

1 Purpose

This document describes the differences between the new software version viva 4.0 and its predecessor.

2 New features

New sample racks

The new sample racks are automatically recognized and can be used in methods:

- 6.2041.770 Sample rack 211 x 11 mL
Recommended for high sample throughput.
- 6.2041.780 Sample rack 65 x 11 mL + 25 x 50 mL
Sample vessel to be used: Bottle PP, 50 mL (6.02743.030)

General

E-mail templates

- An encrypted connection to the SMTP mail server can now be set up. A selection can be made between the **SSL** or **StartTLS** encryption types.

New sample types

- The new **Blank** sample type is available. With the **Blank** sample type, a blank value can be saved in the configuration and used later for the blank value correction of determinations. The **Blank** sample type can be used with the **Standard addition** and **External calibration** calibration methods.
- The new **Electrolyte** sample type is available. With the **Electrolyte** sample type, an electrolyte value can be saved in the configuration and used later for the evaluation of determinations. The sample type **Electrolyte** sample type can be used for the **Calibration method RC**.

Workplace program part

Properties of the tabs in the Live Display 1 and Live Display 2 sub-windows

Pressing the right mouse button in the tab area displays a menu with the following options to choose from:

- **Tabs, single-line (default setting):** Display of the tabs in a row (top or bottom in the live display subwindow) or in a column (right or left in the live display subwindow). Tabs that are not visible can be viewed by scrolling or by opening the menu.
- **Tabs, multi-line:** Display all tabs below one another in rows (top or bottom in the live display subwindow) or next to one another in columns (right or left in the live display subwindow).
- **Tab position (by default: right):** Positioning/rotation of the tabs in a clockwise direction (right, bottom, left, top, etc.).

Database program part

Data export

- The ***.csv (orig. measuring point list)** file type is available for exporting original measurement curves. The file type contains the data measured by the device. The data is not smoothed and spikes are not removed.

Opening a database

- Databases can be opened from the **Database manager** dialog with **[Open]**.

Method program part

Opening a method

- Methods can be opened from the **Method manager** dialog with **[Open]**.

Blank value

- You can now choose whether the blank value is measured in **the same determination as the sample/standard** or in a **separate determination**. If the blank value is measured in a separate determination, then the blank value is saved under **Configuration ► Calibration data** and used for the blank value correction for determinations measured later.
- You can now choose whether the blank value correction is applied to the entire **measurement curve** or to the defined **evaluation quantity**.
- Settings for existing methods:
 - If the previous option **Blank correction with evaluation quantity** was enabled, then the following settings are now set:
Blank measurement: Active, **In the same determination as sample/standard**
Blank correction: Active, **With evaluation quantity**
 - If the previous option **Blank correction with evaluation quantity** was not enabled and no **CALL BLANK** command is available, then the following settings are now set:
Blank measurement: Inactive
 - If the previous option **Blank correction with evaluation quantity** was not enabled and a **CALL BLANK** command is available, then the following settings are now set:
Blank measurement: Active, **In the same determination as sample/standard**
Blank correction: Inactive
- The reports have been extended to include the new settings.

Electrolyte value

- You can now choose whether the electrolyte value is measured in **the same determination as the sample/standard** or in a **separate determination**. If the electrolyte value is measured in a separate determination, then the electrolyte value is saved under **Configuration ► Calibration data** and used for the evaluation of determinations measured later.
- Settings for existing methods: **Measurement of the electrolyte value ► In the same determination as sample/standard**
- The reports have been extended to include the new settings.

3 Improvements

General

New Windows version

- viva 4.0 supports Windows Server 2022.

New Java version

- viva 4.0 runs with Java version 17.

New look and feel

- viva 4.0 has a new look and feel. The new look and feel improves the scaling and sharpness of the user interface on 4K monitors.
It is now possible to choose between a light and a dark display. Operation has not changed.

New versions of third-party software

- Version 3.60.1 of the USB driver software is automatically installed at the same time as the installation of viva 4.0. With the new driver software, viva 4.0 can also be installed after the OMNIS Software has already been installed.

Calibration method RC

- The calibration method **RC** can be used to analyze calibration curves with increasing curve progression.

Workplace program part

HMDE drop formation

- The drop of the HDME (hanging mercury drop electrode) is formed for all possible commands (**LSV**, **DP**, **SQW**, **CV**) **after the stirring time** and **before the cyclovoltammetric pretreatment**.
In viva 3.0 and older, the drop was formed for the **LSV** and **CV** commands before the stirring time.

Database program part

Calibration curve view

- In the calibration curve view of determinations with the **DT** or **RC** calibration methods and the **Evaluation quantity = Measured value** setting, the y-axis is labeled with **Measured value I/I(0)**.
In viva 3.0, the y-axis is labeled with **I/I(0)**.

Database backup monitoring

- An additional status has been introduced for monitoring the database backup. If it is unknown whether a due database backup has been successfully performed, then the database will be highlighted in orange in the database management. This status is used, for example, when a backup is running.
The **[Updating]** button has been newly added. The status of the database backup can be updated with **[Updating]**. The database marking is adjusted accordingly.

Reprocess

- Up to 200 determinations can be reprocessed simultaneously. Until now, up to 40 determinations could be reprocessed simultaneously.

Method program part

Blank value correction

- In the **Evaluation - Calibration** area on the **General** tab, the **Blank correction** check box is then visible only if the **Calibration method Standard addition** or **External calibration** has been selected.

Evaluation start

- The maximum **Evaluation start (Evaluation - Calibration ► Calibration curves)** was increased to **100.00**. The **Evaluation start** parameter is available for the **DT** and **RC** calibration methods. Increasing the value allows more flexibility when evaluating increasing calibration curves.

Configuration program part

PDF settings

- With the **Configuration ► Tools ► Options... ► PDF ► Modifying the document allowed** menu item, it is possible to merge PDF documents created from viva without entering a password.

Calibrator replacement interval

- The **Replacement interval** of the calibrator has been extended. A **Replacement interval** of up to 3,000 days can now be selected. The calibrator no longer needs to be replaced every 2 years.

Calibration data

- The calibration data is now stored client-specifically on the server. Clients see only the calibration data that they themselves have generated. This means that calibration data can no longer be overwritten by different clients.

- The **Sample type** and **Determination start** columns have been added in the calibration data table. The displayed columns can now be defined with **Edit ► Column display...**
The **Calibration method** column is now called **Method**. The **Calibration date** column is now called **Date**.
- Calibration data for which information on the calibration or the intercept value, electrolyte value or blank value is missing is now displayed crossed out. The sample type is **invalid**.

4 Fixed bugs

General

Maximizing the window

- If you were working with multiple screens and viva was not open on the primary screen, then viva was moved to the primary screen when the window was maximized.

Printing the data

- If a user did not have the necessary permissions for directories, then the printing of files (e.g. determination overview, security settings) caused the viva to crash.
The *viva 4.0 Installation (8.0103.8011)* document contains information on the required permissions.

Workplace program part

Calibration data display

- For a determination with the **LAT** calibration method and the **Intercept** sample type, the **Calibration factor** was displayed instead of the **Intercept value** under **Curves # ► Calibration curve overview ► Calibration data**.
- If the intercept was missing for a determination with the **LAT** calibration method and the **Sample** sample type, then the **Date** and the **Determination ID** of the current sample determination were displayed under **Curves # ► Calibration curve overview ► Calibration data**.
- For a determination with the **RC** calibration method and the **Sample** sample type, the **Electrolyte value of the calibration** was displayed instead of the **Electrolyte value of the current sample determination** under **Curves # ► Calibration curve overview ► Calibration data**.

Database program part

No blank value found

- If no value was found for the blank value, then the result is output as **invalid** for all variables that use the blank value.

UTC in reports

- In reports, the time at which the report was generated is specified with Coordinated Universal Time (UTC), e.g. 14:30:10 **UTC +1**.

Database backup

- In client/server systems, databases were not always backed up correctly.

Unit of automatically generated results

- If the **Sample amount unit g** was specified in a determination with external calibration, then the unit was not used in the automatically generated results.

Calibration data display

- For a determination with the **LAT** calibration method and the **Intercept** sample type, the **Calibration factor** was displayed instead of the **Intercept value** under **Curves # ► Calibration curve overview ► Calibration data**.
- If the intercept was missing for a determination with the **LAT** calibration method and the **Sample** sample type, then the **Date** and the **Determination ID** of the current sample determination were displayed under **Curves # ► Calibration curve overview ► Calibration data**.
- For a determination with the **RC** calibration method and the **Sample** sample type, the **Electrolyte value of the calibration** was displayed instead of the **Electrolyte value of the current sample determination** under **Curves # ► Calibration curve overview ► Calibration data**.

Column display in the determination table

- If the columns in the determination table were changed, then this order sequence was not retained the next time viva was opened. Instead, the columns were displayed in the preset order.
- When saving and loading views of the determination table, an error occurred during the following procedure:
Change the order of the columns in the determination table. Save a view of the determination table. Then change the order of the columns in the determination table once again. Load the previously saved view of the determination table.
The order of the columns was not retained in the saved view. Instead, the columns were displayed in the preset order.

Recalculating

- When changing variable assignments, the following procedure resulted in an exception wizard because there was not enough space available:
More than 39 determinations are recalculated. A user-defined result is generated during recalculation. The user-defined result is assigned to a common variable or global variable.
- When recalculating determinations with a **LOOP** command, an error occurred in the following procedure:
Reduce the **Max. run number** in the **LOOP** command during the determination. The reduced number of replications is available in the curve window. Recalculate the determination. After recalculation, the original number of replications is available.
- When recalculating determinations with a fixed value, an error occurred if the fixed value in the method was changed during the ongoing determination.
- Errors occurred when recalculating determinations with manual base point determination that were created with viva 1.1.

Method program part

Corrupted passwords

- If authentication is enabled in the e-mail template, an encrypted password must be entered to send e-mails. In rare cases, the password has been corrupted. Not all digits were shown when a corrupted password was displayed.

Result monitoring

- In methods with result monitoring, an error occurred in the following procedure:
Select a command or a track in the method run. Under **Evaluation - Results ► Monitoring**, delete a result by pressing the **[Delete]** key on the keyboard (not via the context menu). The selected result is deleted. The previously selected command or the previously selected track was also deleted by mistake.

Configuration program part

Port for e-mail notification

- In the **Send e-mail** window, changes in the **Port** field were not saved when closing the window despite confirmation with **[OK]**. The value in the **Port** field was reset to the default value. The window is reached via **Tools ► Security settings ► Login/Password protection ► E-mail...**

Manual program part

Dosing unit without chip

- An exception wizard appeared if a dosing device with a dosing unit without chip was selected under **Manual control ► Prepare** and **[Start]** was pressed. The same behavior occurred with a dosing device whose dosing unit was not recorded in the configuration.

5 Removed features

Avantes Spectrometer/089 Photometer

- The Avantes Spectrometer and the 089 Photometer, colorimetric sensors and all associated commands, variables and functions are removed.
Removed commands:

MEAS Spec	MEAS TMF	CAL LOOP Opt
MEAS Ref	MEAS Opt	CAL MEAS Opt
CAL Spec	MEAS Opt Conc	HEATER

- Existing methods that contain removed components can still be opened and edited.

- Existing configurations that contain removed components can still be imported. The removed devices or sensors are not imported.
If a configuration is imported with the **Colorimetric sensors** subwindow, then the default view with the **Devices, Solutions, Sensors/Electrodes,** and **Dosing units** subwindows is displayed. The same behavior occurs if a **Default configuration view** with the **Colorimetric sensors** subwindow is loaded in the user administration.
- Existing determinations that contain removed components can still be opened and reprocessed.