See the Big Picture

Get 360° transparency with the iba system

Content

Experts in Measurement Systems for Industry and Energy

It is our mission to bring transparency to the world of industrial production as well as to power generation and energy distribution plants. Using an iba system, you can be sure that your plants and machines are captured 360° and that every single process can be seamlessly recorded and made visible 24/7.

100,000+
iba system users

160+
employees

20+
regional offices

25,000+
iba system installations

Cutting edge

For more than 30 years, we have specialized in developing high-quality systems for data acquisition, analysis, and signal processing.

iba is one of the few manufacturers offering the complete technology chain from hardware to software to database and cloud connectivity.

Only those manufacturers who understand the whole process of digitalization in detail can foster innovation and provide competent advice and support to customers.

Communicative

Beside their practice-oriented functionality, a key feature of our hardware and software products is their versatile connectivity to 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 a plant or machine.

Scalable

With the iba system you will have hassle free processes and maximum transparency on all technical processes in your plant – as well as almost infinite ways to monitor and optimize your processes.

The iba system is an open ecosystem that allows you to transfer the recorded measurement data and calculated quality data to other systems for use outside the iba system.

The iba System

Our data acquisition systems and software solutions for measuring, monitoring and analyzing machine, production, and energy plants are scalable and can be perfectly extended at any time. They can not only grow along with increasing requirements but are also compatible with all common industrial control systems.

Your company will benefit from our iba system:

- Increasing productivity
- Minimizing plant downtimes
- Optimizing processes
- Saving energy and raw materials
- Documentation and increasing product quality
- Avoiding critical plant conditions

7 Data transfer

The iba system offers various ways to use measurement and quality data outside the iba ecosystem.

1 Acquire data

Data from different signal sources can be acquired synchronously. Due to the isochronous recording and the central time stamping in ibaPDA, causal relations can be detected and understood even in complex and distributed systems.

MES
Video
PLC
Bus
A/D

Third Party

6 Analysis based on characteristic values

With the web-based dashboard tool ibaDaVIS you can visualize and analyze your process or production on the basis of KPIs. The integrated feature to drill-down to the raw data allows an in-depth analysis on the same dashboard as the KPI analysis.

KPI

Report
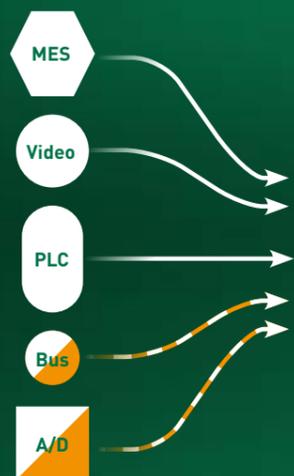
2 Record data

With ibaPDA, the data can be recorded continuously (24/7) or triggered by freely configurable events. Independent of the recording, signals can also be visualized live as well as combined together and analyzed.

3 Store data with long-term availability

Data and events can be stored in the ibaHD-Server with long-term availability and direct access. This allows data to be visualized and also analyzed over longer periods.

4 Analyze data

Depending on its purpose, the recorded data is individually analyzed after measurement – either interactively or automatically on the basis of pre-defined analysis rules. With ibaAnalyzer you have a flexible tool with a free license which can be installed and deployed several times.

5 Calculate characteristic values

By automatically calculating KPIs (Key Performance Indicators), you can abstract your process and gain valuable information and quality data, which you can automatically extract into databases or document in reports.

Troubleshooting

Failures and malfunctions in automated plants lead to production downtime, production losses and and products of poor quality. Thus, it is extremely important to find these failures quickly. In case of a failure, the maintenance engineers need to have access to the measurement data which have been recorded during the malfunction. By analyzing these data, the root cause can be easily found and the failure can be specifically eliminated.

Record data continuously
For localizing failures and malfunctions, 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 controllers. An autonomous but permanently 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 acquires and 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 can be acquired with ibaCapture synchronously to the acquired process signals – a big help when it comes to analysis,

since the measurement data and video images can be commonly analyzed in one tool.

Offline analysis of measurement data
ibaAnalyzer offers various functions to analyze failures based on recorded measurement data. Signal trends, signal intervals, and delays are measured and outliers as well as causal interdependencies can immediately be detected.

"Find the root causes of process failures with only a few clicks."

Ahmet Kösereisoglu, Co-Founder, iba Turkey

Your benefits at a glance:

Reducing production downtime

Efficient commissioning

Find root causes of errors and disturbances

iba system for troubleshooting

ibaPDA   ibaCapture   ibaAnalyzer
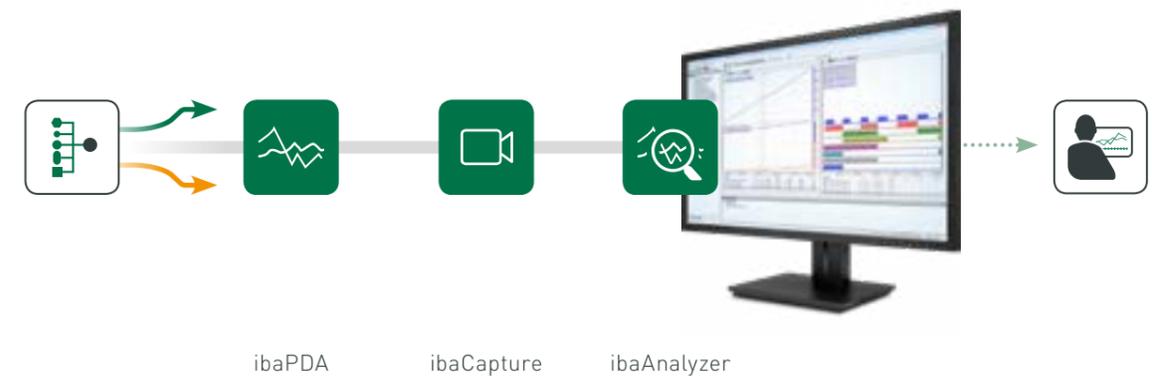
Process Monitoring

Automated real-time monitoring of processes, machines, and plants is based on acquired measurement data, calculated characteristic values and camera images. In addition to simple monitoring of signals for exceeding limits in ibaPDA, more complex characteristic values can also be calculated with ibaInSpectra and ibaInCycle, thus enabling process deviations and anomalies to be detected in real-time. With ibaVision, real-time image processing is possible based on camera images captured with ibaCapture.
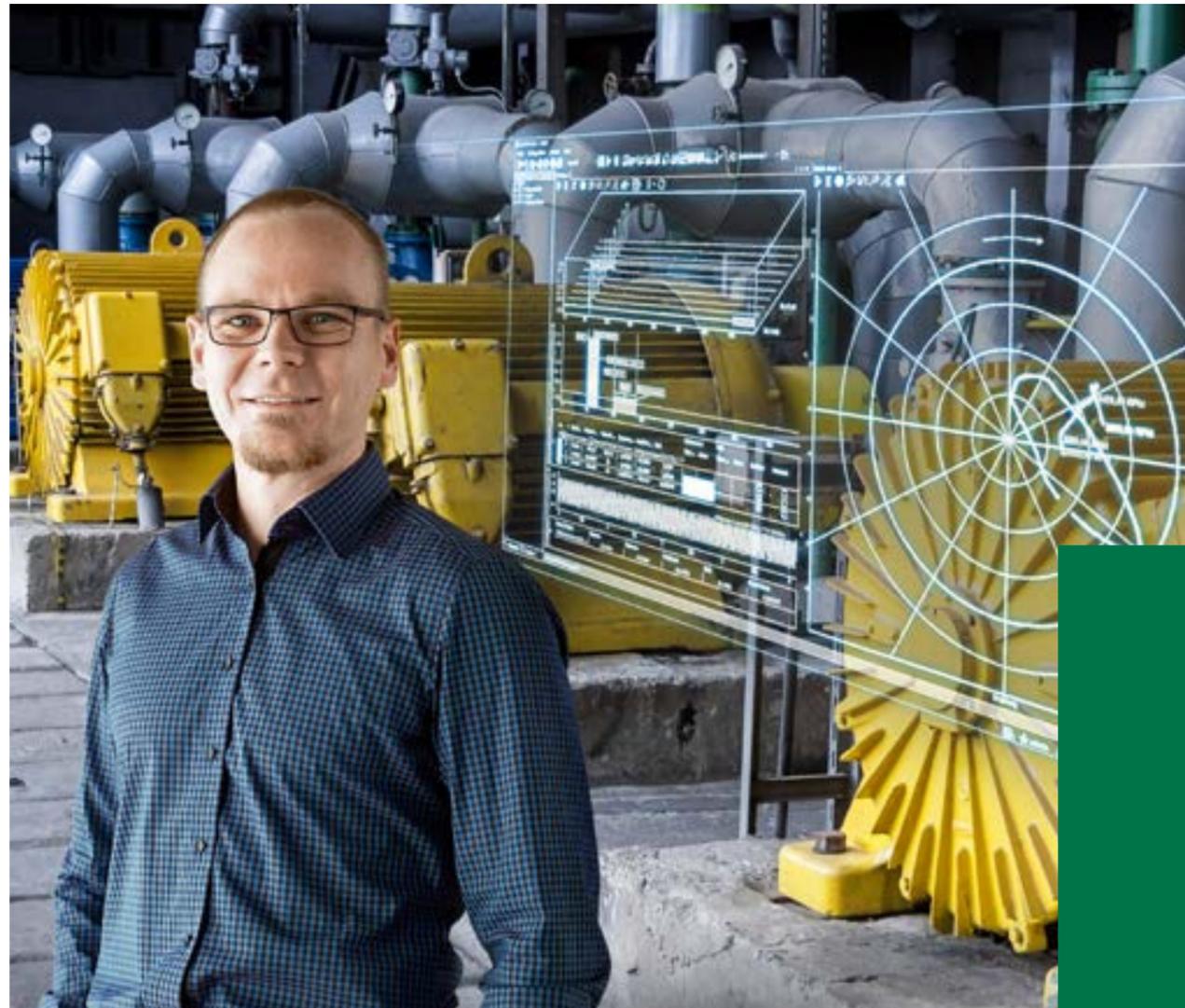
Monitoring of vibration signals

With ibaInSpectra, vibration signals are continuously processed in real-time. Spectral analyses can be used to monitor vibrations online and correlate them with other process data. If vibrations reach critical states, alarms can be issued immediately in numerous different ways. In addition, feedback into the plant control system is possible in order to automatically adjust the corresponding parameters and thus optimize processes and increase product quality.

Monitoring of process changes

ibaInCycle monitors all kinds of cyclic and rotating processes as well as quasi-cyclic, regularly executed process steps without additional sensor technology. Based on the acquired process signals, ibaInCycle detects changes in the process behavior – in particular, deviations that occur slowly due to wear on machines, as well as anomalies (sporadic changes) in the process. The analysis of the measurement data is performed in the time domain. The core of the method is the temporal normalization and the comparability of

similar processes with Time Synchronous Averaging (TSA).

ibaInCycle lets you take action ahead of time to prevent damage and safeguard your production quality. Thanks to comprehensive detection and online analysis of the process, the impact on product quality and machine condition can be reliably predicted. This helps to avoid production downtime, increase plant availability, ensure production quality and, last but not least, reduce maintenance costs.

Monitoring with ibaVision

If the process behavior is recorded with cameras and ibaCapture, your process can also be monitored camera-based. With ibaVision, information can be extracted directly from camera images by means of industrial image processing. The results of image processing are recorded in ibaPDA and monitored for possible exceeding of limit values. A perfect solution for measuring tasks for which sensor technology is either not available or cannot be integrated economically.

Transfer of key performance indicators (KPIs) to higher-level systems

IT network

OT network

Process-oriented online alarms

PLC

Ideally, ibaInCycle and ibaInSpectra should run on an edge device directly at the machine or plant component to be monitored. In this way, alarms can be issued in real-time close to the process, and the calculated characteristic values can be transferred directly to higher-level systems for long-term analysis.

"By combining process and vibration analysis, you can optimize real-time monitoring and offline analysis of your plants and processes."

Christian Reinbrecht, Product Manager, iba AG

Your benefits at a glance:

- Optimization of process and product quality

- Real-time process monitoring

Quality Documentation

In order to document an automated production process, quality data and characteristic values need to be automatically 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 storing them in an open format in databases or cloud systems.
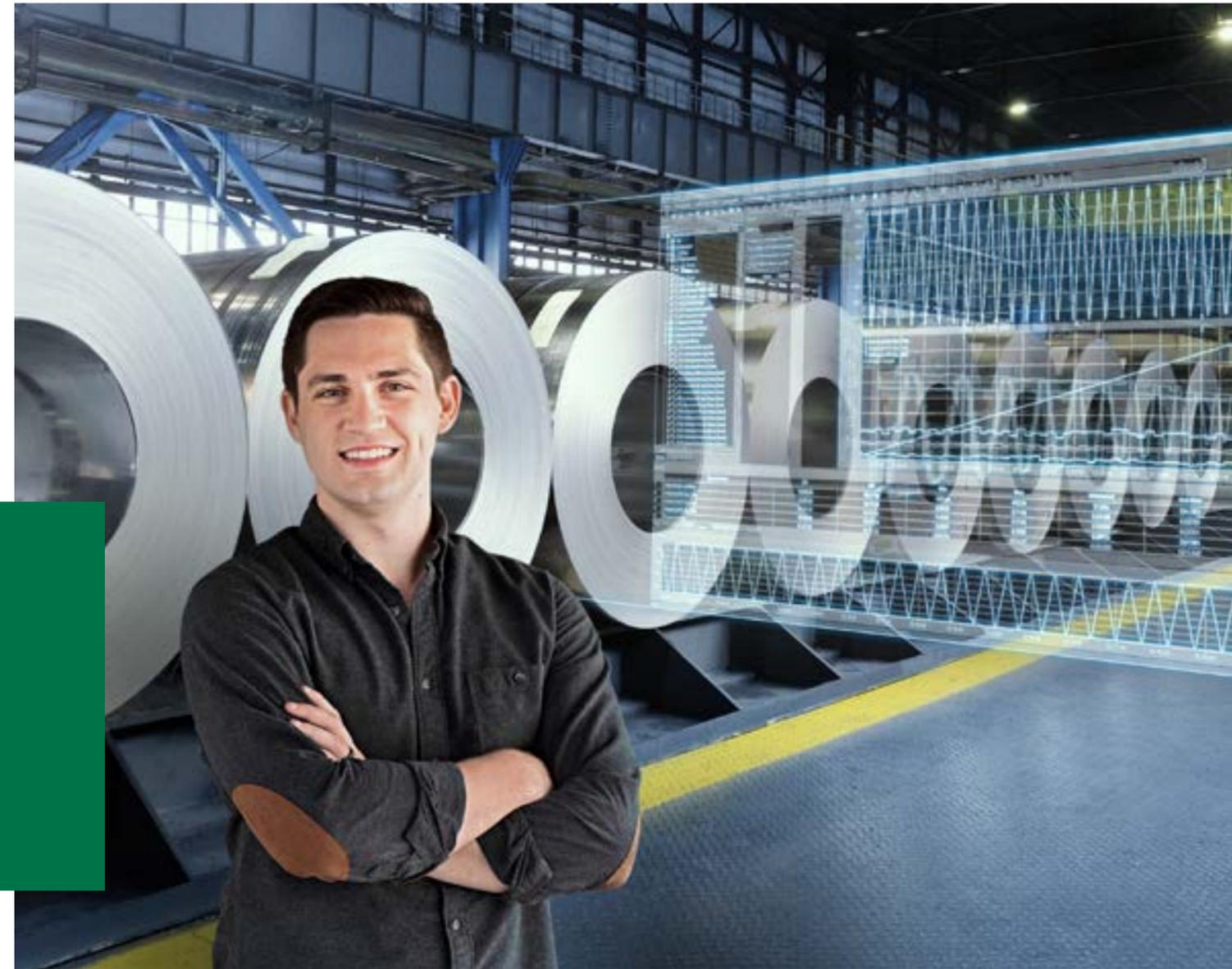
"Quality documentation with iba means transparency from the raw value to the characteristic value."

David Kober, Sales Engineering Manager, iba America

Your benefits at a glance:

- Automatically calculate characteristic values
- Create production and quality reports
- Root cause analysis by drilling down to the measurement data

Length-based quality data

With ibaPDA, data is acquired time-based and then stored in measurement files on a product-specific basis. With ibaQDR values measured with ibaPDA are assigned to the corresponding measuring locations and translated into product-specific, length-based measurement values, standardized to the length of the final product. This allows an efficient calculation of quality data for flat and long products.

Calculate characteristic values automatically

With ibaAnalyzer and ibaDatCoordinator characteristic values and quality data can be calculated comprehensively and automatically based on 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 generated automatically with the current measurement and quality data. On the basis of defined layout templates, the report is stored in 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, flexible and always transparent reporting system can be easily implemented.

iba system for quality documentation
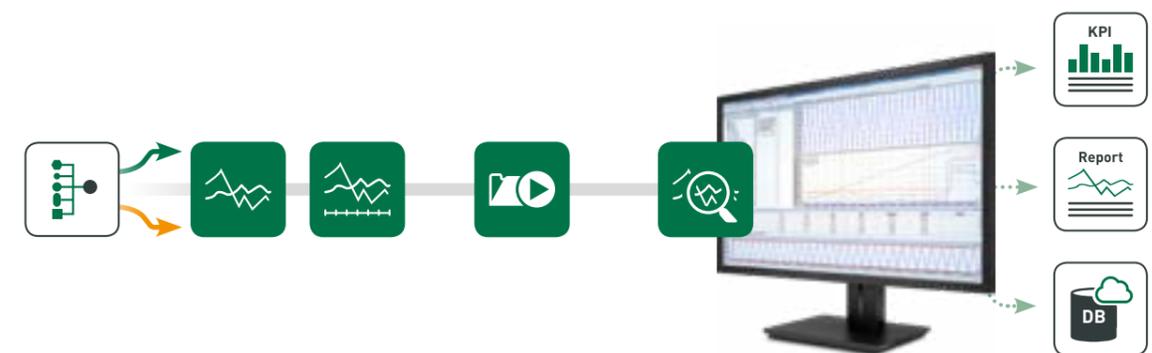
ibaPDA   ibaQDR   ibaDatCoordinator   ibaAnalyzer

"The more you know, the less you need to assume."

Shraddha Patel, CEO, iba India

Your benefits at a glance:

- Optimal planning of maintenance work
- Avoid unplanned downtimes
- Vibration analysis in real time

Condition Monitoring

Condition Monitoring Systems (CMS) use vibration measurement in combination with intelligent analysis procedures for detecting wear and tear on mechanical components at an early stage. These systems 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.

Enhanced reliability

In complex plants, varying load conditions and materials have 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 in this context, it is necessary to know the relevant operating parameters.

With the Condition Monitoring Center ibaCMC and the Condition Monitoring Unit ibaCMU, iba offers powerful tools for monitoring the wear of machines and connecting the results to relevant process information.

Modular system

For CM applications, ibaCMU serves as the central unit for the iba modular system. The CM-specific characteristic values are calculated in the central unit. Up to four I/O modules of the iba modular system can be connected to the ibaCMU. An analog module for the

acquisition of four IEPE sensors with 24 bit A/D converters, galvanic isolation of the channels, and wire-break detection is available, which was specially developed for signal acquisition of vibration sensors.

Offline analysis

In ibaCMC, the raw data snapshots for all characteristic values are additionally saved in a measurement file (dat file). This raw data can be offline analyzed in detail in ibaAnalyzer in order to validate damage occurrences and evaluate process and vibration data.

iba system for condition monitoring
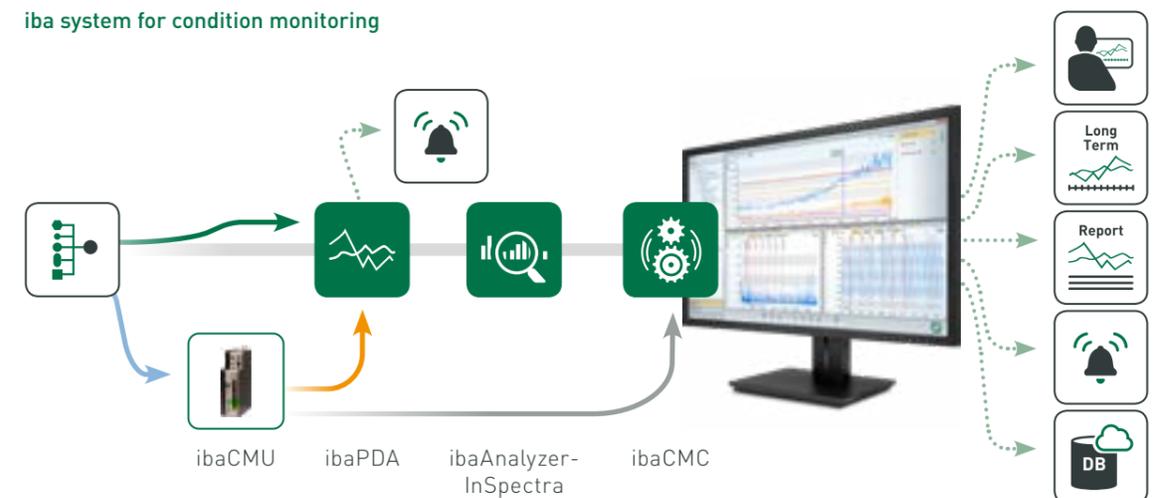
ibaCMU   ibaPDA   ibaAnalyzer-InSpectra   ibaCMC

Power Grid Solutions

In the field of electrical power technology, the iba system is used as a transient fault recorder and for the acquisition, recording, and documentation of power quality variables in accordance with the applicable standards.

Acquire dynamic processes rapidly

With the iba system, fast transient signal transitions can be acquired and recorded at a high resolution up to 500 kHz. Since measurement data is only recorded in case of a failure, ibaPDA initially stores the data in an internal buffer. When a failure condition occurs, the data is recorded in a triggered way and written into a measurement file.

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 Ed. 3 Class A. It is thus suitable for analyzing purposes in accordance with EN 50160 and similar standards.

Analyze power quality and troubleshoot with one system

Protective devices in the plant can be integrated via the standardized transfer protocol IEC61850 for protection and control technology. If several thousand high-resolution signals need to be acquired synchronously in complex plants, multiple ibaPDA systems can be connected via fiber optic cables with perfect, sample-precise synchronization (multistation functionality).

Analyzing measurement data

Triggered and recorded measurement files are interactively analyzed offline to find the root cause of the error situation. To verify the power quality, ibaAnalyzer automatically generates standard-compliant evaluations and reports – based on the measurement data continuously stored in ibaHD-Server over long periods (e.g., one month).

"We monitor power quality in accordance with binding standards."

Dries Boone, General Manager, iba Benelux

Your benefits at a glance:

- Efficiently analyze faults
- Document power quality in accordance with applicable standards
- Avoid fines

Iba system for measuring power quality

ibaPQU-S   ibaPDA   ibaHD-Server   ibaAnalyzer
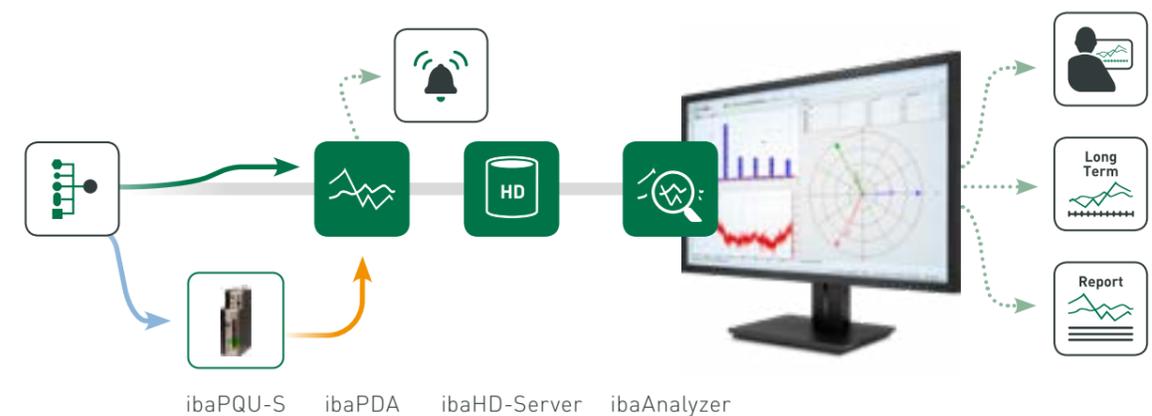
Digitalization

The acquisition of measurement data in machines and plants is a prerequisite for your digitalization strategy and the introduction of digital business models. Measurement data gives you a digital image of your processes, which can be used for optimization, evaluation, monitoring, and long-term analysis. Meaningful characteristic values can be flexibly calculated based on raw data and transferred to databases or cloud systems for analysis – the basis for centrally evaluating distributed machines.

Data acquisition

The processes of your machines and plants can be acquired by ibaPDA in high-resolution using comprehensive process connectivity. This allows you to acquire PLC data and machine data, energy and vibration data with a central time stamp from different data sources and store them in measurement files: The base for the efficient analysis of your processes.

Online streaming

Measurement data can also be aggregated online and then be transferred to databases or cloud systems. By this you have immediate access to measurement data in your superordinate system.

Calculating characteristic values flexibly and automatically

The digital image is the base for calculations of meaningful and individual characteristic values. These characteristic values can be calculated automatically product- and batch-specifically in a very flexible way synchronously to the process using ibaAnalyzer. You decide how and where the characteristic values are stored. The Northbound connectivity of the iba systems allows a flexible storage in databases or cloud systems.

The ibaDAQ family – edge devices in different versions

With the ibaDAQ family (ibaDAQ, ibaDAQ-C, and ibaM-DAQ), iba offers edge devices in different versions. Common to all devices is the fact that data can be locally acquired and processed directly at the machine. This means that your processes can be monitored in real-time with edge analytics and the calculated characteristic values can be simultaneously transferred to higher-level systems. The necessary interfaces for the acquisition of high-resolution measurement data (southbound) and for data transfer (northbound) are available in all edge devices. This is an advantage with regard to the digitalization of your machines and plants

in the context of your Industry 4.0 strategy. Digital business models that generate added value for your customers can be implemented and introduced based on this data.

Central management

ibaManagementStudio is a tool that lets you centrally manage decentralized iba systems from one location – whether in your company network or even from outside via a VPN. By this, you get an overview of the iba system on all machines and can distribute software updates and current configuration files from a central location.
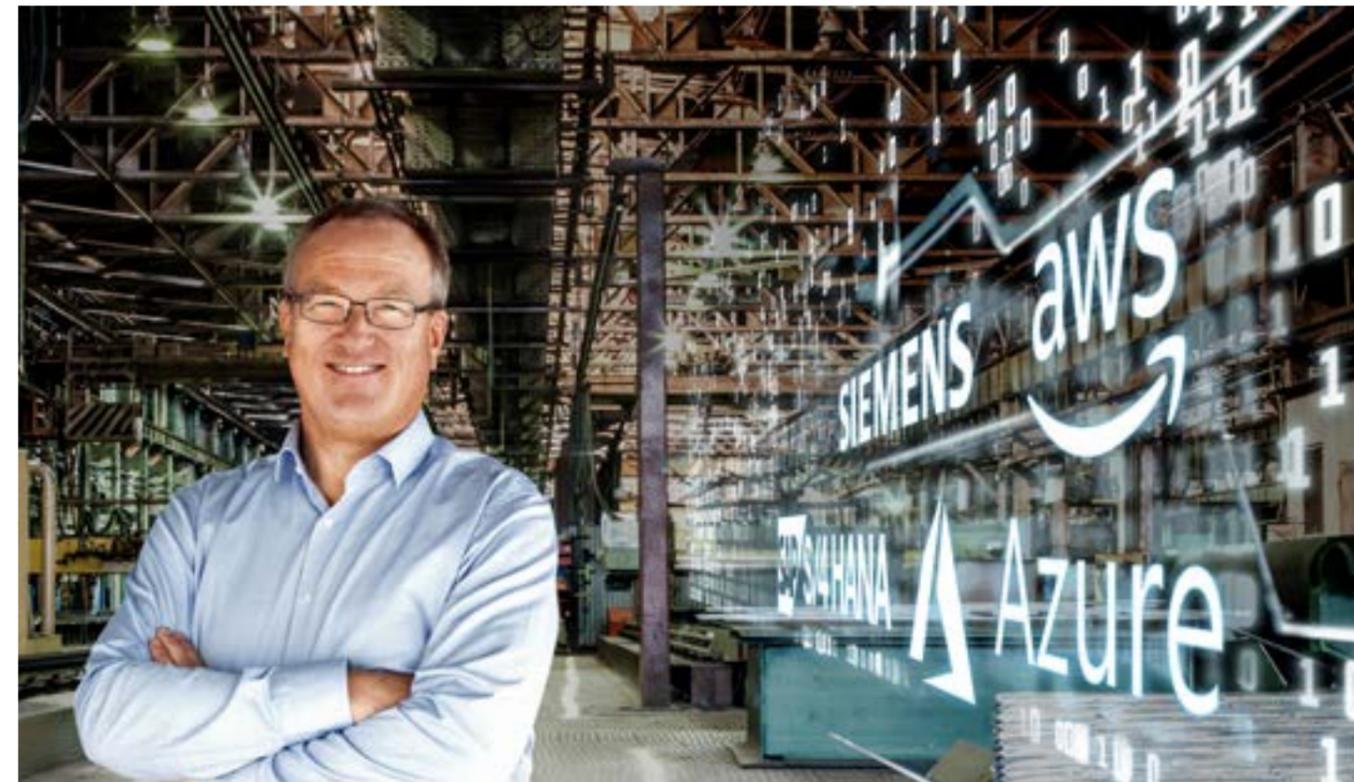
"Due to the comprehensive process and cloud connectivity of the iba system, we can help you to digitize your processes."

Dr. Andreas Quick, Head of Product Management, iba AG

Your benefits at a glance:

- Digital image of your processes
- Automatic calculation of individual characteristic values
- Realization of your Industry 4.0 strategy

iba system for digitalization

MQTT
OPC UA   MS Azure
Siemens MindSphere
SAP S/4 HANA   Databases
Apache Kafka   Lumada

ibaManagementStudio   ibaPDA   ibaHD-Server   ibaAnalyzer
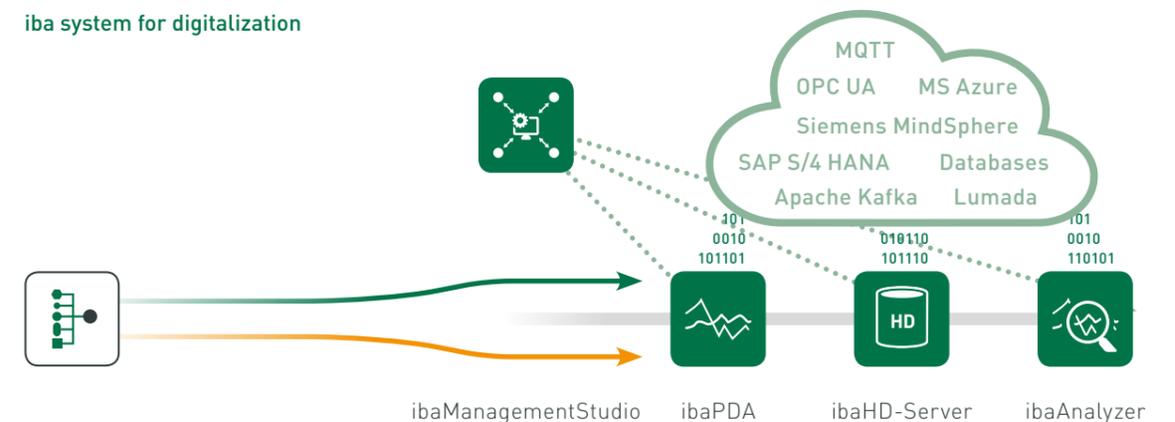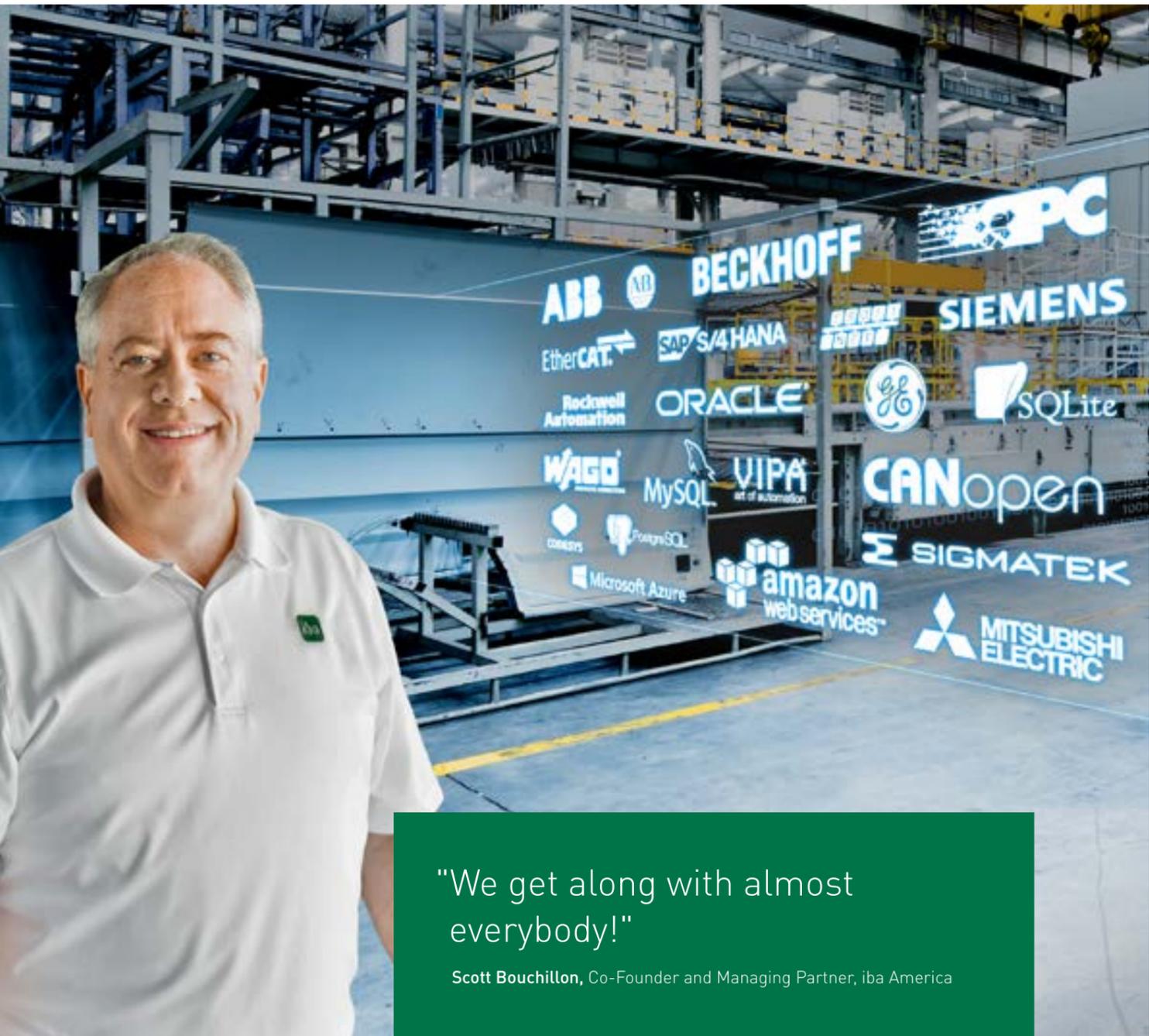
"We get along with almost everybody!"

Scott Bouchillon, Co-Founder and Managing Partner, iba America

Your benefits at a glance:

- Combination of different signal sources, data types and manufacturers
- Time-synchronous acquisition of all relevant data
- Different acquisition rates up to 500 kHz

Connectivity

The iba system acquires all relevant data in automated plants. Independently, whether fast analog values (up to 500 kHz) directly from sensors, data communicated over field buses, or variables from automation systems. Everything can be acquired together and analyzed together. You decide what is relevant! Through this broad connectivity, your machines and plants can be completely acquired.

Thanks to the broad process connectivity of the iba system, 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 interdependencies between the specific components, which is difficult to analyze in local PLC-internal data loggers.

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

Different acquisition methods
Via fibre optical connections you can connect analog and digital IO modules directly. Also, data from different field and drive buses can be acquired (sniffing mode) and system interconnections can be realized. Control systems that communicate e.g. via PROFIBUS or PROFINET can be connected via the corresponding bus monitor. In addition, numerous Ethernet-based interfaces like TCP/IP, UDP or OPC are available for the acquisition of signals from different sources and access methods (direct communication, Xplorer interface, request).

Record camera images time-synchronously
With ibaCapture, camera images are captured and recorded time-synchronously with process data. Hence, you can analyze video data together with measurement data online as well as offline.
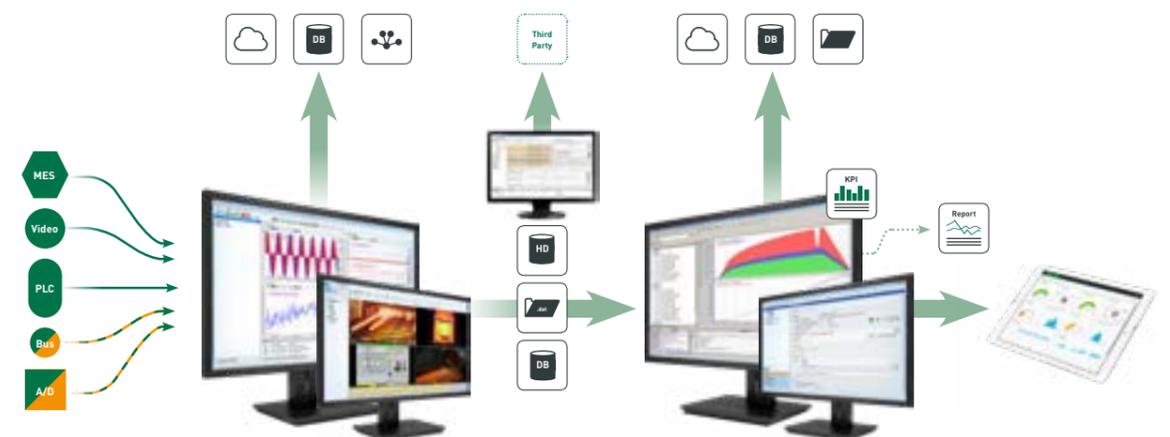
Software and Hardware

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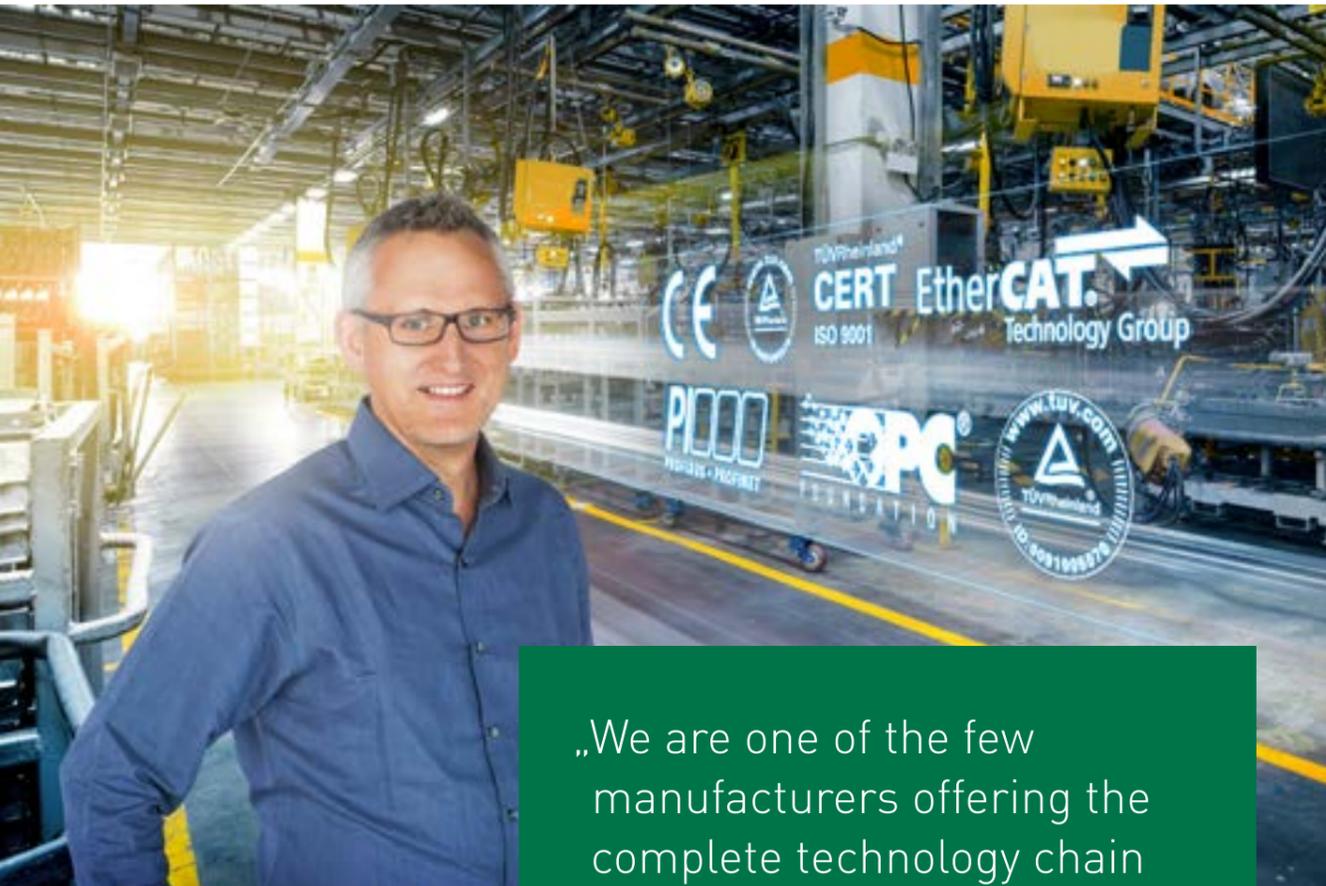
„We are one of the few manufacturers offering the complete technology chain from hardware to software to database and cloud connectivity."

Oliver Soukup, Head of Development, iba AG

Acquire Data from PLCs

Traditional measurement systems acquire electrical sensor signals with the help of A/D converters. But in the era of digital control systems, most measurement values that are of interest are already available in the automation systems. This is why iba offers various methods for accessing internal values of control and PLC systems directly.

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

Request measurement data during running operations
For many systems, Xplorer interfaces and the request method are available. Both methods allow you to request internal variables of the PLC in a flexible way.

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 by their symbolic name. Sending data is done by so-called "Software Request Block" in the PLC which has to be integrated once. Data transmission is done via UDP or field buses.
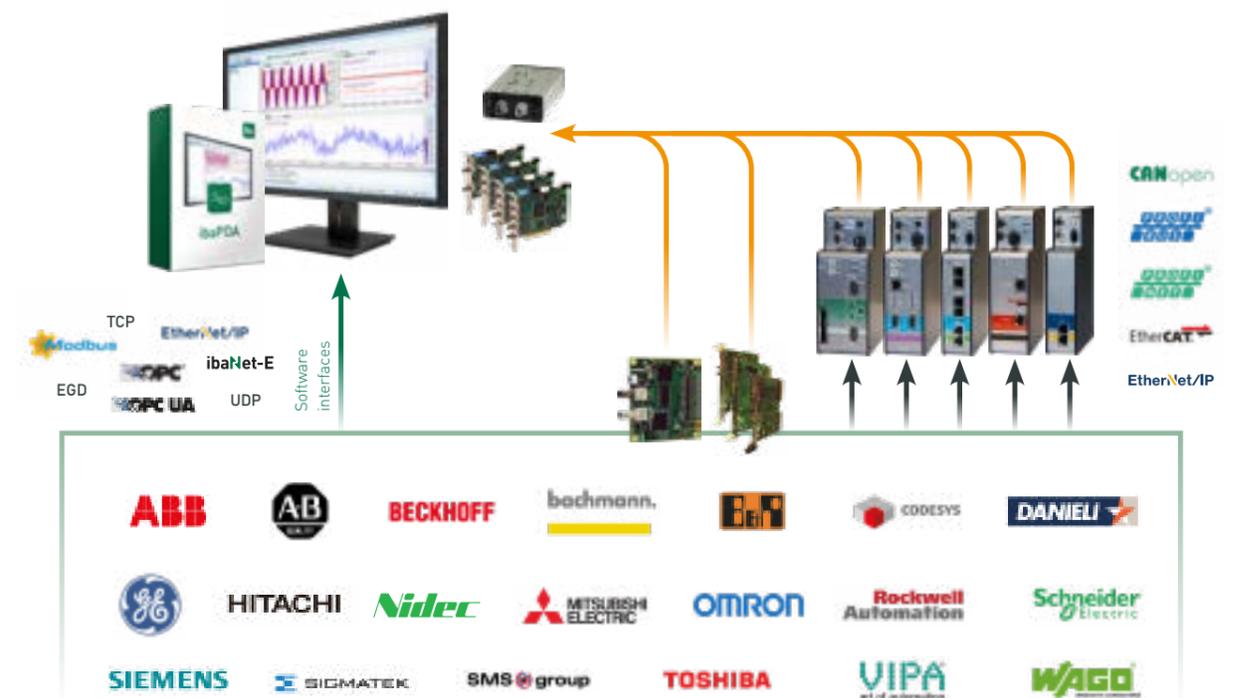
Northbound Connectivity

Thanks to the broad northbound connectivity, measurement and quality data can also be processed outside the iba system. With connections to databases, message brokers, and cloud systems, data acquired with iba can be stored, evaluated, and analyzed in your system.

Online streaming

Special data stores are available to online transfer measurement data acquired with ibaPDA as raw data or aggregated data to higher-level systems. Process data are actively transmitted to other systems as a time series (streaming). Time resolutions of up to 1 ms, different triggers, and an "only send on changes" mode are all available. File-based buffering is available to bridge connection interruptions.

The following target systems are supported:

› Databases (Microsoft SQL Server, MySQL, Oracle, Maria DB, PostgreSQL, SAP S/4 HANA)
› Kafka Cluster (and Azure Event Hub)
› MQTT Broker
› Siemens MindSphere

Output interfaces

In addition to the data stores for streaming, ibaPDA also offers output interfaces to output specific individual values. Here, too, various trigger options are available. In databases, data can be written with a user-defined SQL statement. Connection drop-outs can be bridged via file-based buffering. Output interfaces can be used for production data or for coupling the iba data acquisition directly to MES systems. The database systems listed above are supported.

Standard servers

The measurement data acquired in ibaPDA can be published via standard servers. The advantage of this solution is the low configuration effort; the disadvantage is potentially a reduced time resolution

compared to the original acquisition rate. ibaPDA supports the following standard servers: classic OPC Server, OPC UA Server, SNMP Server and IEC 61850 Server.

Access historical data

Measured values and events stored in the ibaHD-Server can be read by external programs via an API (application programming interface). The API uses the standard gRPC protocol and offers numerous functions to read measurement data and events over a specified period. This is especially useful for proprietary data-analytics applications such as AI or machine learning.

Transfer characteristic values

The characteristic values that are (automatically) calculated in ibaAnalyzer can be stored process-synchronously in different databases for long-term storage in a data warehouse or for long-term analysis with ibaDaVIS. Process-synchronous means, whenever a production step or a product has been completed, KPIs are automatically calculated and stored. For this purpose, ibaAnalyzer offers an open interface to SQL databases (SQL Server/ MS Azure, Oracle, MySQL, PostgreSQL) via OLEDB or ODBC.

In addition to the transfer of characteristic values, the transfer of length or time-related aggregated data is also possible.

Transfer to other file formats

For further processing of the measurement data it may be necessary to transfer the data into another file format. For this purpose, the product ibaAnalyzer-File-Extract offers numerous formats, such as CSV, Parquet or Matlab. In ibaAnalyzer, it is possible to configure which signals and time period should be transferred to the new format, making it easy to transfer only a selection of the signals or a reduced time period.

With ibaAnalyzer-File-Extract, new dat files can also be created – for example, if it is necessary to reduce the amount of signals or the duration before forwarding or analyzing the measurement file.

Cloud	Message broker	Data-base	Standard server

Online streaming

OT network
IT network

Third Party

| Standard server | Cloud | Message broker | Data-base | File | Standard servers |

Process-synchronous data export

Process-synchronous KPI calculation

Database

A/D Bus PLC Video MES
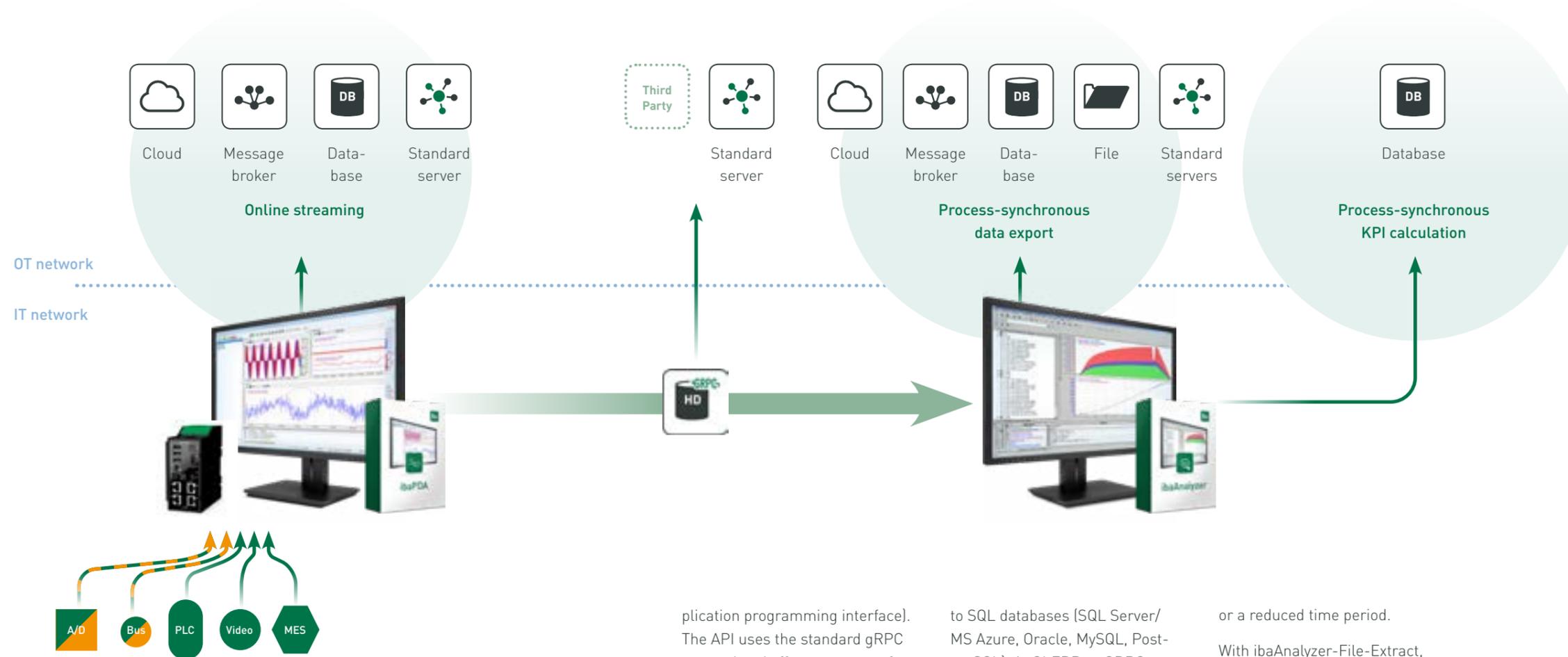
ibaMAQS

Modular measurement system – acquire and process signals synchronously and precisely

With the ibaMAQS modular system, iba has raised the bar in the field of measurement technology. This flexible system enables user-specific solutions and is both scalable and perfectly tuned for demanding tasks. It impresses with extremely easy handling, 24 bit resolution, galvanic isolation of the channels, calibrated A/D converters, and fast, synchronous data acquisition.

ibaMAQS can be quickly and flexibly adapted to an extremely wide range of measurement tasks. The system is ideal for decentralized applications in particular.

Modular concept

The ibaMAQS modular data acquisition system can be perfectly adapted to the requirements of different measurement applications. The system offers the greatest possible flexibility coupled with exceptional technical innovations.

One processor module can be combined with up to 15 different I/O modules. Modules are available for digital and analog input and output signals as well as for special technological functions.

The system can be flexibly extended at any time as requirements grow. The scalable system thus offers a high level of investment security and meets the most challenging requirements.

Universal processor module as edge device

The ibaM-DAQ processor module is an extremely compact ibaPDA system that can serve as a stand-alone device. Thanks to its compact design, ibaM-DAQ is ideal for use close to the process or machine – and wherever only limited space is available. In addition to the synchronous acquisition and storage of the measurement data, ibaM-DAQ is able to aggregate the data and calculate on-board characteristic values.

These characteristic values can also be stored locally or forwarded to other systems. Thanks to the numerous network interfaces, ibaM-DAQ can be integrated into various IT structures.

Specific modules extend the scope of functions

In the course of the expansion of ibaMAQS, special technology modules will be added step by step, which will continuously extend the system's application spectrum.
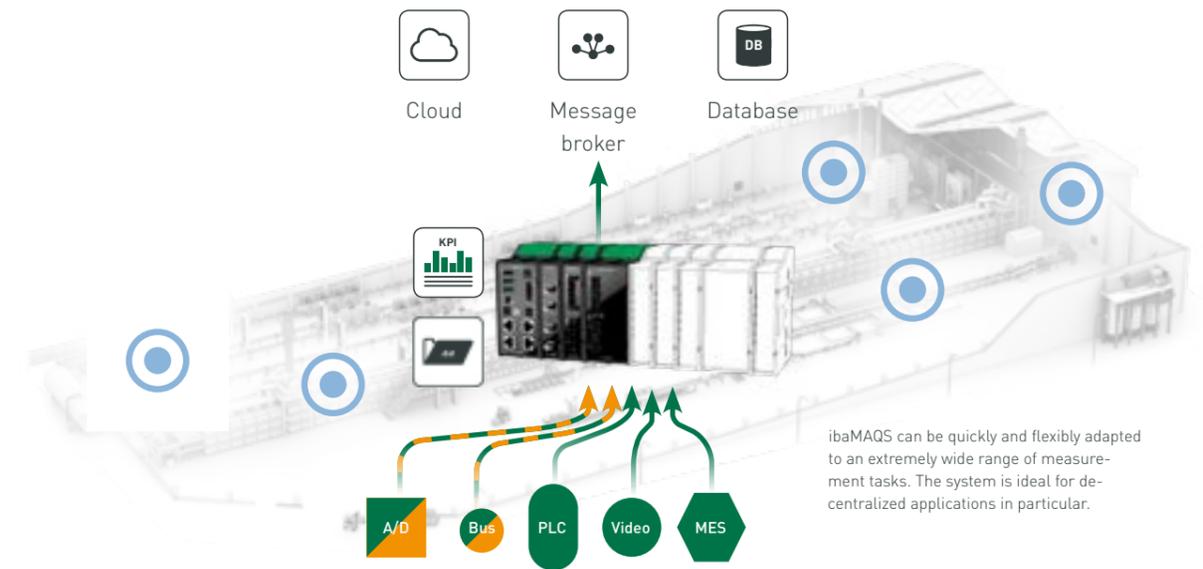
Technology-specific solutions can be realized in combination with other iba applications, such as ibaInSpectra or ibaInCycle, whereby ibaM-DAQ serves as an edge device.

The ibaM-FO-2IO interface module lets you couple additional iba devices via optical fiber. The 32Mbit Flex and 32Mbit iba Net protocols are supported.

Communication module for standard applications

ibaM-COM is a pure communication module that forwards the measuring signals acquired using the input modules to other subscribers via ibaNet-E, or passes output data from other subscribers to the output modules. Alternatively, the modules can be configured from a remote ibaPDA system. When using the communication module, no processor module is required.

Broad range of modules

The I/O modules of the system cover all important signal types, such as analog and digital inputs and outputs, counter inputs, and vibration signals. Special modules for acquiring data from current and voltage transformers are available for medium and high-voltage technology applications.

The number of measuring channels per module is deliberately kept small to ensure optimum scalability.
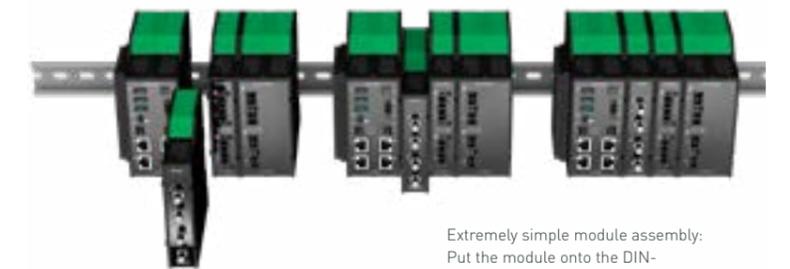
Extremely simple module assembly: Put the module onto the DIN-rail – snap it into place – done.

ibaNet-E – the deterministic protocol for isochronous acquisition

For data acquisition, iba has specially developed the ibaNet-E transmission protocol. It enables fast, efficient and deterministic communication between the acquisition computer and other components involved.

You can use your cost-effective standard Ethernet cabling and standard network infrastructure for data communication. Complex, special fiber-optic cabling is no longer required with the new system.

ibaNet-E makes it possible to realize different applications, such as data acquisition from several data sources as well as control via outputs. Multiple connections per device with different sampling rates enable the simultaneous connection of different acquisition systems; for example, at the production and control level. The transfer bandwidth over Ethernet is significantly higher than via ibaNet fiber optics, which is limited to 32 Mbit/s. Depending on the infrastructure, up to 1 Gbit/s can be achieved over Ethernet.

WAGO-I/O-System 750

With the WAGO-I/O-System 750, analog and digital signals can be easily acquired or also output. Depending on the selected processor station, the measured values are transmitted to/from the ibaPDA system via optical fiber or Ethernet. In both cases an iba-internal protocol is used. It is also used for automatic detection of the connected I/O modules.

ibaNet750-BM-D

Acquire measured values via fiber optics
ibaNet750-BM-D is connected to ibaPDA via optical fiber using the ibaFOB-D optical fiber board. ibaNet750-BM-D supports up to 255 I/O modules.

ibaNet interface
On the optical fiber side, the device supports the following ibaNet protocols:

› Flexible settings with 32Mbit Flex
› 32Mbit for ibaLogic
› 3Mbit compatibility mode

ibaW-750

Acquire measured values over Ethernet
The ibaW-750 processor station connects the WAGO I/O modules to the ibaPDA system over Ethernet. A standard Ethernet board can be used in the ibaPDA system. ibaW-750 is based on the new ibaNet-E protocol. The two 10/100 Mbit Ethernet interfaces provide a switch function. Thus, the network can be easily extended via the ibaW-750 device.

By using the ibaNet-E Ethernet protocol and a standard Ethernet connection, the integration into the ibaPDA system as well as the device configuration for network/IT integration of ibaW-750 are extremely convenient.

A novel device-search feature ensures automatic detection if the ibaW-750 is located in the same network as the ibaPDA system.

Terminal Blocks

Integrating decentralized A/D terminals into the iba system

Both processor stations support the following modules of the WAGO-I/O-System 750:

› Analog and digital
  I/O terminals

› Counters
› SSI sensors
› Resistance thermometers
› Thermocouples
› Measurement bridges
› Terminals for
  power measurement

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 ibaPDA process data acquisition system. Fast and synchronous sampling of all signals enables a detailed analysis of all processes.

ibaPADU device family
The measurement modules of the ibaPADU family are used for measuring analog and digital signals. Analog inputs are available as current and voltage inputs with different measurement ranges.

Each channel is galvanically isolated and equipped with its own A/D converter for real parallel data acquisition. The resolution of the A/D converter is 16 bit.

Furthermore analog and switchable digital filters void out reliantly alias disturbances.

Various devices available
Using the devices ibaPADU-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 ibaPADU-D-8AI-U and ibaPADU-D-8AI-I devices can be configured in the range from 1 kHz to 40 kHz.

A sampling rate of 100 kHz is even 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 in a FO ring.

ibaPDA

#1   #2   #3

ibaPADU-D-8AI-U/-I

32Mbit Flex

32Mbit Flex
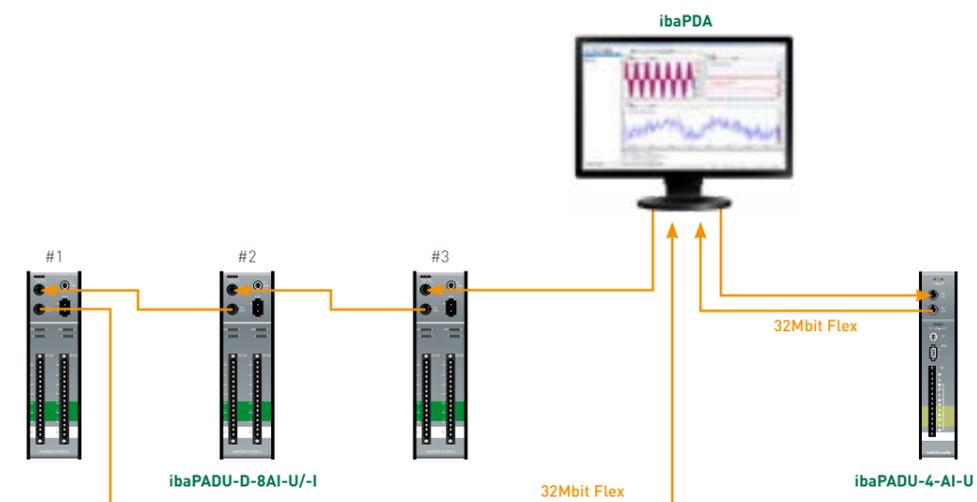
ibaPADU-4-AI-U

Up to 15 32Mbit Flex-enabled devices can be integrated into a "Flex" ring.

A sampling rate of up to 100 kHz can be achieved with ibaPADU-4-AI-U in a point-to-point connection.

Field and Drive Bus Monitors

All bus monitors are coupled without interference to the bus and allow monitoring and recording of data traffic between the automation system and peripheral devices, without compromising or straining the automation system.

Different modes

iba bus monitors normally have two operating modes. In sniffer mode (= monitoring), the values communicated via the bus are read and recorded as signals. Configuration changes of the field bus infrastructure of the system to be monitored 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. By this, all internal values of a PLC can be acquired without having to output them to an analog or digital terminal. Data recorded from the buses are converted in the bus monitor, transfered via the ibaNet fiber optic protocol and sent 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. Informa-

tion on 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.

ibaDAQ Family

The devices of the ibaDAQ family allow local and decentralized data acquisition with integrated ibaPDA software and onboard data storage. Thanks to the comprehensive output options of ibaPDA, relevant data and information are also available outside the iba ecosystem at any time – be it in databases, message brokers or cloud systems.

Perfect for local use in every environment

The devices of the ibaDAQ family are ideal out-of-the-box solutions for acquiring and recording measurement data. Both devices offer the functionality of a PC with the ibaPDA software for acquisition of up to 64 signals, an internal solid state disc for data storage, a powerful CPU, and interfaces for data acquisition.

In contrast to the classic industrial PC, these devices are small, compact, fanless and require no additional ibaFOB board to record analog signals with the compact iba measurement modules or data from iba bus monitors.

These devices are a perfect fit for harsh environments and can be used for local measurements directly at the plant or machine or in remote locations, such as cranes. They will even find space in cramped control cabinets.

ibaPDA can be optionally extended to up to 1024 signals.

ibaDAQ

ibaDAQ is part of the iba modular system and can be combined with up to 4 I/O modules. It has two Ethernet interfaces and one FO connector providing the functionality of an ibaFOB-io board.

ibaDAQ-C

Those who merely intend to acquire data via Ethernet based protocols, will find a perfect solution in the compact DIN-rail device ibaDAQ-C with 2 Ethernet interfaces.

As standard, ibaDAQ-C includes the licenses ibaPDA-Interface-PLC-Xplorer and ibaPDA-OPC-UA-Server+ in addition to the integrated ibaPDA software. This allows you to acquire signals directly from different PLC systems and export data via OPC UA.

In combination with ibaW-750 I/O signals can also be acquired Ethernet-based with ibaDAQ-C.

System interfaces
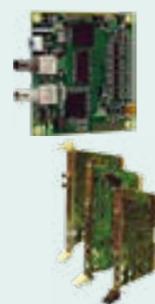
Direct data acquisition

To acquire measurement data from VME-based systems, Simatic MMC and Simadyn-D systems, different system interfaces are available. ibaLink-io-embedded allows you to connect ibaNet-FO to arbitrary proprietary systems.

Special components

Fast acquisition

Special components are available for data acquisition from the Simatic TDC and Simadyn-D control systems. Measurement data can be acquired with a direct FO connection between the ibaPDA system and the control system with a high sample rate.

PCs & FO infrastructure

Industrial computers

iba offers high-performance industrial computers for data acquisition and analysis that meet the highest requirements. The computers are characterized by a high product quality paired with the latest technology and are designed for longevity in rough industrial environments.

Fiber-optic connections: fast and reliable

The boards of the ibaFOB family are communication boards for ibaNet fiber-optic connections. The ibaFOB boards connect iba modules, such as ibaPADU compact measurement modules, ibaLink system couplings, and iba bus modules with PCs.

iba Modular System

The iba modular system acquires and processes measurement signals and is ideal for control applications with the appropriate signal output modules. 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 time-synchronously with sampling rates of up to 40 kHz. 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 every requirement

› 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 algorithms.
› ibaCMU is the central unit for condition monitoring applications.

› ibaPQU-S serves as a Power Quality Unit for monitoring the grid quality according to standards with highest precision.
› With the integrated ibaPDA software, ibaDAQ can acquire data as a stand-alone data acquisition device with local data storage – ideal for use in control cabinets or on cranes.

Measurement Box (ibaMBox)

iba modular system for mobile use

Flexible use everywhere - this is an increasingly important requirement for measurement systems, especially in the fields of commissioning, troubleshooting, service and maintenance.

With ibaMBox iba offers a mobile and robust system to acquire highly precise data, independent of the location. Since ibaMBox is based on the iba modular system it allows you to individually customize the configuration to meet various application requirements.

Scalable at any Time

Apart from its comprehensive connectivity to the process, scalability is another main feature of the iba system. It is extendable at any time and can grow with increasing requirements – from troubleshooting a PLC with 64 signals to monitoring a large plant with over 100,000 signals, as well as camera systems with machine-vision applications and quality-data systems for automated product release, not to mention numerous additional features.

Data acquisition

Data acquisition with iba can exactly be customized to your situation and aims. You only configure those interfaces and signals which you need for acquiring your process. This allows you to start on a small base and add further interfaces, signals, data stores or camera systems, when your requirements grow.

Data analysis

At the beginning, the analysis is generally interactive and signal-based. Nonetheless, measurement data can automatically be analyzed with the iba system, e.g., for quality documentation or to compare machines on the basis of characteristic values (KPIs). The calculation is performed interactively once and is then automatically updated by means of analysis rules based on specific products or fixed time intervals. The results can be automatically documented in reports or loaded into databases – no matter whether they are process-specific KPIs or production details.

Optimizing

The web-based application ibaDaVIS allows the plant or machine behavior to be visualized in a user-specific manner via dashboards.

The analysis delivers important results concerning the optimization of processes and machines for different user groups.

The iba system – an open ecosystem

Furthermore, if the products of the iba system are not sufficient for your requirements, you can transfer the measurement data and quality data that was recorded and calculated with the iba system to higher-level systems via the northbound interfaces – for use in your environment and with your applications.
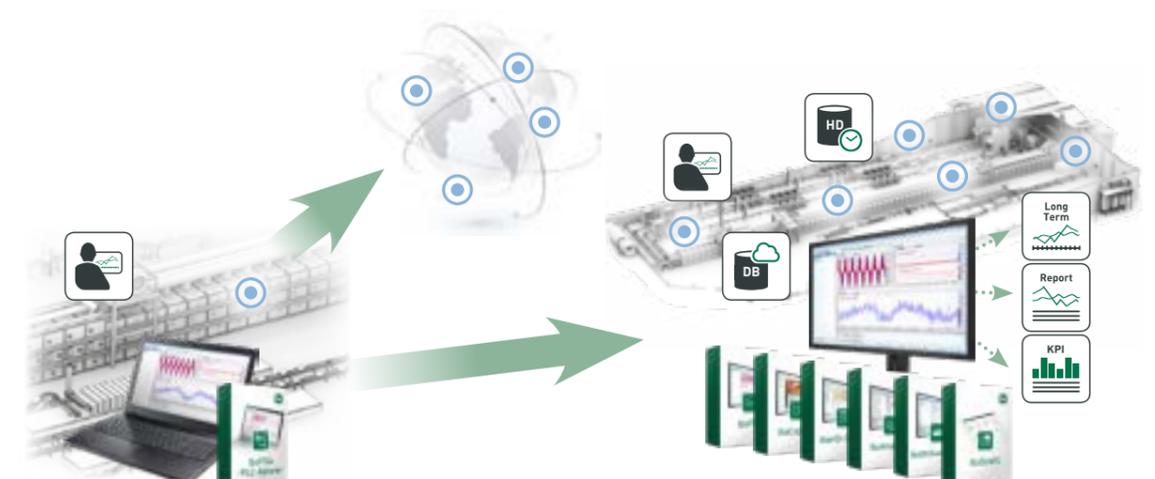
Acquire and Record Data

As a central component of the iba system, ibaPDA has proven itself over many years as one of the most versatile process data acquisition systems for maintenance and production. Client-server architecture, flexible recording, and simple configuration thanks to the "auto-detect" functionality are only a few of its outstanding features.

The modern classic of data acquisition

ibaPDA is an extremely powerful, PC-based acquisition and recording system for measurement data from various data sources in automated technical processes. The modular product concept allows highly flexible configurations and offers customized solutions for individual requirements. This might be the continuous long-term acquisition of measured value to further optimize automation processes or the use

as a fault recorder in energy plants with triggered recording in case of failures. ibaPDA is scalable and suited for individual machines as well as for cross-plant systems.

Systematic transparency

A special feature of ibaPDA is the extraordinarily broad connectivity to all common automation systems. Many acquisition methods allowing the connection of systems of various manufacturers and gen-

erations are available. This allows a consistent data acquisition of an entire system usually consisting of heterogeneous components. ibaPDA can handle several recordings simultaneously which are tailored to different user groups. This enables different use cases, for instance, if different signals, characteristic values or sampling rates are required or measurement files with different trigger conditions have to be created.

Available add-ons

Length-based recording of quality data

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

Show quality data – live and in color

ibaQPanel allows a live view of process and quality data, conditions, events and camera images in a technology-based display. Configuration is intuitive and flexible.

Historical Data available immediately

ibaHD-Server lets you continuously save the data acquired with ibaPDA. Find events from the past with a mouse click. Quickly navigate and zoom in from the yearly, monthly, or weekly overview to the millisecond range.

Use ibaHD-Server to analyze your data over a longer time period and automatically generate shift-based, daily, or monthly reports.

Continuous recording
The application ibaHD-Server (Historical Data Server) allows measurement data to be recorded continuously over a long period as well as subsequently continuously displayed and analyzed.

Recording signals and events
Beside recording signals, events can be recorded and displayed in the event table. The event messages are automatically generated by a trigger signal and can be used for storing the event of product changes or events to analyze 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, annotations on events or dates

can be stored also retrospectively as predefined or free text in the signal trend. These annotations can easily be complemented with additional information like images, reports or documents and be made available for other users.

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

Navigation and zoom function in the ibaHD trend viewer
With the ibaPDA client, measurement signals from time

ranges such as seconds, hours, weeks, months, or even years can be selected and displayed. The selected signals are displayed as a trend in the ibaPDA client within a very short time. Via the navigation and zoom function on the trend viewer, the time range shown can be enlarged as desired or reduced to the highest resolution with a mouse click.

One server for multiple recordings
Multiple HD recordings can be managed from one HD server. Thus, it is possible to store measurement data from several ibaPDA systems in one HD server. In this way, measurement data and historical data from several ibaPDA acquisition systems can be visualized together via one ibaPDA client.

Record Video Data and Measurement 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 level of process analysis.

Everything at a glance

With ibaCapture, live images from video cameras and HMI systems can be acquired and recorded synchronously with measurement data acquired with ibaPDA. Unlike conventional video systems, ibaCapture not only records videos but also synchronizes the visual information with measurement data.

A frame-accurate display

The video information can be viewed frame by frame with the exact matching to process signals. As a result, relationships which are not evident at first sight can be understood more easily.

Errors can be detected faster and root causes identified more easily. The use of cameras improves process monitoring where ever it

is difficult to measure the process behaviour or where process steps cannot be reliably captured by sensors. For example, this refers to material feeding machines or plants that are exposed to excessive amounts of steam, dust, or heat; for example, in steel works or rolling mills.

Available add-ons

Automatic generation of process information

ibaVision integrates professional, industrial image processing into the iba system and enables visual monitoring and analysis of processes. Quality checks can be performed in real-time during production and allow early intervention in the process before major errors occur. ibaVision enables the creation

of image processing applications with the HALCON® library and with freely available image processing libraries, such as OpenCV or Tensorflow. Image processing results extracted with ibaVision can be recorded as signals in ibaPDA, visualized as time trends, and monitored for compliance with limit values. A powerful real-time process monitoring system can thus be created.
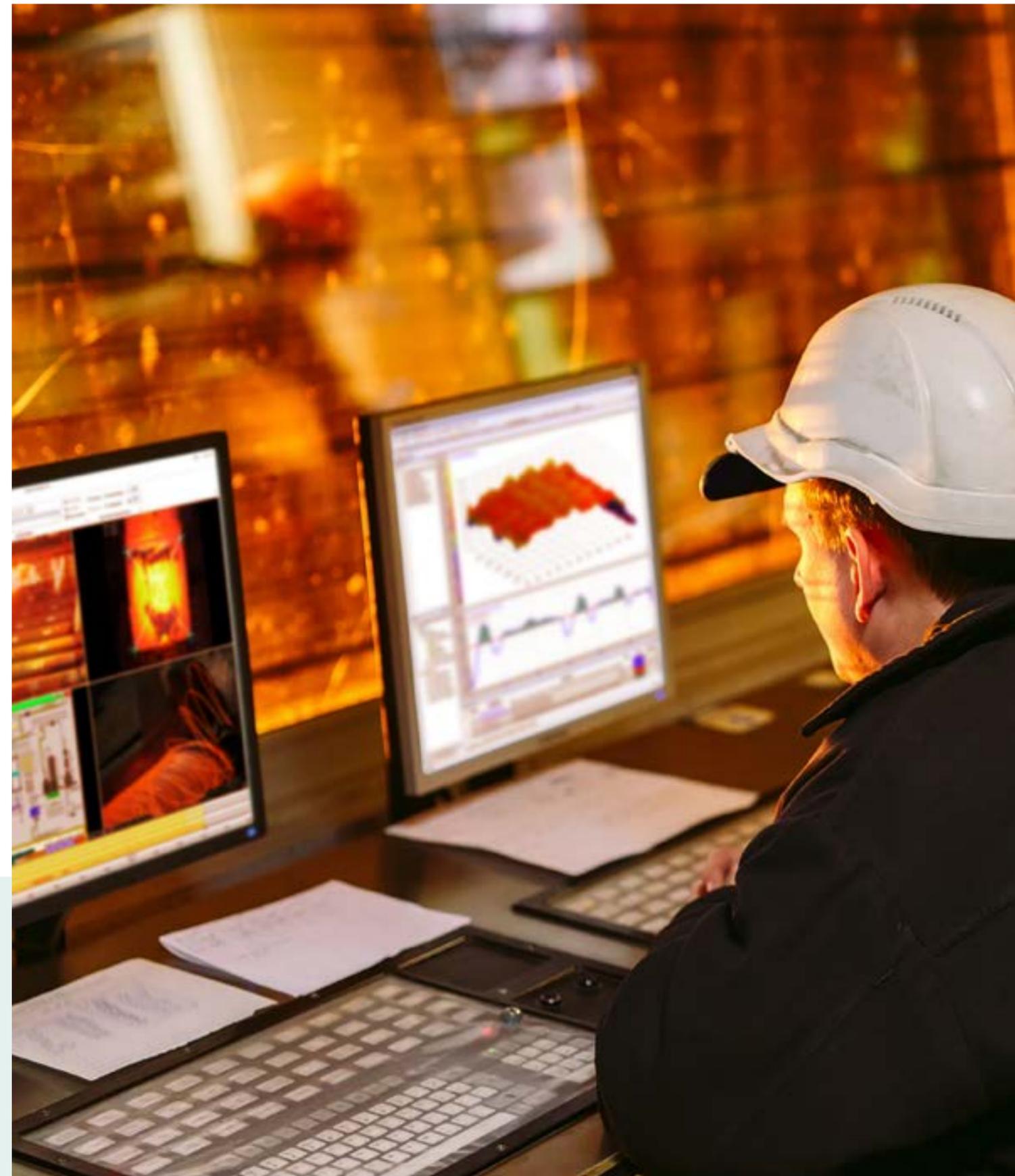
Analyze Data

Within the iba system, ibaAnalyzer is the key element in the field of data analysis. It is a very powerful tool for analyzing measurement data efficiently and deriving information from it. Analysis procedures can be created flexibly and adapted individually, in a way that different users get the appropriate analysis for their special purposes.

Analyzing and evaluating without additional costs

ibaAnalyzer is characterized by broad functionalities for analyzing and evaluating. The application offers intuitive operation with complex functions at the same time. ibaAnalyzer is licensed free of charge for processing measurement data generated with the iba system.

Stay flexible and efficient

Analysis rules can be created flexibly and adapted individually. This allows users to create appropriate analyses for their purposes, such as for analyzing faults, but also performing long-term analyses to validate and to further 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 higher-level quality management system. Moreover, using 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.

Automated generation of reports

The integrated report generator is a powerful tool that allows creating individual reports in a very flexible way. With the report generator, efficient options for creating templates are available in order to present results in the required form.

Available add-ons

Import of third-party formats

Measurement files which are not in the iba dat format can be read and analyzed with ibaAnalyzer using the ibaAnalyzer-E-Dat module. The import procedure as well as further processing steps can also be automated with ibaDatCoordinator.

Exporting iba measurement data

The add-on ibaAnalyzer-File-Extract makes it possible to export measurement data into other formats. The export can also be executed automatically with ibaDatCoordinator.

Loading characteristic values into databases

ibaAnalyzer-DB, the database interface for ibaAnalyzer, lets you export calculated characteristic values as well as length/time-related aggregated measurement values into databases. An analysis of DB values is also possible.

Display GPS positions and routes

With ibaAnalyzer-Maps it is possible to display geographical positions and movements based on GPS coordinates. Thus, with ibaAnalyzer it is possible to determine not only when something happened, but also where.

Automated Data Management

ibaDatCoordinator is an efficient tool for processing and managing measurement data automatically. Typical use cases are automatic extraction of product-related characteristic values into databases, export of characteristic values, moving files, and generating reports.

In synergy with ibaAnalyzer, various tasks can be executed fully automatically and employees can be relieved of routine tasks.

Analyzing data, calculating parameters, or just managing the measurement files is often a time-consuming task, especially in heterogeneous system environments with numerous influencing factors.

With ibaDatCoordinator you have a tool at hand that allows you to run different tasks fully automatically. Using the integrated functions, data management can be set up individually. So, for instance, measurement files can be copied from the PDA systems, to file servers and thus be provided centrally to all authorized users.

Task execution
ibaDatCoordinator can execute the respective tasks either process-synchronously, i.e. whenever a new measurement file has been created in the ibaPDA system, or in a time-controlled manner. Scheduled execution is useful for accessing data in the HD server, for example, to create shift-based, daily, or monthly reports. It can also be used to implement a time-scheduled file backup or cleanup strategy.

Processing files of other formats
With ibaDatCoordinator, it is also possible to automatically process measurement files of other formats (e.g., CSV, Comtrade). As a first step, these files must be converted to the dat file format. Based on the dat files, the complete range of functions of iba-DatCoordinator, such as copying, report creation, and DB extract, is then available for these files.

Tasks
ibaDatCoordinator offers the following tasks, among others:

› **Copy task**
Copying or moving measurement files, e.g., from the acquisition system to a file server to create a backup of the measurement data.

› **Report task**
Automatic report generation. Reports can be created at specified times or after completion of a product or batch. They can be printed or exported into various file formats.

› **Extraction task**
With the extraction task, data can be transferred from a measurement file to a database or another file format. Additionally, data can be extracted from an ibaHD-Server into a measurement file.

› **Scripting task**
Execution of self-created user-specific or application specific scripts. This task provides an open interface for free processing

of the measurement files.

› **Add condition**
Conditions can be used to control the execution of subsequent tasks. This can be used to find "outlier signals" or to compile measurement files of specific product groups.

› **Splitter task**
Split a measurement file into several files with shorter time ranges.

› **ibaHD-Import**
Import a measurement file into an ibaHD-Server.

› **S7-Writer**
With the S7-Writer task, it is possible to extract or calculate data from a measurement file and write this data in data blocks (DB) within an S7-PLC.

› **Publish task (Kafka, OPC UA, SNMP, DB)**
Publish calculated data via Apache Kafka, OPC UA (server) or SNMP (server) to other systems or extract KPIs into databases.

Upload task
Transfer files (dat files or also

the result files of an extraction or report task) to external (cloud) systems. The protocols ftp, sftp, ssh, Amazon S3 and Azure Data Lake are supported.

› **Transfer task**
Transfer files (dat files or also the result files of an extraction or report task) between two instances of ibaDatCoordinator-Server.

Automated report generation

The integrated report generator in ibaAnalyzer is a powerful tool that can create individual reports in a very flexible way. With the report generator, efficient options for creating templates are available in order to present results in the required form.

Web-based Visualization for Product and Process Analysis
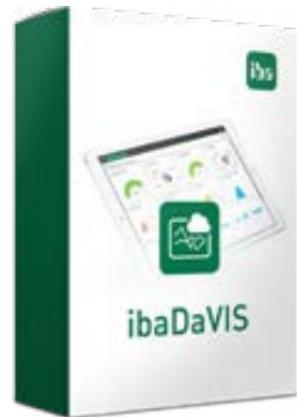
ibaDaVIS allows to visualize your processes and production on the basis of characteristic values. Without installing any client software, you can access your data on any platform with a web browser only. You can perform user-specific analyses on different dashboards easily and intuitively. Drill down to the high-resolution raw data enables you to visualize the measurement data on the same dashboard as the characteristic values for a comprehensive and detailed analysis.

See the Big Picture
With ibaDaVIS, you get a completely new overview and clarity through in-depth insights into your data and processes. Plants and machines can be compared with each other based on their characteristic values. The information that you need to monitor and benchmark systems and machines and to identify weak points and potential for optimization can be shown quickly and easily.

Changes in the process can be tracked directly or displayed over long periods of time. Long-term trends, histograms, tables or pie charts are both visualization and filter elements in one. Plant operators, process engineers or decision-makers are looking at the same data with ibaDaVIS, no matter whether on a PC, mobile tablet or smartphone.

The latest web technology
ibaDaVIS uses the latest web technologies to connect clients to the back-end server. All common web browsers, such as Google Chrome, Edge, and Mozilla Firefox are supported. The responsive design allows a convenient operation, even on tablets or smartphones. In order to connect to ibaDaVIS server only a web browser is required on the client. There is no need for an additional app and software maintenance is not necessary on the client computer.

Visualization of different data sources
Tile-based dashboards visualize characteristic values or the measured values from iba measurement files as well as the HD server. Data from time and event-based HD stores can be visualized. Current measurement data or characteristic values from different sources can be displayed together in dashboards in ibaDaVIS. ibaDaVIS thus enables joint visualization of decentrally acquired data.

Organization of dashboards
Dashboards can be freely organized. The plant structure or the organizational structure can be used to structure and group the dashboards. This means that a dashboard can be created for each site, plant or machine. The dashboards can be arranged and organized hierarchically according to user groups such as maintenance, quality control, or production. The access rights to the individual dashboards can be configured in the user management.

Drill down to the raw data
To determine the root-causes of the displayed behavior, the raw data can be displayed directly in a special tile on a dashboard. The signals can be freely selected. To compare several products, the data can either be displayed successively, one above the other over a time axis with a common start point, or as an envelope curve. This allows an in-depth analysis to be performed based on characteristic values – directly on the dashboard. For further analysis, the measurement files can be downloaded to a local computer or ibaAnalyzer can be accessed directly from ibaDaVIS.

Comparison with reference signals
Signals from reference files can be displayed to compare the current measurement data with the default values. The reference signals can be the most recently generated measurement files or interactively selected on the basis of a product ID or time stamp.

ibaDaVIS and the cloud
ibaDaVIS currently offers access to iba measurement data and databases. A database that is managed via a cloud service can also be used to access data and information, such as a local database.

Process Monitoring and Offline Analysis

Offline analysis tools for configuration, optimization, and validation are essential for reliable real-time process monitoring. Therefore, for both monitoring products ibaInSpectra and ibaInCycle, a corresponding add-on is available for ibaAnalyzer.

With ibaInSpectra vibrations are continuously monitored in the frequency range so that error sources can be detected at an early stage.

ibaAnalyzer-InSpectra+ offers the functionality of ibaInSpectra offline in ibaAnalyzer. It lets you validate cases of damage and helps to optimize your configuration.

ibaInCycle monitors cyclic, rotating, and quasi-cyclic processes based on existing process signals within the time range. This makes it possible to reliably detect process deviations and anomalies.

ibaAnalyzer-InCycle+ enables offline analysis and extraction of the characteristic values that were calculated online, as well as optimization of the parameters necessary for ibaInCycle.

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.

These applications are possible due to short program cycle times (as short as 1 ms) and a deterministic time response. ibaLogic is applicable in many scenarios thanks to its easy handling and the seamless integration of iba products for measurement technology. 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 process the tasks of a conventional PLC. The programming follows the IEC61131 standard.

Condition Monitoring

The ibaCMC Condition Monitoring Center is a modern web-based desktop application for configuration and visualization of the decentralized ibaCMUs. It enables you to execute trend analysis as well as alerting and

reporting tasks. For this purpose, the data recorded with ibaCMU and the calculated characteristic CM values are transferred to ibaCMC. It is operated and visualized via a web browser.

Central Management of iba Software

ibaManagementStudio provides a central overview of the installed iba software (ibaAnalyzer, ibaPDA, ibaCapture, ibaHD-Server, etc.) within a company network. The information provided to the server by agents, such as license information, software version and status, etc., can be viewed in a platform-independent way using a web browser from anywhere in the network.

Future versions of ibaManagementStudio will allow to perform license and software updates, backups, as well as configuration updates from a central location in the network. This is an enormous benefit for software maintenance, especially in an IoT environment for iba edge devices with identical measurement tasks in machines or on cranes.

Automatic Monitoring of Coil Tracking

With ibaDatawyzer-ICC (Inline Coil tracking Certifier), coils can be uniquely identified in the metal producing industry based on geometric properties such as thickness and width. Based on the measured values recorded with

ibaPDA, ibaDatawyzer-ICC can automatically detect and report coil mix-ups in time. It thus helps to identify errors and weaknesses in logistical material tracking systems.

Applications & Consulting

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

Your benefits at a glance:

Customized solutions for your needs

Industry-specific consulting by our specialists

Support in analyzing, monitoring, and optimizing your production process

Customized solutions

When it comes to implementing your various requirements, we believe that individual consulting should play a key role from day one. To work out a specific solution for you, our consulting specialists will be happy to advise you – if required, on-site at your company.

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

Integration with iba

In this way, we support you in integrating the iba system at your site and configuring the interfaces to the process and output together with you. If necessary, iba products can be adapted to your environment or infrastructure by means of plug-in extensions. Our support also includes the adaptation of ibaQPanel displays, the creation of individual reports, or the creation of programs for ibaLogic in accordance with IEC61131. We also support you in designing

the appropriate database architecture and realize a solution together with you.

To us, consulting doesn't just mean presenting solutions. We provide you with the necessary know-how to understand the features of the iba system in order to use it efficiently.

Support

We offer technical support to our customers so they can efficiently use our products and avoid failures during operation of their machines or plants. Our experienced support team will deal with all your queries and requests. We also offer global support 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 with in-depth knowledge of the different application areas 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; complex failure situations are simulated in our test laboratory to find the root cause and to give you concrete advice.

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🌐 www.iba-ag.com

📍 iba AG's product security team, ProductCERT acts holistically to identify security threats and issues to improve iba hardware and software products:
iba-ag.com/en/security

▶ The latest video tutorials for iba products on our YouTube channel:
iba-ag.com/youtube

✉ Subscribe to our newsletter and regular "Product Information" bulletins for your products:
www.iba-ag.com/en/product-newsletter

Training & Workshops

We offer training courses and workshops at our modern training center, at the Mercure Hotel in Hagen, or at your premises.

Our new compact course offers a quick introduction to the iba system. Over three days you will become fully acquainted with the features related to data acquisition and data evaluation.

The other courses enable experienced users to deepen their knowledge of iba products – while newcomers are given extensive insights into the different application possibilities of the iba system with many practical examples and exercises.

After the training, you will be able to perform further steps independently and use the iba system productively.

Upon request, we offer specific and customized training sessions and workshops – of course, these can be held at your company if required.

Compact course NEW

Measurement, data evaluation and automatic reporting with iba

📅 3 days

Basic courses

Analysis of iba measurement data using ibaAnalyzer

📅 2 days

Measurement and data evaluation with iba

📅 2 days

Graphical programming using ibaLogic

📅 2 days

Advanced courses

Automated generation of fault and quality reports with ibaAnalyzer-Reportgenerator

📅 2 days

Automated key data calculation and web-based product and process analysis with ibaDaVIS

📅 1 day

Online visualization of measurement data and quality data using ibaQPanel

📅 2 days

Data acquisition from a PLC SIMATIC S7

📅 1 day

Long term acquisition and analysis of data and events using ibaHD-Server

📅 2 days

Synchronous recording of video and process data using ibaCapture

📅 2 days

Monitoring and analysis of vibration data with ibaInSpectra

📅 2 days

Monitoring and analysis of processes and machine conditions using ibaInCycle

📅 2 days

Certification courses NEW

Condition monitoring and diagnostics of machines according to ISO 18436 category I

📅 4.5 days (including examination)

Condition monitoring and diagnostics of machines according to ISO 18436 category II

📅 5 days (including examination)

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