6.4 FEATURE HIGHLIGHTS

- Automatic Flag Mechanism
- Batch Remove Reference Data
- Authentication Module
- SLIMS Share Improvements
- CDS Integration
- Analytical Workflows
- CSV API
- Macro Usage Restrictions
- Use and Calibrate Instruments
- Study Design Role Restrictions
- Variants Upgrades
- E-signature Updates
- Balances Integration
- View and Filter Upgrades
This version of SLIMS has four options for authenticating users. All of the options are set up in the Authentication Module. The options are:

- Local Authentication
- LDAP Authentication
- OAuth (Google or Okta accounts)
- Agilent OpenLab Shared Services

When a user logs in for the first time, SLIMS checks for the method that is configured, creates the account according to that method, and can either activate new users automatically or require the administrator do it manually. The user's default role and license can be automatically set for new users.

Logging in with an external identity provider makes use of the third-party's authentication system, and means that the user has fewer credentials to remember.

NOTE: Local Authentication is always available in case of third-party issues.
Analytical Workflows can be created to request results to tests and execution of rules on results during a workflow. Products and Specifications can now also be used in workflows as a means to require a predefined group of tests and specifications on a content.

Analytical Workflows use most of the same building blocks as traditional workflows but pieces of the setup differ.

The main flow of an analytical workflow includes:

- Tests associated to requestables that have Analytical Workflow execution mode
- Order Management used with orders of type Default Orders or QC Orders to manage analytical requests, with or without product specifications
- Analytical Methods to setup the treatment arms in a workflow
- Ability to review tests and Acknowledge or send them for Retest from the Orders module

NOTE: Once analytical mode is turned on for a workflow, it can’t be turned off.
CDS INTEGRATION

OpenLab CDS integration allows SLIMS users to send a sample sheet to an instrument registered in OpenLab CDS and to import results pre-processed in OpenLab CDS. The list of instruments used for chromatography in Agilent OpenLab Shared Services can be imported and kept up-to-date in SLIMS by automatically syncing in the Instruments module.

In the OpenLab CDS Protocol type, sample sheets for a chromatograph run can be set up. During the run, the CDS sample sheet can be generated and sent to the instrument, and the results can be imported from the chromatograph run as results on samples in SLIMS.

CDS Integration requires:

1. Authentication via OpenLab Shared Services
2. Import of CDS Package
3. Generic plugins for sample sheet generation and import of results (contact your SLIMS engineer)
4. Configuration of OpenLab CDS protocol in a workflow
CALIBRATING INSTRUMENTS

The calibration status of instruments can be reset in the Instruments module, and Calibration History was added to collect the Date, User, Status, and New Expiry Date.

Instruments that 'Can be calibrated' in Instrument Types can then have a status and expiration date. Calibrating the instrument in the Instruments module adds a new calibration date, and then the status needs to be manually set.

The system checks all expiry dates daily using a SLIMS GATE Flow and changes Calibrated to ‘No’ if the date is passed. The expiration date then is the first day the instrument is no longer usable.
USING INSTRUMENTS

SETTING UP INSTRUMENTS

Instruments were updated so that an instrument used in a workflow can be linked to protocol run steps. Admins can also require the use of instruments for protocol run steps and control the consequences the calibration status of an instrument has in a protocol run.

The protocol step configuration has fields to require instrument selection, to restrict it to particular types, allow or disallow uncalibrated instruments, and provide warnings or flags if uncalibrated instruments are used.

Instrument statuses were added to the Statuses module to include a few calibration statuses by default, and to provide the option to create more.

USING INSTRUMENTS

When the user is selecting an instrument, s/he can see the name of the instrument and the calibration status in the selection dropdown.
Two new filters were added with this SLIMS version for the 'logged in user' and the 'logged in user’s groups.' This allows filters to be created easily for data that is 'created by me' and 'in my groups.'

To build the filter, choose the new "Context: Logged in user" or "Context: Logged in user’s groups" filter. Use "Equals" for the operator, then choose the column to filter on.

For now, the group function is specifically for data in the user's group, and doesn't extend to the additional group rights from other groups that a user could have.
Macros can be restricted so that they do not show up in every module. This helps to reduce clutter by showing only the relevant macros to the user, depending on the module they are working in.

When “Only for selected context usages” is enabled on a macro, the “Usage Restrictions” provides these options:

- ELN
- Scan
- Content Management
- Workflows
- Dashboard
In the “Expression to add flags” field, Groovy can be used to add flags automatically based on conditions on the content, results, or on other more complex criteria. For this to work, the expression needs to use a corresponding flag that exists in the Content Event Types module.

Groovy syntax:
- `flag(flagName, condition)`

**TIPS:** The pictured values are number decimals and not quantities.
E-SIGNATURE UPDATES

Sign-off steps have been enhanced in SLIMS 6.4 to better support Quality Assurance. Sign-off and reauthentication are now called the “Electronic Signature.” When used, this step creates a signature on the server that is linked to the record changes. A pop-up window is provided with username, password, and comments fields to e-sign a step.

The Electronic Signature lab settings have three options:

- Electronic signature requires a username to be provided.
- Electronic signature requires comments to be filled.
- Electronic signature requires a meaning to be provided.

The comments box is always available, but only required if ‘requires comments’ is enabled. The history of all electronic signatures and changes is available on the History tab, and contains the username, date, and comment.
The option “Also show variants of derivations” has been added to the Variants tab in the Content module.

When disabled, only the variants for the selected content will be shown in the tab. If it is enabled, any variants that exist for the derivations of the selected content will be shown along with the parent content. The Identifier of the content differentiates between the parent and the derivations.
The Reference Data module has been updated to add selection checkboxes to the records, as well as a Select All checkbox.

Now, one or more records can be selected to cause the Selection Menu to appear. The Remove Permanently action is available from the menu to batch remove records.
Value Expressions can be configured for tests by clicking on the “Configure Result Datatype” button and entering a groovy expression into the value expression box. The groovy returns a result value for the test.

The groovy evaluation works as it would for a custom field for the Result table and then calculates the result value. This allows a calculation based on other custom fields of the current result, or a calculation based on values of other tests not linked to the same run step.

The result value datatype returned by the groovy must match the test datatype.

Note: Lab setting “Show groovy configuration for tests” makes value expression on tests visible.
ICONS FOR VIEWS

Views have an ‘eye’ icon already, but a secondary icon can also be defined. This can be used for easier understanding of views when many are favorited, and even to save space when labeling views. The secondary icon can be a standard SLIMS icon or a custom one.

The icon can be selected when the view is first added, or afterward using the Edit View window. It can also be deleted by selecting the first ‘empty’ icon in the dropdown.
EDIT VIEW NAME

View and Picklist names can now be changed when the user edits the view. However, the name needs to be unique.

For example, if a view called “blood” exists already, a different view cannot be renamed to “blood” as well. If the original view was renamed to “platelets,” then the second view could be successfully renamed to “blood.”
USER INTERFACE IMPROVEMENTS

CLEAR SELECTION ON GRID

Actions are usually performed after selecting one or more records. The selection is then reset, so that immediately after taking an action, no records are selected.

This reduces human error and makes the grids and information that are displayed after an action less confusing.
SLIMSGATE Flows are now available in a new section within grid actions. They can be accessed by right-clicking or multi-selecting records and using the selection menu.
COLLAPSE FILTERS

The left filter in the Content module was updated to make collapsing and expanding it more clear. The icon beside the filter can be clicked to fully collapse the filter and just show the filter icons. Then the expand icon can be clicked to make it full size, or any of the particular icons (By Location, By Study, etc.) can be clicked to expand the filter on that filter type.
USER INTERFACE IMPROVEMENTS

GRID FILTERS

The Content module contains multiple filters in the left panel. The location filter is no longer automatically applied when you click on a location. Instead, click the filter icon in the desired row to filter on a location, and the filter icon will turn blue to show which one is ‘on’. Each row has a gray filter icon to make the distinction clear.

When a location filter is on, the grid on the right displays a visual filter so the user always knows which is active. The filter that appears above the grid can be canceled by clicking on it.

Note: The Content grid is not auto-filtered when clicking a location – click the filter icon instead.
Administrators can now create a package for SLIMS Share that includes a layout. This allows layouts to be created and shared easily by importing packages to other instances.

Exporting and Importing layout packages allows you to share:

- Reference Data
- Views, Sort, Columns, Highlights, Filters, etc.
- Grid Templates

To create a package with all these items, include any of the desired layouts with the Perspective tables and any desired Grid Templates with the GridTemplate tables in the new package.