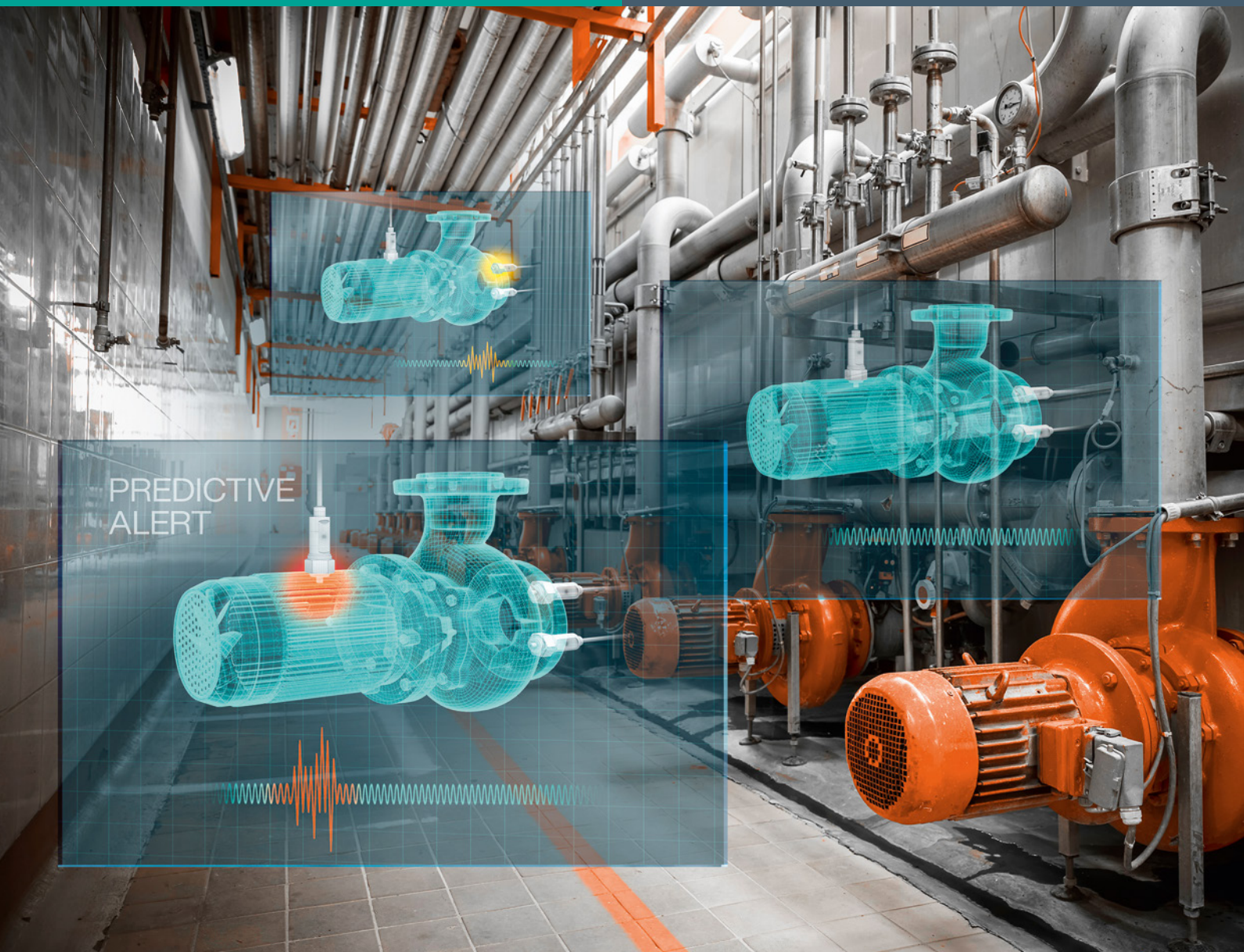# Predictive Maintenance Transformed.

Ready-to-use and flexibly scalable: the plug-and-play solution for AI-powered asset monitoring.

Digital Twin Starter Kit
by Bosch Business Innovations
and Pepperl+Fuchs

PREDICTIVE
ALERT

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Digital Twin Starter Kit

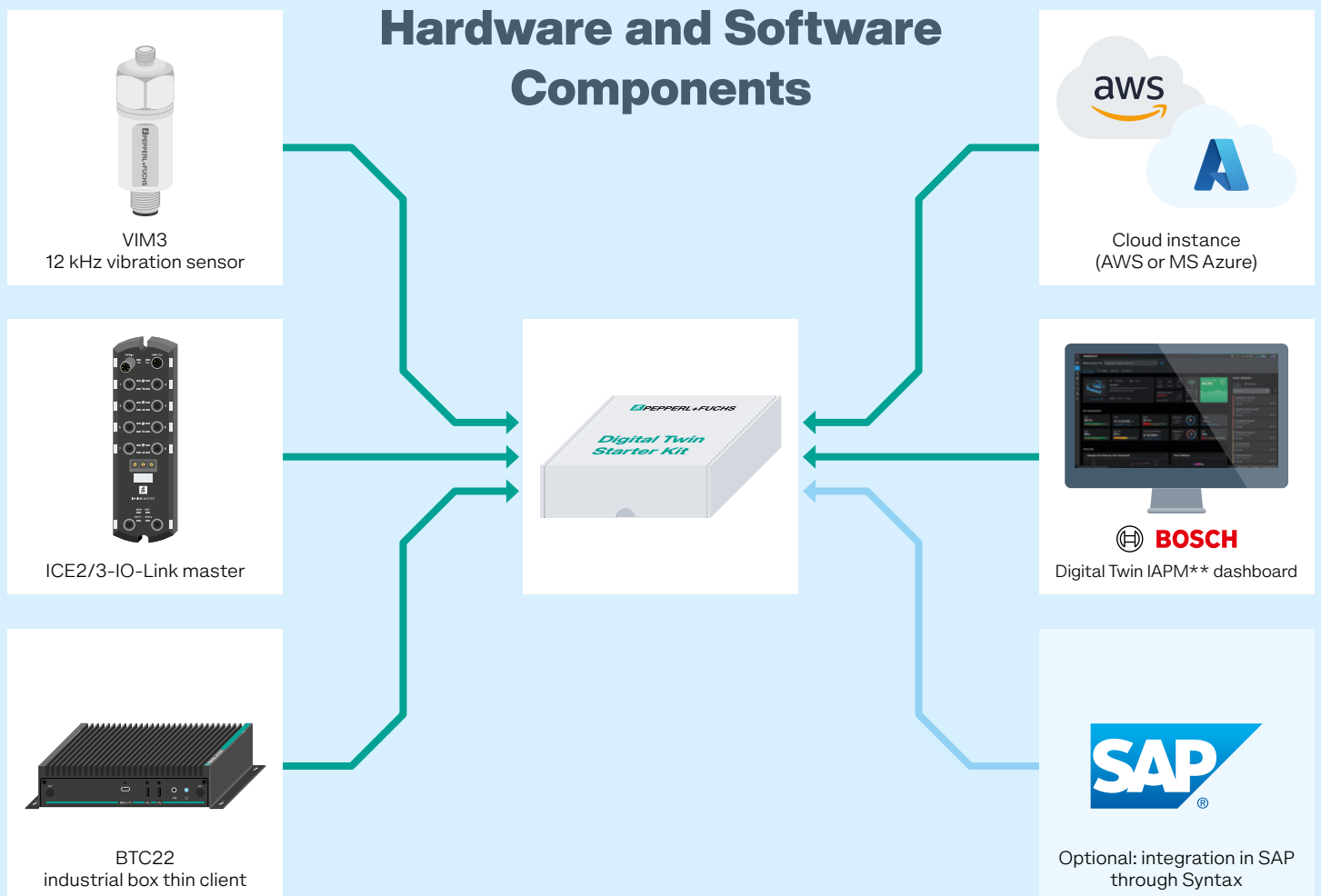# Predictive Maintenance with Artificial Intelligence

The digital twin opens up new possibilities for monitoring system status and avoiding unplanned downtime—for greater productivity and efficiency. The Digital Twin Starter Kit from Bosch Business Innovations and Pepperl+Fuchs makes it easy to get started with predictive maintenance. The ready-to-use complete solution enables simple implementation.

Combined Expertise from Market Leaders

The Digital Twin Starter Kit is a universally applicable system solution for increasing machine availability. It combines sensor technology and infrastructure components from Pepperl+Fuchs with cloud data analysis from Bosch. Artificial intelligence (AI) and machine learning (ML) algorithms for system monitoring in real time enable a data-supported and highly predictive maintenance strategy. Expensive failures can be prevented and considerable resources and costs can be saved.

Measurement, Communication, Evaluation

Specific components, for example 12 kHz vibration sensors from the VIM3 series, measure the status data. They are collected using an IO-Link master and transmitted to the BTC22 industrial box thin client via MQTT. The digital twin platform from Bosch Business Innovations, which is based on established cloud solutions such as AWS or MS Azure, evaluates the data in real time using machine learning models as well as advanced algorithms and automatically derives the appropriate measures. A direct connection to an ERP system is also possible.

Hardware and Software Components

VIM3
12 kHz vibration sensor

ICE2/3-IO-Link master

BTC22
industrial box thin client

Cloud instance
(AWS or MS Azure)

Digital Twin IAPM** dashboard

Optional: integration in SAP
through Syntax

Real-Time Insights in Just a Few Steps

Commissioning the Digital Twin Starter Kit is fast and seamless: After installing the sensors and the IO-Link master, the BTC22 is connected to the network. Initialization and configuration run automatically. After a short teach-in phase, the system sends process and device data to the cloud platform. The dashboard provides real-time insights into the operating status, energy consumption, and general condition data of systems such as centrifugal pumps, blowers, and compressors. Predictive maintenance is directly active and optimizes maintenance processes by predicting faults at an early stage.

Highlights

- High productivity and efficiency: Ready-to-use plug-and-play solution enables AI-supported analysis and optimization in real time
- Significant resource and cost savings through predictive maintenance strategy
- Precise condition monitoring for asset life extension
- Maximum transparency due to wide range of scenario simulations and early detection of anomalies
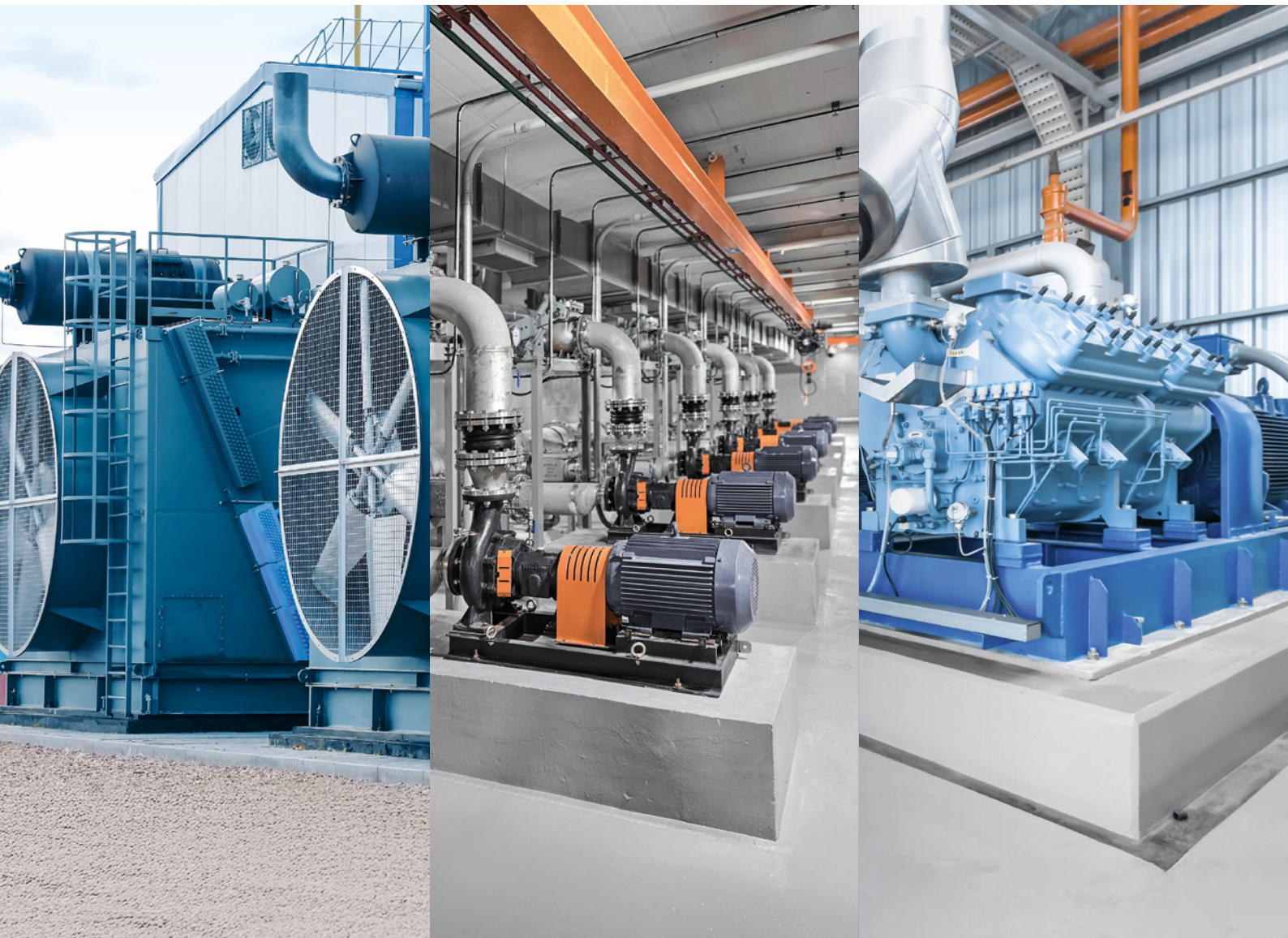
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