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Version 1.5
Release Notes
Firmware: OmnisFirmware-1.5.3x1
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Release Notes EN

1 Purpose

License-based PC program for controlling complex OMNIS analysis systems.

By focusing on the sample, the OMNIS software reflects real-world laboratory processes instead of making you adapt your workflows to the software.

The OMNIS software links all information, parameters, and results to the sample. This approach combined with a context-sensitive user interface streamlines operation greatly.

OMNIS is ...

- FASTER – Analyze 175 samples on four workstations completely unattended
- SAFER – Exchange reagents without opening bottles with hazardous contents
- EASIER – Configure work systems intuitively by drag and drop
- MORE EFFICIENT – Whichever parameters you determine and by whichever methods, get the results in a single report

This document describes the new functions, improvements and fixed bugs in the different software versions of **OMNIS**.

2 New functions

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- To ensure safe access to the working area during the operation of the sample robot (e.g. for exchanging racks), the robot arm can be moved into a park position in the manual control of the main module Pick&Place.
- The **Subsample data** report template was replaced by the **Subsample result report** report template. This report template is used to output sample data, subsample data, results, raw data and curves.

- Units can now be defined for numerical fields in the sample profile and in the subsample data for operating procedures.
- In the sample profile and in the subsample data for operating procedures, you can define for fields of the **Text** or **Number** type that this field should be considered for results. The field can then be written on using the **CALC** command, but it cannot be edited later.
- The language in which the reports should be output can be set on the **General settings** tab. The selected option is taken as default for REPORT commands and the output of reports in sample lists.
- The help for the OMNIS Software is now automatically installed when installing the software. The help for the OMNIS instruments still needs to be installed manually.
- The potentiometric evaluation for the **DET** and **MET** commands can be modified retrospectively for finished determinations.
- Racks whose samples are being used in a determination run are now marked with an orange symbol on the **Instruments** tab. The prerequisite here is that a subsample variable with **Use as** = **Rack** is used in the **MOVE TO RACK** command in the **Target position** parameter.

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- A special sequence with commands can now be defined for a method. In case of an error, these commands are carried out before the determination is canceled.
- Results of subsamples can now be recalculated with modified calculation parameters in the **Calculations** subsection.
- The variables, formulas and saved variables that are used for the calculation of results are now displayed in the **Calculations** subsection.
- The graphical representation of the measurement curve displayed in the **Curves** subsection can be copied to the clipboard with a context-sensitive menu command.
- Tables displayed in the **Measuring point lists**, **Raw data**, **Calculations** and **Statistics** subsections can be copied to the clipboard with a context-sensitive menu command.
- Data of selected samples and subsamples can be exported from the sample list as a CSV file.
- New command **EXPORT** for the export of determination data and results in a CSV file.
- In the **PUMP** command, it is now possible to operate the pump time-controlled for a predefined pump time.
- When defining sample data in the sample profile, two field names can now be entered for an input field: **Field name short** for the column heading in sample lists and **Field name long** for designations in reports.

- Special input fields for the subsample data can now be defined for operating procedures. They can be used as variables for the **Target position** and **Sample position** parameter in a **MOVE TO RACK** command.

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- For the **DET**, **MET** and **SET** commands, **fixed point evaluation** is now available for a maximum of 4 fixed points.
- In the **Samples** work area, **system variables** can be defined that are available in the formula editor across systems.
- In the **Results / Raw data** area, the creation date of the subsample is displayed. This date is also available in the formula editor as **Creation-Timestamp.Current.Subsample** variable.
- When creating a new operating procedure, the **Determination start** field is added to the subsample data in **Properties / Parameters** by default.
- The sequence of the sample data in the sample profile can be changed later.
- The sequence of the subsample data in **Properties / Parameters** in the operating procedure can be changed later.
- For the pump module, a name can now be given to each pump in **Properties / Specific data**. The serial number and the article number are also displayed for each pump.
- The **Sample and subsample data** report template can be selected in the **REPORT** command.
- The **Subsample data** report template can be selected in the **REPORT** command.

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- New **TARE** command to tare a balance.
- New **Concat** function to concatenate texts.
- Ion-selective electrodes (ISE), metal electrodes and polarizable metal electrodes can now be added to the sensor list as analog sensors. They can be used in measuring commands and titration commands.

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- Emergency Stop function. Can be activated in **Settings**.
- Ion-selective electrodes (ISE) are recognized by the OMNIS Software and displayed in the sensor list. They can be used in the following commands: **DET U**, **MET U**, **SET U**, **MEAS U**.
- The calibration data for analog sensors can be saved.
- Write protection for sensors that are being used.
- The import of weighing data is now possible. For this purpose, input fields for weight and unit can be defined in the subsample data.
- Copying and pasting commands with Copy & Paste (Ctrl+C and Ctrl+V).

- OMNIS saves the tabs that were open when the OMNIS application was shut down and opens them again at the next start.
- New **EP recognition** parameter for the **DET** and **MET** commands as filter for the output of equivalence points.

3 Improvements

OMNIS 1.5

- If units have been defined for sample data or subsample data, they are displayed in the same field as the value in the sample list.
- Fixed points are marked in curves.
- The results of the fixed point evaluation are displayed in the **Raw data** subsection of the **Results** area.
- For a better overview of the parameters, the parameter groups present in the command parameters and the properties of Equipment elements can now be expanded and collapsed.
- Solutions that are being used by commands in the determination run are now shown as reserved. This means that changes to the specific data of solutions cannot be saved during the reservation and a corresponding message will be displayed.
- When executing a CSV export of sample data and subsample data, the value and unit are output in two separate columns for numerical fields that have a defined unit.
- Previously, when importing weighing data, two input fields had to be defined for **Sample size** and **Unit** in the subsample data. Now only one field **Sample size** has to be defined, into which the **Unit** can also be entered.
- Links to the locally installed OMNIS Help have been added in the tooltips for the program functions and the parameters.
- Update to SQL Server 2012 SP3.
- Update to OmnisFirmware-1.5.3x1.
- Update to Codemeter 6.40b.

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- When closing a sample list with unsaved changes, a prompt appears asking whether the changes should be saved or not.
- When deleting samples, subsamples, operating procedures and methods, a prompt appears asking to confirm the deletion.
- When closing a tab with unsaved changes in the **Equipment** work area, a prompt appears asking whether the changes should be saved or not.
- The possible input range for the **I(pol)** parameter in the **DET Ipol**, **MET Ipol**, **SET Ipol** and **MEAS Ipol** commands has been expanded to –200 - +200 µA.

- The default value for the **Maximum volume increment** parameter in the **DET pH**, **DET U** and **DET Ipol** commands was changed from **Off** to **Unlimited**.
- The default values for the **Dynamics** and **Dynamics pH** parameters in the **SET pH**, **SET U** and **SET Ipol** commands were changed from **Off** to **Unlimited**.
- In the **IF** and **LOOP** commands, a symbol now indicates whether the sequence contains commands or not.
- Update to OmnisFirmware 1.4.3x1.

OMNIS 1.3

- The wizards for software licensing and for function licensing of OMNIS instruments can now be differentiated better with the help of corresponding icons.
- In the sample list, the subsample data is displayed in the same sequence as it was arranged in the operating procedure.
- The example methods were revised and now also contain work systems.
- The calculation of statistical values for results can be deactivated optionally.
- The properties fields for solutions with bottle cap multi-use were revised and improved.
- The list of commercially available buffers has been updated.
- The firmware update for older instruments was strongly improved and simplified.
- Update to OmnisFirmware 1.3.0x4.

OMNIS 1.2

- The automatic entering of weighing data into sample lists has been improved.
- The displaying of statistics data has been improved.
- Sample data and subsample data can be defined as not editable.
- The modification of IP addresses of an instrument is automatically recognized.
- Update to OmnisFirmware 1.2.0x2.

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- EP recognition can be defined in the **DET** and **MET** commands.
- The duplication of sample lists with the subsamples is now possible in the sample list overview.
- The unit of a result can be defined freely in the **CALC** command.
- The editing of the drift control in the measuring commands **MEAS Ipol**, **MEAS pH**, **MEAS U** and **MEAS T** has been improved.
- The **CAL pH** command verifies the content and temperature difference of buffer 1 and buffer 2 to facilitate a sensible calibration.
- Parentheses are now allowed in name fields.

- Significant rise in performance when loading more than 1,000 subsamples.
- More detailed error message in case of invalid method parameters.
- Update to OmnisFirmware 1.1.0x3.

4 Fixed bugs

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- If instruments were disconnected and then connected again, the instruments or individual functional units were sometimes not recognized correctly anymore.
- When carrying out an SET titration with fixed point evaluation, the Metrohm LabLogic service would sometimes crash.
- The sample data and subsample data of subsamples with status "Ready for execution" could not be exported.
- If a determination contained a SET command, the numbering of the equivalence points would disappear in the EP table.
- If the OMNIS Software was closed while a recalculation of a sample list was still in progress, the OMNIS Software could not be restarted again afterwards.
- Trying to close large sample lists again while loading caused the program to crash.
- When recalculating subsample data that contained a field with a formula of more than 255 characters, the sample list could not be saved anymore.
- Variables were added multiple times by mistake when scrolling in the formula editor.
- Commands were not processed in the correct order when recalculating determinations with parallel CALC commands.

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- The gripper arm of the sample robot moved very slowly in certain positions.
- Invalid but not visible parameters (e.g. fixed point outside of permitted range, but fixed point evaluation deactivated) do not cause an error message anymore when saving a method.
- Only one decimal place was allowed for the **Fixed point at pH** parameter in the **DET pH**, **MET pH** and **SET pH** commands.
- The communication with the Baud rate 600 did not work for Sartorius balances.
- The "Metrohm Miami LabLogic" service was not always started automatically when starting the PC.

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- When installing the OMNIS Software for the first time, no database was created.

- The overview list of the operating procedures was not updated correctly after modifications.
- After adding a command to a method or an operating procedure, this command was not selected.
- If one of the **Greatest** or **Last** options was selected for the **EP recognition** parameter in the **DET** and **MET** commands, the **Stop EP** parameter was ignored.
- A system crash could occur when various samples were selected for the parallel determination of big sample lists.
- The Pick&Place modules on the sample robots could not be differentiated correctly when parallel determinations of samples were carried out with two sample robots.
- An analog sensor that was reserved by an ongoing determination could be deleted in the sensor table despite the reservation.

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- The beaker dimensions were mistakenly displayed in the specific data for the pump module.
- Problems with validating input values were solved by removing the **Decimal places** parameter from the sample profile, the operating procedure and the method parameters. The number of decimal places is now only defined with the corresponding parameter in the **CALC** command.
- If a **CAL pH** command was carried out again after reaching the number of calibration buffers defined in the command, the counter was not reset and the result was saved with the **CAL WRITE** command.
- The temperature of the buffer measured most recently was saved as calibration temperature when calibrating pH electrodes. The temperature of the buffer measured first is now saved as calibration temperature.
- For numerical values with a specified number of decimal places, the last digit was not displayed if it was 0.
- The { } index brackets were not entered correctly when importing old operating procedures and methods with indexed variables.
- The OMNIS Software crashed when deleting methods or work systems that had been imported with a *.opro file.
- Wrong values for slope, zero point and variance were shown in calibration reports.
- If stirrers or pumps were started in the manual control and then the **Instruments** tab was closed, the display in the manual control was faulty when opening the **Instruments** tab again.
- A system crash could occur when carrying out the **WEIGH** or **TARE** commands if the balance was not connected.
- Errors caused by invalid values in fields were not recognized during the method check.

- A system crash could occur if text fields in the subsample data were edited retrospectively.
- Full stops were not allowed for the report directory and the report name.
- The current status of pumps was not displayed correctly in the manual control.
- If the gripper arm was moved manually, it was not registered by the software in certain cases.
- The result could not be saved anymore when carrying out multiple connection tests with a RS-232 interface.
- The status of instrument functions was not displayed correctly after licensing instrument functions for the titrator.
- If a solution was connected whose data could not be read, the corresponding error message was displayed multiple times.

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- Software bug in **WAIT** command fixed with **Wait for user action** parameter.
- The **running** status symbol was displayed while the **WAIT** command was active. Corrected to **waiting** status symbol.
- Titrations could not be stopped in case of a connection failure between the computer and the titrator.
- Empty calibration report after pH calibration.
- The instruments were not completely displayed with the **Search in network** function.
- After subsamples had been deleted, an error occurred during the saving of a sample list.
- The header was displayed incorrectly while creating a sample list.
- Pumps were not stopped when a determination was canceled.
- Error message 030023 when executing **MEAS pH** pointed to hardware error instead of invalid input parameters.
- The OMNIS Software crashed when switching between the result windows of various titration processes.
- A method could not be exported if the formula field in the **CALC** command was empty.
- The **Incompatible firmware** error message had not been translated.

5 Support

SQL Server doesn’t start after the PC has been rebooted

OMNIS uses a standard "Microsoft SQL Server Expression Edition" database server. Microsoft installs the server as a windows service using the security credentials of a virtual account called "NT Service\MSSQL $<INSTANCENAME>". These kind of accounts requires the privileges "log on as a service" on the local computer. If the group policy of the network

domain doesn't grant this privilege on these virtual accounts then the SQL server cannot start after those policies have been applied.

For documentation can be found at Microsoft:

https://msdn.microsoft.com/en-us/library/ms143504.aspx

OMNIS doesn't show any live data in the chart control

OMNIS uses LightningChart for rendering graphics on the screen. This high performance control has some dependency on the graphics hardware and the installed display drivers. For good performance results there exists these requirements:

- DirectX 9.0c (shader model 3) level graphics adapter or newer, or DirectX11 compatible operating system for rendering without graphics hardware. DirectX11 compatible graphics hardware recommended.
- Windows Vista, 7, 8 or 10, as 32 bit or 64 bit, and Windows Server 2008 R2 or higher

Enabling EP recognition parameter in existing methods

The EP recognition parameter for the DET and MET commands is only available in methods created with OMNIS 1.2 or further on.

To be able to use the EP recognition parameter in methods created with OMNIS 1.0 or OMNIS 1.1, these have to be adapted as follows.

1. Open the respective methods.
2. Delete the existing DET or MET command.
3. Insert a new DET or MET command.
4. Redefine the parameters of the commands.
5. Save the method under the same name.