

imc STUDIO 5.2

What is new

Doc. date created: 2019-03-27



Foreword

Thank you for deciding to purchase our product. We wish you total success in accomplishing your measurement assignments with the help of your hardware and software. If you have any open questions about our products, please contact our Hotline (hotline@imc-tm.de).

Disclaimer of liability

The contents of this documentation have been carefully checked for consistency with the hardware and software systems described. Nevertheless, it is impossible to completely rule out inconsistencies, so that we decline to offer any guarantee of total conformity.

We gratefully accept any suggestions for improvements, please contact our Hotline (hotline@imc-tm.de).

We reserve the right to make technical modifications of the systems.

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The software described in this document may only be used in accordance with the provisions of the "imc Software License Agreement".

imc Software and Microsoft® Windows

imc software runs on the Microsoft® Windows operating system.

GPL Sources

Some components of our hardware use software, that is licensed under GNU General Public License (GPL). A description can be found at the imc STUDIO setup DVD in folder "*Products\imc DEVICES\OSS*".

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Update

Along with the PC software (imc STUDIO), the software comprises components such as device drivers and firmware (imc DEVICES). With a firmware update, the firmware can be loaded into the system. Please check regularly whether any new software/firmware versions are available and perform an update if your version of imc STUDIO supports the new firmware. Further information can be obtained from the imc Hotline or the imc website.

Download links:

- | | |
|-------------|--|
| imc STUDIO | www.imc-tm.com/imc-studio/software/ |
| imc DEVICES | www.imc-tm.com/imc-devices/software/ |

imc STUDIO 5.2R8

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

1.1 Firmware 2.11R8

Field-bus



CAN-Assistant - Messages larger than 4 Bytes

Data units larger than 4 Bytes can be transferred in multiple CAN-messages. The prerequisite is the use of a suitable ECU-protocol: "*UDS*", "*KWP2000*" or "*Diagnostics On CAN*".

imc Online FAMOS



imc Online FAMOS-functions - Converting units

The following functions can now convert units: "*IntegralP*", "*IntegralP2*", "*IntegralZ*".

Using the external editor

Support of external editors such as "*Notepad++*" has been re-introduced. It is recommended to continue to use the imc Online FAMOS-editor. Familiar help functions such as syntax-highlighting or accessibility tools are not supported but might be possible to pre-configure in the external editor itself.

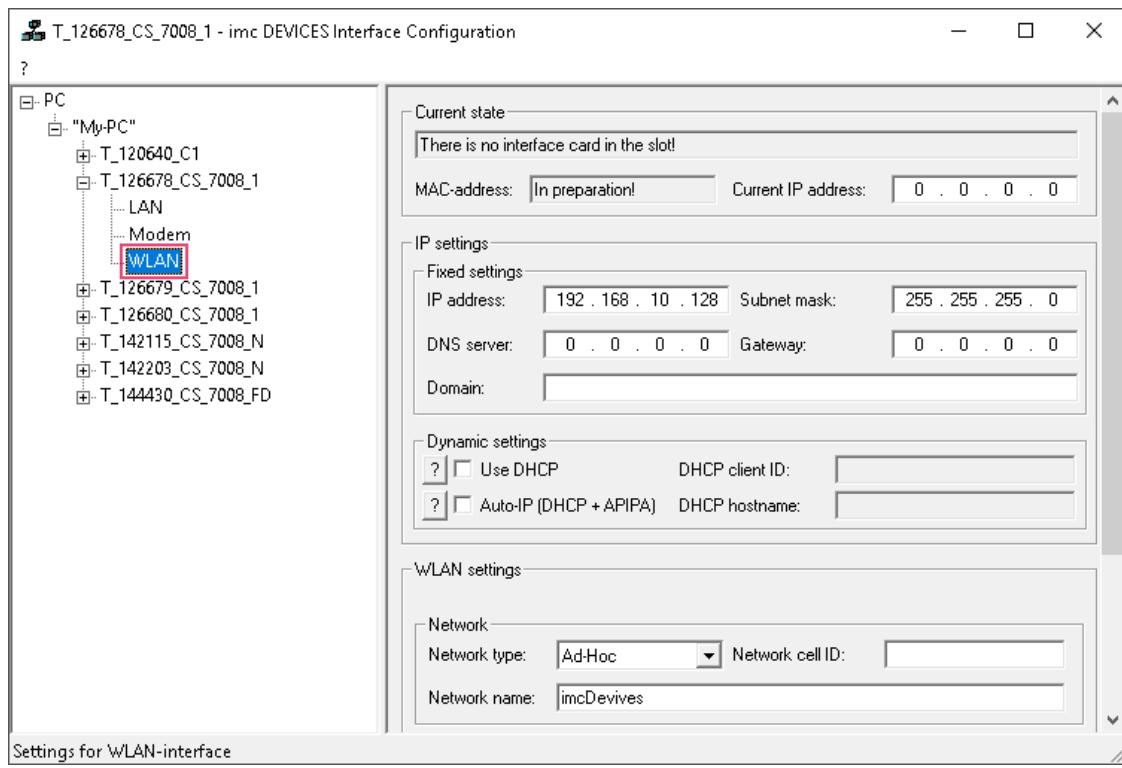
The properties of the respective editors, such as how to close the editor without first explicitly saving, must be taken into account. With "*Notepad++*", it is possible to retain changes which have not yet been saved in this way. This can lead to complications.

Interface Configuration



WLAN-configurations easier to locate

It is easier to find the WLAN-configurations. The page "*PCMCA*" has been renamed to "*WLAN*".



Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
CAN-Assistant - OBD-2-channels	The substitute values were handled incorrectly. Any specified offset was ignored.
Flexray Assistant	Incorrect ECU entries often caused incorrect message to be posted: " <i>slotMatrix.AddAllowedXcpFrame() failed. 2nd</i> ". Now, appropriate information for locating the error is provided.
imc Online FAMOS/imc Inline FAMOS - Editor	Improvement of the Editor's search function. The search function (CTRL+F) now remembers the last search term.
DAC scaling	DAC scaling was not applied. If the DAC was set in imc Online FAMOS, the new value was outputted at the output one-to-one. Now, the scaling set is applied.
imc HiL	Very large imc HiL-files/configurations could not be loaded. The error 5001 was reported: " <i>The field bus system did not confirm the command in time.</i> "
Zero signal level with UNI2-8/DCB2-8	At a sampling frequency of 0.1 Hz and activated AAF, all frequencies were filtered away. Thus, a zero level was always outputted. Now, the AAF is allied correctly.

2 General Changes in imc STUDIO



Module serial number for CRFX-modules is displayed and is available for export

Setup page: "Digital channels": The column "Module SN" can now be added by means of the column selection. Furthermore, this column is included in the export, so that the values are available for modules in the export-file (e.g. the module CRFX/HRENC-4).



Data storage - FFTs are assigned events to rectify time reference

Saved FFTs previously had no events in such cases where, for instance, an overflow occurred. Instead, after loss and subsequent restoration of the connection, any new segments were simply appended to the last one. Now, a new event is generated. This means the new segments are correctly referenced to time.



Device-bits in a Automation-task

CAN-bits and (recorded) DI-bits can now be used in a Automation-task. Thus it is possible to access individual bits.



imc Inline FAMOS-Functions - Converting units

The following functions are now able to convert units: "*IntegralP*", "*IntegralP2*", "*IntegralZ*".

3 Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
Command: Load/Import Variable	The command could not be run in a certain combination of settings. When placeholders were used for the folder and additionally the option "Load/Import All" was selected, a message incorrectly reporting an invalid character in the filepath was posted.
Curve window	<ul style="list-style-type: none"> Scaling of the x-axis (curve window with FFT) always skipped back to "Auto" when loading the experiment. Now it loads correctly. When multiple channels were moved to the Panel simultaneously using Drag&Drop, and a (standard) curve window was selected, the scroll mode was set to "No". Now it is set to "Scroll", as for a single channel. Die Aussteuerungsanzeige übernahm nicht den korrekten Messbereich bei dem Kanal-Messmodus: "DMS" ("Instrument" > "Diverses" > "Physikalischer Wert ±100%").
Data storage	Messages indicating data overflow in empty channels are no longer displayed. When an empty imc Inline FAMOS channel was saved, a data overflow was reported; e.g. if the channel was calculated in an IF-branch which never was run.
Automation	In a certain case, activated synchronization was not observed (Synchronization: wait until event is concluded). The system skipped straight to the next state even if a command was not yet finished. This occurred whenever, before a change was applied, a synchronized event had previously only been triggered once in the routine.

Area	Description
Experiment-template with commands	When starting imc STUDIO, an experiment template is loaded automatically. If the template contained a command " <i>Browse in workspace</i> " attached to a Panel-button, the command did not work.
Installation	Using the frame setup, the fieldbuses ARINC and AFDX were not included in the installation for the firmware (imc DEVICES), even if they were selected.
ChannelLoader	Experiments with " <i>ChannelLoader</i> " from older minor-versions could not be opened successfully.

imc STUDIO 5.2R7

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

1.1 Firmware 2.11R7

Field-bus



DBC-import with a defined default sampling interval

If no sampling interval for a message is defined in the DBC-file, then it was set to a value of 100 ms following the import.

Now the default sampling interval defined in the file is used. Messages which have their own sampling interval retain it.

Device properties



Log file with device properties

Whenever changed device properties are adopted, a text file is generated. The filename was edited accordingly. It now also contains the date and time when last changed, in order to provide traceability:

Name of the file: "*PropertiesLog_<Devicename>_yyyy-MM-dd_HH-mm-ss.txt*"

All information on the device properties currently set is saved as soon as the button "Apply" in the Properties dialog is clicked.

Storage location: Firmware folder of the device software, e.g. "*C:\Program Files(x86)\imc\imc_DEVICES_2.11R7\Firmware*".

New hardware supported



imc CRONOS compact LVDT8

The amplifier imc CRONOS *compact* LVDT8 is now supported. It is specially designed for LVDT-measurements (Schaeitz-coils according to the transformer principle and inductive half bridges).

Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
GPS channel names	It was no longer possible to rename GPS channel names.
imc Online FAMOS	<ul style="list-style-type: none"> Values from the Properties-dialog were not adopted by the variable if they contained one or more apostrophes. The Restore-function did not appear with color highlighting in the Editor. In addition, the help text was missing.
Re-connection with device	Re-connection with the device following loss of connection (in cases of network problems such as overload or interference) has been optimized. The connection process has been accelerated so that significantly less measurement data now go missing.

2 General Changes in imc STUDIO

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
Menu ribbon not always up-to-date	The menu ribbon buttons as well as the quick access toolbar occasionally did not correctly reflect conditions correctly. In such cases they were out of synchronization with the device's actual state or to that of other components (e.g. Sequencer [Start/Stop], measurement device status [Start/Stop/Connect/Disconnect]).
Commands > Import Variables	On some device channels, it is not possible to import values from files. These include analog channels, virtual channels, incremental counters, ... Previously, import to these channels was ignored. Now an appropriate warning is posted.
Commands > Import/Load/Export Variables	All entries in the Variables list can be edited simultaneously. E.g. multi-selection can now be used to set the file format for all variables simultaneously when exporting.
Commands > Import parameter set	Import of parameter sets has been made faster in languages such as Japanese, Chinese, ...
imc Online FAMOS and imc Inline FAMOS Editor	<p>The text search has been improved.</p> <ul style="list-style-type: none"> Adopting text from the selection: Highlight text in the Editor. Open the Search-window e.g. by using <CTRL>+f. The highlighted text is entered and prepared for the search.
imc file format	<p>There is a new version of the imc file format. This version provides some advantages for imc FAMOS. The format can only be generated by imc FAMOS as of version 7.4. imc STUDIO 5.2R7 is able to read it but not generated.</p> <p>The data calculated by imc FAMOS are displayed in the Data Browser like all other data, if they are saved along with the measured data. With any older version of imc STUDIO, the data can not be opened. In imc FAMOS, you can set the format in which imc FAMOS is to save the calculated data.</p>
Automation - imc FAMOS data cutting	With imc FAMOS, cutting of data belonging to time-stamped channels is not possible in a Automation-task. Previously, the system failed to block attempts to do so. Now, a pertinent warning is issued upon processing of the configuration.

Area	Description
Automation	pv-variables created in imc Online FAMOS can now be used for Automation-value limit monitoring. Possible applications include adjusting boundary values for the task by means of imc Online FAMOS, or monitoring of the pv-variables.
Scripting	You can now use the NTP-parameters in Scripting.

imc STUDIO 5.2R4

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

1.1 Firmware 2.11R2

Device properties



Textfile for device properties

A text file is now created when changing the device properties. All information of the current device properties are saved as soon as the "Accept" button is pushed.

Storage location: Firmware directory of the device software, e.g. "*C:\Program Files(x86)\imc\imc_DEVICES_2.11R2\Firmware*".

Name of the file is: PropertiesLog_<Devicename>.txt

imc Online FAMOS

See "General Changes in imc STUDIO" > "[imc Online FAMOS and imc Inline FAMOS Editor](#)".

Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Topic	Description
imc Online FAMOS	<ul style="list-style-type: none"> The function <code>otrEncoderPulsesToRpm</code> returned the value "0" if it was configured with two missing teeth. imc Online FAMOS syntax check did not report error when using the function <code>ECUSend</code> with faulty arguments.
CAN-Assistant	When importing a CBA file, there was no messagebox as to whether the existing configuration may be overwritten.

2 General Changes in imc STUDIO



CAN-sending channels in the Bus Decoder

CAN-sending channels can now also be extracted by the Bus Decoder. Previously, only receive-messages could be processed. Now it is also possible under the tab "Validity" to make the associated settings for CAN-sending channels.



imc Online FAMOS and imc Inline FAMOS Editor

- There had been differences between the functioning of the autocomplete mechanisms in imc Inline FAMOS and in imc Online FAMOS regarding the preset.
The "first suggestion" from the list is applied by means of the Tab-key.
When the ENTER-key is pressed for the "first suggestion", a line break is inserted.
When navigating through the list of suggestions, either TAB or ENTER can be used to apply the suggestion.
- The autocomplete mechanism now also displays PV-variables.
- The channel comment is displayed along with the properties (Help-window).
- The font size in the Editor can be altered by means of CTRL+scroll wheel.
- The function key F3 now continues the search, even if the search dialog was closed.
- When opening the text search dialog, a selected text is now suggested as search text.

The changes to the imc Online FAMOS-Editor which had been made earlier have now also been implemented in the imc Inline FAMOS-Editor:

- With code-folding of IF-conditions, the condition is now included in the display. Only the content of this control command is hidden.
- The autocomplete mechanism now provides the matching "[END](#)" for control commands; e.g. if you insert an "[IF](#)".
- Automatic indenting for control commands now also works on subsequent levels, not only on the first.
- In the drop-down menu for the control commands, commands were displayed which were mentioned in comments.



Cross-correlation in imc Inline FAMOS

A new function has been implemented: "[CrossCorrelation](#)". It cross correlates a test channel with a reference channel.



Options

The confirmation prompt appearing upon closing of the Options has been revised. Now, with the project options, it only asks whether changes are to be saved directly. Application options are automatically saved upon closing imc STUDIO.

3 Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
CAN-Assistant	Import of a2l-files has been accelerated significantly.
Widget > Standard	Widgets of the group " <i>Standard</i> " (text box and single-line/multi-line input) can now also resolve variables read out of a measurement by means of "@", e.g. " <i>Name@Measurement#1</i> ". Previously, after saving and re-loading an experiment, only three question marks were outputted: "????".
Commands > Import/Load Variable	The use of placeholders in filenames did not work; they were not resolved. Now, a file can also be specified by means of a placeholder, but the variables to import/load from it must additionally be specified.

imc STUDIO 5.2R3

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

1.1 Firmware 2.11R1

Field-bus



Sending CAN-messages with time synchronization

With the help of Synchronous-Tasks in imc Online FAMOS, it is now also possible to send CAN-messages.

The following constraint must be observed: CAN-messages can (as previously) either be sent in the asynchronous Task, or in a synchronous task. Sending in multiple synchronous tasks is not possible.



FlexRay decoded in the Bus Decoder

The sampling intervals for the Bus Decoder are now calculated correctly according to the settings. The following parameters are used for that purpose:

Sampling interval = gMarcoPerCycle * gdMarcotick * CycleRepetition

However, the imc measurement devices can only output at the fixed sampling rates (... , 1, 2, 5, 10, 20, ...). In the device itself, an appropriate sampling rate is assigned according to this pattern. In consequence, the FlexRay-channel in the Bus Decoder can have a different sampling rate than the FlexRay channel in the device.

Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
imc Online FAMOS Editor	<ul style="list-style-type: none"> With code-folding of IF-conditions, the condition is now included in the display. Only the content of this control command is hidden. The autocomplete mechanism now provides the matching "END" for control commands; e.g. if you insert an "IF". Automatic indenting for control commands now also works on subsequent levels, not only on the first. The Syntax-Check had been performed only one single time. Attempts to repeat performing it without having made any change did not cause the associated error message and position indication to be shown. In the drop-down menu for the control commands, commands were displayed which were mentioned in comments. With the function "SetData", it was no longer possible to send variables' values. The code folding did not work properly in some cases. When control commands appeared in comments, these were identified and evaluated by the folding mechanism and thus caused problems in the display. But not for executing the code. The function "STri" no longer worked with variables. It was only possible to enter fixed numbers as the parameters.
imc CANSAS-SENT	Loads "SENT"-description files to imc CANSAS with "Slow Channels" for a imc CANSAS-SENT-module. Affected channels were adopted into the CAN-Assistant as "passive". They should have been active.
Triggering of imc CANSAS channels	The system failed to observe the event dwell time for imc CANSAS-Fieldbus channels. The setting "0 s" was always used.
Network data storage with saving intervals	<p>With some devices of serial number 19xxxx, it had not been possible to save data to a network</p> <ul style="list-style-type: none"> when a fixed number of saving intervals was set AND only one channel was saved.
imc CRONOS fler with CAN and imc Online FAMOS	<p>Interference on the CAN-Bus had negative effects on the processing of imc Online FAMOS.</p> <p>The resource demands on imc Online FAMOS temporarily spiked (recognizable by higher values with the function "GetSampleCount").</p>
Capacity of memory cards	The capacity of a memory card in the device was far overstated. The imc Online FAMOS-function " DiskFreeSpace " returned incorrect results.

2 General Changes in imc STUDIO



Importing variables to saved measurements

For the dialogs and commands "*Load Variable*" and "*Import Variable*:

It is now possible to specify the target measurement with the command. Thus it is possible to import variables as well as videos to a measurement. No measured data are saved with the measurement. They are temporarily saved in the Data Browser in the measurement folder. Thus they are available for used in the display or for further calculations.

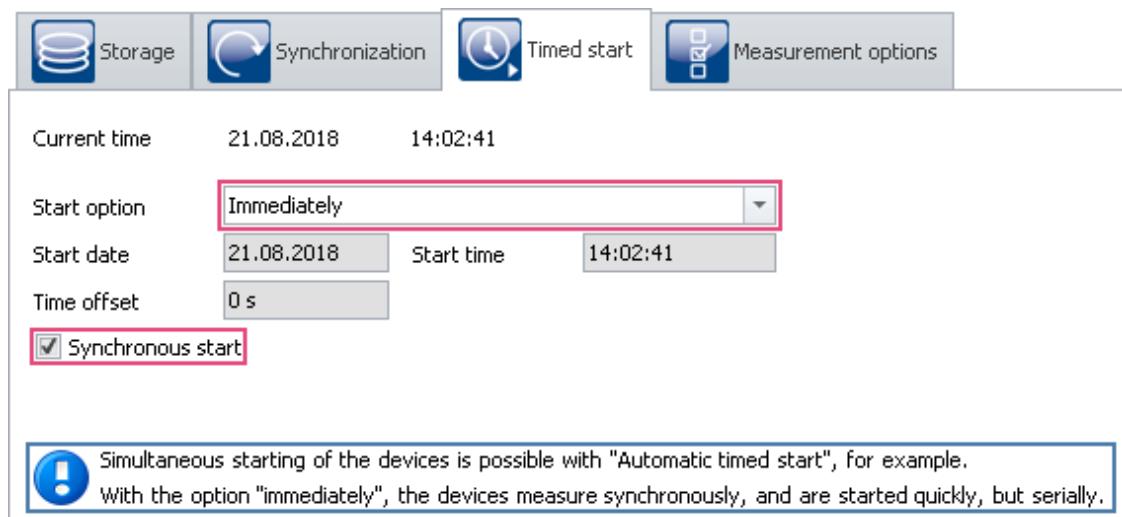


Timed start-settings: Support for synchronized starting of all devices

If the starting option is set to "*immediately*", the devices do not all start simultaneously. Now, a corresponding notification text appears in the dialog for the timed start if:

- the checkbox "*Synchronous start*" is checkmarked and
- the starting option is set to "*immediately*".

Note: Simultaneous starting of the devices is possible with "*automatic timed start*", for example. With the option "*immediately*", the devices measure synchronously, and are started quickly, but serially.



Handling time zones

In imc STUDIO, it is possible for differing time zones and clock readings to coincide.

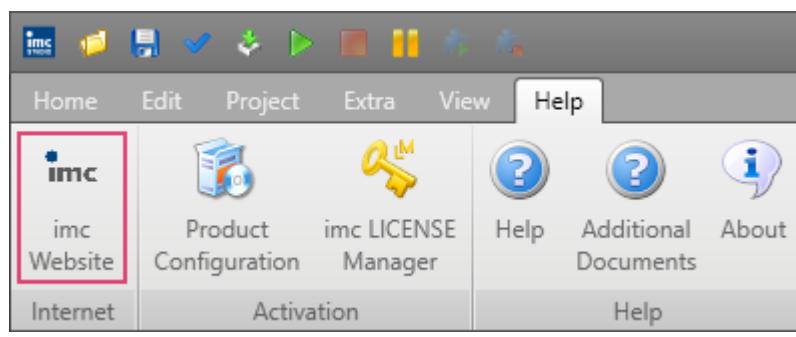
- The external clock (e.g. GPS-mouse) may indicate different time than the PC.
- The devices may be located in different countries.
- On a business trip, the laptop's clock time may reflect a different time zone than the device's.

The clock-Widget can be set for different time zones. For this purpose, there is a new selection available: "*imc STUDIO-Time zone*". With this selection, the clock automatically uses the device's time zone. With the selection: "*Local time zone*", the PC's time zone is used.



Reaching information and help texts more quickly

There is a new button "imc Website" in the "Help" menu ribbon. By means of this button, imc's web page is opened in the browser. Here, the user is provided with a quick way to contact imc, for example.



3 Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
Automation	<ul style="list-style-type: none"> User-defined variables: The designation for the Integer-variable type has been corrected. No adaptations to experiments are required. When an unknown variable (typo) was used in the Automation-editor, the error was no longer reported correctly. For this reason, it was not clear that it was necessary to look for the error in the Automation-editor.
Panel	<ul style="list-style-type: none"> Some commands were missing from the Panel-context menu: "<i>Page Layout for Printout</i>", "<i>Copy Page</i>", "<i>Paste</i>" and "<i>Rename</i>". The Panel-zoom affected the font size and scale of Widgets created. It depended on whether or not the zoom was activated.
Diskstart/Autostart	For a "Diskstart", the selection " <i>at defined time</i> " is no longer available as a starting option. " <i>At defined time</i> " is valid only one single time and in many cases it prevents a measurement from starting. This limitation does not apply to a "Timed start".
Events	It was not possible to trigger events for testing purposes. The function "Start" had no effect.
Commands for events	When, for example, an experiment was loaded directly via a desktop shortcut, a "Browse in Workspace" command associated with the Sequencer event "After Experiment Loaded" was not executed.
Placeholders	Even when path-placeholders were used correctly, at various locations a warning was mistakenly posted which said that the path was not valid.
Powertrain Monitoring	The button "Powertrain Monitoring Panel" caused an error message to appear; the dialog did not open.
User administration	Access rights for the free-floating curve window were not saved.

imc STUDIO 5.2R2

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

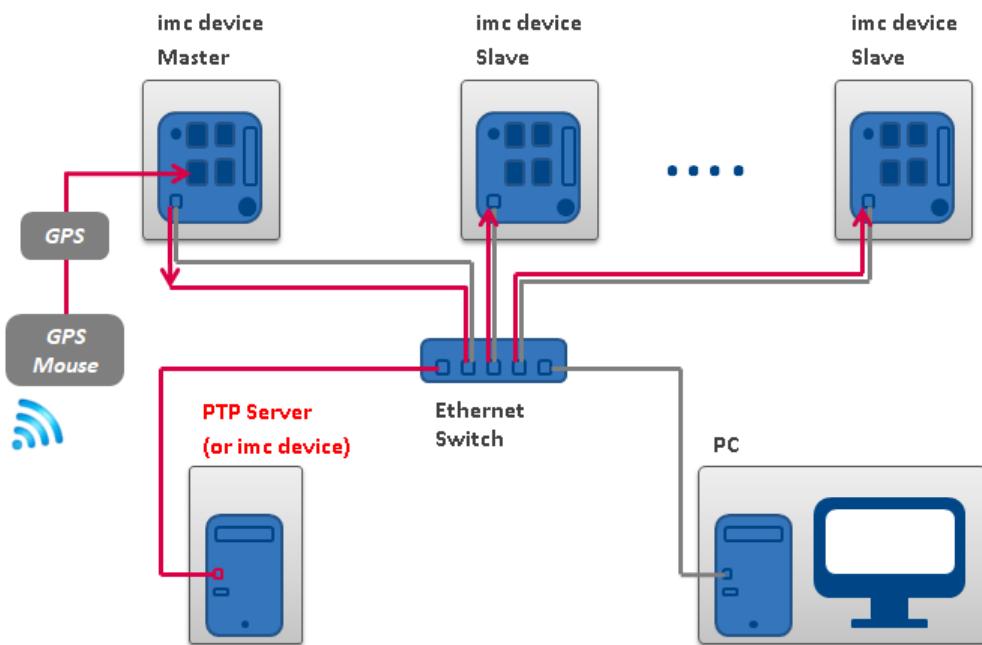
1.1 Firmware 2.10R3

Synchronization



New synchronization type: PTP-Master only

If the network includes no PTP-server true to absolute time, you can synchronize one imc device to a hardware synchronization signal (e.g. GPS). When you define that device as the PTP-master, it will no longer be synchronized by any other PTP-subscriber.



A PTP-master clock synchronizes itself to the GPS-clock. All other PTP-subscribers in the network can be synchronized to this master.

PTP-Master only, and DCF or IRIG-B output

As an additional way to output the time information as the PTP-master, the device can also be defined as the DCF- or IRIG-B-Master.

RAM-Buffer



Automatic adjustment of the RAM-buffer (e.g. for high-speed channels) – Corrections no longer required

When multiple high-sampling-rate channels are used, the RAM-buffer in the device may eventually become insufficient. In the past this caused the following error to occur:

"Insufficient memory in device! Please observe the RAM buffer time of the channels and the number of triggers."

Previously, "auto" signified a fixed value which depended on the device class. In all systems having an aggregate sampling rate of 400 kHz or more, the buffer duration was 10 s. In the new version, the setting "auto" now dynamically adjusts the RAM buffer to between 2 seconds and 10 seconds.

Existing experiments do not need to be modified. "auto" had been the default setting. Thus, the new function is used immediately unless the buffer had been set for a fixed value.

imc Online FAMOS: Events-channels



OFA_Events-channels now retain their settings upon transfer to a different device

Since the channel's default name always depends on the device, the channel is newly created upon being transferred to a different device. However, this means it also loses all of its settings. For instance, the setting which determines whether the channel is to be saved. Additionally, Widgets do not display the new channel, since they still reference the old names.

Now, the channel keeps the name. Even if it no longer fits the device name. But the advantage is that channel transfer is now possible without any corrections needed.

Tip: Assign an appropriate and distinct name to the channel. To do this, open the imc Online FAMOS-editor and there, open "*Properties*" (F5). Here, change the name for the OFA_Events-channel.

2 Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
Sequencer	In some cases, the selection in the table and in the event area jumped to the top. In consequence, it was continually necessary to scroll to the desired line.
Automation	<ul style="list-style-type: none"> An internal channel is saved along with the measured data, if an imc FAMOS-event is attached to a "State". This channel is now no longer saved. Extending a "State"-element (across multiple tracks), or reducing its extent was not recognized as a change. If that was the only change to the Automation, it was not reflected upon next starting the measurement, nor saved along with the experiment. Now the change is recognized correctly. Upon starting measurement, the preparation process is accomplished correctly.
Widgets	Some Widgets were slightly shifted in location when an experiment was loaded.

Area	Description
Curve window	A curve window made substantial demands on software resources if a segmented channel (e.g. an FFT) with the following settings was displayed: Scroll mode: "Scroll" and X-axis " <i>logarithmic</i> ".
Panel	Variable names which contained the German keyword "Messung" were not supported. Widgets displayed yellow warning triangles.
Error upon moving between pages	The process of shifting from the Trigger-page or Power Quality to the Panel has been corrected. In some cases, the page was changed so that it became necessary to restart imc STUDIO.
Licenses via the License Server	When the connection to the license server (network licensing) was temporarily lost, imc STUDIO would close automatically after some time. Now, instead of that a message box appears in the foreground until the connection has been re-established.

imc STUDIO 5.2

1 Firmware and new hardware

This imc STUDIO version has been released along with the following firmware versions (imc DEVICES).

1.1 Firmware 2.10(R2)

Synchronization and supported firmware



The synchronization between PC-components and the devices has been improved

The PC virtual clock's (VRTC) adjustment algorithm has been revised; in consequence the synchronization of PC components to the device clocks is more precise. This applies to Video or 3rd-party devices, for example. The new VRTC only works in conjunction with appropriate firmware versions: 2.10 or higher. For this reason, it is not possible to use older firmware versions. Devices of Group 5 and higher (as of serial number 140000) support the new synchronization precision level. With older devices, there is no change.

This change does not affect synchronization between devices, but only between the PC-components and the device.



Note

Older firmware versions are no longer supported

imc STUDIO 5.2 only works with firmware as of Version 2.10.

Hardware



imc SPARTAN/LVDT16

New amplifier imc SPARTAN/LVDT16 is now supported. The amplifier is specially designed for LVDT measurements (Schaevitz coils according to the transformer principle and inductive half bridges).

Data storage on device



Minimizing data volume requirements on the device hard drive by means of compression

For certain channel types, it is possible to reduce the disk space requirements (file format: "imc FAMOS ZIP"). In the background, the file size is minimized by means of zip-compression. The result depends accordingly on the nature of the signal.

Data compression of the following channel type is newly introduced:

- digital input-ports

In total, data compression is thus available for the following channel types:

- analog/digital field-bus channels
- log channels of the CAN-Field-bus
- digital input-ports

GPS



GPS channels can now be renamed. Thus, the name can be selected to match the application.

Field-bus



CAN-Assistant

- Import and export via CBA file can now be executed individually for each node.
- It is now possible to convert a "send message" into a "receive message" or vice versa.
"Edit" menu of the CAN Assistant: "*Transform messages*".



ARINC-Assistant

- Reception of BCD labels is now possible in reverse order.
- BNR and BCD can now be defined by factor and offset.

Field-bus



FlexRay

- The FlexRay-log channel can now be decoded by imc STUDIO during the measurement.
Decoding after the measurement by imc FAMOS is possible.
- UpdateBits are now supported: PduUpdateBits and SignalUpdateBits.

Note

Update Notes

By adding the FrameDescriptionBlob, it is possible that previously created FlexRay configurations show an "Error in the cluster...". In this case, the value "*{ResultName}_Fdb*" must be entered in the FlexRayCluster properties under "*Construction rule for channel names in the FrameDescriptionBlob*".

The screenshot shows the software's measurement setup and a detailed properties dialog for a FlexRayCluster.

Measurement setup:

Slot	Name	ID	Comment
Slot 2	FlexRay-Cluster 1	FlexRayCluster01	
	Frames		

Properties Dialog:

Property	Value
Name	FlexRayCluster01
Comment	
Construction rule for channel names	(Clu)_({Fra})_({Sig})
Construction rule for names of Monitor channels	(Clu)_({Fra})_({Sig})_mon
Construction rule for BitPort channel names	(Clu)_({Sig})
Construction rule for names of BitPort Monitor channels	(Clu)_({Sig})_mon
Construction rule for ECU channel names	(Clu)_({Ecu})_({Sig})
Construction rule for names of ECU Monitor channels	(Clu)_({Ecu})_({Sig})_mon
Construction rule for channel names in the FrameDescriptionBlob	(ResultName)_Fdb
Construction rule for names of bus- and error-logging channels	(Clu)_({Sig})

TEDS



When reading in the channel settings from TEDS, the sampling rate is no longer accepted. If more than two different sampling rates were read in via TEDS, this led to aborting in the past.

2 General Changes in imc STUDIO

Improved window handling and recognition of changes to views

A new technology is now used for the software interface. In consequence, there are a few new functions and adaptations in terms of operation techniques. Additionally, some issues and problems have been resolved.

- The tool windows now have a defined width. The width doesn't change when the tool window is pinned.
- The logbook is now opened even when a dialog has the focus. E.g., in the past the logbook was not opened if saving of a Diskstart configuration failed due to an error. Now the user sees immediately where the problem is.
- Adaptations of the user interface, such as changes to the order of columns on the Setup pages, are detected automatically. When you close imc STUDIO, there is an explicit prompt asking whether to save the changes with the view.
- The buttons at some locations in the ribbon were not operable.

The list of operating systems supported has been revised

Supported operating systems

Windows 10

Windows 8.1

Windows 7 (32 Bit; recommended: 64 Bit)

This gives us better ability to accommodate the most up-to-date operating systems. It is possible to delete old components such as ones needed by Windows XP, which has the effect of streamlining the system.

3 Setup and Device Control



No more loss of data due to forgetting to save

Data storage on the PC is now activated for all channels by default. This applies to all channel types such as analog, virtual, Field-bus channels, etc. Thus, data loss is prevented, since the option can no longer be selected by mistake. If data storage is not desired, it can of course be deactivated.



Reference

If this function is not desired, you can deactivate data storage also for newly created channels by means of "Default values".

For a detailed description, see the user's manual under: "*Setup - Device configuration*" > "*.Ribbon*" > "*Configuration*" > "*Default Values*"



Single trigger release now no longer default

The amount of trigger releases is now pre-set to "unlimited". Any trigger count limit must be set deliberately instead.



Secure connection to the device via imc REMOTE SecureAccess

"imc REMOTE SecureAccess" enables direct and secure access to a device even when there is an activated firewall. There is now the possibility to add a device to the measurement by means of "imc REMOTE SecureAccess".

Note

Prerequisites

- The option "imc REMOTE SecureAccess" is available for a price and is protected by an activation code.
- Only imc devices from serial number 140000 onward are supported.
- For transfer via secure https access, a certificate obtained along with the installation purchase. This certificate has an expiration and must be renewed annually. After expiration, the system provides notification that the certificate is no longer valid. Depending on the security level set for your IT environment, you may no longer be able to establish a connection with the imc device. In this case, contact the imc Hotline and your IT-administrator.

Saving characteristic curves from an experiment

In the tool window "Sensors" under the heading "Connected sensors", any imc STUDIO characteristic curves used are indicated. Unless the program knew these characteristic curves for other reasons, they could not be used in different experiments. You now have the option of copying the characteristic curves by means of Drag&Drop to the group headed by "User-defined characteristics". Thus, the characteristic curves are known to all experiments and can be used in them.

Security during password entry

Passwords are no longer displayed visibly. This had affected accessing of a network drive when saving data from a device.

Hiding of settings which are not applicable

For histograms, it had been possible to activate circular buffer memory. This is now no longer possible since a histogram contains no time information.

Deleting imc CANSAS from the configuration

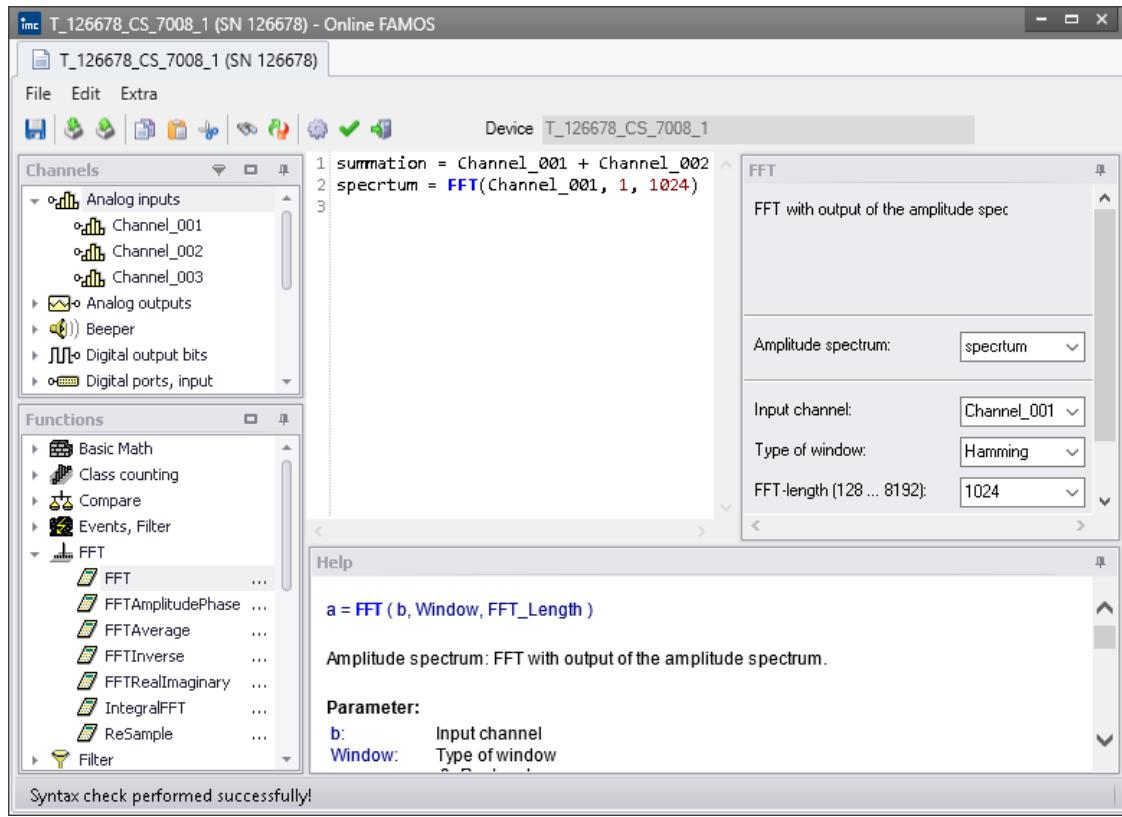
Previously, the imc CANSAS configurations could not be deleted from the CAN configuration if imc CANSAS was not installed. This is now also possible with newly created experiments. For experiments created with imc STUDIO 5.0 or older, this remains not possible.

4 imc Online FAMOS



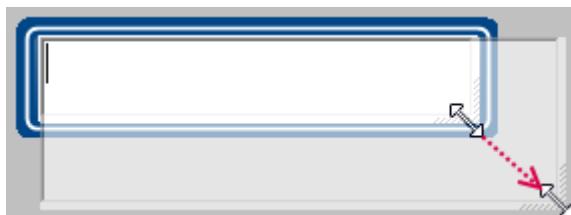
imc Online FAMOS's editor has been modernized. All functions belonging to the imc Inline FAMOS editor have been adopted into it.

In particular, the Editor's syntax support and user input via the Formula Assistant deserve mention. The Editor now comes with all familiar functions of a script editor in order to offer support in making entries. For instance, by offering suggestions while the source text is entered.



5 Panel, Widgets and Data Browser

Text-Widget - More room for the entry



The space for entering text is often not sufficient. The text-Widget has a fixed size and entry is additionally impeded by scroll bars. Now it is possible to enlarge the input box using the mouse. As soon as the entry is confirmed, the input box's size re-adapts itself to the Widget.

Exact specification of Widget: Automotive, Industrial and Designer - "Input, Output" > "Text"

A new type of variable facilitates the embedding of system information in the report

#	Name
1	Current measurement
	Device system variables
	System_T_160046_CRFX_2000
	Connection 1: Data rate
	Device: Client count
	Device: Disk size
	Device: Free memory
	> Monitor
	> SystemClock
	> Display variables
	> Ethernet bit
	Local system information
	Computer
	Drive
	C
	Available free space
	Total free space
	Total size
	> D
	Process
	Process: GDI handle consumption
	Process: handle count
	Process: physical memory consumption
	Process: private memory consumption
	Process: virtual memory consumption
	> Process vector variables
	Trigger
	Trigger_48
	Event number
	State
	Trigger time
	> Virtual bits

"Complex variables" enable a tree diagram structure to be established within the Data Browser. The following variables are displayed as "Complex variables": Device system variables, local system information, and triggers.

All these variables possess various types of information which are now displayed separately and which can be moved to the Panel by means of Drag&Drop.

Improved working with the zoom in conjunction with adjusting the page size

The zoom factor is now deactivated when the Panel page is adjusted to the window size. Previously, the zoom was taken into account, with very diverse results.

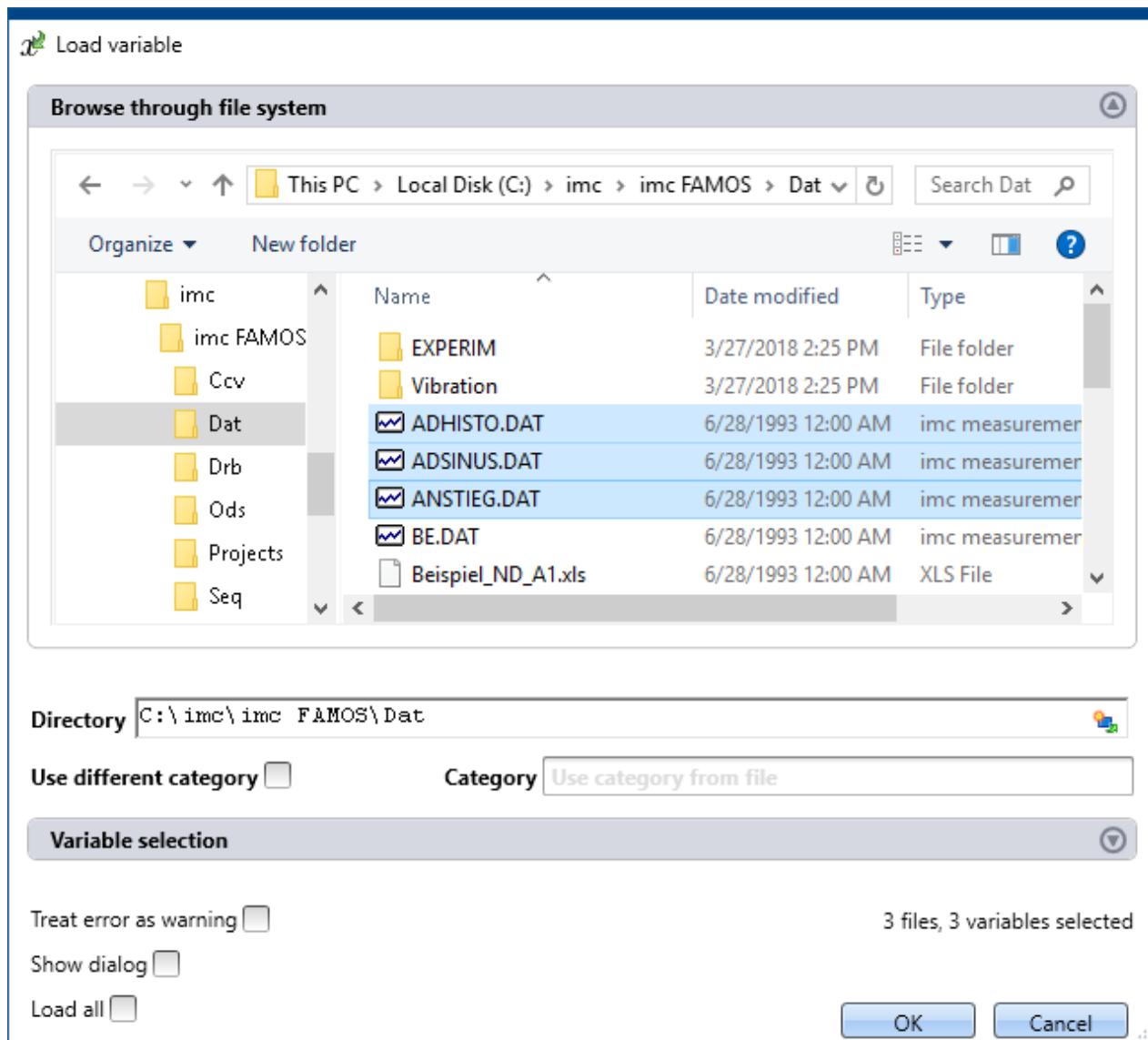
6 Commands

Easier operation of "Load variable" and "Import variable"

The functions in the Data Browser and the associated commands "Load variable" and "Import variable" have been revised. (Background info: "Load" sets up the variable and "Import" writes a new value to existing variables)

As a result of this revision, file selection is faster.

In the upper region there is an Explorer with which to select a file:



Here, you can navigate to and select files by means of the familiar "Explorer"-functions. After selection, you can close the dialog with "OK". All selected data are loaded and selected for the Import command. This simplifies the operation method and makes it faster.

If you don't select any file in the Explorer, all importable files belonging to the current folder are automatically selected.

Below the file selection window, there is an input box for the folder path, which can be used as an alternative for specifying the file(s) desired. Here, you can enter placeholders () or paths which only exist once the command is run.

Using the buttons () near the right edge, you can, for example, expand the Variables area. You can also make additional settings such as

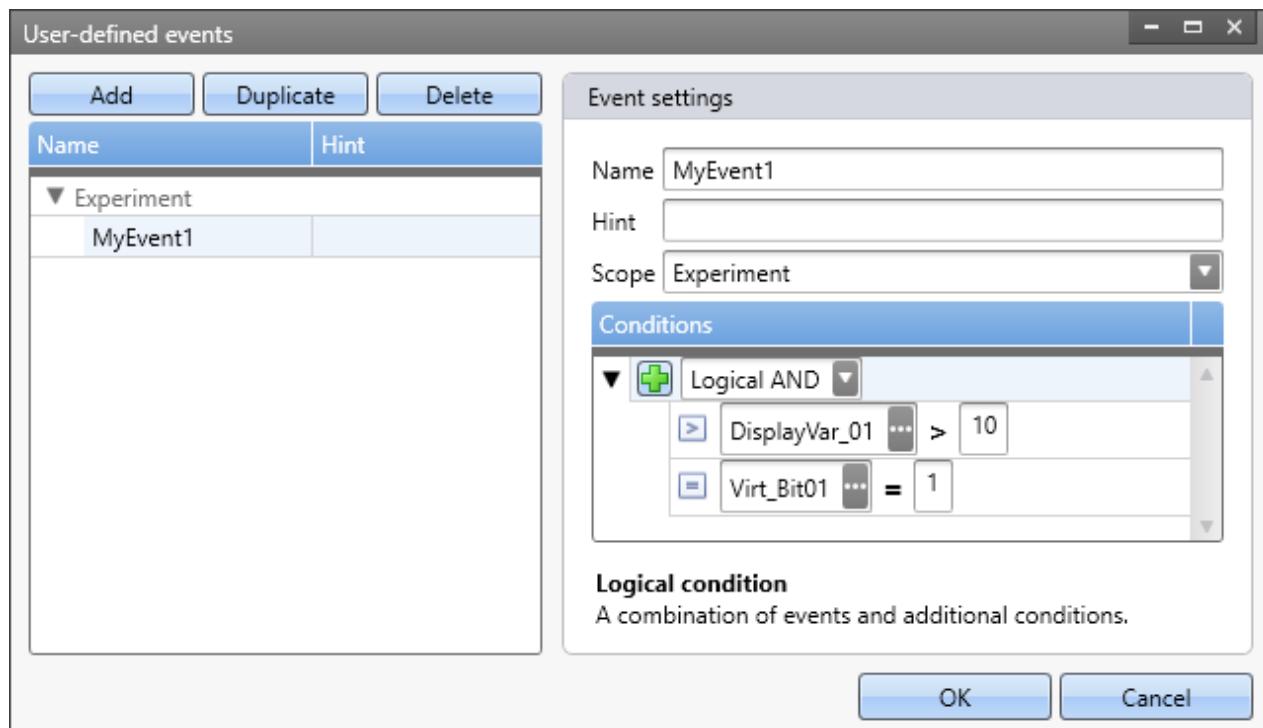
- selecting/de-selecting files or variables by means of the checkbox (). For such cases, for instance, where not all variables belonging to a file are to be loaded.
- adding additional elements. For the case where the variable only exists once at the command's runtime.

7 User-defined events

A better overview and more options for your application

Combining two events with each other? This is now possible. You can now apply a variety of logical operators to your events. Thus you can now easily create compound events which previously were not possible.

Using the new Editor, you have an extensive overview of your events. No matter what their scope or type. All are displayed in one dialog and can be set and edited directly.



Example: The event is triggered if the Display-variable is above 10 AND the Virtual Bit equals 1.

8 Installation

Silent product installation with pre-made configuration

To obtain uniform installation on multiple computers, the Setup program can be pre-configured.

Subsequently, the installation is performed without interruption or any additional entries to make.

Toward this end, the configuration is saved in prepared ini-files. The configuration is imported from these file and applied.

You can generate the ini-files automatically. For more information on this topic, see the user's manual: "Setting Up" > "Information and Tips" > "Unattended Installation - Silent Installation".

9 Miscellaneous optimization

Alongside fault removal, the following important improvements have also been implemented:

Area	Description
Sequencer	Logbook entries from the Sequencer were not hidden. Information entries in the logbook which were attributable to the Sequencer were not always correctly assigned the category "Information" and were not hidden for that reason.
Installation and product configuration	<ul style="list-style-type: none"> • The component "imc STUDIO Automation Engine" always needed to be activated first for the purpose of Runtime functions. Now it is active by default in all Editions, just like all other "Engine"-components. • Subsequent correction of the product configuration is no longer necessary. In the process of installing imc STUDIO Monitor, the product configuration was not always configured correctly. For the "Developer" Edition, the Widgets and the Sequencer were not activated. • Un-installing "imc Documents" - On some computers, the process of un-installing "imc Documents" froze and was not concluded properly.
Project management	The project management dialogs now filter out "non-matching" projects. These include, for instance, the dialogs " <i>Save As</i> ", " <i>Manage Project</i> " and " <i>Open Experiment</i> ". "Non-matching" projects can refer to the imc STUDIO projects for imc WAVE, and vice versa. Use of the same database is now possible, but not recommended.
Setup and Device control	With the strain gauge measurement range, the superfluous sign, e.g. " \pm -770000 μ eps" is now omitted. Now, the readout is correctly " \pm 770000 μ eps".
Panel and Widgets	<ul style="list-style-type: none"> • Fitting the page size of tiled pages - Errors in the fitting of the page size have been resolved. There had been problems with tiled pages, which were also even magnified. • Multiple copied Widgets are now inserted with slight indenting, so that they are not all placed on top of each other. • Widget: "Table" - Text-zones - For text-zones, it had been possible to set ranges, which caused undesired effects. Text-zones now no longer have any ranges. • Widget: "DIO" - If the Widget was linked with a user-defined variable, then one CPU core was at full capacity if the variable had the value "0". • Widget: "Image" - Using the setting "Center image" caused the image to become fuzzy when copied and changed its position.

Area	Description
Data Browser	<ul style="list-style-type: none"> If the "Measurement settings" associated with a measurement are loaded from the Data Browser, a complete experiment is loaded. When you click on "Save", there is a prompt for confirmation that you intend to overwrite the current experiment, since it represents an older state of the experiment. However, this prompt did not appear when the user saved upon exiting imc STUDIO. The variables-functions (Export/Import/Load) via the Data Browser always needed to have their settings made from the beginning. Now, when the function is called the next time, the system automatically targets the most recent path. Other settings also remain in force so that they do not need to be reset each time.
Commands	<p>Commands: "Import/Export parameter set", "Import/Export/Load variables" and "Import/Export Panel page"</p> <p>The placeholders "SETUP" and "MEASUREMENT" were previously not available.</p>
Scripting	<ul style="list-style-type: none"> In the Scripting, the Panel-API-functions "ShowPage" and "HidePage" did not work. Linking the curve window with variables by means of a measurement number or a fixed name could not be reversed via script. In the script restoration dialog, the question was no longer visible when the script names were long. When a script was exported as a DLL, no external resources were exported along with it. (Precondition: "Local copy = true"). When an Event-script was created with the storage scope "Project", it still had the storage scope "Experiment".
imc Inline FAMOS	The function " RSFlipFlop " did not work.
Powertrain Monitoring	In the case of very many measurements of large size, it was occasionally not possible to lead the measurements.