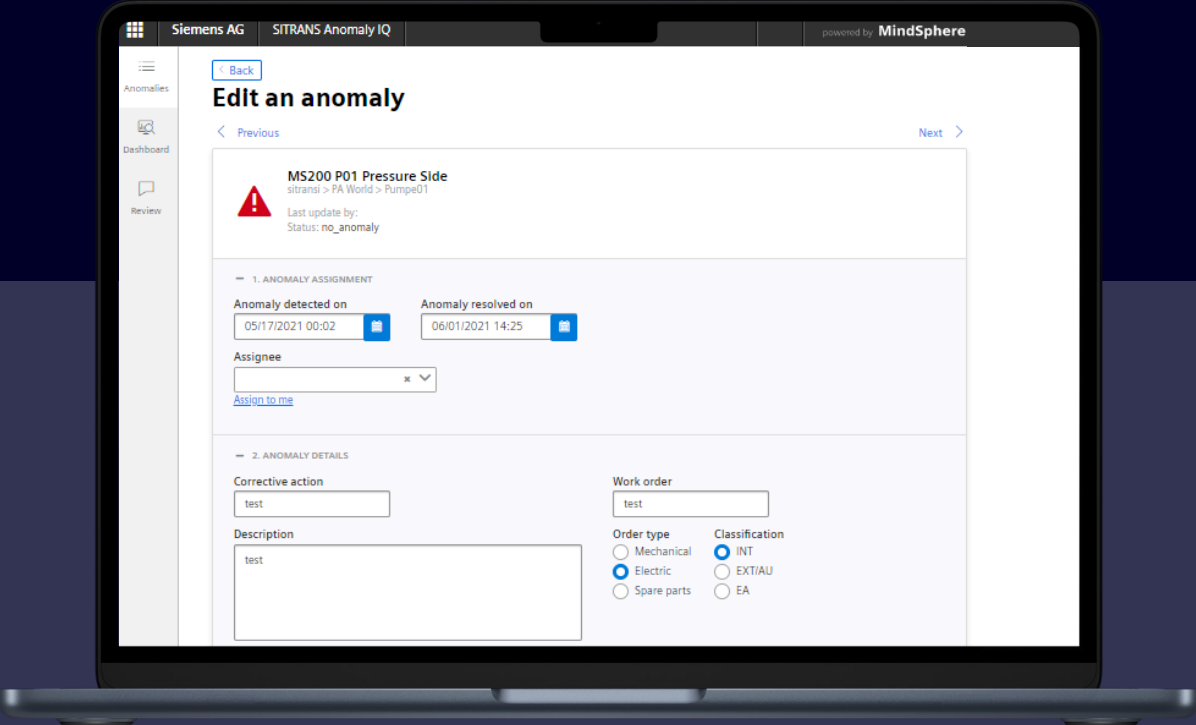
ASSET	STATUS	DETECTED ON	ASSIGNEE	LABEL
MS200_Flansch	ERROR	Apr 21, 2023, 10:28:46 AM	Melanie Moustache	Wear Bearing
MS200_Autoclave_Front_Bearing	WARNING	Mar 10, 2023, 7:27:30 AM	Melanie Moustache	Misalignment
MS200_Flansch	WARNING	May 31, 2022, 11:02:18 AM	Niklas Fragenstein	Gearbox Wear
MS200_Flansch	WARNING	May 30, 2022, 8:24:53 PM	Melanie Moustache	Nut loose
Kreiselpumpe K.RP1.KRC-M030 - Impellergehäuse	ERROR	Sep 5, 2022, 11:09:41 AM	Not assigned	Blockade vor der Pumpe
MS200_Autoclave_Rear_Bearing	WARNING	May 4, 2023, 10:39:04 AM	Not assigned	-
MS200_Autoclave_Rear_Bearing	WARNING	Apr 26, 2023, 10:42:40 AM	Not assigned	-
MS200_Autoclave_Front_Bearing	WARNING	Apr 25, 2023, 2:20:55 PM	Not assigned	-

Anomalies Status

- All: 20
- WARNING: 18
- ERROR: 2

SITRANS Anomaly IQ

Document your anomaly and label it for active learning



SITRANS SCM IQ fits to many industries ...



Chemical Industry



Pharma



Food & Bev



Environmental



Water



Minerals



Oil & Gas

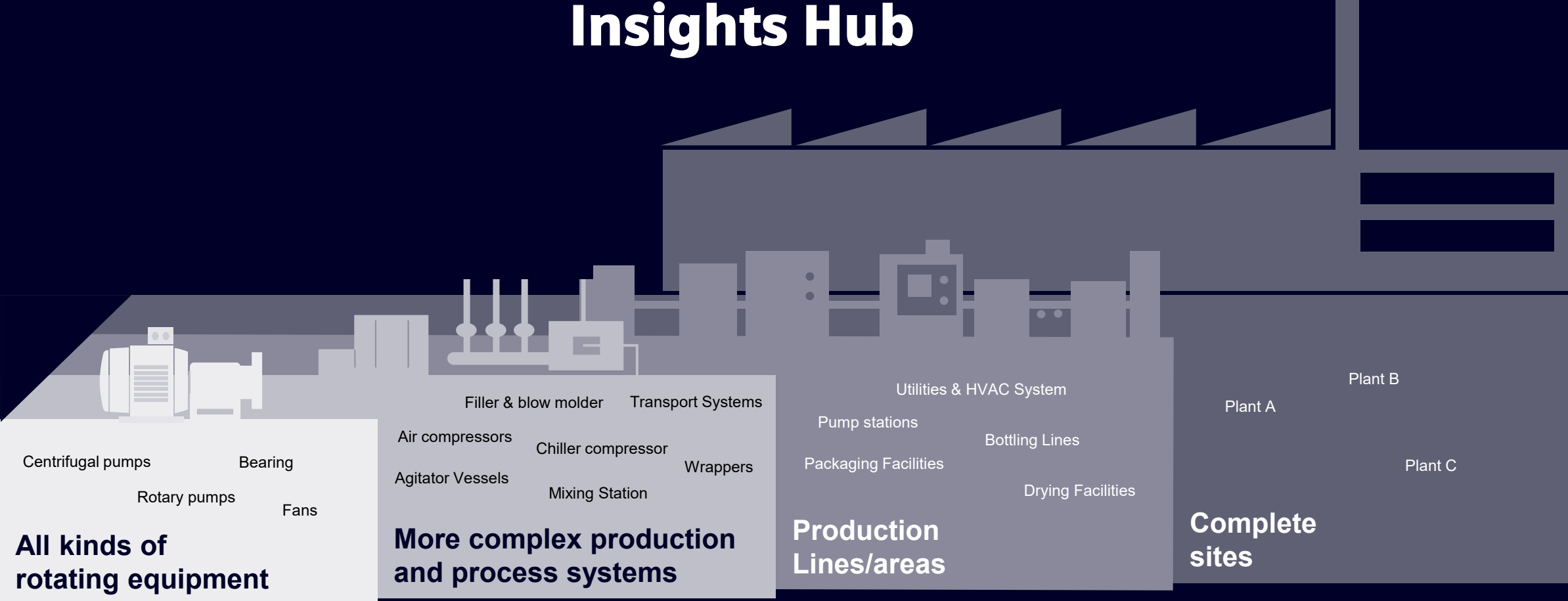


Others

Scalability of SITRANS SCM IQ system

From single assets to complete sites

Insights Hub



5 Use Cases & Savings potential

“Track assets with low initial investment and fast ROI”

Use Cases for Smart Condition Monitoring with SITRANS SCM IQ

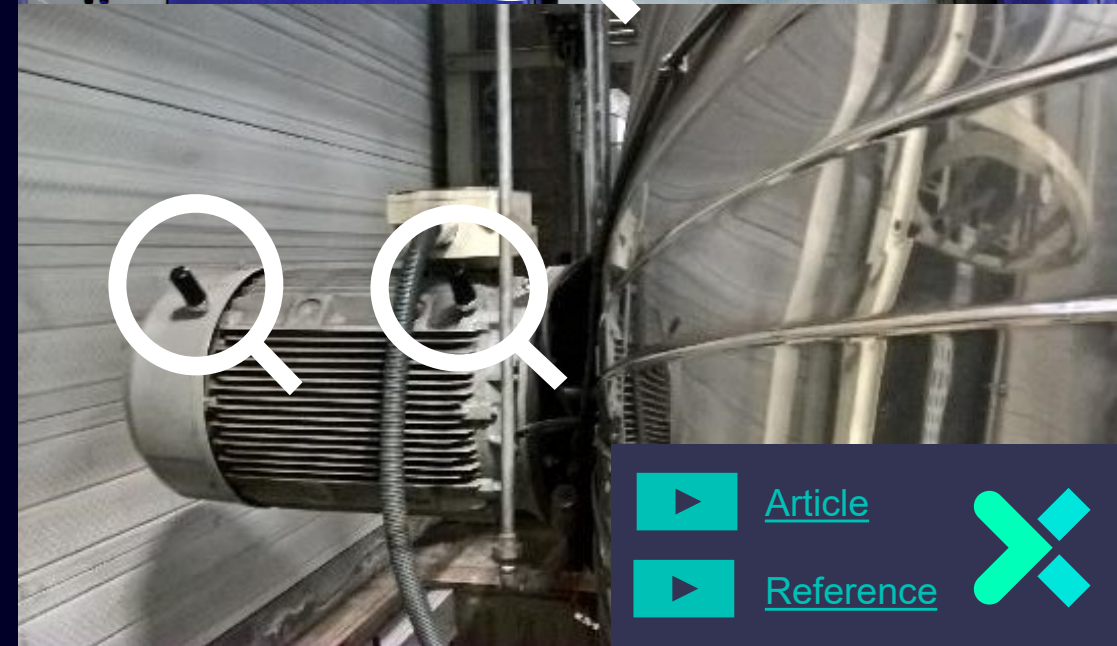
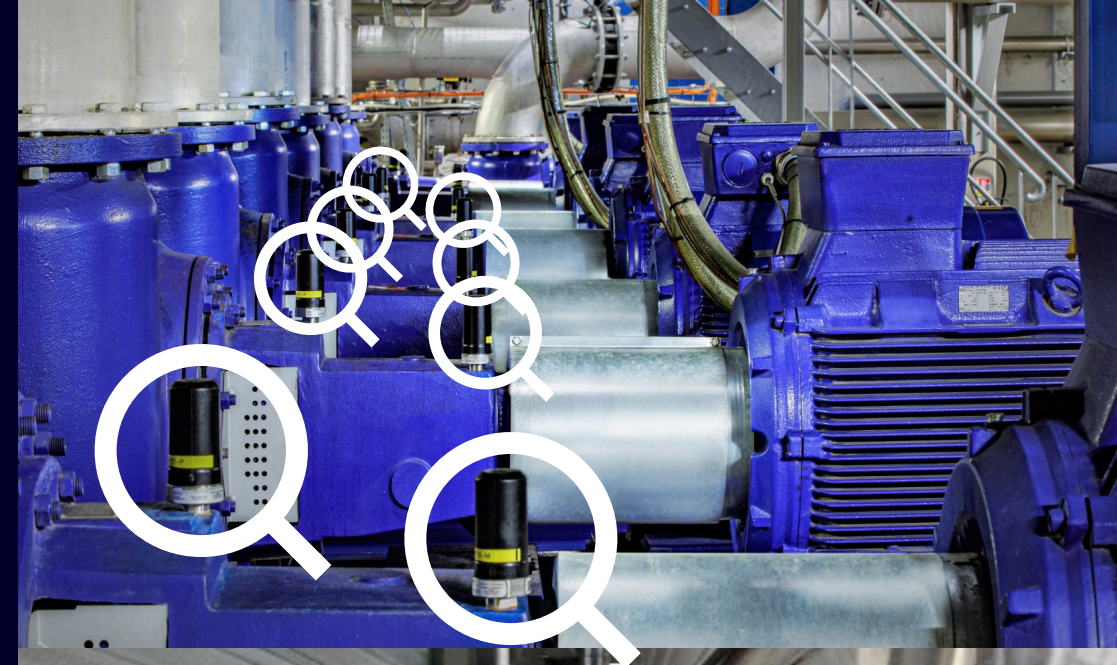
Siemens Manufacturing Hagenau “Mechanical assets learn to speak”

Condition monitoring of rotary equipment in this example for flowmeter transmitter production. Monitoring of eight 75 kW pumps serving calibration benches and a 90 kW ventilator in autoclave to vulcanize the inner liner of flowmeters. Both assets are crucial for production uptime.

Benefit from an Industrial IoT application that applies artificial intelligence on data from the field to give you a decisive time advantage. Increased service level and customer lead time while optimizing maintenance!

Success Factors

SITRANS MS200 multisensors are easily retrofittable, SITRANS SCM IQ can monitor a wide range of rotating assets and its ROI is < 6 months. The system gives otherwise silent plant components a voice to provide accurate information about their current status.



[Article](#)



[Reference](#)



Use Cases for Smart Condition Monitoring with SITRANS SCM IQ

Siemens Manufacturing Karlsruhe Monitoring in production utility areas

Condition monitoring of rotary equipment with SITRANS SCM IQ also works in utility areas. In this example fans of air ventilation in a gas chromatograph production is monitored. Ceiling & floor ventilation is prone to unpredicted and unnoticed breakdowns which is a safety issue when interacting with gas.

Benefit from an Industrial IoT application that applies artificial intelligence on data from isolated assets and that reliably notifies you in case of anomalies.

Success Factors

SITRANS MS200 multisensors are easily retrofittable, SITRANS SCM IQ can monitor a wide range of rotating assets and it's ROI is < 6 months. The system gives otherwise silent plant components a voice to provide accurate information about their current status. Be informed, increase your service level and production uptime!



Concrete example for benefits realized with SITRANS SCM IQ / SITRANS MS200 multisensor (1/3)

Bottling Line > Syrup Pump

> Pre-Mixing station

Cost calculation of one incidence

Part Shipment	€500
CIP Medium	€240
Loss of syrup	€2.220
Line Breakdown	€2,248
Internal Cost	€76
€5284 per failure	

Realized benefits

- Reduced secondary damage / cost of repair
- Avoided emergency spare part delivery
- ROI < 3 months



Concrete example for benefits realized with SITRANS SCM IQ / SITRANS MS200 multisensor (2/3)

Bottling Line > Aseptomag Valve

> Pasteurizer

Saving Potentials with SITRANS SCM IQ

CIP Time	€557
CIP Medium	€72
Yield	€1,039
Energy	€89
€1,758 per failure	

- Reduction in utilities losses – steam, heating, cooling
- Reduced secondary damage / cost of repair
- Avoid emergency spare part delivery
- ROI < 3 months



Concrete example for benefits realized with SITRANS SCM IQ / SITRANS MS200 multisensor (3/3)

Bottling Line > Sirup Pump

> Pasteurizer

Saving Potentials with SITRANS SCM IQ

CIP Time	€557
CIP Medium	€47
Yield	€1,440
Energy	€146
	€2,190per failure

- Reduction in utilities losses – steam, heating, cooling
- Reduced secondary damage / cost of repair
- Avoid emergency spare part delivery
- ROI < 3 month



Use Cases for Smart Condition Monitoring with SITRANS SCM IQ (also without SITRANS MS200)

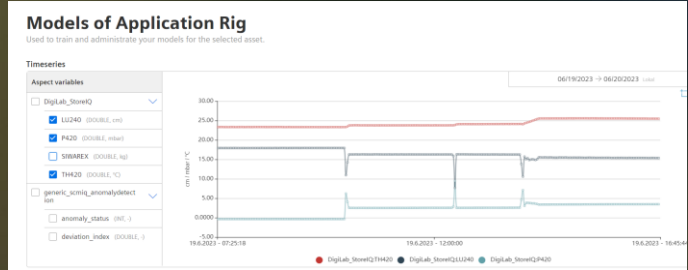
Detect anomalies in your existing data

Brownfield: Condition Monitoring of any sensor data. Exercised here on MI digitalization rig with multiple SITRANS sensors, SIMATIC S7-400, SIMATIC IoT2000 I/O shield and connected to Industrial IoT via MindConnect 240.

Tap existing sensor data from your automation system, hold them ready in Industrial IoT and feed them into SITRANS SCM IQ smart artificial intelligence.

Success Factor

Combine and analyze existing data to create new value. Just train the AI, start to look for data correlations and improve your process!



Use Cases for Smart Condition Monitoring with SITRANS SCM IQ (also without SITRANS MS200)

Bottling Line

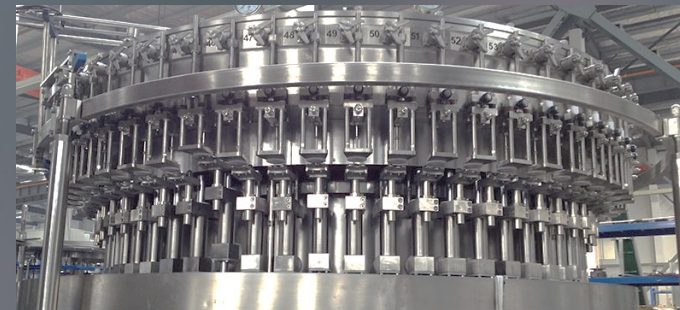
- > Mixing station
- > Blow molder
- > Mixer
- > Pasteurizer
- > Packer

Machine data integration with MindConnect (SITRANS MS200 optional)

- Generic anomaly detection
- Reusable and scalable solution

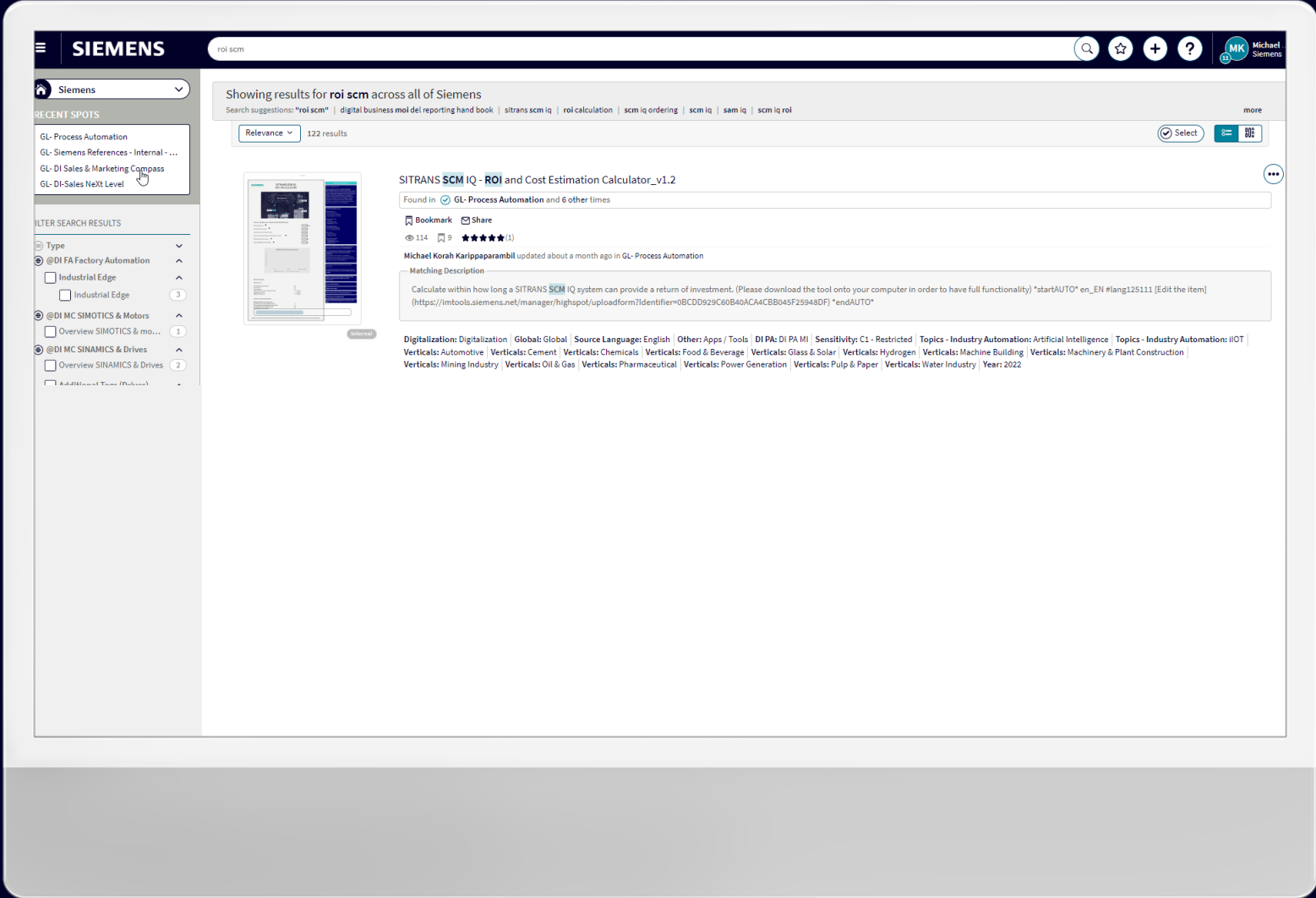
Analyse important assets with existing data

- Increase operations efficiency and effectiveness
- Reduce unplanned downtimes
- Reduce Maintenance and Energy costs
- Realize additional use cases on Insights Hub ecosystem with apps like e.g., Energy Manager



ROI Calculation Tool in HighSpot

Easy interface to quantify benefits and estimate costs involved

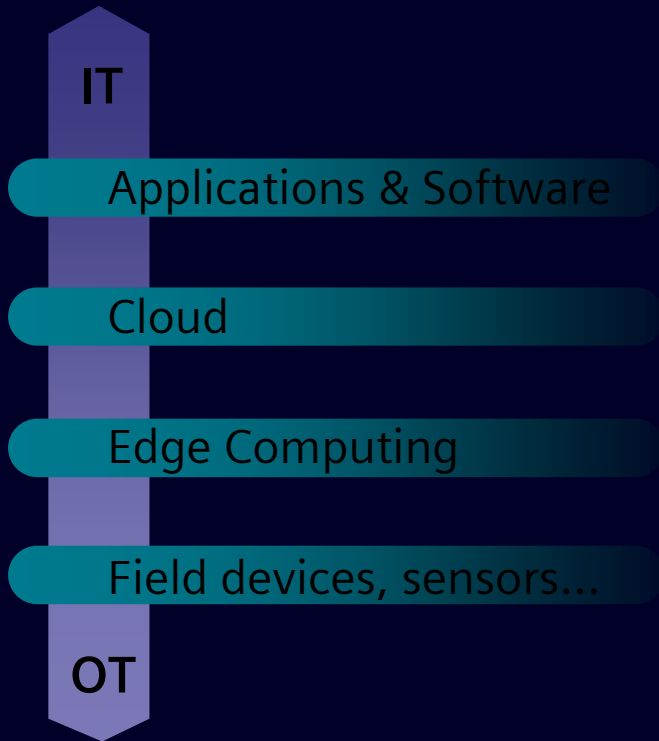


[Link](#)

6 Leverage Ecosystem benefits

“Use data to be better equipped to face ever-changing industry demands, business models and workforces.”

Siemens Xcelerator is an open digital business platform to make digital transformation easy, fast & scalable



- A comprehensive, curated **portfolio**
- A powerful **ecosystem** of partners
- An evolving **marketplace** for customers, partners and developers

Check out
SITRANS SCM IQ on
Siemens Xcelerator marketplace!



| Interoperable | Flexible | Open | As-a-service

What is **Insights Hub**?

Insights Hub drives smart manufacturing through the industrial Internet of Things (IIoT)



- Gain actionable insights with asset and operational data and improve your processes
- Deliver business value with industrial IoT data by: implementing reliable asset monitoring, enhancing manufacturing performance and efficiency, enabling quality prediction and much more
- Make improved operational and business decisions with data-driven insights



Explore data

Connect your assets to the cloud, collect and explore your data, and strategically develop your IoT capabilities.



Discover insights

Unlock a world of previously unattainable insights: Use intelligent analytic to better understand and improve processes.



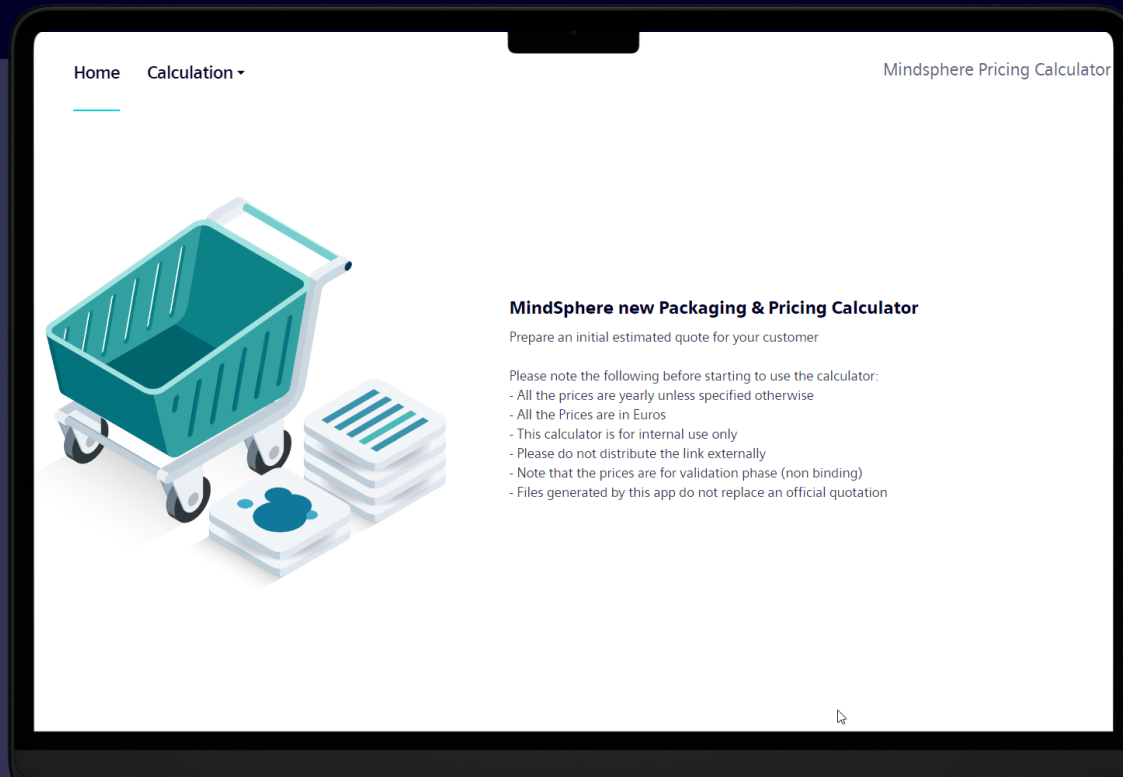
Transform business

Transform your business, processes and products at scale. Create a competitive advantage, reduce costs and improve quality across the entire product life-cycle and supply chain

[Technical Concept and installation](#)

How to enable your SITRANS SCM IQ tenant to cater additional demands?

Buy additional resources in Insights Hub dedicated to your needs



Insight Hub Packaging & Pricing calculator

Follow the link for an initial quotation of
e. g. Capability Packages, IoT Data Packages

Please contact your local DI SW colleague to
verify quotation!

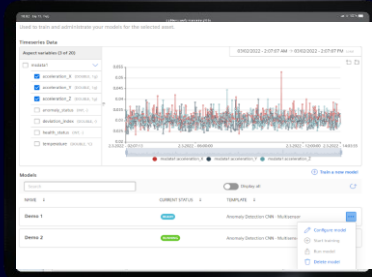


[Link](#)

Leveraging full potential of the ecosystem with other apps on Insights Hub



SITRANS CC220
sensor-to-cloud
gateway

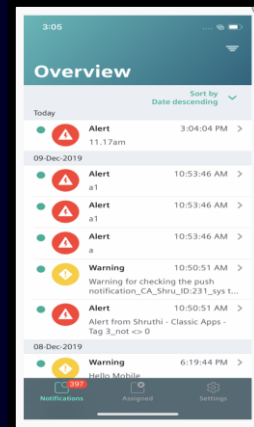


**SITRANS SCM IQ
Package Base**
with cloud infrastructure
and apps

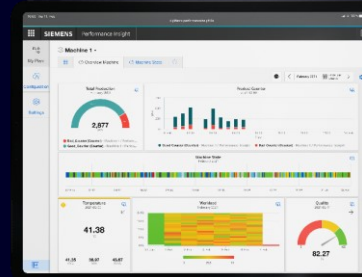
- SITRANS SCM IQ
- SITRANS Anomaly IQ for condition monitoring and anomaly management with AI

Insights Hub

Examples



**SIMATIC
Notifier**
Receive push
notification for
anomalies



**SIMATIC
Performance Insight**

- Advanced and configurable dashboards
- KPI calculations
- Reporting



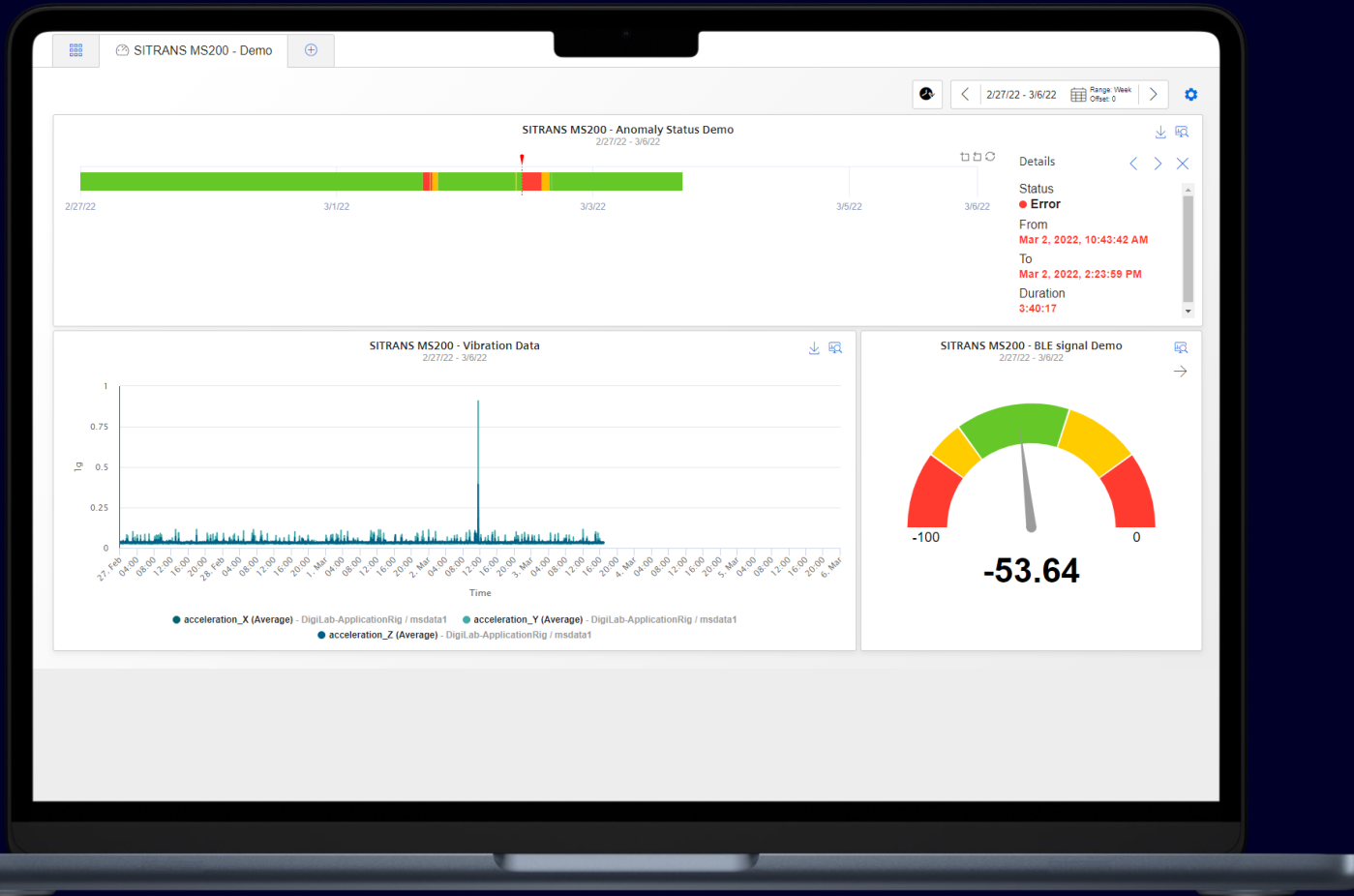
**SIMATIC
Energy Manager**

- Machine and equipment energy consumption analysis
- Energy specific visualization
- Baseline management and reporting

SITRANS MS200 multisensors mounted on different mechanical assets

Machine data connectivity with MindConnect

Benefits and use case examples of combining SITRANS SCM IQ and SIMATIC Performance Insight



Use MS200 data from assets effortlessly in SIMATIC Performance Insight

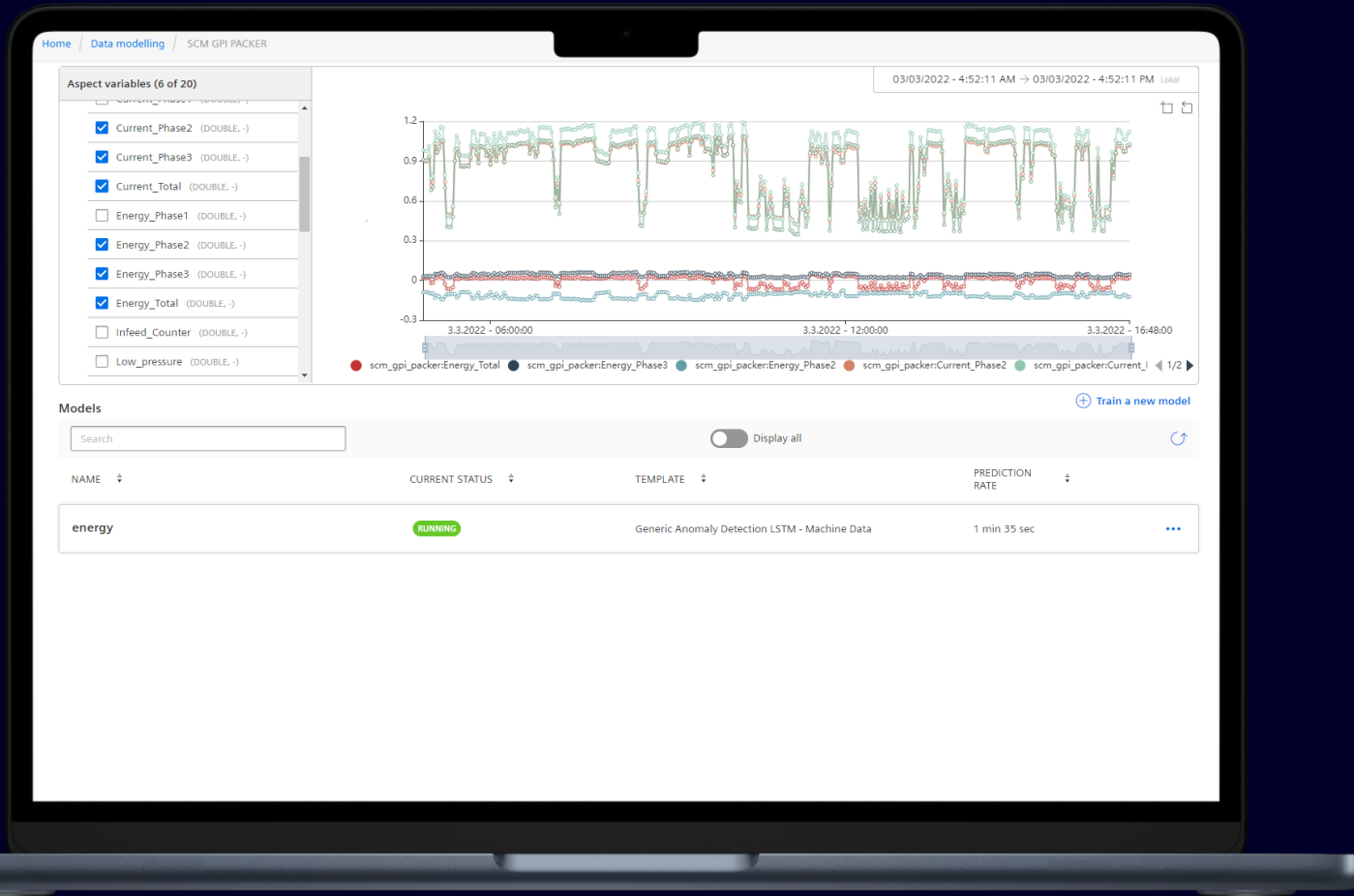
Create configurable dashboards for monitoring:

Apply simple KPIs

Export data from Insights Hub to CSV

Create reports

Benefits and use case examples of combining SITRANS SCM IQ and SIMATIC Energy Manager (1/2)

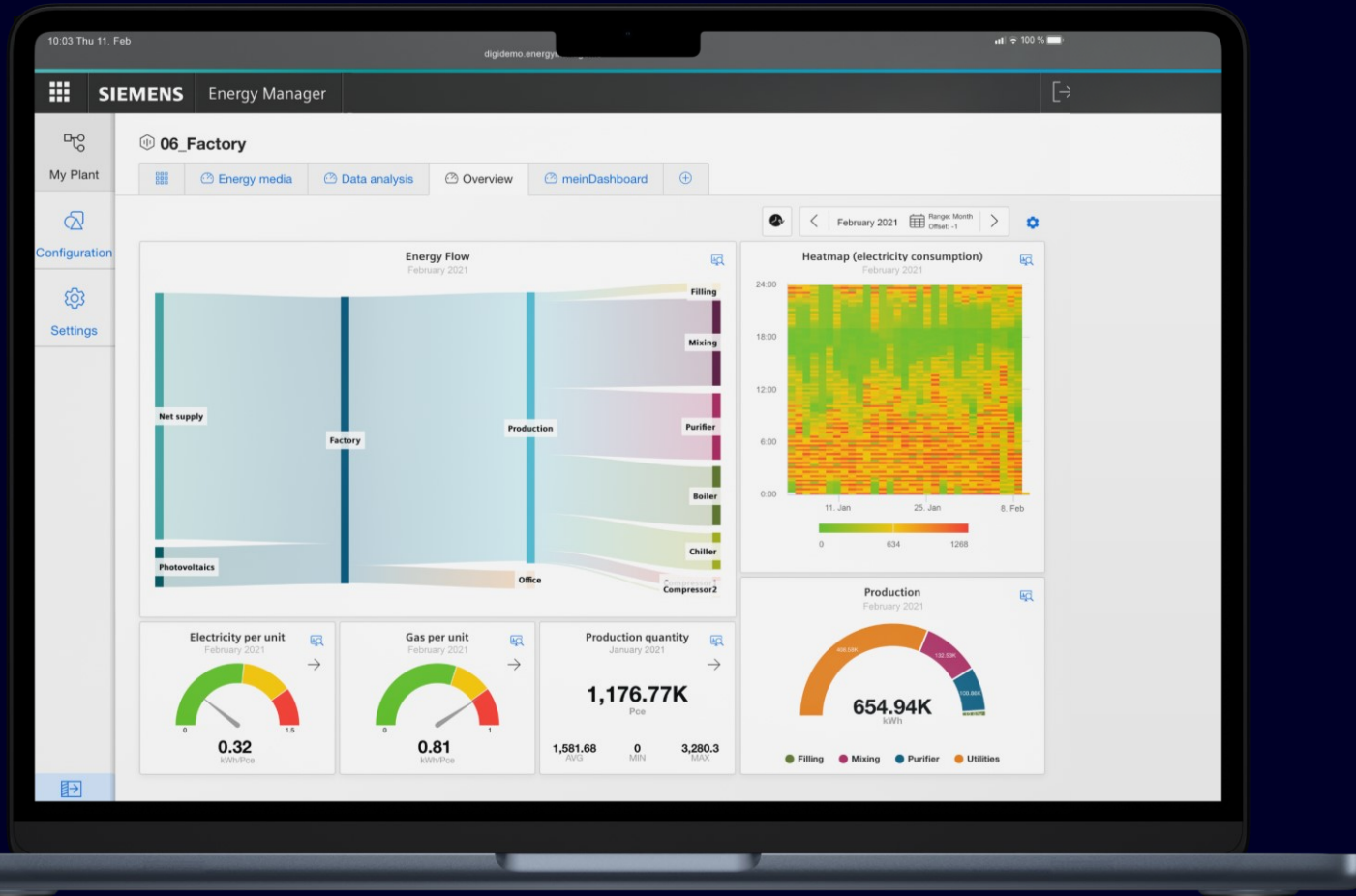


Use existing SIMATIC Energy Manager data as End-to-End use case:

Detect anomalies in SCM IQ on electrical current and voltage

Take operational data into account in the SCM IQ prediction models for more accurate anomaly detection

Benefits and use case examples of combining SITRANS SCM IQ and SIMATIC Energy Manager (2/2)



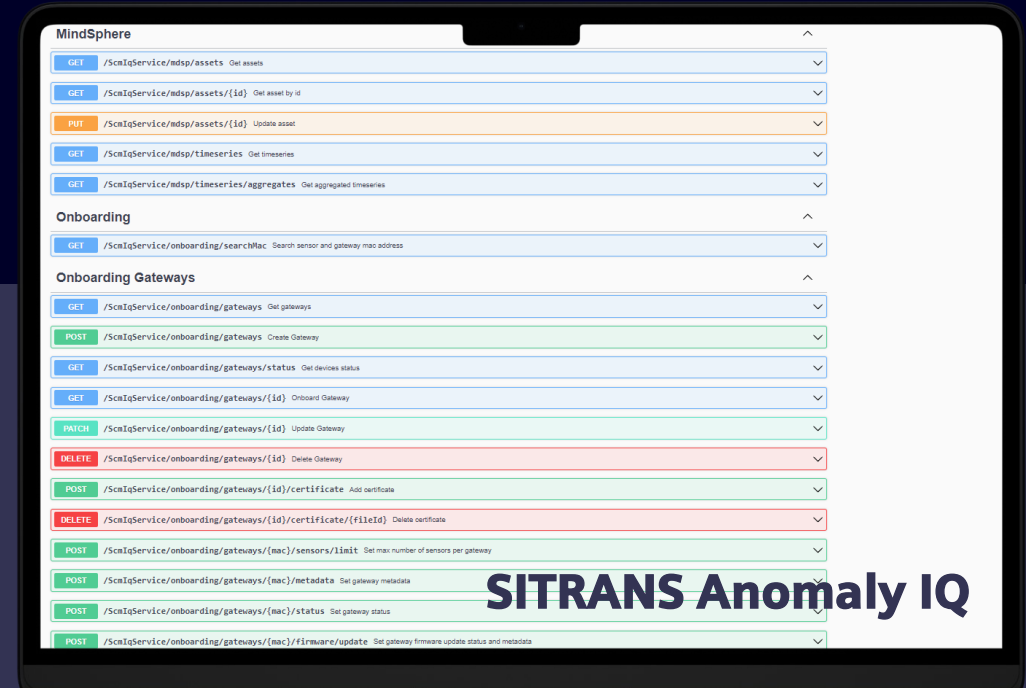
Use MS200 data from assets effortlessly in SIMATIC Performance Insight

Provide operational hours and idle state information to Energy Manager where no data is (easily) available.

Developer Possibilities using REST APIs



Developers find a reference of all provided APIs & Services with the links below!
With this extracted data possibilities to create additional apps and programs are endless!



<https://XXX-sitransscmiq-pddeop.eu1.mindsphere.io/ScmIqService/docs/#/>

Replace XXX with your tenant name!



<https://XXX-sitransanomalyiq-pddeop.eu1.mindsphere.io/AnomalyDocuService/api/#/>

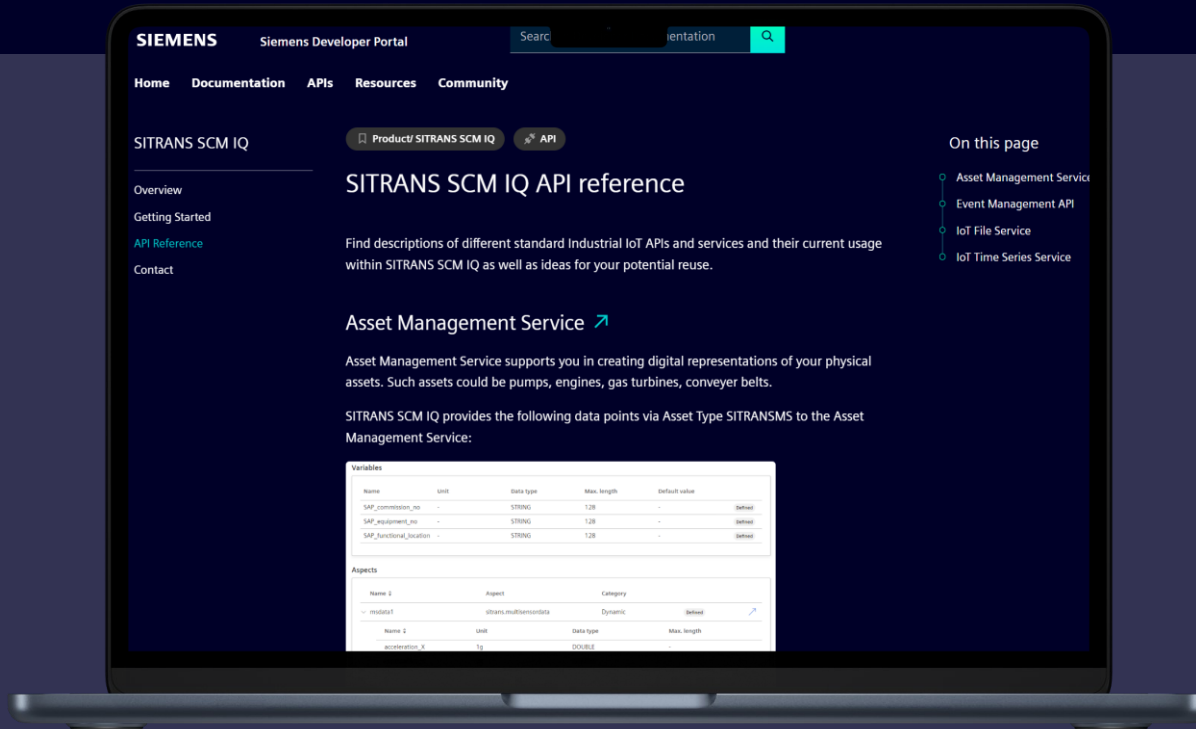
Replace XXX with your tenant name!

Xcelerator Marketplace > Developer Portal

Overview about SITRANS SCM IQ's most commonly used APIs & services



Find a reference and description on how to work with these APIs & Services on the Xcelerator Developer Portal. These APIs will continuously be extended as the SW develops!



IoT Time Series

Fetch all time series data from SCM IQ, peak to peak values for SITRANS MS 200. Anomaly_Status and Deviation_Index will be stored to use in other Apps. There are endless possibilities to create value with SITRANS SCM IQ time series data. You could combine it with power consumption to calculate asset efficiency, or to combine with process data to monitor process health.

[API Details >](#)

IoT File Server

Fetch anomalies videos and pictures per asset, which are uploaded via SITRANS Anomaly IQ and stored in the IoT File Storage.

[API Details >](#)

Event Management

All detected anomalies will be injected as events. Fetch all anomalies, their type (info, warning, error) and the time of event. You could e. g. trigger maintenance tickets in your order management system, or to analyze overall reliability of different assets.

[API Details >](#)

Asset Management

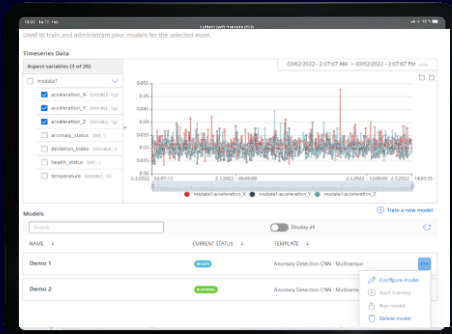
Fetch assets and their specification like MAC address and server position stored during configuration. With this API you could possibly combine IoT assets with your "classical" plant hardware in your plant lifecycle software.

[Service Details >](#)

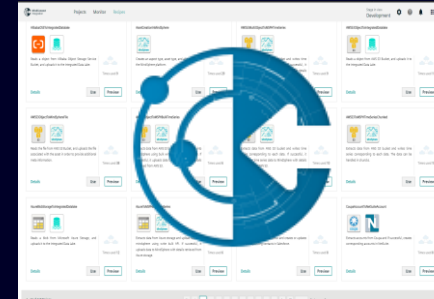
Leveraging full potential of the ecosystem with providing information outside of Insights Hub



SITRANS CC220 sensor-to-cloud gateway

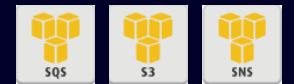


Insights Hub



MindConnect Integration

This solution provides a secure and flexible pipeline to bring data from SCM IQ into context with customer's enterprise systems, clouds and applications



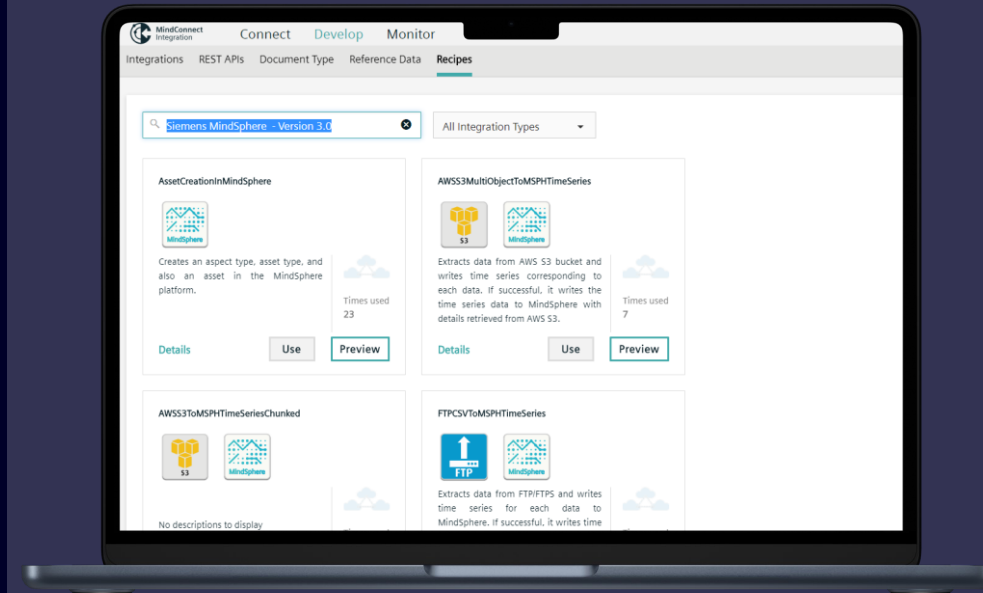
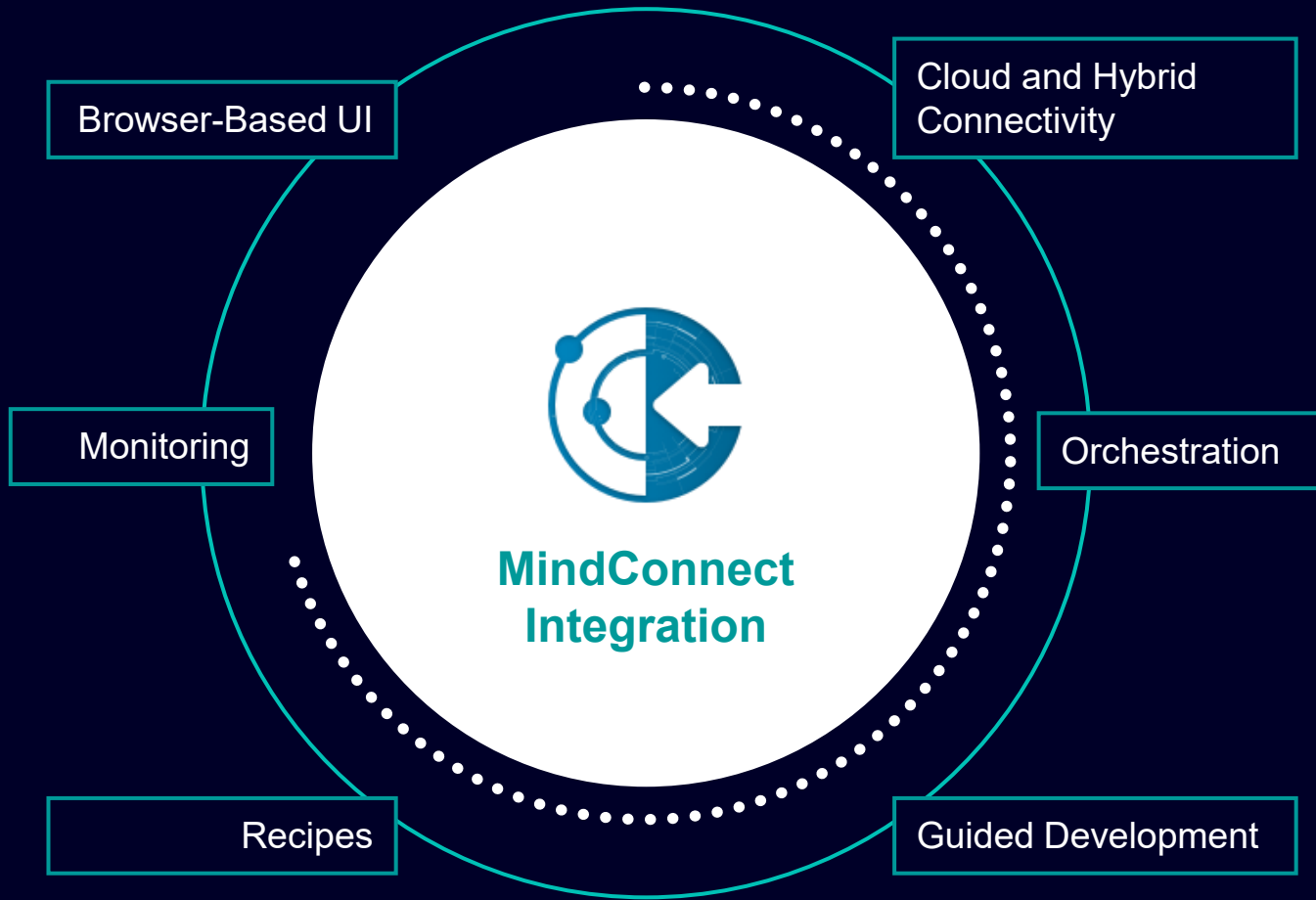
- SITRANS SCM IQ Package Base** with cloud infrastructure and apps
- SITRANS SCM IQ
 - SITRANS Anomaly IQ for condition monitoring and anomaly management with AI

SITRANS MS200 multisensors mounted on different mechanical assets

Machine data connectivity with MindConnect

MindConnect Integration

Seamlessly integrate into and from Insights Hub



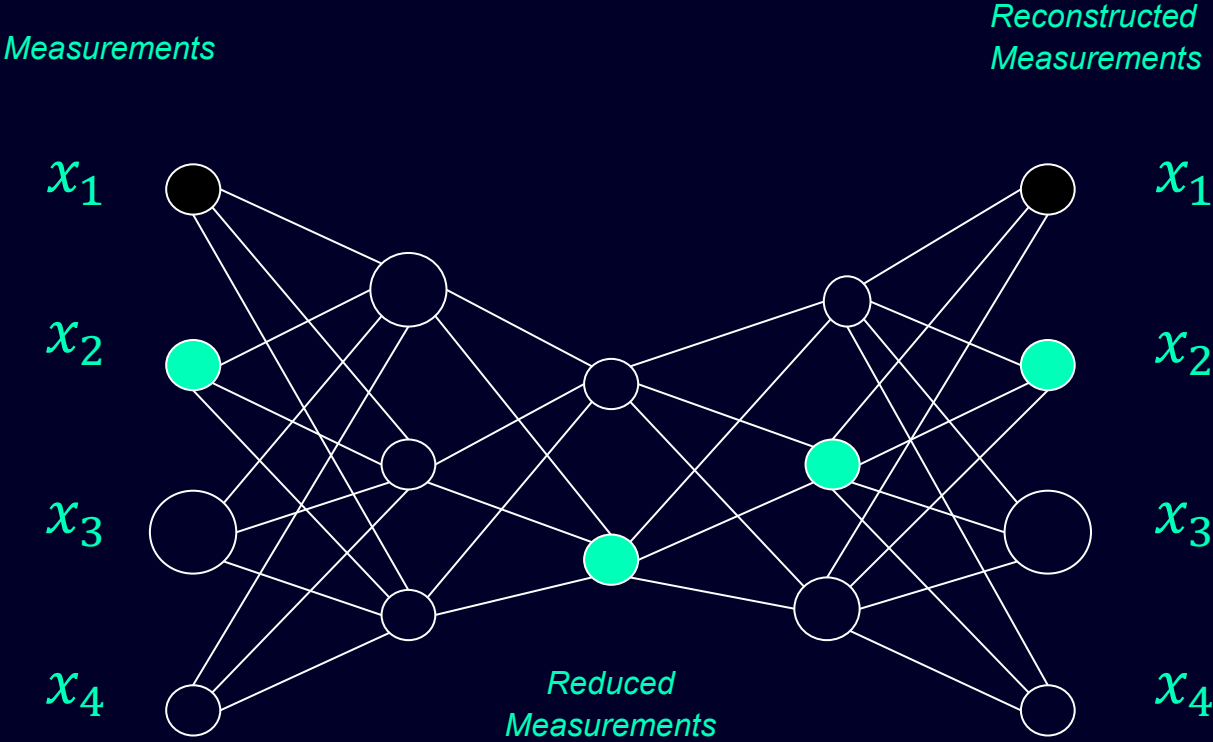
Product Presentation [Link](#)

7 Artificial Intelligence & tips for model training

“Use data-driven machine learning models to apply the solution easily and scale fast”

What can different types of AI do? (1/3)

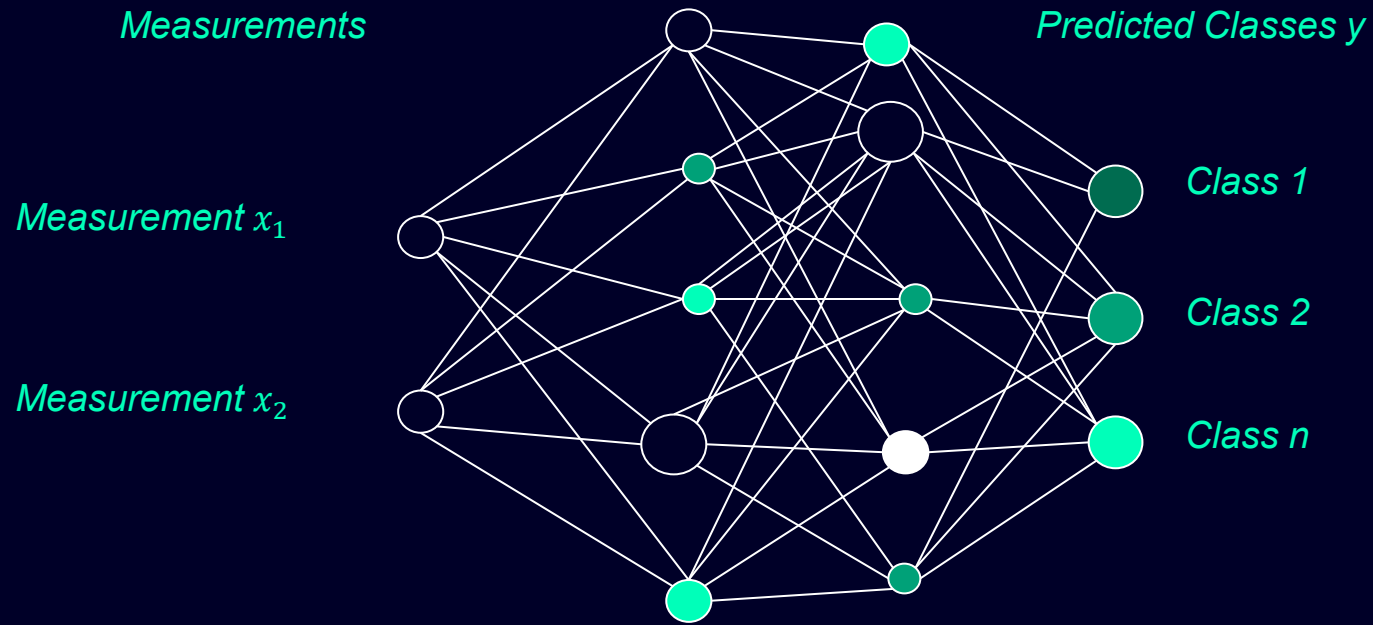
Detection: Differentiate between GOOD and BAD



Anomaly: High Reconstruction Error (Muffin)
No Anomaly: Low Reconstruction Error (Dog)

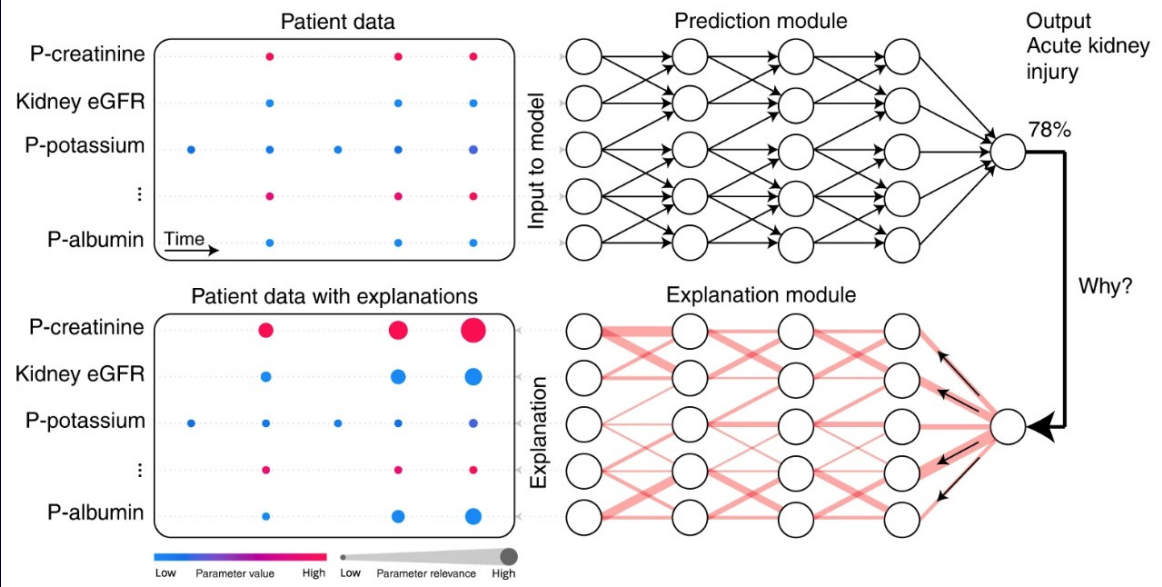
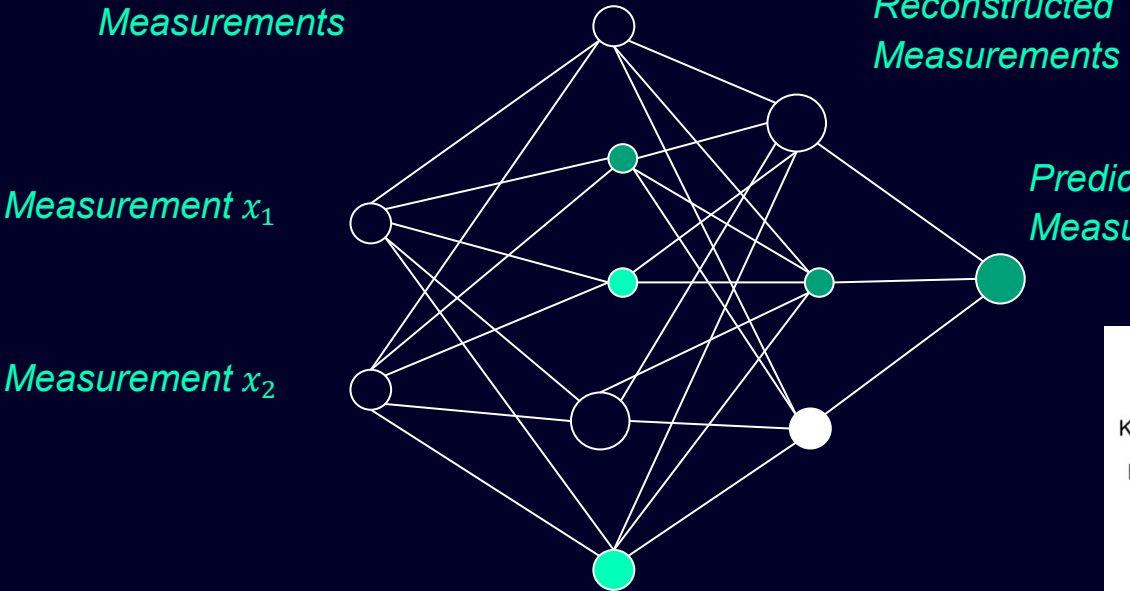
What can different types of AI do? (2/3)

Classification: Get structure into the mess



What can different types of AI do? (3/3)

Regression: Predict the future

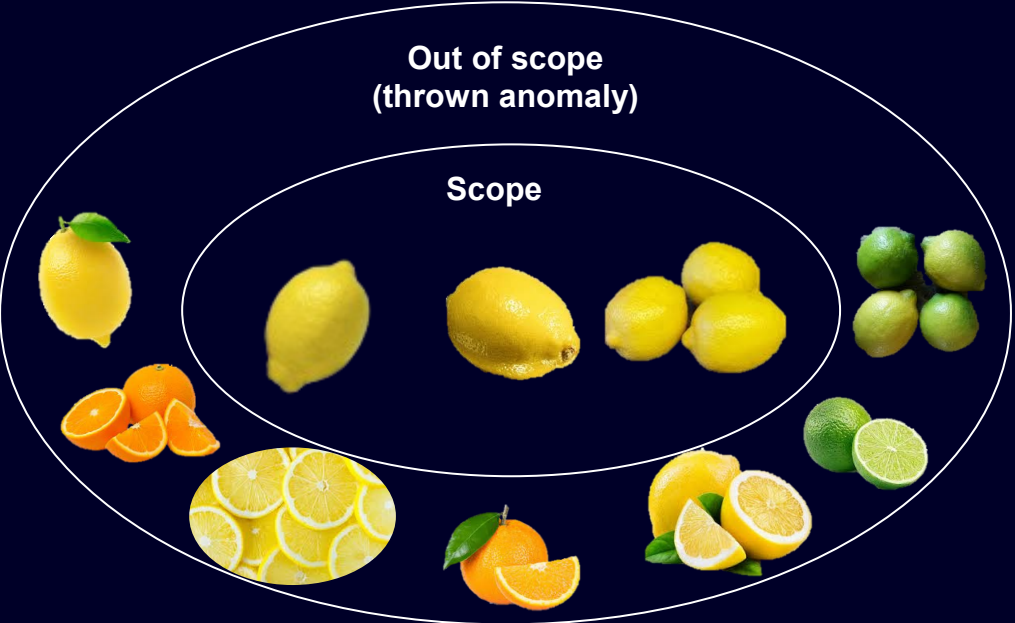


SITRANS SCM IQ modelling is based on Detection-method

Training of enough data sets is crucial

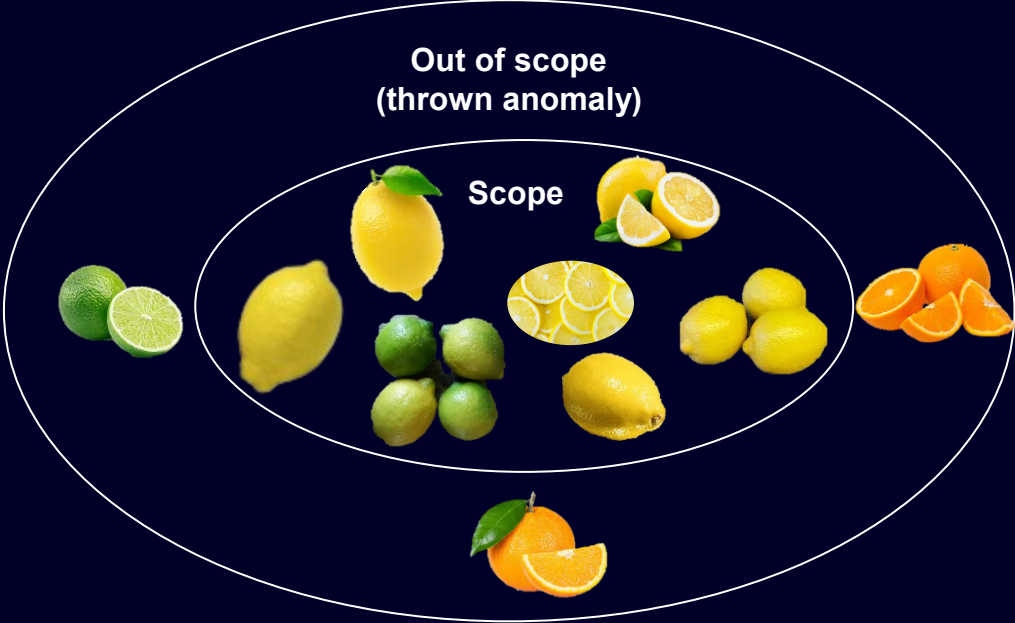
Example task: AI must learn to identify lemons

Few training data



If you only train with data sets of yellow lemons not cut or with green leaves on steam, you will receive **false anomalies**.

Enough training data



If you train with various data sets of yellow/green/cut/green leaves on steam, you will receive **correct anomalies**.

Different types of Condition Monitoring

AI Based



- Machine learning based **raw vibration data analysis**
- Building up a pattern for “**good operational state**” based on individual asset types
- Critical data-driven **operational insights** and enables better decision making



Remote Condition Monitoring

KPI Based

- Alarms/Anomaly detection based on certain pre-defined KPIs for asset variables
- Unable to fully cover anomaly detection under various operational states
- Majority of competitors utilize this form of monitoring

Winning Points for SITRANS SCM IQs' anomaly detection with AI

Continuous Learning

No AI is perfect. And we know that.

However, an AI, which is provided with some “human input” gets close to perfect, or in other words: Your input can be truly groundbreaking.



Better than the human eye

Our AI catches more than any manual data analysis can detect.

By checking millions of relations between various data points it literally leaves no stone unturned.



Individually trained

The SCM IQ system works more adaptive than traditional systems.

Without depending on strict thresholds or fixed KPIs, it adopts to each asset individually.



STEP 01 Input data

SITRANS SCM IQ collects vibration data of your assets' normal operating state and collects samples over a few weeks (e. g. 4 weeks).

28 days

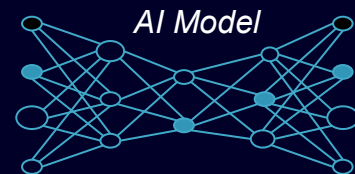
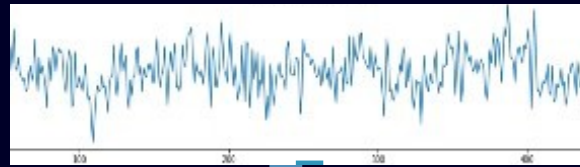
672 hours

24.192
vibration fingerprints



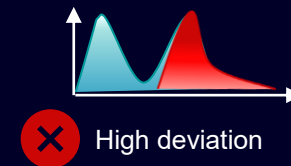
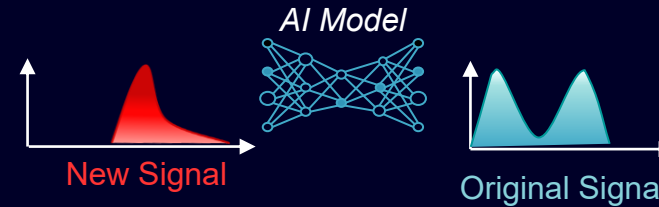
STEP 02 Compress normal operation in an AI model

SITRANS SCM IQ condense all fingerprints collected into one "AI model". All information of the "normal operation" is then stored in a neuronal network.



STEP 03 Calculate deviation and warn when exceeding threshold

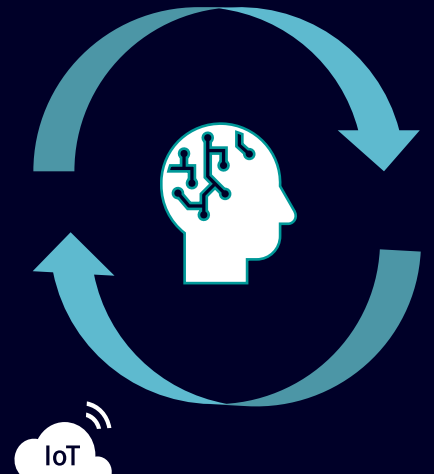
Each incoming new signal is run through the neuronal network to calculate a deviation of the signal. SITRANS SCM IQ automatically notifies you if a problem occurs - so you don't have to keep an eye on your assets!



STEP 04 Active Learning

You support the system with anomaly interpretation based on experience, business and production processes and label it accordingly.

Based on your input SITRANS SCM IQ learns what exactly is causing the problem aka what is the respective root cause.



How does SITRANS SCM IQs' artificial intelligence detect anomalies?

- SITRANS SCM IQ utilizes an AI-based algorithm to identify anomalies in vibration patterns by comparing them to an initially trained vibration pattern. When a significant deviation is detected, it is referred to as an "anomaly." The anomaly detection function relies on an autoencoder that is optimized using a Convolutional Neural Network (CNN). This CNN is first trained with the so-called "training data." Essentially, a "trained model" represents the "good state vibration" of an asset. The input data for this algorithm comes from vibration data collected by SITRANS MS200.
- SITRANS SCM IQ uses a second approach to detect anomalies in other machine data like pressure, rotation speed, power consumption or similar. The algorithm in use for this approach is Long Short-Term Memory (LSTM). This algorithm learns time-relations between different data, and judges by deviations from the known relations whether an anomaly is present or not.



CNN

- Efficiently captures local spatial patterns and is often used for image analysis.
- Unlike classical monitoring of thresholds or a tolerance band around the respective vibration data, SITRANS SCM IQ can also assess the relationship between all three axes.
- New datasets are collected and interpreted every 100 sec.

Machine Data



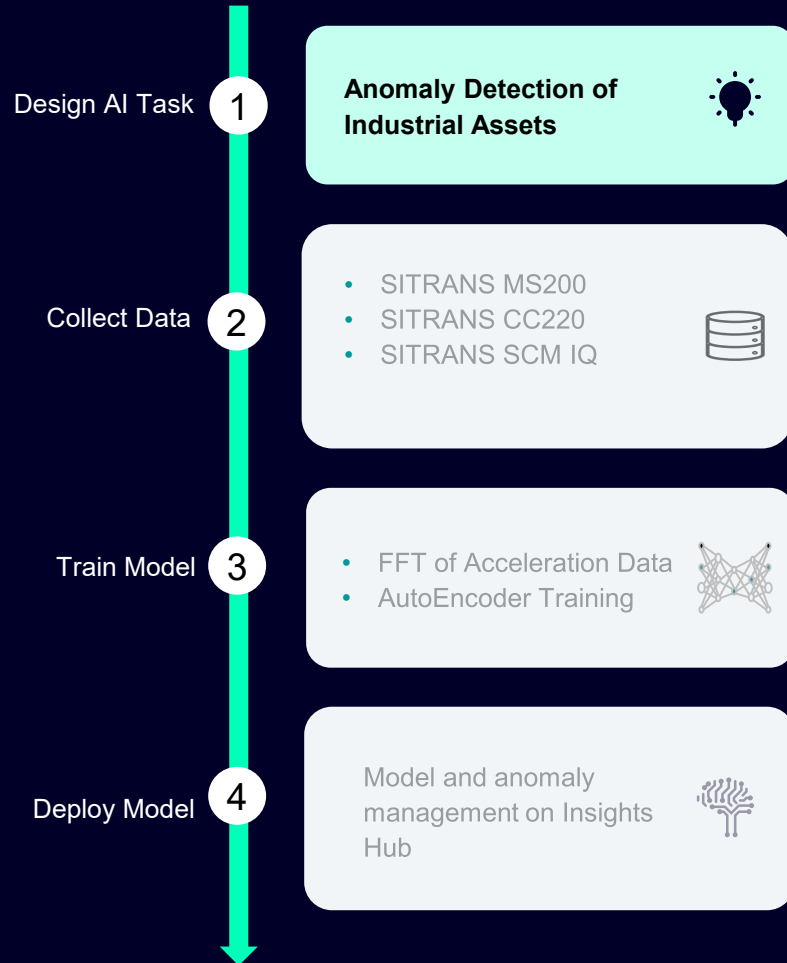
LSTM

- Complex memory consisting of short-term and long-term memory.
- Machine data usually consists of a smaller number of measurements per dataset that can be arranged arbitrarily in space.
- The machine data is generated at smaller time intervals, which increases the importance of the relationship between successive datasets.

AI Pipeline - IIoT sensor and machine data based anomaly detection

Step 1: AI Task for SCM IQ is the anomaly detection of industrial assets

Machine Data



1

Anomaly Detection of Industrial Assets

Expected Benefits

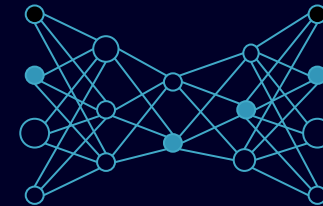
- Low-entry barrier for customers
 - Low cost / initial invest
 - Low know-how necessary
- Continuous observation (anomaly behavior) of asset

Solution

- Unsupervised learning to minimize required customer interaction
- Robust but adaptable algorithm that
 - Is suitable to analyze vibration spectrums
 - Adopt to various assets without changing the algorithm

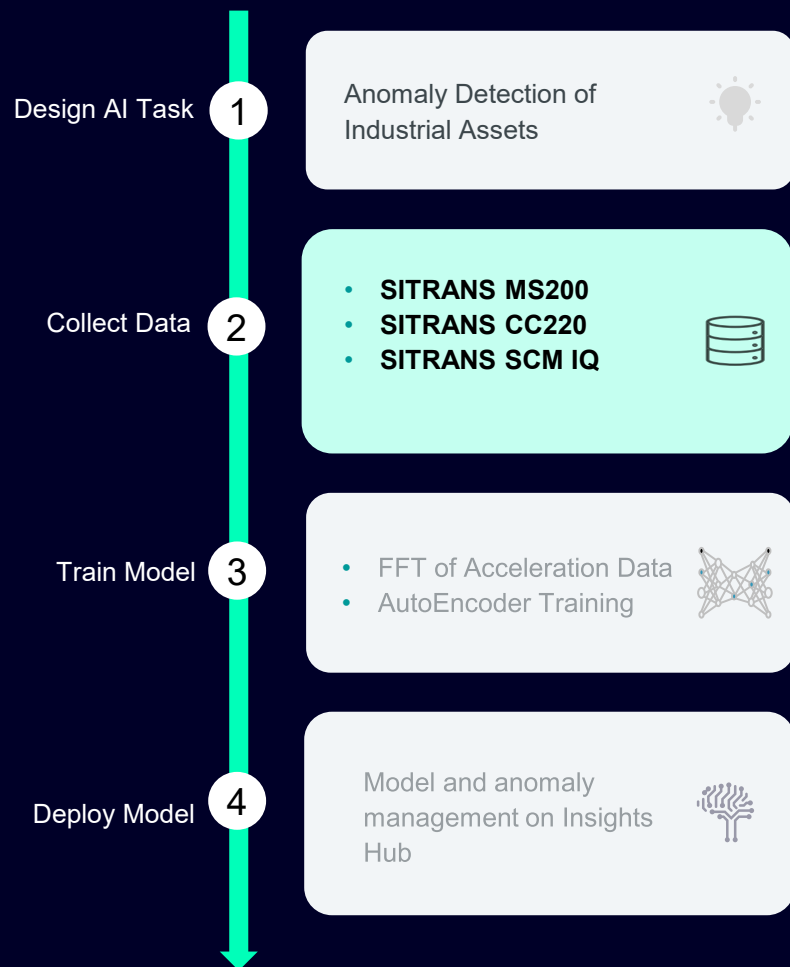


AutoEncoder



AI Pipeline - IIoT sensor based anomaly detection

Step 2: Data acquisition, transmission & storage



2 Data acquisition, transmission & storage

Sensor Hardware Specification

- Description: SITRANS MS200
- Communication: Bluetooth LE
- Target Temperature: -30 ... +80°C
- IP69 classified

Sensor Signal Specification

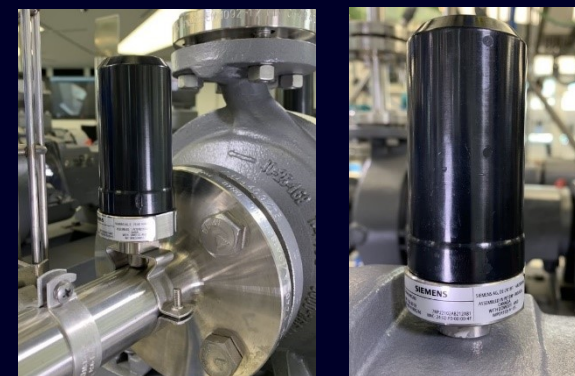
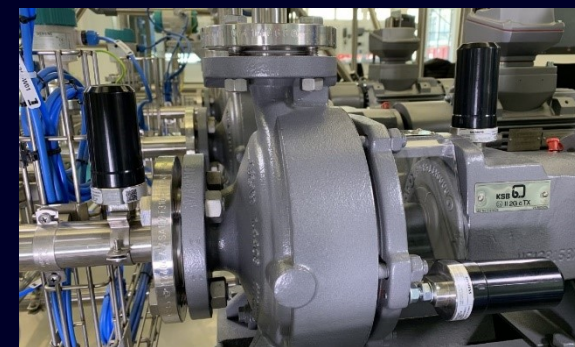
- Acceleration: 3-axis, sampling with 6.6k hz
- Analyzed frequencies: 13 hz – 3.3 k hz
- Data Sampling: 1 Fingerprint (77ms) every 100 seconds

Cloud Data Collection

- Protocol MQTT
- Raw data storage on S3 (AWS)
- Peak to Peak values in Insights Hub

Provisioning of Cloud Services

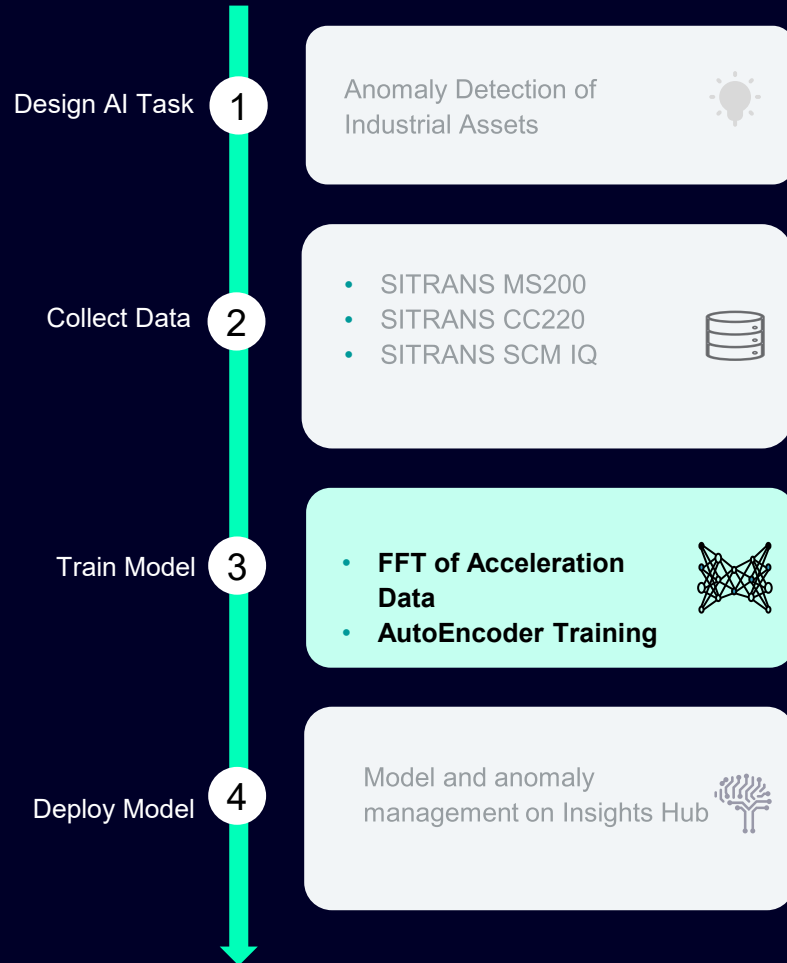
- Infrastructure Management on AWS
- Data visualization, model and anomaly management on Insights Hub





AI Pipeline - IIoT sensor based anomaly detection

Step 3: Let the model calculate the reconstruction error

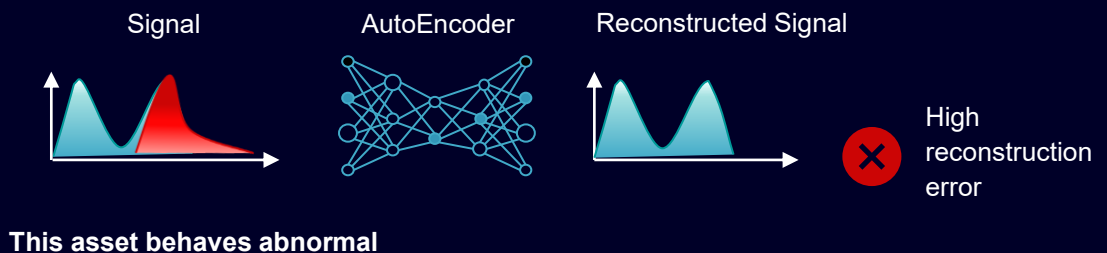
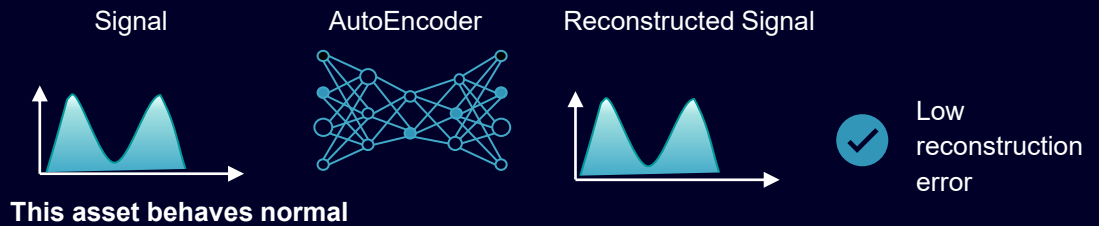


3 AI continuously evaluates data

Data evaluation

Vibration data is run through the trained Autoencoder and the reconstruction error or deviation index is calculated

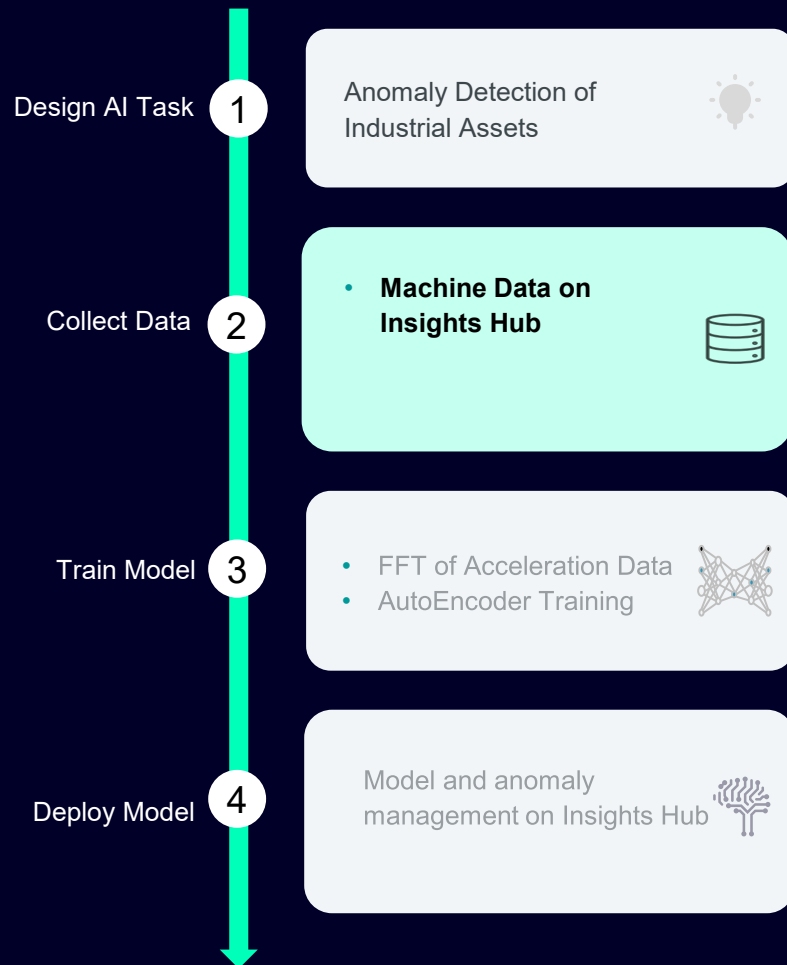
- When the incoming signal / data looks similar to the signals the autoencoder was trained on, the reconstruction error is low → no anomaly
- When the incoming signal / data is significantly different from the trained data, the reconstruction error calculated by the Autoencoder will be rather high → potential anomaly



AI Pipeline – Machine data anomaly detection

Step 2: Data acquisition, transmission & storage

Machine Data

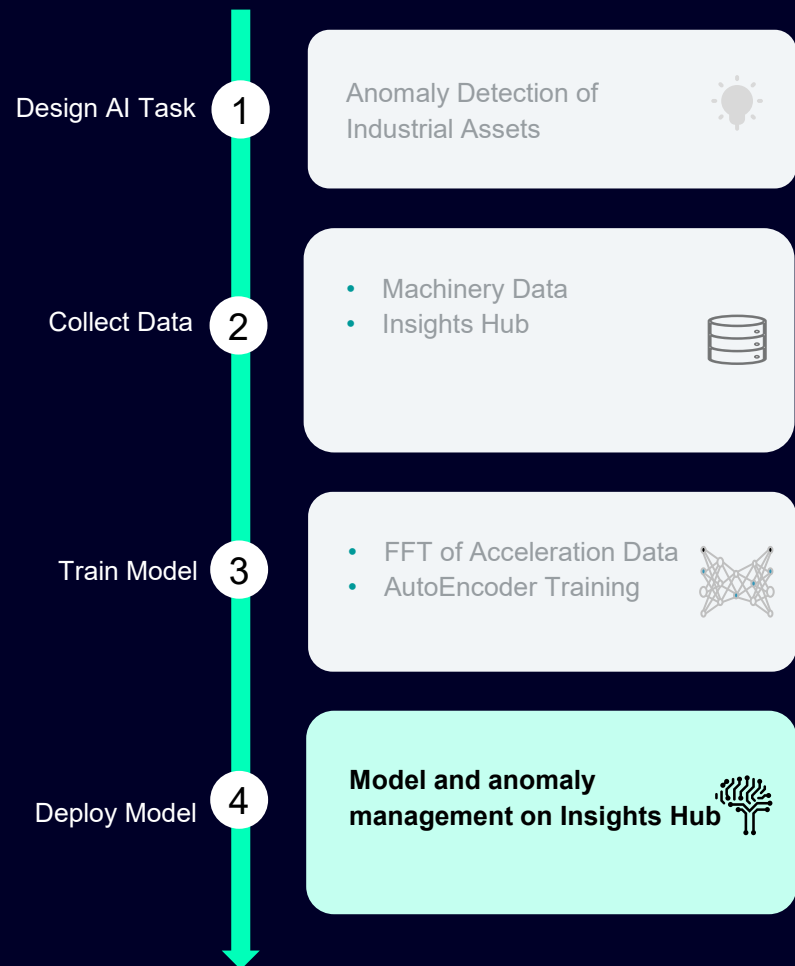


2 Examples for input data ...

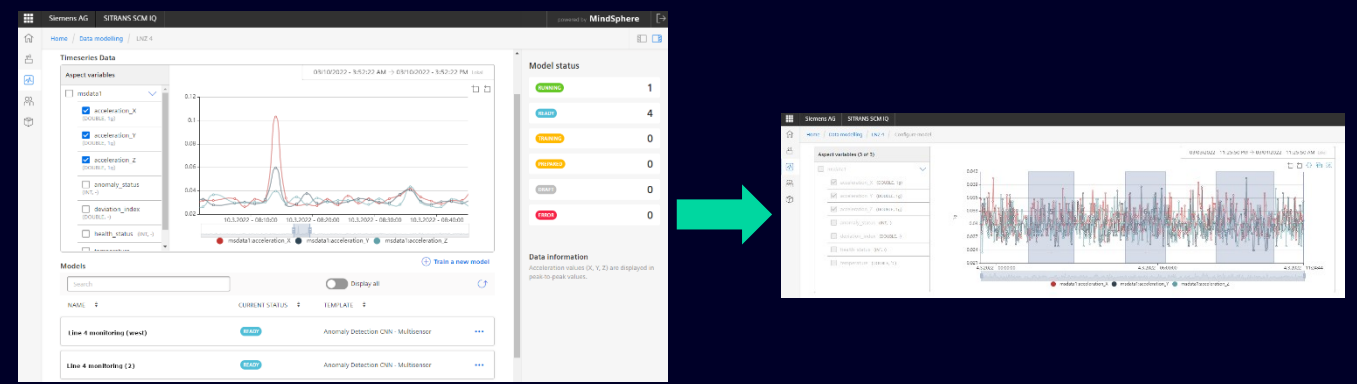
Description	Unit	Data Type	Internal Address in PLC Machine
OPL number	Number	DWORD	DB304.DBD0
EPL number	Number	DWORD	DB304.DBD4
Infeed-Counter (Bottle/Package/Pallet-Counter)	Number	DWORD	DB304.DBD8
Reject-Counter	Number	DWORD	DB304.DBD12
Machine-Speed	cans/Hours	Real	DB304.DBD16
Vibration	Mg	Real	DB304.DBD20
Torque value for the main drive	cph	Real	DB304.DBD24
Togglebit (signal for Life) cycle Time 1	hz	Bit	DB304.DBX28.0
Machine error ID number	Number	WORD	DB304.DBW30
Operating Status	Number	WORD	DB304.DBW32
Operating Hour à Gross	Hour	WORD	DB304.DBW38
Operating Hour à Net	Hour	WORD	DB304.DBW40
Low pressure (air)	bar	Real	DB304.DBD42
Air-Flow	m³/hour	Real	DB304.DBD46
el. Energy Total	KW	Real	DB304.DBD50
el. Energy Phase 1	KW	Real	DB304.DBD54
el. Energy Phase 2	KW	Real	DB304.DBD58
el. Energy Phase 3	KW	Real	DB304.DBD62

AI Pipeline - IIoT sensor and machine data anomaly detection

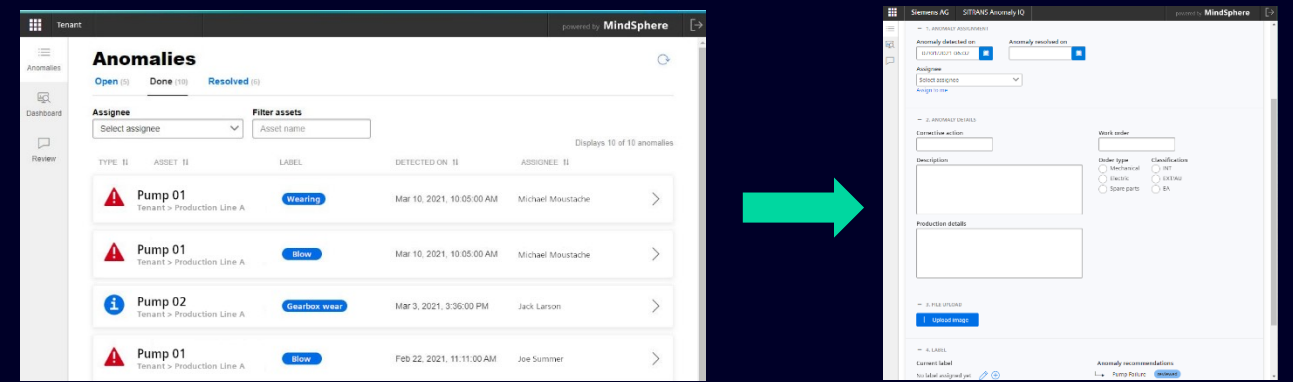
Step 4: Model and anomaly management (1/3)



4 Create a model and start training ...



... and manage anomalies



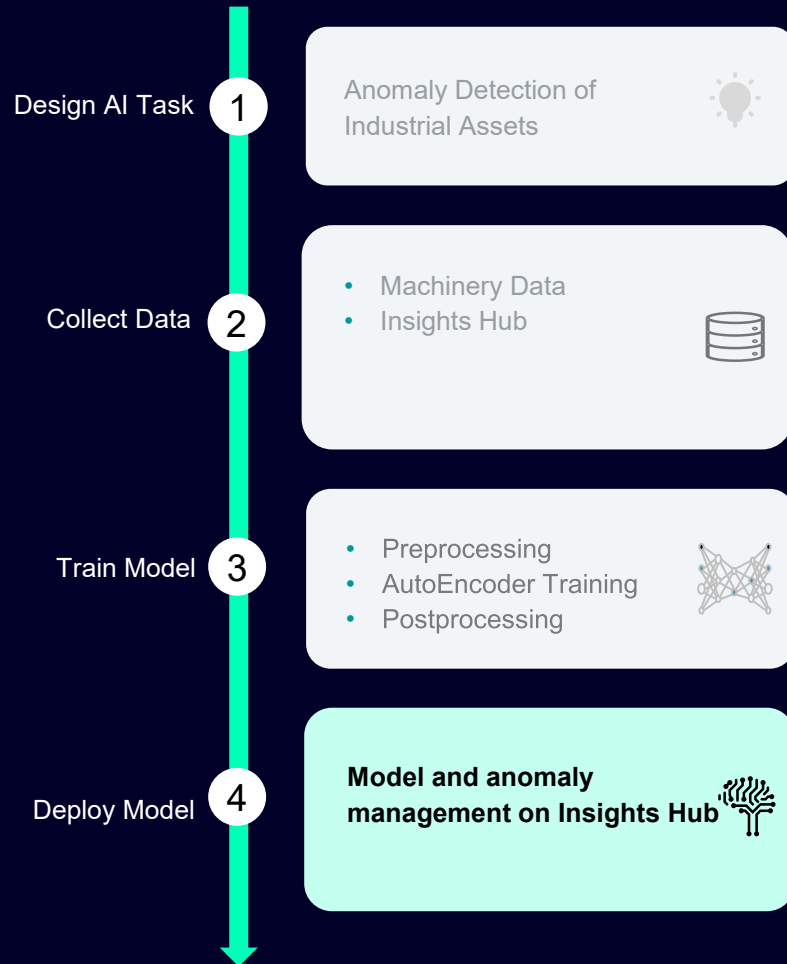
AI Pipeline - IIoT sensor and machine data anomaly detection

Step 4: Model and anomaly management (2/3)

Machine Data



SITRANS MS200



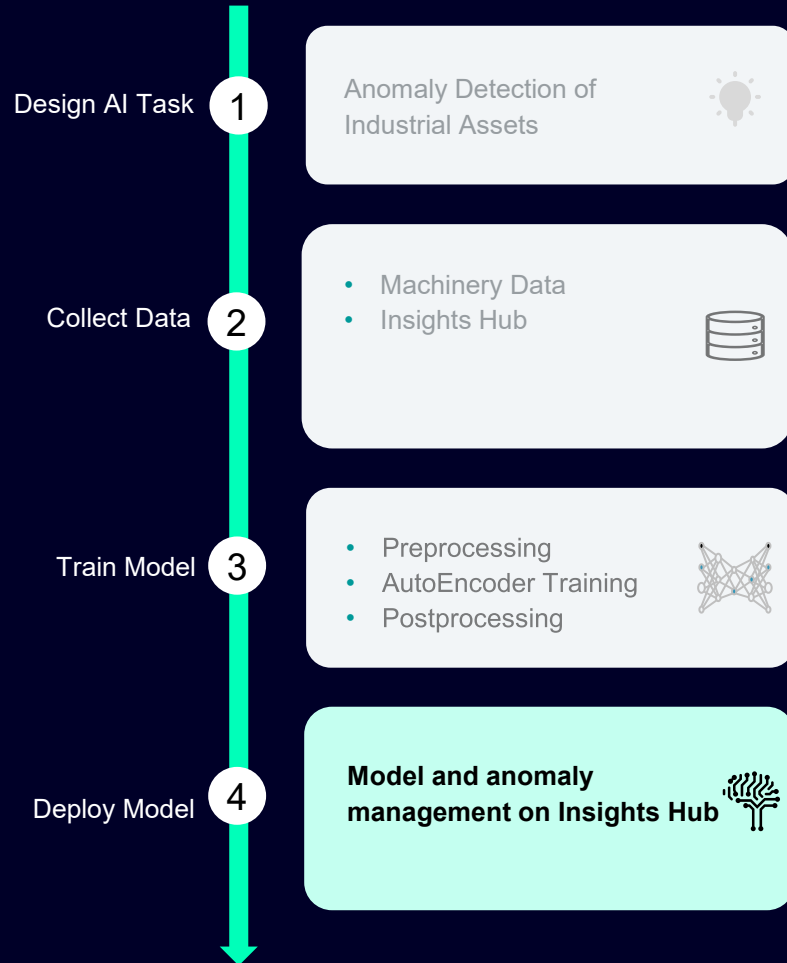
4 Create a model and start training ...



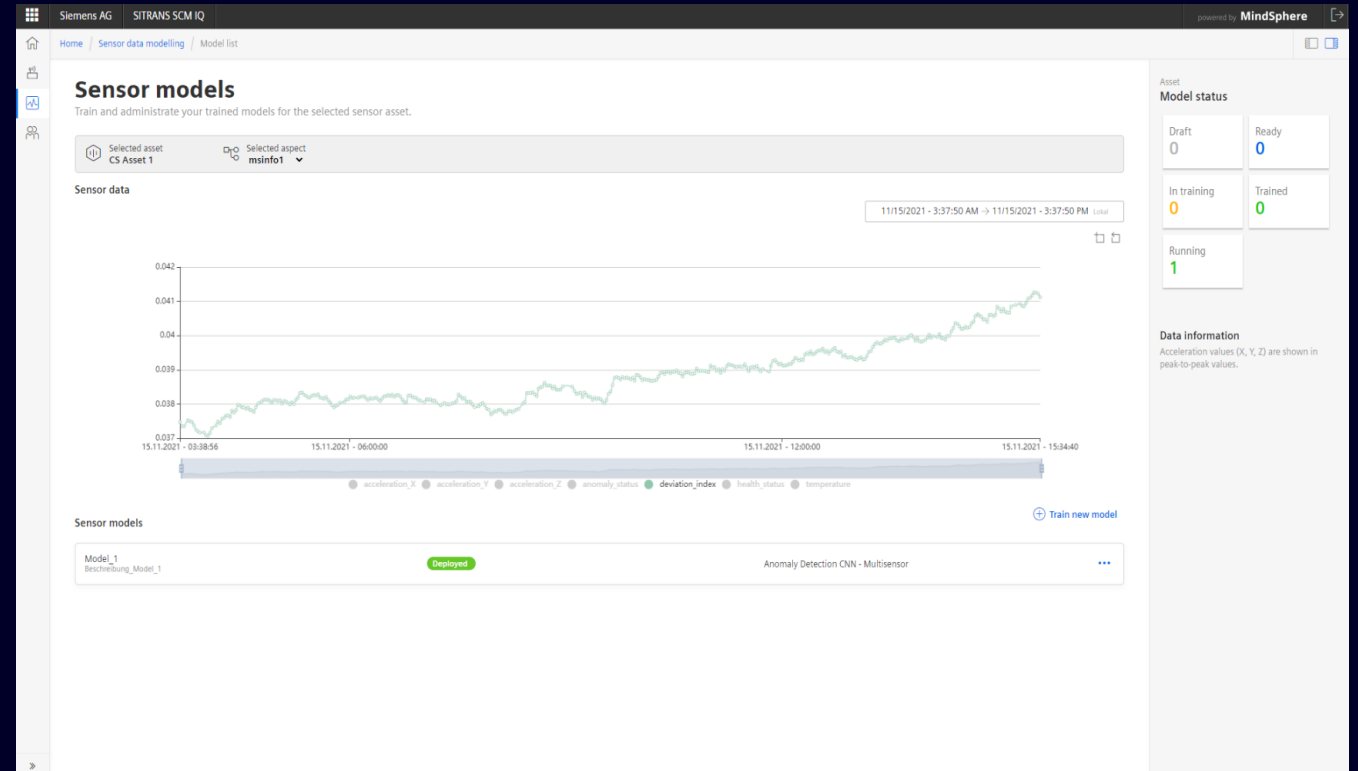
AI Pipeline - IIoT sensor and machine data anomaly detection

Step 4: Model and anomaly management (3/3)

Machine Data

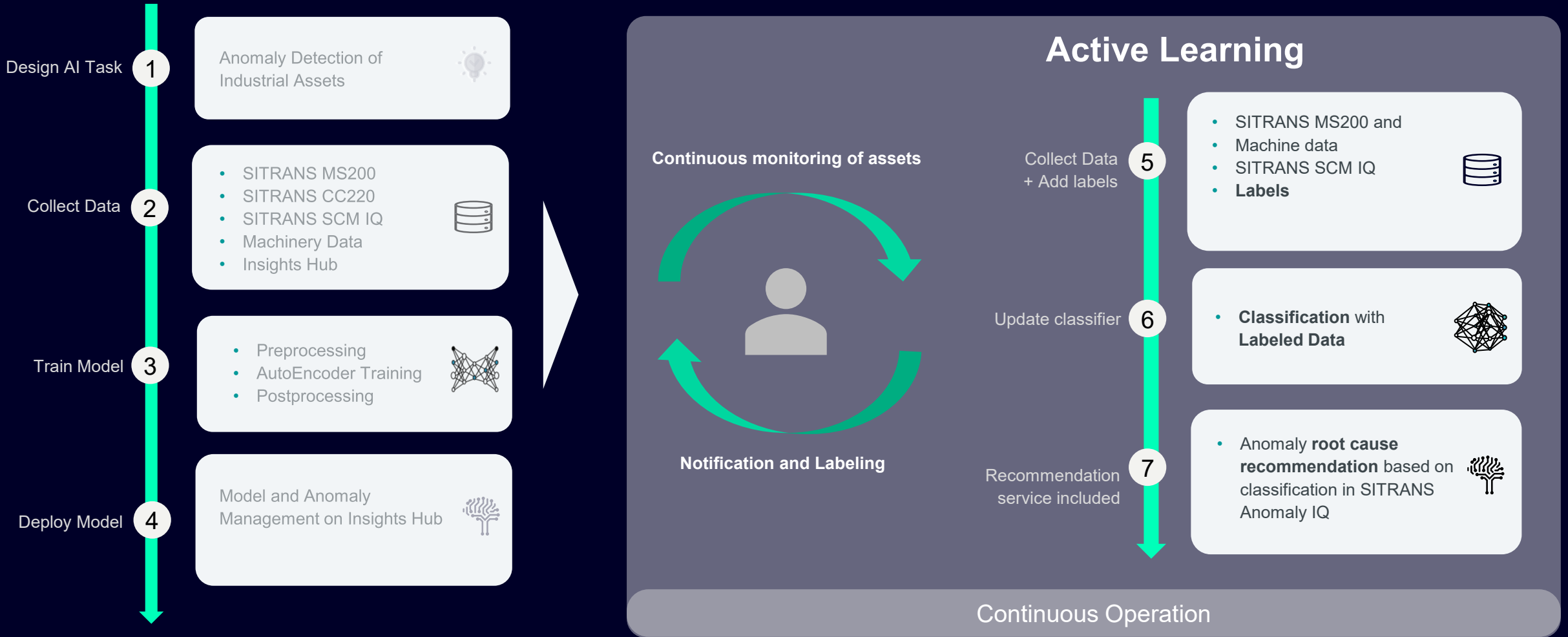
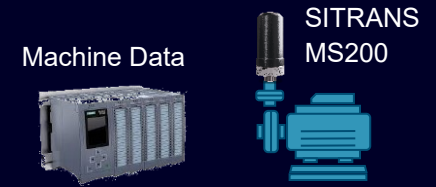


4 Monitor Asset Health



AI Pipeline - IIoT sensor and machine data anomaly detection

Continuous active learning enables anomaly classification



Tips & Tricks to train SITRANS SCM IQ artificial intelligence correctly (1/5)

Be aware of idle time proportion!

Idle time usually is exponentially often present in contrast to other frequencies.



- 1 long training period used
- Longer periods of idle times included in the training time (e. g. a lot of weekends, or an asset that runs in shifts)

The **Solution!**

The screenshot shows the SITRANS SCM IQ interface. On the right, there is a 'Description' section with a text input field containing 'Custom model description'. Below this is an 'Optional description of the model' section. The 'Template in use' section shows 'Anomaly Detection CNN - Multisensor'. The 'Training optimization' section has a toggle switch that is turned on (blue) and a help icon. A tooltip is displayed over the help icon, containing the text: 'Training optimization Training optimization analysis your selected time period to enhance the AI model training. By enabling this feature, the data used for training the model might be adapted within your given selection to achieve optimal prediction results.' A green checkmark icon is overlaid on the top right of the interface.

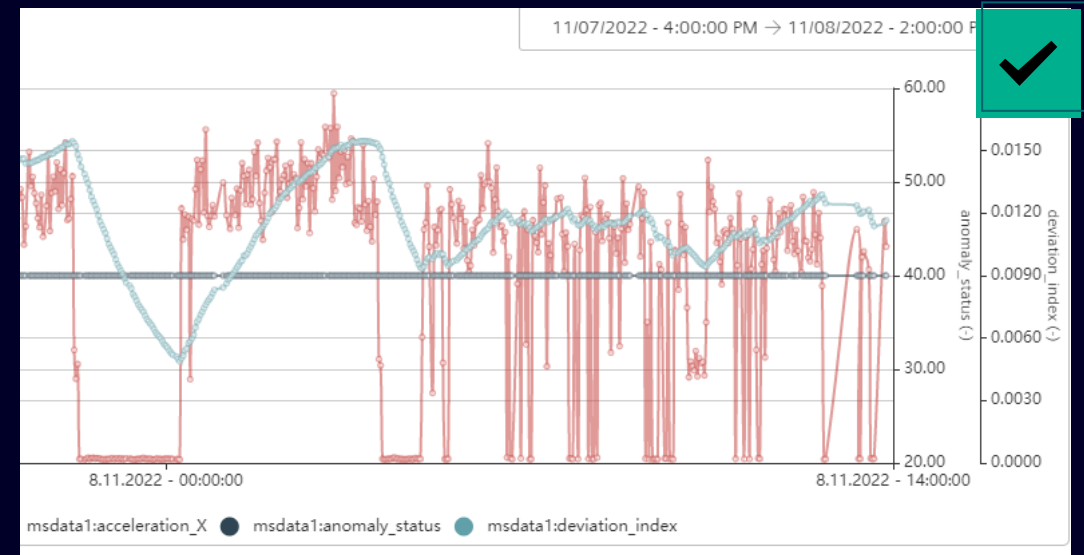
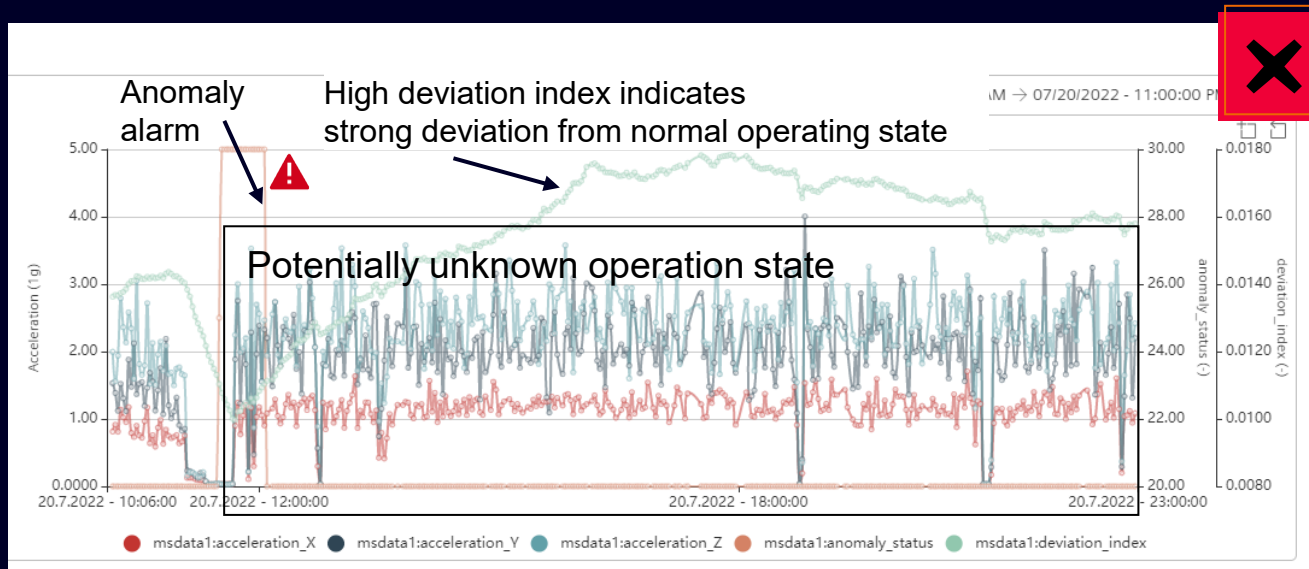


- Use the option Training optimization
- With this “useless” information like the idle state is automatically removed from the training data
- **RESULT:** get a more finetuned and adjusted AI model for your application with **One Click**

Tips & Tricks to train SITRANS SCM IQ artificial intelligence correctly (2/5)

Cover all operation modes!

Try to train all different operation modes in proportion to the occurrence, e. g. train rare operational modes with smaller proportions.



- New operating state is not trained and therefore creates an anomaly.
- Use “No anomaly” in SITRANS Anomaly IQ to retrain model (and add this operation state) or create a proper training from scratch.

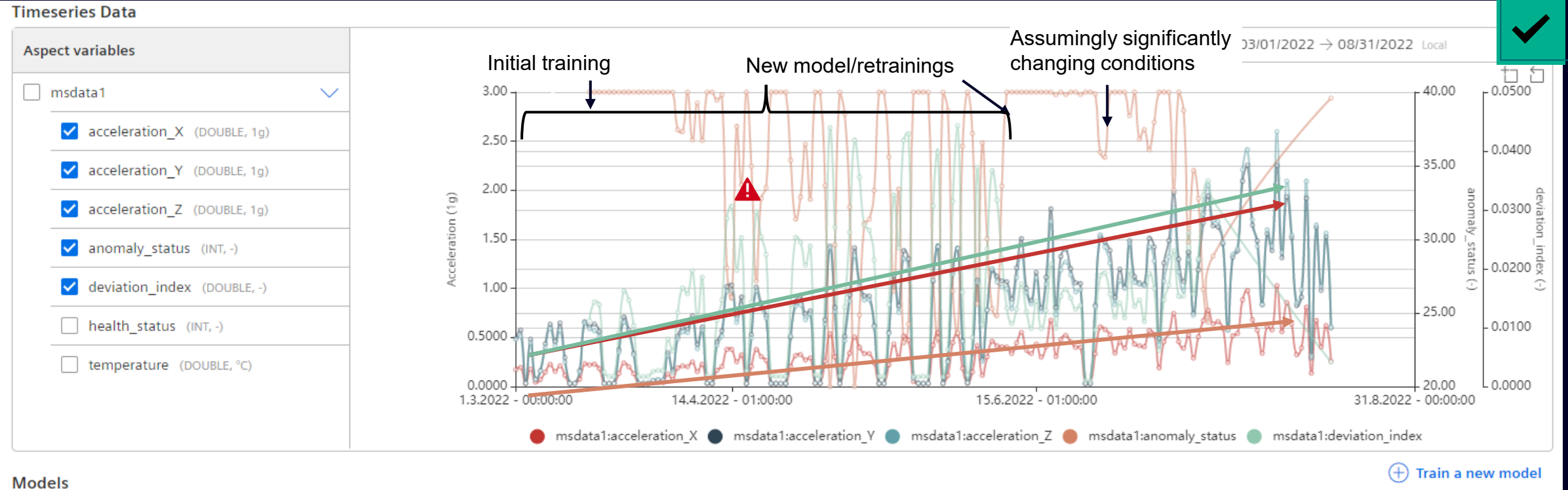
- Model covers different loads of machine, different working modes.
- Anomaly status stable, shows no alarm or warning

All different operating states need to be added to model.

Tips & Tricks to train SITRANS SCM IQ artificial intelligence correctly (3/5)

Gradual degradation will cause regular warnings!

SITRANS SCM IQ is a long-term condition monitoring system, not made to report disruptions immediately or to supervise critical plant operations, as the system cannot replace a security system!

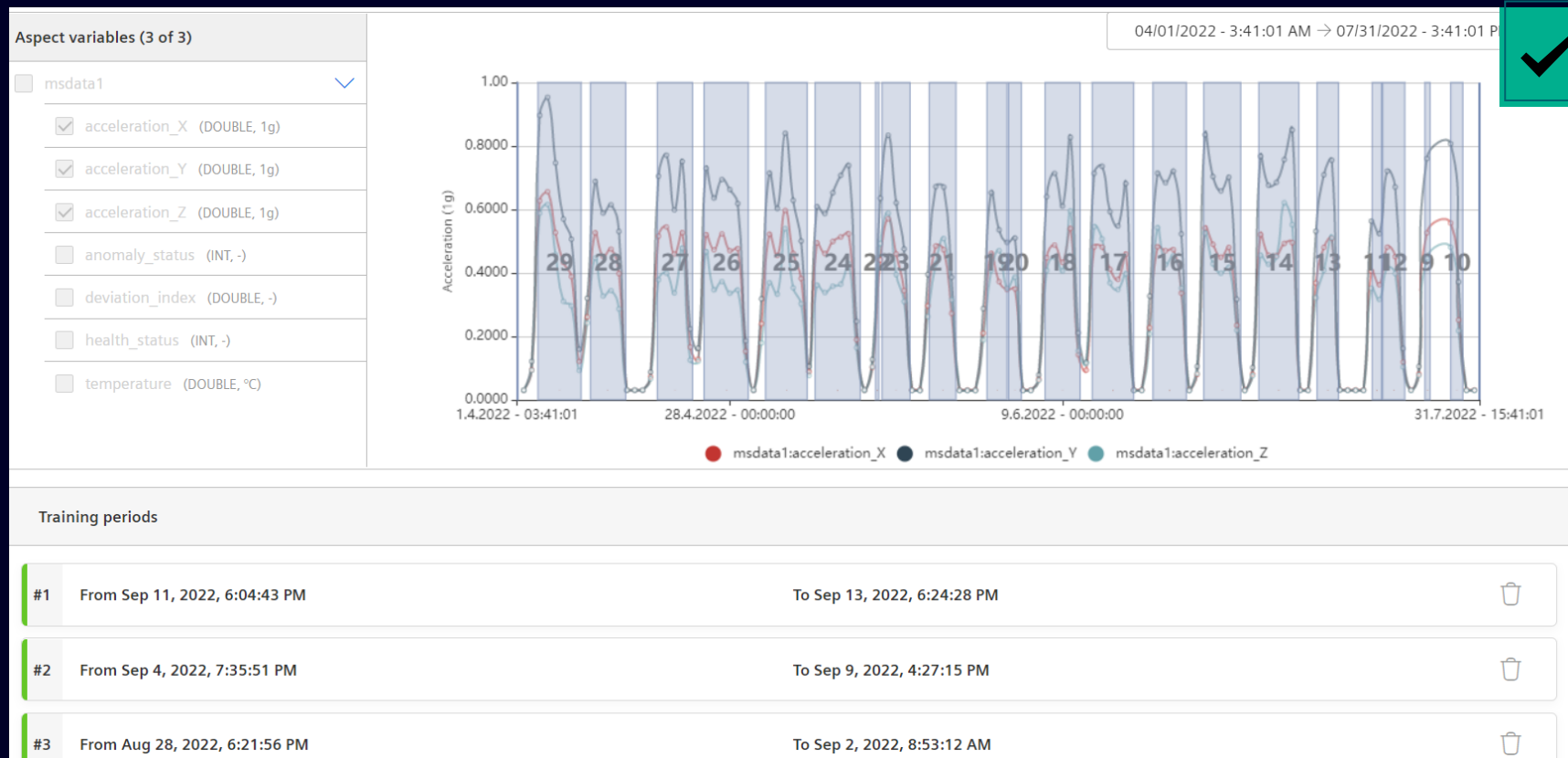


- In the shown case the gradual degradation of the asset leads to weekly warnings that continue to appear after retraining.
- Sudden hick-ups might not be notified immediately, but potentially after minutes/hours, if the malfunction persists.

Tips & Tricks to train SITRANS SCM IQ artificial intelligence correctly (4/5)

Don't focus on start-up/shut-down phases!

5) Start-up and shut-down phases usually produce unpredictable frequencies and might irritate AI algorithm. Try to focus training on running operation mode!

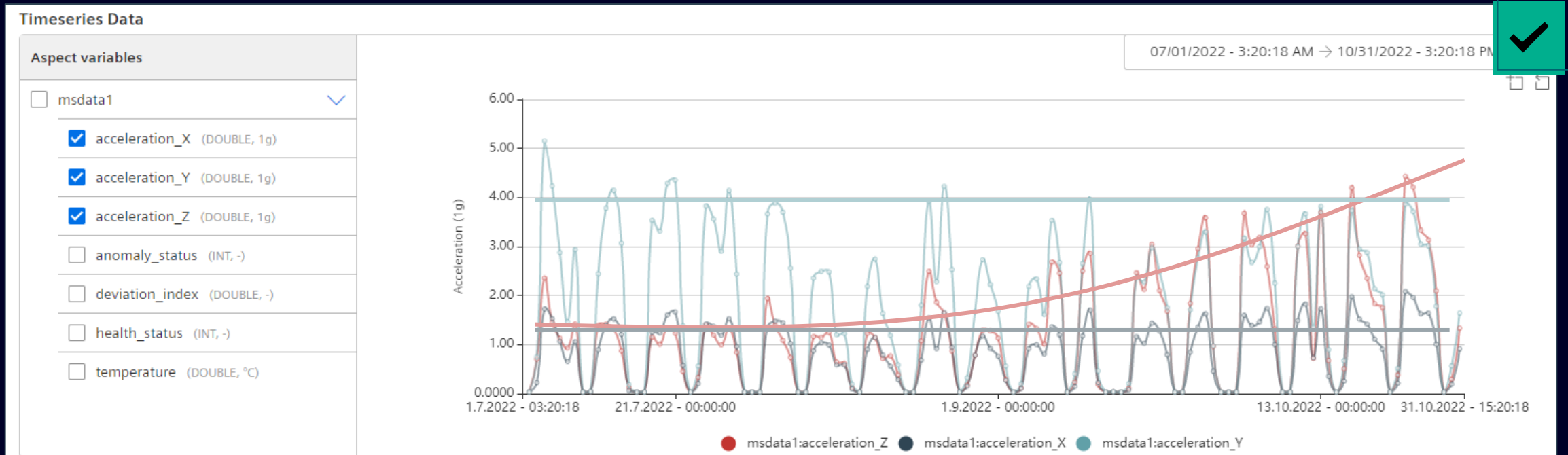


Tips & Tricks to train SITRANS SCM IQ artificial intelligence correctly (5/5)

Not all anomalies really come from asset malfunctions!

In this case an anomaly is provoked by a loosening of sensor.

Indication: Strong frequency increase in one axis, while others remains constant



- Loosening of sensor causes rotation in one axis, e. g. misalignment, loose foot, etc.
- No action to be taken in SW, no model retraining

Physical investigation of sensor is recommended!

8 Network Integration & Security

“Use easy to use connection features
for a secure onboarding”

Full data protection with secure end-to-end connectivity

- Identity management and access control with optional multifactor authentication
- Tenant and environment separation
- Cyber security standard ISO 27001/IEC 62443
- Secure development life-cycle: IEC 62443-4-1
- [Link: Certificate overview](#)

Secured and encrypted, communication via MQTT

(TLS 1.2, RSA4096, SHA256)

- Gateway with Headless design → only accessible via SITRANS SCM IQ
- Secure SCM IQ onboarding procedure

Secured and transportation encrypted, communication via Bluetooth Low Energy (BLE)

(AES128)

- PIN secured access, Random generated default PIN
- PIN policy forces initial PIN change
- Change protected firmware

Further Information: [Siemens Industrial Security](#)



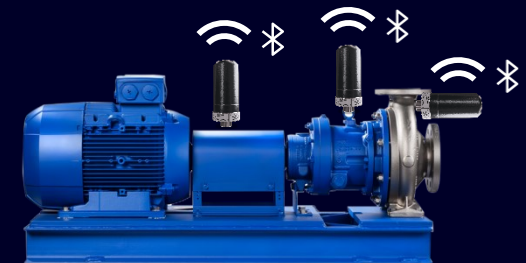
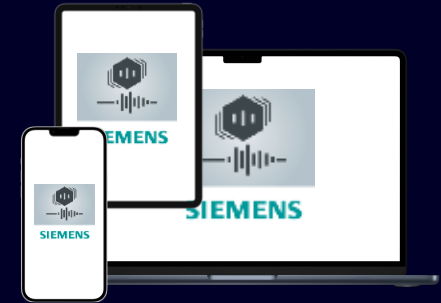
Insights Hub &
SITRANS SCM IQ



SITRANS CC220



SITRANS MS200



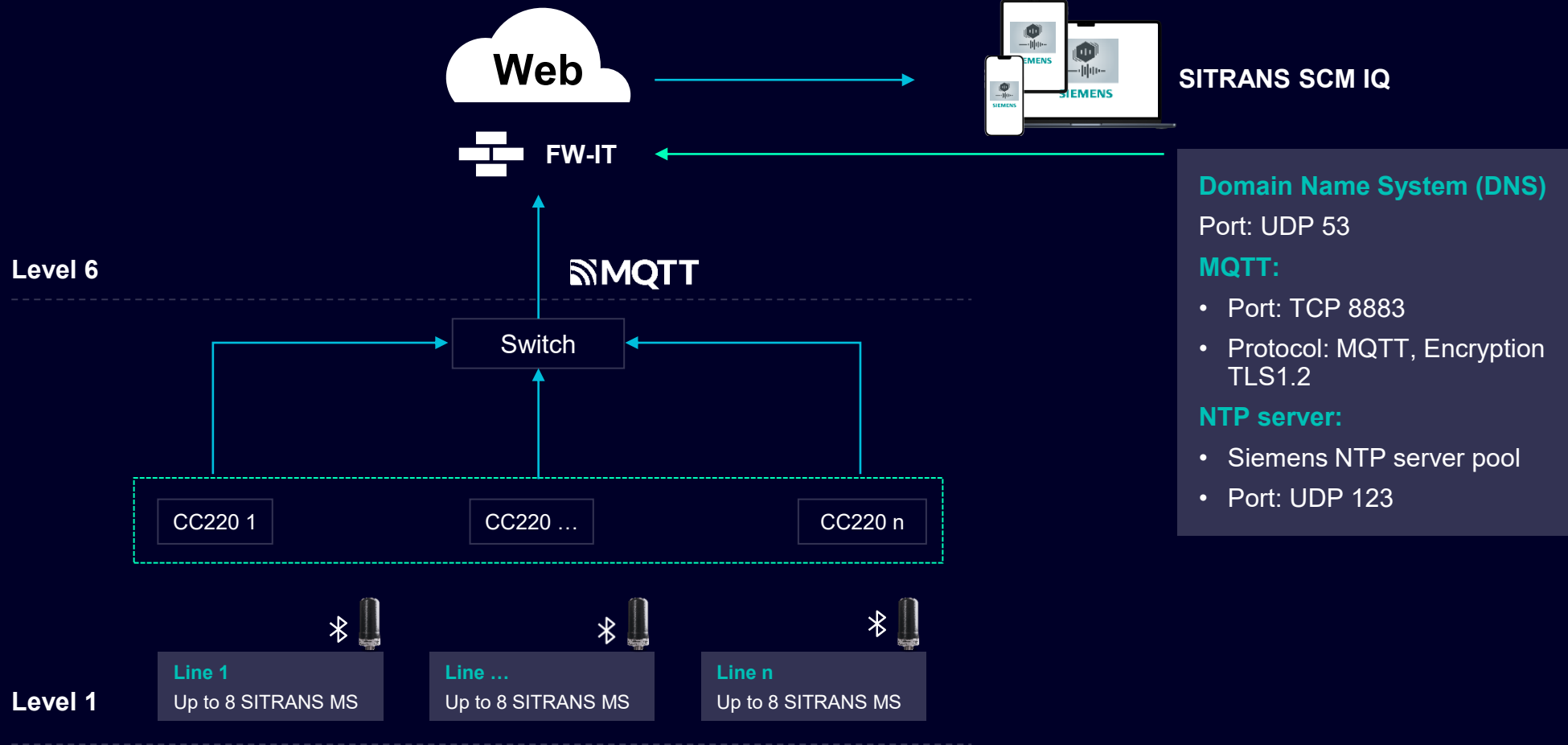
Exemplary network integration with direct internet connection

SITRANS CC220

(only allows Bluetooth connectivity to SITRANS MS200 and internet connectivity via MQTT to SITRANS SCM IQ)

Use Ethernet Interface X1P1

VLAN¹
for GW



Domain Name System (DNS)

Port: UDP 53

MQTT:

- Port: TCP 8883
- Protocol: MQTT, Encryption TLS1.2

NTP server:

- Siemens NTP server pool
- Port: UDP 123

¹ Virtual LAN, separate and isolated network within physical network

Asset integration into Insights Hub

Analyze machine data in SITRANS SCM IQ



With its **Connectivity offerings**, Insights Hub provides multiple, varied and easy-to-implement connectivity solutions (both, hardware and software based) to be able to onboard a **wide range of assets** (Siemens and 3rd party) in both brown- and greenfield environments.



MindConnect
Nano



MindConnect
IoT2050



MindConnect
Software Agent



MindConnect
Advanced
Driver
Extension



MindConnect
LIB



MindConnect
MQTT



MindConnect
Integration
([see page 63](#))

9 How to install on premise

“Use simple mounting and installation”

Use case for Smart Condition Monitoring SITRANS SCM IQ

Bring multisensor data into the cloud with mobile router

Example for cabinet installation, no network integration

Brownfield: Condition Monitoring of rotary equipment. Example here is an Italian company providing maintenance service for **motors on ski lifts**.

Customers use SCALANCE router and SITOP power supply to connect SITRANS MS200 multisensors and SITRANS CC220 gateway with Industrial IoT.

Success Factor

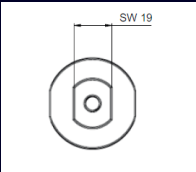
Provision of cabinet with ready to use HW precommissioned in SITRANS SCM IQ industrial IoT app. Just place the sensor, let the data flow in a second data channel and start condition monitoring!



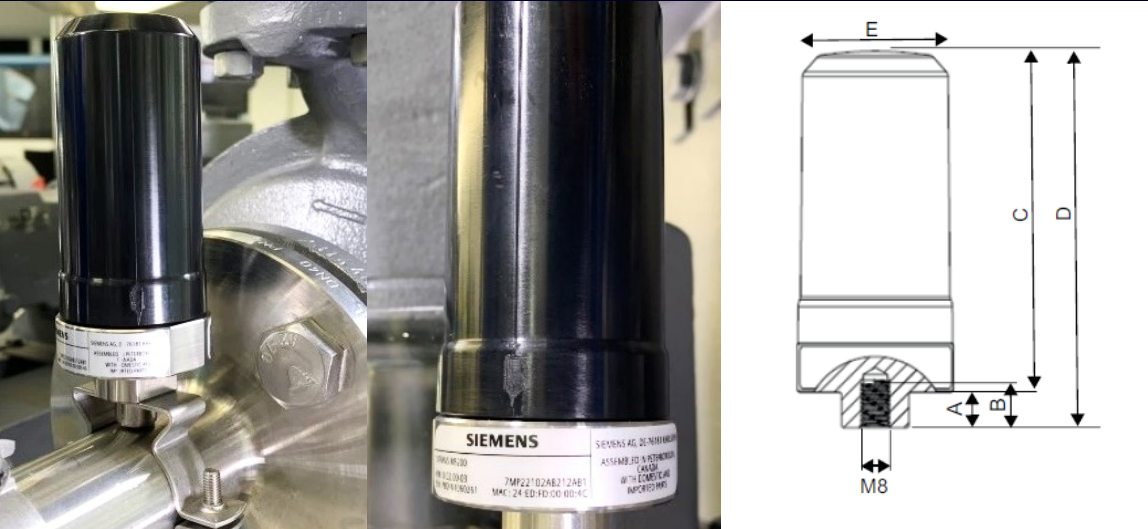
Sensor and gateway installation information

Installation on rotating asset

- Screw-on with M8 female thread
- Clamp-on possible

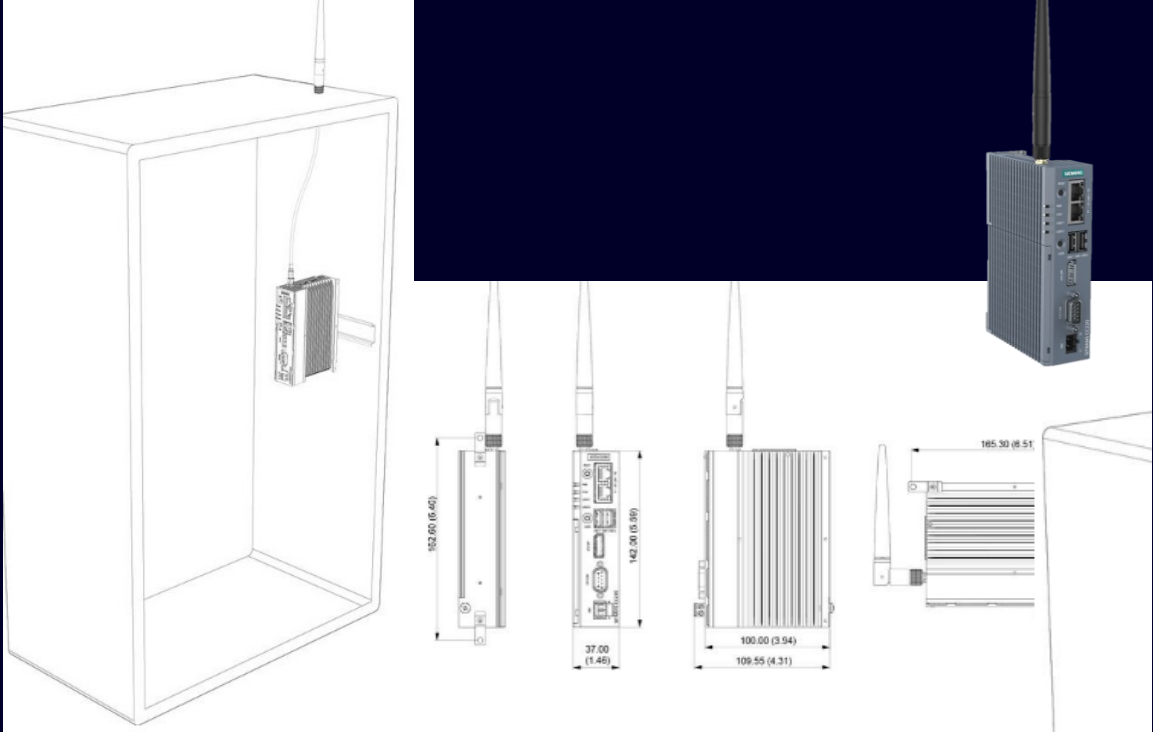


A in mm (inch)	B in mm (inch)	C in mm (inch)	D in mm (inch)	E (Ø) in mm (inch)
10 (0.39)	13 (0.51)	82 (3.23)	106 (4.17)	46 (1.81)



Installation in cabinet

Standard extension cords (SMA plug, SMA socket) are supported (see next slide!) Maximum length 2 m. **Not included in the delivery.** To be ordered from 3rd party.

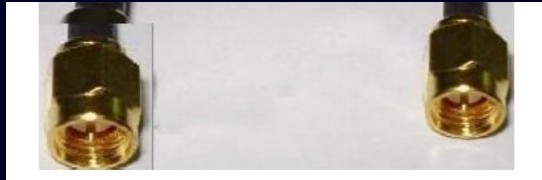


How to attach extension for SITRANS CC220 antenna?



Antenna extension cable

Both sides with pin
Male – Male



Not included in the delivery. Example from 3rd party:
<https://de.rs-online.com/web/p/koaxialkabel/7043495>

Antenna

With pin
– Male –



SITRANS CC220

Connector (attached) no pin
– Female –



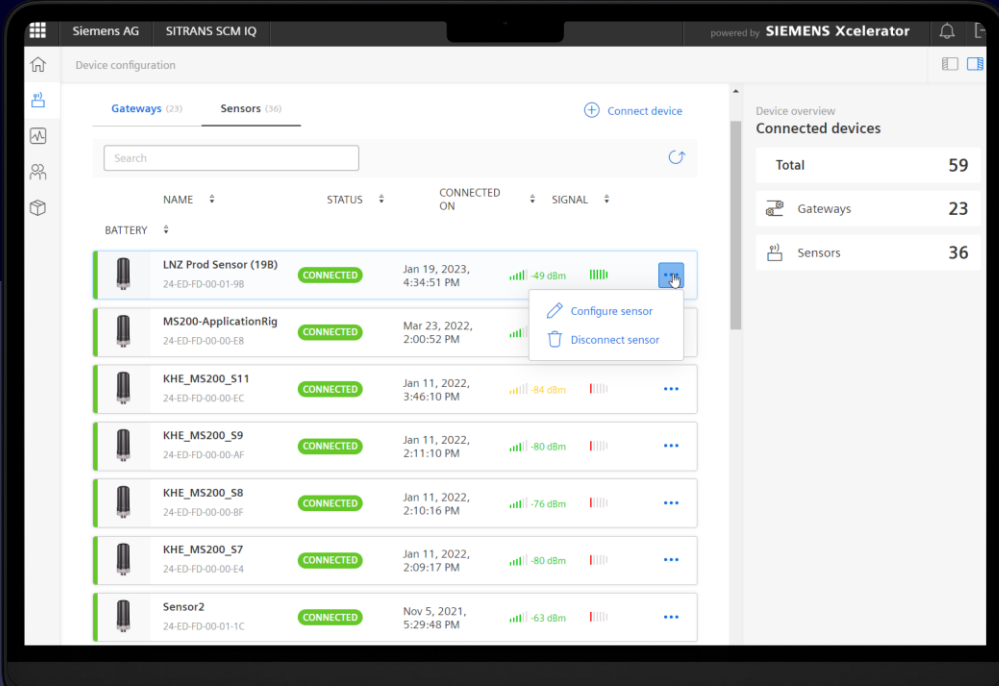
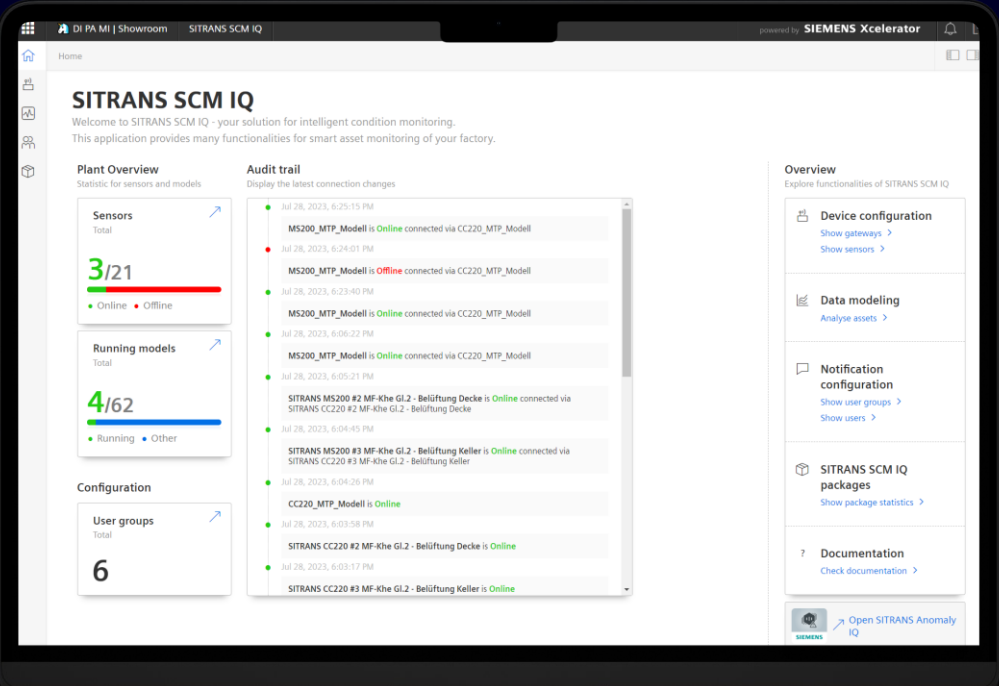
Cable gland to get the antenna “out of the cabinet”

Both sides no pin
Female – Female



Not included in the delivery. Example from 3rd party:
<https://de.rs-online.com/web/p/koaxial-adapter/8782365>

Fast and simple device connection in SCM IQ



Supporting manuals and tutorials

Manuals:

For manuals, FAQs, other documentation please search “SCM IQ”:

<https://support.industry.siemens.com/cs/document/>

[App Product Sheet](#)

[Insights Hub > Getting Connected to Insights Hub](#)

MS200 Mounting Leaflet (A5E50618114)

Short Training Videos:

SITRANS SCM IQ > [System Overview & Insights Hub Introduction](#)

SITRANS SCM IQ > [Mounting the SITRANS MS200](#)

SITRANS SCM IQ > [Onboarding SITRANS CC220 and SITRANS MS200](#)

SITRANS SCM IQ > [How to train a Data Model in SITRANS SCM IQ](#)

SITRANS SCM IQ > [Managing Anomalies in SITRANS Anomaly IQ](#)

SITRANS SCM IQ > [How to add Machine Data to SITRANS SCM IQ](#)

SITRANS SCM IQ > [Asset and Type Structure in Insights Hub](#)



10 Go2Market

Suitable applications and pricing overview

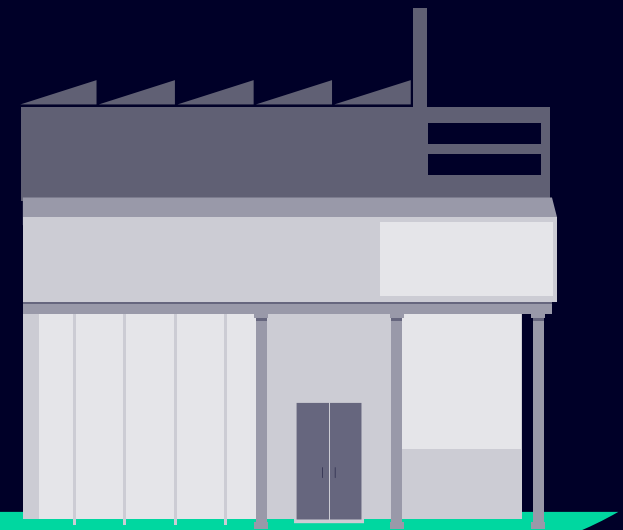
Assets with best fit

> Right selection of asset is crucial

Small/Medium businesses with optimally continuously running ...

- Critical pumps
- Gearboxes (conveyors, elevators)
- Industrial dryer
- Transporting machines
- (Exhaust) fans
- Other rotating mechanical equipment

... that often have downtimes that cause significant costs!

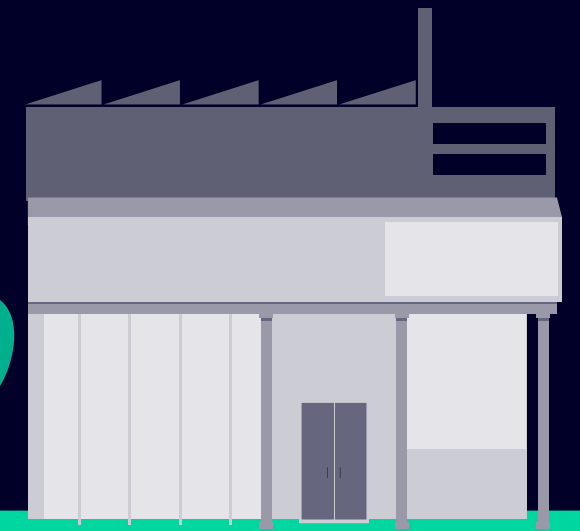
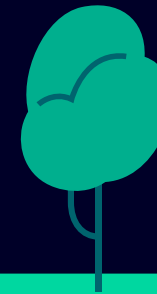


Non-applicable applications



The use of the SCM IQ is NOT recommended for ...




- Short applications (e.g., components which work every minute) as the measurement only happens once per 100 seconds
- Assets with only sporadic data transmission (at least 5 data points per hour is recommend)
- Limitations through the structural circumstances (for example Walls)
- Asset rapidly failing (deteriorating) e. g. over 2 months
- Installations operating outside -30 to 80°C temperature range
- Very critical plant operations, as SITRANS SCM IQ cannot replace a security system



Detailed Pricing Scheme for SITRANS SCM IQ system (July 2023)

Low-cost SaaS ensuring low operating costs



	optional, invest once	mandatory, invest yearly	optional, usage based	optional, usage based	
	Hardware Investment	Software Base Package	Software: Prediction	Software: Additional sensor	
Description	<p>Supervise your asset with:</p> <ul style="list-style-type: none"> SITRANS MS200 multi sensor SITRANS CC220 cloud-connect gateway <p>Each gateway can connect up to 8 multi sensors.</p>	<p>Starter Package with all you need for up to 3 sensors/inputs:</p> <ul style="list-style-type: none"> SITRANS SCM IQ app: Connect & monitor up to 3 sensors or machine data assets and train the AI SITRANS Anomaly IQ app: View & manage anomalies for up to 3 sensors Provides Insights Hub base environment <p>This package is obligatory and includes the full app functionality for 3 sensors/inputs, including Insights Hub base environment and selected resources. Only needs to be bought once per customer. It can be upgraded for connecting additional sensors/inputs (look right).</p>	<p>Predict & Manage Anomalies for additional sensors</p> <ul style="list-style-type: none"> Start/Stop anomaly detection for sensors and/or Insights Hub machine data inputs View, get notifications and manage anomalies <p>Customer uses this upgrade functionality if he/she needs more than 3 prediction models for supervising. Can be de-/activated by customer and is only charged on a daily basis when activated.</p>	<p>Connect & Monitor Additional Sensors</p> <p>Extend your system with more sensors</p> <p>Customer uses this functionality to connect more than 3 MS200 sensors. Can be de-/activated by customer and is only charged when activated.</p>	
Name & Price	<p>“SITRANS MS200” 7MP2210-2AB21-2AB1 €286</p> 	<p>“SITRANS CC220” 7MP2200-2CB05-2AA1 €895</p> 	<p>“SITRANS SCM IQ Package Base” Product-ID DEPCBAA11 €1,200 per year</p>  <p>Insights Hub</p>	<p>“Prediction Extension Package” To be bought for each additional prediction model: €20 per month</p>	<p>“Sensor Extension Package” To be bought for each additional MS200 sensor: €12 per month</p>
Example Calculation	3 * €286 + 1 * €895 = € 1,753 once	€1,200 per year	–	–	
Order Process	Order HW in Industry Mall	Order in SISW organization via CDSP or personal contact (similar to other Insights Hub apps)	In-app purchase	In-app purchase	

Price for a typical starter package with 3 SITRANS MS200, 1 SITRANS CC220 & SITRANS SCM IQ app is €2,953 first year, €1,200 the following years.

Low Investment and Operating Cost

Example cost calculation for 3 sensors and full functionality



One-time Invest

Hardware Investment

SITRANS MS200
7MP2210-2AB21-2AB1



€286

SITRANS CC220
7MP2200-2CB05-
2AA1



€895



mandatory, invest yearly

Software Package

SITRANS SCM IQ Package
Base Product-ID DEPCBAA11
(includes Insights Hub Base
Environment)



€1,200 per year

€1,200 per year

Price for a typical starter package

(example calculation 3 SITRANS MS200,
1 SITRANS CC220 & SITRANS SCM IQ
app)



FIRST YEAR
€2,953

FOLLOWING YEARS
€1,200

Example
Calculation

$3 * €286 + 1 * €895 = €1,753$ once

SITRANS SCM IQ Package Base Trial (Product-ID DEPCBAA10)

Three months free trial – Try before you Buy!

Trial Onboarding

- Customer uses **standard DI SW quotation process (for Product-ID DEPCBAA10)**



[Order Process](#)

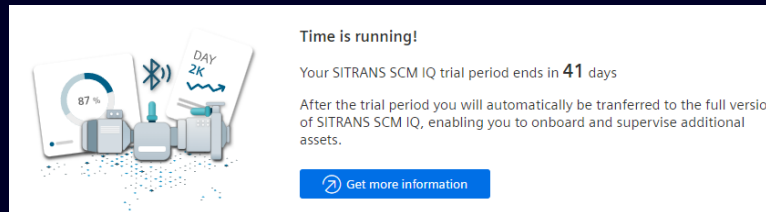


[Trial in DEX store](#)

- A standard SITRANS SCM IQ contract will also be in this quote (starting automatically after the trial)
- Tipp: In order to make the most out of trial do install HW before start of trial phase!

Trial Phase

- Use **full functionality of SITRANS SCM IQ for up to 3 sensors!**
- Trial phase is **90 days**.
- **Automatic transfer to a standard SITRANS SCM IQ contract** (If customer doesn't actively terminate contract)



Full version

- Automatic conversion into standard contract (Product-ID DEPCBAA11)
- Full functionality and no scaling limitations

11 Roadmap

“Customer-centric agile development combined with strategically important HW releases”

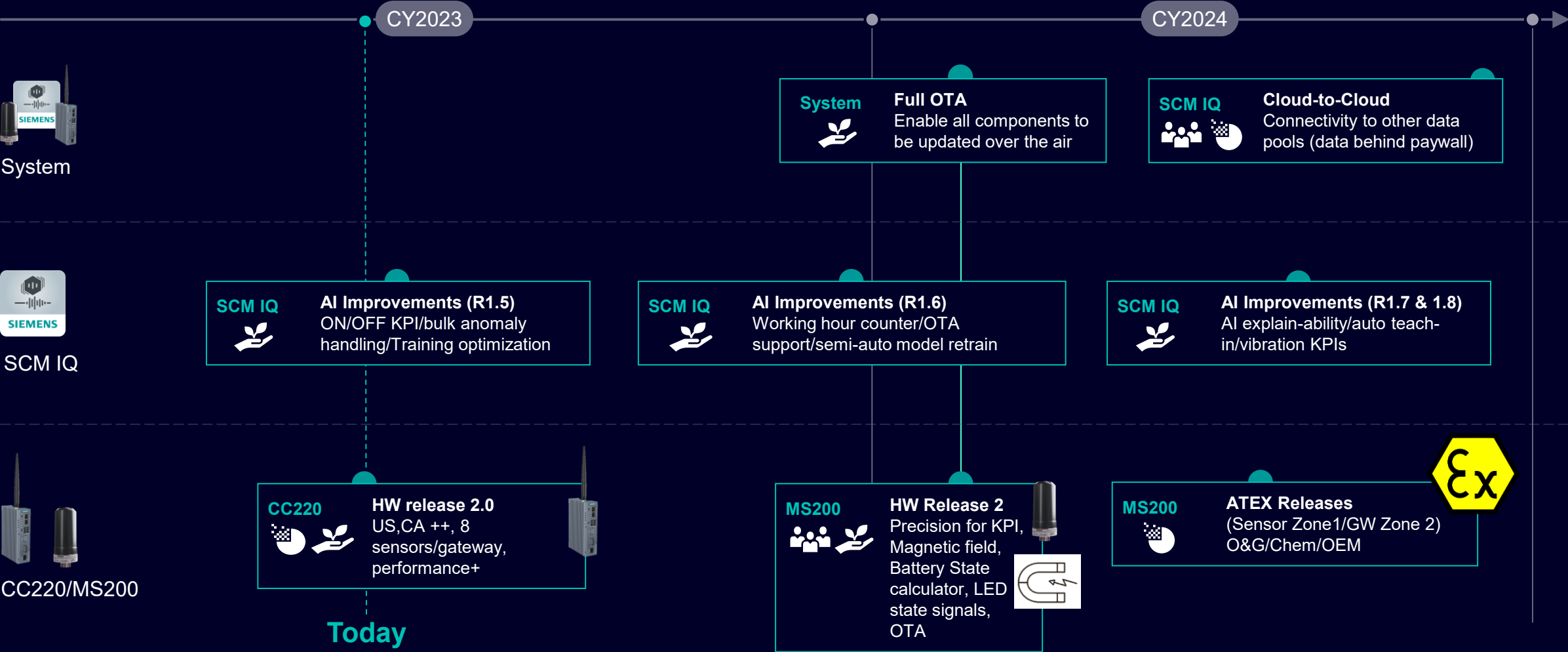
SCM IQ – Global rollout

July 2023



Short Term Roadmap – SITRANS SCM IQ, SITRANS CC220, SITRANS MS200

July 2023



12 Support & Service

Support & Service | Training | Links | Contacts

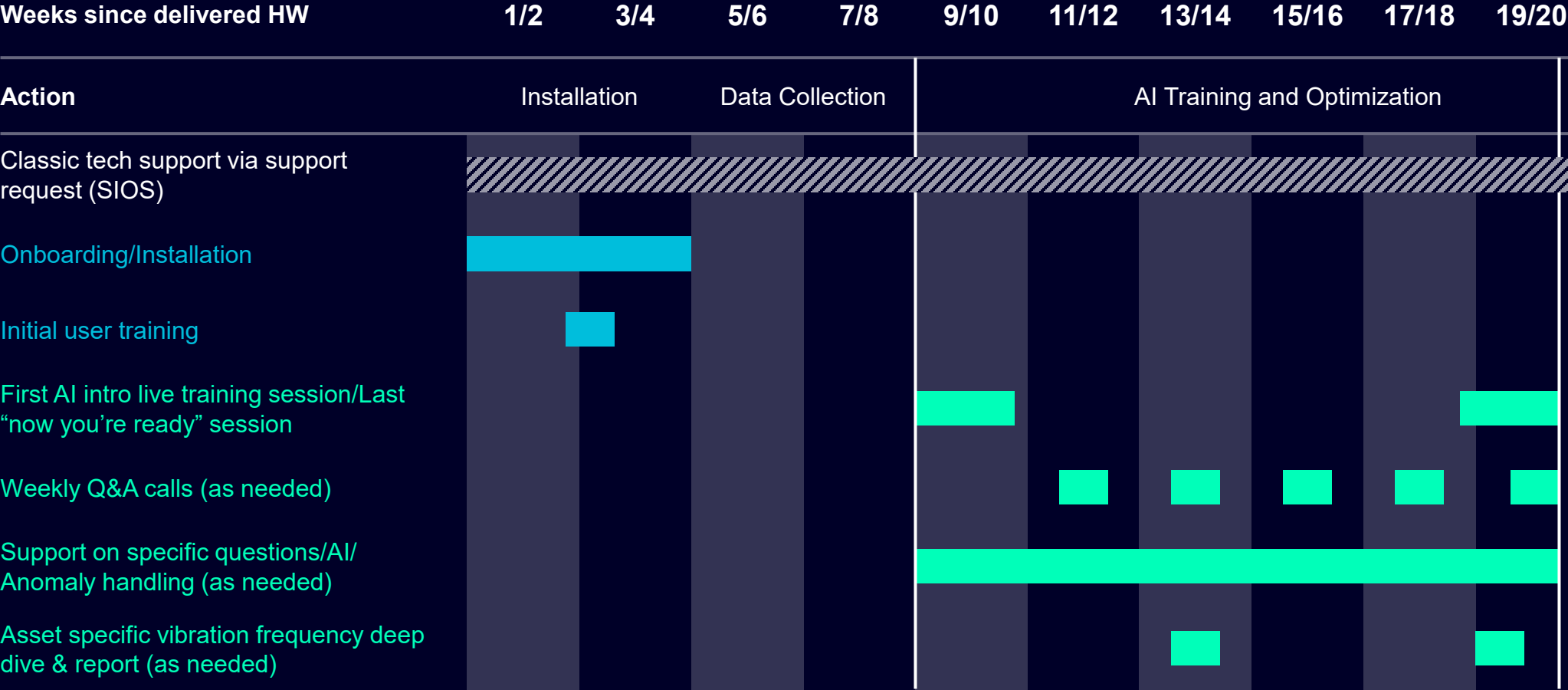
Technical Support and hotline flow diagram

Two different ways for requests, answer via e-mail



Support Request > search „SCM IQ“
<https://support.industry.siemens.com/cs/my/src?lc=en-WW>

HQ service packages – Overview



Commissioning/
Installation Service
Initial User Training
Contact for offer:
Matthias Duttle

Getting Started
Service¹

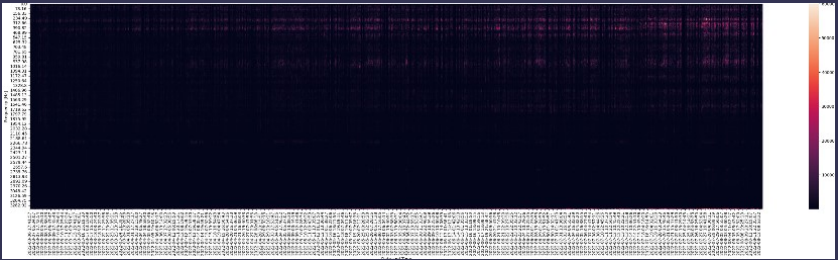
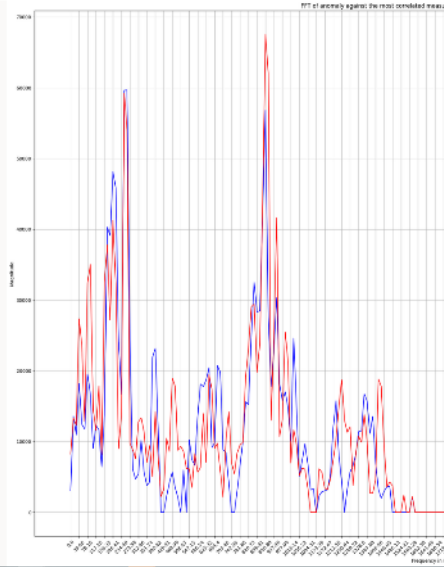
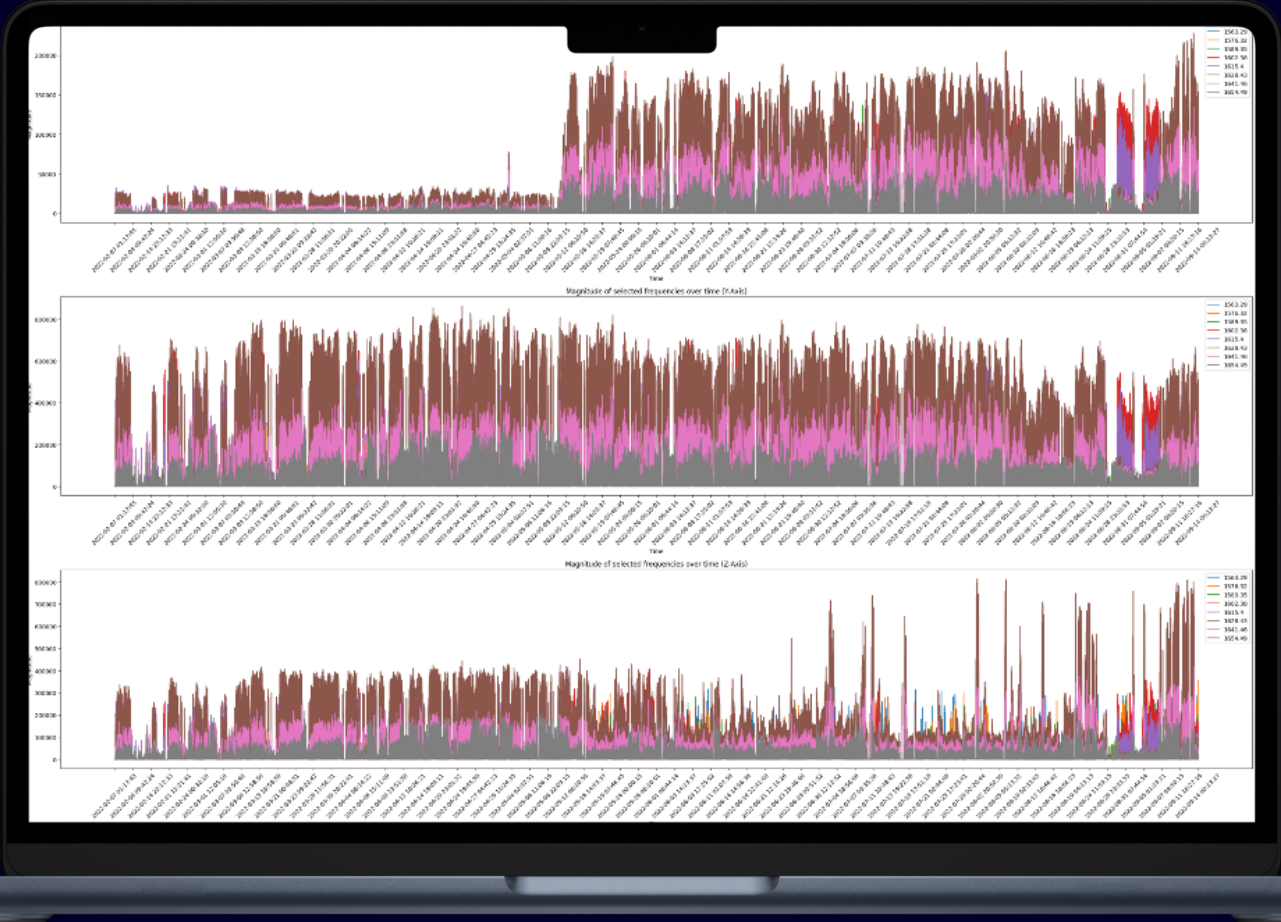
Deep Dive

Contact for offer:
Armin Dedic

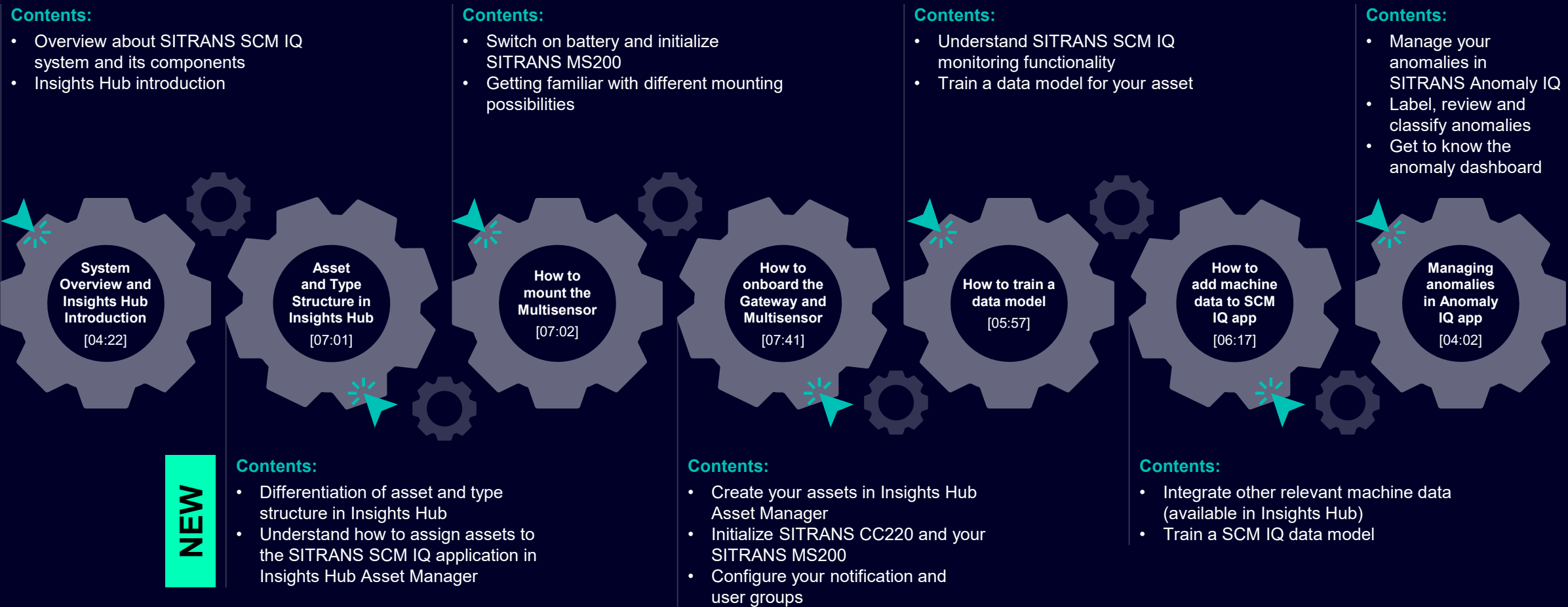
¹ Prices are time & material based, content and format fully adjustable to customers' need

What does frequency analysis mean?

Expert do an individual deep dive analysis per asset



YouTube tutorials to foster commissioning and understanding available internally and externally



Info portals for SITRANS SCM IQ

Website

<https://www.siemens.com/SCMIQ>

Insights Hub

[SITRANS SCM IQ in DEX store](#)

[SITRANS SCM IQ Product sheet](#)

Xcelerator Marketplace

[SITRANS SCM IQ on Marketplace](#)

[SITRANS SCM IQ on Development Portal](#)



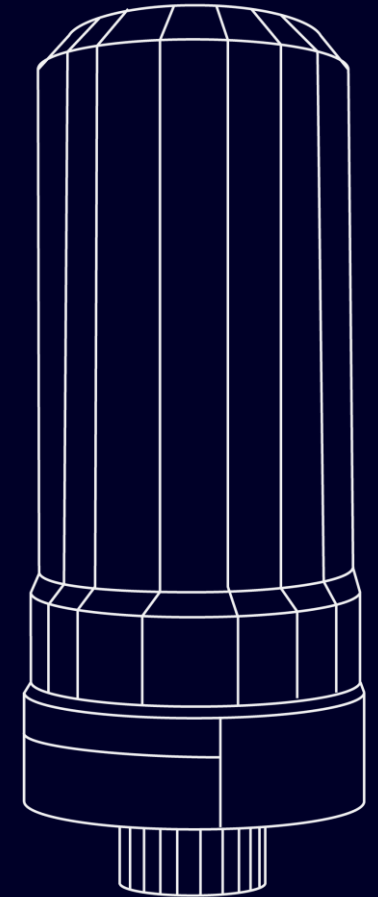
Industrie Online Support SIOS (Catalog, Manual, ...) > search „SCM IQ“

<https://support.industry.siemens.com/>

Automation Technology > Process Instrumentation > Digitalization > Connectivity > SITRANS CC220

Automation Technology > Process Instrumentation > Digitalization > IIoT Sensors > SITRANS MS200

Automation Technology > Process Instrumentation > Digitalization > Digital solutions & Apps SITRANS SCM IQ



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Johannes Burchardt

Marketing Manager SITRANS IQ

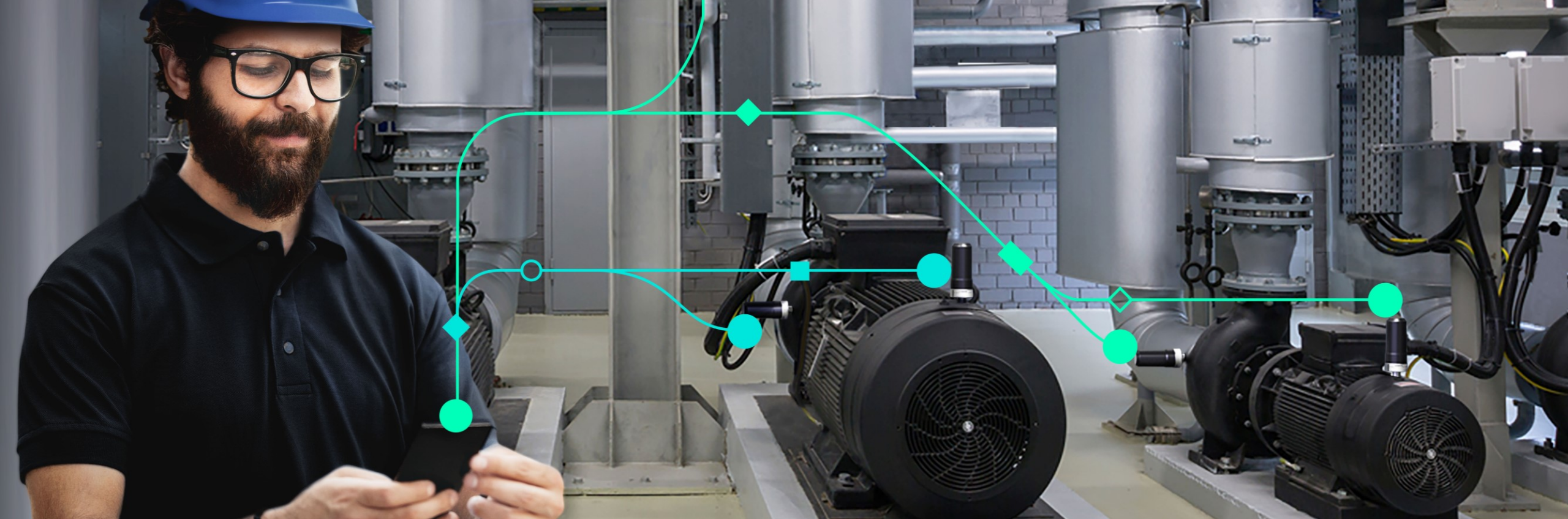
E-mail johannes.burchardt@siemens.com



Frederic Baldauff

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