



# Acquisition, Recording and Live Visualization of Process Data

ibaPDA



## ibaPDA

The modern classic  
of data acquisition



## ibaQPanel

Displaying quality data -  
live and in color



## ibaQDR

Length-based recording  
of quality data

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# ibaPDA - The scalable core software

As a central part of the iba system, ibaPDA has been proven to be one of the most versatile systems acquiring high-resolution process data. The comprehensive connectivity to the process with the autodetect function for easy configuration, the client-server architecture and the variable recording options are just some of the convincing features.



## At a glance

- › System with comprehensive connectivity for acquiring high-resolution process data
- › Efficient acquisition of data from control systems of different manufacturers and device generations
- › Triggered or time-based data storage in measurement files or in ibaHD-Server
- › Several data recordings possible at the same time
- › Additional data storage types and output interfaces for transferring data outside the iba system
- › Acquisition of descriptive additional information via text signals
- › Individually configurable live displays with client-server architecture
- › Internal processing and monitoring of signals and output of current messages and alarms
- › Use of data by maintenance, production, quality assurance, technology, data analysts and much more

## Transparency with system

ibaPDA (Process Data Acquisition) is the core product of the iba system. ibaPDA is an extremely powerful, PC-based software for acquiring and recording different process data in automated technical processes. The modular product concept allows highly flexible configuration options and provides perfectly tailored solutions for varying requirements – whether it is the continuous long-term acquisition of mea-

sured values in order to further optimize processes in automation, the specific search for faults or the use as fault recorder TFR with triggered recording in case of failure. Moreover, already during acquisition, quality data and characteristics can be evaluated and processed from the signals.

## Versatile acquisition

One special feature of ibaPDA is the exceptionally broad connectivity for acquiring different

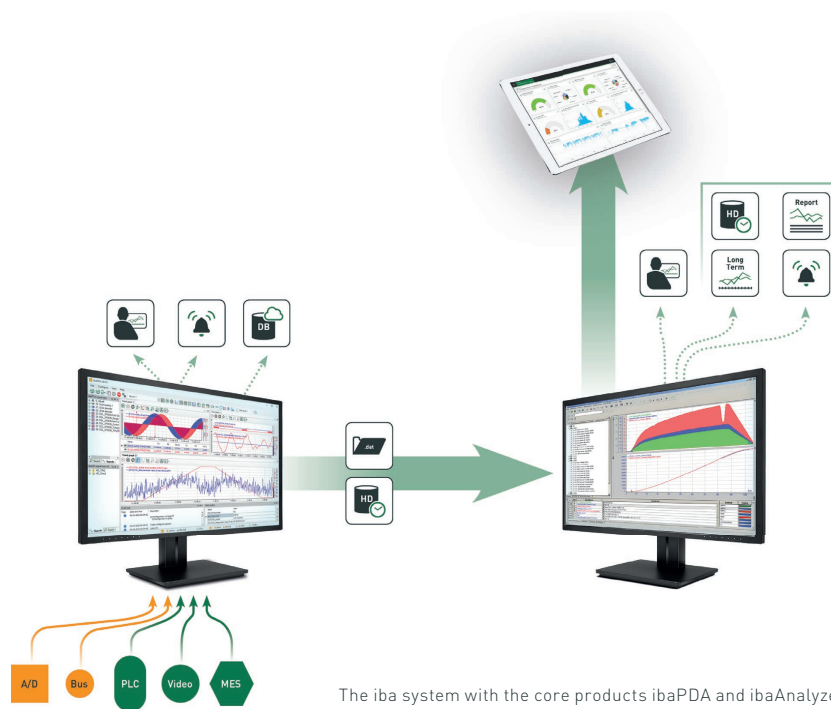
data types with different acquisition methods in heterogeneous systems. This is the only way to enable a continuous consistent acquisition of data from an entire plant.

ibaPDA is scalable and is suitable both for individual test stands as well as for factory-wide plants in which several thousand signals are acquired with a central time stamping. The configuration of the system is extremely simple.

## Flexible recording

The measurement and monitoring requirements of different systems are as manifold as the recording options of ibaPDA. Several data stores with specific parameters can be configured in one system. Each data store creates its own measurement files and uses own recording parameters, like sampling time or trigger conditions.

ibaPDA can be used to perform several recordings at the same time, which are tailored to different user groups, if for example different signals, characteristic values or sampling rates are required. Moreover, each data store can create an overlapping



The iba system with the core products ibaPDA and ibaAnalyzer

recording, consisting of two or more files. This way, data can be continuously acquired to consistently monitor the processes.

On the other hand, individual recordings can be started and stopped using triggers to get product-related data or to specifically analyze faults.

Measurement files can also be protected against unauthorized access by a password.

If, on the other hand, a continuous recording of data without file limits is needed, ibaHD-Server offers the option of continuously recording data over very long periods of time.

### Process monitoring in real time

While monitoring the process, it is important, to immediately detect errors or deviations. Already during data acquisition, the signals can be checked for certain conditions, e.g. comparison with limit values, thus generating warnings and alarms.

In addition to alerts and alarms, acquired signals as well as values

calculated by the expression builder can be output. Output signals can be output via all iba fiber optic cards and iba bus monitors capable of output, reflective memory cards, different Xplorer interfaces, OPC/OPC UA as well as TCP/IP and EtherNet/IP or written into databases. It is also possible to trigger e-mails, which may contain both free text as well as automatically filled fields. The fastest output cycle is 50 ms (server cycle).

### Client-server architecture

Due to the client-server architecture of ibaPDA, tasks are distributed. The ibaPDA server contains the interfaces for the process, processes and records the acquired data and also provides the interfaces for outputs. The client configures the server and visualizes the measurement data live. Client software can run locally on the server computer or on another Windows computer in the network.

Several clients may access a server. Vice versa, several ibaPDA

servers can be configured from a central client having a network connection to the server.

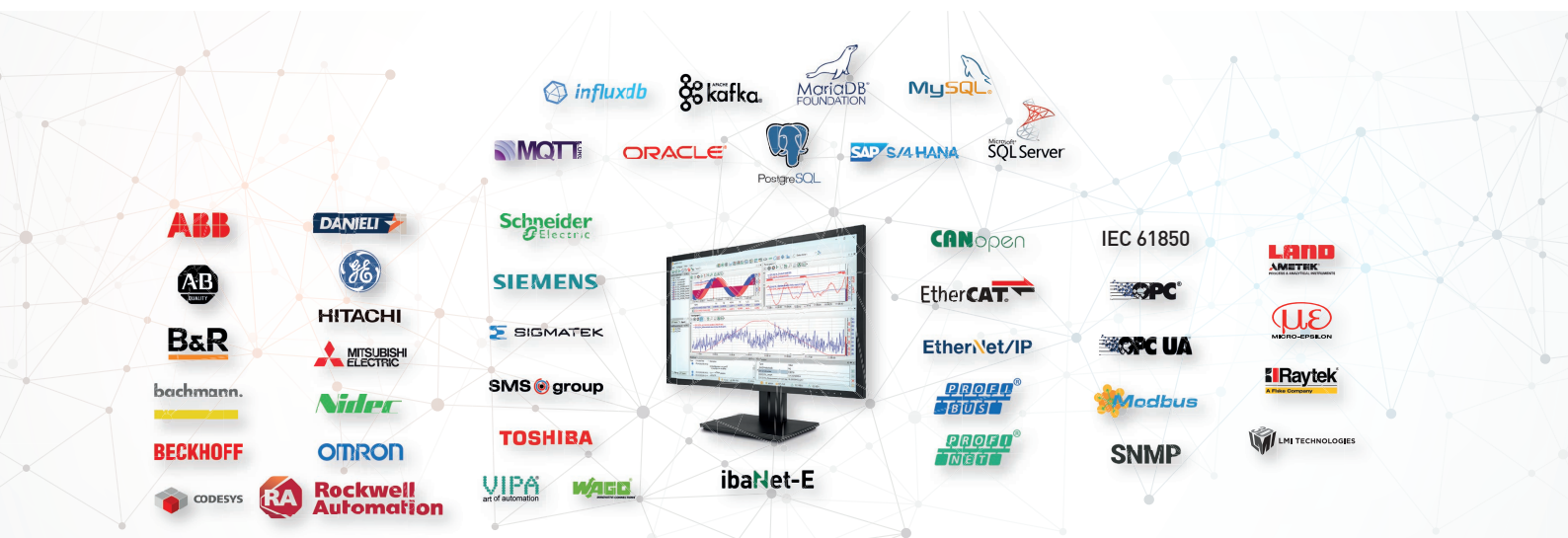
### Synchronization of several ibaPDA systems

With the additional function ibaPDA-Multistation, several ibaPDA systems can be synchronized via fiber optic cable. A typical application of this function is the use of ibaPDA as a Transient Fault Recorder in energy applications. Detailed information on multistation operation can be found in the brochure "Safety and Quality in Energy Grids".

### Free analysis included

The data acquired by ibaPDA and recorded in measurement files or in ibaHD-Server can be evaluated using the free analysis tool ibaAnalyzer<sup>1</sup>. Since data acquisition and analysis are separated from each other, the analysis can take place already immediately after the acquisition phase or at a later point in time, for example by experts away from the system.

# Comprehensive connectivity and signal diversity



## Comprehensive connectivity

One special characteristic of ibaPDA is the broad connectivity, which makes it possible to acquire various types of data with different acquisition methods time synchronously and centrally. This includes analog and digital I/O signals, signals from field and drive buses, data from the control system, production data, product characteristic values, energy data, vibration data, descriptive additional information, etc.

## Data directly from control systems

With the Xplorer interfaces, data can be acquired directly from control systems from all common manufacturers without having to intervene in the control systems.

## Connection via fiber optics

Fiber optics can be used to directly couple analog and digital input/output modules, for example with the iba compact devices, the iba

modular system or I/O modules of the series 750 from WAGO. In addition, data can be acquired from different fieldbuses (PROFIBUS DP, PROFINET, EtherCAT, etc.) without interferences and system interconnections for data acquisition can be implemented.

In the ibaPDA computer, iba fiber optic cards realize the connection of iba peripheral devices and system interconnections. Special interface cards are available for directly coupling Siemens SIMADYN D, SIMATIC TDC or Plus-Control systems.

## Connection via Ethernet

The I/O modules of the WAGO system 750 can be connected to ibaPDA via Ethernet with the iba device ibaW-750. ibaW-750 works with the protocol ibaNet-E. By integrating a software stack developed by iba, it is possible for device manufacturers to connect their device to the iba world in a performant and cost-efficient way.

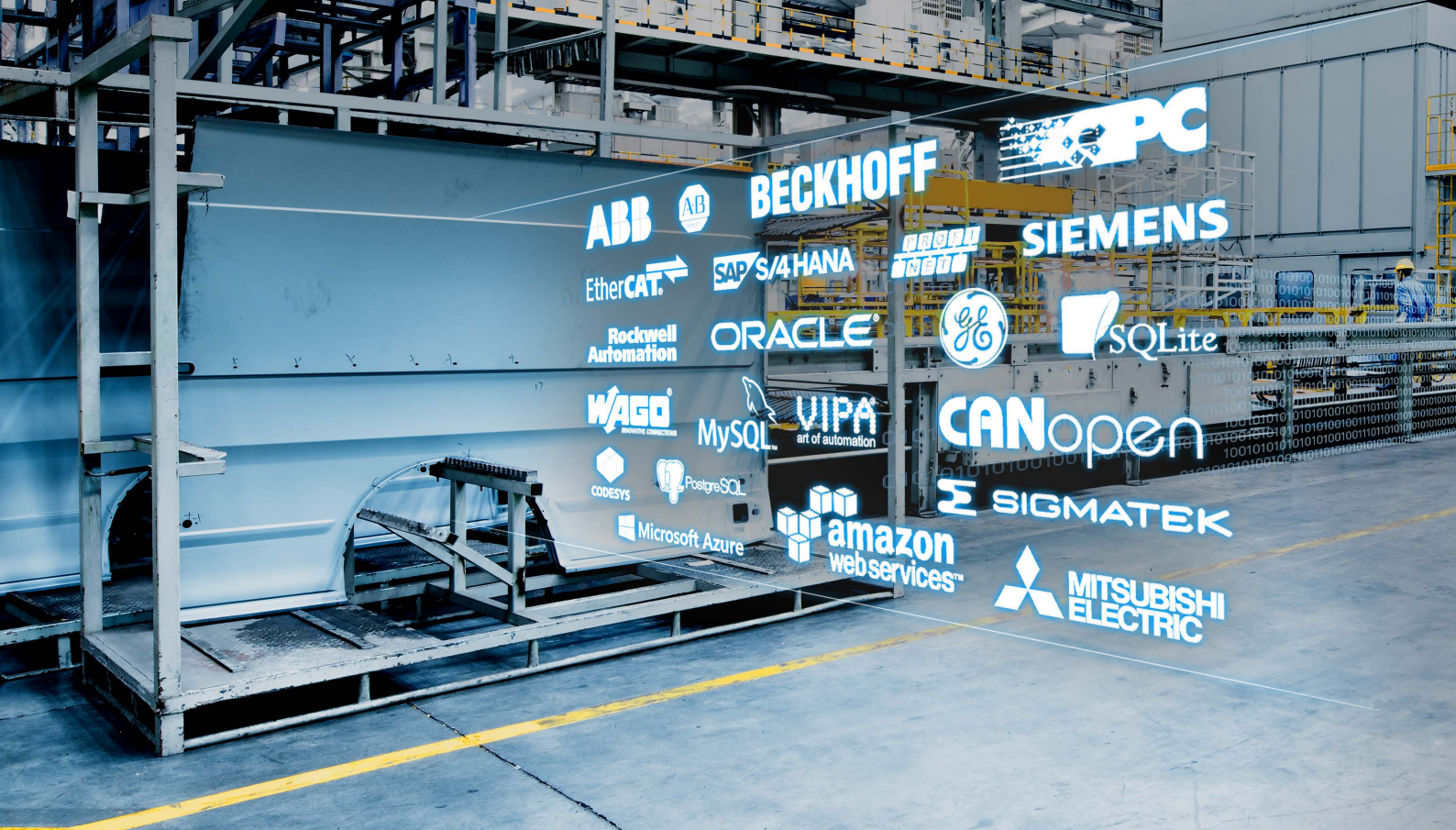
Moreover, there are numerous Ethernet-based interfaces available, such as TCP, UDP, Modbus, EtherNet/IP or OPC UA, to acquire the signals from different sources.

## Request solutions

Different request solutions allow the acquisition of internal values directly from a controller without having to intervene. For this purpose, special function blocks (request blocks) are integrated into the control program once.

## Data from drives and machine tools

Corresponding Xplorer interfaces are available for acquiring data from SINAMICS and SIMOTION drive controls. The SINUMERIK-Xplorer interface allows the acquisition of machine tool data from SINUMERIK CNC controls.



### Connection of measurement devices

Different interfaces allow the connection of different measurement devices, such as infrared linescanners, laser profile scanners, LMI Gocator sensors and temperature scanners.

### OPC client and server

The standard function scope of ibaPDA includes an OPC DA client interface. Using the browser function, OPC tags can be conveniently selected and recorded as signals. ibaPDA also provides all signals acquired via all interfaces via an OPC DA server.

Furthermore, ibaPDA can be operated as an OPC UA server and acquire signals via an OPC UA client interface.

### IEC 61850 support

The IEC 61850 client interface of ibaPDA allows to acquire data

from IEC 61850 capable devices. With MMS modules, single attributes or complete data sets can be queried. In addition, the acquisition of GOOSE messages is supported as well as the automatic copying of Comtrade files from the IEC 61850 devices to a configured target directory.

Sampled Values streams can be acquired via the interface for IEC61850-9-2.

ibaPDA can also act as an IEC 61850 server and publish data according to the IEC standard.

### Recording audio data

The audio interface enables easy recording of sounds and noises. The audio data can be recorded via a standard sound card installed in the ibaPDA server system or a USB microphone. The stored audio data can be replayed with the audio function in ibaAnalyzer.

### See the big picture

Thanks to the extensive connectivity of the ibaPDA system, data from different sources are available consistently and synchronized in time across the entire process. The user gets a seamless overview of the entire process and can detect interactions between the individual components which are difficult to see in distributed monitoring systems.

### Scalable sampling timebase

Timebases of 10  $\mu$ s to 1000 ms can be set for data acquisition. Here, it is possible to configure an individual sample time for each module that just has to be a multiple of the basic sample time.

### Simple configuration with autodetect

All settings relevant to signals and modules are available in a central dialog, the I/O Manager. It provides clear and concise pre-

# Simple configuration and easy use

Signal listing in the signal tree, signal search

Display of event log and data storage status

Live display of the signals in individual layouts



sensation of all necessary setup information. ibaPDA provides numerous functions for the user to make the configuration as simple as possible.

An automatic completion function makes it easier to enter signal names of the same type. Signal names can also be conveniently inserted via text file import or clipboard.

By means of the autodetect function, ibaPDA automatically detects the connected devices (hardware) and adds them into the configuration.

## Configuration validation

The configuration of the input modules provides user support by context sensitive selection menus in order to avoid configuration errors. Configuration changes are always checked and validated by the system before being enabled.

In practice, it is often required to carry out acquisition tasks

for different purposes. In order to facilitate the management of the various tasks, configurations once created can be stored as a project. These projects can be easily re-used or used and modified as template.

## Integrated real time diagnostics

A diagnostic function integrated in the I/O Manager provides information about the status and values of the connected data sources enabling the user to easily check the functioning of the system already during the configuration and localize error sources, if necessary.

## Versatile text signals

In many cases, additional information on the pure measured values facilitates the subsequent assignment and analysis. This information can be transmitted to ibaPDA using text signals.

This can be, for example, product names, characteristics or

other information relevant to the production. Here, several text signal sources can be defined. This data can be shown in a digital text display and trend graphs, stored in the measurement file as additional information, used for the measurement file name or subsequently output in reports. Numerical information can be used for further evaluation, text signals can also be further processed using virtual functions.

## Virtual signals and expression builder

By means of arithmetical and logical operations, arbitrary "virtual signals" can be created in real time in an expression builder. These virtual signals can be recorded just like all other data and can for instance be used to create trigger conditions to start recordings, or to detect that limit values have been exceeded.



### **Comfortable display and operation**

The display can be configured for each user individually using buttons and drag & drop. Any number of signal displays with any number of signals can be created in separate or common signal graphs. Different views with individual settings for scaling, signal composition, colors, etc. can be saved and selected anytime.

In addition to the live display, the signal graphs provide a pause and scroll function. By means of markers, individual measured values or the difference of two values can be immediately displayed. Status windows for data storage, text signals and event log provide additional information.

The add-on ibaQPanel offers additional display options. See page 14.

### **User management**

An arbitrary number of users can be defined for using ibaPDA and assigned with different client and server rights. Access and actions a user is allowed to perform can be restricted in a very differentiated way to protect the configuration and operation of the system. It is also possible to connect to an Active Directory.

### **Integration in SNMP monitoring**

ibaPDA can be integrated in a company-wide network management system with the SNMP interface according to the SNMP

protocol. ibaPDA serves as SNMP server and supports the SNMP protocols V1, V2c and V3.

Diagnostic information about the status of the ibaPDA system can already be used with the base license in SNMP server. To be able to publish any acquired data in the SNMP server, the additional license ibaPDA-SNMP-Server+ is required.



# Live visualization individually configurable for each client



Numerous display functions in ibaPDA support the user in live analysis

## Meaningful displays

With a multi-client solution, displays independent from each other can be realized on different clients. The ibaPDA client includes a trend view, a scope view, an FFT (Fast Fourier Transformation) view to display the frequency spectrum of several signals and digital displays for analog values and texts.

Together with ibaCapture, videos can also be acquired synchronously with process data. The videos can be watched live in the ibaPDA client, playback can also be rewound and repeated. For more information, see page 23.

Historical data from ibaHD-Server can be displayed in special displays, such as HD trend view and HD event table. Special navigation elements are available for this purpose.

## Customized layouts

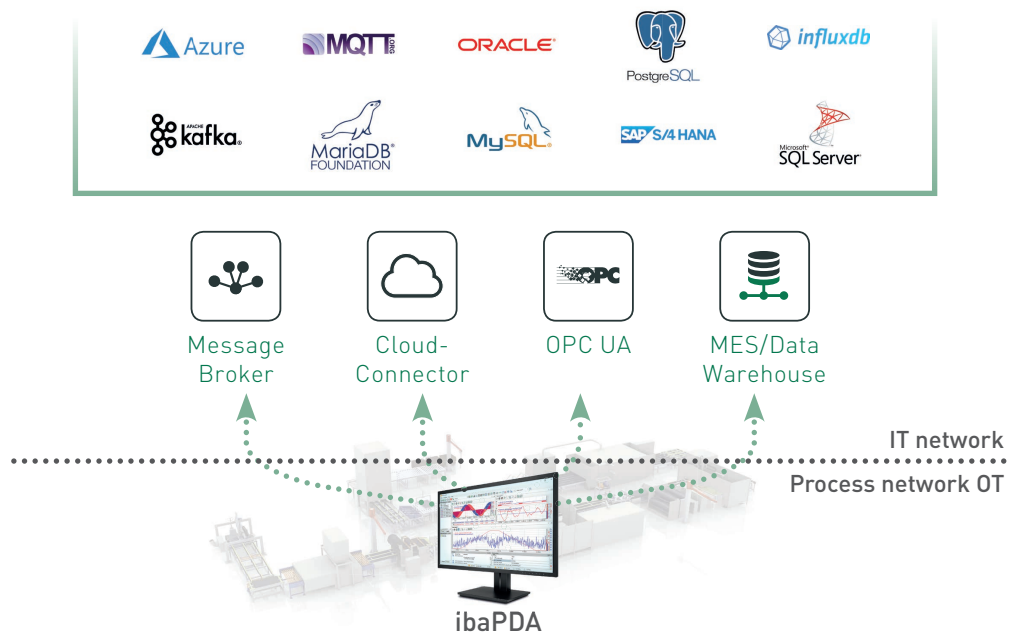
Display layouts can be individually configured for different applications and conveniently managed in the new layout manager. Layouts are stored in a central location and can be assigned to different users. Even with numerous layouts and many users, the assignment is very simple. To ensure that the appropriate layout is loa-

ded right at the start of ibaPDA, a start layout can be defined for users and clients.

## Clearly arranged signal groups

When thousands of signals are to be acquired in large systems, there is the risk of losing track. For better clarity, signals from different sources that belong together technologically or thematically can be combined into any number of signal groups. The signals are grouped accordingly in the signal tree. The signal group assignment is stored in the measurement file and is thus also available in ibaAnalyzer.

# Data transfer to superordinate systems



## Store data where it is needed

With ibaPDA, the user decides which data should be stored where. In addition to recording data in measurement files, ibaPDA or ibaHD-Server offers different options of transferring data to other systems.

## Streaming data via data stores

The time-based streaming of data to different target systems is possible in ibaPDA.

Currently streaming to databases (Oracle, SQL Server, MySQL, MariaDB, PostgreSQL, SAP HANA, InfluxDB), to Kafka clusters and MQTT brokers is supported. Streaming can be

used continuously or process synchronously, i. e. triggered, just according to your individual needs.

The brochure "Web-based visualization for product and process analysis" informs you about how to visualize and analyze data streamed from ibaPDA into databases comfortably via ibaDaVIS in the web browser.

## SQL interface for input and output

With the SQL interface it is possible to read and write data directly from/to databases. The SQL interface allows access to any table in the database. The data can be

read using a user-defined SQL query and then recorded, visualized and processed in ibaPDA as usual.

In the output direction, data can be written with a user-defined statement. The databases Oracle, SQL Server, MySQL, MariaDB, PostgreSQL and SAP HANA are also supported.

# ibaPDA license model

## Basic licenses

The basic licenses of ibaPDA are graded according to the number of signals and comprise one free usable client and one additional client which can be used exclusively on the server computer. Licenses are available for 64, 128, 256, 512, 1024, 2048, 4096, 8192 and unlimited number of signals. The quantities refer to the total number of signals - analog, digital or text signals. The basic licenses also include two independent data stores, which can acquire in parallel.

For a further extension, single or multiple licenses for additional clients are available as well as licenses for further data stores.

## Server licenses

If ibaPDA is to be operated as IEC 61850 server, the license ibaPDA-IEC61850-Server is required.

ibaPDA already offers the function as OPC UA server in the basic version to provide information about its own status. With the ibaPDA-OPC-UA-Server+ license, all signals can be published via OPC UA.

Diagnostic information about the status of the ibaPDA system can be published with the SNMP server integrated in the ibaPDA basic version. The ibaPDA-SMNP-Server+ license is required for publishing any acquired data.

## Communication interface and request solutions

For the connection of different systems, measurement devices, databases etc. and the acquisition via different communication protocols, licenses for the respective communication interface have to be purchased.

The request solutions for acquiring internal values from a controller also require a separate license each.

## Data store licenses

Appropriate data store licenses are required for time-based streaming of data to different target systems, such as databases, cloud systems, message brokers, etc. The licenses are graded according to the number of signals.

## Licenses for language packages

The languages German, English and French are included by default in ibaPDA.

Licensed language packages are available for the Chinese, Italian, Russian, Spanish, Portuguese and Japanese languages.

Please contact your local iba subsidiary or the local iba sales partner.

## ibaPDA-PLC-Xplorer

The ibaPDA-PLC-Xplorer license includes an ibaPDA basic license with 64 signals as well as most Xplorer interfaces for the most common control systems.

If more than 64 signals or other extensions in ibaPDA are required, an upgrade to a complete ibaPDA system is possible at any time.

The order information for the licenses can be found on page 24.

# ibaPDA Overview

System	
Architecture	Client/server
Number of clients	1 free usable client included, 1 additional client exclusively on the server computer; expandable with single or multi-user licenses
Number of signals	Licenses signal-based; grades: 64, 128, 256, 512, 1024, 2048, 4096, 8192 and unlimited. Figures refer to analog, digital and text signals in total, free arrangement; Special license ibaPDA-PLC-Xplorer with 64 signals
Software	Windows 10 (x86/x64), 11 (x64) Windows Server 2016 (x64), 2019 (x64), 2022 (x64) .NET Framework 4.8 or higher required
Hardware	Computer with Multicore CPU 2 GHz, 2048 MB RAM; we recommend using ibaRackline or ibaDeskline industrial computers
Configuration	
I/O Manager	Central configuration of all devices (modules), signals, signal groups, text signals and alarms User support due to dynamic selection menus for configuring modules
Auto-detect	Automatic detection and display of connected hardware (plug & play)
Live diagnostics	Module and device state, actual signal values
Signal groups	Any signals of different data sources can be grouped to provide a better overview. Number of groups unlimited.
Virtual signals/ Expression builder	Virtual signals can be created, evaluated and connected with the help of an expression builder, Virtual signals may be displayed, recorded and combined with real signals Creation of complex trigger signals; real time calculation (e.g. sums, differences)
Alarm and signal outputs	Digital and analog output signals can be configured (expression builder), output cycle: $\geq 50$ ms; output via ibaFOB card, PROFIBUS DP, PROFINET or Reflective Memory, OPC DA, OPC UA, Ethernet/IP, MODBUS, TCP/IP Generic, UDP Generic, ABB-Xplorer, OMRON-Xplorer, S7-Xplorer, TwinCAT-Xplorer, MQTT interface, SQL interface
Module structure (device or data interface)	Number of signals per module dependent on the module type The number and allocation of analog and digital signals are freely configurable for some modules
Sample time	Basic sample time: 1 ms to 1000 ms, fast measurement with appropriate hardware down to 10 $\mu$ s; for each module, an individual sample time can be set (multiple of basic sample time)
Output time base	Output time for alarm outputs: $\geq 50$ ms (server cycle)
Data storage	2 independent data stores included in the basic package, further data stores require extra license. Each data store can run in overlapping mode with 2 or more files. Change in data store configuration does not force restart of data acquisition.
Storage profiles	Any number of storage profiles which can be used by all data stores
Signal compression	Signal recording with multiples of sample time; Optional: recording of actual, average, min or max value
Trigger	For each data store: 1 start and 1 stop trigger (or trigger group) to start or stop the recording. Optional: pre-trigger and post-trigger time can be configured.
Signal presentation	
Signal displays	Unlimited number as dockable windows side by side or one behind the other
Number of trends	Unlimited for each window and graph
Special views	Oscilloscope, FFT display, digitalmeter, QPanel, camera view, orbit view, phasor view, PQU spectrum, cycle view, circle view
Scaling	Separated or common Y-axes, manual or automatic scaling
Feed	Individual time base or feeding speed and direction for each display; feed may be stopped and restarted any time without affecting the data acquisition or recording; zooming is possible with the feed stopped
Layout configuration	Unlimited number of layouts can be configured and stored. Switching between different layouts during operation is possible.

Operation/information	
Data storage status and text signal	Display of all defined recordings with their status, path and file name Text signal: display of status and contents
Event log	Logging of all events relevant to the system
User management	Flexible user administration with differentiated client and server rights to control usage and configuration; Active Directory support

# ibaQPanel



With ibaQPanel, process and quality data, conditions, events and video images can be displayed live in a technology- and user-related representation. It combines the functionality of an interactive measurement value display with elements from the HMI area and is integrated seamlessly in ibaPDA.

## At a glance

- › Live representation of quality data, measured values, conditions and video sequences
- › Software add-on for ibaPDA and ibaHD-Server
- › Scenario Player for video cameras recording with ibaCapture
- › Time and length related display
- › Offline trend display from measurement files and HD data stores
- › Freely configurable visualization objects like e.g. real time FFT analysis, 2D-colored display for vector signals, bar charts, e.g. for representation of cross profiles, static and dynamic text and video display

ibaQPanel is a software add-on that allows live display of process and quality data in an HMI image. The ibaQPanel displays can be easily added to the classic displays in ibaPDA.

Online FFT analyses, flatness or temperature profiles as well as alpha numerical and condition-dependent information can be displayed with ibaQPanel in real time. Signal trends can be displayed both time or length related. Thus, measured values which are relevant for long or flat products' quality may be displayed in relation to the length segment.

In addition, live data from an ibaHD-Server can also be visualized. If several data stores from different ibaPDA systems are stored on an ibaHD-Server, they can be visualized together.

### Valuable process information

By means of multidimensional signals (vector signals) and the 2D-colored display, temperature, flatness and thickness profiles can be configured easily. This display shows the product quality

at a glance. This enables the operating personnel to immediately recognize technological correlations and influences of the process parameters on the quality and to intervene accordingly.

Video sequences that have been recorded with ibaCapture offer live insights in areas of special interest. To monitor the process, the integrated Scenario Player switches trigger-controlled to the corresponding camera view.

### All advantages of ibaPDA

All signals that are acquired by ibaPDA or stored in ibaHD-Server, can be displayed by ibaQPanel.

The panes for display, the so-called panels, are designed as dockable windows and can be arranged on the screen like usual signal monitors or like tab cards one behind another. Using the various graphical elements, even HMI-like displays can be realized. Entire plant layouts can be displayed with dynamic, signal-controlled properties, for example, material flows or movements of parts. More display objects are constantly added.

### Technological functions

Some objects have special technological functions. For example, coefficients for the polynomial calculation of the profile curve can be specified in a cross-profile display or a length signal for the display of length-related values can be fed into the trend display. In FFT displays, frequency ranges can be flexibly configured and be indicated online using markers and highlighted with different colors.

### Object library and language switching allow comfortable operation

Displays can be created fast and intuitively. Any number of display objects can be taken from the „toolbox“ and drawn to the panel using the mouse. All properties of the display objects, such as size, position, alignment, colors, font sizes, scalings etc. are configured in comprehensive dialogs. Measured signals can easily be assigned to the display objects by using drag & drop.

Display objects that have been created once, can be stored in a library and reused whenever needed. Moreover, for objects like text fields, buttons, etc., the user can switch between languages.

### Display of web pages

The integrated web browser is used to display web pages or browser-enabled files, such as PDF and image files. The web browser can also be used to display data from ibaDaVIS in order to visualize data from databases.

## Application example

### Paperless recorder

The function of a paperless recorder is a typical application. ibaQPanel meets numerous requirements, that are typical for recording and visualization of production relevant quality data.

The signals run in different trend graphs - clearly grouped and can be easily identified using different colours. The graphs can be displayed time or length based, the feed rate can be selected individually. If required, the signals can be displayed or hidden by a single mouse click.

To switch to other views, you just have to click on the buttons in the header bar. The buttons can also be assigned to functions like printing or copying into the clipboard.

For scrolling back and forth in the display, or zooming a section, the chart feed of the recorder can be stopped. By means of markers, the user can measure single values or sections.



In ibaQPanel, data from the ibaHD-Server can be displayed as well. Thus, the user can scroll back over a period of several months or display events. The event table of the ibaHD-Server also offers in ibaQPanel its usual functionality, like the event query configurator for targeted finding of events or dynamic display of events as text channel in the trend chart.

Thus, information can be filtered rapidly for product number, date or exceeded limit values. Double-clicking on the event opens the trend directly at the time of the event.

The configuration of the display elements and the layout are stored centrally on the ibaPDA server, whereas several clients at different locations can call the ibaQPanel display.

## Application examples

### Integration in an HMI system

In this example, the ibaQPanel display is integrated as ActiveX-Control in a HMI system. Once again, ibaQPanel offers the same functionality, the possibilities of layout and the rapid display as in an ibaPDA client.

Using the zoom function, the signals can be displayed with acquisition times as low as 1 ms or even down to 10  $\mu$ s. In contrast, common HMI systems usually record the signal sequence significantly slower.

In our example, a 2D-colored top-view chart (outer left) visualizes comprehensively the temperature distribution in a cooling section by assigning different temperature ranges to different colors. With the length-based representation, the user immediately has an overview of the temperature behavior

of the strip over the whole length and width. The 2D-color display is especially suited for visualizing profiles, like flatness or deviations in thickness.

The bar chart above visualizes the deviation in temperature from the

nominal value. The trend graphs show the deviation in thickness in a length-based manner; the measuring location and the nominal value are displayed via a text signal. By means of buttons, the user can navigate to further views of the HMI system.



### ibaCapture with Scenario Player

If parts of a plant are being monitored using ibaCapture, the views of multiple cameras can be displayed in ibaQPanel. The user can arrange the camera views according to his needs. In addition to the live display, the playback function offers the possibility to rewind along the time axis, to change the playback speed or zoom in certain screen areas.

By means of the Scenario Player, the user can switch by triggering to a certain camera view. For example, the Scenario Player can be used to switch on the cameras in a specific area of the plant if an emergency stop has been triggered there. The operating person-

nel immediately gets insight in the area at risk. Not only the live picture is displayed, but the video playback can also be started with a pre-trigger time in relation to

the triggering event in order to detect the cause that triggered the emergency stop. The link to the measured signals offers more insight in that issue.





## Further display objects

### Pictures, symbols, shapes

Not only pictures can be loaded statically, dynamically or triggered, but also vector-oriented graphics in SVC format can be imported as symbols. This way, whole plants, flow charts or site maps can be visualized, movements can be simulated or optical warning messages can be issued depending on a certain status.

Shapes such as lines, rectangles, ellipses and polygons can be freely created as in graphics programs and filled with lines, fillings and gradients.

With the dynamization function, the graphical objects can be moved across the screen and changed in size, orientation, and color.

### Text labels

Texts can be loaded statically or dynamically into text fields and freely positioned. Text labels enable the display of signal values, text signals or other status messages.

### Offline trend graph

The offline trend graph offers the possibility to compare completed measurements to the current display. From measurement or text files, time and length based signals can be displayed simultaneously to the current recording. All information fields contained in the measurement file are loaded, including the signal tree. It is also

possible to load files automatically or triggered in the offline display, e.g. whenever a measurement file has been completed.

With the file scanner and file selector functions, the user can search selectively for data files. The found files can be displayed either automatically or selected from a dropdown menu.

### Input objects

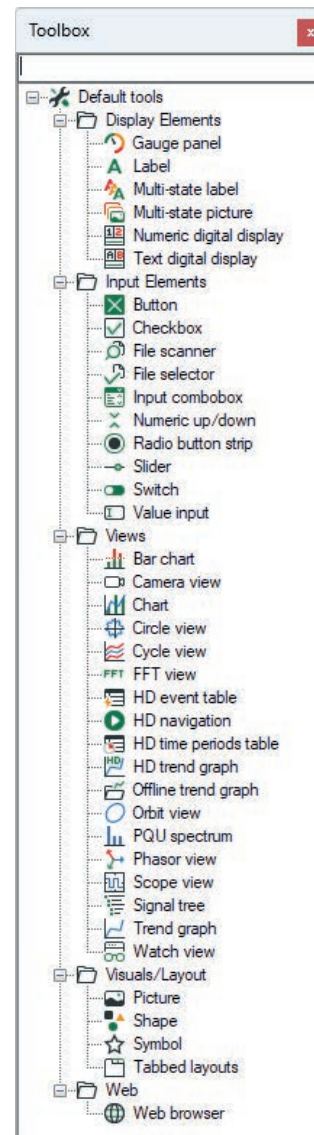
The input objects can be used to write previously defined values to a signal. With the radiobutton and checkbox objects, one or more values can be selected. The slider object offers the possibility to select a value from a range.

The switch is a graphical input element for switching signals. Each status can be displayed with an own picture.

Text can be entered manually using the text input control and thus saved as additional information.

### Chart

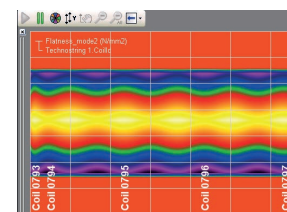
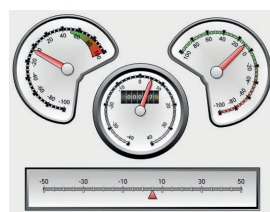
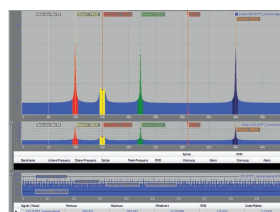
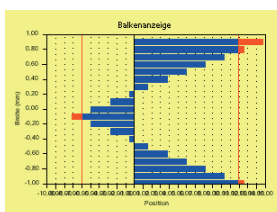
The chart display object offers the highest possible flexibility of visualization. The signal can be represented as graph, line or by points. Colors and transparencies can be chosen freely; additionally dynamic color ranges can be defined. Also the cursor can be defined freely concerning color, size and symbol. Moreover, an XY display allows a display similar to that of an oscilloscope.



Available display objects

### License model

The license ibaQPanel-Add-On contains the display objects and is an add-on license for ibaPDA or ibaHD-Server. The license requires an ibaPDA client, which has to be licensed in addition if needed.



Display objects from left to the right: bar chart, FFT view, gauge panel, two-colored top-view chart

# ibaQDR



To be able to use quality data in continuous process lines on a product-related basis, it is necessary to record quality data on a length-related basis. ibaQDR is based on the time-based acquired data at different measuring locations and assigns the measured values precisely to the length position of the product.

## At a glance

- › Recording system for quality data, based on ibaPDA software
- › Technological process description of strip processing lines, rolling mills and casting processes
- › Length normalization to the final product (exit coil) and synchronization of all measured data
- › Consideration of strip elongation in the process and all cuts
- › Standard length resolution: 1 m (fully adjustable incl. unit, e. g. „ft“)
- › Scalable number of measuring locations and signals
- › Integration of ibaCapture data
- › Additional time-based recording as an option
- › Data storage in iba format related to the exit coil and additional to the entry coil

## Length-based quality data in any resolution

Quality data acquisition of today, is an essential part of the production process for every manufacturer of high-quality products. The quality data recording system ibaQDR is smoothly integrated in ibaPDA as an add-on and offers transparent, high-resolution quality data recording with high ease of use, wide range of interfaces and efficient quality data management.

A product (coil)-related analysis of quality data only makes sense, if the relevant measured values can be mapped exactly to the product. In case of long products, a length-based mapping of the data over the product is usually required, e. g. feet-wise or meter-wise.

ibaQDR does this mapping based on the previous time-based acquired data in combination with accurate data of the material tracking. The initially acquired (time-based) data are mapped exactly to the product at the point where they have been measured.

The system has been optimized for rolling mills, processing lines and inspection plants within the metal industry but it can also be

used for reversing rolling processes in hot rolling mills or other processes.

Quality relevant data are e. g.:

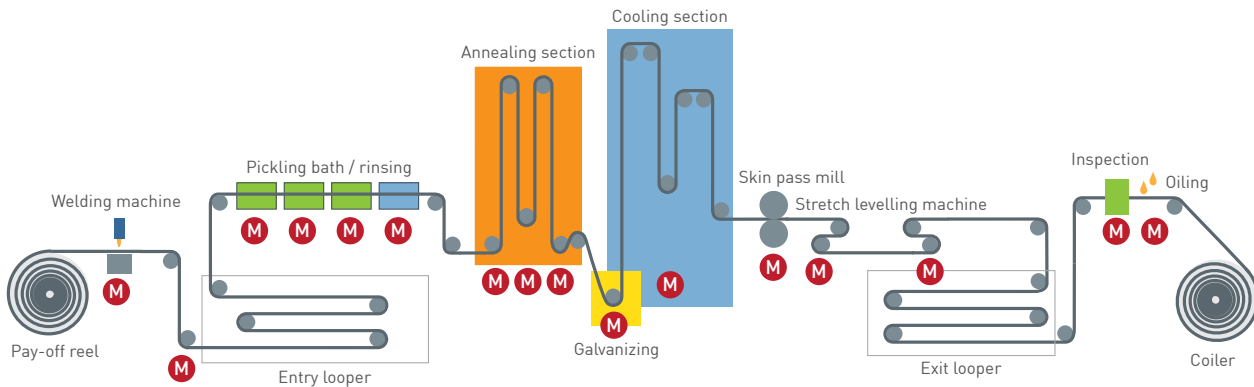
- › Product dimensions (width, thickness,...)
- › Cross profiles (strip coating, thickness cross-profile,...)
- › Production parameters (rolling forces, tensions, ...)
- › Reference values and consumption figures etc.

## Easy configuration and wide range of interfaces

Since ibaQDR is based completely on ibaPDA and the iba hardware, all connectivity of ibaPDA is available. The signals to be measured are configured in the so-called I/O Manager. The ibaQDR functions can be configured comfortably in special dialogs.

## Functional principle

The production line is divided into several sections (measuring locations), where the quality relevant data are acquired. At first, the measuring data are acquired separately based on the measuring locations, together with the material ID and the position (length) of the strip in relation to the measuring location.



On the different measuring locations, time-based and entry coil related measurement files are generated. ibaQDR generates an exit coil related file, in which the data are mapped exactly to the length.

This creates as many measurement files as measuring locations. When the product (coil) is finished (e.g. defined by shear cut) the measurement data are extracted from the temporary single files based on the material ID and the length positions and will be written into a new file – the QDR data file. All measurement values belonging to the recently produced strip are stored scaled to the final product length. Production-related material elongations are taken into account.

In addition (optional) it is possible to save QDR data defined by the entry coils, too. That means that parallel to the exit coil data files, a data file for each entry coil will be also generated by ibaQDR.

### Live status display

The status of the recording is displayed for each measuring location, as well as the current material ID and the position in the product (length) at the measuring location. Furthermore, file name and elapsed time are displayed. This is valuable information, particularly during the commission of the system.

### Configuration of the measuring location

Besides the name of a measuring location further information is

entered in the configuration dialog, such as signals from material tracking, like material ID and actual length position. Moreover, the quality measurement values belonging to this measuring location are selected. Two actual length values (entry and exit) can be configured for each measuring location in order to map accurately material distortions (e.g. elongation) of the product, for example at rolling stands.

### Scalable system size

An appropriate number of measuring locations can be defined throughout the line. Another arbitrary number of measuring signals can be assigned to each measuring location. An ibaQDR system can also perform (time-based) data recording for maintenance with respect to the size of the plant. In case of large scale plants we recommend a separated ibaPDA system in addition to the ibaQDR for maintenance and troubleshooting.

### Analyzing with standard tools

The data files which are generated by ibaQDR can be analyzed and displayed with ibaAnalyzer. Sophisticated reports can be generated with the powerful report generator.

### Quality data management

Using the software ibaAnalyzer-DB the recorded data can be provided to higher level systems, such as MES (Manufacturing Execution System), DataWarehouse or individual applications in a plain and transparent database structure. Supported database systems are Oracle, SQL-Server, DB2-UDB, PostgreSQL, MySQL and other databases. In ibaAnalyzer-DB, KPIs (Key Performance Indicators) can be determined and made available for other systems.

### Sales note

As ibaQDR works in close relation to the segment mapping of the automation, a detailed knowledge of the functioning of the automation is required for its configuration. Therefore we recommend the integration of the system through a qualified supplier or together with support services (consulting, training, support).

### Licensing

The ibaQDR licenses are graded according to the number of signals and measuring locations. The licenses each include one ibaPDA system for the specified number of signals and two ibaPDA data stores.

# Vibration monitoring in real time with ibalnSpectra



With ibalnSpectra, any vibrations are monitored continuously in real time and possible error sources can be detected in an early stage. As the ibalnSpectra library is integrated in ibaPDA, not only pure vibration analyses can be done, but also possible relations between vibrational effects and process behavior can be determined.

## Open and versatile

In contrast to many other Condition Monitoring systems, ibalnSpectra is not a manufacturer-specific system or limited to individual machines, but uses the broad connectivity of iba products. Thus, it is perfectly made for the use in heterogeneous automation structures, that are characterized by a great number of different technical disciplines and controller types.

Due to the smooth integration in ibaPDA, vibrational measurement data as well as other machine, process, material and quality data can be acquired centrally and related to each other. Hence, besides the pure vibration analysis of a single machine, also possible effects of the vibrations on the process stability and product quality can be detected.

## At a glance

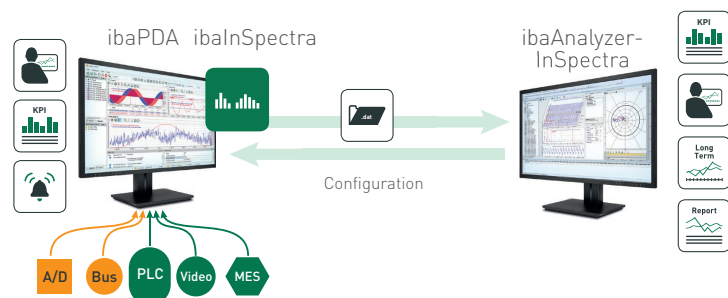
- › Real-time analysis of vibrations
- › Comprehensive configuration options
- › Calculation profile for multiple use
- › Visualization according to requirements
- › Alarming in case of exceeded limit values
- › Correlation of vibration and process data
- › Expert modules for frequency spectrum and orbit monitoring

## Real-time analysis

With ibalnSpectra, the sensors can be monitored time-synchronously and continuously and the current frequency analyses can be displayed in real time. Negative trends as well as significant correlations can be detected early

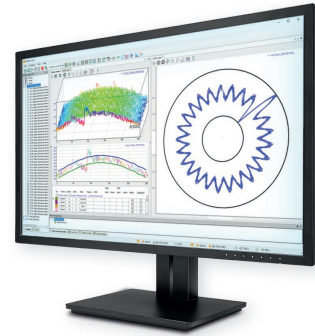
in the process. Critical conditions or exceeded limit values can be signaled immediately.

**i** For more information, see the brochure "Predictive maintenance and vibration monitoring".



# Monitoring and analysis of cyclical processes with ibalInCycle

ibaInCycle monitors cyclically recurring and rotating processes online. A precise forecast of quality features is therefore possible already during production. Implementing measures promptly can prevent damage and malfunctions of machines or plants, thereby ensuring the product quality.



## At a glance

- › Online monitoring and analysis of cyclical processes (recurring process steps, rotating mechanics)
- › Identifying process anomalies
- › Automatic alarming in real time
- › Saving raw data for detailed analysis in measurement files
- › Outputting characteristic values for the long term analysis in higher-level systems
- › Live visualization of measured data and characteristic values
- › Self-learning module for different process conditions (auto-adapting)
- › Reference curves for various process conditions
- › Individual definition of warning and alarm limits

## Identifying early-stage process changes and anomalies

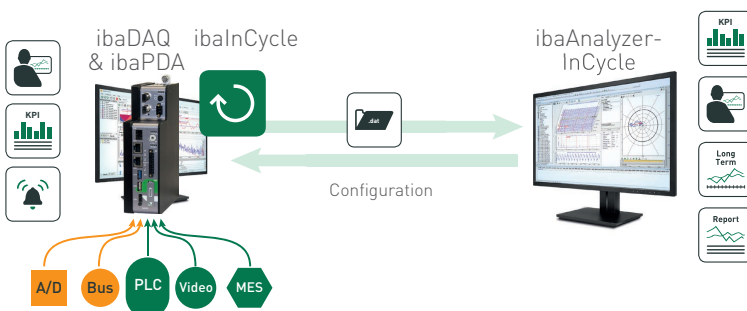
ibaInCycle is an add-on to ibaPDA and monitors all types of cyclically repeating processes, such as recurring processes, but also rotating machine parts, i.e. rollers, gears, etc.

ibaInCycle makes it possible to detect anomalies in the process at an early stage, in particular wear on machines and resulting deviations in product quality. This means you are able to take measures promptly to avoid damage and ensure quality.

## Compact stand-alone solution

The operation of ibalInCycle is not only possible on a central system, but also on the edge device ibaDAQ. This compact monitoring solution can be used stand-alone directly on the machine on site.

**i** For more information, see the brochure "Online monitoring of cyclical processes for quality assurance and machine diagnosis"



# Historical data immediately available with ibaHD-Server



ibaHD-Server allows you to continuously store data acquired with ibaPDA. Find events from the past with a mouse click, navigate and zoom quickly from the year, month or week view into the milliseconds range. Use ibaHD-Server to analyze your data over a long period of time and to automatically create day, shift or monthly reports.

## Store measurement data and events continuously

With the application ibaHD-Server (Historical Data Server), measurement data can be recorded continuously over long periods of time and then displayed continuously.

In addition to recording signals, events can also be recorded and displayed in an event table. Event messages are generated automatically via triggers or signal conditions and can be used to detect product changes or malfunctions, as well as for quick navigation.

## Write KPIs to HD store

With so-called offline events, calculated characteristic values (KPIs) from post-processing processes can be subsequently written to a HD store. Characteristic values are thus available together with the high-resolution data from live operation in a common data source.

## At a glance

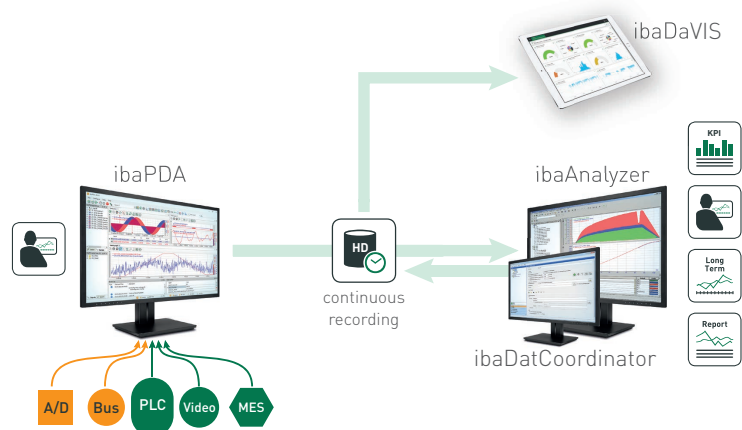
- ▶ Continuous recording of measured data and events over a long time period
- ▶ Simultaneous recording from several ibaPDA systems and import of measurement files
- ▶ Direct access to historical data with intuitive use for visualization, such as scrolling, jumping to a date
- ▶ Quick zoom function from the annual, monthly or weekly overview down to the range of milliseconds
- ▶ Display and filtering of historical events and joint visualization with measurement data

## Access with external systems and ibaDaVIS

With the programming interface ibaHD-Server-API-Read, historical data and events from the HD stores can also be queried and

analyzed by external systems. Access to historical data is thus also possible with ibaDaVIS.

**i** For more information, see the brochure "Saving measurement data and events and making them available immediately"



# Record and analyze videos and process data synchronously with ibaCapture

The video recording system ibaCapture records video and HMI images synchronously to process data - either continuously or triggered by events. The simultaneous display of recorded process data and visual information with ibaAnalyzer offers a completely new quality of process analysis.



## At a glance

- › Synchronous recording of video images and process data with ibaPDA
- › Continuous and event-triggered recording
- › Integration of HMI images and images from ibaVision as virtual cameras
- › Protected storage areas for important sequences
- › Capturing of up to 64 cameras (analog, IP, GigE or virtual)
- › View and analyze video sequences and process data with ibaAnalyzer
- › Live image display as replacement for a CCTV system
- › Event-triggered switching of display-layouts (Scenario Player)

## Viewing with sample accuracy

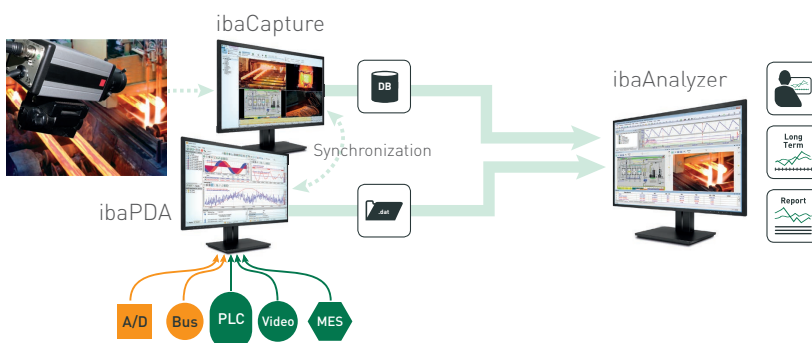
Images and process data can be viewed in a time-synchronized way with accuracy down to individual samples. As a result, causalities that are often not identifiable at first glance can be better understood.

At last, failures can be detected more quickly which allows better identification of root-causes. The use of cameras improves process monitoring wherever operations are difficult to measure or process steps cannot be reliably detected with sensors. These can be, for example, material feeders of machine tools or material handling systems where excessive steam, dust or heat is generated, such as in steel and rolling mills.

## See everything

ibaCapture can be used to capture and record video streams from cameras and HMI systems synchronously to the measured values with ibaPDA.

Unlike conventional video systems, ibaCapture not only records videos but links measurement data from the process and system synchronously with the visual information.



**i** For more information, see the brochure "ibaCapture - Record and analyze videos and measurement data synchronously"

# Order Information

## ibaPDA

Order no.	Name	Description
30.770064	ibaPDA-64	Basic package with server/client application, for 64 measuring signals
30.770128	ibaPDA-128	Basic package with server/client application, for 128 measuring signals
30.770256	ibaPDA-256	Basic package with server/client application, for 256 measuring signals
30.770512	ibaPDA-512	Basic package with server/client application, for 512 measuring signals
30.771024	ibaPDA-1024	Basic package with server/client application, for 1024 measuring signals
30.772048	ibaPDA-2048	Basic package with server/client application, for 2048 measuring signals
30.774096	ibaPDA-4096	Basic package with server/client application, for 4096 measuring signals
30.778192	ibaPDA-8192	Basic package with server/client application, for 8192 measuring signals
30.779999	ibaPDA-unlimited	Basic package with server/client application, for unlimited measuring signals
30.770021	ibaPDA-One-Data-Store	Add-on license for writing one more measurement file (*.dat)
30.770022	ibaPDA-Two-Data-Stores	Add-on license for writing two more measurement files (*.dat)
30.770023	ibaPDA-Ultra-Data-Store	Max. 255 data storages with up to 20 signals each; more signals per data storage are possible but with every additional multiple of 20 or part of it the number of usable data storages decreases by 1. 1...20 signals require 1 data storage 21...40 signals require 2 data storages 41...60 signals require 3 data storages.
30.770024	ibaPDA-Client	Extension with one more client
30.770025	ibaPDA-Multi Client	Extension with five more clients
30.001930	ibaPDA Multistation	License extension Multi-station application

## Server licenses

30.670050	ibaPDA-SNMP-Server+	Advanced SNMP Server function
30.670051	ibaPDA-OPC-UA-Server+	Advanced OPC UA Server function
30.670052	ibaPDA-IEC61850-Server	Add-on license IEC61850-Server

## ibaPDA-PLC-Xplorer

30.681502	ibaPDA-PLC-Xplorer	ibaPDA system for 64 signals, 2 clients, 2 data stores, standard interfaces plus all available PLC-Xplorer interfaces
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## ibaPDA communication interfaces

31.000001	ibaPDA-Interface-S7-Xplorer	Xplorer interface for Simatic S7-200/300/400/1200/1500/WinAC/Logo!
31.000002	ibaPDA-Interface-Codesys-Xplorer	Xplorer interface for Codesys-based systems (V2 and V3)
31.000003	ibaPDA-Interface-AB-Xplorer	Xplorer interface for Allen-Bradley PLC5 and SLC500
31.000004	ibaPDA-Interface-Sigmatek-Xplorer	Xplorer interface for Sigmatek systems
31.000005	ibaPDA-Interface-TwinCAT-Xplorer	Xplorer interface for Beckhoff systems
31.000006	ibaPDA-Interface-B&R-Xplorer	Xplorer interface for B&R systems
31.000007	ibaPDA-Interface-Logix-Xplorer	Xplorer interface for Allen-Bradley Logix systems
31.100008	ibaPDA-Interface-MELSEC-Xplorer	Xplorer interface for Mitsubishi MELSEC systems
31.100009	ibaPDA-Interface-ABB-Xplorer	Xplorer interface for ABB systems
31.000030	ibaPDA-Interface-SINAMICS-Xplorer	Xplorer interface for SINAMICS drives
31.000031	ibaPDA-Interface-SIMOTION-Xplorer	Xplorer interface for SIMOTION systems
31.000033	ibaPDA-Interface-SINUMERIK-Xplorer	Xplorer interface for SINUMERIK CNC controls
31.000034	ibaPDA-Interface-Bachmann-Xplorer	Xplorer interface for Bachmann M1 systems
31.000035	ibaPDA-Interface-OMRON-Xplorer	Xplorer interface for OMRON systems
31.001044	ibaPDA-Interface-Drive-Xplorer	Xplorer interfaces for drives (SIMOTION, SINAMICS)
31.001005	ibaPDA-Interface-EtherNet/IP	EtherNet/IP communication interface
31.001006	ibaPDA-Interface-ibaNet-E	ibaNet-E communication interface



31.001009	ibaPDA-Interface-HPCI-DGM200E	HPCI-DGM200E communication interface
31.001010	ibaPDA-Interface-HPCI-DGM200P	HPCI-DGM200P communication interface
31.001015	ibaPDA-Interface-ibaLogic-TCP	ibaLogic TCP communication interface
31.001020	ibaPDA-Interface-Modbus-TCP-Server	Modbus TCP/IP communication interface; Modbus Server
31.001021	ibaPDA-Interface-Modbus-Serial	PDA Modbus over SerialLine communication interface
31.001022	ibaPDA-Interface-Modbus-TCP-Client	Modbus TCP/IP communication interface; Modbus Client
31.001026	ibaPDA-Interface-AN-X-DCSNet	AN-X Automax communication interface
31.001030	ibaPDA-Interface-RAW-Ethernet	Raw-Ethernet communication interface
31.001040	ibaPDA-Interface-S7-TCP/UDP	S7-TCP/UDP communication interface
31.001042	ibaPDA-Interface-PLC-Xplorer	PLC-Xplorer interfaces (S7, Allen Bradley, ABB, B&R, Bachmann, Beckhoff, Codesys, Logix, Mitsubishi MELSEC, OMRON, Sigmatek)
31.001045	ibaPDA-Interface-SCRAM-Net	SCRAM-Net communication interface
31.001046	ibaPDA-Interface-Toshiba-ADMAP JAMI1	Toshiba ADMAP communication interface
31.001047	ibaPDA-Interface-TC-net	Communication interface for Toshiba TC-net network
31.001055	ibaPDA-Interface-Sisteam-TCPIP	Sisteam TCP/IP communication interface
31.001056	ibaPDA-Interface-TDC-TCP/UDP	Simatic TDC TCP/UDP communication interface
31.001065	ibaPDA-Interface-VIP-TCP/UDP	ABB VIP-Protokoll TCP/UDP communication interface
31.001070	ibaPDA-Interface-EGD	Ethernet Global Data Memory communication interface
31.001075	ibaPDA-Interface-Generic-UDP	Generic-UDP/IP protocol communication interface
31.001076	ibaPDA-Interface-Generic-TCP	Generic-TCP/IP protocol communication interface
31.001080	ibaPDA-Interface-GCOM	GCOM für ABB Stressometer communication interface
31.001090	ibaPDA-Interface-IEC61850-Client	IEC61850-Client communication interface
31.001100	ibaPDA-Interface-Hitachi-MicroSigma	Hitachi-MicroSigma communication interface
31.001101	ibaPDA-Interface-Audio	Communication interface for audio signals
31.001111	ibaPDA-Interface-OPC-UA-Client	OPC-UA-Client communication interface
31.001112	ibaPDA-Interface-MQTT	MQTT communication interface
31.001113	ibaPDA-Interface-Oracle	Oracle database communication interface
31.001114	ibaPDA-Interface-SQL-Server	SQL Server database communication interface
31.001115	ibaPDA-Interface-PostgreSQL	PostgreSQL database communication interface
31.001116	ibaPDA-Interface-MySQL	MySQL database communication interface
31.001117	ibaPDA-Interface-SAP-HANA	SAP HANA database communication interface
31.001220	ibaPDA-Interface-Reflective-Memory	Reflective Memory Access communication interface
31.001350	ibaPDA-Interface-Profinet-CP	Profinet CP interface to CP1616 and CP1626
31.001400	ibaPDA-Interface-IEC61850-9-2	IEC61850-9-2 (Sampled Values) communication interface

### Interfaces to measurement devices

31.001011	ibaPDA-Interface-LANDSCAN	LANDSCAN communication interface (infrared line scanner)
31.001012	ibaPDA-Interface-LMI-Gocator	LMI Gocator communication interface (laser profile sensor)
31.001013	ibaPDA-Interface-Raytek	Raytek communication interface (infrared line scanner)
31.001016	ibaPDA-Interface-Micro-Epsilon	Micro-Epsilon laser scanner communication interface

### ibaPDA Request

31.001300	ibaPDA-Request-HPCI	HPCI system, HPCI symbolic request channels
31.001302	ibaPDA-Request-HiPAC	Symbolic request channels for Danieli HiPAC PLC
31.001303	ibaPDA-Request-TwinCAT	TwinCAT symbolic request via UDP or ibaBM-eCAT
31.001310	ibaPDA-Request-S7-DP/PN	Simatic S7 system, S7 symbolic request via ibaBM-DP/PN
31.001311	ibaPDA-Request-S7-UDP	Simatic S7 system, S7 symbolic request via UDP, ibaPDA-Interface-S7-TCP/UDP required
31.001320	ibaPDA-Request-SD	Simadyn-D system, Simadyn-D symbolic request channels
31.001330	ibaPDA-Request-TDC	TDC system, Simatic TDC request via FO connection
31.001340	ibaPDA-Request-X-Pact	X-Pact system, X-Pact interface to PROBAS system

31.001360	ibaPDA-Request-FM458/TDC	FM458/TDC system, FM458/TDC request via Profibus
31.001412	ibaPDA-Request-DTBox-128	Dualis DTBox, 128 signals
31.001413	ibaPDA-Request-DTBox-256	Dualis DTBox, 256 signals
31.001414	ibaPDA-Request-DTBox-512	Dualis DTBox, 512 signals
31.001415	ibaPDA-Request-DTBox-1024	Dualis DTBox, 1024 signals
31.001416	ibaPDA-Request-DTBox-2048	Dualis DTBox, 2048 signals
31.001417	ibaPDA-Request-DTBox-4096	Dualis DTBox, 4096 signals
31.001418	ibaPDA-Request-DTBox-8192	Dualis DTBox, 8192 signals
31.001419	ibaPDA-Request-DTBox-unlimited	Dualis DTBox, unlimited number of signals

### Data Store DB/Cloud/Message Broker

30.670141	ibaPDA-Data-Store-SAP-HANA-64	Data streaming into SAP HANA DB/Cloud; 64 signals
30.670142	ibaPDA-Data-Store-SAP-HANA-256	Data streaming into SAP HANA DB/Cloud; 256 signals
30.670143	ibaPDA-Data-Store-SAP-HANA-1024	Data streaming into SAP HANA DB/Cloud; 1024 signals
30.670160	ibaPDA-Data-Store-Kafka-16	Data streaming into Apache Kafka cluster, 16 signals
30.670161	ibaPDA-Data-Store-Kafka-64	Data streaming into Apache Kafka cluster, 64 signals
30.670162	ibaPDA-Data-Store-Kafka-256	Data streaming into Apache Kafka cluster, 256 signals
30.670163	ibaPDA-Data-Store-Kafka-1024	Data streaming into Apache Kafka cluster, 1024 signals
30.671000	ibaPDA-Data-Store-MQTT-16	Data streaming into MQTT broker, 16 signals
30.671001	ibaPDA-Data-Store-MQTT-64	Data streaming into MQTT broker, 64 signals
30.671002	ibaPDA-Data-Store-MQTT-256	Data streaming into MQTT broker, 256 signals
30.671003	ibaPDA-Data-Store-MQTT-1024	Data streaming into MQTT broker, 1024 signals
30.671020	ibaPDA-Data-Store-Oracle-64	Data streaming into Oracle DB/Cloud; 64 signals
30.671021	ibaPDA-Data-Store-Oracle-256	Data streaming into Oracle DB/Cloud; 256 signals
30.671022	ibaPDA-Data-Store-Oracle-1024	Data streaming into Oracle DB/Cloud; 1024 signals
30.671030	ibaPDA-Data-Store-SQL-Server-64	Data streaming into SQL Server DB/Cloud; 64 signals
30.671031	ibaPDA-Data-Store-SQL-Server-256	Data streaming into SQL Server DB/Cloud; 256 signals
30.671032	ibaPDA-Data-Store-SQL-Server-1024	Data streaming into SQL Server DB/Cloud; 1024 signals
30.671040	ibaPDA-Data-Store-PostgreSQL-64	Data streaming into PostgreSQL DB/Cloud; 64 signals
30.671041	ibaPDA-Data-Store-PostgreSQL-256	Data streaming into PostgreSQL DB/Cloud; 256 signals
30.671042	ibaPDA-Data-Store-PostgreSQL-1024	Data streaming into PostgreSQL DB/Cloud; 1024 signals
30.671050	ibaPDA-Data-Store-MySQL-64	Data streaming into MySQL DB/Cloud; 64 signals
30.671051	ibaPDA-Data-Store-MySQL-256	Data streaming into MySQL DB/Cloud; 256 signals
30.671052	ibaPDA-Data-Store-MySQL-1024	Data streaming into MySQL DB/Cloud; 1024 signals
30.671060	ibaPDA-Data-Store-InfluxDB-64	Data streaming into InfluxDB; 64 signals
30.671061	ibaPDA-Data-Store-InfluxDB-256	Data streaming into InfluxDB; 256 signals
30.671062	ibaPDA-Data-Store-InfluxDB-1024	Data streaming into InfluxDB; 1024 signals

For the different data stores, license extensions are also available for upgrading to a higher number of signals.

### Language Packages

30.770030	ibaPDA-Lang-CN	Language package Chinese
30.770031	ibaPDA-Lang-IT	Language package Italian
30.770032	ibaPDA-Lang-RU	Language package Russian
30.770033	ibaPDA-Lang-ES	Language package Spanish
30.770034	ibaPDA-Lang-PT	Language package Portugese
30.770037	ibaPDA-Lang-JP	Language package Japanese

## ibaQPanel

30.670040	ibaQPanel-Add-On	Add-On license for ibaPDA for to display process and quality data on an HMI window
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## ibaQDR

35.702560	ibaQDR-256-6	Quality Data Recording with 256 signals, 6 measuring locations
35.710240	ibaQDR-1024-32	Quality Data Recording with 1024 signals, 32 measuring locations
35.720480	ibaQDR-2048-48	Quality Data Recording with 2048 signals, 48 measuring locations
35.799990	ibaQDR-unlimited-64	Quality Data Recording with unlimited signals, 64 measuring locations
35.799992	ibaQDR-unlimited-96	Quality Data Recording with unlimited signals, 96 measuring locations
35.700001	ibaQDR-Measuring-Location	Extension license for 2 measuring locations
60.700201	ibaQDR Requirements	Requirement for the application of ibaQDR (training, support during programming, accompanying for system test, optimization and final acceptance test at plant side, certification of first users )

## ibaInSpectra

30.681223	ibaInSpectra	ibaPDA license extension, Spectrum Analysis Library, 4 modules
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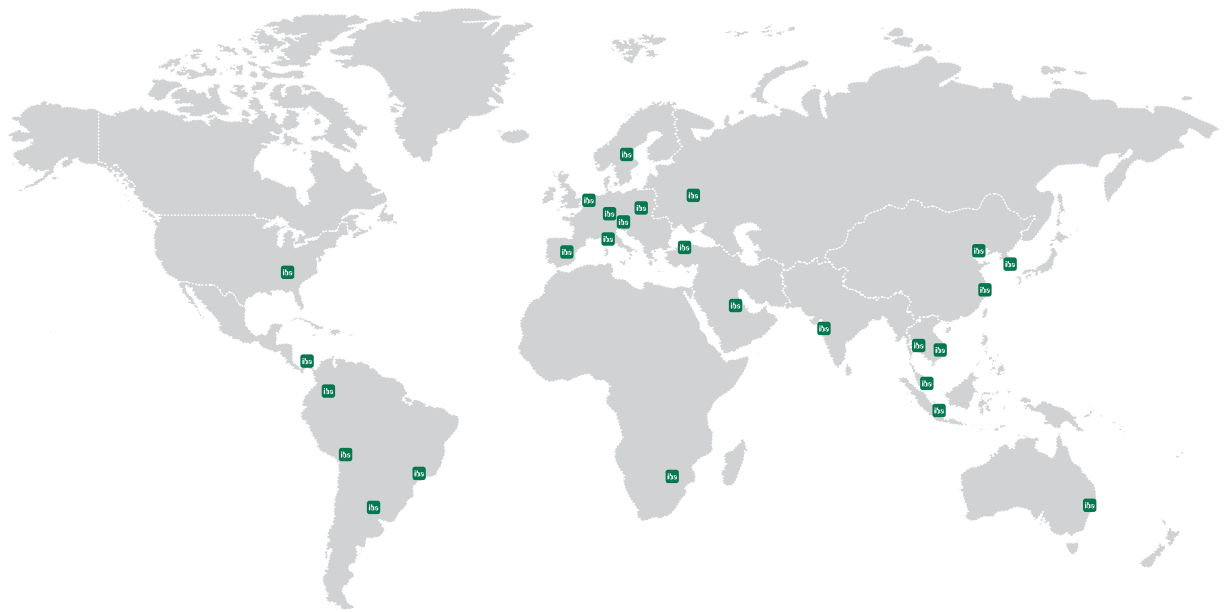
## ibaInCycle

30.681215	ibaInCycle	Analysis of cyclical processes, 4 modules
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## Training

61.100000	Measurement, data evaluation and automatic reporting with iba	3-day compact course
61.000200	Measurement and data evaluation with the iba system	2-day basic course
61.000400	Long-term data archiving and evaluation with ibaHD-Server	2-day advanced course
61.000700	Monitoring and analysis of vibration data with ibaInSpectra	2-day advanced course
61.000210	Visualization of measurement data and quality data using ibaQPanel	2-day advanced course
61.000220	Data acquisition from a PLC SIMATIC S7	1-day advanced course

The entire training program is available under [www.iba-ag.com/training](http://www.iba-ag.com/training).



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