

ReadMe FluentControl 3.5

Introduction

This document contains important information about FluentControl 3.5. Please read it carefully before installing or upgrading the software.

1. [Installation and Upgrades](#)
2. [Changes in FluentControl 3.5](#)
3. [Additional Information](#)
4. [Compliance Features](#)
5. [Known issues in FC 3.5](#)
6. [FluentSetup 3.5](#)

Important info for systems upgrading from a previous FluentControl version to FluentControl 3.5

FluentControl 3.5 requires Touch Screen Driver DisplayLink USB Graphics Software for Windows v11.1 M1. Do not skip step 4 in the upgrade procedure described in this ReadMe.

Important info for systems with RGA upgrading from FluentControl 2.8 or older to FluentControl 3.5

After upgrading from FluentControl 2.8 or older to FluentControl 3.5, the Gripper Alignment QC Setup Action needs to be re-executed in FluentSetup. A Tecan Field Service Engineer must be on site to perform this test. When upgrading from FluentControl 3.0 or higher to FluentControl 3.5, execution of the Gripper Alignment QC Setup Action is not required.



Important info for Connect & Introspect users upgrading from FluentControl 2.6

If the IoT Client was used to send live status updates to the Tecan Connect app or to send meta-data to Introspect, special steps are necessary before the installation of FluentControl 3.5 to ensure that data is still sent from the Fluent PC. Please follow the step-by-step instructions on page 3.

1. Installation and Upgrades

Considerations before installation or upgrade

Operating system

FluentControl 3.5 is compatible with Windows 10 Enterprise LTSC 2019 (1809) and Windows 10 Enterprise LTSC 2021. The IOT versions of these LTSC releases can also be used. Tecan cannot support issues arising from running FluentControl on an incompatible operating system.

FluentControl uses Windows components, especially the .NET library. Please install the current .NET security and quality updates to prevent a negative impact on FluentControl.

Computer requirements

The minimum requirements to run FluentControl can be found in Chapter 4.1 Computer Requirements of the FluentControl 3.5 Manual. To guarantee a good performance, Tecan recommends using an Intel processor (CPU) of the 10th generation or higher. Using a CPU of a lower generation is also possible, but performance should be verified.

DeckCheck

Since early 2022, all Fluent instruments have DeckCheck camera(s) integrated in the chassis. DeckCheck commands may be integrated in methods to check prior to a run that the worktable has been set up correctly. DeckCheck can be disabled Configure System.

The DeckCheck image comparison algorithm requires the following computer hardware (see also the computer requirements in chapter 4.1 of the FluentControl Manual):

- Use an Intel® Core™ i7 10th generation (Comet Lake) processor with UHD 630, or higher. For example, an i9 or higher generation i7 can be used
- Do not use a processor without integrated graphics (Intel UHD Graphics), except when also using an NVIDIA RTX 2060, NVIDIA RTX 2080 or NVIDIA PP2200 Quadro graphics card
- Do not use a separate graphics card for a DeckCheck configuration, except the NVIDIA RTX 2060, NVIDIA RTX 2080 or the NVIDIA PP2200 Quadro
- DeckCheck does not work when using a separate graphics card not listed above

The speed of the DeckCheck command execution depends on the PC hardware configuration.

Anti-virus software and FluentControl

Tecan recommends refraining from actively scanning hard drives or memory while a run is in progress in Fluent Control. If a virus scan must be executed during a run, exclude (whitelist) the following directories and their subdirectories from the scan:

```
C:\Program Files (x86)\Tecan  
C:\Program Files (x86)\Common Files\Tecan  
C:\Program Files\Tecan  
C:\ProgramData\Tecan
```

User Administration Settings

In rare cases, the Login Settings and Password Settings in Settings > User Administration (Lock Time, Minimum password length, etc.) are reset to defaults during the upgrade. If the User Administration is

used and settings have been customized, please note down or take a screenshot of those settings before upgrading.

DriverFramework & 3rd party drivers

The current version of the DriverFramework only allows the use of drivers for which a license has been purchased. For questions about DriverFramework driver licenses, please contact your local helpdesk.

FluentControl 3.5 is only compatible with DriverFramework 3.1.12 or higher. If DriverFramework 3.1.11 or lower is used, the License Manager will not find a valid license and FluentControl and its sub-drivers are only available in simulation mode (see DriverManager, show hidden drivers).

For certain 3rd party device models or firmware, a newer version of the DriverFramework may be needed. For SiLA2 drivers, please follow the steps in Appendix 1. Your local Tecan helpdesk can answer any questions on this topic.

Upgrade the DriverFramework before upgrading FluentControl. Upgrade the DriverFramework as follows:

1. Upgrade within the same DriverFramework series (e.g., 3.1.2 to 3.1.12): run the latest DriverFramework installer
2. Upgrade between series (e.g., 2.4 to 3.1.12):
 - a. Do not run the installer
 - b. Backup the file "C:\ProgramData\Tecan\DriverFramework\SystemConfig.ini" which contains all driver settings of the current installation
 - c. Un-Install the previous DriverFramework and remove the above file from the folder (keep your backup)
 - d. Install the new DriverFramework
 - e. Add each driver with the same name as before the upgrade
 - f. Consult the backup SystemConfig.ini for names and parameters
3. DriverFramework 3.1.12 or higher no longer allow the use of the dot (.) character in the driver module name. If drivers with such naming are present, uninstall the driver from FluentControl before upgrading. After upgrading, add the driver back without the dot (.) in the name and update any scripts accordingly.

FluentControl must always be started before launching the DriverFramework, otherwise the driver license check will fail.

Before upgrading FluentControl, make sure that the latest versions of any 3rd party device drivers are installed.

Restore Points

Reverting to a restore point is not possible, if the restore point was created before an upgrade to FC 3.5.

Upgrading procedure

When upgrading from FluentControl 2.2 or lower, uninstall FluentControl and run the FluentControl 3.5 installer. When upgrading from FluentControl 2.3 or higher, please upgrade as described below. It is not necessary to uninstall and reinstall FluentControl.

For an upgrade from FluentControl 2.6 with Introspect and / or the Tecan Connect app, consult the instructions below.

Logfiles of the upgrade process may be created by running the autorun.exe through MSIEXEC from the command line:

```
msiexec /i "D:\FluentControlMasterCD\AutoPlay\Install\Tecan  
FluentControl.msi" /L*VX "C:\Fluent_install.log"
```

Change the paths in italics as needed.

To upgrade FluentControl, follow these steps and reboot the computer whenever prompted to do so:

1. Close FluentControl
2. Execute the autorun.exe
3. Execute installation steps in the following order:
 - Step 1: Pre-Installation
 - Step 2: Install FluentControl

FluentControl 3.5 executes a database cleanup step as part of the upgrade process, which may take some time.


- Step 3: Post-Installation
 - (optional) Step 4: Install Sample Tracking
4. Install the DisplayLink driver for the touch monitor from the 'Touch Screen Driver' folder. Please consult the ReadMe for the DisplayLink driver first.


Upgrade from FluentControl 2.6 with Introspect

Does not apply to upgrades from FluentControl 2.6 not using Introspect or the Tecan Connect app.

Important info for Connect & Introspect users upgrading from FluentControl 2.6

If the IoT Client was used to send live status to the Tecan Connect app or to send meta-data to Introspect, special steps are necessary before installation of FluentControl 3.5 to ensure that data is still sent from the Fluent PC.

If the IoT client was not registered (red icon ) , please follow the instructions in the section 'Regular Upgrades' on the previous page

The information described here only applies for upgrades from FluentControl 2.6 and only when the IoT Client was registered (green icon  'Tecan IoT client' in the Windows control bar).

1. Run FluentControl 3.5 autorun.exe
2. Select Step 1: Pre-Installation
3. Reboot the computer
4. Open 'Add or remove programs' from Windows Settings
5. Uninstall the IoT Client Bundle and Tecan FluentControl Preinstaller
6. Run FluentControl 3.5 autorun.exe
7. Select Step 1: Pre-Installation
8. Continue with regular FluentControl upgrade as described in this ReadMe and make sure to re-register the IoT client again after upgrading.

Note:

After registering the instrument, the IoT Client parses all existing log files (again). To avoid the risk of duplicate data and to benefit from the latest parsers it is recommended to delete the data of the instrument in the Introspect Cloud Platform for the time span covering the available log files.

After the Upgrade

A Tecan Field Service Engineer must open FluentSetup to perform any necessary firmware updates and service actions.

Open FluentControl and accept importing the updated labware definitions. This process may take some time to complete.

If activated, open User Administration and verify that the login and password settings are correct. If necessary, revert to the previous custom values.

Please check any scripts, processes and methods for validity and execute test runs.

3D Simulator instrument configuration

It is strongly recommended after installing FluentControl that the instrument's configuration is selected in *Settings > Configure System > Instrument configuration*. The instrument's configuration name is based on the serial number of the connected instrument:



If working with the 3D Simulator to develop methods for a specific instrument that is not connected to that PC, the instrument's configuration can be used. Copy the .config file *C:\ProgramData\Tecan\VisionX\InstrumentConfigurations* from the Fluent PC to the same folder on the PC not connected to the Fluent. Launch FluentControl and select the configuration in *Settings > Configure System > Instrument configuration*.

Registering the IoT client

Information on how to register the IoT Client can be found in the Application Software Manual Introspect, which can be found on the [Introspect webpage](#) after log in.

The Tecan Connect app can be downloaded from the App Store and Google Play Store for Apple and Android devices respectively.

After upgrade from FluentControl 2.5 or lower, Tecan Connect commands are not available

The Common Notification Service (CNS) was replaced by Tecan Connect in FluentControl 2.6. When upgrading from FluentControl 2.5 or lower to FluentControl 2.6 or higher, the CNS command remain available in the Controlbar and the Tecan Connect commands are not present. To resolve this issue, contact the local helpdesk.

2. Changes in FluentControl 3.5

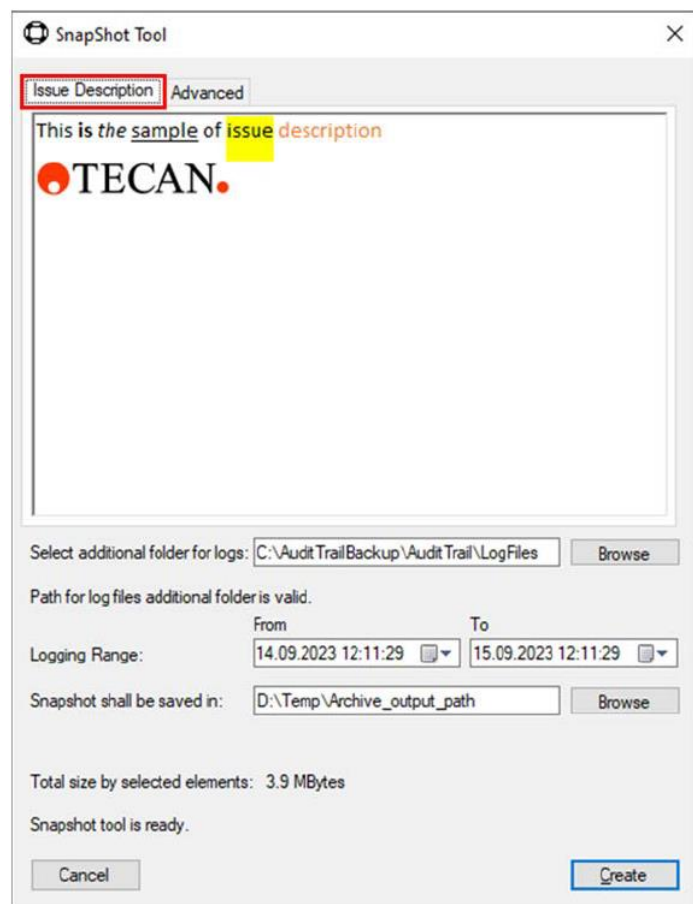
The following changes have been made in FluentControl 3.5

- Snapshot Tool enhancements
- Scheduler enhancements
- Support for pressure based liquid level detection (pLLD) for MultiSense AirFCA
- Support for XY move during aspirate
- Support for dual RGA (available via Labwerx)
- Support for i300 (hardware release pending)
- Integration of IoT Client V2.7
- New instrument worktable layer
- Bug fixes and improvements

See Revision History FluentControl 3.5 for a complete list of bug fixes and changes. See FluentControl Manual for more information on software functions.

Snapshot Tool enhancements

The Snapshot Tool user interface has been updated. In the text field, a description and pictures of the issue that was encountered can be added. A time range for log file collection, a customized path to collect additional logfiles as well as the path where the resulting ZIP file is stored can be defined. The Snapshot Tool automatically collects the IoT Client, Sample Tracking, DriverFramework, Tecan Reader and Washer log files by default. The Advanced tab allows the user to specify what data is and is not collected by the tool.



Snapshot Tool: Enter key always triggers Snapshot creation, even when editing text field (ID 121599):

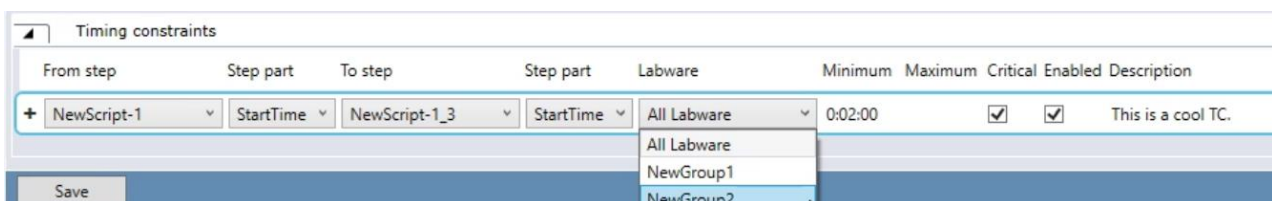
If the cursor is in the text field and the 'Enter' key is used to trigger a line break, the 'Create' button is triggered instead and a Snapshot is generated. If line breaks are needed, please compose your text in an external text editor and copy it to the Snapshot Tool's text field.

Scheduler enhancements

Timing constraints

Timing constraints are not only needed to safeguard the assay's timing constraints, but also ensure that a good plan is created by the Scheduler. Better control over timing constraints and schedule creation is implemented in this FluentControl release, including:

- New vertical scrollbar for the timing constraints section of the Process editor
- New 'Critical' checkbox for each timing constraint. If a critical timing constraint is violated, the run will finish with errors. Non-critical timing constraints may be used to optimize the schedule. Violation of non-critical timing constraints will not cause the run to finish with errors
- New 'Enabled' checkbox for each timing constraint. Disabled timing constraints are not used by the Scheduler. Checking or unchecking this checkbox triggers an update of the created schedule and can be used to find an optimal schedule for your assay
- Timing constraints can now be defined for individual Transfer steps
- Timing constraints can now be defined per labware group

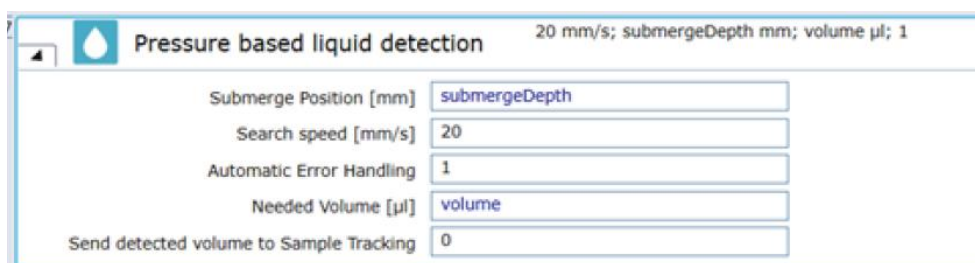


Output files

New variable 'BatchID', type string and scope run, can be used to add a pre-fix to the file names of the Labware and Timing Constraint Reports. If BatchID is set, the file names are "BatchID_LabwareReport" and "BatchID_TimingConstraint" respectively. If not set, the default file names are used.

Software support for pLLD

The 'Pressure based liquid level detection' microscript command is now available and can be used with a MultiSense AirFCA.



Using pLLD with wet tips can lead to wrong liquid level detection results (ID 121298, 121437)

When using pLLD to detect liquid, the disposable tip touches the liquid in the labware and will get wet. Using a wet tip for liquid level detection can lead to incorrect results, for example when choosing the 'Retry' option after a 'Not enough liquid' error when using pLLD. There is a risk of air aspiration.

Error - pLLD Not Enough Liquid Verification Script

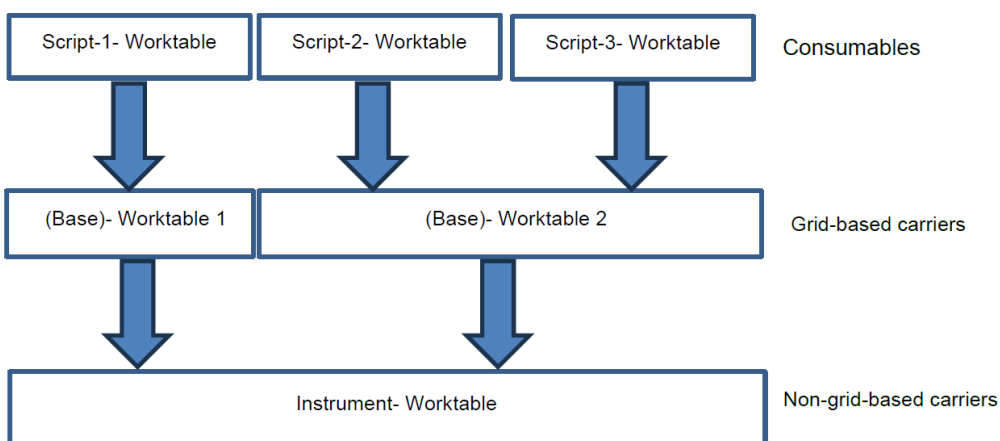
Channel	Result	Available volume	Needed volume	Detected volume
Tip 1	No Liquid	0.00	400.00	0.00
Tip 2	No Liquid	0.00	400.00	0.00
Tip 3	Not Enough Liquid	0.00	400.00	0.96
Tip 4	Not Enough Liquid	0.00	400.00	1.11

XY move during aspirate

The new Microscript command 'Aspirate Liquid with XYTracking' can be used to perform synchronous movements of the pipetting channels in x, y or z. For more information, see the FluentControl Manual and the Fluent Reference Manual.

Instrument worktable for device placement

The new instrument worktable is an additional layer below the script and base worktables and is shared by all worktables in FluentControl. There is always only one instrument worktable that is associated with the instruments' serial number. Any devices or carriers that are bolted onto the instrument or never change position, such as waste chutes or a centrifuge, may be placed on the instrument worktable. When a worktable is loaded in the FluentControl Worktable Editor, the software merges the instrument, base and script worktables. If there are any conflicts, the instrument worktable is prioritized over the base worktable and the base worktable is prioritized over the script worktable. The items that cannot be merged because of a conflict will be shown as orphaned.



The instrument worktable cannot be viewed via the Worktable Editor. To place items on the instrument worktable, open an existing worktable or script and use the right-click context menu of the relevant items. Alternatively, set the custom attribute 'WorkspaceDeltaLevel' to '-2'. Levels '1' and '0' are used for the script and base worktables, respectively. Level '-1' is the default setting, i.e., labware is placed on script worktable and carriers on base worktable.

There is no need to make use of the instrument worktable. For more information, please refer to the FluentControl Manual.

Due to the introduction of this new feature, it is not possible to use methods, processes, scripts, or worktables created in FluentControl 3.5 in FluentControl 3.4 or lower.

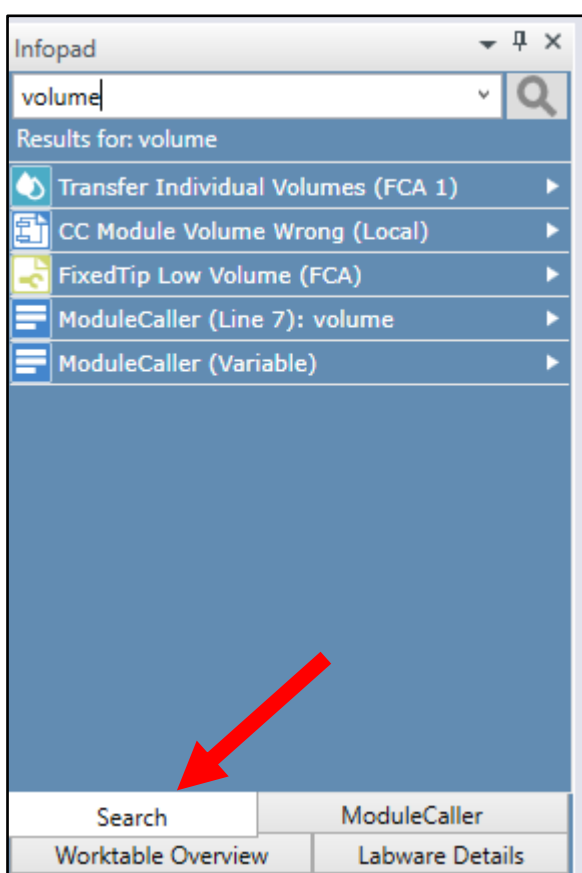
3. Additional Information

Online Help

When FluentControl is in edit mode, pressing the <F1> key will open the Online Help. The section relevant to the selected or displayed GUI elements will be shown. Online Help content is identical to the FluentControl Manual.

Search function

FluentControl has a search function in the Infopad. Search results have the same drag and drop behavior as Controlbar elements. The search is active in all currently open Scripts, Modules and the Controlbar.



Touch monitor configuration

For more information on touch monitor configuration, refer to the ReadMe for DisplayLink driver in the Touch Screen Driver folder on the FluentControl installation medium.

FCA and MCA96 use the same disposable tips

The MCA96 and the FCA use identical disposable tips. However, for correct tip pickup, the arms require unique settings in the tip labware definitions. In FluentControl, distinct disposable tip labware must be placed on the virtual worktable for each of the arm types. It is therefore not possible for both arms to use the same tip box. The MCA96 disposable tip labware can be found in the *Labware > MCA96 DiTi* section of the Controlbar, and the FCA disposable tip labware can be found in the *Labware > FCA DiTi* section.

MCA384 Get Tips and MCA384 Drop Tips commands renamed, new MCA384 Get Tips and MCA384 Drop Tips commands

The MCA384 “Get Tips” and MCA384 “Drop Tips” commands have been renamed to MCA384 “Pick Up Tips” and MCA384 “Set Tips Back” to align with the behavior of the equivalent FCA commands. The “Pick Up Tips” / “Set Tips Back” commands can be used to define from which labware specific tips are to be mounted or where they are to be dropped again. When the “Get Tips” command is used, FluentControl automatically determines where the next available tips are.

Scripts, processes or methods from older FluentControl versions are automatically updated with the new command names during the upgrade or import process. No manual changes to scripts, processes or methods are needed.

Get Tips command performs re-racking for MCA384 with EVA adapter and MCA96

If not enough columns or rows of tips are available in one tip box and additional tip boxes with sufficient tips are present on the worktable, the “Get Tips” command automatically executes re-racking of the tips so that the required number of columns or rows can be mounted. Currently, automatic re-racking is only supported for the MCA384 with the EVA adapter and the MCA96.

Liquid classes created in FluentControl 3.5 cannot be used in FluentControl 3.2 or lower

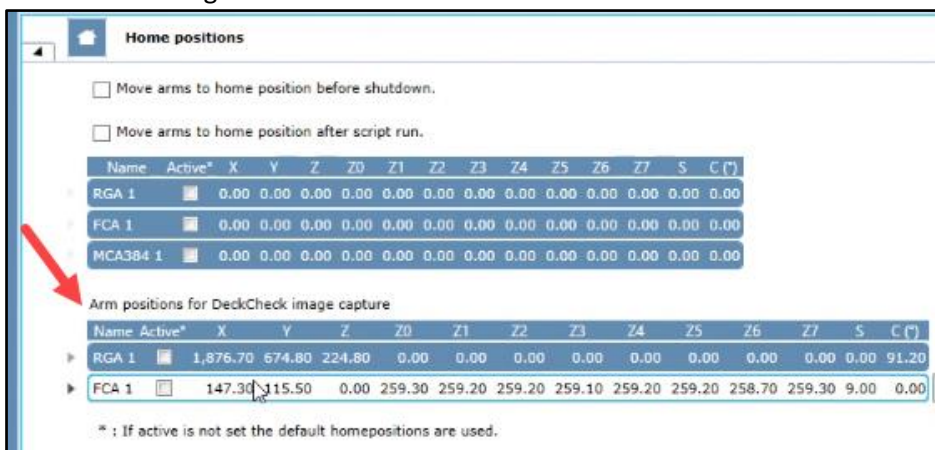
To enable the Pressure Monitored Pipetting AI (PMP AI) and the Phase Separator features, a new hardware module on the FCA called MultiSense is supported since FluentControl 3.3. In the liquid class section Detection & Positioning, a new cLLD Sensitivity Group setting called ‘MultiSense’ has been added. MultiSense arms do not require the cLLD Sensitivity Group to be set to ‘Low’, ‘Medium’, or ‘High’ – the setting ‘MultiSense’ is used for all liquids. This change means that Liquid classes created in FluentControl 3.5 cannot be used in FluentControl 3.2 or lower.

Driver version mismatch between Windows and FluentControl

In Windows ‘Add or remove programs’, the version of the driver’s DLL file is displayed. This is the actual version of the driver. In FluentControl Configure System > Drivers > Available Drivers the version of the driver’s EXE file is displayed in the Version column, which does not (always) correspond to the actual version of the driver.

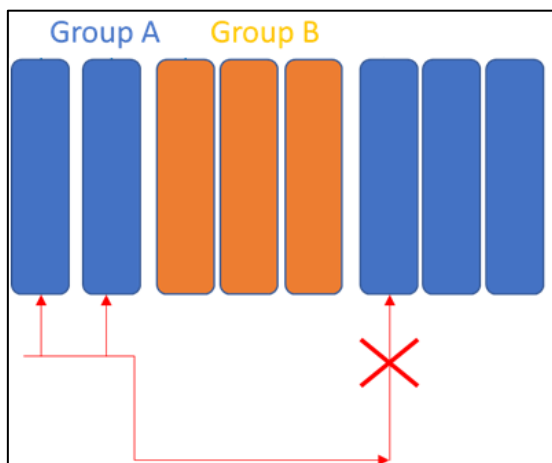
DeckCheck arm position settings

If any Hotels or devices are positioned at the right or left side of the worktable (i.e., the side panel is removed to accommodate a reader), the arm positions for DeckCheck image capture may need to be modified in Configure System. The default DeckCheck arm positions could be within the bounding boxes of such Hotels or devices, which would lead to an error at runtime. Positions for the right- and left-most arm can be configured.



Labware of the same group must be placed next to each other on a carrier for “Use Next When Empty”

The feature “Use Next When Empty” will not proceed to the next labware correctly if there are gaps within the labware group. In the figure below, if the first two blue tubes are empty, “Use Next When Empty” will not proceed to the blue tube to the right of the orange group. Instead, an error prompt is shown to the operator.



Teaching Nests next to MCA Thru Deck Waste Chute

Accessing the nests next to the MCA Thru Deck Waste Chute with the RGA in narrow orientation is not possible with the default vectors. If access is required, please duplicate the nests, and teach a custom vector. Z-travel should be taught higher than the Waste Chute to avoid Pathfinder errors.

When duplicating a manufactured labware item the custom attribute “ToolIDName” needs to be manually re-added

The custom attribute “ToolIDName” must be unique. When duplicating a manufactured labware item, for example disposable tips, this attribute is automatically removed. If a “ToolIDName” is not manually re-added, the context check error “Invalid DiTi labware selected. ToolType and ToolIDName Custom Attributes must be set.” is shown if the item is used in a script.

Functions for error handling

The functions *LastErrorId()*, *LastErrorMessage()*, *LastErrorSeverity()* return an empty string if they are used without “Error Handler” command. If these functions are to be used, first an “Error Handler” needs to be defined. “OnErrorGoTo” command needs to be used to determine which error handler will be acting upon the occurrence of an error. Within the error handler the functions return the correct values.

Function “date()” returns different format than stated in the manual

The fluent manual states that the function “date()” returns the date in the format “YY-MM-DD”. However, the date format returned is “yyyy-MM-DD”.

Direct Commands & Worktable selection

Direct Commands will use the worktable which is open in the Worktable Editor when the Direct Command is executed. If no worktable is open, the Direct Command will use the worktable that has been most recently used in a run, including the most recent DiTi positions. Before executing a Direct Command, make sure that the arm is outside a contouring-error prone position (i.e., bounding boxes).

FluentControl Scheduler: exporting reference files for Processes and for Carousel command

Processes created in FluentControl 3.3 or lower and using the “Assign labware by barcode file” feature must be opened in FluentControl 3.5 and saved again. Otherwise, the barcode file(s) referenced will not be included when exporting the Process with dependencies. The same applies for scripts or processes which use the “LoadBCFromFile” command for the Fluent Carousel or Cytomat.

Trough dimensions and cLLD volume detection

Depending on the manufacturer of the labware, the dimensions of trough labware in FluentControl (for example the “300ml SBS” trough) may need finetuning so that the detected volume reflects the actual volume within the labware. Please refer to the manufacturer dimension specification of the inside of the trough to modify the labware definition in FluentControl.

FluentID scan CSV file headers

The CSV output file created by the Start Loading command contains headers which do not always match the data. The table below can also be found in the FluentControl Manual and Online Help (F1). The column “TipNumber” was renamed to “TubeNumber”. This might lead to a context check error when opening scripts using this feature. Please correct your script accordingly.

GridPos	Grid position of the runner
SiteOnGrid	Always ‘1’ for tube runners
TubeNumber	Tube position in the runner (previously “TipNumber”)
ConfigName	Barcode of the runner (the string from Custom Attribute FluentID_tUbeRunnerID)
RackLabel	Always ‘N/A’, currently not used
CarrierBarcode	Barcode of the tube, ‘\$\$\$’ if no tube was detected or ‘***’ if the barcode could not be read
SRCRackID	Always ‘N/A’, currently not used

Repair installation no longer available

In previous FluentControl versions, it was possible to execute a repair of the installation. This feature has been removed. To repair issues with an installation, simply uninstall and reinstall the software instead. For help with FluentControl issues, please contact the local helpdesk.

Touch monitor content shown on main monitor if instrument is disconnected or turned off

If the PC loses connection to the Fluent, for example if it is powered off or the USB cable is disconnected, the touch monitor content is displayed on the main monitor.

The easiest solution is to turn on the instrument, verify the USB connection, and restart FluentControl. The fastest solution is to turn on the instrument and change a setting in Settings > Configure System > Drivers > TouchTools (e.g., de-select and re-select Use Full Screen checkbox).

Microsoft Remote Desktop Protocol (RDP)

Tecan sporadically receives reports of issues when using RDP with FluentControl. FluentControl was not tested with Microsoft Remote Desktop Protocol (RDP) and compatibility is not guaranteed. Issues such as FluentControl crashes caused by using RDP will not be analyzed and resolved by Tecan product support.

Detection & Positioning during dispense: ‘Z Offset’ behavior and user interface update

In previous FluentControl versions, when liquid level detection was selected, any Z Offset value defined in the ‘Detection & Positioning’ section of the liquid class was added to the submerge depth, even though that input field was greyed out. In current FluentControl versions, Z Offset values are not taken into consideration when liquid level detection is used. The user interface was updated to clarify this behavior:

Pre-FluentControl 3.5 user interface

Detection & Positioning based on Tip Type

Liquid Level Detection


Liquid Level Detection: cLLD

cLLD Sensitivity Group: Medium conductivity liquid

Submerge: 1 [mm]

Z Position: Z Max

Z Offset: 5 [mm]



FluentControl 3.5 and higher user interface

Detection & Positioning based on Tip Type

Liquid Level Detection


Liquid Level Detection: None

cLLD Sensitivity Group: Medium conductivity liquid

LLD Submerge: 0 [mm]

No LLD Z Position: Z Dispense

No LLD Z Offset: 0 [mm]



Sample Tracking and Liquid Supervision errors

Aspiration Supervision Error: error handling “Ignore and continue” is flagging the sample as “nothing was pipetted”.

Aspiration Supervision Error: error handling “Dispense back and deactivate tip” is flagging the samples as “Not enough liquid”.

Sample Tracking and resuming pipetting steps interrupted by Active Stops

Sample Tracking will show a warning for any interrupted pipetting steps.

Sample Tracking cannot handle duplicate barcodes

If Sample Tracking is used and duplicate barcodes are part of the workflow, make sure they are renamed to be unique before the Labware is registered in Sample Tracking. For example, suffixes or index numbers may be added using the “GetAttribute()” and “SetAttribute()” functions.

4. Compliance Features

This section contains a brief overview of some of the features that FluentControl offers to support compliant usage.

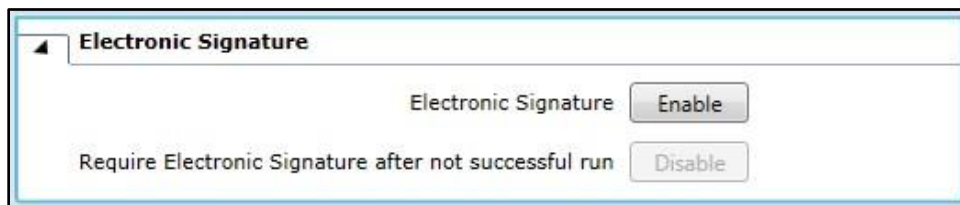
Audit Trail

Changes to all data objects, user logins and logouts, runs status, errors, changes to variables, and more are logged in the Audit Trail. By default, Audit Trail .csv files are saved in:

C:\ProgramData\Tecan\VisionX\AuditTrail

Electronic Signatures (requires Fluent Gx Assurance Software license)

Electronic signatures must be used in combination with User Administration. Enable this feature in Settings > User Administration.



Reason and user credentials must be given upon saving any changes in FluentControl. The input will be saved in the Audit Trail.

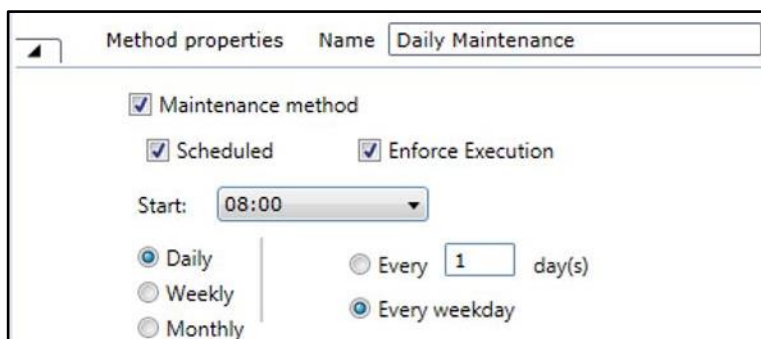
Data Audit Tool (requires Fluent Gx Assurance Software license)

This tool can be opened via the Start menu. It verifies the electronic records for a given date range, including validity of all database files, validity of all Audit Trail logs, no presence of unexpected files and no missing files.

It also enables the export of the human readable files (.xml formatted checksum protected text files) to a single directory. This export can be used for an audit or for backup and archival purposes. Please note that this is an intensive check and may take a few minutes to execute.

Scheduled and Enforced System Care Methods

In the Method Editor, methods may be scheduled based on calendar events, like a recurring meeting in Outlook. If a scheduled, enforced method is due, no other methods can be executed until it has been run.



5. Known issues in FluentControl 3.5

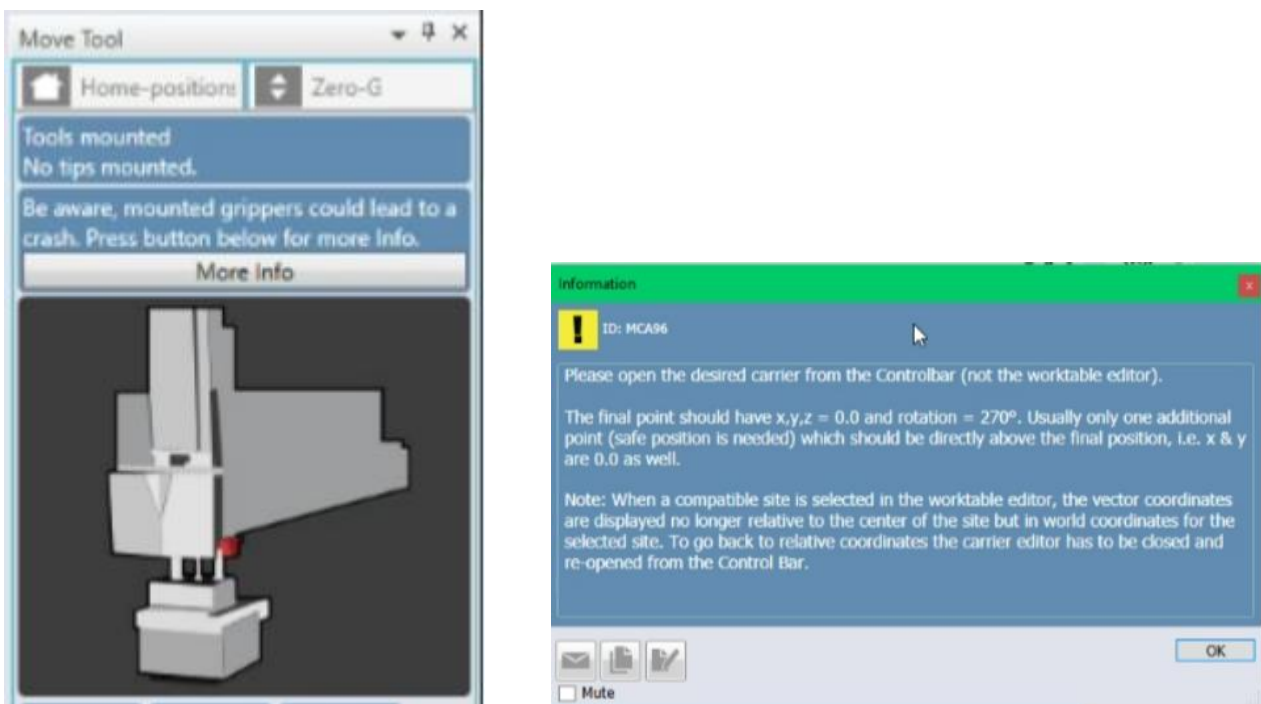
This section contains information about known issues and guidance on avoiding or handling them. If issues not described here are encountered, please contact the local helpdesk.

Snapshot Tool: Enter key always triggers Snapshot creation, even when editing text field (ID 121599):

If the cursor is in the text field and the 'Enter' key is used to trigger a line break, the 'Create' button is triggered instead and a Snapshot is generated. If line breaks are needed, please compose your text in an external text editor and copy it to the Snapshot Tool's text field.

Move To buttons in Edit Carrier send MCA96 with Gripper to wrong position (ID 121267)

When using the 'Move To' buttons in the Robot Vectors tab of a carrier definition, the Move Tool does not take the position of the Gripper fingers into account and can send the arm to the wrong position. A warning is displayed in the Move Tool when the MCA96 is selected. The More Info button contains a suggested workaround for this issue. MCA96 without Gripper are not affected.



FluentAPI expression resolver cannot handle some FluentControl functions (ID 120544)

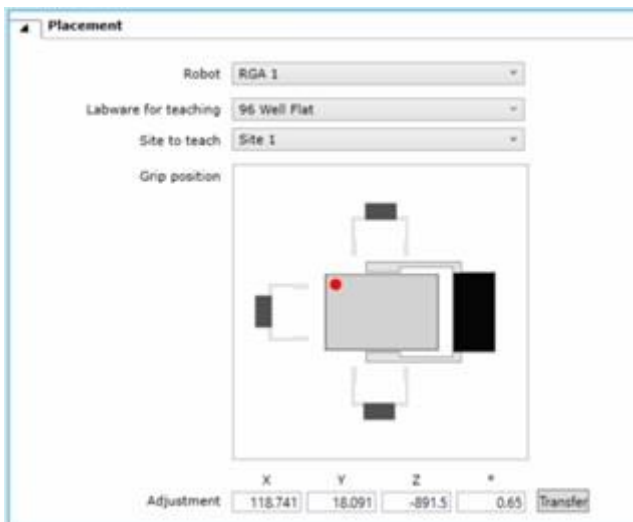
Some functions that work as expected in FluentControl return an empty string when called via the FluentAPI. Functions ScriptName(), ProcessName(), WorktableName() and potentially others are affected. A workaround is to save the output of the desired function via the FluentControl script as a variable with scope 'run' and query this variable using the FluentAPI.

FluentControl does not start when using command line parameters -sim and -simulateFluentID (ID 121598)

When starting FluentControl (systemsw.exe) with the command line parameters -sim and/or -simulateFluentID, FluentControl shows the message "FluentControl has stopped working" and cannot start. It is possible that other command line parameters are also affected.

Worktable GUI glitch non-grid based devices after worktable import (ID 121076)

The worktable position of non-grid based devices (centrifuges, readers, etc.) is defined in the Placement tab of the device. After importing a worktable, the device is shown at the top of Grid 1 of the Worktable Editor, even though the Placement values are unchanged.



Workaround 1: re-import the affected worktable and select the checkbox 'Import device placements'.

Workaround 2: edit the affected device by right-clicking it in the Worktable Editor, delete one of the Adjustment values in the Placement section, re-enter the deleted value and save.

Creation of restore point failed (ID 114357)

A restore point cannot be created if any SVN folders or files are missing. Loss of files or folders *may* occur if the PC is powered down while FluentControl is running, if FluentControl crashes or if an SVN folders is open in Windows Explorer when the SVNRepair tool is executed.

Runtime Error for 7mm Nest when 10ul or short 50ul tips mounted on MCA96 (ID 118380)

During script edit time there will be no context check error when these tips are used for pipetting with an MCA96 on a microplate located on a 7mm nest. The user will only get an error during runtime that pipetting with these tips is not possible.

Default liquid class "Whole Blood Pierce Single" is only verified for use with 200 µl (ID 115350)

The default liquid class "Whole Blood Pierce Single" is verified for use with a volume of 200 µl. When using it with lower or higher volumes, the trailing air gap (TAG) is aspirated but not dispensed. The liquid class' MicroScript must be adapted when using it with volumes higher or lower than 200 µl. Default Liquid class "Whole Blood Pierce Multi" can be used with all volumes defined in that liquid class.

Additional known issues

Below are additional issues that may be encountered. Fixed issues will be listed in the Revision History of future versions of FluentControl.

ID	Title
111635	[DeckCheck] Defining a big Region of Interest (ROI) too fast does not work
112011	Fluent ID Fatal Error
113267	Error Handling with multiple parallel subroutines can lead to unresponsive state of FluentControl
113950	[Scheduler] Trace View message is shown to switch into task mode although the switch is done automatically
114576	Tool Location driver cannot bring plate from Carousel transfer station back to base in tower
114596	[Scheduler] Freeze after fatal error by transfer labware
117388	Methods and scripts disappearing after return to edit mode
117873	Run button stays grey after init completed - script cannot be started
118374	[Scheduler] Missing FluentControl Scheduler logs when Automated DiTi Handling cannot be executed
118947	Wrong Context Check in Robot Specific Section of the Labware Editor
118965	Start Timer command opens Windows Media Player pop-up that extends waiting time until user handles pop-up
119690	MCA384 drives below z-max when tracking with standard liquid classes like Water Free Single
120575	MCA96 Adapter: 100ul filtered DiTi box with wrong labware definition
121076	Non-grid based device graphics default to top of Grid 1 after import a worktable
121080	Dual RGA ends up in deadlock when paths to drive cross each other
121168	FCA stops over 50ul DiTi's after picking up the tips
121171	In the robot path section, it's not possible to execute "Move to first" or "Move to last" action for the MCA96
121177	Transfer Individual Volumes splits volumes into multiple steps but still runs into error too much in plunger
121251	Get Weight command gives an error when Balance is connected via TeControl:COM
121267	In the robot path section, for MCA96 pressing Move buttons sends the robotic arm to the wrong position.
120687	After arms were successfully sent to home position, FC displays error "ID CC_HOME_001_002" "Send arm to home position failed."
115232	[MultiSense] Switch between real-mode and simulation does not work
115765	Null Ref in Sensitivity Calculation Direct Command when entering incorrect Labware Name
121310	MCA384 cannot evade when freshly picked up tips from highest tray of stack8 box
121422	Visualizer displays labware at wrong location when script is run partially
121511	Find and Replace Arm does not work for MCA96 Transfer Labware command
121599	[Snapshot Tool]"Enter" key cannot be used to add a new line
121604	[Scheduler] incorrect internal calculation of Mid Anchor point timing constraints leads to run finished with error
121555	Different offset behavior with 24pos and 26pos runners on loop cycle
121598	FluentControl 3.5 cannot start when using with parameters -sim and -simulateFluentID
121628	Move to Home Position does not take RGA rotation into account
121756	Wrong DiTi selection on Tipbox with MCA 96 after collapsing and expanding script line
121879	Moving 2 devices from base worktable to instrument worktable causes orphaned device

6. FluentSetup 3.5

After upgrade from FluentControl 2.8 or older to FluentControl 3.5, QC action “Gripper Alignment” needs to be re-executed

Due to a change in the RGA initialization procedure in FluentControl 3.0, the RGA rotational axis may have a small deviation of around 3-4° in its position. Therefore, the QC action “Gripper Alignment” needs to be re-executed to set this offset back to 0. A Tecan Field Service Engineer must perform this intervention.

Execution of DeckCheck Setup cannot be executed twice in a row (ID 110011)

This issue occurs sporadically and can be resolved by restarting FluentSetup and executing DeckCheck Setup again.

QC Report chapters are mixed up when Fluent is equipped with 2 MCA’s (ID 116347, 118163)

The results of the QC report for the second MCA arm are not listed in the correct chapter (e.g., the detailed results of the “Displacement Test” will be listed in the chapter of the “Arm Alignment Test”). The test results are correct.

Fluent Setup does not start on MCA96 instrument when upgraded from V3.1 (ID 118663)

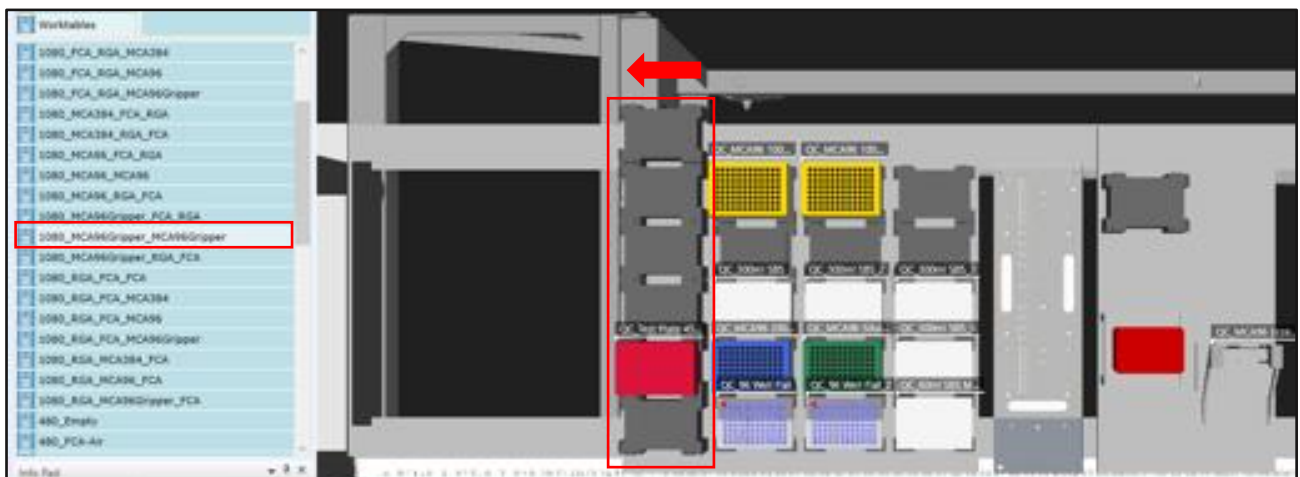
The issue only concerns Fluents equipped with an MCA96. After upgrading from FluentControl V3.1, the following error message might appear: “Mca96.Adapter/TOOLNAME:McaDiTi96” when opening FluentSetup. To resolve the issue, uninstall FluentControl and manually delete the following files from C:\ProgramData\Tecan\VisionX\DataBase\SystemSpecific\Worktable\Components:

- 984cc8fd-533c-489e-9eea-30e18b1ed6a8.xcmp
- a581e854-6dd9-4afd-afd4-e80860509de1.xcmp
- bb7a1b30-46d7-429a-8cf7-443b7cd8344c.xcmp

Afterwards, install FluentControl again.

Default worktable causes setup tests to fail on Fluents with dual MCA96 configuration (ID 118313, 118659)

The issue only concerns Fluents equipped with two MCA96 with Grippers. The default worktable “1080_MC96Gripper_MC96Gripper” needs to be adapted before running any tests. The segment on grid 16 must be moved at least one grid to the left.



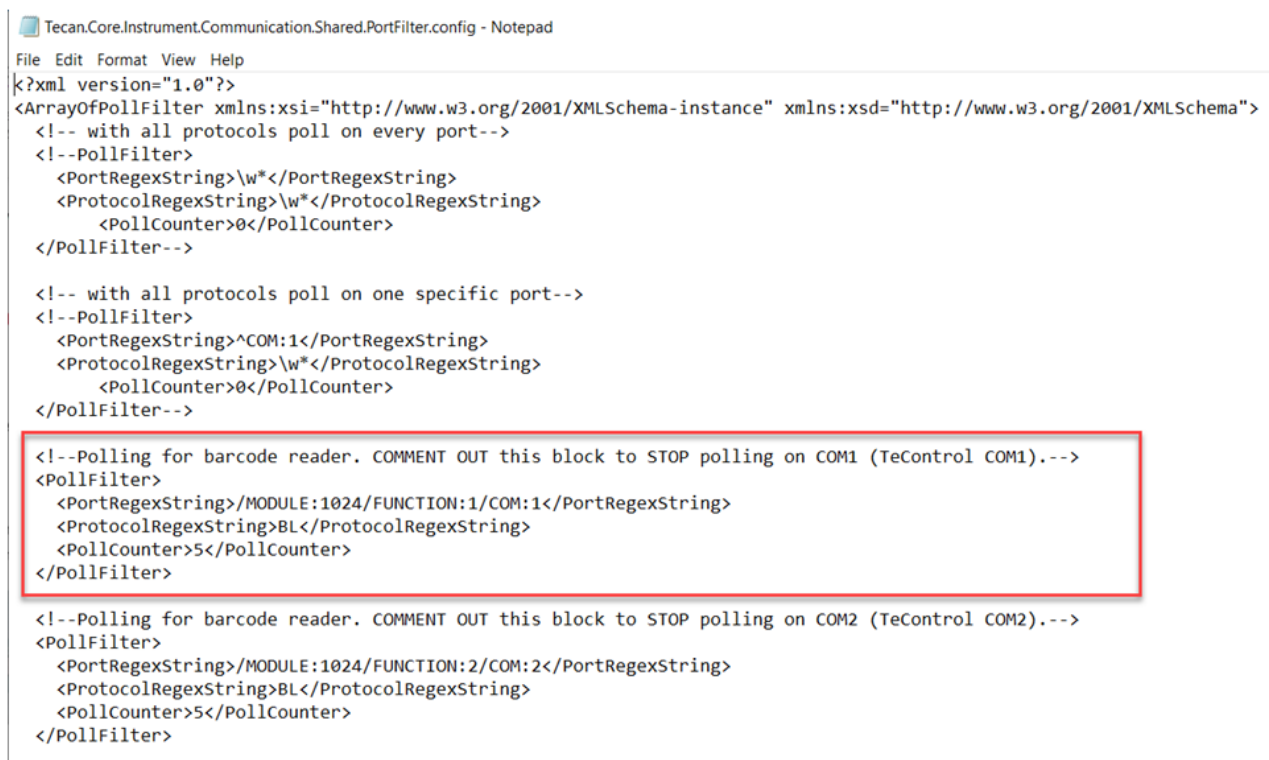
Balance connected to Te-Control COM: error message when using Get Weight (ID 121251)

If the Balance is connected via the Te-Control COM, it is recognized, and the Direct Commands are visible. However, a 'Connection Lost' error appears if the commands are executed. This issue can be caused by having a barcode reader on the same system.

Affected are:

- Pipetting Test for FCA, AirFCA and MultiSense
- Balance Direct Commands

To eliminate this issue, edit the file Tecan.Core.Instrument.Communication.Shared.PortFilter.config which is found in C:\ProgramData\Tecan\VisionX\Config. Delete the COM port settings for the COM port to which the barcode reader is not connected. In the picture below, the Balance is connected to TeControl:COM1 and the section in the red box must be deleted.



```
Tecan.Core.Instrument.Communication.Shared.PortFilter.config - Notepad
File Edit Format View Help
<?xml version="1.0"?>
<ArrayOfPollFilter xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <!-- with all protocols poll on every port-->
  <!--PollFilter>
    <PortRegexString>w*[/PortRegexString>
    <ProtocolRegexString>w*[/ProtocolRegexString>
    <PollCounter>0[/PollCounter>
  </PollFilter-->

  <!-- with all protocols poll on one specific port-->
  <!--PollFilter>
    <PortRegexString>^COM:1[/PortRegexString>
    <ProtocolRegexString>w*[/ProtocolRegexString>
    <PollCounter>0[/PollCounter>
  </PollFilter-->

  <!--Polling for barcode reader. COMMENT OUT this block to STOP polling on COM1 (TeControl COM1).-->
  <PollFilter>
    <PortRegexString>MODULE:1024/FUNCTION:1/COM:1[/PortRegexString>
    <ProtocolRegexString>BL[/ProtocolRegexString>
    <PollCounter>5[/PollCounter>
  </PollFilter>

  <!--Polling for barcode reader. COMMENT OUT this block to STOP polling on COM2 (TeControl COM2).-->
  <PollFilter>
    <PortRegexString>MODULE:1024/FUNCTION:2/COM:2[/PortRegexString>
    <ProtocolRegexString>BL[/ProtocolRegexString>
    <PollCounter>5[/PollCounter>
  </PollFilter>
```

Z-break test cannot be executed for second RGA (ID 121747)

When the Z-break test for the second RGA is started on a dual RGA instrument, the test is not executed and an 'Value cannot be null' error message is displayed. Two workarounds have been identified:

- Use a clean installation where the folder "DataBase\SystemSpecific\Worktable\Components" is empty before running the installer
- Import the Full Export Database.zeia file which is found on the MasterMedia to overwrite older labware items

Range Test fails for second RGA in X axis (ID 121700)

When the Range test starts for the second RGA on a dual RGA instrument, the grippers (G-axis) are partially opened on both RGAs and stay in that position. During the range test, the RGA is moving to find a hard stop in the X-axis. The hard stop is now found on the open grippers instead of the RGA head, so that the minimal found range is smaller than the configured one. To work around this issue,

move the RGA arm which does not take part in the Range test to a y-position where it cannot collide with the other RGA during the test.