Web-based visualization for product and process analysis

ibaDaVIS

Application areas
- Interactive process analysis
- Direct process comparison
- Product tracking
ibaDaVIS allows the visualization of your process data and characteristic values in the web browser. You can interactively access detailed data from the overview on the dashboard.

**The big picture at a glance**
With ibaDaVIS, you get a completely new overview and clarity through in-depth insights into your data and processes. Systems and machines can be compared with each other based on their characteristic values. The information that you need to monitor 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 visualization and filter elements in one. Recognize trends, deviations and weak points at a glance.

Plant operators, process technologists, 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. All common web browsers, such as Google Chrome, or Mozilla Firefox, are supported. The responsive design allows a convenient operation, even on tablets or smartphones.

**At a glance**
- Visualize and analyze process and quality data
- Web-based and platform-independent – access from anywhere
- Flexibly configurable dashboards for a wide range of user groups
- Representation as time trend, histograms, XY diagram, table, tachograph, and pie chart
- Interactive detailed analysis through flexible filtering of process and quality data
- Comprehensive access to measurement files, ibaHD data and databases

Only a web browser is required in order to connect to ibaDaVIS. The installation of an additional app is not necessary.

ibaDaVIS also supports HTTPS through Windows or general certification for a secure connection establishment as well as secure data transmission.

The status of ibaDaVIS can be monitored and controlled using the ibaDaVIS Status application and is indicated by an icon in the taskbar. ibaDaVIS Status is installed together with ibaDaVIS on a Windows PC.

Meaningful displays can be realized with different types of tiles.
Visualization of different data sources
Dashboards visualize in tiles quality or characteristic values from databases or the measured values from iba measurement files as well as from HD stores of an ibaHD-Server. Data from time- and event-based HD stores can be visualized.

The advantage of ibaDaVIS is the central access to decen-trally acquired data and the always up-to-date overview.

Flexible configuration
In the navigation area of ibaDaVIS, dashboards can be thematically and hierarchically organized by location, machine, or user groups.

A variety of tile types are available here, such as trend displays, XY diagrams, histograms, bar charts, tables, tachographs, pie charts, grids and heat maps. Bullet graphs visualize several statistical parameters and last registered values of a value series.

The data can be shown directly or in aggregated form, de-pending on the tile selected. All tiles can be quickly and easily resized and individu-ally placed using drag & drop.

Display and compare measurement files directly
Time and length-based signals from a measurement file in dat format can also be visualized in a trend display. Data from up to 50 measurement files can be displayed. These can be either the latest files or files that have been selected manually.

Several measurement files, for example identical process steps, can be stacked in trend views and compared. The trend of the new-est file can be visually highlight-ed. The files can also be simply appended to each other or even displayed as an envelope view.

Comparison with reference signals
Additionally, signals from reference files can be displayed for comparison. The reference signals can be selected from the last produced or from interacti-vely selected measurement files.

Visualize vector signals
Vector signals can be visuali-zed in a special heat map view. This allows signals from flat-ness or profile measurements to be clearly displayed. Both time and length-based data are supported in the display.

The color schemes of the dis-plays can be set individually.

Visualize distribution of characteristic values
In the bar chart, KPIs can be sorted by time or grouped by a selected category. The data can be aggregated or sorted into bars that are displayed side by side or as stacked bars. In this way, the distribution of properties in cer-tain categories can be visualized.
Quick and easy selection of time ranges
hibaDaVIS shows characteristic values or measurement values from the same defined time range on all tiles. The time range can be set directly with the date and time or relatively, for example for the last 7 days. A number of preset time ranges, such as „last month” or „this week”, as well as a configurable shift model facilitate the selection. All tiles are updated directly after the selection and display values from the desired time range.

Interactive filter and search functions
The tiles also serve as filter objects. By clicking on a segment in the pie chart, the filter is set to the selected group. For example, a certain material group can be selected this way. All tiles of the dashboard then show data points or trends associated with the selected material group. By zooming in a trend graph, you can very quickly narrow down the time range for all parameters shown on the dashboard.

To examine the parameters of a specific product, for example, simply enter the product number into the table. The table immediately shows the product-related characteristic values and offers the iba measurement file or the previously created product report for download.

Trend views of measurement files also allow you to filter for specific process details based on defined events. For a better comparison of the found signals, they can be synchronized to the same start event.

Interactive filter functions enable fast searches
Drill-down to the raw data
The raw values must be accessed in order to examine and understand the causes for process deviations, process changes, outliers or potential for optimization in detail. The iba measurement files can be downloaded from the server from the web browser and opened and evaluated with ibaAnalyzer including the referenced analysis rule. This is how all the relevant information for the product and process analysis is always completely available at a glance.

Measurement data from databases and cloud
ibaDaVIS currently provides access to iba measurement data from ibaPDA and ibaHD-Server as well as databases. A database that can be managed via a cloud service can also be used to access data and information, such as a locally hosted database. With ibaPDA, it is also possible to stream measurement data directly into a database via database interfaces and to query them with ibaDaVIS.

Access to HD data
Time-based signals and events can be queried, visualized and analyzed directly from the ibaHD-Server. An additional license for the programming interface ibaHD-Server-API-Read is required for this.

Integration in the iba system
ibaAnalyzer can calculate characteristic values according to the respective requirements based on the measurement files. With ibaAnalyzer-DB, additional key information, such as production date, batch numbers or product numbers, can be extracted into your database.

ibaDaVIS searches on the basis of these fields and determines the characteristic value or measured value trends. Information of the iba database model is used to access the reports or the original iba measurement file.

Calculated process characteristics or product and batch information can also be posted as an offline event in an event-based HD store. The postprocessing is realized by means of the software ibaDatCoordinator.

Language variety for international use
The display language of the menus and dashboards in ibaDaVIS can be switched in the browser or directly in the user profile. The languages German, English, French, Italian, Portuguese, Spanish, Russian, Chinese and Japanese are included.

Licenses
ibaDaVIS is a protected software. The licenses are differentiated according to the number of configurable tiles. The base version of ibaDaVIS contains 12 tiles. The number can be expanded with upgrade licenses, each with 12 tiles. The number of dashboards and registered users of ibaDaVIS are freely selectable and not subject to licensing.

Requirements
› Database system for including the index table (supported databases: MS SQL Server, MySQL, Maria DB, SQLite, ORACLE and PostgreSQL)
› Central Windows PC (or VM) on which ibaDaVIS service is running and has access to the database system or cloud service
› Browser on the terminal device
At a plastics manufacturer, production with several injection molding machines is to be continuously monitored and can be seamlessly traced. ibaDaVIS enables live monitoring and evaluation of all quality-relevant data over the entire process chain.

The project
Production with several injection molding machines at a plastics manufacturer is to be continuously monitored from a central location and be fully traceable. In addition, the declared goal is to identify deviations and errors, to quickly identify the causes, and monitor effects of parameter changes at the machine.

The technology and products
Several hundred signals are acquired synchronously and in high resolution at each injection molding machine and recorded in ibaPDA, such as the temperature, injection pressure, cavity pressure, etc. The signal curves are visualized with ibaDaVIS directly in the machine control and always offer a current insight into any machine.

.ibaAnalyzer also uses user-defined analysis rules to calculate the relevant key figures for the process. The measurement data and characteristic values are then extracted into a database with ibaAnalyzer-DB. Afterwards, all quality-related process data can be accessed for each individual injection cycle. The data can be intuitively and manually evaluated for targeted troubleshooting.

Automatic reporting
In addition, the data is automatically summarized in a report with ibaAnalyzer-Reportgenerator and displayed clearly. Using the QR code on any component, the component-specific report can be accessed at any time. This allows complete tracking of all product and process data per component.

Continuous recording of process data in high resolution
Intuitive evaluation for special error analysis
Process optimization through continuous data acquisition

Visualization of the signals at the display - online by smartphone, tablet or PC, no matter where you are.

Production-specialists thus have a data-based basis for making decisions in order to optimize production and increase process reliability.
## Order information

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<th>Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>34.040010</td>
<td>ibaDaVIS-V2</td>
<td>Data Visualization and Information Service (12 tiles)</td>
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<tr>
<td>34.040100</td>
<td>ibaDaVIS-upgrade by 12 Tiles</td>
<td>Upgrade by 12 tiles</td>
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### ibaPDA data store DB/Cloud

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<tbody>
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<td>30.67014/1/2/3</td>
<td>ibaPDA-Data-Store-SAP-HANA-64/256/1024</td>
<td>Data streaming into SAP HANA DB/Cloud; 64/256/1024 signals</td>
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<tr>
<td>30.67016/1/2/3</td>
<td>ibaPDA-Data-Store-Kafka-16/64/256/1024</td>
<td>Data streaming into Apache Kafka Cluster; 16/64/256/1024 signals</td>
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<td>30.67018/1/2/3</td>
<td>ibaPDA-Data-Store-MindSphere-16/64/256/1024</td>
<td>Data streaming into MindSphere Cloud; 16/64/256/1024 signals</td>
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<td>30.67100/1/2/3</td>
<td>ibaPDA-Data-Store-MQTT-16/64/256/1024</td>
<td>Data streaming into MQTT Broker; 16/64/256/1024 signals</td>
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<td>ibaPDA-Data-Store-Oracle-64/256/1024</td>
<td>Data streaming into Oracle DB/Cloud; 64/256/1024 signals</td>
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<td>30.67103/1/2</td>
<td>ibaPDA-Data-Store-SQL-Server-64/256/1024</td>
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<td>ibaPDA-Data-Store-PostgreSQL-64/256/1024</td>
<td>Data streaming into PostgreSQL DB/Cloud; 64/256/1024 signals</td>
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<td>30.67105/1/2</td>
<td>ibaPDA-Data-Store-MySQL-64/256/1024</td>
<td>Data streaming into MySQL DB/Cloud; 64/256/1024 signals</td>
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### ibaHD-Server

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<td>30.800001</td>
<td>ibaHD-Server-API-Read</td>
<td>gRPC-API interface to query stored signals and events from existing HD stores</td>
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### ibaAnalyzer

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<td>33.010001</td>
<td>ibaAnalyzer-V7-DB</td>
<td>Offline analysis package and data generation for SQL or ODBC databases</td>
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### Training

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<tr>
<td>61.000140</td>
<td>Automated key data calculation and web-based product and process analysis with ibaDaVIS</td>
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Technical changes and errors excepted.