

# INDUSTRY 4.0



## WHAT ARE THE CHALLENGES?



### HETEROGENEOUS MACHINERY OF VARIOUS MANUFACTURERS

How can I convert my heterogeneous machine park in a way that will allow me to network all of my existing machines?



### MACHINE FAILURES THREATEN TO SHUT DOWN THE ENTIRE PRODUCTION

How can I achieve an economic and time-saving parts replacement that will upgrade legacy machines to the state of the art and boost their performance to that of new machines?



### ANALOGUE LEGACY MACHINES ARE NOT NETWORKED

How do I integrate my legacy systems into a modern, Industry 4.0-style production? How can I detect deviations before they become failures? How will I achieve predictive maintenance?



### REPLACING MACHINES IS JUST TOO COSTLY

How can I retrofit controls, sensors, actors or other automation elements to boost productivity?



### MISSING TRANSPARENCY OF PRODUCTION PROCESSES

How can I digitalise my production processes in a cost- and time-efficient way in order to measure and evaluate Overall Equipment Effectiveness (OEE)?

# EXISTING PLANTS RETROFIT



## JUST A FEW EASY STEPS TO YOUR SMART PLANT

The reliable way of modernisation: a secure implementation process that is perfectly matched to your requirements, your schedule and your budget!



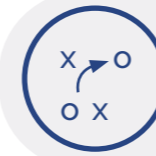
### 1. NEEDS ANALYSIS

We will check your analogue machines' existing capabilities. Do they generate any signals at all? Can we leverage existing signals or do we need to retrofit any sensors? Is there an integrated bus system that could make a retrofit unnecessary?



### 2. SELECTING SENSORS

Before installing them, all sensors must first be carefully selected to match your use case. Only then will you gain the information needed to effectively monitor your machine.



### 3. DEVELOPMENT OF YOUR PERSONAL RETROFIT STRATEGY

What kind of hardware and software will need to be installed to make sensor data available in a meaningful way? We recommend using the Fraunhofer vBox to cope, for example, with high data loads. Of course, you can also digitalise analogue sensor data with third-party hardware and/or microcontrollers.



### 4. RETROFITTING SENSORS

We will install any necessary sensors and a preprocessor agent to process and prepare the resulting sensor data. Once the retrofit is complete, your machine will be ready for data analysis.



### 5. NETWORKING

Our data integration platform edbic merges all collected machine and sensor data and analyses them in real-time according to predefined rules. This provides you with intelligent monitoring and controlling capabilities across the entire production environment and across all plants.