

# What is new in imc STUDIO Version 5.0R1

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# imc STUDIO Version 5.0R1 build March 05, 2014

## 1.1 imc DEVICES and new hardware

imc DEVICES has been updated.



### What is new in imc DEVICES

Information on improvements of the imc DEVICES version used is presented in the document:

**What is new in imc DEVICES V2.8R5**

## 1.2 Documentation/Help

Document	Chapter	Description
Index	General Notes	Structural revisions; Minor content changes made
Setup - Advanced Device Functions	imc REMOTE WebServer	New
	imc Display Editor	Structural revisions
	Synchronization	Structural revisions; Changes concerning the conversion to 5.0R1
	Device Hard Disk, removable drive	Structural revisions; Changes concerning the conversion to 5.0R1
	Trigger and Events	Structural revisions; Changes concerning the conversion to 5.0R1
	Fieldbusses > Application-module	Structural revisions; Changes concerning the conversion to 5.0R1
	Fieldbusses > General notes on Field-busses in imc STUDIO	Structural revisions
imc STUDIO (general)	Ribbon > Extra Menu > Options	"Variables Options" is now called "Save current Measurement Data"
Scripting	All	Revised for 5.0R1 and many amendments made
Video	All	New
Devices manuals	imc CRONOS System Family	Updated
	imc C-SERIES	Updated
	imc BUSDAQ	Updated
	imc SPARTAN	Updated

# imc STUDIO Version 5.0R1 build November 14, 2013

## 2.1 imc DEVICES

imc DEVICES has been updated.



### What is new in imc DEVICES

Information on improvements of the imc DEVICES version used is presented in the document:

**What is new in imc DEVICES V2.8R5**

## 2.2 General Notes

- A new imc STUDIO Edition "Runtime" is available. It provides the loading and executing of experiments, that were created with higher editions.
- imc STUDIO 5.0 is compatible with Windows 8.
- The splash screen as well as the imc STUDIO icon have been re-designed.
- The tool windows can be closed and opened.
- The Navigation pane can be hidden.

### 2.2.1 New views

- imc STUDIO starts with a new, simplified view offering all important functions for measurement and visualization.
- New views are available: "Standard", "Compact" and "Complete".
- The Automation- as well as the Sequencer-Editor are hidden both in the "Compact" view and in the "Standard" view. To see these components, either a different view must be selected or the Navigation pane must be displayed. However, execution can occur independently of the view.
- The views "imc", "imcB1", "imcT1" and "imcT2" have been eliminated.

### 2.2.2 Installation/Product Configuration

- The installation setup has been revised, so that for example, imc FAMOS prompts for confirmation to install if a different version of imc FAMOS is already installed.
- The product configuration as well as the product information have been revised.
- After the product configuration has been changed, the necessary restart of imc STUDIO is offered directly in the product configuration dialog.

## 2.3 Setup and Device Control

- The function "Statistics" provides a quick overview of the hardware used in the experiment, as well as of the channels used.
- The module serial number can be added as a column in the Setup and exported as metadata to the saved measured data.
- The channel type "DAC-Outputs" has been renamed to "Analog Outputs".
- There is a new Setup-page for GPS channels.

- The icons in the Setup have been replaced with new icons.
- Complete layouts could previously only be added by means of the "Layout-repository" tool window. Now there is the additional option to add it via the Setup-pages' context menus.
- Changing the behavior of the device variables: Upon loading the experiment, the device variables are now consistently initialized with "0", where the only exception is the device variables, which have an initial value, such as Tunable Parameters from imc HiL or Application Module applications. These are initialized upon loading with the value saved in the application.

### 2.3.1 Assistants

- The assistants (e.g. CAN-Assistant) are only offered now if they are supported by devices used in the experiment.
- Calling imc CANSAS is only offered now if imc CANSAS is installed.
- The assistant for the Application Module's RoaDyn application is available.

### 2.3.2 Progress indicator for device actions

- The window size is adjustable.
- It is possible to scroll in the window.
- For some device actions such as bridge balancing, the progress indicator now displays specific names instead of numbers as hitherto.



### 2.3.3 Supplemental files

- Supplemental files (e.g. characteristic curves (\*.dat) and Messaging-files (\*.msg)) can be listed, imported, exported and deleted within one dialog.
- Importing/exporting of Online FAMOS files is possible.
- Changes to supplemental files are now detected. Before the start of the next measurement, the device is downloaded automatically and the changes are thus transmitted to the device.

### 2.3.4 Measurement settings

- Synchronized start: The default wait time of 4s was too short for experiments involving many devices. The default time has now been raised to 10s.
- It is possible to perform shunt calibration during measurement and the value is displayed.
- The function "Export configuration" provides the export of adjustment values as well as single columns of the current Setup page.
- Adjustment values can be imported.
- The tab "Trigger Events" has been eliminated because all the settings it offered are available on the "Trigger"-page.

### 2.3.5 Saving measured data

- It is possible to save measured data after measurement (the content of the circular buffer, for display and calculations):
  - Save current measurement: Saves all channels without offering a selection of the path; the path to be used, as well as the channel selection, can be set under Options.
  - Save current measurement as: Before saving the data, the path can be selected; the channel selection is set under Options.
- Under Options, the behavior of the "suspend data saving"-button can be specified. This makes it possible to start the measurement without saving of data and then to activate data saving only upon clicking on the button. The precondition for this is that the channels are selected for saving in the Setup. The button's default setting is for the data to be saved when the measurement starts.
- The storage path for the measured data, as well as the measurements' names can be set freely; see [user-defined measurement storage](#) .
- Access to saved measurements and their corresponding metadata is possible by means of the placeholder MEASUREMENT, see [Placeholders](#) .
- Under the tab "Data Transfer" for the individual channels, the device-specific data storage options are shown.

### 2.3.6 Channel Name Assistant

- The preview is now highlighted.
- The preview illustrates exemplary the first three names.
- For the format element "Column value", the parameters "Connector" and "Module number" are now available.

## 2.4 Parameter set

- Using the parameter set export capability, it is possible to export individual parameters of a Setup page. This selection can be activated under Options.
- Import/export of parameter sets could previously only process files in which the variables were arranged in rows and the parameters in columns. Now it is also possible to process files in which the variables were arranged in columns and the parameters in rows .

## 2.5 Metadata Assistant

- The internal names of parameters which were saved in the channel file have been replaced.
- In the Expert view, individual columns of the Setup pages can be selected for export.

## 2.6 Panel

- The Design mode is always available in the Panel-page's context menu and can thus be quickly activated/deactivated. The exception is the fullscreen mode.
- A zoom function for Panel-pages has been introduced.
- The Panel's menu has been subdivided into "Control", "Navigation" and "Design".

## 2.6.1 Widgets

- In order to execute a menu action, there is a dedicated widget "Execute menu action". This automatically shows the picture of the action selected.
- With the widget Input > Numerical it is now also possible to change individual digits of a number using the keyboard and scroll wheel (arrow up/scroll up: increase value, arrow down/scroll down: decrease value). To do this, the desired digit/s must previously be selected.
- The visibility of curve windows can be set.
- Tables: Text which matched variables' names were always resolved. Now, when a variable's name is entered, the name is always displayed. If the variable's value is desired, it must be written in arrow brackets (<>).
- The pushbutton's LED can be hidden under Properties; with newly created pushbuttons it is hidden by default.
- The Standard meter now has the property "Zone Representation".
- The widget property "Factor" has been augmented with the setting "auto". This adds an appropriate prefix (e.g kilo-, milli-) to reflect the value.

## 2.6.2 Navigation bar

- The Playback function is available.
- It is possible to navigate curve windows connected with xy-data sets (e.g. GPS) (note: the background must be set to "Map"):
  - The position slider control is displayed as a circle, like with curve windows which are not linked with the Navigation bar.
  - The Navigation bar's Zoom/Rezoom function does not affect these curve windows.
  - These curve windows are not considered for in the calculation of the visible range.

## 2.7 Data Browser


- The displayed names of measurements are now no longer necessarily the respective measurement's time stamp. The measurement data folder's name is used. For example, for "continuous numbers" the number is displayed. In consequence, the measurement's number also appears in parentheses after the time stamp. If [user-defined measurement storage](#) <sup>7</sup> is used, the name set there is displayed in the Data Browser.
- The grouping by category (e.g. channel type, "User-defined variable", "imc FAMOS") in the Data Browser can optionally be switched off. This setting is made under Options.
- Variables can be grouped by entering a point: e.g. the variables "Axis.x" and "Axis.y" yield a node "Axes" in the Data Browser, under which the variables "x" and "y" are found. It is also possible to group across categories (meaning: independently of the channel type, for instance). To do this, grouping by categories must be switched off (see previous item).
- The traceability of the measurement settings (Data Browser "Load Measurement settings") can be switched off under Options. If the traceability is not required, it is possible to save memory space in this way.
- A filter list is available. Some predefined filters are provided. Additional filters can be created.
- An option is available, whether the assigned symbolic measurement number shall be saved or not.

- Measurements are loaded automatically when one of their channels are linked with Widgets. This behavior can be changed in the Options.
- By means of the context menu, the measurement's name or the fixed channel name can be copied to the Clipboard.

## 2.8 User-defined variables

- The dialog for creating variables has been completely revised.
- User-defined channels can be linked to triggers, report channels must be linked to triggers. If the user does not specify any trigger for the report channel, it is linked to the measurement's start and end. While the trigger is active/during the measurement, data can be written to the channels.


## 2.9 Placeholders

- MEASUREMENT: This is a new placeholder for accessing saved measurements. By means of this placeholder, it is possible to inquire for example the following properties by referencing the measurement name:
  - the measurement's storage path,
  - metadata saved with the measurement
  - start time.
- VARS["example"].PROPS: Using the placeholder PROPS, it is possible to access the properties of variable, e.g. the unit.
- STORAGE: The STORAGE-placeholders are only provided for the purpose of configuring the [User-defined measurement storage](#) 
  - STORAGE.FOLDERNAME: Finds a folder name from the storage settings (e.g. *2013-01-01 08-00-00 (1)*)
  - The result may change during a measurement, e.g. if interval saving is activated. With this placeholder, you ensure that every measurement result is assigned to its own folder.
  - STORAGE.MEASUREMENT: Returns the time and date of the measurement's start (e.g. *2013-01-01 08-00-00*). The result remains constant until the end of the measurement. By this means, it is possible for example to assign each measurement's its own permanent folder.

## 2.10 Project Management

- When loading/saving experiments, a progress indicator is displayed.

### 2.10.1 User-defined measurement storage

- The root folder for the measured data folders can be moved to a different path than the experiment path.
- The names of measurement data folders can be set individually.
- [Placeholders](#)  can be used.

## 2.11 User administration/access rights

- The following can be managed by means of user access rights:
  - Changes of the product configuration,
  - Display of the Options dialog, and
  - Opening the Options dialog from the Panel fullscreen mode.

## 2.12 Commands

- The command configurations have been revised, so that they only close in response to explicit clicking on "OK"/"Cancel".
- The command "Set Variable" has been moved to the group "Variables".

### 2.12.1 Variables commands

- The Variables commands have been completely revised.
- Placeholders can be used.
- Along with \*.dat and \*.raw, additional import- and export formats are possible, e.g. \*.csv and \*.aet.
- Exporting variables:
  - If all variables are to be saved to a file, the filename can be specified.
  - Variables can be exported from saved measurements.
- Importing/loading variables:
  - Along with the folder, it is also possible to specify individual files.
  - Individual file elements can be selected from a file.
- With "Load Variable", it is possible to specify a category, if the category specified for the variables in the source file is not to be applied.

### 2.12.2 New commands

- Stop Sequencer: Stops the Sequencer (group: Flow control)
- Data Saving Assistant: After the measurement is stopped, it is possible to prompt for whether to discard or save the measurement. Additionally, metadata can be saved with the measurement and also the whole measurement can be exported.

### 2.12.3 Revised commands

- imc FAMOS Sequence
  - It is possible to debug the FAMOS Sequence.
  - Result data of a FAMOS-sequence can now be saved.
  - If imc FAMOS is opened from the command, the variables "from FAMOS" in the variables list are displayed in imc FAMOS.
- Set Measurement Number: Use of placeholders is possible.
- Show message box: The "Cancel"-button can optionally be hidden.



- Execute menu action:
  - The selection box has been renamed to "Action".
  - The individual menu actions in the selection list are now grouped differently, so that individual actions are easier to find.
  - In addition to the selected action, a note on the action is displayed.
  - Menu actions which can have two states can be controlled distinctly. An example of this is the action "Design mode", with which it is possible to activate/deactivate the Panel's Design mode in a systematic way.
- The command "Connect and transfer settings" has been renamed to "Transfer device settings".

## 2.13 Sequencer

- The column "Stop on error" can now be configured. It is possible to set whether to stop the Sequencer and if yes, for what errors or warnings.
- The result of the last dialog which was called from the Sequencer, can be evaluated in If-, Switch- and While-conditions, so that it is possible to react on it. The dialogs which can be evaluated are "Show message box", "Panel-page as dialog".
- During the Sequencer is running, canceling dialogs no longer stop the Sequencer. If that behavior is still desired, the result of the respective dialog need to be evaluated. If the dialog response is "Cancel", the command "Stop Sequencer" must be inserted.

### 2.13.1 Events

- Project\_Loaded: The event is triggered when the project was loaded.
- Storage\_DirectoryUpdate: The event is triggered, when a measurement folder is completed or updated.
- Timer-event: The time interval can be changed subsequently.
- For user-defined events, a scope can be defined.

## 2.14 Data Processing

- Processing of single values is possible.

## 2.15 Scripting

- The script examples have been augmented.
- Scripts can be imported and exported.
- The functions "Delete", "Edit", "Run" and "Regenerate Proxys" have been collected under the menu item "Edit".
- Scripts can be assigned to a context. For example, scripts can be defined which start automatically when the experiment is loaded.
- There are type library scripts to which one can write one's own classes and which can be integrated by other scripts.
- There is a class in which the possible values of device and channel parameters can be provided as

constants.

- Attach to the STUDIO process for debugging a script can be made directly by means of an button in the toolbar.

### 2.15.1 Functions

- It is possible to generate Windows buttons and forms in the Editor included and to embed them in Panel-pages.
- The position and size of widgets can be set.
- Commands can be called from the script. They can easily be selected and parameterized using a dialog.
- User-defined variables can be set up with a scope. They appear in the Data Browser in the group "Scripting".
- Devices can be added by their IP-address or the DNS-name.

### 2.15.2 Curve windows and imc FAMOS

- Access to the imc FAMOS kits is possible. In particular, this makes it possible to access curve windows in the Panel via the imc FAMOS Curve Window Kit.
- Curve window configurations (CCV-files) can be loaded.

### 2.15.3 Dialogs

- By altering \*.csscript to \*.cs it is now possible to create forms in the SharpDevelop-Editor. The available selections are "WPF User Control" and "WPF Window".

## 2.16 Logbook

- The logbook has been completely revised.
- In the logbook window, it is possible to filter by categories (information, warnings and errors) and by texts (Search).
- In the Options, you can set whether the logbook opens when information and warnings appear.
- Duplicated messages are grouped and the amount of duplicate messages is stated in parentheses.
- The complete messages (including sender, etc.) can be copied.
- The messages displayed can be deleted.
- The current logbook can be sent via E-mail from the Logbook tool window.
- The logbook viewer offers the ability to open and browse through old logbook files.

## 2.17 Documentation/Help

Document	Chapter	Description
Shared Components:	If / Switch / Loop-While	New: Evaluating the last dialog's answer
Command Reference	Stop Sequencer / Open Logbook viewer / Delete Panel page/ Export Variable / Import Variable / Load Variable / Delete Variable /	New: Command description

	Data Saving Assistant	
Setup	Setup pages	The channel Setup pages have been splitted into channels und variables
	Setup pages > Trigger	Trigger event dialog has been removed Description was moved to Setup page Trigger
	Ribbon	Ribbon revised partly
	Setup page > Experiment/Documentation	Experiment page renamed to Documentation page
Setup - Advanced Device Functions	Controlling data storage > Targeted data saving or saving subsequent to measurement	New: Save current measurement
	Controlling data storage > Measurement storage area	New
Panel	Ribbon	Ribbon revised partly
	Widgets > Operation > Editing	Example: It has been pointed out that the Widget consists of two standard meters
	Tool Windows	Added Tool Window group with Data Browser and Properties
imc STUDIO (general) and Getting Started in parts	System requirements	Win 8 added
	Installation - Preparation	Update description from imc STUDIO 3.x and 4.x
	Installation	Installation description updated
	Product configuration / Licensing	Updated and amplified with Edition Runtime
	Info / Version Information	Updated: New Configuration dialog
	Start	New: Start with new, simplified views described
	Command Line Parameters	Updated: Starting an experiment from the data base
	Navigation pane	Updated: Show and hide
	Tool Windows > Operation	Tool window chooser: Showing/hiding the tool window
	Tool Windows > Logbook	Revised completely
	User Administration	Removed: Login without user administration (no longer necessary)
	Extra Menu	Options amplified
Scripting	Installing additional languages	New
	All	Revised completely
Devices manuals	imc_CRONOS-series_Manual	Updated
	imc_BUSDAQ_Getting_Started	Updated
	imc_BUSDAQ_Manual	Updated

## 2.18 Update Notes

- imc STUDIO starts with a new, simplified view offering all important functions for measurement and visualization. This view does not show neither Sequencer nor Automation. For experiments, that use these plug-ins, change the view to "Complete" or open the Navigation pane via Extras > View > Toll Windows. In the new default view, also the available actions in the ribbon are reduced. If the complete menu is required, switch also to the view "Complete". Notes and descriptions can be found in "Getting

Started" as well as the help.

- During the Sequencer is running, canceling dialogs no longer stop the Sequencer. If that behavior is still desired, the result of the respective dialog need to be evaluated. If the dialog response is "Cancel", the command "Stop Sequencer" must be inserted. The execution of commands connected to any events or Widgets is still stopped when a dialog is canceled.
- Scripts in experiments, that are created with version 4.0, shall be compiled after conversion. Detailed notes on this topic can be found in section "Important notes" in the "Scripting" help.