FluentControl™

TAKE CONTROL OF TECAN'S MOST POWERFUL LIQUID HANDLING WORKSTATIONS

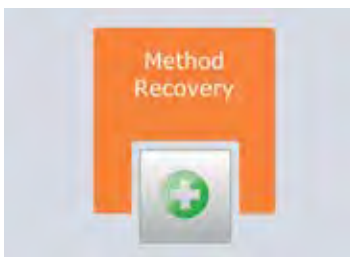# One great software, two powerful interfaces.

Designed for those who 'press go', daily activities such as running assays and routine maintenance become as straightforward as using the smartphone in your pocket. Users intuitively know what to do next.

The Fluent® and Fluent Gx are powerful automation platforms, yet FluentControl keeps it simple with TouchTools™, a dedicated operator interface on the touchscreen of the instrument itself. Everyday interactions – such as starting a run, entering key values and reacting to user prompts – are cleanly presented, delivering user-friendly operation without the need for any extra programming.

Create custom instructions to guide operators through each method. Embedding your SOPs into every run using pictures, videos and wording specific to your lab or protocols, can reduce the training necessary for new operators, and making day-to-day tasks easier than ever before.

This simple interface is not limited to only simple activities. For example, if your computer loses power in the middle of a method, TouchTools can guide the operator through recovering the run, showing what has been done, what still needs to be done, and where everything should be.

Help is always at hand

FluentControl includes special troubleshooting features, such as Snapshot, Log Viewer, and Remote Support for direct connection with Tecan. Users are automatically emailed if the system is interrupted, and the import/export method feature speeds up troubleshooting and allows easy transfer of methods between Fluent platforms.
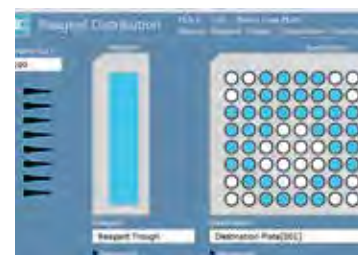
FluentControl is designed to empower scientists to build, optimize and maintain their own assays, without the need for computer programming expertise. By separating everyday work from the configuration of new assays, Tecan has created ideal tools for both, without compromise.

Users can simply drag and drop commands to create a protocol, using the 3D editor to configure their worktable elements and labware. A built-in auto-context check reviews the scripts as you create them – offering help if something might not work – and you can even preview your finished protocol in a **3D simulator,** without wasting reagents. Even infrequent users can understand how to read and edit existing methods, avoiding the need to wait for an expert to make changes and giving you control of your project timelines, costs and data quality.

How does FluentControl help those new to programming?

Smart Commands allow you to program common tasks – such as distributing a reagent or transferring samples in replicate – with a single command. In addition to intuitive editors and the auto-context check, pressing F1 during editing opens the integrated help system. Every action also has an 'undo' option, even if the computer is restarted. For even greater reassurance, a 'restore point' is automatically generated with every run, allowing you to roll back to before any unintended consequences.

Lab or operator specific information can be communicated before every run:

Is it possible to customize the system?

If the hardware can do it, FluentControl can control it. Creating custom labware and carriers is easy. With Zero-G positioning, you can simply slide the arm to the desired location by hand, then click 'transfer' in the editor, and FluentControl will know exactly where it is.
Need to control a special device? FluentControl is ready for that too. Any SiLA-ready device can be controlled with the default driver. Tecan has an extensive driver library available for other modules. FluentControl also offers easy interaction with external programs. Execute applications from the instrument or start/stop runs from your own software's custom code via VB.NET or use the built-in API.

Hand guides arm to the correct centrifuge loading position below the deck using Fluent's ZeroG technology.

Can FluentControl interact with my existing data systems?

There are many options for passing data to and from a LIMS or other data system. The 'import/export variable' commands make it easy to get data to/from external files, while the worklisting feature allows you to pipette directly from CSV or other text files.
FluentControl is also the brain of the Fluent and Fluent Gx automation solutions. The platforms' arms move with speed and grace during a run, tracing optimal paths around other modules. This is overseen in real time by **Path Finder™**, which evaluates where everything is in three dimensions, including the shapes of devices and the changing height of disposable tip stacks during a run.

Software also lies at the core of the platforms' amazing **'teach-free'** capabilities. After Installation Qualification, default carriers and labware can immediately be used in methods. No additional teaching is required, thanks to a combination of the hardware's mechanical accuracy and precision and the software's carefully refined definitions. Zero G one-touch teaching is easily possible for devices integrated below deck or to assist in optimization of positioning to pipet sub micro-litre volumes in high density plates such as 1536 well plates.

'Active Stop & Resume' is another feature that combines great hardware with powerful software. This option allows a run to be immediately paused via the touchscreen or even by just opening the door. The arms all switch into Zero-G mode, allowing them to be easily moved by hand. The system can identify the new arm positions with a resolution of less than 0.1 mm, allowing the run to safely continue once restarted.

Need to reduce dead volumes, maximize aliquot numbers from precious sample or reduce expensive reagent waste?

Adaptive Signal Technology™ can reliably detect miniscule volumes. Combining liquid sensing technology with hardware accuracy and exact labware contour definitions, FluentControl can precisely model the interior of wells, calculate the detected volume, dynamically alter liquid tracking speeds and adapt the threshold to allow detection of volumes as small as 2 µl of water.

Simplifying compliance with the Fluent Gx automation workstation.

Tecan developed the Fluent Gx Assurance Software with highly regulated environments in mind – such as clinical, GMP and QC laboratories – offering a host of features designed to make compliance with relevant national or industry guidelines as straightforward as possible.

User management for controlled access

Multi-level user management allows bespoke control of access to protocols and software features. With three default user levels – operator, application specialist and administrator – plus the ability to define custom roles, this is ideal for busy, multi-user labs. Administration is further simplified for labs using Windows® Active Directory, allowing each employee's Windows ID and password to provide direct, traceable access to FluentControl.

Uncompromised security

FluentControl's optional method approval feature delivers process security for regulated environments without compromising method development. This ensures that only approved and validated protocols are used for day-to-day activities, while providing application specialists with the ability to create and test new automation workflows.

End-to-end traceability

Traceability is crucial for regulated laboratories and clinical activities. FluentControl's sample tracking add-on traces every sample, from initial identification using a handheld or integrated 1D/2D barcode scanner through to reporting of final results, including data from Magellan™ data reduction software.

A detailed, secure and audit-ready log of all actions for each sample is generated, which can be automatically uploaded to your LIMS.

Assured data integrity

FluentControl's electronic records help laboratories to meet stringent regulatory standards for data security – such as those defined by FDA 21 CFR Part 11 – by providing protected copies of scripts, methods, carrier and labware definitions, liquid classes, and system configurations. Each file has a checksum to guarantee data integrity, and an optional electronic signatures function provides a detailed record of any changes made. For maximum process security, this feature can also be used to handle processing errors, requiring the user to approve any run that has been completed with errors or warnings.

Maximum compliance, minimal manual input

The Fluent Gx Assurance Software offers advanced features to streamline regulatory activities, helping laboratories to demonstrate compliance with minimal manual input. The Compliance Checker provides rapid, fully automated verification of the integrity of all executable software components – meeting the needs of GMP facilities and supplementing existing cybersecurity measures – while the Data Audit Tool performs a similar function for electronic records, ensuring data integrity.

Notification on mobile device

Tecan's Common notification System (CNS) informs you on your mobile device when user-interactions are needed or your instrument status has changed. Available for Apple iPhone, and Android mobile devices, CNS gives you the freedom to walk longer and further away from your instrument. CNS also offers connectivity with IFTTT allowing you to put the internet to work for you. See http://ifttt.com/tecan for examples of what you can do.

The Fluent Gx is an open automation platform product for general laboratory use. It is intended for routine laboratory tasks, such as general purpose pipetting and general purpose liquid handling and robotic processes. Not all options are available in all markets. Certain options when combined with Fluent are for research use only. Configuration of options may impact intended use – please consult your local Tecan office.

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