See the Big Picture

Get 360° transparency with the iba system

Measurement Systems for Industry and Energy

Flexible, holistic, traceable

See the Big Picture

The iba AG is the expert for measurement systems in the industrial and energy sector. It is our mission to bring transparency to the world of industrial production, power generation and power distribution plants. By means of an iba system, the user can be sure that the entire plant is completely acquired and every single process is completely recorded 24/7 and made visible.

»Efficient data analysis and utilization is the key to success for our customers.«

Dr. Ulrich Lettau
CEO

Cutting edge

For more than 30 years, our area of expertise has been the development of high-quality systems for process data acquisition, analysis and signal processing.

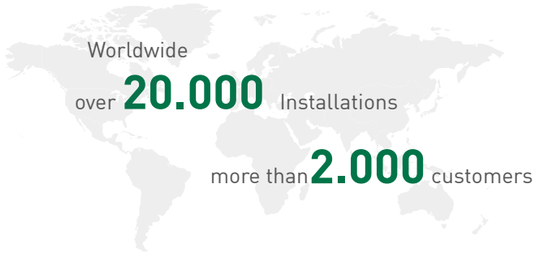
iba is one of the few manufacturers who completely masters the whole technology chain from hardware via software to database technology. Only those manufacturers who understand the whole process in detail can foster innovation and provide competent advice and support to customers.

Communicative

In addition to the practice-oriented functionality a main characteristic of our hardware and software products is the distinct connectivity to the automation systems.Various manufacturers and system generations are taken into account and even legacy systems can be integrated as well: A clear benefit in the life-cycle of the plant.

iba System

With the iba system you will have interference-free processes and maximum transparency on all technical processes in your plant - and beside that - almost infinite possibilities to optimize your processes.



You always see the big picture when using an iba system.

Business Benefits

Enhanced
productivity

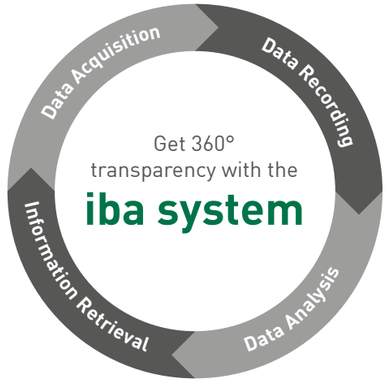
Reduced
plant downtimes

Improved
and documented product quality

Saved
energy and raw materials

Prevention
of critical plant conditions

Optimized
processes



2/3
of our employees are technicians and engineers

Autonomous, modular, scalable

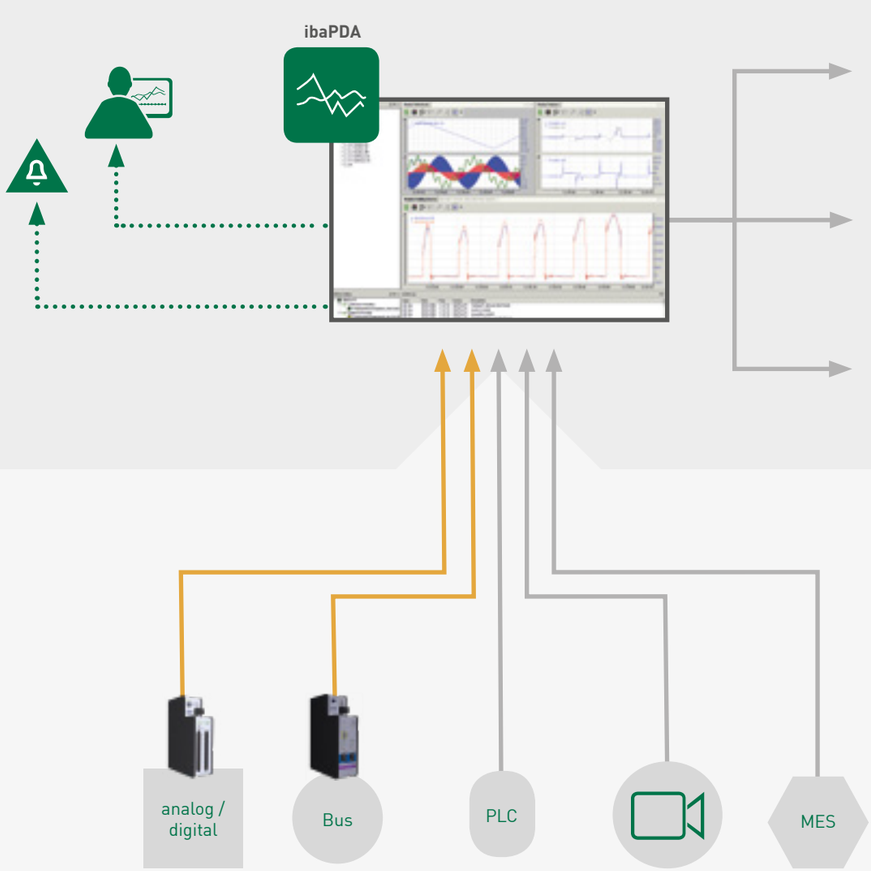
The iba system

Our data acquisition systems and software solutions to measure, validate and analyze machines, production and energy plants are scalable and can be perfectly enhanced at any time. They can not only adapt to the growing requirements but also communicate with all common industrial control systems.

Due to the modular design and the simple configuration, the iba system can be adapted comfortably to the various tasks and is scalable in size at any time.
Thus, numerous areas of application can be covered: from the small system for mobile commissioning with 64 measurement signals up to the plant-wide stationary system with several thousands of signals. The iba system can be stepwise adapted to the growing tasks.

Record data

Like a flight recorder, the iba system aquires and stores various measurement data for long-term availability by using the ibaPDA system (process data aquisition). The data is recorded continuously (24/7) or triggered by certain defined events. Signals chosen by the user can be visualized online as well.

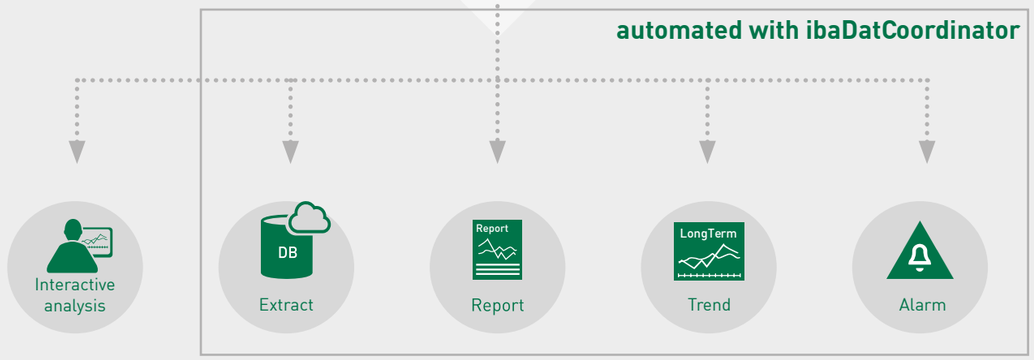


Acquire data

The basis of all process data analysis is the time synchronous acquisition of relevant data at characteristic places within an automated plant. Data from different signal sources can be combined. Due to the isochronous measurement, causal relations can be detected and understood also in complex and distributed systems.

Analyze data

Depending on the objective, data is analyzed individually - either directly during acquisition (online) or based on the recorded values following an event. Also the offline analysis over a longer time period for production and process analysis is possible.



Optimize

By deriving Key Performance Indicators (KPI), the user gains valuable information about the acquired process. This way, your measurement data become a tangible competitive advantage.

Area of application

Troubleshooting

Failures in automated plants lead to production interruptions, production loss and products of poor quality. Thus, it is extremely important to find these failures. In case of a failure, the maintenance engineer needs to have access to the measurement data which have been recorded during the disturbance. By analyzing these data, the technician finds the root cause and eliminates the failure in the plant in a targeted way.

Your advantage at a glance

Root cause
analysis

Reduced
plant downtimes

Optimized
processes

»Find the root causes of process failures with only a few mouse-clicks.«

Eik Spietz
Application & Consulting

Record data continuously

For localizing failures, the plant behavior needs to be recorded continuously and hence be made transparent. **ibaPDA** provides a global view on the plant and also allows for analyzing interactions between individual system components and several controls. An autonomous, but stationary integrated acquisition system in the plant provides the data immediately in case of a failure.

With **ibaPDA-PLC-Xplorer** you have a powerful tool at your disposal which records signals from PLCs in a flexible and mobile way.

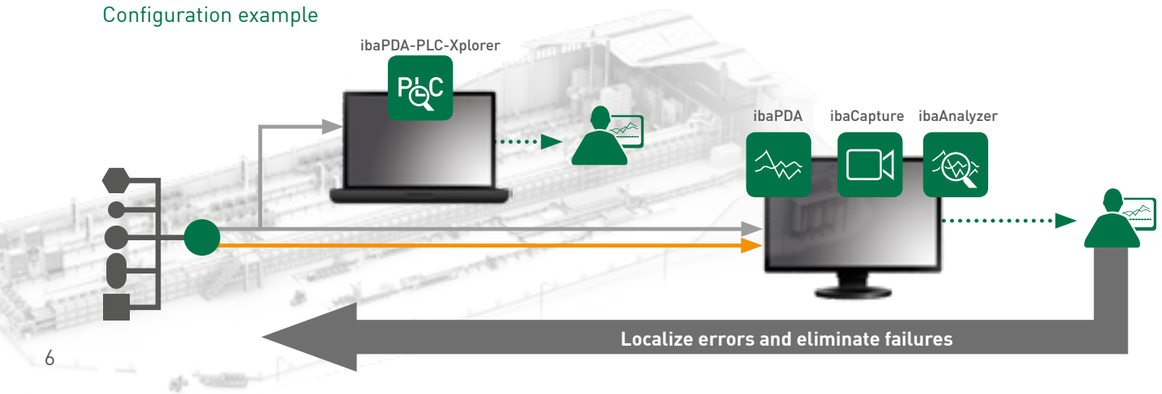
Convenient data analysis with video images

Values which cannot be acquired with the existing sensor technology, will be acquired with **ibaCapture** time synchronously to the measured signals - a valuable help for analysis, since measurement data and video images can be analyzed together.

Offline analysis of measured data

ibaAnalyzer offers various functions to analyze failures based on recorded measuring data. Signals, signal intervals, and delays are measured and outliers as well as causal relations can be detected immediately.

Configuration example



Our success stories

Finding and eliminating malfunctions in a hot rolling mill
Plant components in the hot rolling mill are monitored and analyzed by the targeted recording of events together with the historical measurement data. This allows a faster and more efficient troubleshooting.

Offshore use of ibaPDA-PLC-Xplorer
The data acquisition system for PLC systems is used for the commissioning and maintenance of offshore cranes worldwide. With ibaPDA-PLC-Xplorer the service team can quickly determine the status of the installed system and carry out maintenance work.

Optimizing the hydraulic actuator on a ship propulsion system
iba measurement systems measure the nominal values of the hydraulic engines that are responsible for driving the rudders. At the same time the reason for a deviation of nominal values can be checked.

Area of application

Process analysis

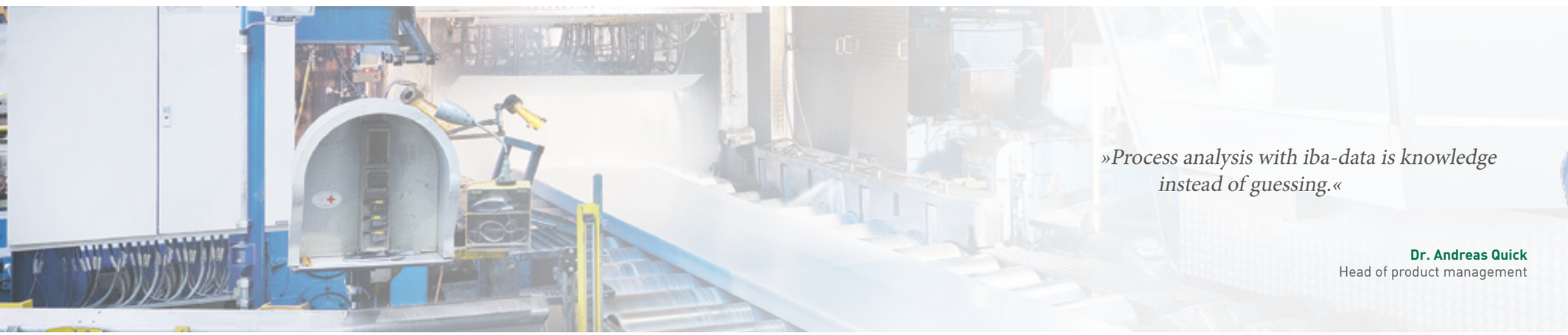
Process analysis is the prerequisite for process optimization and is always required when e.g. new products are launched, the process is modified or improvements in quality are to be achieved. The process analysis is most successful when it is based on unaltered long-term data and statistical data allow to draw conclusions about the process behavior and the production at any time.

Your advantage at a glance

Optimized processes
through continuous data recording

Enhanced
productivity through more efficient processes

Saved
energy and raw materials



»Process analysis with iba-data is knowledge instead of guessing.«

Dr. Andreas Quick
Head of product management

Efficient long-term data acquisition

In product analysis, the long-time behavior of a process is considered under different aspects and for various product groups.

For analysis, the product- or time-related measurement files generated with **ibaPDA** or the data and events saved in **ibaHD-Server** can be used. The videos recorded with **ibaCapture** and the automatically generated individual images help to understand and analyze the process behavior.

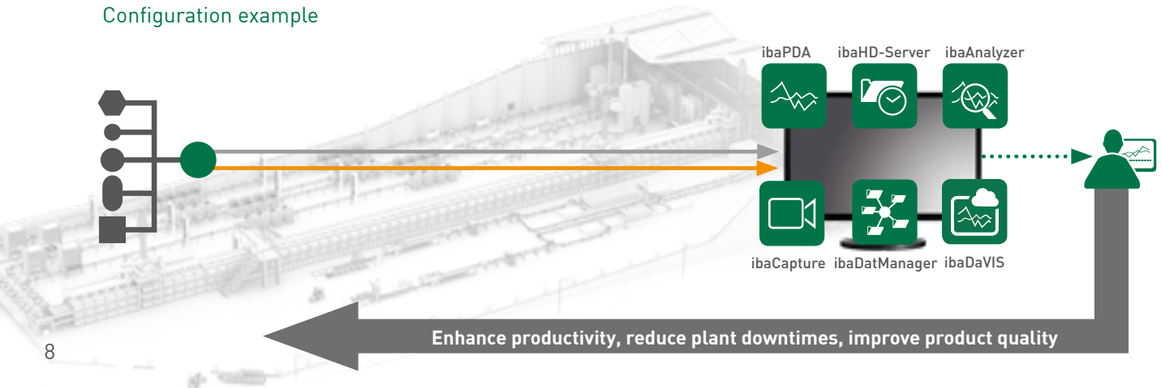
Flexible and reproducible analyses

With **ibaAnalyzer, ibaDatManager** and **ibaDaVIS** you have powerful analysis tools at your disposal for answering technological questions and doing long term analyses with drill-down to the high resolution measurement data.

Process optimization

Benefit from an enhanced productivity through more efficient processes, an improved product quality as well as saved energy and raw materials. Hence increase your customer satisfaction.

Configuration example



Our success stories

Packaging manufacturer reduces waste
Monitoring of the machine status in real time and immediate failure detection. This helps to increase plant efficiencyand primarily reduce set-up times and rejections.

Monitoring in the open brown coal pit sector
Using the iba measuring systems allows an efficient setup and global monitoring for optimizing the propulsion and automation technology.

Focus on plants with process-specific camera monitoring
Generally, not all critical components and aggregates of a rolling mill are visible from the platform. Therefore camera system are used for process monitoring. Process failures can so be detected in the platform and countermeasures can be taken. The project includes the installation of ibaCapture and ibaPDA in a rod rolling mill.

Area of application

Quality documentation

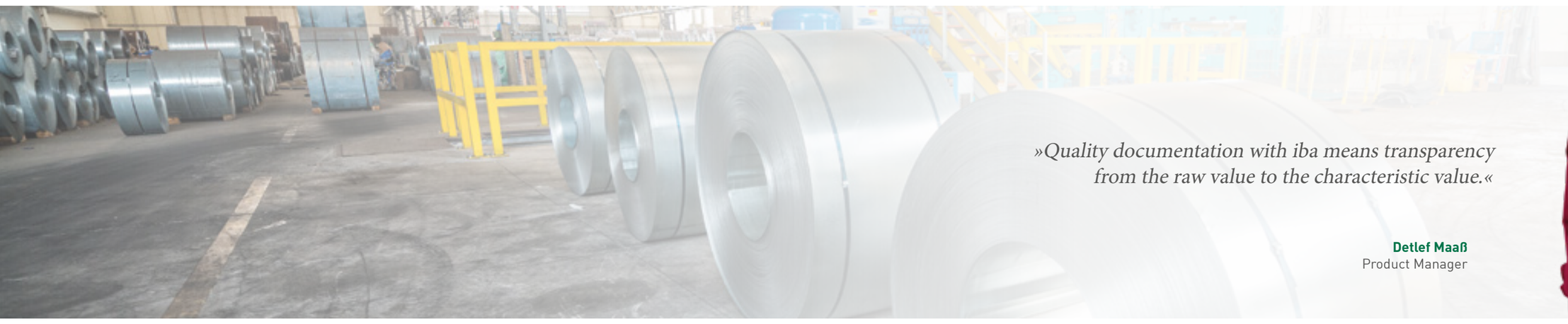
For documenting an automated production, quality data and characteristic values need to be calculated and stored reliably in a quality management system. With the iba system, customer specific reports can be generated for product documentation and product release by automatically transforming measurement data into quality data and saving these data in an open format in databases or cloud systems.

Your advantage at a glance

Calculate
characteristic values traceably

Automatically
generate production and quality reports

Root Cause Analysis
via drill down to the measurement data



»Quality documentation with iba means transparency from the raw value to the characteristic value.«

Detlef Maaß
Product Manager

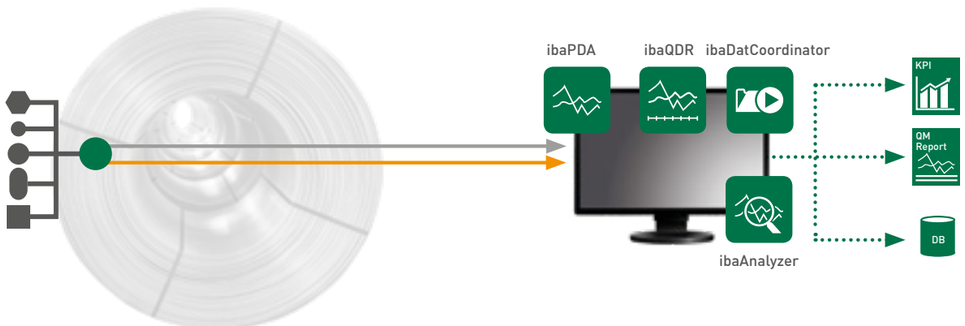
Automatically calculating characteristic values

With **ibaPDA** measuring data are recorded time related and then are stored product related in data files. With **ibaQDR** the values measured with **ibaPDA** are assigned to the corresponding measuring locations and transformed into product-specific, length-based measuring values, standardized to the length of the final product. This allows an efficient calculation of quality data for line products. With **ibaAnalyzer** and **ibaDatCoordinator** characteristic values and quality data can be calculated comprehensively and automatically from the high resolution measurement data. **ibaAnalyzer-DB** allows the further aggregation of the measured data length or time related and storing them along with the calculated characteristic values in databases or cloud systems.

Generate quality documentation automatically

After a product has been finished, the customer-specific report is being filled automatically with the current measurement and quality data. On the basis of defined layout templates, it is filed as PDF or HTML or sent automatically via email. For long-time analyses and cross-product documentation, **ibaAnalyzer** has access to the data in different databases. Hence, a powerful, always transparent reporting system can be implemented very easily.

Configuration example



Our success stories

Length-related measurement data acquisition in strip processing plants
ibaQDR is a quality data recording system with broad connectivity and efficient quality data management. In addition to the online visualization of measurement data a status window can be used to monitor which product is at a certain measuring point.
The measured values and parameters are stored by meter.

System monitoring in a medium-wide strip mill
Harmonizing of different recording systems into a unified data acquisition system for all departments to get a reliable data basis for maintenance and quality management.

Checking and certifying coil tracking automatically
In a rolling mill ibaDatawyzer-ICC checks the coil identity online based on high resolution measurement data. By means of their geometric properties like thickness and width, an identification of the coil is made, whether it can further proceed in the process chain. In error cases, an alarm message is sent via email.

Area of application

Power Quality

In the field of electrical power technology, the iba system is used as Transient Fault Recorder and for the acquisition, recording, and calculation of power quality variables according to standards.

Your advantage at a glance

Analyze
failures

Document
according to standards

Avoid
fines

»Measuring transients together with operational data and EEQ data is another step towards a “smart grid“.«

Maria Dimitsanti
Technical Account Manager Power Transmission Systems

Acquiring dynamic processes rapidly

With the iba system, fast transient signal transitions can be acquired and recorded in the range from 1 kHz to 100 kHz at a high resolution. As with this application the measurement data is to be recorded only in case of failure **ibaPDA** initially stores the data in an internal buffer. When a failure condition occurs, the data is recorded in a triggered way.

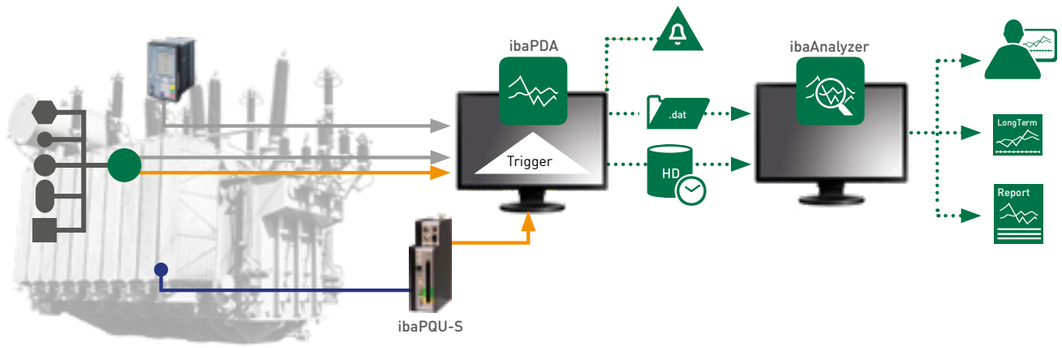
Prove power quality according to standards

ibaPQU-S is a certified measuring system that measures raw values like current and voltage grid-synchronously and calculates the characteristic values that are relevant for the power quality according to IEC 61000-4-30 Class A and thus is suitable for analyzing purposes according to EN 50160.

Analyzing power quality and troubleshooting with one system

Protective devices in the plant can be integrated by means of the standardized transfer protocol IEC61850 for protection and control technology. If in complex plants, several thousands of signals have to be acquired synchronously at a high acquisition rate, several **ibaPDA**-systems are linked via fiber optic and the data is recorded with sample precision (Multistation-functionality). With **ibaAnalyzer** the causes for failures can be determined. Based on the measuring data recorded by **ibaHD-Server** over long periods of time, standard-compliant evaluations are generated

Configuration example



Our success stories

Fault recordings in HVDC systems
For HVDC transmission, fault recorders are used. In an event of fault they record all essential signals in high resolution. By definition of trigger values and scenarios the recording can be started at certain points of time. Each record has its own record control, signal selection and assignment of a memory profile. Special acquisition modules were developed that are suitable for the special requirements in the field of power quality with a 100 times overload under full resolution.

Monitoring of grid quality
ibaPQU-S is used in a big steelworks to record the grid quality in accordance with standards and to check the quality of supply. Exceeding limit values are reported online so that an intervention can be made quickly in the event of a malfunction. Furthermore, the measured values are used to optimize the utilization of transformers and lines and are furthermore used for the development of new components.

Area of application

Condition Monitoring

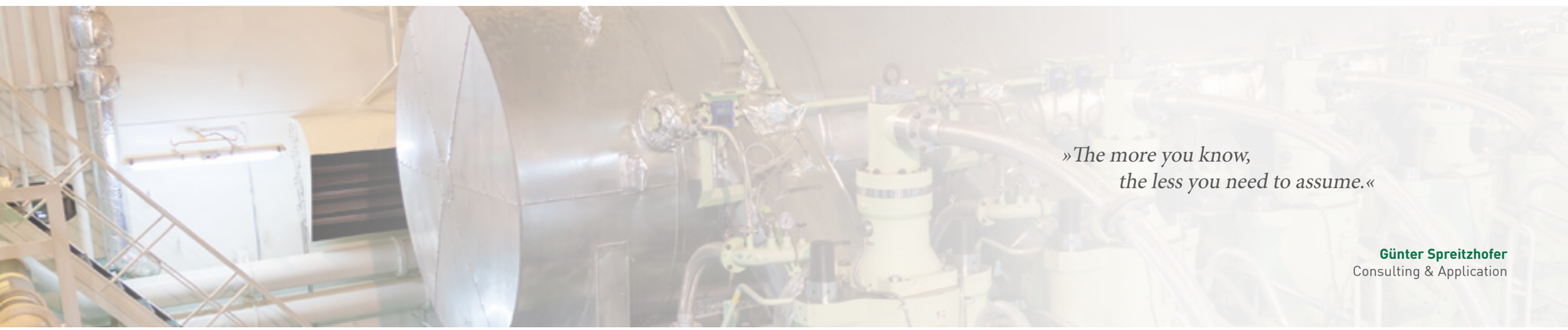
Condition Monitoring Systems (CMS) use vibration measurement in combination with intelligent analysis procedures for detecting wear and tear of mechanical components at an early stage. They are the basis for the transition from a preventive to a condition-oriented maintenance. Thus, mechanical components are optimally used over their real service life and the costs for unexpected downtimes and spare parts are reduced.

Your advantage at a glance

Optimal planning
of maintenance work

Prevention
of unforeseen downtimes

Vibration analysis
in real time



*»The more you know,
the less you need to assume.«*

Günter Spreitzhofer
Consulting & Application

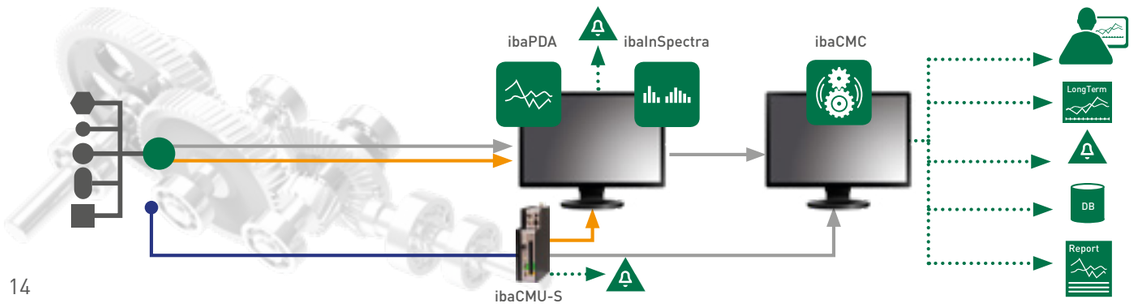
Enhanced reliability

In terms of complex plants, varying load states and materials exert a great influence on the vibration measurement and the analyzed damage levels are strongly fluctuating. Often false alarms that arise as a consequence are often responded with an increase of the alarm limits - this reduces the lead time and voids out the benefit of the system. To obtain a reliable function of the CMS system in this context, it is necessary to know the relevant operating parameters. With the Condition Monitoring Center **ibaCMC** and the Condition Monitoring Unit **ibaCMU-S** iba offers powerful functions for monitoring the wear of machines and setting the results into relation to process information.

Online monitoring: Optimize processes, Enhance product quality

ibaInSpectra is an integrated technology module of the process data acquisition system **ibaPDA** and processes vibration signals continuously and in real time. By means of spectrum analyses, vibrations can be monitored online and set into relation to other process parameters. When vibrations become critical, the plant operator is informed via alarm message or email. In addition, a feedback in the plant control can be implemented to automatically adjust the corresponding parameters.

Configuration example



Our success stories

Monitoring gears the intelligent way
Significant savings can be made with preventive maintenance using sensor-based Condition Monitoring. Detecting damages on bearings in a rolling mill early on in the process, was the main objective of this project, as in case of an unplanned failure of a pinion gear box, the whole production unit would be down. For predicting downtimes with a high reliability, the implemented system can perform detailed analyses of complex plants.

Acoustic monitoring in the engine testing technology
Test benches at an automobile engine plant had to be retrofitted by the test bench manufacturer to include acoustics analysis. The manufacturer was looking for a retrofittable system for a reliable and automated monitoring of the test benches using vibration sensors and microphones.

Optimizing wind energy plants
For the optimization of wind energy plants, characteristic values should be analyzed in the long-term. Specified data on the current status of wind energy plants are recorded, parameters are calculated and are stored daily in a central database. Possible damages can be diagnosed at an early stage and efficiency can be increased by a continuous trend monitoring

Service

Applications & Consulting

Our specialists help you finding a tailored solution for your project. To us, consulting means a comprehensive support: beginning with problem analysis up to implementation and commissioning.

Your advantage at a glance

Customized
solutions for your needs

Domain-specific
consulting by our specialists

Support
in analyzing, monitoring and optimizing your production

»We help you with your digitalization strategy.«

Harald Opel
COO

Customized solutions

This is why for us individual consulting plays an essential role from the very beginning. For working out a specific solution for you,our consulting specialists will give you advise - also on-site at your company.

Our specialists know your industry, your requirements, and your tasks and support you in finding a customized solution.

Integration with iba

iba products can be adapted to your system environment and your infrastructure with plug-ins or special configurations . This comprises among other things special interfaces, integration in existing applications, visualizations, individual reports or programs programmed according to IEC61131. We also support you in designing the appropriate database architecture and realize a solution with you.

To us, consulting does not only mean presenting solutions. We provide you with the necessary know-how for understanding the functionalities of the iba system and to develop it further.

Our consulting process accompanies you from your requirements analysis to a customized solution and even beyond

1. Requirements analysis
2. Requirements workshop
3. Consulting with experienced specialists
4. Customized solution
5. Training

Examples of our consulting and application services

Benefit from a wide range of specific consulting and application services tailored to your needs. These are just a few examples from our portfolio:

Documentation of your production in clear reports

We generate informative reports with your key figures. As a result you can get product-related documentation and therefore full transparency at any time.

Online visualization of measurement and quality data

We generate your individual process visualizations according to your needs. Visualize measurement data, historical data and quality data in flexible views.

Monitoring of your production through KPIs

We analyze your machine and define with you characteristic values (KPIs) for data-based monitoring and optimization of your production. The calculation of the characteristic values (KPIs) is based on the high-resolution data recorded with the iba system.

Support

We offer technical support to our customers so they can efficiently use our products and prevent failures during operation.
Our experienced support team will attend your requests. Also worldwide via our affiliates and partners.

Competent technical support

If you have questions concerning our products, we provide fast and competent support. Our support is provided by competent engineers who exactly know the different areas of application of the iba system and the individual products. They are familiar with the broad connectivity and have access to a comprehensive knowledge database. Thus, many questions can be answered on the phone; we try to simulate complex failure situations in our test laboratory for being able to get to the root of the cause and giving you concrete advice. If required - and technically possible from your side - we connect to your system using the Teamviewer® software for analyzing the situation on-site and finding a solution for the problem.
Additionally, we offer a comprehensive download area on our website. Here, the latest software version of your licensed products can be found together with the comprehensive user manuals as a free download.

New software available online

Our software is continuously improved.
Benefit from that and register on our website. By email, the „Product Information" informs you regularly about new software versions.

In order to show you new features and to demonstrate how iba products work, we will focus more on video tutorials in the future. So you get a quick impression of our products and their applications. Many questions about configuration and operation are answered directly in this way and provide a visual complement to the manuals. In a few minutes you will receive concrete tips and tricks.

Newsletter

Stay up to date and sign in for the iba-Newsletter ibaAktuell.

Contact us:

+49 (911) 97282-14

support@iba-ag.com

www.iba-ag.com

You can find answers to many questions in our FAQs: www.iba-ag.com

You can find the latest video tutorials on our products on our YouTube channel: www.iba-ag.com/youtube

Sign in for our newsletter and the „Product Information" for your products.

Trainings & Workshops

In our modern training center based in Fuerth or on-site in your company, we offer various trainings and workshops. Experienced users deepen their knowledge about iba products, while new users get a compact introduction to the various areas of application of the iba system with many practical examples and exercises. We deal with your topics in customer-specific workshops. Based on the workshop results, you will be able to do the following steps alone on-site and use the iba products to their full extent.

Practice-oriented training

All trainings are held by our qualified technicians and engineers. Due to the small training groups, they can also respond to individual questions at any time. All of our trainers bring in years of experience using the iba system and provide you with their gathered knowledge.

The participants benefit from the solutions for existing tasks and hence can gather valuable information for the use of iba products in their company.

Modern training center

The trainings take place in our modern training center based in Fuerth. A modern didactic system supports the "learning by doing" principle. Every participant works at an own workplace and can discuss the tasks with the trainer in direct dialog. Thus, you can directly apply and deepen the things you have learned.

Upon request, we offer thematic and customized trainings and workshops - of course also on-site at your company.

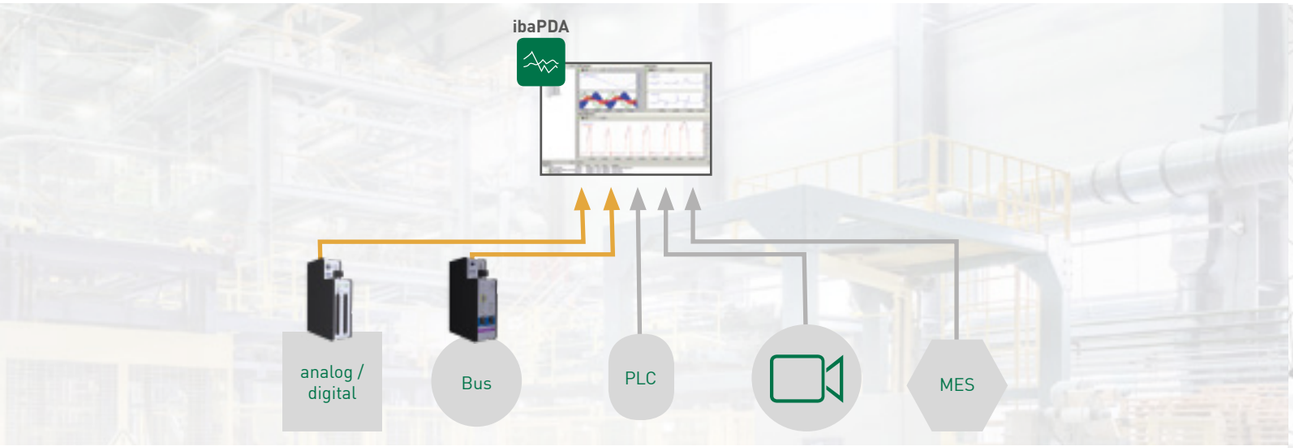
Basic courses
Analyzing iba measurement data Duration: 2 days
Graphical programming using ibaLogic Duration: 2 days
Long-term acquisition of data and events using ibaHD-Server Duration: 2 days
Data acquisition and data analysis using iba tools Duration: 2 days
Synchronous acquisition of video together with process data using ibaCapture Duration: 2 days

Advanced courses
Automatized generation of reports and quality documentation using ibaAnalyzer-report generator Duration: 2 days
Data acquisition from a SPS SIMATIC S7 Duration: 1 day
Long-term analysis across measurement files using ibaDatManager Duration: 2 days
Visualization of measurement data and quality data using ibaQPanel Duration: 2 days

Acquire data

Process connectivity

The iba system acquires all relevant data in technological plants. Independently, whether fast analog values (up to 100kHz) are coming directly from sensors, data exchanged over field buses or variables from automation systems. Everything can be acquired and set into relation.
You decide what is relevant!
Through the broad connectivity, your machines and plants can be completely acquired.



Thanks to the broad connectivity, data from different sources throughout the entire manufacturing process are available consistently and in a synchronized way. The user gets a complete view on the entire process and can detect reciprocal effects between the specific components. This is difficult to analyze using PLC-internal data loggers.

The consistent acquisition of different process signals such as analog and digital IO signals, signals from field and drive buses, data from controlling units, communication data, camera data, product data from MES systems, etc. is the great strength of an iba system.

Via FO connections you can connect analog and digital IO modules directly. Also data from different field and drive buses can be sniffed and system interconnections can be realized. Control systems that communicate e.g. via PROFIBUS or PROFINET can be connected via the corresponding bus monitor. With ibaCapture camera images are captured and recorded with measurement data synchronously. In addition, numerous Ethernet-based interfaces like TCP/IP, UDP or OPC are available for the acquisition of signals from different sources and access routines (direct communication, Xplorer interface, request).

Ethernet-based interfaces

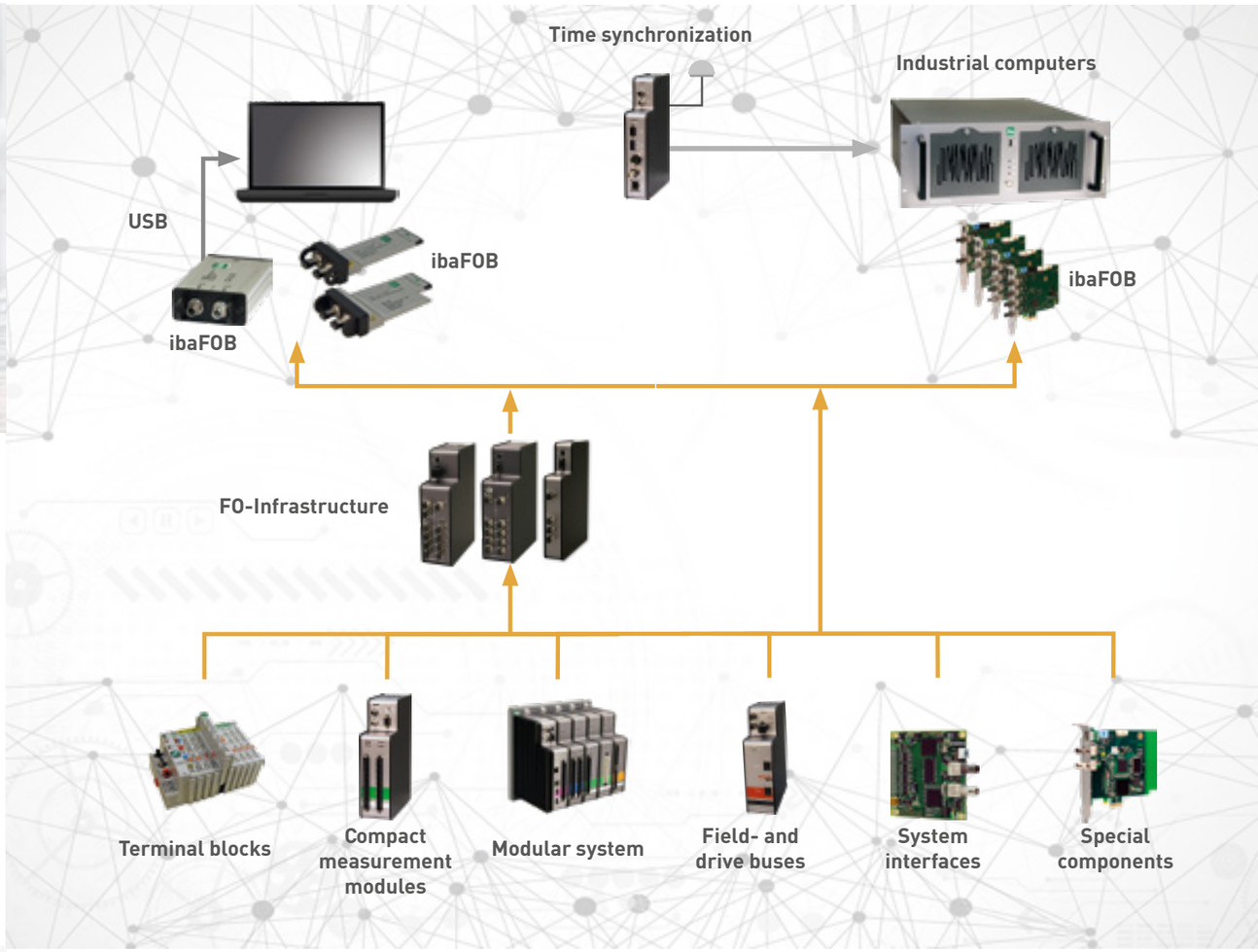
- EtherNet/IP
- Modbus over TCPIP - Server
- Modbus over TCPIP - Client
- Modbus over SerialLine
- RAW-Ethernet
- S7-TCP/UDP
- S7-Xplorer
- Codesys-Xplorer
- Sigmatek-Xplorer
- Sisteam-TCPIP
- TDC-TCP/UDP
- VIP-TCP/UDP
- EGD
- Generic-UDP
- Generic-TCP
- B&R-Xplorer
- Logix-Xplorer
- GCOM
- AB-Xplorer
- IEC61850-Client
- OPC DA
- OPC UA
- Melsec-Xplorer
- TwinCAT-Xplorer
- Mitsubishi
- SIMOTION-Xplorer
- SINAMICS-Xplorer

Field buses

Fast, robust, reliable

iba Hardware

Complex technological systems need highly precise hardware for acquiring measurement values. Electrically isolated and calibrated measurement channels with synchronous sampling and loss-free and interference-free transmission of decentralized measurement devices to the central recording system are properties that make the iba hardware unique.



Fast, robust, reliable

iba hardware is “Made in Germany” and designed for longevity in a rough industrial environment.
For iba, longevity does not only mean a five year guarantee, but also the certainty that 20 year old hardware of the first generation can still be connected to today´s state-of-the-art computer technology. This is ensured by our ibaNet FO technology in cooperation with our multi-protocol enabled PC-interfaces.

Fiber optics connections: fast and secure

The boards of the ibaFOB-D family are communication boards for ibaNet fiber optical links. The ibaFOB-D boards can be used for connecting a computer like e.g. iba industrial computers or notebooks with iba peripherals like e.g. ibaPADU compact measurement modules, iba modular system and iba bus monitors.

High precision recording

Compact measurement modules

Using the ibaPADU (Parallel Analog Digital Unit) device family, analog and digital signals can be acquired and recorded with high precision by the data acquisition system **ibaPDA.** Fast and synchronous sampling of all signals allows detailed analysis of all processes.

ibaPADU device family

The measurement modules of the ibaPADU family are used for measuring analog and digital signals. Analog filters and switchable digital filters reliably prevent anti-aliasing effects:

Each channel is galvanically isolated and equipped with its own A/D converter. Furthermore anti-aliasing filters reduce disturbances.

Various devices available

Using ibaPADU-D-8AI-U and ibaPADU-8AI-I up to 8 devices can be connected in series via FO and transmit up to 64 analog and 64 digital signals at a fixed sampling rate of 1kHz. The sampling rate of the devices ibaPADU-D-8AI-U and ibaPADU-D-8AI-I can be configured in the range from 1 kHz to 40 kHz. A sampling rate of even 100 kHz is possible with ibaPADU-4-AI-U in a point-to-point connection . These three devices work with the 32Mbit Flex protocol that allows a flexible transmission of up to 4060 Bytes/ms in a FO ring.

Terminal blocks

ibaNet750

- Wide selection of terminals (WAGO 750)
- No electrical isolation
- f_S < 500 Hz

Data logger

ibaPADU-C

- 8-channel data logger
- Grid-independent operation with an integrated lithium ion battery

Acquire data at field busses

Field and drive buses

All bus monitors are coupled without interferences in the bus and facilitate the monitoring and recording of data traffic between automation and peripherals, without compromising or straining the automation.

Different modes

The iba bus monitors usually have two modes of operation. In the sniffer mode (= listening), the values communicated via the bus are read and recorded as signals. Configuration changes are not required in this case. In the active mode, known as „active slave", the bus monitor can receive the values sent to it from the control system. The bus monitor can be specifically addressed by the master and supplied with any values. All internal values of a PLC can thus be acquired in this way without having to switch them to an analog or digital terminal. Data recorded from buses are converted and sent via the ibaNet FO interface to ibaPDA.

Diagnostics

The iba bus monitors offer a substantial amount of diagnostic information about the status of the field bus in order to be able to quickly detect bus errors. Information of the slaves is also displayed.

Convenient configuration in ibaPDA

The configuration of signals conveniently takes place in the I/O manager of ibaPDA. By using automatic detection in ibaPDA, the connected devices are detected in ibaPDA and displayed in the I/O manager. The required signal configurations can be made quickly thanks to the simple user interface. Configurations are saved in the devices.

System interfaces

ibaLink

- Bidirectional connection to control systems
- VME-based systems
- Simatic S5, Simatic MMC, Symadyn D
- OEM version for integrating the ibaNet FO technology in proprietary systems

Special components

ibaFOB-TDCexp/-SDexp

- Direct FO connection between measurement computer and SIMADYN-D or SIMATIC TDC GDM
- Fast transfer of measurement data

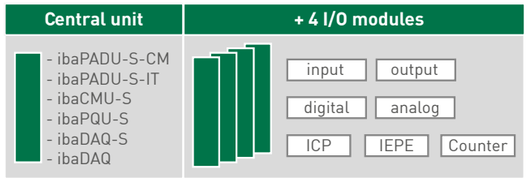
Acquiring and processing data

Modular system

The iba modular system acquires and processes measurement signals and is perfectly suitable with the appropriate signal output modules for control applications. The decisive advantage of the system is the modular concept that can be freely configured: On a module rack with backplane bus, one central unit and up to four other input and output modules can be plugged. Various operational scenarios can be realized with application-specific central units.

Broad range of modules

The system includes several I/O modules for analog and digital inputs and outputs as well as for SSI and pulse transmitters. All I/O modules work with sampling rates of up to 40 kHz absolutely time-synchronously. Due to the modular technology and the broad range of I/O modules, the iba modular system can be flexibly adapted to the respective requirements.



Central units for each application

- ibaPADU-S-CM is a pure communication unit for the input and output of different signals.
- ibaPADU-S-IT is suitable not only for the fast acquisition of measurement values but also for intelligent processing of signals and system controls.
- ibaCMU-S is the central unit for Condition Monitoring applications.
- ibaPQU-S serves as a Power Quality Unit for monitoring the grid quality according to highest precision standards.
- ibaDAQ / ibaDAQ-S is equipped with an integrated ibaPDA system and can acquire data as stand-alone data acquisition device and store them locally - ideal for the operation in control cabinets or cranes.

Measuring case (ibaMBox)

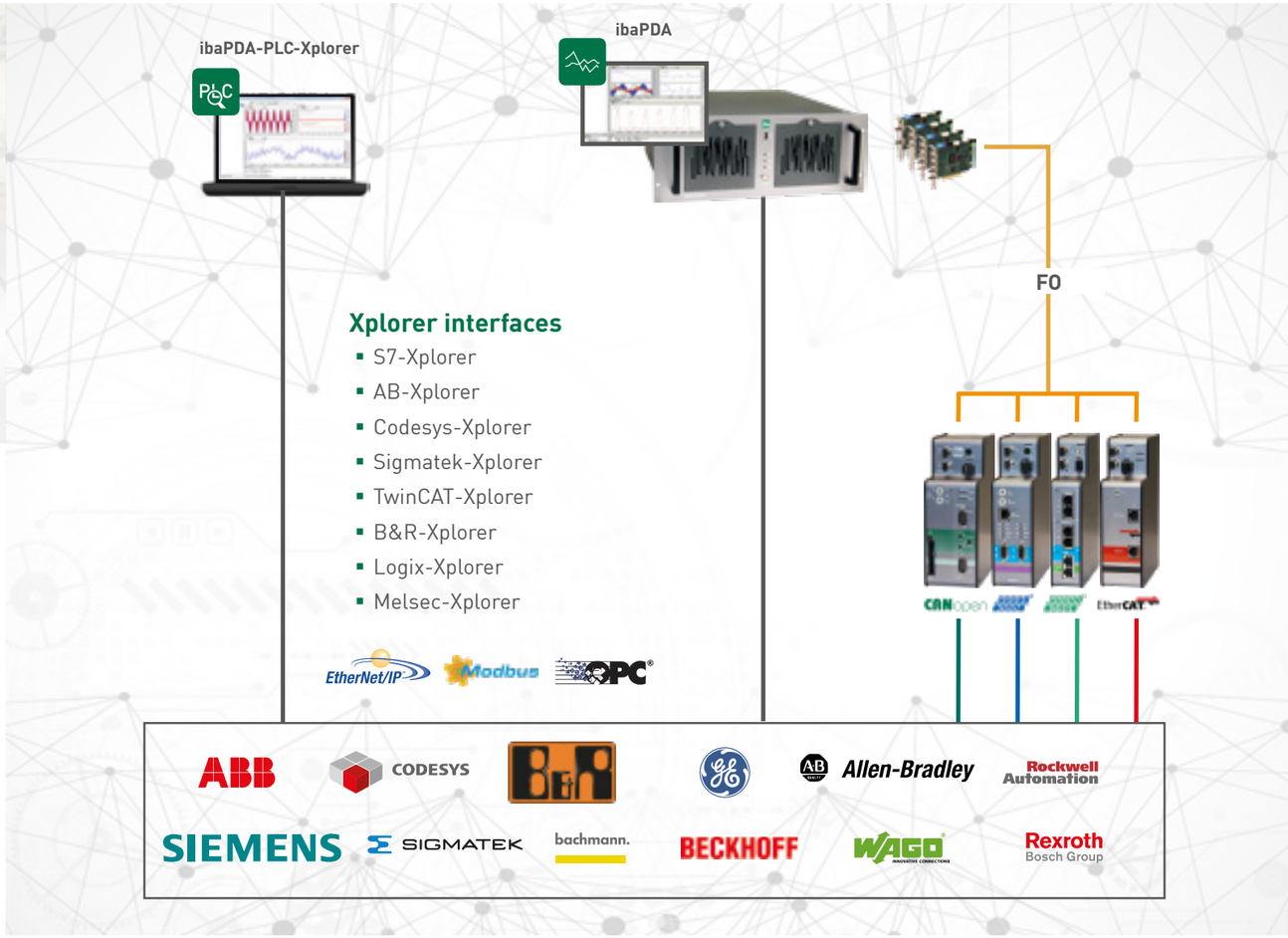
iba modular system for mobile use

Portability everywhere - this is an increasingly important requirement for measuring systems, especially in the fields of commissioning, troubleshooting, service and maintenance. With **ibaMBox** iba offers a mobile, robust system to capture highly precise data, regardless of physical location. Thanks to using the modular system **ibaMBox** allows you to individually customize the infrastructure to meet various application requirements.

We get along with almost everybody!

Acquire data from PLCs

Traditional measuring systems acquire electronic sensor signals with the help of A/D converters. In the era of digital control systems, most measurement values that are of interest are already available in the automation. This is why iba offers various possibilities for accessing the internal values of open-loop and closed-loop control systems directly.



Your connection to almost every system

A main characteristic of the iba system is the broad connectivity to automation systems and field bus technologies. Via field bus connections and/or Ethernet protocols, an iba measurement system can be connected to almost every automation system independently of manufacturer and device generation.

Requesting measured data during running operation

For many systems, Xplorer interfaces and request technology are available. This technology allows you to optionally request internal variables of the PLC. Thus, you can newly select measurement values without having to stop the PLC and adapt these to the respective requirement.

The measurement values are addressed with their symbolic name. The rest is done by a software request block in the PLC which has to be integrated once. The output of data is done via UDP or field buses.

Record Data

As central component of the iba system, **ibaPDA** has proven for years as one of the most versatile measurement acquisition system for maintenance and production. Client server architecture, flexible recording, and the simple configuration due to “auto-detect” functionality are only a few of the convincing features.

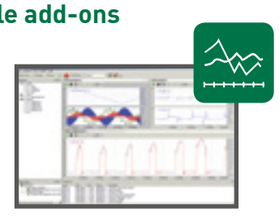
The modern classic of measuring data

ibaPDA is an extremely powerful, PC-based acquisition and recording system for different measurement data in automated technical processes. The modular product concept allows highly flexible configuration options and provides perfectly tailored solutions for varying needs – be it the continuous long-term acquisition of measured values to be able to further optimize automation processes or the specific search for errors or the use as fault recorder with triggered recording in case of failure
ibaPDA is scalable and suitable both for individual machines and for cross-plant systems.

Systematic transparency

A special feature of **ibaPDA** is the extraordinarily broad connectivity to all common automation systems and acquisition methods allowing the connection to systems of various manufacturers and generations. This allows a consistent data acquisition of an entire system usually consisting of heterogeneous components. **ibaPDA** can make several recordings simultaneously which are tailored to different user groups if, for instance, different signals, characteristics or sampling rates with different triggering methods are required.

Available add-ons



Length-based recording of quality data

ibaQDR allows the recording of quality data for strip products. Time-based measured values with **ibaPDA** are converted into product specific and length-based data.

Display of quality data - live and in color

ibaQPanel allows the online visualization of process and quality data, conditions, events and camera images in a technology-based display.

Record videos and measuring data synchronously

The video recording system **ibaCapture** records video and HMI images synchronously to measurement data - either continuously or triggered by events. Important events can be automatically stored as still images. The simultaneous display of recorded measurement data and visual information with **ibaAnalyzer** offers a completely new quality of process analysis.

With **ibaCapture** live images of video cameras and HMI systems can be synchronized to measurement data, acquired and recorded with **ibaPDA**. Unlike conventional video systems, **ibaCapture** not only records videos, but links measuring data recorded with the **ibaPDA** time-synchronously with the visual information.

ibaVision integrates professional, industrial image processing into the iba system and enables visual monitoring and analysis of processes. Quality checks can be automated in real time during the production and allow early intervention in the process before major errors occur. **ibaVision** allows the creation of image processing applications with the library HALCON® and offers interfaces to **ibaCapture** and **ibaPDA**. Values calculated with **ibaVision** can be recorded as visual signals in **ibaPDA** and can be online visualized or used as trends in process-monitoring applications.

Historical data available immediately

Find historical events rapidly, using the high resolution Historical Data (HD) server - also for continuous and long running processes. With the zoom function, browsing from annual, monthly or weekly overview down to the millisecond range is possible with just one mouse-click.

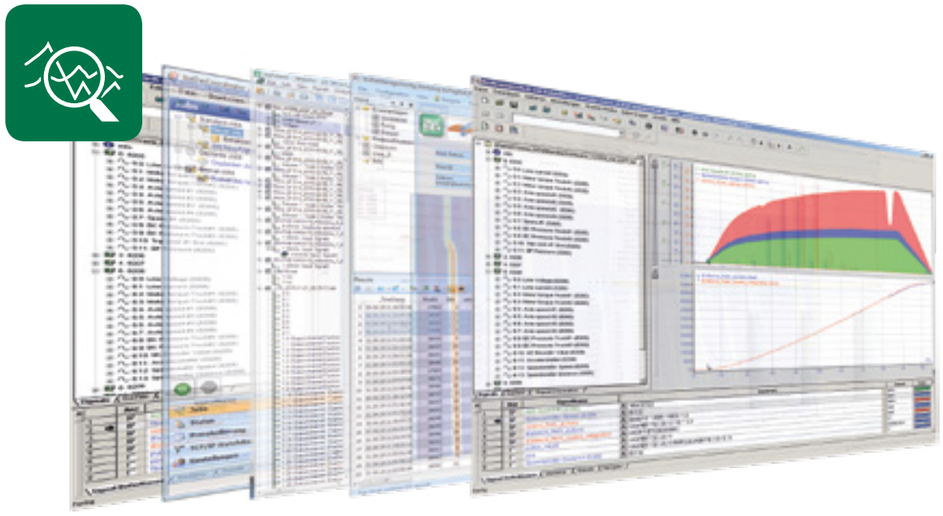
The application **ibaHD-Server** (Historical Data Server) allows that measured data are recorded continuously over a long period of time and continuously displaying it afterwards.
Beside that, the HD-server does not only offer time-based and length-based recordings of signals, but also the recording of events which are then displayed in an event table. The event messages are automatically generated by a trigger signal and can be used to easily find product changes or failures.

These events can easily be filtered in the event table and serve as a base for an effective navigation towards the next entry. Additionally comments on events or dates can be placed also retrospectively as predefined or free text in the signal trend. These comments can easily be complemented with additional information like images, reports or documents and be made available for other users.

ibaAnalyzer offers a wide range of options to analyze and evaluate HD-data with a complex structure. This application is license-free for the processing of HD-data as well as for the analysis of measurement files.

Analyze data

Within the iba system **ibaAnalyzer** is the key element in the field of data analysis **ibaAnalyzer** is a very powerful tool for analyzing measurement data efficiently and without generating additional costs as well as deriving information. Analysis procedures can be created flexibly and adapted individually, in a way that different users get the right analysis for their special purposes.



Analyzing and evaluating without additional costs

ibaAnalyzer is characterized by broad functionalities for analyzing and evaluating. The application offers an intuitive operation along with the complex scope of functions. The license for **ibaAnalyzer** for analyzing measurement files which have been generated with the iba system, is free of charge.

Stay flexible and high-performing

Analysis descriptions can be created flexibly and adapted individually, in a way that different users get the right analysis for their special purposes, e.g. for analyzing failures but also for performing long-term analyses in order to evaluate and optimize processes. The wide-ranging analysis features comprise the automatic computing of specific characteristic and statistical values, but also product-related quality data that can be used for a superordinate quality management system. Moreover, by means of powerful mathematical and technological functions, signals can be combined, calculated or set into relation to the raw values. Further features amongst others are: filter designer, FFT analysis, macro editor, time- or length based display, X/Y diagram.

Automatized generation of reports

The integrated **Report generator** is a powerful tool that offers a flexible creation of creating individual reports. With the report generator, efficient options for creating templates are available.

Available add-on

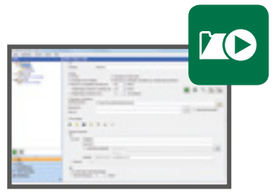
The database interface for ibaAnalyzer

With **ibaAnalyzer-DB** quality data and key performance indicators (KPIs), which were calculated in **ibaAnalyzer**, can be extracted into databases e.g. for further developing of a production or quality management system.

Automatic processing of measurement data

ibaDatCoordinator is an efficient tool for processing and managing measurement data automatically. Typical fields of application are the automatic extraction of product-related characteristic values in databases as well as the report creation. In synergy with **ibaAnalyzer**, various processing procedures can be run fully automatically and employees can be relieved of routine tasks.

Analyzing data, calculating parameters or just managing the data files is often time-consuming, especially in heterogeneous system environments with numerous influencing factors. With **ibaDatCoordinator** you have a tool at hand that allows you to run different procedures fully automatically. With the integrated tools, data management can be set up individually. So, for instance, measured data can be copied from the data acquisition systems to file servers and thus be provided centrally to all authorized users. Moreover, reports can be generated automatically after a product is finished.



The fast overview of all iba data

ibaDatManager allows a quick identification of measurement files using the properties of the measured signals and the characteristic values extracted from them. You do not need to know file names and storage locations. A decisive advantage is the possibility to statistically evaluate quality parameters at a glance. Thus, deviations from the normal behavior can quickly be detected and analyzed in detail.

In large plants, several **ibaPDA**-systems acquire process and quality data at different locations throughout the entire production process and generate a vast number of measurement files on different storage locations. **ibaDatManager** gives a complete view over all measuring files to the user and allows the targeted identification of corresponding data by means of its numerous search functions. On the other hand **ibaDatManager**can be used to perform long term analyses between the measuring files and display them as trend, histogram or X/Y diagram .

Web-based visualization and analysis

With **ibaDaVIS** you can visualize and analyze measurement, process and quality data in a web-based way using dashboards. **ibaDaVIS** uses state-of-the-art web technology to connect user clients to the back-end server. All standard web browsers and platforms like Windows, IOS®and Android®are supported. Due to the responsive design, you can use **ibaDaVIS** also via tablets or smartphones.

With **ibaDaVIS** you can visualize and analyze measurement data, process data and quality data using dashboards. For this purpose, different graphic elements like trends, histograms, X/Y diagram, gauge charts and pie charts are available that can flexibly be dragged into your dashboard. **ibaDaVIS** offers a hierarchical dashboard management which allows you to view and analyze machines and plant from different perspectives. In a dashboard you can visualize data from different data sources, e.g. to compare data from various machines (benchmarking). Data sources and different kinds of dashboards can be configured freely.

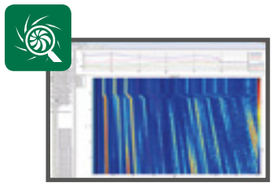
ibaCMC, ibaInSpectra & ibaRotate

Condition monitoring and vibration analysis

Condition Monitoring Systems (CMS) use vibration measurement in combination with intelligent analysis procedures to identify deterioration of mechanical components at an early stage. They form the base for the change from a preventive to a condition based maintenance strategy.

The Condition Monitoring Center **ibaCMC** is a high end web-based desktop application for trending, alarming and reporting tasks. The only software needed on the client side is a web browser. Furthermore **ibaCMC** is used for the configuration of the condition monitoring units ibaCMU-S that acquire data locally.

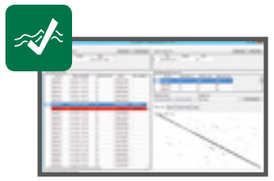
With **ibaInSpectra** any vibrations are monitored continuously and possible error sources can be detected at an early stage. As the **ibaInSpectra** library is integrated in **ibaPDA** , not only mere vibration analyses can be performed, but also possible relations between vibrational effects and process behavior can easily be detected.



ibaRotate offers unique methods to perform high resolution frequency- and order-based spectral analyses that allow a detailed diagnosis of failures in a plant. **ibaRotate** is the perfect add-on for **ibaAnalyzer** to perform an advanced troubleshooting even for difficult machine issues.

ibaDatawyzer-ICC

Clear identification of coils



With **ibaDatawyzer-ICC** (Inline Coil tracking Certifier) coils in the metal producing industry can be identified by characteristic geometrical features. The data is acquired and stored with **ibaPDA** and processed with the analyzing tools of the iba system. **ibaDatawyzer-ICC** then identifies the coil on the basis of the measuring data and helps to detect errors or weaknesses of logistical material tracking systems.

ibaLogic

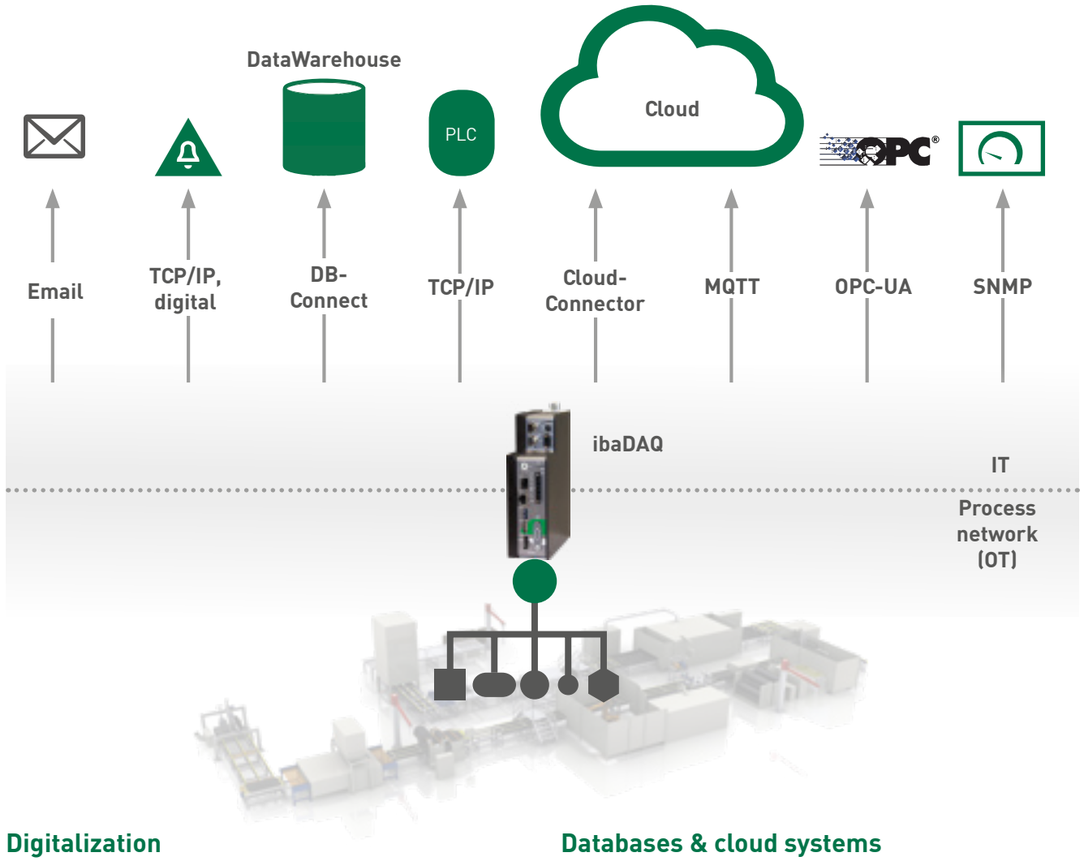
Signal processing and automation

ibaLogic is mainly used in measurement and control technology for fast and dynamic processes as a system for signal processing, simulation and as a communication gateway. Short program cycle times up to 1 ms and deterministic time response make this possible. Thanks to the easy handling, seamless integration of iba products for measurement technology and an outstanding price/performance ratio **ibaLogic** is applicable in many scenarios. Based on the architecture of a Programmable Automation Controllers (PAC) **ibaLogic** uses both, powerful PCs and special runtime environments such as ibaPADU-S-IT-2x16, to solve the problems of a classical PLC.

Sustainable, progressive, innovative

Output Connectivity

With the broad output connectivity measurement and quality data can also be processed outside the iba system. The interfaces range from TCP/IP-connections over alarming systems or measurement transmission to high-level control systems up to connections to databases and cloud systems. This allows the storing of data outside the iba system for evaluating and analyzing purpose.
Which data you process further is configurable in **ibaPDA** and **ibaAnalyzer**. You decide which data you need from your plant.



Digitalization

With **ibaDAQ** iba offers a perfect IOT device that - with the complete iba connectivity - can locally acquire data and afterwards save it for global access. This allows you to digitalize your systems according to an industry 4.0 strategy and to publish your quality data (KPIs) e.g. via OPC UA or MQTT.

Process monitoring

To monitor the process recorded with **ibaPDA**, the iba system offers various interfaces: email, digital, TCP/IP, SNMP. Measured values can be output continuously or only on limit violations. With SNMP, the state of the iba system can also be monitored efficiently from external.

Databases & cloud systems

For long-term storage and analysis of characteristic values, the iba system offers an open database interface to SQL databases (SQL Server/MS Azure, Oracle, MySQL, PostgreSQL, ...) via OLEDB or ODBC. Cloud connectors allow storage of data in cloud systems for ubiquitous access to data, whether for analysis, benchmarking of multiple plants, or simply monitoring multiple machines. This is how analysis services (data analytics) can be used by very different providers (ecosystem).

iba AG Headquarters Germany

Office address
Koenigswarterstr. 44
D-90762 Fuerth

Mailing address
P.O. box 1828
D-90708 Fuerth

Tel.: +49 (911) 97282-0
Fax: +49 (911) 97282-33

www.iba-ag.com
iba@iba-ag.com

iba AG is represented worldwide with subsidiaries and sales partners.

Europe

Benelux, France, Spain, Portugal, Ireland, Great Britain, French-speaking Switzerland
iba Benelux BVBA
Tel: +32 (9) 22 62 304
sales@iba-benelux.com
www.iba-benelux.com

Denmark, Finland, Norway, Sweden
iba Scandinavia
c/o Begner Agenturer AB
Tel: +46 (23) 160 20
info@iba-scandinavia.com
www.iba-scandinavia.com

iba Polska
c/o ADEGIS Sp. z o.o. Sp.k.
Tel: +48 32 75 05 331
support@iba-polska.com
www.iba-polska.com

Italy, Slovenia, Croatia, Italian-speaking Switzerland
iba Italia S.R.L.
Tel: +39 (432) 52 63 31
sales@iba-italia.com
www.iba-italia.com

iba Russia
c/o OOO FEST
Tel: +7 (4742) 51 76 81
dmitry.rubanov@iba-russia.com
www.iba-russia.com

North America (NAFTA)

USA
iba America, LLC
Tel: +1(770) 886-2318 102
esnyder@iba-america.com
www.iba-america.com

Canada
iba America, LLC
Tel: +1(770) 886-2318 100
sb@iba-america.com
www.iba-america.com

Mexico
iba America, LLC
Tel: +1(770) 886-2318 103
jgiraldo@iba-america.com
www.iba-america.com

Asia

Western and Central Asia Philippines, Taiwan, Vietnam, Cambodia, Laos, Myanmar, Bangladesh, Bhutan, Nepal, Sri Lanka
iba Asia GmbH & Co. KG
Tel: +49 (911) 96 94 346
mario.gansen@iba-asia.com
www.iba-asia.com

Malaysia and Singapore
iba Malaysia
c/o iba Engineering & Consulting (Malaysia) SDN. BHD
Tel: +60 12 25 35 991
bruno.marot@iba-malaysia.com
www.iba-malaysia.com

Saudi Arabia, UAE, Qatar, Kuwait, Bahrain and Oman
iba Gulf
c/o ASM
Tel: +966 12 690 2144
a.magboul@iba-gulf.com
www.iba-gulf.com

Korea and Japan
iba Korea System Co. Ltd.
Tel: +82 (51) 612-3978
sh.lee@iba-korea.com
www.iba-korea.com

iba China Ltd.
Tel: +86 (21) 58 40 27 68
julia.wang@iba-china.com
www.iba-china.com

iba Systems India Pvt. Ltd.
Tel: +91 (22) 66 92 08 69
shraddhap@iba-india.com
www.iba-india.com

iba Indonesia
c/o PT. Indahjaya Ekaperkasa
Tel: +62 (21) 34 57 809
sandhi.sugiarto@iba-indonesia.com
www.iba-indonesia.com

iba Thailand
c/o SOLCO Siam Co. Ltd.
Tel: +66 (38) 606232
pairote@iba-thai.com
www.iba-thai.com

iba Turkey Ltd.
Tel: +90 (312) 22 34 790
ahmet@iba-turkey.com
www.iba-turkey.com

Central and South America

iba LAT, S.A.
Tel: +507 (474) 2654
eric.di.luzio@iba-lat.com
www.iba-lat.com

iba LAT Bolivia
Tel: +591 (2) 21 12 300
mario.mendizabal@iba-lat.com
www.iba-lat.com

iba LAT Argentina
Tel: +54 (341) 51 81 108
alejandro.gonzalez@iba-lat.com
www.iba-lat.com

iba LAT Brazil
Tel: +55 (11) 4111 6512
iba@iba-brasil.com
www.iba-lat.com

Australia

Australia, New Zealand, Oceania
iba Oceania Systems Pty Ltd.
Tel: +61 (2) 49 64 85 48
fritz.woller@iba-oceania.com
www.iba-oceania.com

Africa

iba Africa
c/o Variable Speed Systems cc
Tel: +27 83 456 1866
danie.smal@iba-africa.com
www.iba-africa.com