



FluentControl

Revision History

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|--------------------------------|---|
| Filename | 02891_09952_Revision History FluentControl 3.7_V1.0 |
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1 FluentControl 1.1 (V1.1.0.35110)

Initial Version

2. FluentControl 1.2 (V1.2.0.36876)**2.1 Bug Fixes**

| ID | Title |
|-------|--|
| 69345 | "Storage" custom attribute "true" and "false" are doing the same |
| 68668 | [ExpressionSolver] Floating point values with 0 in decimal place should be interpreted as Integer values |
| 68666 | [FCA][ContextCeck] cLLD Self Test: It is not possible to have more than one cLLD Self Test command in a script where each command has another DiTi type |
| 70092 | [Import Export] loss of liquidclasses and import failed for external Files. |
| 71867 | [Reliability Arrow1] - Script aborted with Win32Exception"Not enough storage is available to process this command". |
| 68950 | [Script Commands] Motion Executer timeout due to duplicated Labware in Worktable merge |
| 71225 | [TransferTool] GetDiTi of 8 Tips with only 4 remaining Tips in the 350nested tray will not work |
| 71763 | [Worklist] [FixedTips-configuration] Load Worklist Command with FixedTips-configuration shows no Context Check Error but cannot be executed successfully |
| 71179 | [Worklist] R after a Sequence with F shows context check error caused by an already mounted Tip. |
| 67099 | [Worklist]T Command with TubeRunner causes context check error |
| 68843 | [Worklist] Duplicated/custom DiTis don't work well with Worklisting and can make it inoperable |
| 67654 | A change made to a carrier on the worktable is not reflected in the template |
| 70662 | About the LGE two groups are processed simultaneously. When saving all entries will not be accepted. |
| 70072 | Application crashes after execution of FCA Smart Command |
| 68669 | Application does not recognise wrong/incomplete execution of Dispense System Liquid script command |
| 70793 | Application intermittently hangs after start of run |
| 56368 | Aspirate from 300ml trough on site gives a context check error |
| 68789 | AuditArchServer stops |
| 69083 | Auto Context Check menu item in SI mode not working properly |
| 60021 | Carrier Editor: Application crashes if instrument doesn't have an RGA |
| 68954 | Centrifuge Driver should not be included |
| 71474 | Checkbox "Ignore GWL file content until run" in Load Worklist Command doesn't work |
| 70096 | Configuration Builder: FCA options are gone |
| 47386 | Configure System - TouchTools Driver: Checkbox for I/O-state is ignored. |
| 70943 | Context Check changes Worktable based on transfer labware in subroutine |
| 69347 | Custom Attribute "Server" has no function |

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| 68667 | Detect Liquid Script Command does not take any well offset parameters from Variable Pipetting Loop |
| 63074 | Device 'jumps' back to grid 1 if grip mode is changed |
| 65568 | Direct Commands: "Too many editors are open, closing the application is recommended." |
| 66820 | DiTi 350ul After the last Transfer Tool has been picked up the software hangs without message to the user |
| 65895 | Duplicated DitiType Labware definition cannot be used |
| 58760 | Initial temperature for shaker doesn't work |
| 68798 | Error Dialog: Send Mail button not working |

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| 67742 | FCA : When a diluter error is provoked and a script is executed sometimes the channel number and Result is not shown and the fields are empty. |
| 63954 | FCA DiTi Nest Bounding Box Too Small |
| 68857 | FCA GetDiti calculates unexpected Positions |
| 71713 | FCA: Aspirate with container switch (Use next when empty) aborts with exception |
| 71731 | FCA: Aspirate with container switch (Use next when empty) aborts with exception |
| 70980 | FCA: Aspirate: Exception during pipetting: Parameter volumeFulcrums out of range |
| 66725 | FCA: Iterate via negative Well Offset is not working well |
| 38633 | FCA: Pressure events from PMP cause fast stop instead of stopping only affected dilutor |
| 71636 | Fix creation of incorrect Execution String when Object Parameter is not set. |
| 71765 | Four Smart commands Reagent Distribution DiTi box empty |
| 62833 | Help should not need ActiveX permissions every time |
| 67557 | Labware placed on 'PCR Adapter 96 Well' is not on correct height |
| 71724 | Liquid Class parameter changes when moving pipetting commands in the script editor |
| 70603 | log files: all log files on hard drive are not zipped |
| 68610 | MCA 384, selected wells change while expanding and collapsing command parameters |
| 59767 | MCA384 : A context check error appears in the Drop Tips command, if the SW does not know that DiTIs are mounted on the head adapter |
| 67735 | MCA384 : It is not possible to pick MCA384 50ul DiTis placed on an Active carrier with the 96 MCA384 Adapter |
| 60176 | MCA384 : Trailing Airgap after Dispense is executed even though switched off |
| 55833 | MCA384 Empty Wash Station Direct Command is not executed |
| 69879 | MCA384 Get Tips Fails with Software Crash |
| 66771 | MCA384 parameterization: Share value adapter plate is not set correct if the previous script command is a "Drop Head Adapter" |
| 55420 | MCA96 DiTis can only be selected in MCA384 GetTips command when they are placed on a DiTi Base |
| 64372 | MIO: Group Editor instead of Placement after device drop onto the worktable |
| 69434 | Multi Dispense: Dispense Acceleration, Deceleration and Speed are calculated wrong for the Conditioning Dispense |
| 68605 | No display name for SiLA driver in configure screen |
| 69876 | Non recoverable errors during microscript execution are not shown to the user |

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| 28090 | Opening the front door during movement does not provide an understandable error message |
| 71177 | Prepare Method directly starts run. |
| 70855 | Raise Error script command does not work as expected |
| 71076 | RetryAfterFastStop moves are automatically aborted when an error is thrown |
| 69874 | RGA Barcode Reader: Scanning does not work with FluentControl when attribute "BarcodeReaderMounting" is set to "ReadsInOppositedirection" with FluentSetup |
| 71154 | Run fails with context check error when started from the script editor. |
| 71152 | Runtime Controller sometimes does not have Back To Edit Mode button. |
| 71667 | Rich User Prompt Wizard will not Stop when Stop Button is clicked |
| 66788 | Sample Tracking does not create a report file for a plate with barcode 913/000214 |
| 71850 | Sample Tracking: Generate Report fails with error message |
| 60218 | On rare occasions, script gets corrupted during variable declaration and cannot be opened anymore (can be recovered from change history) |
| 71210 | Script scope variable not found during runtime |
| 69169 | Smart Commands, Tip Access & Well Offset must both be calculated when evaluating context check |
| 71333 | Smart Commands: Sample Transfer: Aspirate Vol. in generated temp script is not as expected |
| 67734 | Stacker: When transering a microplate from a full stacker and placing it back, an error shows that there is no free space |
| 66051 | Standby : When the Fluent Control SW is closed, the MCA -Z and RGA-Z axes are in Zero-G and do not go into Standby mode |
| 67722 | Te-shake error message: Parameters invalid! for SetTemperature script command |
| 71548 | The SampleTransfer command does not create a valid subscript if "Max Tip Reuse" is greater one. |
| 67088 | The UV lights are not switched off when the Cabinet door sensors are opened and door lock is disabled. |
| 65618 | Touch Tools : Touch Tools does not log the script executions and user interactions of rich user prompts |
| 71155 | Touch Tools displays wrong information in second run. |
| 71835 | Tube runner not filled completely causes index out of range |
| 67602 | Two parallel Wait commands do not work in asynchronous subroutines |
| 69050 | Undo not undoing worktable actions |
| 65630 | Worklist: "Too much liquid in tip" runtime error when executing an R command. |
| 72100 | Worklist: Runtime Error when using R and T record with empty liquid class field |
| 55525 | Worktable in open script is not updated after labware template is modified. |

2.2 New Features

- Air FCA Commands
- Active Stop & Resume
- Robotic Gripper Arm mounted Barcode Scanner
- Method Approval
- Interior Light control
- Individual Channel Accuracy Adjustment function
- Te-VacS

3. **FluentControl 1.3 (V1.3.0.38526)**

3.1 Bug Fixes

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|-------|---|
| 36952 | Worktable visualization error when cut pasting vertically stacked labware |
| 43868 | After renaming a labware the undo operation affects other fields |
| 48769 | CNS: Command name mismatch |
| 48770 | Tpyo [sic] in word "Message" in channel Tecan/Myrius/CNS/Client |
| 51182 | Doorlock problem during Active Stop when User Prompt Command will be performed |
| 54326 | Play sound in a loop after run does not stop |
| 54883 | Editor: "LLD Error Handling" command, selected "Error Handling Action" is not visible if the command doesn't have the focus |
| 55336 | Import script: Importing with a WT 780 to an instrument with WT 1080 does not update the worktable |
| 56410 | Unit [mm] missing from Z offset field – Liquid Class editor Dispense [detection positioning] |
| 57900 | MCA 384 : The Ignore option is not available as Error Handling options when an Tips Not Fetched error occurs |
| 59302 | Set Location Function: No context check errors for out of range parameters |
| 59427 | Not possible to define an Aspirate with 8 FCA tips from tube carrier |
| 60126 | Connector Problems when MCA Adapter Nest will be copied on Nest Base Segment |
| 60910 | MCA moving with 'Move Tool' into a collision with another Arm, FluentControl freezes. |
| 62821 | Worktable Editor: Context Menu "Template" option saves new carrier with current input if the mouse is moved |
| 63566 | Carrier Editor: site rotation not visible on the worktable |
| 64813 | Device driver commands show error but context check of script is ok |

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| 66054 | "CGA" shows up in an error message |
| 66258 | Incubator driver crashes when exiting FluentControl |
| 66765 | Worklist: Sample Transfer - uninformative error message |
| 66841 | User Input uses wrong max limit on Touch Screen |
| 66876 | MCA384 automatic parametrisation: in the Get Tips script command is the adapterplate not correct set. |
| 67603 | User can start method even though it has no permission for the method |
| 68305 | A hotel site previously used as lid station is not used to store the plate with lid on upon return |
| 70403 | Carrier Cut and Paste does not paste nests with the base plate |
| 70406 | Sound settings in configure have no or incorrect impact |
| 70850 | Software Crashes if selected Method has no scripts |
| 71153 | FCA: It is not possible to select tips 1-4 to aspirate from 24-well plate |
| 71178 | Carrier cannot be edited - VX_CARR_001_001 given key was not present in the dictionary |
| 71476 | Editor Save & Close Button does not save changes |
| 71568 | A collection of typo and wording issues |

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| 71716 | Well offset with changing labware orientation causes wrong wellOffset |
| 71866 | Set Location, KeyenceBarcode, etc. script commands does not accept Labware with counter variable (i.e. MyPlate[i]) and no variable at all. |
| 71967 | Transfer Labware not possible for stacks of plates with lid |
| 72182 | Long run stopped after 4 days after user intervention, PC became frozen. |
| 72736 | Empty Tips fails in runtime with disabled Channel |
| 72738 | Vertical Tab Groups are missing |
| 72804 | FluentControl crashes when changing tip selection in 12-well plate |
| 72809 | FCA Dispense context error incorrectly calculating, 0.000 missing in tip |
| 72914 | Worklist records throws Exception when Position field is empty and TubeBarcode field is set with a correct value |
| 72915 | Sample Transfer: system incorrectly calculates needed labware |
| 72916 | Convert CSV to GWL using Tube ID also needs Position |
| 72917 | Smartcommands do not parse variable as Labware name |
| 72997 | FluentControl does nothing when pressing resume after hardware problem |
| 73074 | Error message "Sequence contains no elements" when running direct commands with activated method approval |
| 73129 | Unable to print scripts out of FluentControl |
| 73130 | Execute Worklist command cannot be executed when one channel is set to broken |
| 73208 | Wrong warning dialog when when entry of missing barcode is aborted |
| 73209 | Variable Rich User Prompt Combo Box does not accept integers |
| 73285 | Load Worklist command Invalid parameter |
| 73364 | worktable simulation wrong: lid shown on plate when it should be in hotel |
| 73367 | Transfer Labware command doesn't save the selected Tool-on-the-Fly |
| 73370 | Running a suspect method or script is not logged, when user has no right to run unapproved methods |
| 73373 | CNS Webserver does not show user interaction required status |
| 73424 | FCA fails to advance to next trough when detected trough as empty |
| 73430 | y-spacing of tips switches between -9 and +9mm when teaching trough with FCA |
| 73432 | If an error occurs during lid transportation the lid information is lost. |
| 73487 | When Options are connected, the power-on order of instrument, options and software should not be relevant |

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| 73538 | External legacy driver interface does not allow saving labware parameter if it is the only parameter of the command |
| 73925 | Execution of the transition failed (leads to software hang) |
| 73936 | Expression solver parses 'Round' of '96 Well Round' plate as round() function |
| 73938 | 3D Simulator, Create Instrument Configuration, Dropdown menu to select Tip type is empty |
| 74020 | Transfer Labware: MCA125ul DiTi box from Carousel to Active DiTi carrier results in Context Check error 'no suitable labware connector' |

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| 74025 | RGA gripping error status not reset after releasing gripped lid |
| 74162 | DiTis from MCA96, 200 Nested, Stack8 cannot be picked up - stack is too high (Worktable Data) |
| 74180 | Carousel sends collision errors upon BC read command |
| 74672 | Nested Ditis are not reported to pathfinder, when running a script with stored DiTi positions |
| 74810 | Carrier with Custom attribute 'Lid'=false cannot be used as Lid Location |
| 75096 | Fluentcontrol import variable command does not accept "comma" as delimiter |
| 75098 | Context check not working for labware moved with "set location" command |
| 75171 | Script command "On empty tray": Method execution hangs after pressing STOP button on User Prompt in Subroutine |
| 75204 | FluentControl collision error won't allow to abort and go back to edit mode (Stop button invisible) |
| 75532 | Rotate Menu Options need to be 0 & 180 |
| 75534 | GetAttribute should be able to handle labware index as integer |
| 75827 | [SiLA][ODTC]: Error from external driver is not shown by FluentControl |
| 75829 | When importing a script with different script name but same GUID the context menu in the Control Bar does not show the correct script name |
| 75894 | FluentControl crashes after re-naming of carrier site |
| 75896 | Subversion service failure |
| 75922 | If (AirFCA) "Pressure out of range" appears the status light is not blinking |
| 75941 | Labware Group Editor: Lids can't be edited; apply buttons disabled despite changes; labware lost when saving and closing |
| 75942 | Init failed because "instrument is not initializable", afterwards FC freezes. |
| 75954 | the KeyenceCGA "Scan Barcode" command has lost its icon. |
| 75955 | Zero G teaching accepts values outside of the arm range |
| 75960 | Tube fingers lead to worktable sim errors |
| 75961 | Software crashed when scrolling in a script and trying to open a loop command while the script is running |
| 75987 | Ziath: MacroExecution ZiathREad2DTubeCodes failed 'LabwareName' |
| 75998 | No context check errors for 'Sample Transfer' command are displayed when values for labware and volume are missing |
| 75999 | After Retry from "Fetch DiTis" error handling dialog the Stop button is pressed: Fatal error or software hang |
| 76078 | 3D Simulator, creating new configuration sets wrong X Ranges |
| 76244 | Occasional deadlock between MCA & RGA during Automatic DiTi Handling |
| 76247 | Errorhandling did not appear for already gripped Labware |
| 76558 | Software crash error during MCA nested DiTi pick up |
| 76768 | ActiveStop during DeadLock leads to hang |
| 76966 | ActiveStop during execute vector with Gripped Labware drops the Labware |
| 77081 | Leading airgap is calculated against the tip capacity |

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| 77109 | Te-Shake sporadically doesn't initialize |
| 77150 | Stop button is sometimes not displayed |
| 77321 | Touch Tools does is inactive after user interaction at start of script |
| 77346 | Stop On error handling cycle comes into an endless loop when TeMotion Overcurrent Error is thrown. |
| 77471 | Worktable alterations do not trigger context checks |
| 77613 | RGA Transfer Labware does not work when handling stacks of labware in a storage device, e.g. Carousel. |
| 77688 | Editing custom carrier: 'the given key was not present in the dictionary' |
| 77803 | Operator User unable to run Method with Subroutines without also having edit rights |
| 77985 | Liquid Handling Commands sometimes are not resumeable after ActiveStop |

3.2 New Features

- Method Recovery
- Dual FCA
- Finger Exchange System (FES)
- Reset DiTi workflow in TouchTools, so Operators can decide to use leftover tips from the last run or use all new tips
- New Liquid Classes:
 - Ethanol Free Single (FCA)
 - Ethanol Free Multi
 - Mastermix Free Single
 - Mastermix Free Multi
 - Serum Free Multi
 - Water Contact Multi
 - Mix LC

3.3 Changes or Improvement

- Manual entry of coordinates for “non-grid” Carrier Placement enabled
- New Option “Vertical Tab Group” in editors to allow side-by-side viewing
- Edit Tabs differentiated by icons
- Usability improvements on Touch Screen, e.g. first touch selects the option
- Optimized Conditioning Volume handling
- Enabling of multiple execution of single sub-routines without wait for sub-routine necessary
- Enhancements in Smart Commands, e.g. Reagent Distribution has a new parameter Sample Direction
- Significant performance improvements in Context Check
- Liquid Class Improvements:
 - General goal of making microscripts similar between LCs
 - MCA all single pipetting classes, implement backlash compensation
 - MCA: Increase the maximum allowed acceleration (config change)
 - Align all LC Microscripts, including unused features like pulse formula
 - Remove Mix from all “pipetting” LCs
 - Conditioning Volume default made “Back to Source”
 - cLLD changed from z_Dispatch to Z_Start
 - Removed “default” tip type as it had no run time impact

- Introduce 1 Dispense Adjustment Formulas
- Simplified Z Max move expressions
- Added TAG after dispense in Single LCs
- Removed unnecessary “hard coded” parameters, replace with variables

4. FluentControl 1.3.4 (V1.3.4.39565)**4.1 Bug Fixes**

| ID | Title |
|-------|---|
| 78215 | FluentControl may become slow if the MCA384 drops of the adapter with tips attached multiple times in a give run. If this workflow is critical to your needs, contact your local support. |
| 79583 | When all 8 tips are used and a liquid class is defined in the gwl, the liquid class from the load worklist command is used instead. |
| 79625 | In TouchTools, "Method Cannot Be Started" message appears when running two methods with different worktables one after the other. |
| 80023 | Unlocking the interface via TouchTools while a userprompt is displayed in the background freezes FluentControl |

4.2 Changes or Improvement

| ID | Title |
|-------|---|
| 80048 | Keyance Barcode Scanner manual barcode entry must be possible to enter via TouchTools |

5. FluentControl 1.4 (V1.4.0.40209)**5.1 Bug Fixes**

| ID | Title |
|-------|--|
| 81919 | Worklist:AADW with decimal points lead to run blocking context error |
| 81907 | Dual TeVacs drivers in combination with other devices lead to a software crash on startup |
| 81897 | Certain "stop on error" scenarios do not lead to the run aborting as expected |
| 81816 | Stacker not defineable as waste. |
| 81803 | Method could not be recovered after run aborted due to path finder error |
| 81795 | In certain FCA error handling sequences a System.NullReferenceException appears in the Sample Tracking Log cause the run to "finish with errors" |
| 81787 | Importing methods may have the wrong values for Preserve Disposable Tips and trigger save button |
| 81740 | FCA Dilution command generates invalid temporary script is the target volume is 0 |
| 81238 | 'Negating the minimum value of two complement numbers is invalid' in FCA Aspirate Liquid micro command |
| 81234 | FluentControl freezes when clicking 'stop' behind a warning message popup |
| 81187 | Intermittent fatal error due to rendering the Method Recovery worktable image in the background |
| 81149 | FCA pipetting may be interrupted by sporadic invalid movement profile calculation leading to "collision or hardware" errors at run time, when no physical collision has occurred |
| 81049 | Retry option of LLD error dialogue does not reposition arm before retrying |
| 80976 | In the second iteration of a loop "Cannot move to colliding position" error ends the run due to worktable simulation problem |
| 80945 | FCA Not Enough Liquid error handling option "Aspirate available" leads to "Too much in plunger" error |
| 80936 | 'Data export' report has wrong source positions of tube rack (number iterated by total number of tubes in the runner instead of by 1) |

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| 80935 | Using a centrifuge in subroutine leads to 'object is not located on device carrier' contextcheck error |
| 80657 | FluentControl freezes after pause a pause and resumes when trying to close via Windows Task Manager Application Tab. After "Run is executing" message is acknowledged, the run continues |
| 80511 | With MCA wash stations and complex scripts, execution stops sporadically with error 'WRC is not configured' |
| 80176 | FluentControl uses 100% CPU and becomes slow |
| 80175 | FCA pipetting with multiple tips in a single tube without using channel 1 leads to a positioning issue in Y |
| 80174 | FCA Sample Transfer with sample count and offset shows context check error and unhandled exception |
| 80077 | FluentControl freezes when clicking 'Next' after successful completion of direct command |
| 80023 | Unlocking the interface via TouchTools while a userprompt is displayed in the background freezes FluentControl |
| 79813 | Intermittently, Save not active after parameter change, running without saving will use the former value of the parameter |
| 79711 | Plates intermittently disappear from simulated edit-time worktable |
| 79268 | Collection Labware and Carrier Data issues (e.g. part numbers and typos) |
| 79129 | FCA aspirate command fails with 'tip[1-8], line 11. Duration must not be zero' |
| 79025 | FluentControl displayed 'Preparing Run' for an hour |
| 78968 | FCA Errors may occurs during dispense when Error handling is set to Aspirate available or Aspirate anyway |
| 78706 | Typo / Wording improvements (collection of minor changes) |
| 78628 | Sample Transfer commands fails in semi-access scenario where logically the tips should have access. Note: not all semi-access scenarios are expected to work with Sample Tracking. |
| 78627 | It is not possible to disable mixing in the FCA Dilution Command |
| 78591 | Short Name is shown instead of Full Name after a while |
| 78390 | During Automatic DiTi Handling, if there is no free position for the rack to remove, FluentControl may hang. |
| 78331 | Well Attribute Volume set during a run before a method recovery was started are set to 0 |
| 78326 | Software does not check if head adapter is mounted on MCA before executing command. |
| 78214 | "Method cannot be started" due to context check problems has poor visibility in TouchTools |
| 78178 | Using On Empty Tray asynchronously on stacked MCA96 tips doesn't work |
| 78055 | Well Attribute Volume set during a run before a method recovery was started are set to 0. |
| 77980 | "Method cannot be started" due to context check problems has poor visibility in TouchTools. |
| 77979 | FCA Pipetting in tube runner with well offset not possible if tube runner is not completely filled. |
| 77978 | If more than one script line is selected, Context Check only verifies the selection. This is true if a group/loop is selected but collapsed. All the grouped commands are selected and Context Check only runs on these. |

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| 77901 | FluentControl does not start up when installing and executing happened by different Windows user |
| 77868 | Labware has been lost even the labware is at target site and message not shown in trace view and is stated as info not as error in log file |
| 77788 | Running methods with many sub-routines for a long time may lead to high memory usage and in the worst case, FluentControl may crash. |
| 77762 | FluentControl crashes when the users assigns the same barcode to two labwares via the worktable context menu. |
| 77701 | Search and Replace Liquid Class does not trigger Save button. |
| 77700 | If setting query at startup variables in the Method Editor, they may not be visible at runtime. Fixed in 1.4 |
| 77614 | If a user prompt is cancelled after stop has been pressed in the run-time controller, FluentControl may hang |

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| 77540 | If arms are not in Zero G before starting method recovery, they remain unmoveable by hand during the recovery user prompts. |
| 77514 | FES 'Drop location needs to have fingers placed on it' or it leads to an auto-context check errormessage when fingers are mounted while editing script. |
| 77499 | When Prepare Method is used from Script Editor, and then Save As Method is used, the newly created method is not recoverable. |
| 77498 | Labware Name in FCA Smart Commands is not adjusted when renaming labware on the worktable. |
| 77385 | Array variables in subroutine and main script interfere with each other even though they have scope 'script' and are not shared. |
| 77384 | Move Arm Command intermittently disappears from Control Bar. No impact on existing scripts. Workaround: Copying & Pasting an existing script command. |
| 77381 | Well Attribute Volume set during a run before a method recovery was started are set to 0. |
| 77322 | "Method cannot be started" due to context check problems has poor visibility in TouchTools. |
| 77264 | Using On Empty Tray asynchronously on stacked MCA96 tips doesn't work. |
| 77236 | On the "The run was aborted. Do you want to return to edit-mode?" prompt, if the user presses Yes and the immediately clicks next, FluentControl may hang. |
| 77229 | Sample Transfer Well Offset & Sample Count do not work in combination. |
| 77165 | Pipetting in tube runner with well offset not possible if tube runner is not completely filled. |
| 76965 | Simulation mode does not work for async subroutines on dual FCA instruments. |
| 76962 | FluentControl crashes when the users assigns the same barcode to two labwares via the worktable context menu. |
| 76666 | Search and Replace Liquid Class does not trigger Save button. |
| 76624 | Worktable Batch error during saving labware group changes. Fixed in 1.4 |
| 76452 | Incubator - Changing the temperature in the "Set Temperature" command does not activate the Save button. |
| 76449 | During transfer labware regrip, Labware attribute offset is only applied after first moving to end position without offset. |
| 76331 | Adapter Nest for 1.5ml Tubes not accessible with Application Software. |

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| 76325 | MCA 384 Get Head After Drop Error Handling uses incorrect moves at run time. |
| 75989 | Script Editor does not update commands by changing the orientation of labware from labware group editor. |
| 75940 | Cancelling instead of logging in causes FluentControl to crash. |
| 74024 | FluentControl basic Script Function "ScriptName()" returns nothing when writing to a variable |
| 73485 | Pick Up Tips followed by Set Tips Back is not possible for 350 µl Nested Tips. |
| 73371 | Approve on import does not lead to method having the approved initial status |
| 72433 | Possibility to change the micro script of a Default Liquid Class by using Save As and saving as the same name |
| 71934 | Move Arm Relative moves full distance from current position upon resume after ActiveStop |
| 71931 | Liquid Classes Editor: Dispense Easy Control shows in Aspirate section upon creating a new liquid class. Closing & Opening the editor solves the issue. |
| 71630 | Graphical display of 384 well labware is inconsistent. |
| 68925 | Syntax error during runtime even when command is disabled |
| 67740 | Software halts in the middle of the script run with Replace Used DiTi command if nested tip layer is not removed before next Get DiTi |
| 66093 | If sample tracking server is stopped during a running script no error message is shown. |
| 66055 | Periodic Wash: no context error for unreachable waste station. |
| 65276 | Switching between Rich User Prompts in display and continue mode many times increases memory usage and may lead to application freezing. |
| 58636 | WRC: Prime Micro Script Command, Duration parameter not as specified |
| 55576 | Retract supervision: The detection results after a successful detection are not logged |
| 55570 | Barcode reader: Driver with switched off I/O state is used |
| 52703 | Incubator or Shaker do not start shaking again after RGA has placed a plate |
| 47755 | RGA: counter clockwise rotation not possible when executing ExecuteSingleVector command |

5.2 New Features

- Liquid FCA Mixed Tip support
- 5000ul Syringe Support
- 5000ul Disposable Tip Support
- Restore Entire Database to a given time - 77662
- Audit Trail
- Electronic Record
- Data Audit Tool
- Schedule and Enforce System Care Methods
- "Store Well Concentration" Command
- Normalization command can create dilution schemes based on "WellAttribute"
- Add Labware command
- Remove Labware command
- API "1.1" now enables error handling
- Disable visualization of sub-routine scripts in Configure System / Application settings to increase speed of worklists at run time - 80286
- New Functions
 - Transfer or pipette based on barcode

- GetLabwareLabel("Barcode") ○ Transfer to top of a stack
- GetCoverSiteName("LabwareLabel")
- GetCoverSiteIndex("LabwareLabel") ○ Execute vector based on dynamic positions
- GetLocation("LabwareLabel")
- GetSite("LabwareLabel") ○ How long since last maintenance?
- GetTimeSinceSuccessfulExecution("MethodName")

5.3 Changes or Improvement

- Speed improvements when loading and switching states 80323
- FCA Get Tips fetching logic based on labware index, not based on physical position of the arm - 79151
- FCA only tries picking up once before moving on if force feedback indicates no tip is present (otherwise it still retries twice) - 75903
- FCA & MCA check all configured waste bottles when washing, flushing, or priming - 78398
- To help teaching & troubleshooting, Sliders and Move To buttons are enabled for default liquid classes, labware, and carriers - 75575
- Set Location command has rotation parameter - 67576
- Driver name is displayed even if the command is collapsed - 79709 & 80287

5.4 Default Liquid Class Improvements

- Added "default" place holders instead of omitting undefined default liquid class subclasses
- Replaced variable "volume" with "aspirationVolume" in aspirate MicroScript in all LC's
- For Serum Free Multi, added conditioning volume formula for all DiTi types for Liquid FCA.
- For Serum Free Multi, corrected Pulse Volume formula for Air FCA Pulse now used only for <25ul
- For Water Free Multi, corrected Pulse Volume formula for Air FCA Pulse now used only for <10ul
- For Standard Wash, Changed the STAG from 10ul to 20ul
- Changed parameter set for all DiTi 10 LCs to support the new (3.6 mm longer) DiTi 10. The new LC also supports the DiTi 10 supplied prior than v1.4.
- Renamed:
 - "DMSO Contact Single" to "DMSO Contact Wet Single" ○ "Master Mix Free Multi" to "MasterMix Free Multi" ○ "Master Mix Free Single" to "MasterMix Free Single" ○ "Water Contact Multi" to "Water Contact Wet Multi" ○ "Water Contact Single" to "Water Contact Wet Single"
- New liquid classes:
 - Water Contact Single Air FCA all tip types ○ Water Free Single Liquid FCA DiTi 5000 ○ Water Free Multi Liquid FCA DiTi 5000
- See Read Me for information about liquid classes and upgrades

6. **FluentControl 1.5 (V1.5.0.41335)**

6.1 Bug Fixes

| ID | Title |
|-------|---|
| 79580 | Method DiTi Reset screen uses wrong worktable logic |
| 80937 | Reagent Distribution command shows context check error 'select target wells' for number of samples = 0 |
| 80977 | Import Variable fails with 'delimiter does not match' if there is an empty string |
| 81283 | MCA384 Pipetting Commands give error message 'specified argument was out of the range of valid values' and leads to crash |
| 81392 | If script line >1 has focus, new labware cannot be dragged to the worktable |
| 81476 | SampleTransfer with variable for replicates gives context check error not enough space in y |
| 81755 | FluentControl freezes when supervision error occurs |
| 81933 | Simulation of Keyence Barcode scanner is not possible |
| 82148 | Opening front door during "run is paused" leads to duplicated error message and software crash |
| 82158 | Sample Transfer Script Command shows incorrect context check error |
| 82257 | Dual FCA system fails to initialize when more than 2 washstations are present |
| 82373 | After runtime error during 'On Empty Tray' subroutine user cannot return to edit mode |
| 82430 | FCA Mixed Tip configuration - Tip 1 is also moving down even only tip 5 - 8 are used |
| 82550 | Copy and Paste of runners with tubes creates runners not editable by Group Editor |
| 83302 | Error switching to ZeroG after Active Stop |
| 83316 | FluentControl randomly crashes during script editing |
| 83383 | Worklisting with 384 well plates leads to error "None of the selected tips can access all wells in this sequence." |
| 83407 | Method Approval significantly affects the load/save/window refreshing |
| 83408 | Reduced likelihood of SVN Problem on new Fluent System after rebooting PC |
| 83486 | Software crashes while using export variables command |
| 83711 | Script export did not contain liquidclass |
| 83817 | FCA Y Range checking inconsistent between runtime and worklist conversion |
| 83826 | Intermittent collision error on nested MCA DiTi pickup. |
| 83837 | False context-check error at Dilution command |
| 83982 | Error Handling in Asynchronous Subroutine doesn't work. Software freezes. |
| 84079 | Carousel does not present plate upon resuming after Active Stop |
| 84297 | FC freezes on Retry after prompt to close cabinet door lock |
| 84388 | Data Audit Tool cannot be started in FluentControl 1.4.1 |
| 84512 | Air FCA Z Brake Test: Z-Axis touches upper hard stop |
| 84594 | Missing error flag in Sample Tracking reports for aspirate air after liquid detection error |
| 84735 | FluentSetup in doesn't start after approving method in 1.3 and upgrading |
| 84881 | TouchTools crash during reset DiTi step if worktables have mismatching MCA DiTis |
| 84883 | RGA transfer labware command to MIO failed with PREPAREDEST error message (intermittent, rare) |
| 84890 | System care methods doesn't complete successfully when method recovery state is present |

6.2 New Features


- Fluent ID support
 - Start Loading
 - Allow Removal
 - Wait for Finish

6.3 Changes or Improvement

- Snapshot Tool General Improvement
- Worklist will skip pipetting for labware not on worktable
- MCA DiTi Pickup & Drop side movements
- New Functions: FileLineCount(filePath) & FileExcelRowCount(filePath, [column], [startRow])
- General run-time error message “run was stopped due to collision or hardware error” has been split into two distinct messages: one for collision errors and another for general hardware errors.

7. FluentControl 1.5 SP1 (V1.5.1.42658)

7.1 Bug Fixes

| ID | Title |
|--------|--|
| 58944 | Problems when editing or saving labware opened from the worktable rather than controlbar |
| 66184 | Pathfinder problem when recovering from active stop with gripped deepwell plate |
| 78168 | Software crash with ‘Index out of range’ error while placing incubator onto worktable |
| 78598 | Errorhandling ‘continue pipet nothing’ for airFCA ‘Pressure out of range’ not working |
| 79024 | Context check problem with 3 rd party devices that have more than one site (i.e. centrifuges) |
| 79176 | Worklist based on 2D tube barcodes scanned with Ziath scanner fails with 'unknown labware' |
| 79494 | TouchTools Variable command displays keyboard directly with no instructions |
| 79540 | Welloffset does not work for custom 5*15 Tube Runner |
| 81248 | ‘DiTi have to be discarded to perform Inline Filter Test’ error occurs when error handling is performed after a Pressure Out of Range error |
| 81282 | TouchTools Variable command at the start of a method may cause software freeze |
| 81389 | RGA tries to grip lid from wrong position |
| 81473 | RGA ignores z-Grip offset for part of the move when using regripping |
| 83303 | ‘move to selected’ during RGA vector teaching could cause collision |
| 83390 | Welloffset not working for labware with a name containing a dot (e.g. 1.5ml Eppendorf, 0.5ml DeepWell Plate) |
| 83392 | Method recovery did not reset dispense counter |
| 83710 | Context check error when Worklist should use DiTis added with 'Add Labware' command |
| 83815* | Tracking speed in truncated cones and pyramids is initially very high (*)  this bugfix was not successful and removed in FluentControl 1.5 SP2 |
| 83820 | Impossible to FCA DiTis into MCA waste chute if different sizes of DiTi are mounted simultaneously |
| 84085 | Approval functionality not working when importing scripts |

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| 84157 | FCA Aspirate Script Command has some errors with option 'use next when empty' |
| 84202 | Method execution is started after pressing "Cancel" button on the CED of Method Recovery |
| 84296 | Deleting a lid with 'remove labware' leads to error in subsequent 'transfer labware' commands of the plate |
| 84459 | sometimes two methods can be started in parallel |
| 84584 | Worklist: FCA cannot access different tubes at once when specified by Source Tube Barcode |
| 84588 | Running script sporadically impossible with 'SaveRuntimeWorkspace failed' |
| 84657 | Software crash when trying to run an empty method |
| 84658 | Add Labware not working with labware names not containing brackets [] |
| 84661 | Rounding problem in liquid classes can lead to 'Too much in tip' error |
| 84732 | script editing slow when using array variables and labware with truncated cone/pyramid |
| 84734 | Worktable simulation performance improvements |
| 84770 | Some actions Labware Group Editor give 'object reference not set to an instance of an object' error |
| 87772 | SampleTracking: Register Labware command ignores manually entered barcodes and pauses the system |
| 84781 | FCA Dilution command sporadically failed with 'sequence contains no element' |
| 84821 | not possible to use 3 T-GIO extension boards |
| 84836 | grid numbers for back extension are shown inconsistently |
| 84865 | Touch Tools Variable command crashes with empty variable |
| 84872 | Software crashes if "Trace View" window is dragged out of main window during script start |
| 84874 | Method recovery fails if script contains different MCA headadapters |
| 85120 | Context Check error 'No tool has been found' |
| 85146 | SampleTracking logs warning in traceview when labware is moved during script edition |
| 85197 | Position of some non-grid based devices lost during software upgrade |
| 85219 | Problem with 'Dispense Back and Retry' error handling after pressure out of range error |
| 85676 | Import Variable command in microscript failed with "Value cannot be null Parameter name "methodName" |
| 85718 | Shaker Carrier definition did not have a valid default HW address specified |
| 85719 | Export Variable command did not show number of selected variables |
| 85720 | FCA transfer tool did not allow reliably discarding empty FCA DiTi trays to MCA-off-deck Waste Chute |
| 85737 | Error messages in main script can hide touch tools prompts from subroutine |
| 85740 | Possibility to recover after timeout during liquid level detection |
| 85751 | Prevent timeout when starting run when many DiTi boxes are stored in Stacker |
| 85825 | Set location allowed moving carriers when could lead to 'key not found in dictionary' error |
| 86006 | Prevent software crash when hardware reports certain errors |
| 86052 | Prevent software crash at Get DiTi command if scripts with different worktables are used |
| 86065 | Carousel prompts twice for missing barcode |
| 86105 | Run marked as finished successfully although tips are deactivated after an aspiration supervision error |
| 86106 | Improve recovery from Active Stop at during Get DiTi command in subroutine |

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| 86109 | Recovery does not remember DiTi position |
| 86188 | Context Check Error in Ziath scan barcode command |
| 86388 | Pause during MCA Get DiTi command could block MCA head in active DiTi carrier |
| 86393 | Pathfinder deadlock when both MCA and RGA try to move to the same position |
| 86408 | Improved error message when trying to assign a string value to a floating point variable |
| 86419 | Info message missing when transfer labware command involving an external device needs to be reexecuted |
| 86479 | MCA96 nested tip pickup sporadically failed with hardware error message |
| 86481 | worklist is converted into inefficient temp-script when using several source labware but one common destination |
| 86531 | Sporadic initialization timeout caused by Cytomat |
| 86532 | Method recovery failed with disabled script lines that contain undeclared variables |
| 86584 | software crash when declaring the same variable as string and floating point |
| 86678 | Air FCA: Automatic pressure out of range error handling not working |
| 86720 | Carousel ReadAllBarcodesInLocation fails when the last plate (top-down) of a tower has unreadable or no barcode |
| 86748 | Touch monitor displayed 'run finished' before it actually was finished |
| 86803 | Occasionally pickup of nested MCA96 disposable tips failed with hardware error |
| 86860 | Worklist does not skip labware placed in carousel |
| 86909 | Liquidlevel detection in tubes was done simultaneously even though liquid classes with different detection sensitivity were used |
| 86933 | No labware could be added to worktable when TeShake driver was enabled |
| 87196 | Active DiTi carrier remained locked after MCA drop DiTi command |
| 87314 | Automatic restarting of FluentControl failed with 'already running' |
| 87377 | Imported mesh files were not displayed and carriers were shown with red color |
| 87380 | Worktable TouchTools prompt did not display the selected labware |
| 87417 | Upgrade installation failed |
| 87479 | Toggling between two script commands changed the labware index |

7.2 Changes and Improvements

- New worktable access function ○ GetLabwareByLocation() - 83780
 - Programmatic access to stored disposable tip information - 75902
 - GetNumberOfTipsInTipBox()
 - GetTipBoxStatus()
 - SetTipBoxStatus()
- SampleTracking ○ Register Labware command now allows using a variable to specify the platemap file –
 - 81878 ○ Improved available volume data after not-enough liquid error handling – 81242 ○
- Drivers ○ Improvements to SiLa driver allowing to use 'work during pause' function -79588 ○
 - Finish thermal cycling with Inheco ODTC after active stop - 86011 ○ Driver settings are

preserved during upgrade – 82358 ○ Allow using Datalogic Matrix210 2D BC reader as on-the-fly tool

- Allow manual barcode entry on Touch Screen after carousel barcode read error – 84820
- Pathfinding ○ Worklist engine takes hotels behind the worktable into account when selecting tips for the pipetting – 80027
 - Prevent pathfinder timeout when RGA needs to move away from under the MCA – 81475
- RGA execute single vector allows setting z-offset - 84453
- Direct command improvements (prefill more parameters) - 85838
- Snapshot tool improvements – 85147

7.3 Default Liquid Class Improvements

- Retract position and speed:
In all airFCA and FCA liquid classes the retract position was changed to liquid level +/- 5mm. After this initial retract out of the liquid the tips will retract to z-travel with a speed of 20mm/s.
- Pressure Limits in Mix LC decreased the lower and upper pressure limits to +/-1000.
- Dispense speed of Empty Tips LC Reduced dispense speed to 600 ul/s.
- Conditioning volume in wide bore tips:
Increased conditioning volume to 50ul in Water Free Multi and Water Free Single liquid classes for DiTi 1000 Wide Bore filtered for both AirFCA and FCA.
- Further corrections:
 - Changed hardcoded aspiration speed in microscript to use the use the “AspirationSpeed” variable in the liquid class Water Contact Wet Single MCA.
 - Corrected variable name for the selection of error handling options on pressure out of range error for airFCA liquid classes.

8. FluentControl 1.5 SP2 (V1.5.2.42885)

8.1 Bug Fixes

| ID | Title |
|-------|--|
| 87773 | Incorrect FCA liquid level tracking in FluentControl 1.5 SP1 |

8.2 Changes

The bugfix 83815 introduced in FluentControl 1.5 SP1 caused bug 87773. The changes were reverted.

9. FluentControl 1.5.3 (V1.5.3.43025)

9.1 Bug Fixes

| ID | Title |
|-------|---|
| 83815 | Incorrect FCA and airFCA liquid level tracking |
| 86998 | Fatal error in pressure out of range error handling |
| 87031 | Method Recovery: Execution of transition failed |
| 87132 | Automatic screen lock is not working reliably |

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| 87514 | MCA or RGA significantly slows down during the run |
| 87605 | Wrong airFCY y-range calculation |
| 87962 | Method recovery shows wrong worktable picture |
| 87990 | Method Recovery is slow |

10. **FluentControl 1.6 (V1.6.4.44360)**

10.1 Bug Fixes

| ID | Title |
|-------|---|
| 55181 | "Stacked Plate to Plate offset" is not functioning for x and y offsets |
| 56469 | sensitivity calculation command doesn't check for missing liquid |
| 56648 | Corrected aspirate position when using partial MCA tips on labware in portrait orientation |
| 58675 | undo not working when deleting waypoints of robot vectors |
| 59229 | not possible to change password when switching users on touchscreen |
| 65133 | Switching between simulation and real mode fails |
| 66137 | String + operator does not work in Userprompt |
| 66145 | Declared variables appear multiple times in Intellisense, when command is deleted followed by an undo |
| 66191 | Magellan Trial Period Expiration Error Message shows up as a worktable error during init |
| 67095 | Empty Tip Contents (MCA384): Switching from the lowest index labware to the highest index labware via column/row offset is not accepted |
| 67176 | MIO, No warning messages are logged / shown for the delta temperature |
| 68897 | Error Msg for Init Vol Adjustment shows Target Vol smaller than Feasible Vol, this is due to a rounding issue in the message box not the calculation itself |
| 69549 | Device Placement values are different if you reopen editor, GUI displays incorrect values |
| 69878 | 3D Simulator New Configuration screen gets stuck behind Simulator if always on top is selected |
| 74805 | It is not possible to delete carriers in the Control Bar that are used in Worktables |
| 77624 | FluentControl occasionally hangs during Method recovery |
| 78170 | 20 grid back extension cannot be deleted from worktable. |
| 78383 | The speed attribute of labware does not move to an on-the-fly tool during transfer labware |
| 78393 | When an object is imported with a name that is already in use, the imported object is not renamed, resulting in 2 objects in the database with the same name. |
| 78860 | An empty Error Window (with ID Unknown) is shown after importing XDS-file |
| 79021 | Stop with gripped(RGA) DiTi box in ADH leads to error message |
| 79125 | RGA Grips in wrong position when dealing with stacks of lidded plates |
| 79489 | Device Placement values are different if you use the transfer button or type them in by hand |
| 79702 | When changing the allowed labware, it may lead to orphaned Labware which cannot be deleted and Run not possible because of Context Check errors |

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| 79810 | functions row() and column() now no longer need the labware name when used in an aspirate or dispense command |
| 80692 | 'Fetch labware for teaching' after a run ends with 'Move to home after each run' enabled |
| 80987 | A failed Inline Filter Check command results in an error dialog appearing twice |
| 81048 | FluentControl initialization with Magellan Tracker displays two Magellan login screens |
| 81389 | RGA tries to grip lid of DiTi box from wrong position |
| 81390 | After upgrading FluentControl it may be necessary to run a repair for Sample Tracking |
| 81519 | SW upgrade resets UMS settings |
| 81814 | duplicated method tab during method recovery |
| 81820 | 'query at startup' variable triggers 'disposable tip status' TT prompt |
| 82195 | RGA vectors of manufacturer objects can be changed |

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|-------|---|
| 82197 | Reverting carrier to restore point doesn't revert to RGA vectors. (Reverting the whole database should) |
| 82199 | FluentControl crashes if TouchTools Worktable command links to non-existing picture file |
| 82331 | MCA384: Aspirate/Dispense without LCs gives no runtime error - scripts finish successfully but don't pipette |
| 83380 | Sensitivity calculation command detects with a Well Offset of 1 (e.g. if A1 is selected B1 will be used). Values are not otherwise impacted. |
| 83822 | Load Worklist Context Check error with DiTis added to worktable with 'Add Labware'. Workaround: ensure all need DiTi types are on initial worktable and use Remove Labware command if necessary. |
| 83824 | Teaching not possible when labware is opened from infopad window. Works fine if opened from worktable context menu or from Control Bar. |
| 83828 | TouchTools doesn't automatically refresh user specific methods on switch user. Leaving to Main Screen and returning shows correct list. |
| 84083 | During worktable simulation Add Labware only adds items to worktable overview list but does not remove it |
| 84301 | Worktable simulation error (site index below zero) when moving layers of nested MCA DiTis to waste |
| 84458 | Methods with same GUID/Name leads to FluentControl crash and disappearing Touch interface (TouchTools crash) |
| 84515 | I/O state of drivers not tracked in Audit Trail Log |
| 84659 | FES sensors are not read in non-RGA scripts which potentially leads to collisions during arm avoidance moves |
| 84772 | Sample Tracking: manually entered barcode is discard if the enter key used (behaves like clicking cancel) |
| 84819 | TouchTools Worktable command does not highlight labware |
| 84867 | After clean install 'Administrator' role does not have the right to 'run unapproved methods' |
| 85025 | If Undo/Redo history is blank (e.g. after Import), System Care scripts with comments may prompt for saving after being run. This save will place the System Care method in the root directory (default location). |

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| 85028 | If Method Recovery point takes place during the lid handling step of transfer labware, both the labware and lid must be returned to their original locations |
| 85731 | Fluent ID Start Loading LEDs show extra flashes |
| 85734 | Inside RUP Worktable Script command all labware is displayed with Site 1 |
| 85736 | inconsistent context checking of smart commands |
| 85738 | Traceview truncates list of errors & warnings |
| 86007 | Fluent ID Start Loading color parameter change does not trigger request to save |
| 86068 | ExportVariable command shows Array variables multiple times and doesn't export them |
| 86072 | Array variables show up multiple times in Expression box autocomplete |
| 86105 | Run is finished successfully although tips are deactivated after an aspiration supervision error |
| 86108 | Movement Limits for FCA are not applied |
| 86338 | Liquid Class Editor does not save information when changing tip type or arm |
| 86339 | Status light stays solid green when going in edit mode after method run finished with warnings |
| 86387 | Fluent Memory Usage increases while opening, closing and editing script |
| 86421 | context check error of cLLD Self Test when using mixed fix/disposable tip configuration |
| 86486 | context-check error when a lid is moved with narrow reverse orientation |
| 86658 | FES sensors status not transmitted to pathfinder |
| 86703 | Aspirating with the FCA out of a 300ml SBS trough placed on a portrait nest is not possible |

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| 86760 | Sample Tracking manual barcode entry during register labware command shows the site number calculated over all carriers on the touch monitor, rather than the site on the current carrier |
| 86775 | Incorrect worktable reset leads to DiTi Reset problems and Worktable Commands not showing labware |
| 86787 | MCA mix failed with no device available |
| 86803 | MCA Get Tips failed after ADH |
| 86860 | Worklist must skip pipetting for labware not on worktable |
| 86882 | Carousel cannot retry after error to present plate |
| 86909 | simultaneous cLLD for different sensitivities when using worklist |
| 86910 | cLLD with liquid classes containing different sensitivities can happen simultaneously when using worklist and custom liquid classes |
| 86914 | Te-Shake configuration panel referenced incorrect carrier |
| 86986 | Edit barcode at Worktable Overview window changes labware label instead |
| 86998 | Fatal error in pressure out of range error handling |
| 87013 | Te-PS tips crash into Wash Station Cleaner Deep |
| 87030 | NullReference with 'use next when empty' and partially filled tube runner |
| 87031 | Method Recovery: Execution of transition failed |
| 87048 | FCA Aspirate Script Command has some errors with option 'use next when empty' |
| 87085 | timeout when starting driver configuration panel the first time |

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|-------|---|
| 87098 | Context Menu Hide is not persistent between software restarts |
| 87099 | Smart command cannot calculate needed cycles for fixed tips |
| 87132 | Automatic screen lock is not working reliably |
| 87227 | duplicating DiTi boxes does not duplicate the custom attributes |
| 87228 | Scan manually Touch Tools command does not unlock the doors |
| 87257 | pathfinder problem during worklist execution |
| 87314 | Automatic Restarting of FluentControl triggered by SampleTracking fails with 'FluentControl is already running' |
| 87318 | Wrong Tip Index used in error message "...Unknown disposable tip(s)...." |
| 87377 | carrier mesh files are incorrectly displayed after import |
| 87416 | Software freezes after statement deletion when previous statement is SetVariable containing SetAttribute function |
| 87417 | Software upgrade sometimes fails unless computer is freshly restarted |
| 87419 | unnecessary 'too much in tip' error message after retrying cLLD multiple times |
| 87424 | The Add Labware command does not treat the index as 3 digit value |
| 87426 | upgrade fails when backup path becomes too long |
| 87427 | SampleTracking not working for MCA |
| 87428 | Error shows up in Sample Tracking Server, when a tip is dropped in Fluent error handling |
| 87429 | arm priorities not consistently enforced |
| 87471 | Audit Trail files are deletable |
| 87474 | move simulation problem in very long scripts |
| 87479 | Labware index changes when switching between two scripts |
| 87514 | MCA or RGA significantly slows down during the run |
| 87556 | Pipetting sequence generated by Sample Transfer is sometimes not optimized |
| 87572 | NullReference error caused by invalid window layout file |
| 87584 | Run with pressure out of range error must end with errors |
| 87601 | No context-check error is shown when a non-Fluent ID runner is used in FluentID commands |

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| 87603 | GetAttribute function cannot access well barcode |
| 87605 | Wrong airFCY y-range calculation |
| 87611 | inconsistent limits when configuring UMS from FluentControl |
| 87613 | improved error messages |
| 87618 | Fetch labware for teaching cannot select MCA tips |
| 87620 | Stacking of lidded plates is not possible |
| 87623 | Lid handling is not working for plates with inserts |
| 87627 | [MCA 384] Selecting Wells is not working with Fixed Tips Adapter |
| 87631 | Labware label allowed blank name |
| 87648 | FCA Traceview Warning Message "Not enough liquid to dispense" is not displayed under some circumstances |

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| 87676 | Unnecessary error messages are displayed when using 3 cabinet doorlocks |
| 87679 | object reference not set to instance of object when trying to open Labware definition |
| 87750 | Recovery of a deleted method: dialog shows placeholder instead of method name |
| 87753 | Save button is activated and context check triggered without actual changes by the user |
| 87755 | Manually Scan Barcode command: SW crash when you type in a variable as labware index |
| 87756 | Path too long in Journaling |
| 87761 | In mixed tip configuration SmartCommands only use volume capacity of the smallest channel |
| 87762 | FluentControl SW crashes at Preview of FluentID LED light when invalid values are entered |
| 87764 | FCA 350ul wafer cannot be discarded to MCA thru deck waste because of incorrect default vector |
| 87767 | Tip not in compartment error during AirFCA error Handling |
| 87770 | cannot return to edit mode after aborting run |
| 87773 | Incorrect FCA and airFCA liquid level tracking (this also solves Bug 83815) |
| 87799 | Software freezes when using both liquid classes with and without cLLD in the same command |
| 87813 | Set Location command does not accept variable as Labware |
| 87819 | MCA nested tip status cannot always be reset from touch monitor |
| 87824 | plate types specified in labware group editor occasionally are lost |
| 87827 | TouchTools 'Wait for close' in asynchronous subroutine pauses main script |
| 87880 | StackOverflowException when trying to recover after an aspirate with use next when empty |
| 87881 | Incorrect Unit for Te-Shake Frequency |
| 87892 | Tracking speed when dispensing in labware with truncated cone compartment shape |
| 87939 | '+' is not allowed in labware name |
| 87940 | Carousel Barcode Scan Error User Prompt displays false labware type |
| 87941 | Defining an interleaved Labware is not working |
| 87962 | Method recovery shows wrong worktable picture |
| 87990 | Method Recovery is slow |
| 87998 | Electronic Signature Dialog pops up twice, No AuditTrail Entry on cancelation |
| 88005 | Air-FCA: Pressure out of range error leads to summing up of Air-Gaps |
| 88007 | Value cannot be null error message when last Variable declaration line is selected but empty |
| 88082 | Wrong disposable tip information when starting a method after abort. |
| 88089 | Synchronous On Empty Tray subroutine fails at recovery |
| 88101 | Pipetting volume is limited to 0 ul, although there is mathematically enough in the well |
| 88102 | Enhanced logging for pathfinder problems |
| 88104 | Recovery Editor shows wrong description for SetVariable |
| 88107 | Stop and Pause/Start Buttons not visible after aborting a script run |
| 88117 | Timing issue in the recovery of asynchronous "On Empty Tray" subroutine |

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| 88130 | Tips Pickup MCA384: MCA384 is not able to pick up 15ul MCA384 disposable tips properly with the combo adapter plate. |
| 88143 | Recovery of Query At Startup variables with scope RUN fails |
| 88144 | Query At Startup variable with scope ITERATION is not set for the next iterations |
| 88184 | Data Audit Tool - only one manipulated file was shown |
| 88187 | Remove Labware command does not support variables |
| 88192 | FCA Standard curve smart command didn't work with replicates in column-wise arrangement |
| 88201 | Labware teaching: FCA doesn't move up to z-travel with Move To buttons to move from Well 1 <-> Well 96 |
| 88215 | The Shaker shakes in the wrong direction |
| 88222 | improved error messages for TeVacs |
| 88232 | Transfer Labware command arm is unable to move to specified position error occurs, because virtual LW blocks the position |
| 88238 | Plunger acceleration for MCA empty tip not was not limited to allowed range causing overcurrent error |
| 88253 | Warning message for end of hardware lifetime is not displayed |
| 88254 | Default carrier definition of centrifuge is has reference offset, which leads to incorrect Placement & Teaching |
| 88255 | Background coloring of TouchMonitor now corresponds to run status |
| 88256 | Row and Column offset for Get Tips when using nested MCA96 tips |
| 88258 | Added retract for FCA tips after aborted run |
| 88263 | mix in FCA dilution smart command does not take well offset into account |
| 88267 | Te-Vacs: inconsistent labelling of rear and front site - tubes may need to be swapped |
| 88304 | FluentControl is closed when deleting a previously added labware (via "Add Labware" command) from the worktable |
| 88305 | Aspirate/Dispense from/into an added labware via "add labware command" is not working |
| 88307 | Additional Context Check about undefined Tool ID Name is shown for Get Tips command |
| 88308 | Add labware command - rotation value cannot be 180° |
| 88309 | Changes are logged in the audit trail even when they are cancelled |
| 88376 | Corrected SampleTracking volume when using cLLD error handling during dispense |
| 88402 | aborted direct commands reported as 'executed successfully' |
| 88497 | buttons greyed out after switching user |
| 88498 | MCA and FCA Script Commands generate errors when using labware from add labware statement |
| 88499 | unnecessary warning message 'dispense target volume reduced' |
| 88513 | pauses runs could occasionally not be resumed |
| 88519 | Index of Audit Trail file is not increased after modifications |
| 88541 | FCA relative move slowed down after 1.5 SP2 upgrade |
| 88542 | User Management Errors were not displayed on touch monitor |

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| 88550 | repeatedly using dispense back and retry on aspiration supervision errors did not update the selection of affected tips |
| 88554 | software freeze after shaker hardware error |
| 88555 | No warning message show when specified temperature of TeShake could not be reached |
| 88556 | Repetition of labware movement in Plate Action Report |
| 88557 | Automatic handling of pressure out of range error as defined in LC not working |
| 88562 | Aspirate Available when no liquid detected shows >0ul in SampleTracking report |

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| 88579 | Exception when script/method run is resumed after Stop is clicked during Dispense |
| 88595 | configuration problem with duplicated MIO incubators |
| 88596 | volume higher than available volume error when pipetting in 1536 well plate |
| 88602 | Barcode Reader: numbering of automatically generated IDs are not successive |
| 88612 | Context Check & Runtime error in LC Microscript with function availableVolume |
| 88613 | "Move to Selected" and Labware Z-Coordinates "Move To" in carrier or labware editor causes NullReferenceException |
| 88628 | Executing a method as operator with no rights is possible |
| 88632 | CNS is working only with admin rights |
| 88634 | Script execution is severely delayed and UI freezes temporarily |
| 88637 | Recovery view not correct for subroutines, worklists, script iterations or several scripts |
| 88651 | Finished scripts and subroutines are not properly recovered |
| 88657 | Command line unintentionally jumps to the end to the script |
| 88675 | "Specified argument out of range" when using Run Partially |
| 88676 | RegisterLabware command does not assign tube barcodes when Enter key is used. |
| 88686 | UI-Labels truncated in Magellan Measure Command |
| 88698 | After cytomat 'scan cartridge' it takes >2 min before barcodes are sent to FluentControl |
| 88700 | Tip crashes into the bottom of the plate after a no liquid error handling for another tip |
| 88707 | Green indication shown in Fluent RuntimeController, When Run finished with Warning(s) |
| 88709 | FluentControl crashed with invocation error after adding DiTis to Stacker in LGE |
| 88725 | Reset DiTi status for MCA stacked DiTis is not working as expected |
| 88733 | Fluent Control crashed after all DiTis in the direct command Sensitivity Calculation are disabled |
| 88735 | Abort run does not work for Standard command in TouchTools |
| 88757 | FCA dilution command shows incorrect info in status line |
| 88758 | When switching user from Operator to Admin, open scripts remain in read-only state |
| 88773 | Normalization command - operator verification map shows initial concentration as target concentration |
| 88785 | 7mm Regrip Nest cannot be selected in Add Labware |
| 88794 | Missing error context check for Remove Labware command |
| 88795 | Touch Tools command 'Manual Scan Barcode' cannot scan group of plates with door open |

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| 88817 | Exception thrown while aspiration out of an empty trough |
| 88836 | FCA DiTis collide with FluentID handles during pathfinder move |
| 88854 | Deviations between labware definitions and drawings |
| 88870 | MCA couldn't evade from RGA when removing empty nested tip wafer |
| 88880 | Add Labware followed by functions GetNumberOfTipsInTipBox(), GetTipBoxStatus() & SetTipBoxStatus() leads to context-check error |
| 88886 | FCA Aspirate Execution Error "index was outside the bounds of the array" |
| 88889 | Not possible to reset nested FCA DiTi stack |
| 88953 | Checkbox for Heater enabled is unchecked though heater is enabled |
| 88954 | FluentControl crashed when switching to user with expired password |
| 88962 | Tolerance for mechanical imprecision is too small when using FCA tip spreading |
| 88967 | Snapshot window always covers FC error message |
| 88973 | Pause and Stop buttons disappear |
| 88984 | Labware Editor - Custom Attribute "Stacker Type": value > 10 is initially not possible |
| 88999 | unnecessary 'too much in tip' error message |
| 89005 | WT merge error by loading/creation a method that use two scripts with the same worktable |
| 89006 | FluentControl crashes when run resume check was aborted and run finished |
| 89026 | Transfer of Nested DiTi racks from the Stacker Tower to the MCA DiTi Base is not possible with tool location robot |
| 89060 | Sub journal exception when recovering after stop / retry in an aspirate or dispense with the FCA |
| 89099 | MCA96 GetTips fails with 'unknown column offset' when using layer of DiTis moved by RGA |
| 89102 | Sample transfer command: Overview missing for 1x16 16x100mm Tube Runner |
| 89103 | Switch user: Different users were shown in FluentControl and TouchScreen |
| 89122 | RUP Variable with Textbox and Numpad always need to delete default value before typing |
| 89145 | Fluent Setup Pipetting test fails in first cycle |
| 89151 | MCA Get Tips command shows no error when labware does not exist |
| 89262 | Approval Release Menu Item is missing |
| 89269 | RGA driver error during FluentControl startup |
| 89275 | Operator can execute 'suspicious' method, even though he doesn't have the necessary rights for this |
| 89313 | SW crash at runtime followed by FCA crash with broken tip adapter in next run |
| 89315 | Importing a corrupt file with InSituNormalization Command leads to an Unhandled exception |
| 89330 | Installer includes non-tested components |
| 89357 | Sample Transfer smart command gives "Unhandled exception" if no tubes are selected in a runner |
| 89358 | Carousel command "ReadBCsInLocation" non-readable Barcodes causes a non-recoverable error |
| 89398 | Substring command gives context check error if there is no initial barcode set for the labware |
| 89426 | RGA is not in Zero G state after the warning demanding to move the arm by hand |

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| 89542 | Tips collides with the labware during aspirate command when the labware was added by Add labware command |
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10.2 Changes and Improvements

- Redesigned Export/Import
- Allow suppressing Active stop messages for external drivers
- New 'On System Prompt' command
- Enhanced MCA96 Advanced DiTi pickup to choose move distance automatically and support multiple tip sizes

10.3 Default Liquid Class Improvements

- Ethanol Free Single and Free Multi:
enabled prewetting by changing default value of the variable 'prewettingSteps' from "0" to "1" for all tip types
- DMSO Contact Wet Single: changed AccuracyAdjustment (aspiration and dispense) for DiTi 50 and DiTi 50 Filter
- Serum Free Multi Liquid FCA:
changed Conditioning Volume, AccuracyAdjustment (dispense) and First Dispense Correction for DiTi 200 and DiTi 200 Filter
- Serum Free Single Liquid FCA:
changed AccuracyAdjustment (Aspiration and Dispense) for Standard Fixed Tips, DiTi 50 and DiTi 50 Filter
- Serum Free Single Air FCA: changed AccuracyAdjustment (Aspiration and Dispense) for DiTi50 and DiTi 50 Filter, DiTi 200, DiTi 200 Filter and DiTi 350
- Water Free Multi Liquid FCA: changed Excess Volume, Conditioning Volume (Min&Max), AccuracyAdjustment (Dispense) and First Dispense Adjustment for DiTi 350
- Water Free Multi Air FCA:
changed PulseVolume and First Dispense Adjustment for DiTi 350
- "Standard Wash Tipblock 125" was renamed to "Enhanced Wash Tipblock 125"

New liquid classes

- DMSO Contact Wet Single AirFCA DiTi 50
- DMSO Contact Wet Single AirFCA DiTi 50 Filter
- DMSO Contact Wet Single MCA384 96DiTi 200 Wide Bore
- DMSO Contact Wet Single MCA384 96DiTi 200 Wide Bore Filter
- DMSO Free Single MCA384 96DiTi 200
- DMSO Free Single MCA384 96DiTi 150 Filter
- DMSO Free Single MCA384 96DiTi 200 Wide Bore
- DMSO Free Single MCA384 96DiTi 200 Wide Bore Filter
- Ethanol Free Single Air FCA DiTi 50 clear
- Ethanol Free Single Air FCA DiTi 200 clear
- Ethanol Free Single Air FCA DiTi 1000 clear
- Serum Free Single Air FCA DiTi 50 clear
- Serum Free Single Air FCA DiTi 200 clear • Serum Free Single Air FCA DiTi 1000 clear .
- Water Contact Wet Multi MCA384 96DiTi 200
- Water Contact Wet Multi MCA384 96DiTi 150 Filter

- Water Contact Wet Multi MCA384 96DiTi 200 Wide Bore
- Water Contact Wet Multi MCA384 96DiTi 200 Wide Bore Filter
- Water Free Single Air FCA DiTi 50 clear
- Water Free Single Air FCA DiTi 200 clear
- Water Free Single Air FCA DiTi 1000 clear
- Water Free Single MCA384 96DiTi 200
- Water Free Single MCA384 96DiTi 150 Filter
- Water Free Single MCA384 96DiTi 200 Wide Bore Filter
- Water Free Single MCA384 96DiTi 200 Wide Bore Filter

10.4 Default Labware Changes

Troughs: 25ml, 100ml, 1000ml, 125ml MCA, 200ml MCA, 250ml MCA, 1000ml

Plates: 24 Well Flat, 48 Well Flat, 96 Well Flat, 96 Well Round, 96 Well Crystal Quick, 96 Deep Well 0.5ml, 96 Deep Well 1ml, 96 Deep Well 2ml, 384 well, 384 Well Deepwell, 384 Well LoVol HiBase, 384 Well LoVol LoBase, 384 Well LowVol Round Corning, 1536 Well

Tubes: 50ml Falcon, 15ml Falcon

11. FluentControl 2.0 (2.0.4.45040)

11.1 Bug Fixes

| ID | Title |
|-------|---|
| 30423 | No undo/redo entry created during "Edit/Search and replace LiquidClasses" |
| 86071 | Touch Tools does not switch back to home screen after run. Showing User Input Variable |
| 87754 | Move Simulation fails after undoing delete of a DiTi stack |
| 88975 | first undo not working after copying carriers on worktable |
| 88995 | classification of errors into collision and other hardware errors is not working |
| 89103 | Switch user: Different users were shown in FluentControl and TouchScreen |
| 89106 | commands appeared twice in Controlbar |
| 89163 | Executing a script step by step is not possible - script cannot be aborted after second statement |
| 89265 | FluentControl crashed after Import of zeia file |
| 89318 | Opening door while MCA aspirates aborts script |
| 89355 | Sample Transfer smart command does not consider arm range when using well-offsets and multiple runners |
| 89356 | TouchTools 'worktable' command did not show FluentID runners |
| 89387 | On multiple changes in System Configuration that includes change in Sample Tracking I/O State, Fluent doesn't instruct to restart the application |
| 89427 | Retry after stop during "Remove Empty Tip Spacers" command is not working |
| 89437 | connection error to MIO incubator during initialization |
| 89457 | NullReference exception when editing 'on error goto' command |
| 89508 | AirFCA moves to wrong position with Move Tool Home Position button |

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| 89542 | Tips collides with the labware during aspirate command when the labware was added by Add labware command |
| 89546 | Software freezes when paused during timer |
| 89559 | No "Retry"-option if variables are exported to a folder that doesn't exist. Run aborts. |
| 89571 | Can't switch user, after closing User Management Editor without saving changes |
| 89583 | Inheco MTC driver could not be simulated (hangs when I/O state is set to off) |
| 89588 | Approval Release Context Menu Item not available when admin activates approval functionality |
| 89612 | CNS send notification command did not display checkboxes for selected recipients |
| 89616 | Move Simulation fails after undoing delete of a DiTi stack |
| 89621 | FluentControl crashed when access to AuditTrail logfiles was blocked |
| 89661 | Windows Screensaver is blocked while Fluentcontrol runs |
| 89674 | If the door is opened exactly when a 'plate lost' error occurs the RGA may keep moving |
| 89680 | Typo in Te-Stack error message |
| 89706 | FluentID did not ask for rescan of tubes after opening door |
| 89707 | TouchTools 'worktable' command showed wrong site numbers |
| 89715 | Unnecessary error flag transmitted to SampleTracking when dispensing to a labware which had a previous aspiration error |
| 89732 | On screen keyboard stays on Touch Monitor after user login and overlays method starter |
| 89733 | TouchTools 'worktable' command does not show TeVacs, FES-Fingers, MCA head adapters and DiTis on MCA Active Nest |
| 89741 | Error message of Keyence driver during startup |
| 89749 | Previous button on Touch monitor was not working reliably |
| 89763 | Repeated import of the same zeia-file creates always a new worktable and method |
| 89764 | Labware definition for 1.5mL Eppendorf Tube was not accurate |
| 89775 | After importing two labwares and the worktable had the same name |
| 89788 | Dot in labware name leads to error during aspiration when using option "use next when empty" |
| 89799 | Inline Filter command is not skipped on Liquid FCA |
| 89812 | New Clear FCA DiTi definitions were not protected as manufacturer objects |
| 89814 | The error handling window for "No liquid detected" does not show the position and the barcode of the tube to be refilled |
| 89827 | Advanced MCA96 DiTi drop performed only side-move but not second drop |
| 89833 | FluentID tried asked for tube rescan twice when switching from real to simulation mode and back |
| 89855 | error after importing script from old FluentControl version |
| 89866 | Changes not reverted when they could not be written to AuditTrail (write operation to audit trail failed) |
| 89875 | Data Audit Tool wrongly marks empty GWL File as invalid |
| 89895 | 5000ul DiTis could not be picked up on instrument with DiTi adapters on channels 1-4 and fix tips on channels 5-8 |

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| 89899 | Touch Monitor does not display query text for User Input |
| 89903 | Touch Tools does not switch back to home screen if the last statement in a wizard group has context check errors. |
| 89955 | labware label name without index leads to an error in Smart Commands including Worklist 'R' and 'T' statements |
| 89965 | ADH for FCA for reactive case is not working |
| 89974 | Tips are not picked up by FCA Get Tips when script is recovered |
| 90018 | Two warning messages shown when switching to research only mode instead of one |
| 90114 | Drivers using a GUIprovider cause a wrong 'not released ' warning |

11.2 Changes

- Compatibility with Windows 10 added

12. **FluentControl 2.1 (V2.1.19.46163)**

12.1 Bug Fixes

| ID | Title |
|-------|--|
| 79132 | Software freeze during FCA pipetting |
| 80975 | clld cross talk check is run even though 'trough mode' is enabled |
| 84656 | Labware may be preserved in runtime worktable after aborted run |
| 86107 | Operator cannot execute newly created methods |
| 87001 | already loaded FluentID runners are not re-verified after the error messages 'Pick up Tips no Tips' and 'Tips already mounted' |
| 89148 | Context check error that FCA tips are out of range appears after opening method or deleting second script from method. |
| 89274 | MCA 96 DiTi Pickup stopped with HW error |
| 89290 | FluentControl crashes during script editing when activating 'has lid' in Cytomat |
| 89384 | Return labware from teaching shows error message that labware is gripped |
| 89412 | calculation of pathfinding evasion routes can be slow |
| 89571 | Can't switch user, after closing User Management Editor without saving changes |
| 89676 | Initialization fails with 'power switching failed' |
| 89738 | ToolLocation to present plate from the cytomat does not free up RGA |
| 89903 | Touch Tools does not switch back to home screen if the last statement in a wizard group has context check errors. |
| 89917 | Software hangs when FluentID Run Resume Check is aborted |
| 89922 | When using 'user input' with limited range on the touch monitor some numbers can only be entered by using the + and - keys |
| 89930 | Imported methods only become accessible for operators after withdrawing and granting user permission again |
| 89931 | Error when switching user while using method approval to release a method |
| 89932 | While Importing a zeia file additional information is shown and files are not imported |

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| 89952 | Variable view shows variables transferred to subroutine twice |
| 89956 | Initialization with simulated instrument occasionally fails with 'move cannot be executed because not move profile exists' |
| 89969 | Move Arm relative in X to a not reachable position with another arm in the way causes FluentControl run to freeze |
| 90035 | Sample Transfer is fails when selecting a tube runner that is not on the left of a group as source |
| 90044 | error when using spaces in variable name |
| 90045 | FluentID run-resume check can take very long |
| 90067 | FluentControl freezes at SampleTracking 'Generate Report' command if SampleTracking is not responding |
| 90093 | Method Recovery problems when using parallel subroutines |
| 90097 | configuration for touch monitor can be lost when starting FluentControl without connected touch monitor |
| 90127 | Import does not show conflict if only an RGA vector was changed |
| 90159 | Exporting a script with dependencies doesn't export the liquid classes, if liquid class is used per channel in aspirate/dispense command |
| 90186 | prepare method fails with 'unable to save new runtime worktable' |
| 90283 | When user aborts a run the status message may read 'Fast stop event received' rather than 'aborted by user' |

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| 90284 | Pause button not visible after pressing continue in touch tools 'standard' command |
| 90305 | Worktable graphic in Touch Tools 'Manual Scan Labware' command does not show hotels on back extension |
| 90325 | Software slow down when starting hundreds of methods via API |
| 90335 | Running script with smart command unapproves the used worktable - script gets 'suspicious' |
| 90341 | User gets locked after typing wrong password twice when 3 retries are allowed |
| 90348 | Using automatic lid handling and specifying a lid-location without free space can lead to software crash |
| 90401 | Status light keeps blinking green even after continuing run |
| 90407 | Using the function FileExcelRowCount() can lead to sporadic freezes of FluentControl during context checking if Excel does not respond |
| 90408 | Labware in incubator is not excluded as inaccessible for pipetting during worklist execution |
| 90426 | Not possible to continue run after stopping during FCA move arm command |
| 90438 | Sporadic software crash while saving script |
| 90446 | Renaming site of non-grid based carrier changes RGA vector |
| 90503 | Doorlocks do not disengage to allow manual barcode entry after failed read with Keyence BC scanner |
| 90515 | Unnecessary warning message about reduced volumes is shown due to rounding problems |
| 90530 | Error 'value too high or too low for int32' when using 25ml Trough |

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| 90541 | Using a well offset for a trough with only one well shows misleading error message 'invalid labware format' instead of 'invalid well offset' |
| 91190 | Retry option is offered for unsuccessful move to position outside of arm range which will also fail when retrying |
| 91213 | New methods do not become available for operators until permission has been enabled in user-management |
| 91220 | Storing subroutines in sub folders leads to error during method recovery |
| 91226 | Adding new tip types to a liquid class fails the first time with 'all tip types have already been added' when not types are defined. It works on the second try. |
| 91227 | Run aborts after method recovery, subroutine not found |
| 91251 | System does not initialize if the RGA has a gripped labware |
| 91254 | No info popup shown when setting channel to broken after pressure out of range error and failed inline filter test |
| 91255 | Doorlocks can fail to reopen when stopping a run within few seconds after starting |
| 91257 | Robot vectors can become incorrect when editing and moving carrier without saving the worktable |
| 91259 | Access denied error at startup if a windows user does not have access to C:\AuditTrailBackup\AuditTrail\LogFiles |
| 91272 | Error 'Update SVN repository - Error CreateContentWithoutCopy failed' during upgrade |
| 91280 | Wrong positioning of non-FluentID runners on FluentID segment |
| 91281 | Improved error message when trying to start run with 'stored DiTi information' and labware of the new script is overlapping with a stored disposable tip box |
| 91309 | Opening door immediately after executing 'fetch labware for teaching' may lead to 'FastStop' error |
| 91316 | Collision error when picking up lowest layer of nested 350ul or 10ul FCA tips |
| 91346 | Operator cannot continue on 'labware lost' error message |
| 91361 | Errors that occur while monitoring the tube runners from FluentID barcode scanning are displayed only after rescanning the tube barcodes |
| 91404 | No specific error message and retry possibility when a RGA FES finger is removed during run |

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| 91444 | Y-range obstacle check does not take into account the y-dimension of the FCA z-bar |
| 91459 | User information is not transmitted to Magellan tracker triggering a password prompt |
| 91475 | Worktable merge errors after resetting stacked disposable tips by add/remove labware commands |
| 91477 | Software freeze due to simultaneous rendering in main and touchtools thread |
| 91487 | Export tool fails to export some linked liquid classes specified via expressions. |
| 91488 | Import shows worktable as conflicting even if it does not yet exist on target system |
| 91561 | No error message shown when partial pickup of MCA96 disposable tips failed due to misaligned box |
| 91613 | Worklist shall skip records for tubes/wells barcode not on the worktable |
| 91614 | Doorlocks do not open when aborting script immediately when starting it |
| 91673 | No default carrier definition exists for 'waste thru through 8*100ml' |

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| 91674 | opening front door during MCA pipetting leads to aborted run |
| 91675 | Error message "Too much in plunger" is shown during execution of aspiration command |
| 91690 | Buttons of error message greyed on main monitor are greyed out after locked screen and the dialogue can only be answered from the touch monitor. |
| 91709 | Carrier Attribute 'grasp offset' is ignored |
| 91716 | OutOfMemory exception during very long run |
| 91734 | FCA makes an unexpected movement when MCA evades |
| 91764 | airFCA z-channels sporadically move up or down during zero-G |
| 91767 | Contouring error when picking up disposable tips from lowest layer of nested 350ul tips |
| 91827 | If MCA wrongly mounts service head adapter it crashes when putting back the service adapter |
| 91845 | MCA drop tips not possible after error during MCA get tips |
| 91871 | Runs sporadically stop with message 'Entry could not be written to Audit Trail' |
| 91873 | FluentControl freezes when aborting during 'manual scan labware' TouchTools prompt |
| 91877 | MIO incubator shows communicationException at startup |
| 91878 | When teaching 384 well plate only the position of well #1 but not well #384 can be transferred |
| 91879 | Improve Error Message when well offset cannot be applied to plate outside pipettable area |
| 91880 | using Datalogic 2D barcode scanner as on-the fly tool leads to 20sec delay and timeout |
| 91889 | Status lights unnecessarily switch to red during initialization if user switches script editor tabs |
| 92007 | Pressure out of range error handling option 'retry once with new tip' does not switch the tip if dispense back fails |
| 92008 | Pathfinder does not consider the time required to retract pipetting arms out of labware bounding box which can cause a delay in an evasion move resulting in crash between arms |
| 92009 | changing carrier site definition while script is open may cause carrier to disappear from worktable |
| 92010 | software freezes when aborting during 'wait' command |
| 92011 | Doors can be opened while arms are moving when recovering a run and pressing pause while a touchtools prompt is active |
| 92012 | Exporting a script with dependencies does not export the referenced files of StartApplication and RegisterLabware script commands |
| 92013 | RGA direct command 'drop fingers' tries to drop tips even when a labware is gripped |
| 92081 | Switching between two TouchTools prompts within a Wizard group not possible with open door |
| 92082 | Context Check doesn't flag invalid labware selected in TouchTools worktable command |
| 92084 | Balance driver sporadically fails to load and give no context check error. Runs will stop at first balance command. |
| 92086 | Stop button not working when TouchTools 'manually scan' labware command is active |
| 92159 | RGA Transfer Labware to retrieve a plate from the carousel sometimes fails with 'error sending command' |

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| 92160 | SampleTracking report may show small aspirated volume (<0.1ul) even though nothing was pipetted when no liquid is detected and 'aspirate available volume' chosen as error handling |
| 92200 | When airFCA error handling option 'dispense back to source and retry' after pressure out of range error SampleTracking reports pipetting volume 0 for the unaffected channels that successfully pipetted before executing the error handling. |
| 92222 | FCA GetTips command only calculates arm range for tip 1 |
| 92224 | Pathfinding resolution occasionally insufficient to detect colliding elements during fast RGA rotational move |
| 92226 | Door locks not opened when user prompt appeared for refilling system liquid |
| 92229 | Improve error message of worklist command convert CSV to GWL |
| 92230 | Improved error message for Transfer Labware command if the specified on the fly tool is not available or not working |
| 92233 | When stopping and aborting a FluentID "Start Loading" command a context check error appears after returning to Edit mode |
| 92293 | Occasional Fluent doesn't switch axes to zero-G mode when aborting run |
| 92297 | Selected Labware in SmartCommand gets lost in combination with Add/Remove Labware |
| 92299 | TouchTools worktable command displays portrait plate with orientation 180 incorrectly |
| 92300 | Runs sporadically stop with message 'Entry could not be written to Audit Trail' |
| 92302 | API shows unknown state when method recovery is active |
| 92303 | Querying FluentControl status via API during startup prevents successful startup |
| 92304 | Context check error about object out of arm range can be unnecessarily displayed when after switching back to edit mode at the end of a run |
| 92397 | CNS over iphone does not get any messages |
| 92402 | Worklist does not use all tips to pipette reagent from through on a rear nest |
| 92403 | Sporadically SyringeSize function cannot be resolved in Microscript |
| 92406 | Dataversion number restarts when using method approval |
| 92408 | Communication problem to centrifuge after long period of inactivity |
| 92498 | Carrier definition for Stacker left had a type in the TransferStationSite1 custom attribute |
| 92499 | FluentControl froze when running method with Array variable of scope run |
| 92500 | Switch User via Lock Application not working |
| 92501 | The context check of Smart Commands for the well selection and well offset does not account for the possibility of partially filled tube runners which can unnecessarily raise context check errors |
| 92503 | Light collision of FCA DiTis was not detected and pipetting continued without error message. |
| 92565 | Hidden and Deleted methods are incorrectly displayed in TouchTools Quickstart view |
| 92567 | Method recovery failed when using finger exchange system for RGA |
| 92568 | Method recovery failed when recovering an interrupted touch tools wizard group |
| 92571 | Lid_location on source carrier gives context-check error |
| 92572 | Method property Show Disposable Tips Information greyed out |

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|-------|---|
| 92589 | Pickup of nested MCA96 disposable tips fails with hardware error |
| 92590 | Doors not unlocked on liquid detection error when using 'use next when empty' |
| 92752 | SampleTracking doesn't process messages fast enough |
| 92753 | default liquid classes can be edited |
| 92764 | Labware not gripped error handling opens grippers before user can choose Ignore and Continue |
| 92923 | Method recovery fails when aborting during touch tools commands |
| 92969 | Editing workspace is slow |
| 92971 | Recovery of Methods with Subroutines and FluentID Run Resume Check is not working reliable |
| 92972 | Software crash when trying to edit a particular script |
| 92995 | Incorrect z-height of Fluent ID runners |
| 92996 | Software freezes when no firmware answer is received for liquid detection result |
| 93062 | Unnecessary context check error after FluentID allow removal command |
| 93105 | Error 'Cannot ensure detected tool equals mounted tool' in traceview |
| 93106 | GWL worklists are not exported together with script |
| 93108 | SampleTracking script command "Register Labware" shows the error "Object Reference Not Set To An Instance of an object" |
| 93110 | After not enough liquid error on FluentID runner and refill only the refilled tube is pipetted |
| 93112 | editing carrier fails with 'key not present' |
| 93123 | Sporadic software freeze during FluentID barcode scanning |
| 93134 | FluentID does not give an error when tubes are swapped during the run |
| 93155 | Trace view shows driver init ok even it is failed |
| 93161 | Context-check error after running Standard Curve command |
| 93188 | Snapshot tool finished with 'errors occurred' when using default settings |
| 93213 | Retry option in Stop on Error Handler leads to re-execute and not to recovery of current statement |
| 93214 | Selected labware in SampleTransfer does not update when labware is renamed |
| 93218 | 'runner removed' warning missing in SampleTracking report when FluentID runner was removed during pipetting |
| 93266 | subroutines displayed even though disabled in configure system |
| 93268 | Automatic lid handling fails with 'position occupied error' when moving plate between several positions that don't allow lid |
| 93305 | TeStack slide not initialized after an error |
| 93307 | Error "000 Value cannot be null. Parameter name : key" when declaring a variable name with an invalid character |
| 93309 | RGA error during FluentID scan (continue while scanning) removes FluentID info from touch monitor and continues without scanning barcodes |
| 93319 | Cancel not working while duplicating driver |
| 93321 | Wrong ST report when FluentID tubes are swapped during 'not enough liquid' error handling (refill) |

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| 93330 | Start of method with worklists takes too long |
| 93332 | RGA doesn't evade during MCA sidesteps |
| 93360 | Carrier dimensions not editable |
| 93389 | After opening door resume needs to be pressed twice to restart run |

12.2 Changes

- Intended use changed to general purpose
(when used on Fluent 2018 design together with GX assurance software)

13. FluentControl 2.2 (V2.2.16.47310)

13.1 Bug Fixes

| ID | Title |
|-------|---|
| 87629 | Changes to the user management done in Fluent are not logged in UMS Audit Trail correctly. |
| 89316 | Inconsistent behavior when trying to save Scripts, Methods, Worktables and Liquid Classes with the same name |
| 89530 | grid and site numbers shown in worktable editor are inconsistent |
| 89671 | CNS doesn't send emails for state 'user interaction required' |
| 89696 | Configuration of TeStack: Y position value can be set higher than actually available. No error-message on script execution |
| 89910 | Entry could not be written to AuditTrail error |
| 90437 | Change of rotation coordinate by exactly 360 degrees cannot be saved since it has no effect |
| 91275 | Improve logging for moves with Move Tool |
| 91461 | Carrier definition for MCA off deck waste chute is higher than real carrier preventing 500ul MCA DiTis from being dropped |
| 91670 | Liquid class 'Serum Free Single' has wrong accuracy adjustment |
| 91672 | Differences in MCA96 disposable tip mounting height for 1 column or all 96 tips |
| 91676 | Operator has execution rights for imported methods without being explicitly granted this right |
| 91678 | Exporting a script to USB stick is very slow |
| 91881 | Touch tools "Select Wells" command cannot show runners with 24 or 32 tubes |
| 92042 | Context checking of parameters (such as password length) for user management is different in FluentControl and user management standalone |
| 92087 | Unit of Te-Shake shaking frequency is displayed as Hz instead of rpm |
| 92157 | 'Show delta' button in Carrier editor shows incorrect values |
| 92294 | Imported tool definitions (Disposable tips, MCA head adapters or RGA fingers) are not found during context checking until restarting FluentControl. |
| 92295 | Commands moved out of a variable pipetting loop keep a tip-mask entry which causes no tips will be used |
| 92301 | after changing instrument configuration file new worktables are created with a blank name and cannot be saved without changing the name |
| 92411 | Importing maintenance methods shows an unnecessary warning message that it contains no worktable |

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| 92570 | Move simulation fails if FES fingers are mounted in a subroutine. Script must be started with disabled context check. |
| 92973 | FluentControl crash at runtime when running as method |
| 93061 | Method started via Prepare Method does not auto return to edit mode after successful run |
| 93063 | Move Arm commands repeated fully when resuming or recovering run |
| 93109 | Pathfinding fails if two parallel subroutines trigger evasion moves simultaneously |
| 93113 | After Tip Lost error disposable tips are cleared from pathfinder |
| 93156 | Obsolete warning message when exporting script with Normalization / In Situ Normalization command |
| 93191 | Run can sporadically not be resumed after active stop |
| 93269 | collapsed MIO incubator set temperature command doesn't show specified temperature |
| 93308 | User Prompt is replaced by the Error message dialog box when you abort the script execution |

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| 93343 | MCS communication problems leading to sporadic freeze of FluentControl when using SampleTracking |
| 93377 | Shaking frequency of MIO incubator is now shown in summary of collapsed command |
| 93379 | Run could not be continued after opening the door during airFCA pipetting. Method recovery after reinitialization works. |
| 93431 | Dispense back error handling after pressure out of range error dispense from z-start with upward tracking |
| 93433 | Question mark characters are automatically inserted after each character when typing a labware name into the 'waste' field in the worklist command |
| 93521 | Referenced files are not shown explicitly in export/import |
| 93533 | Connection to API is lost after 10 minutes of inactivity |
| 93536 | Exporting Script with ST register labware command gives unnecessary warning message 'application file could not be found' |
| 93540 | FCA move arm shows 'well offset cannot be calculated for labware outside pipettable area' even when plate is in pipettable area |
| 93542 | Fluent control crashed after several consecutive method runs, if Fluent is operated via API |
| 93743 | FluentControl crashes when Undo and redo was done in method editor |
| 93744 | Operator that has rights to edit methods cannot run approved methods |
| 93745 | FluentControl can crash during a run if the lock screen is displayed |
| 93748 | Change in intended use is not logged in audit-trail logfile |
| 93749 | Data Audit Tool detects inconsistency unnecessarily when TeShake is used |
| 93750 | Tecan Licensing Client Module is not working after installing SparkControl magellan 2.2 or Magellan 7.2 |
| 93830 | Operator is able to execute suspect methods in addition to approved ones |
| 93898 | AirFCA cannot drop 1000ul disposable tips to FCA off deck waste-chute - out of range error |
| 93902 | FluentControl sporadically freezes when used from API |
| 93940 | Worklist reagent distribution with a tip reuse > 1 does not work |

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| 93955 | Method Recovery fails if 'leave loop' or 'next cycle' commands are used |
| 93980 | Method cannot be continued after active stop during 'on empty tray' action with the FCA transfer tool |
| 93982 | Touch monitor interface disappears when using query at startup for variable input |
| 93996 | CNS communication timeout can lead to FluentControl software crash |
| 94003 | Pipetting to this partially filled tube rack not possible |
| 94048 | no possibility to continue run after improper cLLD error |
| 94073 | Saving device carrier not possible directly after editing site definition |
| 94094 | License Client Module crashes when aborting Open-File Dialog for adding an existing License File |
| 94095 | Interior Light Off command executed and Touch Tools Header menu still shows Turn off |
| 94096 | 'DiTi lost' error is not reported in Trace View |
| 94134 | Touch Tools shows an empty user prompt window when executing a script with Query at start-up set. |
| 94187 | Sample Transfer command: Additional Error prompt pops up stating "Fatal error encountered" when trying to Abort run from a Liquid handling error prompt |
| 94201 | CNS over internet cannot be activated in some cases |
| 94220 | RGA Move Arm and Execute Single Vector command fails when gripping labware that is not define in software worktable |
| 94221 | Pathfinder error during method recovery |
| 94236 | RGA rotation during move can lead to collision with other arm |

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| 94248 | Repeated error message 'run stopped due to hardware error' and abort not possible |
| 94251 | 'preserve disposable tip position' does not preserve position of disposable tip lid. |
| 94327 | FCA move arm command doesn't allow moving to DiTi labware |
| 94344 | Licensing client crashes and not license can be requested |
| 94347 | problems using database export when referenced files are used. |
| 94354 | Pathfinder used old worktable for checking and therefor found collisions with objects that no longer exists |
| 94355 | Empty Tray command generates Collision Error for FCA when two 5 Stack disposable tips are placed on sites next to each other |
| 94380 | Worktable Editor: Undone changes cannot be saved. |
| 94474 | File Version Checker displays duplicated drivers as 'not released' |
| 94488 | FluentControl can crash when switching the user during the run |
| 94489 | FluentControl info bar shows a logged in user even after deactivating UMS |
| 94537 | Snapshot tool fails with 'inner exception' on windows 10 |
| 94546 | Run stops to due to hardware error 10 |
| 94560 | False context-check error after run when setting concentration via Set Attribute function |
| 94564 | Unnecessary warning 'dispense target volume was reduced to available volume' |
| 94577 | 'invalid job index' error message during worktable editing |

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| 94580 | Sample Tracking out of Memory after registration when empty positions in tube runner |
| 94581 | Method recovery of asynchronous subroutines fails |
| 94598 | liquid FCA channels randomly drop to the worktable after script is aborted |
| 94612 | Wrong icon for mouse cursor on unlock screen after switch user |
| 94613 | Slow context checking while editing dynamic disposable tip handling parameters in worklist command. |
| 94620 | FCA spreading axis is varied too quickly when used from the move tool |
| 94637 | Software can crash at FluentID start loading command depending on worktable layout |
| 94638 | "Too much in tip" error during aspiration command which followed after a wash command. |
| 94656 | Wrong site name in default carrier definition of Te-Stack |
| 94657 | Software Crash while editing labware group settings |
| 94721 | Installation fails on non-English Windows versions |
| 94749 | liquid level detection not possible after fast-stop event |
| 94769 | Additional logging for 'execution of transition failed' error |
| 94771 | Fluent crashes after deactivation of the UMS and running a script |
| 94774 | FluentControl occasionally crashes when defining variables |
| 94834 | FullExport function does not export referenced files of scripts |
| 94836 | Motion delays from pathfinder are added to the wrong arm possibly leading to collisions at runtime |
| 94875 | Context Check error message in SampleTransfer command doesn't specify which labware is missing |
| 94876 | 'Save as' of read-only liquid class also sets the copy to read-only |
| 94877 | FCA move arm command can fail with 'invalid well offset' |
| 94878 | Software froze during Data Export Generate Report command when using an automatically generated barcode |
| 94892 | FluentControl can crash when deleting a labware that is moved |
| 94913 | Tracking during aspiration is enabled although the aspiration is performed at Z-MAX (AirFCA, clear Ditis) |
| 94914 | Empty tip LC for 1000ul wide bore and clear disposable tips on AirFCA is missing |
| 94915 | Water Mix liquid class is missing for FCA 1000ul wide bore tips, clear tips and MCA96 200ul tips |
| 94916 | Wrong dispense acceleration formula in liquid class Water Free Single for Diti50 on FCA |
| 94981 | option 'notify by mail' in the FluentControl user administration panel is not working |
| 94993 | TeShake initialization can take several minutes |
| 95051 | Pathfinder could not find a path |
| 95067 | Method recovery fails when stopped during MCA aspirate command |
| 95070 | Copy Paste in Method Editor leads to Object Reference not set to an instance of an object error |
| 95079 | initialization fails without meaningful error message when home position of the arms is not accessible |

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| 95169 | Summary dialogue after import does not count referenced external files |
| 95261 | Unnecessary context check error 'rearranging labware in stacker location after move failed' |
| 95265 | FCA gripper failure after evasion move in asynchronous subroutine |
| 95266 | API ReadyToConnect event is not available for Excel VBA and COM |
| 95288 | 'volume has been reduced' warning during pipetting |
| 95294 | Pathfinder evasion move fails with 'target position is out of the valid position range' |
| 95353 | Running script with 'standard curve' smart command unapproves the used worktable - script gets 'suspicious' |
| 95365 | Worklist optimization changes order of advanced worklist commands |
| 95369 | FCA gripper skips alignment move when run in stopped and resume during finger pickup |
| 95397 | Error when using SampleTracking register labware with a plate-map for a tube runner |
| 95449 | Cannot drop plate to waste since GetCoverSite function returns empty String |

13.2 New Features

- License control of FluentGX features
- UserManagement via Windows Active Domain
- SampleTracking Standalone including Report Designer, Web Server for Reports and Quick Viewer • FCA gripper

14. FluentControl 2.2 SP1 (V2.2.17.47727)

14.1 Bug Fixes

| ID | Title |
|-------|---|
| 96210 | Possible droplet formation on liquid-FCA with fix tips because airgap is sporadically not dispensed |

15. FluentControl 2.3 (V2.3.13.48369)

15.1 Bug Fixes

| ID | Title |
|-------|---|
| 92042 | Context checking of parameters (such as password length) for user management is different in FluentControl and user management standalone |
| 92396 | CNS Browser Gadget shows FluentControl as 'MyControl Application' |
| 92412 | CNS Send Notification sends out emails to users that are locked in UMS |
| 92755 | Data Export report does not contain Detected Volumes |
| 92920 | CNS Send Notification script command icon changes color |
| 93191 | Run can sporadically not be resumed after active stop |
| 93379 | Run could not be continued after opening the door during airFCA pipetting. Method recovery after reinitialization works. |
| 93431 | Dispense back error handling after pressure out of range error dispense from z-start with upward tracking |
| 93744 | Operator that has rights to edit methods cannot run approved methods |

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| 94202 | GX status lost when switching to simulation mode and then back to real mode without restarting FluentControl |
| 94278 | Reinitialization needed to recover after removal of FluentID runner while pipetting |
| 94750 | 'Labware lost' error during removal of empty nested MCA tip wafer in landscape mode due to non-optimal grip parameters |
| 94769 | Additional logging for 'execution of transition failed' error |
| 94879 | Nested FCA tips are not used in the correct order |
| 94910 | wrong display of FCA gripper fingers in 3D visualizer |
| 94919 | Unclear error message when login fails due to wrong capitalization of username - username is case-sensitive |
| 94960 | When switching to PAUSE and carrying a plate the RGA does not drive up the exact same distance like it drops down |
| 94993 | TeShake initialization can take several minutes |
| 94994 | Email Recipients not listed in CNS Send Notification command after fresh FluentControl start |
| 95313 | Set 320ml trough as read-only and adjust bounding box |
| 95315 | Error message run aborted due to hardware error shows incorrect axis |
| 95362 | Allowed locations for 2 Grid Left 147mm carrier are wrong |
| 95363 | Labware editor permits allowing more than one lid type per labware which then causes wrong offsets to be applied |
| 95368 | Error message improved when arm is standing inside a bounding box |
| 95497 | switching user during initialization aborts the initialization |
| 95498 | retry after dilutor error fails |
| 95571 | 'exceeding remaining tip volume' error message when resuming from active stop during airgap aspiration |
| 95574 | Reinitialize of MCA P&S axes needed after aborting run during MCA aspirate |
| 95586 | Expanding FCA get finger command in the script can change selected fingers |
| 95587 | Driverinterface does not allow to create carrier or labware |
| 95588 | FluentControl crash when trying to switch user during the run |
| 95598 | Method recovery fails after collision during nested tip handling routine |
| 95657 | FluentControl shows general purpose intended use even when Spark is used (which is a research-only device) |
| 95665 | Software crash when using 'Save as' and not providing a filename |
| 95687 | Software crash at TouchTools 'Worktable' command |
| 95689 | Tuberunner in landscape orientation is scaled incorrectly in graphical user interface |
| 95691 | Errorhandling for failed labware detection in FCA transfer labware command has 'retry' rather than 'ignore and continue' option |
| 95693 | When aborting run from FluentID command the background of the prompt is green instead of red |
| 95783 | Methodrecovery unnecessarily asks user to remove FCA transfer tool when recovering run aborted during nested tip handling routine |

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| 95788 | Variable in AdvancedWorklist is not working |
| 95789 | Context-check error 'enter valid XY-position offset' when using a labware with a compartment shape with width zero at z-bottom |
| 95790 | CNS Send Notification: Underscore in Username not Displayed |
| 95791 | MCA 'S target positoin exceed movable range' error |
| 95980 | Target position for arm FCA 1 out of range during worklist execution |
| 96021 | Object reference not set to instance of object error when executing direct command after an error |
| 96123 | Running FluentID command as direct command is possible and then causes TouchTool driver to crash |
| 96167 | Array variable cannot be resolved when variable scope is set to RUN |
| 96168 | TeVacs Vent command has back/front sites inverted |
| 96202 | RGA vector coordinates for non-grid based carrier cannot be overwritten |
| 96203 | Cancelling 'switch user' is not possible from touch monitor |
| 96210 | Possible droplet formation on liquid-FCA with fix tips because airgap is sporadically not dispensed |
| 96354 | Method recovery fails when using worklisting and loading more than one worklist |
| 96381 | RGA z-axis not in zeroG after Fetch labware for teaching command |
| 96391 | Configure System tab does not refresh immediatly after enabling driver |
| 96395 | MCA tip pickup fails with 'hardware error' |
| 96396 | Method recovery failed when using asynchronous subroutines |
| 96401 | Error 'arm has been moved during pause' when resuming from cLLD error |
| 96412 | Doors remained locked after script stopped for error prompt |
| 96426 | On System prompt not working in subroutines |
| 96462 | Unit 'rpm' was shown as 'RPM' |
| 96463 | Retry failed after 'tips not fetched' error |
| 96536 | Software freeze when resuming after hardware error |
| 96582 | Run stopped during MCA aspirate could not be resumed |
| 96705 | 'Object reference not set to an instance of an object' when opening script |
| 96722 | Move Tool not updated after manually removing disposable tips |
| 96723 | FCA dilution command shows error about DiTi capacity when using fixed tips |
| 96740 | Wrong SampleTracking report when using 96well plate with MCA and teaching slightly deviates from 9mm spacing |
| 96791 | SVN Restore data to previous restore point does not work to go back to revision 1 |
| 96846 | No context check error is displayed when script name is missing in Subroutine command |
| 96857 | FluentControl crash during carrier editing |
| 96874 | FCA gripper failed to drop fingers after detect labware command |
| 97023 | Touch interface disappears at the end of a run |
| 97046 | Run paused at touchTools prompt and could not be continued |

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| 97048 | Error 'Failed to deserialize statements' while loading script |
| 97060 | Initialization fails with 'positioning of FCA over waste failed' when using RGA when centric finger and FluentID middle. |
| 97084 | RGA evasion move after 'grip failed' error can lead to dropping of gripped labware |

15.2 New Features

- Parallel API access via Execution channels
- Support of UVC light option

15.3 Changes and Improvements

- Expression input box to specify connection in ICP commands
- Improved logic for FCA nested tip pickup

16. FluentControl 2.4 (V2.4.23.51375)

16.1 Bug Fixes

Some bug numbers were changed during migration to a new tracking system. The migrated bugs show the original bug number in square brackets as part of the description.

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| 93058 | Magellan ini file is not validated after changing COM port causing an unnecessary warning about an invalid checksum |
| 96725 | Software freeze after fatal error while showing TouchTools prompt in asynchronous subroutine |
| 97039 | TouchTool QuickStart button sometimes cut method name |
| 97093 | Worklist with decontamination washes leads to sequential rather than parallel pipetting of with individual tips |
| 97113 | Method with zero iterations of a script and query at startup variables cannot be opened |
| 97175 | Variable pipetting loop on 24-position FluentID runners fails |
| 97214 | User is reasked to save when closing 'configure system' even after having already saved changes |
| 97371 | Carrier '24 Eppendorf adapter' does not have the checkbox 'accessible to pipetting arm' enabled |
| 97408 | 'Remove Labware' command does not allow to remove tube runners |
| 97808 | Standard Wash liquid class causes rapid wash be on for 2 minutes when a flush/wash volume smaller than 0.5 ml is specified. |
| 97812 | Method aborts when trying to start a 2nd method during the run via API. 2nd run request should be blocked without aborting running method |
| 97827 | Unclear error message when output folder for 'export variable' command is not accessible |
| 97828 | FluentID runner definition is too wide and prevents placing a wash station next to FluentID segment even though it physically does not collide |
| 97830 | When starting to edit a labware barcode form the worktable editor but cancelling barcodes can unintentionally be set to 'no barcode set' |
| 97831 | Incorrect timing of evasion move leading to RGA/FCA collision |

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| 97833 | When method start fails due to context check error the system returns to edit mode and the error message is no longer shown |
| 97835 | FluentID grid flashing red upon removal of runner after finishing a script at script editor |
| 97836 | Switching user fails when run is stopped for user-prompt and the screen is locked |
| 97843 | Delay after script command |
| 97867 | [93938] Labware name longer than 32 characters leads to failed Magellan measurement |
| 97869 | [94651] FluentControl with Magellan Tracker leads to Magellan login screen at Initialize if password > 8 characters |
| 97882 | [96826] Incorrect Grid numbers displayed on 20 Grid Back Extension |
| 97883 | [97033] Timeout error caused by pathfinder when two FCA simultaneously try to access same tip stack |
| 97884 | [97034] Variable not consistently colored in blue during script editing |
| 97885 | [97035] using labware definition with truncated cone that has identical top and bottom diameter (i.e. a cylinder rather than a cone) leads to error 'negating the minimum value of two complement numbers' |
| 97886 | [97037] 'object reference not sent to instance of object' context check error after running script. |
| 97887 | [97877] RGA could not evade from arm FCA1 |
| 97888 | [97087] 'labware does not exist' error when retrying after crash during TeStack slide movement when the TeStack is marked as waste location. |
| 97889 | [97091] Software freeze when trying to save script |
| 97890 | [97094] Store Well concentration commands tries to access SampleTracking information at edit time and causes SampleTracking error because barcodes do not yet exist |
| 97891 | [97095] Software crash when trying to declare two variables with same name |
| 97892 | [97096] Software freeze when trying to recover method after modifying the underlying script |
| 97893 | [97406] Run is marked as 'finished successfully' when aborting immediatly after starting. |
| 97895 | [97482] defining interleaved labware with less than columns not possible |
| 97897 | [97534] Variable name for sometimes not working for output path of Export Variable command |
| 97898 | [97535] Sending StopMethod via API immediatly after an error occurred does not work |
| 97899 | [97536] Running context check is cannot be aborted |
| 97900 | [97537] Software crash during script editing when mixing / using variables names only differing in lower-uppercase |
| 97902 | [97545] After navigation up and down in complex script a context check error 'position occupied' is unnecessarily displayed |
| 97903 | [97605] TouchTools worktable command highlights wrong position in some cases |
| 97905 | [97637] Evasion move cannot be started while errorhandling routine is executed. |
| 97906 | [97738] FluentControl sporadically crashes when saving script |
| 97907 | [97739] Aborted method cannot be recovered due to 'plunger not able to prepare move' error |

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|-------|---|
| 97909 | [97743] Interrupted long-term runs due to synchronization issue in listing of runnable methods |
| 97913 | [93376] Starting instrument in simulation sporadically fails and restart of FluentControl is required |
| 97915 | [96558] Method recovery failed when using asynchronous subroutine |
| 97916 | [96584] Carrier corrupted after editing site-offset |
| 97917 | [96871] Pathfinder error when two arms are active in different subroutines and both trigger an evasion move for third arm |
| 97918 | [96878] Resume after error not possible and error 'no sub journal with the name MCSMessages found' shown |
| 97921 | [97114] Labware with zero wells leads to software crash |
| 97923 | [97205] worklist can fail when 18mm spacing is used on position next to a hotel |

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| 97924 | [97207] FCA gripper opened while transporting plate |
| 97925 | [97403] In some scenarios with nested FCA tips, the FCA cannot get the required number of disposable tips but does not trigger the on empty tray subroutine that would allow fetching more tips. |
| 97926 | [97404] Automatic DiTi Handling subroutine does replaces tips earlier than needed in 'reactive' mode. |
| 97927 | [97410] Software freeze when aborting while starting recovery of a method with asynchronous subroutines |
| 97928 | [97411] No context check errors in edit mode if MCA Dispense has empty well selection |
| 97930 | [97542] Lockscreen can be bypassed by using Windows 'close all windows' |
| 97931 | [97543] RGA drops labware when 'colliding end position' error occurs |
| 97932 | [97564] Moved labware is not immediately deleted from pathfinder swift scene and blocks position for another move. |
| 97933 | [97601] TouchTools 'Variable' command sorts fields column instead of row-wise. |
| 97934 | [97602] TouchTools 'Worktable' command show wrong grid number in edit-time details |
| 97935 | [97603] TouchTools worktable command does not nicely display back extension |
| 97936 | [97604] 'Store Well Concentration' command uses regional language settings for decimal separator unlike the rest of FluentControl |
| 97937 | [97700] FluentControl can crash with error 'message carrier or labware not found' |
| 97939 | [97741] CNS shows Info messages for 'display and continue' TouchTools user prompts |
| 98638 | Functions date() and time() depends on language settings |
| 98720 | Direct command 'drop tips' did not work after stopping a run during pipetting |
| 98725 | SampleTracking error after many empty tip commands to waste location |
| 98737 | SampleTracking show volume with accuracy adjustment instead of net volume when using negative accuracy adjustments |
| 98783 | API reports status 'EditMode' around 100ms before it is possible to start a new method |
| 98818 | Microscript command 'Move absolute z' should allow to access all positions in armrange, also below worktable |

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| 98834 | Unloading lid from carousel with barcode scanning leads to error 'object reference not set to instance of an object' |
| 98835 | Error Handling Option "Retry at same position" for Get Tips retries at next rather than same position |
| 98836 | Allow specifying which new DiTis are fetched by Replace Used DiTi Racks command |
| 98854 | Incorrect Syntax highlighting for <Labwarename>.Barcode statements |
| 98863 | MCA can oscillate when dispensing with tracking to a compartment with zero initial diameter |
| 98877 | When continuing after some errors the status light is flashing green instead of solid green |
| 98880 | FCA gripper plate presence check fails if breakthrough event is reported |
| 98885 | long pauses between pipetting and washing steps |
| 98901 | For some partial sphere compartment diameters no graphic is shown in the labware editor |
| 98906 | Warning message 'this run was recovered after an error' reworded to 'This run was recovered after an error or a recovery point exists from a previous run' |
| 98923 | Status of mounted RGA fingers not correctly displayed in MoveTool in Fluent Control |
| 98926 | Starting scheduled maintenance run not possible after aborting other run |
| 98937 | User is unnecessarily asked to save the Base worktable even when it has not been modified |
| 98962 | No context check error when no output filename is provided for Convert CSV to GWL command |
| 98964 | Certain Programming commands displays field values with red dotted underline although valid |

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| 98965 | Start VB command does not show context check error when selecting txt instead of vb file |
| 98980 | Method recovery with asynchronous subroutine fails stating that subjournal files are missing |
| 98989 | sporadically run cannot be started |
| 98992 | API occasionally incorrectly returns no available methods |
| 99051 | Deselected tips must move to z-travel during round-move within a plate |
| 99055 | Query at startup variables not shown after starting Method |
| 99064 | Pickup of FCA nested tips fails with pathfinder error |
| 99070 | FluentControl freezes when trying to open method with duplicate variable names |
| 99087 | Active Stop during Wait for Timer command leads to error |
| 99088 | Start application command shows red border on textfield for output variable even though no context check error is detected. |
| 99107 | CNS reports incorrect run status |
| 99142 | Pathfinder unnecessarily still considers gripped labware as attached to the RGA when an evasion move is triggered immediatly after releasing the labware. |
| 99143 | CNS Send notification command does not resolve variables (between tildes ~) |
| 99144 | Volume Well attribute after dispense is increased by gross rather than net dispensed volume |
| 99404 | Fluent Control can crash after long run time |

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| 99439 | FC crashes during print script to pdf or BackToEditMode after run finish |
| 99507 | Variable transfer via API is not reliable |
| 99537 | Reactive SBS DiTi handling not working |
| 99551 | Resuming run after stopping during programming command (such as wait) fails |
| 99556 | FCA gripper plate presence check incorrectly identifies plate as missing even while it was correctly transported |
| 99574 | Deleting labware that is shown at a simulated position can lead to a software crash |
| 99596 | FluentControl crashes when adding empty lines to available drivers and then deleting those lines again without filling in any text |
| 99599 | Incorrect compartment definition of 25ml trough |
| 99629 | 'use next when empty' switches all 8 tips to new trough even when there is still enough liquid for some of them. |
| 99634 | FluentControl hangs if you try to add a script to a running method |
| 99648 | Unexpected syntax check errors, if variables are used in GetAttribute function |
| 99658 | Command Select Wells does not allow to go back to the previous page from Touch Tools |
| 99660 | Null reference exception and software crash when starting method via API |
| 99662 | No prompt is shown when all stacks of nested FCA are empty and need to be replaced |
| 99664 | dispenses after empty tip command show warning 'reduced target volume' |
| 99666 | API execution channel terminates when active stop occurs. |
| 99672 | Initialization fails with 'Positioning of FCA over waste failed' due to incorrect bounding box of RGA fingers |
| 99684 | 'Manually Scan Labware' command in Wizard Group forces to close the door in order to execute the following Standard RUP command |
| 99693 | Manually Scan Labware command does not support variables in Title and Instructions fields |
| 99697 | runtime controller displays wrong color after unrecoverable error |
| 99759 | Te-Vacs Vent script command: front and rear radio buttons are incorrect labelled |
| 99779 | Collision avoidance fails on system with 2 RGAs when started while FES fingers are mounted |
| 99780 | FCA Get Tips failed with RPR-B and run could not be continued |
| 99797 | Side window panel is simulated in the middle rather than on the outside of the beam and therefore prevents RGA from moving to some physically accessible positions |
| 99868 | Method recovery for method aborted at liquid level detection in trough only pipets with the detecting tip rather than with all 8. |
| 100011 | When all tips are marked as broken after failed inline filter test, the FCA get tips command shows the confusing error message 'invalid tip selection' |
| 100084 | Red light keeps blinking after switching to edit mode from failed run |
| 100090 | RGA could not evade error when evasion move is triggered when while the RGA is on the regrip station |
| 100116 | 'liquid class not known' error when selecting liquidclass with a variable transferred from a subroutine |
| 100129 | Unclear context check message when selecting a not allowed labware as 'emptyTipLocation' in the Sample Transfer smart command. |

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| 100166 | RGA crashed again front screen when trying to move back to original position after failed move |
| 100196 | FluentControl shall does not show a warning/error if several copies of a DLL are loaded. |
| 100221 | SmartCommand shows incorrect context check warning that transfer will be split into multiple steps if the liquid volume plus leading airgap exceed tip capacity. |
| 100258 | Reset DiTi status not possible when using Te-Stacker as WasteLocation |
| 100384 | Aborting the run shall also close the API execution channel |

16.2 Changes and Improvements

- airFCA channels are in zeroG mode when system is paused
- I/O control script commands added
- Run partially now uses worktable expected at first selected script line
- Destination and liquid class of Empty Tip command generated by SmartCommands and Worklists can be configured
- Maximal volume supported by MCA96 Extended Volume Adapter (EVA) has been increased by 10ul
- More commands are allowed in TouchTools Wizard Group
- TouchTools Worktable command shows 3D graphics and supports variables
- String parsing functions InStr(), FormatDateTime(), ParseDateTime() and Format() added

17. FluentControl 2.4 SP1 (V2.4.25.51907)

17.1 Bug Fixes

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| 100522 | Reagent Distribution command performs empty tip step over source wells instead of the specified location |
| 100533 | Empty Tip location cannot be set to a plastic waste chute |
| 100828 | MCA aspirate and dispense commands fail with "no wells selected" when using a variable to specify the number of mounted tips |
| 101120 | MCA move speed is not reset after liquid class execution |

18. FluentControl 2.5 (V2.5.18.52326)

18.1 Bug Fixes

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| 97795 | Increased retract distance after FCA Get Tips to decrease risk that empty tray of nested tips will be pulled along |
| 97862 | [92227] FluentControl installation can abort if a pending windows update tries to install at the same time |

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| 98547 | Logging for Import Variable & Query At Startup |
| 98580 | Show error message when disposable tip could not be picked up but position is not empty |
| 98635 | [41026] 'Cannot ensure detected tool equals mounted tool' error can appear when initializing the MCA after power cycle of the instrument |
| 98939 | No description displayed on touch monitor for user input |
| 99093 | Carousel ReadBCsInCartridge command shows context check 'worktable invalid' error after a run. The error clears when pressing F5. |
| 99393 | Improve performance at script/method start - SVN |
| 99610 | Handheld Barcode scanner: wrong barcode will be not overwritten on the next scanning |
| 99613 | AirFCA can display 'out of range' error after execution of the direct command Set Tips Back |
| 99761 | Moving carrier by mouse is not possible if a script adds labware to it using 'add labware' |
| 99801 | Method Recovery View in Wizard Group command is incorrect |
| 99848 | Pathfinder error when moving to nested MCA384 tips |
| 100120 | Position of non-grid based devices is lost after importing new worktable. Please use SVN revision history to reset old worktable if necessary. |
| 100128 | Run sporadically aborts unexpectedly after FluentID 'allow removal' command |
| 100168 | Method recovery option is shown after aborting a run before first script line was executed. Recovery then fails because no actions can be recovered. |
| 100180 | TeVacs default carrier definition leads to arm range error |
| 100192 | Repeated message 'please move arm manually' after failed FCA disposable tip pickup |
| 100203 | FluentControl can crash when saving carrier definition |
| 100249 | Nest7mm_pos not listed in Allowed Locations for other carriers |
| 100269 | Asynchronous Subroutine cannot be run in API execution channels |
| 100295 | incorrect bounding box for FES finger nest |
| 100309 | Pathfinder prevents move which would be possible |
| 100318 | Title of add labware command is not updated when changing the selected labware |
| 100319 | Renaming labware on work table is not reliably updating the labware selection the SampleTracking Generate Report command |
| 100329 | Stop button and time disappear when run is stopped due to Magellan error |
| 100332 | Deleted recovery point is still shown on touch monitor |
| 100354 | TouchTools display can disappear after stopping run from main windows of FluentControl |
| 100363 | Rich User Prompts do not work with variable scopes |
| 100390 | Duplicated tube runner has no tubes allowed by default |
| 100391 | FluentControl API loses connected during long period of inactivity |
| 100403 | After error in reader, the control light of the Fluent can blink green instead of red |
| 100418 | "On Empty Tray": unexpected behavior when "Execute in parallel" is checked |
| 100439 | Dilution command does not execute any Context Check for the field "Liquid Waste" |
| 100506 | Liquid class specified for empty tips action in reagent distribution command is not automatically exported with the script |

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| 100516 | execution of on empty tray command leads to fatal error |
| 100523 | Incorrect Context-check error at GetLabwareByLocation() function |
| 100549 | 3D rendering for wash station shows 3 instead of 4 trough positions |
| 100580 | Syntax check of function teMotionPosition prevents dynamic usage |
| 100589 | Store Well Concentration seems does not correctly calculate dilution factors when comma is used as decimal separator in regional language settings |
| 100597 | Move tool does not use all channels at the same time and does not stop |
| 100612 | The commands accessing the digital input and outputs sporadically fail with 'pin not configured' |
| 100682 | Input files of 'store standard curve' and 'normalization' commands not stored to AuditTrail/Data folder |
| 100801 | custom TouchTools prompt not closed at the end of the run |
| 100825 | FluentControl must be restarted after re-enabling broken tip from Configure System |
| 100836 | Store standard curve command can't read ASC file with replicates |
| 100837 | Store Standard Curve command does not accept Magellan workspace older than 10 minutes |
| 100839 | Imported labware which is not allowed on the worktable does not show up as orphaned |
| 100882 | Remove lid with remove labware command right after transfer of lid raises context check error in unrelated commands |
| 100934 | Import Sample IDs from file command: when using a variable as path, the variable does not turn blue |
| 100952 | improved pickup parameters for MCA384 tip pickup in active DiTi carrier |
| 100985 | [97810] Performance edit time - variable handling and rendering |
| 101033 | FluentControl can crash during printing to PDF |
| 101104 | z-Heights for MCA active DiTi carrier not optimal leading to the MCA starting pickup motion even when head it not correctly aligned in x/y axes |
| 101127 | FluentControl can crash when switching between real and simulated mode |
| 101229 | Unnecessary warning during context check to not use a multi dispensing liquid class |
| 101251 | Empty Tip command execution gets slower when a script is executed for a long time |
| 101414 | Automatically reduce airFCA plunger move distance and show warning if physical plunger position does not allow to execute the full planned move |
| 101425 | Inline filter test not working correctly when plunger is not at zero-position when starting the command |
| 101444 | Retract supervision was unintentionally enabled in the Water Free Multi liquid class for 1000ul filtered tips |
| 101482 | Main menu file close is not blocked during runtime of methods |
| 101630 | On the fly scanning operation not performed with the current grip mode |
| 101659 | Abort run needs to be pressed for each active micro script to abort run after dilutor error |
| 101819 | Preview of TouchTools prompt is not removed when starting script |
| 101891 | SampleTracking errors at edit time when using labware without barcode in SampleTracking Set Value command. |
| 101946 | worklist considers warning about reduced volume due to non-defined airgap as error |

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| 101948 | Pipetting position in 25ml trough is slightly away from the center in x |
| 101981 | Opening the door during a normalization command causes a fatal error and script abort |
| 102030 | Available volume evaluates submerge depth at the height and labware diameter for start rather than end of the aspiration |

18.2 Changes and Improvements

- Vacutainer/Vacuette Piercing support added
 - Definition of piercing needle
 - Pierce and Retract from Septum Microscript commands
 - Template Piercing LC
 - Move Tool tracking piercing status
 - Optional logging of piercing force curve
 - Retract Piercing Needle direct command
 - Labware definition for BD Vacutainer and Greiner Vacuette with piercing specific parameters
- Support for additional MCA head-adapters and pin tools with arbitrary magnet encoding and tip-spacing
- Faster start of methods
- Configurable error or warning message for worklist command when specified labware/barcode is not on the pipettable worktable
- Arm and tip type preselection for liquid class editing based on instrument configuration and persistence of manual selection
- Initial Drop Tips command in generated scripts is skipped when no tips are mounted
- Optional shake of MCA384 tip-box using clamps of active carrier before tip-pickup
- Export Variable allows to export variables of type string without enclosing quotation marks
- Subroutine command allows to map expressions to variables in subroutine
- Temperature and humidity logging for instruments equipped with TeGLO2 board •
Lookup function for serial number

19. **FluentControl 2.6 (V2.6.14.53223)**

19.1 Bug Fixes

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| 99598 | No dumpfile created at software crash because output directory does not exist |
| 100490 | No specific error message is shown when a user account is locked due to too many incorrect login attempts. Login fails but no reason is shown. |
| 100515 | After SVN restore of a LiquidClass Snapshot it cannot be edited until FC is restarted |
| 100798 | Spark carrier is named Symbio |
| 101481 | Some tube runners do not contain tubes when dragged onto the worktable |
| 101549 | Fatal error when trying to open API execution channel |
| 101561 | Deadlock during evasion move |
| 101603 | RGA sends finished status even though it still in centrifuge - centrifuge door then closes and crashes |
| 101641 | Infopad shows also shows errors of non-active scripts |
| 101863 | Leading Airgap can be subtracted from tip capacity if the plunger position is not exactly at zero before aspirating |
| 101974 | Run could not be continued after active stop |
| 101991 | Script can be started when an subroutine is edited and not saved |

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| 102003 | RGA arm remains powered off after some errors and subsequent moves therefor fail |
| 102035 | Run can be resumed with the door of the carousel open and then stops with error when the carousel is needed the next time |
| 102153 | Rewording of error message when trying to mount too many MCA384 tips outside active carrier |
| 102167 | Labware transfer to carousel continues even though covering the plate with its lid failed |
| 102221 | Placement section if carrier definition is not expanded during printing |
| 102233 | No prompt is displayed to refill disposable tips once all present boxes have been used up with automatic tip handling |
| 102250 | SampleTracking Generate Report command does not context-check that a labware is selected leading to a fatal error at runtime |
| 102259 | FluentControl can crash at the end of the run when switching back to edit mode very quickly while the CNS driver is still processing the status change |
| 102297 | Retries after needle stuck error during piercing and retracting can lead to sample tracking messages being sent twice leading to double volume in Sample Tracking report |
| 102323 | Array Variables cannot be transferred to subroutine |
| 102424 | Subroutine Variable with Scope "Run" Is Overwritten by Main Script Variable with Scope "Script" |
| 102466 | sporadically switching from simulation mode to real mode fails |
| 102540 | Location field of drivers did not accept selection by mouse |
| 102554 | No 3D rendering shown for Eppendorf tubes |
| 102556 | Labware can become selected when doubleclicking outside worktable view and then moving the mouse to the worktable with the button pressed |
| 102564 | Object Reference not found error when executing inline filter test in simulation mode |
| 102629 | context check error 'select valid labware' after deleting labware and then using undo to restore it |
| 102630 | Display problems when entering long floating point numbers via touch tools |
| 102631 | Software crash when switching user from touch monitor |
| 102655 | A FluentSetup action which is executed but not required shall create a report saying 'not required' rather than 'failed' |

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| 104050 | MCA Get Headadapter command sporadically fails with 'Not able to prepare move with teMotion Drive-P' |
| 104093 | corrected part number of 4 Landscape 61mm Nest (from 30157271 to 30042719) |
| 104111 | Recovery of method containint TouchTools Close Prompt command fails |
| 104112 | TouchTools Close command does not close all TouchTools prompts |
| 104113 | TeGIO commands sporadically show error that pin is not configured |
| 104119 | High Acceleration and Deceleration in DMSO Contact Wet Single liquid class lead to overcurrent errors |
| 104120 | TouchTools worktable command fails with 'Unknown error during adding to GUI. Attempted to read or write protected memory' |
| 104128 | FluentControl pre-installer did not contain .NET 3.5 which prevented installation on some Win10 systems |

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| 104148 | Software freeze when editing script |
| 104149 | pathfinder failed to calculate evasion move for MCA |
| 104185 | "Register Labware with Platemap" requires prior plate barcode assignment instead of taking it directly from platemap |
| 104226 | Cannot convert XAML Report Template to PDF Report File |
| 104229 | Script containing Standard Curve command for FCA2 cannot be opened on system with only one FCA |
| 104259 | graphical well selection for MCA Drop DiTi command not stored when DiTi labware was specified via variable |
| 104336 | Base Worktable could be renamed which causes problems when editing carriers and labware |
| 104351 | Airgap aspirated as part of FCA get tip commands not discarded and can lead to 'too much in plunger' error after many aspirate dispense cycles |
| 104389 | FCA get tips command fails with 'Exception : Index was out of range. Must be non-negative and less than the size of the collection' |
| 104402 | The RGA ReplaceUsedDiTiRack command does not transfer a new tip box when interrupted |
| 104415 | Context checking that variables are not used with different scope in scripts that are in one method |
| 104444 | DIV and MOD operators did not accept operators of type floating-point |
| 104547 | 'On Error GoTo' command can no longer catch errors of 'import variable' command |
| 104548 | Pathfinder error when using 'move to' button during RGA Vector teaching |
| 104580 | Traceview shows message 'unable to save new data for runtime workspace' |
| 104626 | partial tip selection for MCA get tips command is not stored |
| 104635 | Reagent Distribution with sample direction specified as row-wise pipettes column-wise |
| 104659 | TouchTools 'variable' command does not allow to input values for array variables |
| 104666 | Software crash when changing selected MCA head adapter in get tips command |
| 104743 | Slow script execution when using well offset larger than number of wells per plate |
| 104773 | Revision history only shows the first 5000 restore points |
| 104806 | Rapid wash pump did not wash tips and continued run without error |
| 104915 | RGA moves to transfer station of device without using pathfinder |
| 104928 | context check error when using ReplaceUsedDiTiRacks command outside of automatic-ditihandling subroutine |
| 104931 | Store Well Concentration to a tube runner causes fails with 'InnerException: An item with the same key has already been added' |
| 104968 | Setting for output folder of SampleTracking CSV reports is ignored |
| 105078 | Optimized motion parameters for RGA y-axis |
| 105113 | No context check error when adding scripts with different worktable to same method |
| 105132 | On error goto with 'continue after group' not working |
| 105180 | Windows 10 taskbar is shown on touch monitor |
| 105392 | GetFile and SelectWells TouchTools commands cannot write to array variables |

19.2 Changes and Improvements

- Common Notification Service (CNS) replaced by Tecan Connect
- Safe-travel height to move over FCA stacked tips as long as the height of the stack has not been detected
- New functions ceil() and floor() to round up or down to the next full number
- Conversion functions numeric() and alphanumeric() for well identifiers
- Transfer labware command allows to move labware-like carriers (such as SBS format tube adapters)
- Labware can be moved during on-the-fly barcode scanning
- Support for front mounted MCA Active DiTi carrier
- Forwards compatibility for script import (meaning that scripts from newer software versions can be imported and shown; unknown script commands will be marked)
- On airFCA systems 'Empty tips' command is tracked by SampleTracking the same as the 'Dispense' command thus permitting concentration calculation in Magellan
- Removal of Windows 7 support. Only Windows 10 is supported now.

20. FluentControl 2.7 (V2.7.18.54561)**20.1 Bug Fixes**

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| 98297 | Group of MIO incubators cannot share one location name |
| 100017 | Rotation coordinate of RGA vectors is always relative to the rotation of the carrier and cannot be defined as absolute |
| 101321 | Touch monitor does not clear old content when aborting run from a wizard group |
| 102248 | Changes to a carrier could not be saved because save button is grayed out |
| 103194 | Orphaned labware cannot be place in script worktable by dragging |
| 104447 | Export does not include input files and pictures of TouchTools 'confirmation' and 'plate map confirmation' commands |
| 104740 | Snapshot Tool does not capture the full screen when using high-resolution display and scaling factor |
| 104927 | 'Do not show again' option not working for warning about research use only |
| 104930 | FluentControl freezes when trying to execute carousel ReadBCsInCartridge command with open carousel door. |
| 105136 | Pathfinder did not fine evasion route |
| 105165 | Constants such as Z_MAX must be usable in if-statements of liquid class MicroScript |
| 105196 | Context checking the counts trailing airgap towards the dispensable liquid volume |
| 105210 | MCA Get Tips command does not completely color-code selected tips in blue for partial tip selection |
| 105301 | Marking a position of a vector as absolute in the carrier editor is saved even when the carrier editor is left without saving |
| 105329 | FluentControl can sporadically crash when searching in long scripts |
| 105394 | Configuration of TeStack must be preserved when switching between tabs in configure system |
| 105430 | Worktable command shows wrong grid location for the 100ml Waste Trough |
| 105461 | Colliding position error when using transfer labware to move to plate between high neighboring objects |
| 105465 | cLLD error message not formatted nicely |
| 105547 | Variable defined in scripts with Iteration scope shown as error in method editor |
| 105585 | FC crashed when opened a large script with many context check errors |
| 105590 | Software hangs on wait for timer command |
| 105596 | Resuming run while RGA is under worktable level can lead to crash |
| 105598 | Change in Labware position throws an error message in edit mode |
| 105640 | Door locks do not open to allow manual closing of door when 'closing of door locks failed..' error is displayed |
| 105645 | Labware groups on worktable and on script level are merged together |
| 105663 | Performance improvement for very long runs |
| 105709 | Worktable command shows wrong site index for the 5 Pos 1.5ml Tube Adapter |

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| 105818 | Index out of bonds error when FCA 'Get Tips' needs to use tips from two different 5000ul boxes |
| 105820 | Windows displays 'non responding' state for FluentControl during worktable import |
| 105832 | RGA crashes into fix tips standing above wash station |
| 105841 | Software crash after adding/removing drivers |
| 105858 | Reagent Distribution command generates temp script without Empty Tips command - reagent discarded with tips |
| 105937 | Magellan commands (and other legacy driver commands) are not executed when using 'run partially' |
| 105953 | Custom attributes can be defined for carriers with an empty name field; these carriers cannot be edited afterwards |
| 105976 | MCA384 dispense and empty tip to MCA waste location fails |
| 105979 | Piercing commands developed are also shown on airFCA systems that don't support piercing needles |
| 106048 | orphaned labware cannot be deleted and leads to software crash |
| 106050 | software crash when using concat() function for worklist filename |
| 106071 | alphaNumeric() function on labware added with Add Labware shows syntax check error |
| 106096 | barcode checksum verification cannot be activated unless it is also activated for barcode type 'CODABAR' |
| 106114 | Liquid Class editor does not accept MCA384 microscript commands |
| 106128 | SampleTracking should subtract aspirated excess volume from source labware volume |
| 106157 | Wrong dispense speed for MCA96 50ul tips in LiquidClass Water Free Single |
| 106163 | If volume is larger than tip size, Reagent Distribution command uses Tip multiple times although Max Tip Reuse is set to 1 |
| 106171 | Sample Transfer does not create empty tip command in smart subroutine when Max Tip Reuse is set to 1 |
| 106296 | The well volume is not updated with the expected net volume after dispense and aspirating with multi-pipetting LCs |
| 106298 | New user is not prompted to change initial password when empty passwords are allowed |
| 106304 | DiTi rack 'FCA_ 350ul Nested' is allowed to be placed on '96 Well Flat' & '24 Well POGO' |
| 106314 | Error message when TeVacs target pressure cannot be achieved is unspecific |
| 106448 | Channel is marked as 'broken' after selecting 'deactivate tip' error handling option |
| 106452 | No context check is triggered when labware is removed from worktable |
| 106458 | Incorrect site offsets for 1x32 10mm Tubes 75mm barcode carrier definition |
| 106617 | Context Check error 'unable to generate valid pipetting sequence' when pipetting to second plate of group while first plate is outside of pipettable area |
| 106744 | After start of method in TouchTools the SW sporadically remains unresponsive and displays Run button |
| 106976 | GetFluentIDSensorStatus expression function only works after Start Loading command |
| 107022 | 'Arm cannot move to position' error for 12 well trough on site 1 |
| 107148 | IoT client not upgradable |

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| 107159 | Long delay between inserting FluentID and update of touch monitor |
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20.1 Changes and Improvements

- Enhanced Normalization workflow
 - Normalization Calculation Command
 - In-Situ Normalization Calculation Command
 - Transfer Individual Volume Command
- New Script commands to export/import labware attributes
- New Liquid Class micro script command Liquid Level Check
- Function to return mounted MCA adapter and RGA FES fingers
- MCA Get Tips command supports partial tip pickup in Active Carrier
- Capacitive liquid level detection microscript command allow sending detected volumes to SampleTracking
- Software support added for upcoming new hardware
 - MCA waste chute with drop guide
 - Tube Rotator
 - FRIDA reader
- Integrated IoT client upgraded to version 2.1
- Supported SampleTracking version changed to 1.3 SP1 Patch3
- Snapshot Tool improvements

21. FluentControl 2.8 (V2.8.10.55332)**21.1 Bug Fixes**

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|--------|---|
| 102313 | [Fluent Setup] Setup SW requires Wash Station for AirFCA in some tests |
| 102651 | Error when checking mounted FES finger in Simulation mode, if pc has been connected to real instrument |
| 104249 | Cannot teach well position 96 with tip 8 on plate in front position |
| 105636 | [2.8] FC: Print script to PDF does not open and print commands inside the groups starting from certain line (for long script) |
| 106128 | FC does not send the expected net volume after aspirating to ST |
| 106482 | "Declare" button in SetVariable command does not work. |
| 106510 | Standard Curve Pipetting Command gives context-check error in Portrait |
| 106801 | [2.8] [TRD] [Error Handling] HardStop/Contouring error should be a recoverable error |
| 106859 | Lid disappears in Waste forever, even for following runs |
| 106882 | Base Unit on old WT does not have a name -> not possible to save LW groups added via OpenLabwareGroupEditor |
| 106924 | Error message shown when tried to execute a direct command with unsaved editors open |
| 107044 | New created or duplicated Liquid Classes or Worktables appear in the Controlbar when editing or creating a Method |
| 107069 | [2.8] Context Check for Normalization/InSitu Calculation for minimal pipettable liquid (sample/diluent) |
| 107071 | Error Tube Holder shall be a grouped as Nest not Runner |
| 107107 | ST command GetValue does not accept function alphaNumeric(loop,"ElisaA",3) in the field "Position in LW". |
| 107108 | Same run and iteration scope variables written in different case can be saved despite an error. Saved script could not be opened later. |
| 107139 | Syntax check error when using the SetVariable GetLocation for dynamically added labware |
| 107201 | [2.8] Normalization Calculation unexpectedly cannot find a valid sample and diluent combination |
| 107206 | [Channel Gripper] Context check error when trying to move labware to Bioshake |
| 107220 | [2.8] After unsuccessful pipetting the volume well attribute is not updated with the expected volume after dispense and aspirating |
| 107233 | [2.8] [TRD] Abort Run is ignored when aborting a run on cLLD error |
| 107247 | [2.8] [TRD] [Improvements] Failed Retract Piercing Tip Handling |
| 107287 | [2.8] [TRD] 2x Start Rotation leads to misbehaviour |
| 107304 | [2.8] [TRD] Duplicate of Tube Rotator Middle with Wash Station is not possible |
| 107307 | [2.8] Not possible to place trough runner on FluentID grid 6 |
| 107342 | [2.8] Transfer Individual Volumes Command - Reuse mounted tips/sample filter option does not work for tube runners |
| 107373 | Not all wells selectable for aspiration in portrait orientation |
| 107386 | [2.8] A Context Check error is thrown when the Drop Spectrometer Group Command is loaded in a subroutine. |
| 107393 | [2.8] No specific error message when non-disposable tip is missing during initialization |
| 107410 | [Fluent Setup][TRD] "Command signalled an error" during the TR Init Offset Setup action execution |
| 107419 | [2.8] RGA cannot move to home position after script execution |
| 107438 | [2.8] Single green position on not yet loaded runners |
| 107441 | [2.8] Additional (duplicate) TouchTools Reports are created |
| 107476 | [2.8] [TRD] Abort/Retry scenario differs from oscillate to rotate |
| 107482 | FluentControl Crashes when switching Users while Configure System is still opened |
| 107494 | [2.8] When restarting FluentControl after getting a dilutor error software crashes at Startup phase |
| 107495 | [TRD] [2.8] Deadlock after restarting a run that was stopped before |
| 107496 | Empty Tip Contents with well offset moving to next labware doesn't work |
| 107497 | [2.8] [TRD] Runners "lost" in loading ID of TR2 when stop movement of TR1 |

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| 107515 | Fatal Error in Stop/Resume scenario with asynchronous Subroutines |
| 107520 | [2.8] The Transfer Individual Volumes Command causes an endless Loop if double entries in the Pipetting sequence are used |
| 107523 | [2.8] [TRD] Pause/Stop is not reliable - dead lock |
| 107615 | [TRD][Bounding Box] Issue with Bounding Boxes of Lower DiTi eject and TR during mixing |
| 107673 | Control Bar doesn't provide all allowed labware while editing plates in Labware Group Editor |
| 107720 | [TRD] Tube Rotator labware has same location multiple times --> Errors in Sample Tracking |
| 107761 | Worktable not correctly updated in script editor mode |
| 107774 | [FluentSetup]: Liquid FCA pipettes on the wrong grid when the Balance carrier is moved to a different grid on the WT |
| 107846 | [2.8] [TRD] Run/Resume Check triggered for Fluent ID after Pause |
| 107847 | [2.8] [TRD] Method Recovery aborts during Recovery of finished Rotation and Oscillation Statements |
| 107867 | FluentControl API: Channel "commands" not working |
| 107870 | Touch Tools disappears and FC freezes at TT Worktable command |
| 107880 | Fatal error on SCC REM Error 56 |
| 107899 | FluentControl freezes after TouchTools Confirmation in subroutine |
| 107902 | SW Freeze while pipetting worklist after it failed to find liquid it never displayed error message |
| 107981 | Empty variable field in Subroutine command leads to object reference error |
| 108120 | Run aborts with hardware error due to RGA gripper in Zero-G state |
| 108174 | SmartCommand cannot generate pipetting sequence due to rotation angle |
| 108216 | TT Standard cannot display gif file, TT Confirmation can display gif file |
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21.2 Changes and Improvements

- ZeroG mode can be toggled from the TouchTools monitor
- New Fast Simulation Mode for 3D Simulator
- New Confirm Standard Curve command
- New and updated QC-Kit scripts on installation medium
- Loop command is allowed in Wizard group
- New barcode verification option for FluentID
- New variable scope Parameter
- Scripts can be saved as Modules in new command bar section
- Software support added for
 - FRIDA reader (release pending)
 - MCA waste chute with drop guide
 - 12 Well Trough SBS
 - 15mL Falcon Tube FluentID Runner
- SnapShot Tool improvements
- Improved performance when editing long scripts
- Integrated IoT client upgraded to version 2.1 SP1

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| 98118 | [2.8] SetMCATipMask SampleTracking functionality for FluentControl |
| 98486 | [2.8] Fast simulation/offline run |
| 100479 | [2.8] Magellan once connected to simulated Infinite does not show any errors on initialization/run time but also does not execute the commands in real during run time |
| 100527 | [Fluent Setup][2.8] New production workflow is needed to produce arm modules without instrument. |
| 100652 | [2.8] Confirm Standard Curve command which actually displays the standard curve to be confirmed |

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| 101498 | [DropSpec] [2.8] Store Well concentration command should read the standard Fluent Control Magellan output file format |
| 101769 | [DropSpec] [2.8] Store Well Concentration could not be used twice (or more) to store concentration from two different quant plates for two different parts of the same source |
| | plate. |
| 102189 | [DropSpec] [2.8] Store Well Concentration command does not consider initial concentration factor in the source plate |
| 102401 | [2.8] Performance improvements - edit time |
| 104139 | [Fluent Setup][2.8] FluentSetup SW: if door was opened during Pipetting test it continues without notification, but then fails. |
| 104258 | [2.8] Store Well concentration command should store warnings as well attributes |
| 104692 | [2.8] allow defining variables of subroutines as input parameters |
| 104817 | [FRS-2.8] Merge Fluent Scheduler to Development |
| 105441 | [2.8] Update QC-Kit scripts on master media of FluentControl 2.8 |
| 105714 | [2.8] allow making Modules from subroutines with input parameters - original |
| 105748 | [Fluent Setup][2.8] new tip adapter - configuration option whether old or new tip adapter is used |
| 105926 | [Fluent Setup][2.8] Allow setting of a PMP board serial number in Setup Process |
| 106265 | [3.0] PMP Support in FluentControl |
| 106325 | [2.8] make insert to guide MCA384 tips during ejection available as labware/carrier in FluentControl |
| 106393 | [DropSpec] [2.8] Update the NuGet packages of the Drop Spectrometer and integrate the drop spectrometer module msi into the FluentControl Installation |
| 106394 | [DropSpec] [2.8] Implement a Stand Alone Prepare Measurement Command for the Drop Spectrometer |
| 106655 | [2.8] FCA retracts to global instead of local z-travel during pipetting |
| 106764 | [2.8] Write move counters to logfiles during initialization |
| 106977 | [2.8] Log improvements (Introspect) |
| 106983 | [2.8] [TRD] [Usability] allow FluentID start loading command in Wizard group |
| 106984 | [2.8] [TRD] Barcode Verification option for FluentID |
| 106996 | [2.8] [TRD] [Usability] Loop command should be allowed in Wizard group |
| 107184 | [DropSpec] [2.8] Drop Formation LC and Drop Spectrometer specific Wortable data shall be part of the FC 2.8 installation |
| 107186 | [DropSpec] [2.8] The snapshot, that is created with the snapshot tool shall contain logging output of the drop spectrometer module |
| 107205 | [DropSpec] [2.8] Context Check Warning for missing FRIDA Reader is not consistent with that for TRD device |
| 107230 | [DropSpec] [2.8] Transfer Individual Volumes script command shall create a context check warning, if not all selected tips can reached all wells of the source and target labware |
| 107236 | [2.8] [TRD][Improvements] GUI changes for Piercing commands |
| 107252 | [Fluent Setup][2.8] External Door Locks Test in Setup SW |
| 107283 | [2.8] [TRD] [Usability] Empty Tube Rotator Move Tool tab shall be removed |
| 107294 | [DropSpec] [2.8] The Buffer Drop Measurement command does not save and load the adjustment recorder values to optimize the adjustment routine |
| 107299 | [Channel Gripper] Not able to move because of a collision at the end position |
| 107338 | Standard RUP commands continue to display the same picture, even if the picture has been changed on file system |
| 107340 | [DropSpec] [2.8] TIV Command with Dynamic DiTi handling throws Runtime Error when insufficient tip size capacity is entered in dyn. DiTi Handling Expression Box |
| 107398 | [Fluent Setup][2.8] Management QC Results Reporting: Additional devices |
| 107468 | [2.8] [TRD] All TRD LC should only be available for Piercing Tips |
| 107554 | [2.8] Integrate IoT Client version 2.1 SP1 into FC 2.8 |

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| 107616 | [2.8] Update MasterMedia Contents of FluentControl 2.8 |
| 107726 | [2.8] Snapshot tool improvements (subset of 105904) |
| 107772 | [2.8] Carousel slide is not moved to transfer position when RGA transfers plate to slide after init |
| 107776 | [3.0] PMP Aspiration Error Handling in FluentControl |
| 107777 | [2.8] Apply usage of standard FluentControl Magellan output format for each measurement |
| 107842 | [Fluent Setup][TRD] Alignment of the Drum should be a QC checkpoint in the Setup SW |
| 107848 | [DropSpec] [2.8] Change labels in drop spectrometer commands UI |
| 107876 | Loading ID: Manually entered barcodes are not visibly marked as wrong when they do not match the pre-defined barcode |
| 107896 | Apply usage of gain and z-position from standard curve each measurement |
| 108046 | Configurability of concentration unit to support reader specific concentration units |
| 108217 | Run is not aborted immediately if a Delay Command is running |

22. FluentControl 3.0 (V3.0.16.56719)

22.1 Bug Fixes

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| 107913 | MCA384 crashed into FCA while moving to the waste because FCA did not evade |
| 107954 | MethodRecovery after exception fails with error 'No sub journal with the name x found' |
| 108113 | Saving carrier definition of '6 Landscape 61mm Nest' failed: Value cannot be null |
| 108300 | Incorrect context check error 'Mismatching parenthesis or function...' in Set Location command Tags |
| 108309 | Communication issues with FluentID during Allow Removal command |
| 108480 | First script line skipped when running multiple iterations |
| 108492 | Fatal Error at Runtime: "Tecan.Core.ResourceManagement.LocalizedCoreException: Path and file name could not be resolved. |
| 108536 | When switching from Simulation to Real mode, Flush command does not work |
| 108688 | [FRS] Incorrect Remaining, Elapsed & End time |
| 108741 | FluentControl crashes during execution of Direct Command 'LockPlate (BioShake1)' |
| 108808 | [FRS] Execution of Transition failed after run |
| 108835 | Worklist generates temporary script that Get Tips on channels that already got a tip earlier |
| 108837 | FC crashes occasionally during worktable updates |
| 108882 | Retry after not gripped lid at automatical lid handling fails |
| 108914 | Delays between scripts when using API execution channels |
| 108919 | Error when Get DiTi for 8 tips with VSLH Mosaic SW |
| 108940 | Pressure out of Range error recovery resets Movement limits |
| 108971 | It's possible to declare multiple variables with same name and different scope within same script |
| 109060 | At FluentID Start Loading command the system intermittent cannot power the RGA x axis |
| 109073 | No sub journal found after pressure out of range and error handling |
| 109082 | Index was outside the bounds of the array. |
| 109131 | [MethodRecovery] When recovering a method, the script command "End Script - Success" aborts the recovery |
| 109153 | 'retry' fails with subjournal error when channel was deactivated |
| 109182 | Error message about improper shutdown when starting FC |
| 109205 | MCA crashes inside active carrier during Get Tips (related to Pause & Resume) |
| 109403 | No suitable labware connector specifically for MCA384, 50ul Filtered |

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| 109510 | FluentID Loading issue |
| 109531 | FCA aspirates from the wrong labware if 2 tips per well is selected |
| 109588 | RGA Axis G axis not in a ready state |
| 109604 | Fatal error after active stop and retry dropping a nested DiTi tray to waste |
| 109644 | Exception at aspiration with Contact Wet liquid classes since upgrading to FC 2.8 |
| 109700 | Script started via API reported as successfully finished when nothing is executed |
| 109818 | Reagent Distribution not working for mixed tip configuration (mix&pierce + DiTi) |
| 109836 | FCA hardware error leads to broken channels |
| 102285 | AirFCA: It is not possible to execute any Fluent Setup action requiring DiTis without a restart, when the previously executed action with DiTis had requested a labware refill |
| 104579 | External drivers: Object parameters aren't displayed |
| 105568 | HydroWasher driver cannot be duplicated in FC |
| 106921 | Wrong "Lid_6mm_1" instead of "Lid_9mm" will be added on top of the plate via labware group editor, if "Lid_6mm_1" is available in the databank. |
| 107045 | Incubator starts shaking after Microplate is transferred out of the device |
| 107114 | Windows Media Player window appears in background and blocks FC to show a picture on "Confirmation" command or to continue after WaitForTimer: "The file you are attempting to play has an extension (.) that does not match the file format." |
| 107515 | [3.0] Fatal Error in Stop/Resume scenario with asynchronous Subroutines |
| 107580 | Air FCA 2 drops channel grip with deep well plate after recover from error |
| 107581 | Fluent Control: Initialization fails with Fluent Control on an instrument with RGA-AirFCA-MCA384 |
| 107737 | FluentControl crashed while editing a carrier |
| 107785 | On open script: "The script is already opened. Any script can be edited only once." The script will not be opened. |
| 108085 | Device is not correctly placed on worktable after import |
| 108164 | MCA: Aspirate from SBS trough believes to use only "1 tips" instead of 96 tips. Subsequent ST report is wrong. |
| 108215 | Standard Curve command 'Fatal Error' in runtime when using rotated Labware with Well Offset |
| 108250 | [FRS-3.0] Clicking +(increase) or -(decrease) iteration button in Touch Tools quickly Touch Tools disappears or becomes non responsive |
| 108333 | [FRS-3.0] Gantt chart window appears with fluent scripts |
| 108337 | [FRS] FC crashes if you try to rename a Process after renaming its worktable |
| 108338 | [FRS-3.0] Gantt Chart is not updated during execution |
| 108354 | SubroutineCommand: Variable headers will be lost if drag and dropped out of command |
| 108362 | [FRS] Updated variable values are not shown in the variable window during run. |
| 108387 | [FRS-3.0] Reported step end time can be different from the actual end time |
| 108391 | [FRS-3.0] Cancel "nice to have" updates that delay the run |
| 108393 | [FRS] Context check errors in ProcessEditor due to error occurred in previous execution |
| 108394 | [FRS] Error Message "Run was aborted!" if a script was aborted due to an error |
| 108418 | [FRS-3.0] Executing a Method without an initial Schedule is possible |
| 108420 | [FRS] Gantt Chart window are directly open when starting FC for the first time |
| 108421 | [FRS-3.0] Irritating log entry "Step could not be found in schedule " |
| 108422 | [FRS] Inconsistent timing constraint drop down behaviour when process is modified |
| 108423 | [FRS] Jump back to process editor when opening a processing script by clicking more than 2 times for double click |
| 108424 | [FRS-3.0] Method Editor is opened twice |
| 108425 | [FRS] No schedule available when processing step uses MCA and RGA. |
| 108432 | [FRS-3.0] Not possible to start a Run again after aborting it |

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| 108434 | [FRS-3.0] Methods can be started with unsaved changes in Process Editor |
| 108459 | [FRS] Method 'Elapsed Time' does not update on 'Direct Run' of complex Process |
| 108462 | [FRS-3.0] Recovery Point for method with script is deleted, when method with process is aborted |
| 108467 | [FRS-3.0] Calculating schedule overlay is displayed in the Gantt Chart while running a script |
| 108473 | Fluent freezes when the iteration is changed during a run while it is paused |
| 108486 | When new method created prepare method button is enabled |
| 108493 | [FRS-3.0] Script recovery results in "run finished successfully" |
| 108497 | [FRS-3.0] FC crashes when source step labware name is changed by quick typing |
| 108502 | [FRS] Width of runtime indicator changes during execution |
| 108503 | [FRS] Context check error 'No Schedule Created' not updated |
| 108504 | [FRS] Process and Process step can be deleted, although process step script is open |
| 108506 | [FRS] Orphaned Labware context check error is not shown in the process |
| 108507 | [FRS] non connected Source-Step is not marked in red |
| 108508 | [FRS] Variables are not present in the Suggestion list of the Commands |
| 108512 | [FRS] Context check error indicator does not vanish from process editor tab when error solved |
| 108514 | [FRS] Process name is written wrongly in Labware Report |
| 108516 | [FRS] Process Tab is not deleted from the Infopad if the process is closed |
| 108518 | [3.0] Move tool : error message "One or more errors occurred" when RGA tried to move to home position after aborting the run |
| 108523 | [DropSpec] Runtime error during FRIDA Measurement: "Execute Prepare Measurement (Object reference not set)" |
| 108533 | [FRS-3.0] After run has been aborted – windows with WaitForTimer will not be closed and continue countdown |
| 108539 | Fluent crashes if an operator with no edit script user rights clicks on Variable in variable grid |
| 108542 | [3.0][Bugfix] Correct logging channel of MCA384 script commands |
| 108557 | [FC 3.0] Store Well Concentration command must not apply the concentration factor of the source plate, if source and target plate are the same |
| 108568 | Modules cannot be opened via Double-Click after making changes to a saved module |
| 108579 | [FRS-3.0] Non affected iterations are removed from the schedule after transfer error |
| 108588 | [GS1b] HW error: the system cannot find a solution for the requested arm movements with RGA 1 |
| 108594 | Fluent crashed during initialization |
| 108628 | [3.0] Fast simulation mode with physical devices |
| 108642 | Changed Module name is not displayed in the controlbar after the 'Export' Window was opened |
| 108678 | Changes in the device configuration for the 'Incubator1' driver are not committed to the Fluent Audit Trail |
| 108743 | [FRS-3.0] If a step starts on one and finishes on the next day the reported duration can be negative |
| 108745 | Trace View double entry after abort |
| 108748 | DuF import message shows empty backup path after Reinstallation (from FC 2.7 to FC 2.8) |
| 108799 | FC2.8.1 suddenly LEDs of 5 previous runners changed from green to red, reload not working. |
| 108824 | After an "Instrument Connection Lost" error recovery point will be created but does not work |
| 108926 | Fluent Control crashed when dropping command from Control bar into the Script Editor |
| 108956 | GetCoverSiteName and GetCoverSiteIndex not working for base box of nested tip tower |
| 108992 | [FRS-3.0] Implement Method-editor variable-grid update for iteration variables |
| 109072 | Movement counters are logged only when an initialization is forced |
| 109124 | SiLA2 driver can not be duplicated |
| 109141 | Variable Grid in the method editor does not show correct information |

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| 109253 | [FRS] Implement 'Close all' for processes |
| 109254 | [FRS] TC violation error should have a tolerance of at least 1 sec |
| 109312 | [FRS-3.0] Automatic UI update after changes is missing |
| 109314 | [FRS] Error message "the given key was not in the dictionary" at end of run with process in multiple iteration |
| 109747 | Cannot use Keyence on-the-fly tool in simulation anymore |
| 109839 | "MCA384, 50ul Filtered" is not allowed on Carousel RightTower_P69_7Nest |
| 109849 | Stop or resume a run in system idle time due to timing constraint |

22.2 Changes and Improvements

- Scheduling feature to schedule processes and protocols (FluentControl Scheduler FRS)
- Software Support for Pressure Monitored Pipetting Artificial Intelligence (PMP AI)
- Software Support for DeckCheck
- New FluentID runner available for 15ml Falcon tubes
- Improved normalization calculation command with sample well offset and range possibility
- Fast simulation mode for physical devices
- Extended FC autorun UI with PostInstaller and ReadMe to improve installation process
- Default logging mode changed to 'Info' and improved logging
- Improved ST information when emptying tip contents
- Mix&Pierce: Tip stuck in septum error message can now be manually removed when tip is released
- Integrated IoT client upgraded to version 2.3
- Removing QC -Kit Scripts and Liquid classes from Master Media

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| 108251 | [FRS-3.0] Enable scheduling licensing |
| 108263 | [FRS] Automatic diti-handling |
| 108264 | [FRS-3.0] Final-destination-step behavior |
| 108265 | [FRS] "Approved-process"-flag and electronic signatures |
| 108267 | [FRS-3.0] Extend set of functions to work during scheduling |
| 108325 | [FRS] Allow Scheduling in GP mode and remove command line parameter |
| 108326 | [FRS] Inherit context check errors of (opened and closed) Scripts to Processes to Method |
| 108327 | [FRS] Prevent deletion of a process, if used in method |
| 108329 | [FRS-3.0] Force to save changes to processes prior to a run |
| 108339 | [FRS-3.0] Additional Context Check Scenarios |
| 108361 | [FRS] Zooming the gantt chart does not always work when switching between zoom modes |
| 108596 | [FRS-3.0] Reduce calculation time for schedule creation |
| 108638 | [FRS-3.0] Change Color gradient of Timing Constraints if 'Transfer' is used as anchor point |
| 108639 | [FRS-3.0] Add barcode to labware report |
| 108640 | [FRS-3.0] Add customization of transfer scripts |
| 108732 | [FRS] Control Bar shall not show Steps group when no process editor is active. |
| 108733 | [FRS] Display Process names and iterations instead of labware names in the gantt chart |
| 109213 | [FRS] Delete steps option in right click context menu shall be greyed out if only connections are selected |
| 109365 | [FRS] Add scheduling options to config page |
| 109526 | [FRS] Prevent Process step scripts to exist in Database before saving |
| 109618 | [FRS] Suppress error handling of the RGA driver to increase unattended runs |
| 106265 | [3.0] PMP Support in FluentControl |
| 107776 | [3.0] PMP Aspiration Error Handling in FluentControl |

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| 108182 | PMP AI Licensing |
| 109056 | [CR] Add PMP AI Curve Viewer to installer |
| 109558 | Limit automatic retry of PMP Error to one new DiTi |
| 106525 | [3.0] Create DeckCheck ScriptCommand |
| 106526 | [3.0] Create DeckCheck Correction Handling |
| 106527 | [3.0] DeckCheck Settings |
| 105441 | [3.0] Update QC-Kit scripts on master media of FluentControl 3.0 |
| 108218 | [FC 3.0] Display warning message, if not enough liquid is available in the tip |
| 108470 | [FC 3.0] Extend FC autorun UI by PostInstaller |
| 108489 | [3.0] Parameter variables should behave as script when used as output variables |
| 108499 | [FC 3.0] [DROPSPEC] The normalization command must use the barcode of the labware for the plate map confirmation file, if barcode is assigned using ManuallyScanLabware statement |
| 108520 | [FC 3.0] ST volume information is not updated after Empty Tip Contents with liqFCA or MCA instrument |
| 108528 | [3.0] Update MasterMedia Contents of FluentControl 3.0 |
| 108532 | [FC 3.0] [DROPSPEC] The normalization command does not use a unique name for the plate map confirmation file |
| 108546 | [3.0] [FCA Piercing][TRD] Tip stucked in septum warning not automatically removable |
| 108617 | [Typo_Wording] Small UI and text change requests for 3.0 |
| 108619 | [FC 3.0] [DropSpec] Enable the user to select wells for Normalisation Calculation Command |
| 108623 | [FC 3.0] Transfer Individual Volumes: after a well was skipped -> following wells were pipetted with suboptimal tips selection 1+7 instead of using all 8 tips in parallel |
| 108737 | [MS] FluentControl Update for supporting Fluent AirFCA with Multisense |
| 108753 | [3.0] no FluentID runner available for 15ml Falcon tube |
| 108860 | [3.0] Fast simulation/offline run (merge changes from 2.8 release branch to Dev branch) |
| 108962 | [FC 3.0] Touch Tools RUP shall be abortable within a Wizard Group |
| 108991 | [3.0] Update year of tecan copyright in the About Box to 2021 |
| 108993 | [3.0] update the integrated IoT Client in FC 3.0 |
| 109217 | [Test Automation] Changes and fixes for supporting automation testing |
| 109424 | [Logging] Log - Improvement |
| 109712 | [CR] Add step to installer to show the readme |
| 109761 | [MS] Implement PMP Functionality of MultiSense |

23. FluentControl 3.1 (V3.1.11.57925)**23.1 Bug Fixes**

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| 109685 | AuditTrail files are not protected from modification |
| 109625 | [3.1] 5ml Diti not working in FC 2.8 anymore as they are pushed off by channels not having mounted tips |
| 110058 | FCA does not evade MCA in Amplitude Script |
| 110129 | FluentControl shuts down during run |
| 110054 | FluentControl fails to start with misleading error message |
| 110244 | "Use Next when empty" proceeds to tube with different label if tube is placed on runner or adapter carrier |
| 109632 | If Get Tips parameter Proceed to next position is unchecked and it runs out of tips the run gets stuck and FC needs to be killed via task manager |
| 110172 | MCA384 Combo Adapter: Count of mounted and selected tips doesn't match |
| 109946 | After run has finished: "Touch Tool UI thread was aborted by an exception". |
| 110135 | Tip adapter crashing into waste station with mixed tip configuration (mix&pierce +DiTis) |
| 110019 | [Mix&Pierce]: SW reports a "collision" between Safety Shield on FCA and FluentID barcode scanner but physically enough clearance |
| 110562 | Run Abort due to: VX_RUNTM_001_007 - No sub journal with the name "McsDispenseErrorMessage" found |
| 110559 | FC changes Aspiration target volume and throws fatal error |
| 109678 | OnSystemPrompt not working because lastErrorId() = None |
| 110699 | Variables are not allowed for device commands for MIO and Te-Shaker |
| 108096 | MCA collides with FCA DiTi Nest carrier during Random Move Test in FluentSetup |
| 110205 | Moving into hardstop causing overcurrent error during retraction of piercing tips in maintenance script |
| 110822 | FluentControl does not start due to " VX_APPFR_012_007: Internal error during set up of data repository (part of data store)." |
| 110811 | Reference Offsets Not Applied On Left Grid Segment |
| 110772 | FC V3.0 Freeze after STOP |
| 109387 | FluentControl cannot start up anymore (in real mode while it can start in simulation) |
| 110894 | Pathfinder could not find a path for arm RGA 1 to move to current position |

23.2 Changes and Improvements

- Fluent Scheduler: select labware for process iterations via a barcode file
- Fluent Scheduler: incubation at <Base>
- Fluent Scheduler: Gantt Chart visible in Touch Tools
- Support for new 50µL short filtered DiTis in standard tray, including 5 new Liquid Classes
- FCA 5mL DiTis can be used (not supported in FluentControl 2.8 and 3.0)
- Snapshot Tool always collects large dump files
- Variables can be used in Te-Incubator (MIO) and Te-Shake commands (not supported in FluentControl 2.8 and 3.0)
- Improved DeckCheck usability at edit and run time (hardware release pending)
- Magellan output format configurable when not for use with FluentControl (not supported in FluentControl 2.8 and 3.0)
- MCA waste chute with drop guide supports both MCA384 and MCA96 tips
- IoT client upgraded to version 2.5 integration
- Sample Tracking version 1.4 integration

- User Management System (UMS) version 1.1.11 integration

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|--------|--|
| 108593 | [3.1][FRS] Enforce scheduled steps to be closer together |
| 108827 | [3.1][FRS] Trace View should report aborted sequences |
| 109479 | [3.1][FRS] Import of custom transfer steps from another process results in conflicts. |
| 109904 | [3.1][FRS] It's possible to open a processing script when its process is closed |
| 98579 | [Fluent Setup][2.8] FSE part replacement: inconsistent triggering of Door Sensor- and Door Lock Test for extensions |
| 104628 | [3.1][FRS] Introspect enhancements for scheduling |
| 104629 | [3.1][FRS] Tecan Connect App support |
| 104630 | [3.1][FRS] process steps without dynamic plates |
| 107221 | Carousel barcode scanner cuts off long barcodes from 21th symbol |
| 107755 | [FluentSetup] Reports are stored in XPS format that cannot be opened |
| 108312 | [FluentSetup] FluentSetup does not detect when user wrongly configured a long RGA as a short |
| 108433 | [FC 3.1] Long delays while imports |
| 109994 | [FRS] Context check for processes is spamming log file |
| 110059 | [FluentSetup] Cannot run Mount Pipetting Tips action with TRD mounted on a specific GRID |
| 110062 | FC 3.1: New labware definition and liquid class to support the new 50ul LiHa (short) Tips filtered in standard tray in FluentControl |
| 110084 | [FluentSetup] Integrate FSE Authenticator |
| 110088 | [3.1][FRS] Squeezed label in Gantt Chart |
| 110096 | [FluentSetup] About Box is not up to date |
| 110145 | [3.1][FRS] Select labware for Process iterations via a barcode file |
| 110163 | [3.1][FRS] Allow multiple Processes in one Batch |
| 110176 | [3.1][FRS] Process Step names are forced to be system unique. Should be process unique. |
| 110178 | [3.1][FRS] Make it easy to edit step name and change expected duration |
| 110261 | [3.1][FRS] Enhance Touch interface: Gantt chart on Touch Tools |
| 110295 | [3.1][FRS] Allow base-incubation with fully occupied Hotels |
| 110299 | [3.1][FRS] Improve Wait command with option to execute without popup and display time in HH:MM:SS |
| 110454 | [FluentSetup][DeckCheck]Improve UI: Order of Windows / Prompts is not logical |
| 110471 | [FluentSetup][DeckCheck] In case of an error with any camera (disconnected/broken) the SW does not show clearly which camera is affected |
| 110719 | [DreamPrep CR]: Make modules functional when saving in sub-directories |
| 110721 | [DreamPrep CR]: Pre-populate default parameter values of a module in the script |
| 110804 | [FRS] API shall support variable query and expressions |
| 111046 | [DeckCheck] Improvements Config |
| 111047 | [DeckCheck] Improvements Edittime |
| 111139 | [FRS] Base incubation: Do not automatically open the Labware Group Editor in Process Scripts. |
| 111140 | [FRS] Enhance Touch Interface: Hide resources in Gantt chart on Touch Tools. |
| 111218 | [FluentSetup] Extend FSE Token Validity Duration |
| 110813 | [FluentSetup] Devices with TOY firmware (Labwerx) not supported |
| 110185 | [FluentSetup][3.1] Update Manual |
| 110105 | [3.1] Integrate the new version of Sample Tracking (v 1.4) in FC 3.1 |

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|--------|---|
| 109688 | [3.1] FluentControl 2.8 and Magellan 7.4 Pro: Output always in fixed layout |
| 108749 | [FluentSetup] FluentSetup update for supporting AirFCA with Multisense |
| 109944 | [3.1][CR] update the integrated IoTClient in FC 3.1 to version 2.4 (or newer) |
| 110808 | Microsoft Visual C++ redistributable contains an known vulnerability MS11-025 |
| 111045 | [DeckCheck] Improvements Runtime |
| 111251 | [FRS] Processing Step, TouchTools Gantt and Script expected runtime needs a visual update |
| 110590 | [FluentSetup] Check Door Sensor During Door Lock Test |
| 110068 | [FluentSetup] Required Labware not Shown when Using WXS Balance |
| 109722 | [CR] [3.1]: Update / Remove Microplate and Trough labware according to Consumables Phase-out plan |
| 108784 | [Fluent Setup] Syringe exchange leads to faulty pipetting |
| 109123 | [3.1] One MCA Waste for multiple Tip Types using different Positions |

24. FluentControl 3.2 (V3.2.8.59234)

24.1. Bug Fixes

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|--------|---|
| 112154 | DiTi not ejected if pressure out of range error occurs during dispense back of 'Continue, dispense back, pipette nothing' error handling option |
| 110745 | "Run finished with errors" after it finished all lines successfully |
| 111970 | Fluent Control shuts down during run |
| 111657 | [TRD] Freeze: Mixed Tip Configuration cannot Aspirate from TRD wells 20-24 (Pathfinder does not find a Path) |
| 112318 | Changes in partial tips (MCA Get Tips command) are not saved during edit time. |
| 112121 | Hardware crash if FCA Y-spread > 38mm and pipetting with all 8 channels |
| 110869 | ST Register Folder: Returned a fatal error for barcode: 'BC1234'. The barcode is eventually already registered. |
| 111071 | FC gets stuck / freezes during Reagent Distribution |
| 112965 | Registering Labware with Platemap file leads to "Script Command aborted with error [...] An item with the same key has already been added" |
| 110642 | Barcode data missing on Sample Tracking report |
| 110977 | Error thrown at "Register labware" (ST) command. |
| 113347 | Arms move slowly with open FrontDoors |
| 112740 | Default labware disappears from worktable after import |
| 113232 | PathFinder cannot evade MCA384 arm as it doesn't use all available range |
| 112646 | FCA unable to mount DiTi after error handling option „Retry once with new tip“ is selected |

24.2. Changes and Improvements

- Windows 10 Enterprise LTSC 2021 (version 21H2) compatibility
- FCA Y-spread > 38 mm with all 8 channels used in parallel no longer causes physical collision with labware
- Tube Rotator: support of mixed tip configuration
- Usability improvements related to DreamPrep NGS
- Sample Tracking command Register Labware with Platemap and option Folder now works
- Improved MCA384 DiTi pickup
- MCA384 Get Tips command saves partial tip settings in GUI
- DeckCheck command improvements

- Fluent Scheduler improvements
- IoT Client 2.5 SP1 integration
- Sample Tracking 1.4 SP1 integration
- User Management System (UMS) version 1.1.12 integration
- Loading ID FW update to version 1.10
- TeGIO II FW update to version 1.1.0

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|--------|---|
| 111397 | [FRS] Context Check Error in Method: error for unsaved changes in process editor when the labware is orphaned |
| 111072 | [FRS] Default and Custom Transfer send comments to the Connect App |
| 110372 | Lost Labware error ignored in custom transfer steps |
| 109736 | Import Editor lists Modules under Scripts. After the import Modules are listed under Modules and not under Scripts. |
| 111567 | [DeckCheck]: SW freezes during "Worktable" RUP after a DeckCheck command has been placed before |
| 111677 | [DeckCheck]: Labels of Rol should be shown in DiscrepancyScreen when Rol is affected |
| 110722 | [CR DreamPrep]: Improve context check error messages for Modules |
| 111944 | [DeckCheck] Remove "Validation" from DeckCheck output |
| 110840 | [CR DreamPrep]: New function to query the Worktable Name |
| 110847 | [CR DreamPrep]: Modules shall be better discriminable from conventional scripts |
| 111495 | FRS commands and UI Elements not being linked with the online help |
| 110720 | [DreamPrep CR]: Display query text from variable section next to the respective parameters in the module editor (in the script) |
| 112650 | [FluentSetup][Multisense] Modify TipAdapter Tests for Multisense Board |
| 112385 | [CR] [FC 3.2] Changes required for FluentControl 3.2 Win10 LTSC 21H2 compatibility |
| 111620 | [FluentSetup][Multisense] Add tests for Air FCA with Multisense Board |
| 104625 | [FRS] Implement Dynamic loading |
| 110566 | License text in FC Pre-installer is not up to date |
| 110001 | [FluentSetup]: Naming of "Cabinet is available" is potentially wrong |
| 110617 | [FluentSetup] Latest FW Versions to Be Integrated: UniBootloader II V1.2.0 and TeGIO II V1.1.0 |
| 111334 | [3.2] Aspirate 'Execute exception with liquid class' |
| 111625 | [DeckCheck]: Rename the "Sensitivity" to "Confidence Threshold" |
| 108749 | [FluentSetup][Multisense] FluentSetup update for supporting AirFCA with Multisense |
| 111443 | [3.2] [CR] update the integrated IoTClient in FC 3.2 to version 2.5 SP1 |
| 111464 | [3.2] [CR] Integrate the new version of Sample Tracking (v 1.4 P1 or newer) in FC 3.2 |
| 109545 | [FluentSetup][3.2] Integrate TeMotion2 in FluentControl 3.2 |
| 112878 | Setup SW Support of Loading ID FW V1.10.0 |
| 110041 | [FRS] Allow that Processes are started at a predefined time. |
| 109545 | [FluentSetup][3.2] Integrate TeMotion II V3.1.0 in FluentControl 3.2 |
| 110823 | [CR Te-Chrom]: Integrate Te-Chrom labware into FluentControl |

25. FluentControl 3.3 (V3.3.11.60625)**25.1 Bug Fixes**

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|--------|---|
| 109096 | Intermittent FluentID grid with runners get unexpected GetFluentIDLEDStatus values |
| 109168 | Open cabinet door locks failed message at TouchTools command |
| 111315 | Fatal Error during method recovery |
| 111348 | Scheduler: Gantt chart does not update properly after completed run |
| 111936 | Freeze during method recovery if script contains disabled If statements |
| 113051 | FluentControl crashed during Export - Eventlogs: "System.ArgumentOutOfRangeException" |
| 113109 | Setting custom "Sounds" in Configure System does not work |
| 113333 | Fluent overnight runs stopped due to a collision or hardware error or to communication issues |
| 113336 | Tip touching results in tip moving past well dimensions for 2ml Deep Well Plates |
| 113365 | Unable to execute worklist due to faulty temporary script: "Aspirate volume must be at least Dispense volume" |
| 113513 | FluentControl crashes when attempting full export |
| 113727 | Temporary scripts generated by "Load Worklist" command trigger erroneous cLLD exceptions. |
| 113924 | FluentControl shows error that DiTi box is out of range when box is accessible |
| 113977 | Cannot use variable in Reagent Distribution command for Empty Tip Labware field |
| 114163 | Method Run scope variable Context Check error at edit time |
| 114177 | Protect Audit Trail fix not effective for upgrade installations |
| 114413 | FluentControl pulls the MCA active carrier out of the worktable, breaking grids |
| 114575 | Fluent cannot initialize with AirFCA on the right of the MCA384 and correspondingly an FCA waste on the right of the MCA waste |
| 114621 | Variable scope Script and Run are not usable within liquid class variable declaration |
| 114660 | MCA aspirates sample liquid into head after initialization (after power cycle) |
| 114858 | Slow RGA performance with long move pauses at transfer of 96 tube rack |
| 114945 | "Select a valid labware" context-check errors when opening Modules |
| 115007 | TouchTools starts up at wrong screen, but goes to the correct position when opening Configure System |
| 115063 | FCA moves to Global Z-travel prior to dispensing at Z-dispense |
| 115124 | Transfer Individual Volumes with Dynamic DiTi Handling not working |
| 115137 | Standard Curve command aborts run if labware is specified with a Variable at the index |
| 115207 | Invalid character in Set Variable command causes FluentControl crash |
| 115222 | FluentControl 3.2 freezes while executing "Add Labware" command in complex scripts |
| 115269 | Lids added in the Carousel through the Labware group Editor are not present at runtime and disappear after the script is closed or exported |
| 115270 | User unable to run script due to "Unable to generate functional pipetting sequence" error |
| 115283 | It is possible to define negative offsets for Z-ax in the liquid class for the MCA arm |
| 115510 | Transfer Individual Volumes command cannot be used with fixed tips |
| 115749 | FluentControl 3D Worktable editor not rendering properly when using Intel generation 12 processor |
| 115590 | Touch Tools displays wrong error for a variable with limit |
| 116017 | Scheduler: if plate is lost, unrelated iteration is aborted. Abort reason not logged |
| 115613 | Sample Transfer cannot generate valid subscript due to replicate |
| 115079 | Context check does not calculate the variable associated with the function FileLineCount() |

25.2 Changes and Improvements

- Windows 10 Enterprise LTSC 2019 (1809) and Windows 10 Enterprise LTSC 2021 (version 21H2) compatibility
- Software support for new MCA96 arm
- MCA384 Get Tips and MCA384 Drop Tips commands have been renamed to MCA384 Pick Up Tips and MCA384 Set Tips Back
- New MCA384 Get Tips and MCA384 Drop Tips commands
- New MCA Transfer Liquid smart command for MCA384 with EVA adapter
- New Te-Chrom smart command
- Software support for new MultiSense board for AirFCA
- Software support for new Phase Separator
- Delay command only available for MicroScript
- Removed possibility to run a repair installation
- FluentSetup: new firmware TeMotionI V1.10, TeMotion II V3.1.2 and UniBootloader II V1.3.1
- IoT Client 2.6 integration
- User Management System (UMS) version 1.1.13 integration

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|--------|---|
| 104563 | Upgrade Licensing Client to support TLS 1.2 |
| 109545 | [FluentSetup][FW] Integrate TeMotion II V3.1.2 |
| 110831 | Cannot connect to SVN service anymore after a FluentControl repair |
| 112109 | Modules shall be listed directly underneath the Scripts in the Controlbar |
| 112555 | [FluentSetup] Arm Alignment failure text is wrong |
| 112807 | [FluentSetup][FW] Integrate TeMotion I FW 1.10.0 |
| 113940 | [FluentSetup][FW] Integrate UniBootloader II V1.3.1 |
| 113962 | [Scheduler] Integrity check of added Processes (Destination Step) |
| 114174 | Integrate UMS V1.1.13 |
| 114354 | Log instrument Initialization data for IoT Client |
| 115531 | Increase contouring error threshold to 160 for DiTi eject of FCA arms |

26. FluentControl 3.3 SP1 (V3.3.12.60898)**26.1 Bug Fixes**

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|--------|---|
| 116574 | FluentControl 3.3.11 does not have GP state with SampleTracking Stand-Alone |
| 116515 | [3.3] Add IoT Client Installer V2.5 additionally on MasterMedia |

27. FluentControl 3.4 (V3.4.9.617874)**27.1 Bug Fixes**

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|--------|---|
| 113138 | FluentControl cannot return to edit mode after run with a message "The execution of the transition failed". |
| 114060 | FluentSetup SW vs Excel Check List discrepancies |
| 115359 | FluentControl fails to import manufacturer definitions after upgrade from 3.1 to 3.2. |
| 115550 | FluentControl user management randomly modifies admin rights upon user creation. |
| 115980 | Fluent Scheduler Timing Constraints lacks a scroll bar so some constraints cannot be seen/entered. |
| 116398 | MCA384 could not evade from FCA after upgrade from FC 3.0 to FC 3.2. |
| 116426 | TouchTools crashes after completion of methods/scripts. |
| 116505 | After failed initialization due to device turned off, re-initialization after turning on device will initialize that device but overall initialization fails. |
| 116523 | "DiTi Lost" - Error when detecting liquid with the dedicated "Detect Liquid" command. |
| 116638 | User cannot reliably edit a carrier definition because reference & site offsets are randomly saved or not saved. |
| 116672 | Variable window not displaying all variables. |
| 116682 | Container barcode overwriting plate barcode when registering with Platemap from a file. |
| 116737 | Increasing times of pipetting steps and e.g. delays in RGA movements cause violations of timing constraints of processes. |
| 116916 | Generate Report Export Data command: File gets overwritten |
| 117121 | Error while moving arms. Differences between destination position and the arm's current position after move have been detected. |
| 117156 | Z-Offset from LC is added for Dispense despite cLLD being used. |
| 117166 | FluentControl unusably slow with when method approval is active. |
| 117202 | FluentID Start Loading scan doesn't work in FC 3.3. |
| 117295 | Run aborts if Sample Transfer command is performed with 10ul FILTERED DiTis. |
| 117342 | MCA DiTi pickup with Active Carrier: Labware Definitions of MCA384 DiTi products |
| 117366 | Pathfinder Delays |
| 117371 | Exception event during pipetting - "Invalid attempt made to decrement the events count to below zero" |
| 117424 | FluentControl Scheduler cannot close a running process and freezes. |
| 117572 | Te-Chrom smart command does not use variables in Subroutine. |
| 117574 | FluentControl crashes during very long runs. |
| 117905 | Te-Chrom cannot generate a valid subscript with provided parameterization. |

27.2 Changes and Improvements

- Software support for new MCA96 arm
- New MCA96 Transfer Liquid smart commands
- Updated Te-Chrom smart command

- Software support for new MultiSense board for AirFCA
- Software support for new Phase Separator
- FluentSetup: new firmware TeMotion I V1.10.0.11416, TeMotion II V3.3, and TeGIO II V1.1. 0-0-g8e1cb3550
- User Management System (UMS) version 1.1.13 integration
- DisplayLink USB Graphics Software for Windows V11.0 M0
- Sample Tracking 1.4 SP2
- SPARKControl Magellan 3.2 fixes issue with automation interface

28. FluentControl 3.4 SP1 (V3.4.10.62215)

28.1 Bug Fixes

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|--------|---|
| 119435 | Slow Buffy aspiration for PPD-testing |
| 118627 | RGA Z contouring error on execute single vector |
| 119737 | FC 3.4 not importing zeia created in FC 3.3 |

29. FluentControl 3.5 (V3.5.7.63142)

29.1 Bug Fixes

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|--------|---|
| 116981 | Trough mode (8 tips performing in parallel) is disabled in a mixing step |
| 117003 | Transfer Script takes longer because Fluent pauses for 20 seconds |
| 117172 | Wait command timer is skipped during run |
| 117284 | RGA drops plate if system pauses when executing single vector |
| 117301 | FluentControl freeze (deadlock) when using both automated Lid Handling and Automated DiTi Handling |
| 117307 | [Scheduler] Processes cannot be opened anymore |
| 117681 | Get File in TouchTools does not close |
| 118021 | FCA not able to hit pick from 96 well MTP in on 7mm nest located in front of hotels |
| 118342 | [Scheduler] If Process is started with Tasks, it cannot set a variable of scope Iteration |
| 118724 | MCA384 timeout while on Pick Up Tips command |
| 118775 | It is possible to initialize the Fluent with open doors |
| 118927 | FluentControl crashed during a run |
| 118987 | Pause Worklist execution and then Resume ends in Fatal Error and TouchTools window crashing |
| 119086 | Arms move at normal speeds during re-initialization of Fluent with open doors |
| 119322 | [Scheduler] Process cannot be opened and FluentControl crashes when try to delete affected process |
| 119608 | After manually moving the MCA384 after an error, the arm crashed the fixed tip adaptor when dropping head adapter to nest |
| 119614 | [FluentAPI] CloseMethod in state RunModeResetTips resets state machine to RunModePreparingRun instead of EditMode |
| 119715 | Worktable changes are not saved when editing worktable in subroutine |
| 119718 | Resume Condition Check Failed after a successful FluentID scan followed by an error |
| 119853 | Not possible to import all database objects from export file |
| 108889 | [FluentAPI] If TouchTools is the active window, Shutdown via API does not work |
| 114357 | Creation of restore point failed |

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| 115949 | [Scheduler] Incubation process steps aborted after a non-connected iteration had a washer error |
| 119909 | [MCA384] MCA96 Adapter: 50ul non-filtered DiTi box with wrong labware definition |
| 119910 | FluentControl crashes when returning to Edit-mode after failed run |
| 120380 | Mix command not executed after "not enough liquid" error |
| 120382 | PathFinder cannot evade MCA384 arm as it does not use all available range |
| 120671 | Cannot edit MCA384 Liquid Class Positioning Z Offset in FC 3.4 |
| 120890 | [Scheduler] Unexpected error occurred while adding due Processes |
| 120985 | RGA contouring error when evading MCA384 |
| 120754 | Runtime error and abort when executing partial script containing commands that add, remove or move labware |
| 121255 | [Scheduler] Freeze during Automated DiTi Handling |
| 120569 | FluentControl freeze during context check of large scripts and simultaneously viewing further scripts |
| 116917 | "Sequence contains no Elements" error after pressing <continue> for replace DiTi |
| 119854 | Not possible to save duplicated MCA384 head adapter definition: "An item with the same key has been added" |
| 121090 | "Find and Replace Liquid Class" does not work for Aspirate and Dispense commands |

29.2 Changes and Improvements

- 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)
- Snapshot Tool enhancements
- Integration of IoT Client V2.7
- New instrument worktable for device placement
- FluentSetup: Role based access
- FluentSetup: TeMotion II FW V4.0.1

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| 118004 | [MCA96] Improvements needed for MCA96 Liquid Classes |
| 118801 | [FluentSetup][MCA96] Add support of drop plate made from plastic and update cLLD Test |
| 118498 | Improve Error / Warning Messages for MCA96 Transfer Liquid Smart Command |
| 117845 | [FluentSetup][MultiSense][FW] Integration TeMotion II FW V4.0.1 |
| 118538 | [Scheduler] Add batch ID as prefix to scheduler output files (Labware and Timing Constraint report) |
| 117989 | [FluentSetup][MCA96] Improvement of Alignment and Displacement, Positioning Actions |
| 119940 | SampleTracking report wells containing multiple samples after contouring error and resuming the run |
| 113628 | [FluentSetup] FSE shall be able to download bootloader |
| 111578 | Snapshot Tool improvements |
| 118658 | [Scheduler] Do not accept NiceToHave schedule updates that increase overall time unless in conjunction with adding new iteration or method |
| 118769 | [Scheduler] Improve RGA error handling of transfer steps |
| 119139 | [MCA96] Corrected location names of sites on 4 Nest segment |

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| 120430 | [Scheduler] Start iterations in sequence |
| 121377 | Add warning message to MCA96 Move Tool |
| 118203 | [FluentSetup] Role based access to Setup SW |
| 118530 | [Scheduler] Allow timing constraints to be defined as non-critical |
| 114747 | [Scheduler] Create labware in batch 1 script followed by batch 2 process with 'assign labware by barcode' does not work |
| 118534 | [Scheduler] Do not re-schedule or start new steps while a step that has been given extra time is not completed |
| 113800 | Support of dual RGA configuration |
| 121282 | New instrument worktable layer for device placements |
| 118531 | [Scheduler] Allow definition of transfer timing constraints for individual transfer steps |
| 116959 | Update the integrated IoTClient to V2.7 |
| 119355 | Support for i300 |
| 113799 | [FluentSetup][DualRGA] Support of dual RGA configuration |
| 113999 | [MultiSense] FluentControl update for supporting pLLD |
| 119414 | Software support for XY move during aspirate |

30. **FluentControl 3.6 (V3.6.11.64496)**

30.1 Bug Fixes

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|--------|--|
| 113267 | Error Handling with multiple parallel subroutines can lead to unresponsive state of FluentControl |
| 120687 | After arms were successfully sent to home position, FC displays error "ID CC_HOME_001_002" "Send arm to home position failed." |
| 121076 | Non-grid based device graphics default to top of Grid 1 after import a worktable |
| 121168 | FCA stops over 50ul DiTi's after picking up the tips |
| 121177 | Transfer Individual Volumes splits volumes into multiple steps but still runs into error too much in plunger |
| 121325 | FluentControl unexpectedly crashed during script execution |
| 121428 | When adding module to script it shall not add additional outer double quotes to 'Value from main script' |
| 121440 | Internal error during tracking calculation: No time for volume was calculated |
| 121481 | FluentID with 24pos Runner: Fatal Error encountered and script is aborted. |
| 121511 | "Find and Replace Arm" does not work for RGA/MCA96 Transfer Labware command. |
| 121555 | Different offset behavior with 24pos and 26pos runners on loop cycle |
| 121805 | FCA cannot find evasion route in position above tube rack when the RGA wants to move rack with tubes inside underneath FCA |
| 122229 | Open Labware Group Editor stutters and response is slow |
| 122501 | Fluent fails to initialize after upgrade from FC 3.4 to FC 3.5 |
| 122653 | PDF report created via TouchTools command "Report" doesn't contain all data after upgrade to FC 3.5 |
| 122706 | In FluentControl 3.5 the GetFile command gives a fatal error if the file path is a variable |
| 122757 | Missing Objects in Full Export exported from FC 3.5.7 / imported into FC 3.5.7 |
| 123005 | FluentControl Syntax Check also performs a Context Check for fileExcelRowCount() |
| 123048 | MCA384 cannot evade from RGA when RGA is holding a plate |

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| 123185 | In specific scenarios, some liquid is dispensed when volume = 0 in dispense command and using default Water Free Multi liquid class |
| 123203 | FC crashes after trying to close unsaved script |
| 123455 | Liquid level detection error does not trigger run pause with user prompt |
| 123501 | PDF of FC Script printed with errors |
| 124223 | Run stopped by error when trying to assign MicroScript variable Z_LIQUID to a helper variable |
| 124391 | [Scheduler] RGA returns plate to <BASE> after aborted step via Regrip Station but crashes into regrip carrier as it fails to apply grip offset |
| 124768 | Warning Dispense target volume has been reduced occurs since upgrade to FC 3.5 |

30.2 Changes and Improvements

- New Transfer Phase command for the Phase Separator
- New integrated driver for the Brooks PreciseFlex 400 robotic arm
- New pooling feature in the Sample Transfer smart command
- New FluentAPI support for DeckCheck
- New Email notifications feature
- New Capture Worktable command for DeckCheck
- New Script for Loading Guide feature
- New Device placements and carrier adjustments are stored on the instrument (Te-Control)
- System liquid can now be dispensed via Worklists
- Te-Chrom smart command supports gradient collection workflow
- Scheduler support of 0 Process iterations
- Software support for 2 RGA on one Fluent (dual RGA)
- Enhanced software support for Resolvex i300
- New Optimized Log Extractor G (OLEG) log file viewer tool

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| 111170 | Modules and Subroutines shall support alphabetical variable sorting |
| 112556 | [FluentSetup] After Arm Alignment failure, Displacement is necessary |
| 113265 | [FluentSetup] Saving the system configuration by File/Configuration makes the instrument initialize again |
| 113862 | [FluentSetup] AirFCA ZeroG: apply correct calibration pass/fail limits |
| 114828 | [FluentSetup] Corrections to watermarks on Reports |
| 115249 | [FluentSetup] Instrument Information File shall provide arm order |
| 115497 | Implement driver of Brooks PreciseFlex 400 |
| 115724 | [FluentSetup] Axis move counter is shown as "-" instead of "0" |
| 116215 | New Phase Separator Transfer Phase command - Workpackage I |
| 117328 | [Te-Chrom] Support of Gradient Collection workflow in Te-Chrom smart command |
| 117374 | Segment Deck 1 grid to be added to Fluent Control |
| 117429 | [FluentSetup] Leakage Test and Pipetting Test does not start if MCA384 configured as second arm |
| 118470 | [Scheduler] Support the use of 0 as iteration for processes in Methods |
| 118933 | [FluentSetup] Door Sensor Test fails as cabinet door sensor reported as closed permanently |
| 119956 | pLLD pressure compensation for mechanical Backlash |
| 119959 | [FluentSetup] MCA96 stops during Z-down movement before touching the worktable at alignment-, displacement-, positioning-test |
| 119969 | [Phase Separator] Support Detect Phase MicroScript command in simulation |

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| 120478 | [FluentSetup] MCA96 Gripper Plate Move Test with standard segment instead of 4-nest segment |
| 120752 | Remove deprecated commands Dilution, Normalization, Store Standard Curve and Load Standard Curve from FluentControl |
| 121252 | Snapshot Tool improvements |
| 121437 | Retry' after not enough liquid pLLD error shall use fresh DiTi |
| 121441 | [FluentSetup] Log time series during Running In action |
| 121446 | Define up to 50 x,y coordinates for custom labware attribute XYTrackingSequence |
| 121890 | Integrate MAP PMP Curve Viewer into FluentControl |
| 121983 | Update naming of Resolvex i300 commands in FluentControl |
| 122009 | [Scheduler] Allow Scheduler to work with Labware Groups that have been modified by AddLabware or RemoveLabware. |
| 122124 | Segment Deck 7 grids waste thru to be added to Fluent Control |
| 122125 | Segment Deck 6 grids multipurpose to be added to Fluent Control |
| 122134 | FluentControl shall support pooling in Sample Transfer smart command |
| 122160 | [FluentAPI] DeckCheck Support |
| 122162 | New Email notifications feature to send an email on error |
| 122830 | [DeckCheck] Save camera pictures using new Capture Worktable command |
| 122870 | Update instrument name in Device Manager under USB Devices |
| 122924 | [FluentSetup] Backup & Restore does not include MAP Config |
| 123052 | Segment Deck 6 grids thru to be added to Fluent Control |
| 123092 | New Script for Loading Guidance in Methods |
| 123095 | Fix typo in driver initialization message for simulated reader devices |
| 123111 | New PMP AI model DNN - ARP_Asp_Anomaly_WholeBlood_cLLD_A01 |
| 123875 | Migrate existing teaching values to instrument Te-Control board on first connect after upgrade of FluentControl |
| 123893 | Implement solution for TouchTools image display issues (black lines, images not displayed) |
| 124521 | Update mesh files of carriers and labware |
| 125570 | [Compliance] New intended use IVD for Fluent |

31. **FluentControl 3.7 (V3.7.12.125)**

31.1 Bug Fixes

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| 121225 | [Scheduler] FluentControl sometimes freezes when a timing constraint is violated |
| 122364 | Software freeze during Dynamic DiTi handling |
| 122376 | Dynamic DiTi handling within "Transfer Individual Volumes" command does not execute according to the conditions set |
| 123192 | MCA384 EVA and non-EVA adapters occasionally over-dispense |
| 123432 | [Performance] FluentControl non-responsive during context check |
| 124539 | FluentControl cannot start due to NullReferenceException error |
| 124636 | [Multisense] Pressure out of range error on one channel of the AirFCA causes all other channels to have dispense target volume reduced |
| 124712 | [FluentSetup] AirFCA MCA96 RGA Configuration: Running-in test not successful |
| 125670 | User Prompt aborts run due to curly bracket "{" in prompt-text (CIDVX_COOR_001_005) |
| 125793 | MCA96 tip pick up offset not applied correctly in rare scenarios |
| 126194 | Method recovery still shows up in Touchtools and main screen when it is disabled in configure system |
| 126196 | FluentControl crashes if Tecan.Core.LoggingService.exe is terminated or crashes |
| 126222 | MCA96 applies wrong liquid level tracking if 2 tips aspirate from a single well simultaneously |

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| 126309 | [MultiSense] AirFCA target position out of range error during Set tips back command execution |
| 126417 | Variable in Liquid class updated at unexpected timepoint |
| 126427 | [Teaching] In FluentControl 3.6 non-grid based device placements are lost after FluentControl restarts |
| 126507 | MCA384 cannot evade RGA |
| 126820 | Disabled lines in liquid class Microscript lead to software freeze at runtime |
| 126878 | [Multisense] cLLD profile for acceleration and deceleration must use be sinusoidal |

31.2 Changes and improvements

- Compatibility with Windows 11 Enterprise (IoT) LTSC 2024
- Default liquid class 'Water Free Dispense' supports pressure based liquid level detection (pLLD)
- FCA and MCA smart commands support dynamic tip handling
- Updates to Transfer Phase command for the Phase Separator
 - New well attribute 'TransferPhaseResult' for source labware
 - Support of retry after initial liquid level detection does not detect any liquid
 - Support for defining tip re-use
 - Empty tip contents can now pipette back to source tubes and wells
 - New well attribute 'TransferredReplicateCountForTransferPhase' to store total number of achieved replicates per source tube
- Support for XY move during dispense ("spiral pipetting")
- Default pipetting path added to tube labware (13x100 and 16x100) for Aspirate/Dispense with XY Tracking ("spiral pipetting")
- 3D simulator supports MultiSense AirFCA and pLLD
- Improved robustness of (Air)FCA tip pickup procedure
- Scheduler:
 - support for defining process iteration by variable
 - improved timing constraint definition for individual labware
 - long running processes: skip automatic FluentControl restart on defined days of the week
 - long running processes: persist variables after automatic restart
- Support for Advanced Worklist feature
- Updated labware definitions of FCA 350µl DiTi and FCA 1000µl Wide Bore DiTi
- Enhanced software support for Resolvex i300
- FluentAPI supports arrays and querying labware type
- Compatibility with SiLA2 Client (driver) v2.3 and SPARKControl Magellan 3.2 SP1
- Integration of IoT Client 3.0 and TeMotion II v4.1.1 firmware
- Bug fixes and improvements

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| 113844 | [GUI] Default config 1080_LiqFCA_MCA_RGA references a real instrument |
| 118415 | [Scheduler] Cannot set number of process iterations by a variable |
| 121477 | [3.7][CR] Update FC installer to integrate the new IoTClient V3.0 or later |
| 121765 | [FluentSetup] Actions/Tests with Reference pins should by default be executed with 8 reference pins |
| 122387 | [TipHandling] (Air)FCA DiTi pickup improvements |
| 122635 | [FluentSetup][FW] Support of Te-Motion2 FW with fix of PWI 4024 |
| 122636 | [Compatibility] Support of Te-Motion2 FW with fix of PWI4024 |
| 122840 | [PhaseSeparator] Add Pipetting Path to LW definition of Tubes (13x100, 16x100) |
| 124291 | [PhaseSeparator] New command 'Dispense Liquid with XY Tracking' |

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| 124327 | Not possible to simulate pLLD with provided instrument config files |
| 124464 | [Precise][Teaching] When teaching vectors with gripper arms the arm switches back to ZeroG or power off |
| 124694 | [Variables] Allow variables in Estimated End Time for Scripts in order to allow more accurate predictions |
| 124765 | [PhaseSeparator] Introduce a well attribute for transfer phase result. |
| 124779 | [LiquidHandling] Water Free Single liquid class shall support pLLD |
| 124882 | [PhaseSeparator] Implement Retry option for cLLD error 'No liquid detected' |
| 124905 | [PhaseSeparator] "Empty DiTi" after plasma transfer |
| 124933 | [FluentSetup][MCA96] Remove support of MCA96 head with metal ejection plate |
| 125035 | [PhaseSeparator] "Replicate Volume" doesn't allow to enter "if" statement with keyword and numbers |
| 125117 | [LiquidHandling] Mitigation of over- and under-dispenses of MCA384 adapters |
| 125240 | [i300][CR] Context check error for i300 commands when incorrect Pressure Head/Evaporator head is mounted |
| 125252 | [i300][CR] "Stop" button does not stop devices of i300 |
| 125275 | [LiquidHandling] Pressure Out Of Range errors on MultiSense AirFCA when mixing vigorously |
| 125330 | [PhaseSeparator] Transfer Phase command within a Variable Pipetting Loop does not work as expected |
| 125335 | [Scheduler] Timing constraint with the same step combination cannot be set up several times with individual Labware |
| 125384 | [PhaseSeparator] Configure tip re-use options in Transfer Phase |
| 125472 | [Scheduler][GUI] Scheduler Parameter has unclear and ambiguous name referring to task instead process step |
| 125507 | [ErrorText] Context check error is not shown for i300 commands executing on non-accessible labware |
| 125508 | [Worklist] Decontamination volume range selection within "Worklist" command limited between 1-1000 ul |
| 125563 | [Compatibility] FluentControl 3.7 shall be compatible with Windows 11 Enterprise LTSC 2024 |
| 125662 | [API] Support get\set array variables in Fluent API |
| 125790 | [Scheduler] Skip scheduled software restart for certain days |
| 125826 | [Scheduler][Variables] Run-Scope Variables lose value due to Scheduler automatic restarts |
| 125888 | [PhaseSeparator] Context check & User Interface improvements |
| 126061 | [Database] Labware Definition: 350ul DiTi Mount Offset must be shortened by 0.77mm // 1000 ul WideBore DiTi Mount Offset must be shortened by 0.56mm. |
| 126470 | [Scheduler] Context-check error for method since it does not consider plate re-use from option assign labware by barcode file |
| 126522 | [PhaseSeparator] New Source Labware attribute recording achieved total number of replicates |
| 126745 | Fix delays when read\write values in Sila2 driver's configuration ini file |
| 126946 | [API] Add possibility to get labware type from FluentControl |
| 127170 | [Worklist] Advanced Worklist is a standard feature of FluentControl |
| 127173 | [IoT] Support external drivers sending environmental data to IoT |
| 127343 | [Compatibility] MCA96 DiTiAlignmentMoveDistance to 0.8mm |
| 127759 | [Scheduler][Variables] Run-Scope Variables lose value due to Scheduler automatic restarts |