New Features in

ibaCMC v3.0.0

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1   General

1.1   Modern Webapplication – No Silverlight Plugin needed

ibaCMC v3.0.0 was build new from the ground up. The frontend is based on the Angular framework and can be opened with any modern webbrowser. No extra plugins like Silverlight are needed anymore.

> **Note**
>
> To use ibaCMC v3.0.0 JavaScript must be activated in the browser.

1.2   Installer

The application can be installed and updated easily with an Inno Setup Installer. The installer also manages database updates and setup of new databases for new customers. The latest version can be downloaded on the iba website in the download area.

1.3   Webhosting

In ibaCMC v1.x the hosting was done by the InternetInformationServer (IIS). With ibaCMC v3.0.0 the hosting ist done in a windows service where a kestrel webserver hosts the application. The status of the application can be checked via the "ibaCMC.Status.exe" which can be found in the traybar of the windows desktop.
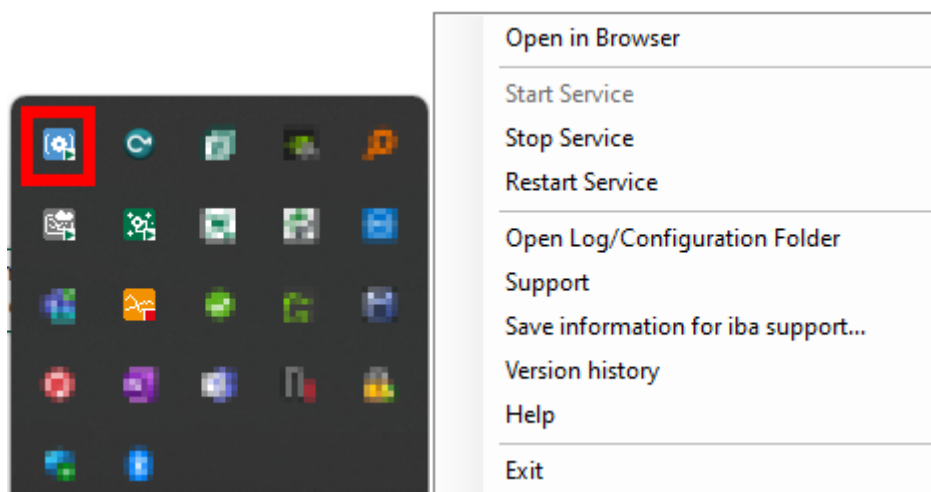
1.4   Documentation in German (3.0.0) and English (3.0.x)

The webbased software documentation is available in German and English language and can be accessed directly via the webapplication Help > Help. The documentation can also be downloaded in the download area of the iba website.

1.5 WIBU License + new license model

ibaCMC v3.0.0 comes with the standard iba WIBU licensing system. ibaCMC v3.0.0 supports software and hardware license dongles.

With the new license system also the license model changed compared to the previous ibaCMC v1.x license model.

The base license is much cheaper now and already includes 2 plant licenses. If the system grows and more plants are needed, additional plant licences can be purchased.

The following ibaCMC products are available:

Product No.	Product Name	Description
30.100000	ibaCMC	Condition Monitoring Center Base License including 2 plants
30.100001	ibaCMC-One-Plant	ibaCMC-One-Plant enables the configuration of an additional plant in ibaCMC.

To get the latest software updates and support an EUP fee must be payed.

The following EUP products are available:

Product No.	Product Name	Description
30.100010	ibaCMC-EUP	Annual fee for software maintenance and support
30.100011	ibaCMC-One-Plant-EUP	Annual fee for software maintenance and support
30.100014	ibaCMU-S-One-Sensor-EUP	Annual fee for software maintenance and support Every IEPE sensor connected to an ibaCMU-S requires this product as part of our software maintenance and support fee

The total EUP fee is calculated by summing up the EUP products based on the customer installation.

All relevant Informations regarding the license can be found on the About page (Help > About).

1.6   Data Migration in ibaCMC v3

For customers who have an existing ibaCMC v1.x installation stand alone or in parallel operation mode running with ibaCMC v2 beta, all the backend tasks are still done by the ibaCMC v1.x backend and the Windows Task Scheduler.

To get all the benefits of ibaCMC v3.0.0 and be able to shut down the ibaCMC v1.x in the long run, all plants of ibaCMC v1.x have to be migrated to the new ibaCMC v3.0.0 data structure.

The data migration can be done plant by plant.

Please note that during the migration no data will be imported into the system and no configuration changes can be perfomed by the user.

> **Note**
>
> We recommend the migration process be accompanied by an iba employee.

For more information about the data migration process contact the iba support.

1.7   Renamings

1.7.1   Measurement ranges => Trend filter

This renaming was done because a measurement ranges does mean something different and is more used in context of measuring devices and not of filtering trends.

So, "measurement ranges group" was renamed to "trend filter", "Measurement signal" to "Filter signal" and "measurement ranges" to "filter ranges".

1.7.2   Measurement conditions => Snapshot

Because in the iba system measurement conditions are called snapshots, it was renamed in ibaCMC as well.

1.7.3   ISO trend => vRMS

After the update to ibaCMC V3 all ISO or frequency selective ISO trends e.g. ISO 3-1000 are renamed to vRMS 3-1000. vRMS is short for RMS in the velocity time signal. The reason for the renaming was that ISO trends are standardized trends based on the ISO 20816 standard with defined frequency ranges and thesholds based on the speed or power of the machine.

1.8 New plant tree icons

With ibaCMC v3.0.0 the plantree icons were updated.

Check out the new icons below.
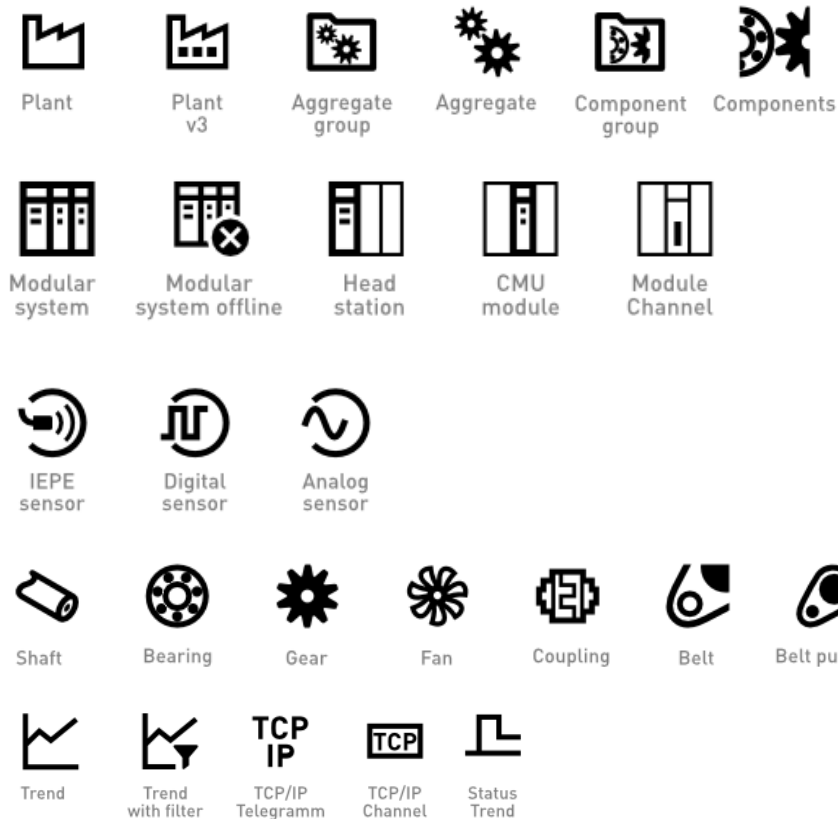
1.9 Dropped Features

Compared to ibaCMC v1.x the following features are dropped and are not available in ibaCMC v3.0.0

- Online signals
- Translation (user specific translation was disabled)
- Trend and status calculation engine (user specific trend and status calculation was removed)
- Signal test on the CMU via ibaCMC (is still possible via the CMU visualization (logi.VIS)
- Orbit (was removed from ibaCMC. Can be done on ibaPDA with Orbit Module)

After data migration the following features are no longer available:

- Status trends (visualization of status change is planned for one of the next versions)
- Urg trend (sensor defect is calculated directly on the CMU now)
- Work area (second y axis is planned for one of the next versions)

2   New Features

2.1   Logbook

The logbook is used as a central commenting and documentation tool for analysts and plant operators. Different log types and statuses enable categorization of the log entries.

The logchart below the trend analysis charts shows the log history on a timeline. That helps to find releationships between documented system changes (e.g. bearing changes, bearing lubrication etc.) and trend jumps and also enables the user to document analysis results.
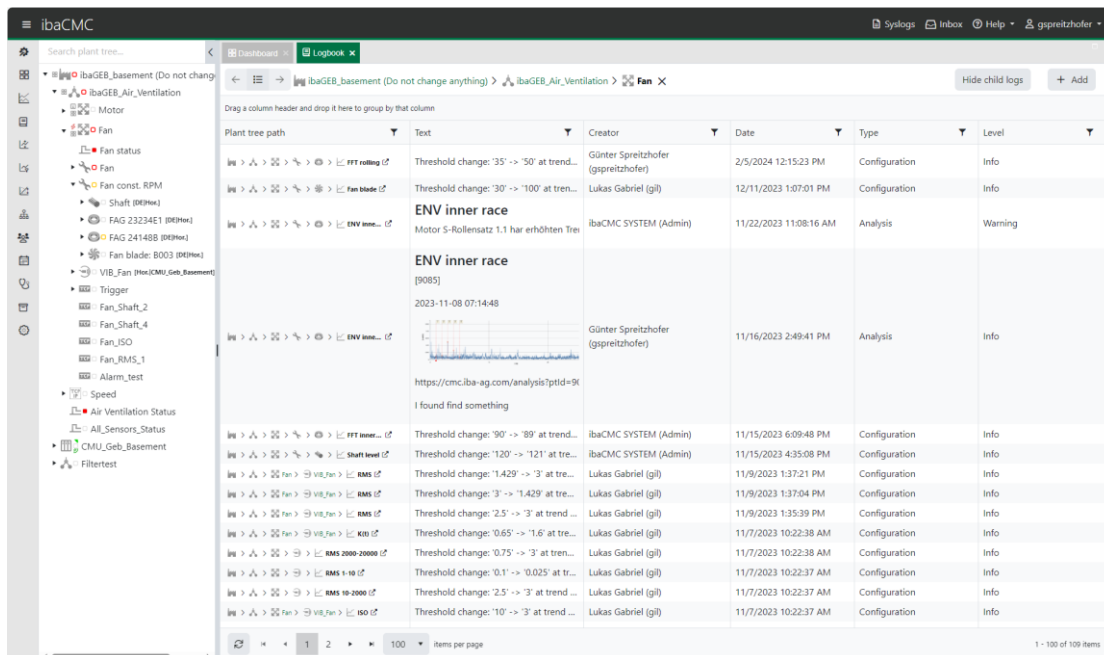
Figure 1: Logbook

2.2 Dashboard

On a dashboard, users can display relevant trends using tiles of type "line chart" or display the system status as overview. The user can create the dashboard for private use or share the dashboard with other users by linking the dashboard with a plant tree item. Shared dashboards are marked in the plant tree with a dashboard icon to the left of the plant tree icon.
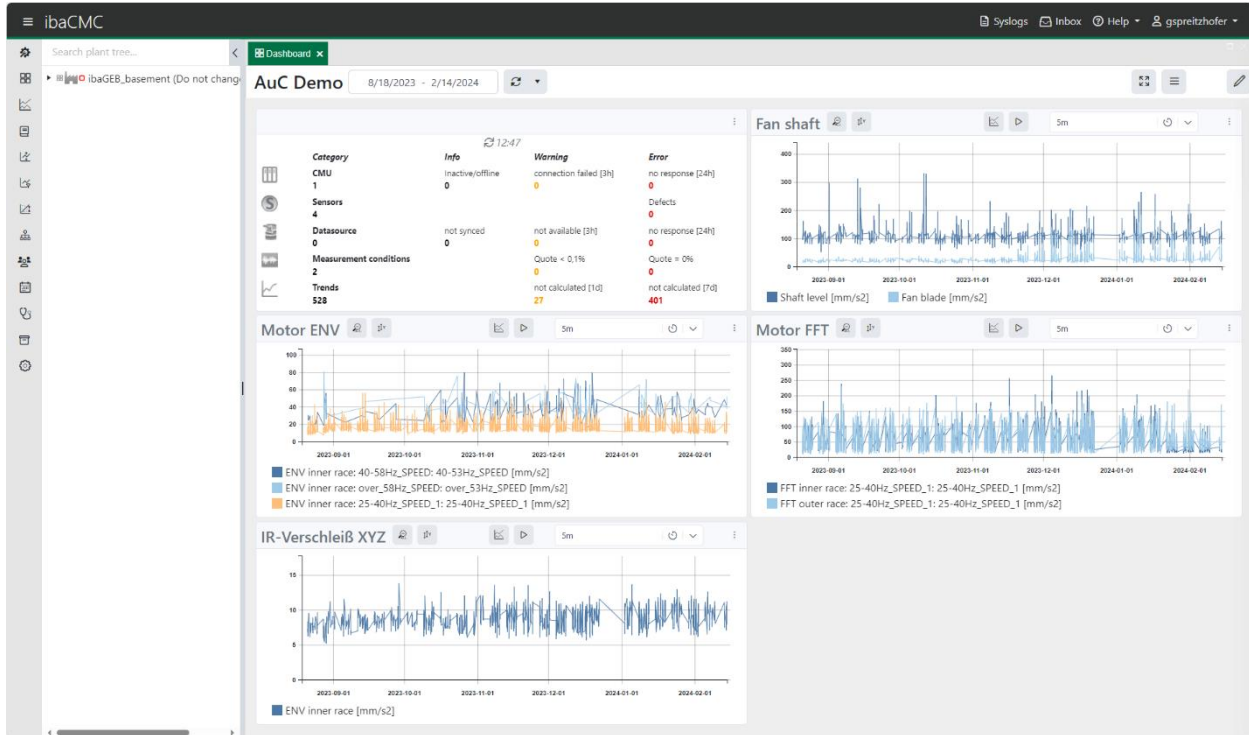
Figure 2: Dashboard

2.3 User Management

2.3.1 Additional plant restrictions for user groups

In user groups it is now possible to select specific plants the users in this group can see.

This give the admin the possibility to restrict the access not only on feature level but also on plant level.

If no plants are selected for a group, the users of this group do not have access to any existing plants.
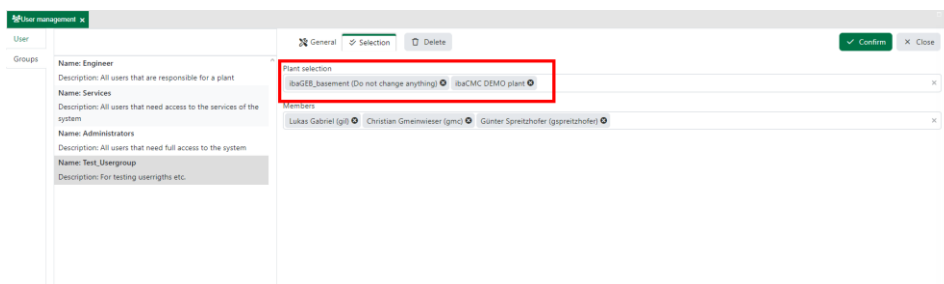
Figure 3: User management - Plant restrictions for user groups

2.3.2 Global adjustment of user profile settings

Administrators or user who have the right "user" can now edit user profile settings from all users in the system.

2.4 Task Scheduler

In ibaCMC v1.x the tasks were triggered from the windows task scheduler. In the widgets tab you saw the status information of the tasks.

To reduce the dependencies to external software components in ibaCMC v3.0.0 the task scheduler is build into the system itself.

You see the task information like Last/Next run time, Duration, Schedule and Status. In the command column the tasks can be started, stopped and disabled/enabled.

Figure 4: Task scheduler

2.5   Diagnostic

The diagnostic application gives an basic overview of the status of all devices and services in the system.

It also monitors the disc space of the archive folders and shows a red badge with the number of the errors in the sidebar.

Figure 5: Diagnostic application

3   Improvements

3.1   Status Calculation Engine

> **Note**
>
> A data migration of the plant is needed to get the following features.

The status calculation engine was completely rewritten and improved in performance. Also, the status calculation itself has been simplified.

By default, if trends are added via the asset configuration the status monitoring is disabled and not limts are configured.

Limits can be added in different locations like **trend analysis**, **level adjustement** tool, or in the **plant configuration** at trend level.

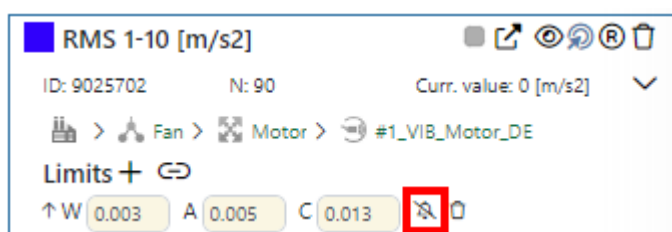It is also possible to disable the status notification by clicking on the bell icon.

Figure 6: Trend Analysis - Disable alarm notification

> **Note**
>
> Use the disable notification feature with care.

3.1.1 Update Status after threshold change

If the threshold is changed, also the status will be updated after saving the changed threshold. In ibaCMC v1.x the update of the status could take several hours in worst case.

3.1.2 Individual Warning, Alarm and Critical limits

It is possible now to adjust warning, alarm and critical threshold levels independently from each other. Upper and lower limit configuration can be added to each trend.

It is possible to adjust the threshold in the trend analysis legend, the level adjustment application and the asset configuration.
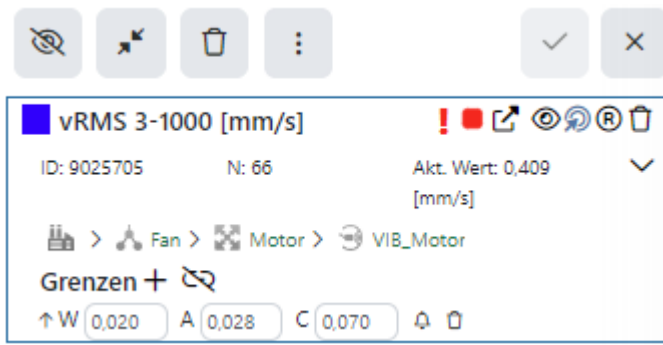

Figure 7: Level adjustment - Trend Analysis

Figure 8: Level adjustment in Level adjustment tool

Figure 9: Level adjustment in Asset configuration

3.2　Trend filters

In ibaCMC v1.x the trend filters (previously called measurement ranges) setting was fixed after assigning it to a sensor or component group. So, the ranges and the filter signals could be just changed by deleting the trendfilter, adjusting the values and reassigning it. With this approach all the current trends were merged and the filtering starts from the beginning.

With the new approach the filtering is done on demand which means that no preprocessing is performed anymore. The user configures a trend filter and assigns it to sensors and component groups. The ranges can be changed also after the assignment.

With this approach you are able to finetune the ranges after assignment and find the best settings.

3.3　Trend analysis

Note

A data migration of the plant is needed to get the following features.

3.3.1　Appling trend filters to multiple trends

If multiple trends with the same trend filter are loaded in the trend analysis window, the filter for all trends can be applied by double clicking on the filter in the trend legend.
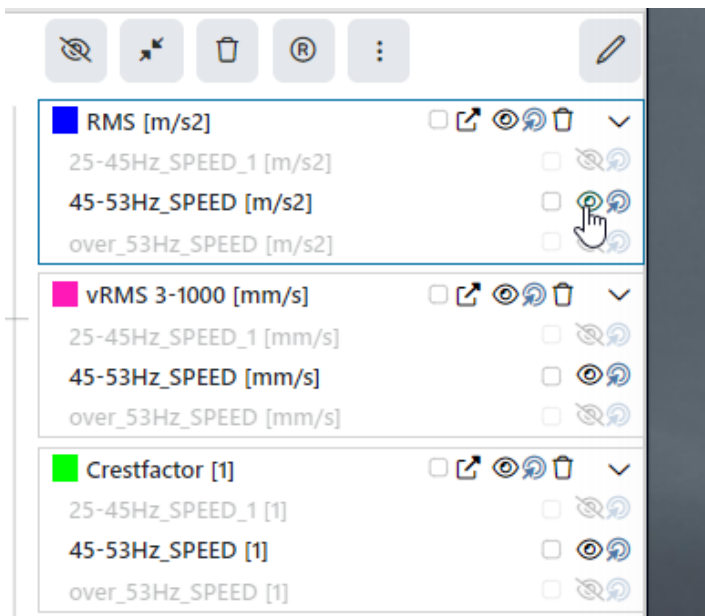

Figure 10: Trend Analysis - Switching trend filters for multiple trends

3.3.2 Trend raw data and averaging view

In ibaCMC v1.x the trends were imported and a separate task calculated the average of the last e.g. 5 trend points from the Com database and stored a new averaged trend value in the Main database.

Because of the fixed average setting the later changes could not be applied to existing trend data.

With the new data structure and downsampling engine the averaging of the trend can be done on demand.

The default downsample interval is 6 hours. That means you get one trend point (AVG) every 6 hours.

3.4 More reliable and stable sensor defect detection

The sensor defect detection was improved so that the sensor defects or cable breaks will be detected more reliably.

> **Note**
>
> To get the benefits, the ibaCMU-S firmware has to be updated to version 3.0.0.

The following improvements were made:

- Improved sensor defect detection and reset also when CMU gets restarted.
- Added logging to the sensor so you can see a history when a sensor defect occurred and when it was resetted.
- Added the ability to enable and disable the sensor defect detection for each sensor.

3.5   Asset Condition Report

> **Note**
>
> A data migration of the plant is needed to get this feature.

With ibaCMC v3.0.0 we also redesigned the Asset Condition Report.

3.5.1 Alarm list and trend status overview

The trend status and alarms are now visualized in a more visual way.

Figure 11: Report - Alarm list and trend status

3.5.2 Data Acquisition Error

In the data acquisition sector, problems with the sensors are listed.

Ⓘ **Data Acquisition Error**

Aggregate Group	Aggregate	Sensor Name	CMU SN	Input number	Error Status
Fan	Fan	#3_VIB_Fan	000019	[1:1]	General defect
	Motor	#2_VIB_Motor_NDE	000019	[1:3]	General defect

Column	Description
CMU SN	Serialnumber of the device where the sensor error occurs.
Input Number	[Module:Channel]
Error Status	Possible errors: General defect (e.g cable break, sensor defect, sensor not connected)

Figure 12: Report - Data aquisition error

3.5.3 Device Status

In the device status section you see the connection state of the devices in the plant.

🔧 **Device Status**

Device Status	Device Name	Devicetype	Serial Number
Online	ibaCMU-S Test	ibaCMU-S	000019

Column	Description
Device Status	Online / Offline / Inactive
Serial Number	Serial number of the device where the sensor error occurs.

Figure 13: Report - Device status

3.5.4 Measurement Rate

The measurement rate area shows how many measurements are made compared to the configured settings. A low percentage can be an indicator that there are problems with the data acquisition or the measurement condition because of changed process conditions.

% Measurement Rate of Snapshots

CMU	Snapshot Name	Σ Total	Σ Successful	%
ibaCMU-S Test (000019)	MC 0 [45]	5640	4821	85%
	MC 1 [46]	1410	1208	86%

Column	Description
Σ Total	Sum of max. possible measurements based on the configuration within the report interval.
Σ Successful	Sum of successful measurements within the report interval.
%	Ratio of Σ successful / Σ Total in %

Figure 14: Report - Measurement rate of snapshots