"Your Laboratory management solution"

User's guide

Laboratory Service Management (LSM)

Version 3.213 – December 2019

Summary

1- INTRODUCTION

Thank you for choosing one of AgileBio's solutions for the management of your lab. **The Laboratory Service Manager** also called **LSM add-on** is a web-based application designed for laboratories, core facilities, and biotechs providing services to clients or partners by keeping track of all samples arriving for processing.
In the LSM add-on, you can create an unlimited number of jobs and projects. You can also define services featuring useful tools to produce added value:

- Lab staff and client interfaces.
- Configurable assays/tests and workflow environment.
- Result and invoice template editor, to personalize your documents.
- Invoice management interface.
- Service cost definition.
- Audit trail log.
- Worklist and scheduler.
- Result report integration.
- And much more...

The LSM add-on provided by AgileBio in combination with **LSMRemote** is suitable for technical platform service activities, Contract Research and Service Organizations (CROs and CSOs). The **LSM add-on** is fully integrated with **LabCollector**, the LIMS we developed for life science research labs, Pharma and Biotech industries. Indeed, several **LabCollector** tools, data, and features work together with the **LSM** to enhance service quality and organization e.g. an alert system for equipment maintenance, consumable stocks, and validity.

The LSM is the main portion of the software where lab level configurations are made and it is also the interface lab staff use to perform jobs. The LSMRemote is an interface for customers/partners to request jobs and to retrieve results.
Note that Chapters 1-3 are mainly concerned with setup and configuration. Chapters 4-6 are mainly concerned with regular use after the LSM is setup.

LabCollector is a proprietary product from AgileBio.

2- GETTING STARTED

You can get **LSM add-on** simply by downloading from www.labcollector.com. LabCollector has to be installed first as it contains the framework. LabCollector support documents for installation are available on our website. **LSM add-on** can be installed on any operating system (Windows, macOS X, Linux).

It is a best practice to make a backup of LabCollector prior to any installation, update or upgrade.

1/Manual mode:

Unzip and paste the **LSM add-on** folder in the extra_modules folder of your LabCollector installation.
As an example, for Windows, it would look like:

C:\Programs\AgileBio\LabCollector\www\lab\extra_modules\lsm

2/Automatic mode from LabCollector interface:

You can also use the LabCollector Menu

Admin > Setup > Upload/Add Addons > Upload Addon ZIP > Add Addon

Return to LabCollector - the **LSM add-on** module is now activated. Click on the module to finish the installation.

3/Cloud hosted:

If your instance of LabCollector is cloud-hosted with AgileBio, AgileBio staff may perform the installation and license update for you. Contact your sales rep with any questions about the process.

The add-on will remain in a 30-day free trial mode until you save the final license **Admin > Setup > License**. To obtain a valid license, you have to copy and send the activation key to AgileBio.

3- ADMIN MENU – CONFIGURATION

When starting **LSM** usage, it is essential to start with customization steps. You need to create your assays catalog, customers, results parameters and more. These items interact with each other in multiple ways; therefore the order of steps for the initial setup is important. Some portions of the LSM cannot be customized without first setting up others. Helper text appears frequently throughout the LSM. Additionally, the LSM requires records to exist within the Equipment and Reagent & Supplies modules of LabCollector.

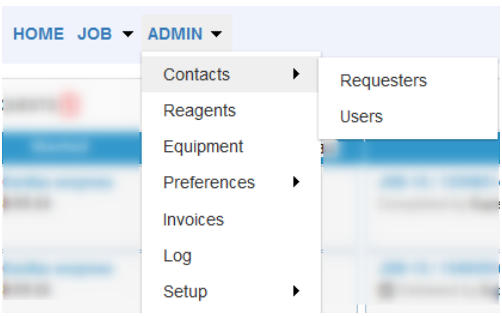
Additionally, the LabCollector knowledge base provides additional information on specific usage and setup scenarios for the LSM.

The general order for a first-time setup is the creation/modification of:

1) Users/requesters
2) Reagents and equipment
3) Protocols and sample types
4) Test parameters
5) Result and invoice templates
6) Test/Assay

3-1. Contacts – Define users and customers/requesters

New customers/requesters and users can be edited in this section. Navigate to **Admin > Contacts**. Only the administrator has full access to the Admin Menu. The other users (with lower permissions levels) have limited access to admin tools. They cannot edit user accounts.



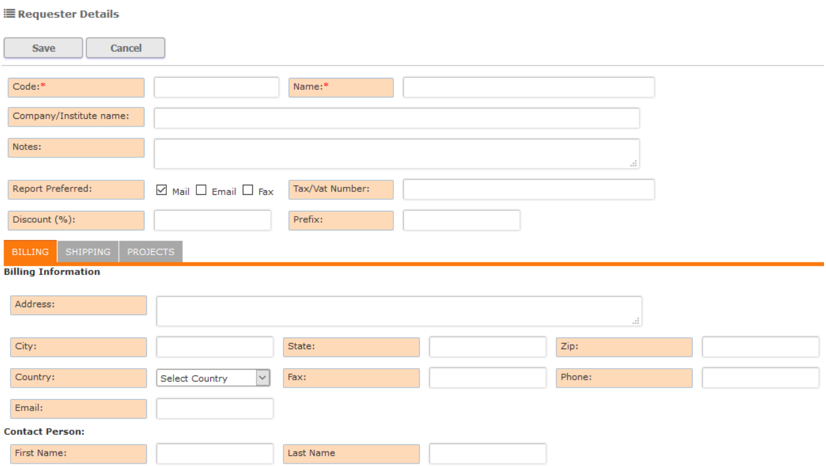
3-1-1. Create customer/partner/requester list

Select the **Requester** tab in the **Admin > Contacts > Requester** menu.

<u>Note</u>: Customers may be labeled as Requester for some implementations of the LSM.

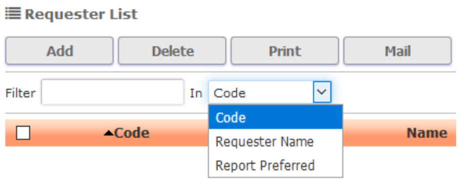
All functions related to customers and requestors are identical. Customer/partner/requester access is also available via the LSM remote.

To add a new customer/requester, click on the **Add** button. General information is followed by tabs used for billing and shipping purposes. Complete the fields and click on the **Save** button to save the customer profile. After the customer profile is active new tabs for the users, jobs and invoices will appear on the screen.
The Projects tab allows to link project codes created in LabCollector to a customer/requester. When a job is created, the selection of the customer will request the selection of one of his projects. And samples will have automatically the prefix given here. See also section Projects and modules3-4-6 to see the impact on samples.



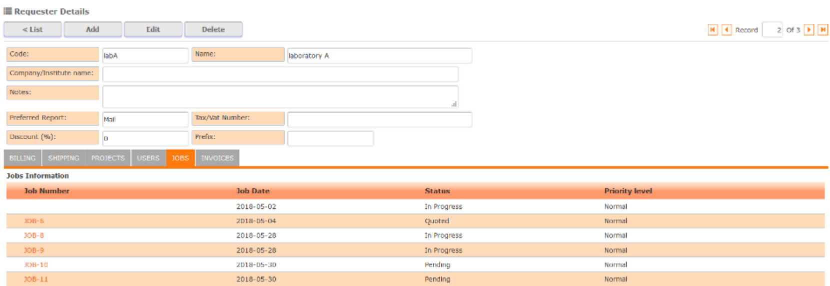
All lab service customers and/or partners can be seen in the **Requester List**. Results can be filtered. Type in the filter box and select the type of filter then click *apply*.

Results can be sorted by clicking the column title (alphabetic order). Each Requester is identified with a barcode ID for data traceability.
To see details and modify profiles, double-click on the record of interest, and click on the **Edit** button. Edits to a Requester are only confirmed by clicking on **Save** after making the changes.



Once validated, the new profile is added to the customer list and additional tabs become available. The new tabs are USERS, JOBS, and INVOICES:

- The USERS tab displays information regarding user accounts. These are created in the next step (login and password).
- The JOBS tab displays information on services ordered by this customer.
- The INVOICES tab displays invoices created from this customer's orders.



3-1-2. Create New Users

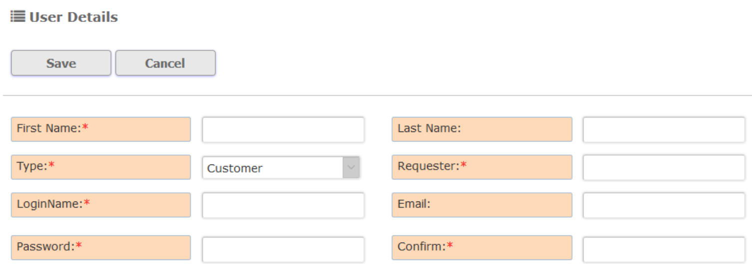
A user account (login and password) is required to have access to the **LSM** platform. Access to the LSM and the LSMremote can be distinct from LabCollector access. In addition, LabCollector user logins may be directly linked to a LSM user login. A LabCollector user can be added with the same account information as a LSM user.

Select the **Users** tab in the **Admin > Contacts > Users** menu.

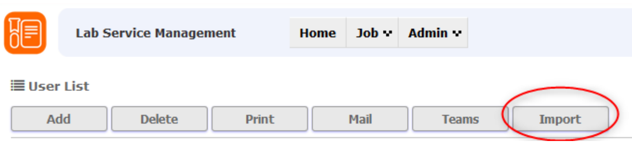
User accounts are of two sorts:

- The ones relative to the customers/requesters
- The ones relative to the member of your lab.

From the LSM, only customer/requester user accounts can be created. Click on the **Add** button, this will bring up the form to create a new user. The customers/requesters have limited access to viewing. They can only place job requests. Job requests may be done via the LSMRemote or the LSM. Access is limited to their own jobs and results.



To create an account for the member of your laboratory, you have to import an account from LabCollector. This will allow a person to use the same username and password for both LabCollector and the LSM. Click on the **Import** button

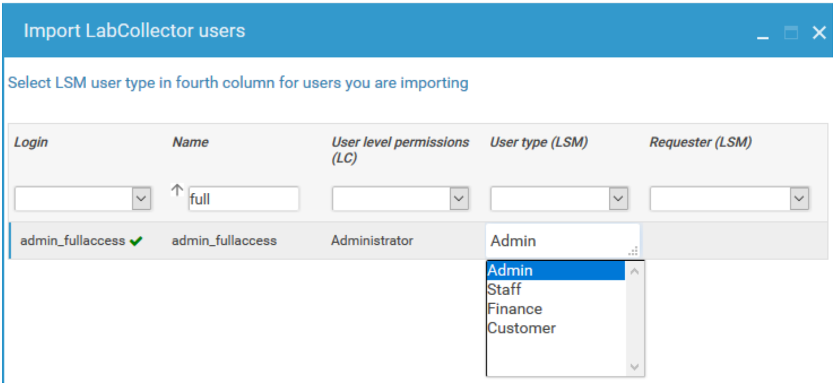


This will bring up a menu to find LabCollector users and allow the assignment of user type in the LSM.

A permission level (**Type**) must be assigned to all users:

- **Admin**: Full access to all LSM applications and features.

- **Staff**: Access to *Preferences* menu and *Contacts* menu, except for the user account editor. He can only see the jobs assigned to him or his team (see below).
- **Finance**: Access to the invoice interface, cost management, and customer list. He can also view the job management list.



The columns consist of:

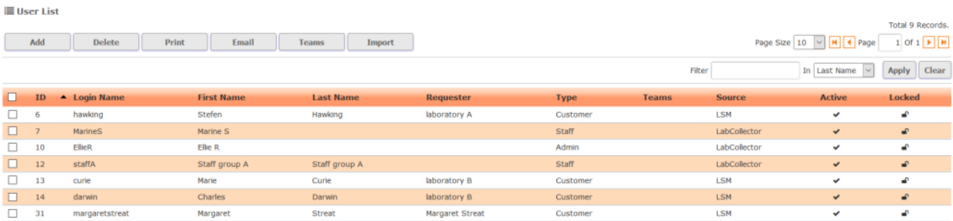
- Login: LabCollector username.
- Name: Real name
- User level permissions (LC): User level in LabCollector
- User type (LSM): User type in the LSM. A blank entry indicates the LabCollector user does not have a connected account for the LSM.
- Requester (LSM): Only necessary for Customer user type. A blank entry indicates the LabCollector user does not have a connected requester for the LSM.

The upper row may be clicked to toggle between unsorted, and sorting in ascending or descending order (indicated by the absence or presence of an arrow). Login, User level permissions (LC), and User type (LSM) have drop-down menus that allow filtering. The name column offers a text entry filter. These filters can be combined.

After selecting a LabCollector user to import, click in the column corresponding to the User Type (LSM) to select from a drop-down menu. The change takes effect immediately upon selecting. This choice can be changed by an admin.

Equipment categories can be associated with each laboratory user. In this way, lab managers can quickly identify user profiles to execute specific jobs. Equipment is connected to the equipment module in LabCollector. Enter the first letter of the equipment in the auto search field, and click on the **Plus** button to add each type.

The user list shows all lab users: administrators, staff, customers and financial representatives. Specific lists of users can be sorted by clicking the column title (alphabetic order). To see details and modify profiles, double-click the record of interest, and click on the **Edit** button.



ID	Login Name	First Name	Last Name	Requester	Type	Teams	Source	Active	Locked
6	hawking	Stefen	Hawking	laboratory A	Customer		LSM	✔	
7	MarineS	Marine S			Staff		LabCollector	✔	
10	EllieR	Ellie R			Admin		LabCollector	✔	
12	staffA	Staff group A	Staff group A		Staff		LabCollector	✔	
13	curie	Marie	Curie	laboratory B	Customer		LSM	✔	
14	darwin	Charles	Darwin	laboratory B	Customer		LSM	✔	
31	margaretstreat	Margaret	Streat	Margaret Streat	Customer		LSM	✔	

When the account is created, the admin can set up two more parameters that will be displayed in the User List. These parameters can be changed at any time.

- Locked/unlocked account

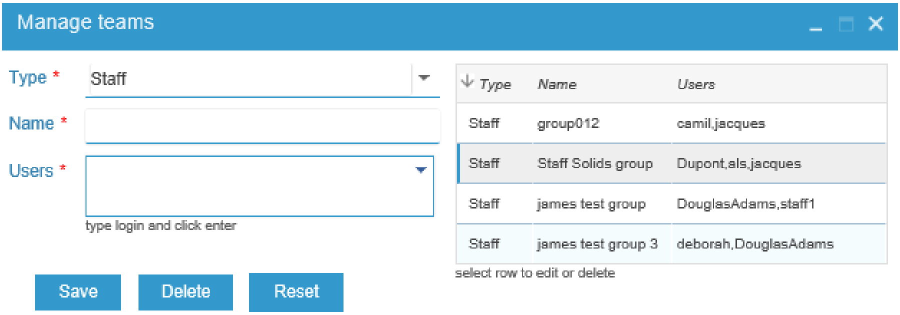
This option is useful to manage customers' access. Instead of editing a new account each time the same customer submits a job, the administrator can use this option.

- Active/inactive profile

The administrators can also decide to identify a profile as inactive if the user is not (or will not be) in the lab for some time. This option is useful to manage laboratory staff members.

Only active & unlocked users may log in to the LSM.

A team of users may be created. This allows the assignment of jobs to an individual or to any individual on a particular team. Navigate to **Admin > Contacts > Users** and select **Teams**. The following menu to manage teams will appear:



Select the type of team, the options are staff, admin, finance, and customer. Type a name for the team. Select users for the team. Save to confirm changes to the team. In a similar manner, an existing team may be selected from the list and may be altered. The buttons on the menu have these functions:

Save to save any changes to a team.

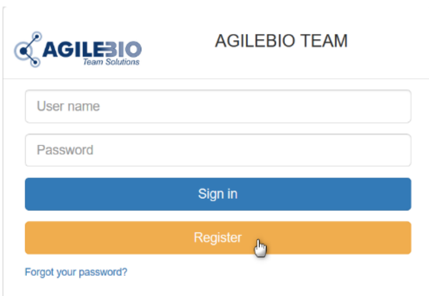
Delete will delete a team – there is a warning asking if you are sure you want to delete the team.

Reset will clear the team name and list of users on the team. The effect is not confirmed until clicking the save button.

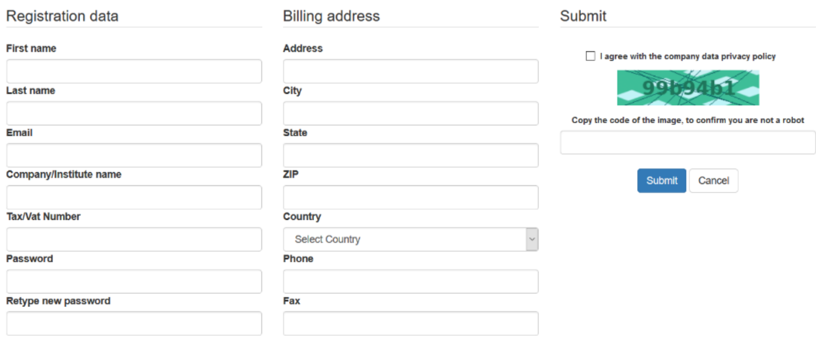
3-1-3. Registration from the LSMremote

From the LSM remote interface, your customers can also ask for an account to register in LSM.

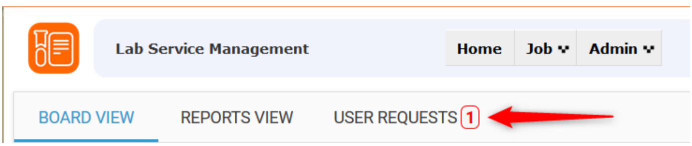
To activate this option, in the file **config.ini** of the LSMremote directory, the *allow_register* parameter has to be activated.



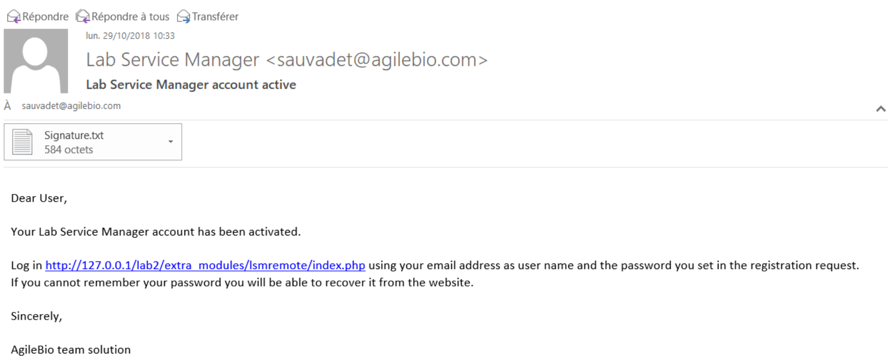
Once the new user clicks on register, a form opens. All the fields are mandatory.



Then, an admin has to approve the request in the LSM. On the home page, a new tab is visible showing the numbers of user requests.



Double click on one user request to be able to validate or discard the request. Once validated, the user will receive an email.


Répondre Répondre à tous Transférer

lun. 29/10/2018 10:33

Lab Service Manager <sauvadet@agilebio.com>

Lab Service Manager account active

À sauvadet@agilebio.com

Signature.txt
584 octets

Dear User,

Your Lab Service Manager account has been activated.

Log in http://127.0.0.1/lab2/extra_modules/lsmremote/index.php using your email address as user name and the password you set in the registration request.
If you cannot remember your password you will be able to recover it from the website.

Sincerely,

AgileBio team solution

Email settings need to be done in LabCollector. Please refer to this KB for more information.

The relative requester will also be created at the same time using the first and the last names of the user.

3-2. Manage Reagents and Supplies

Navigate to this feature by selecting the **Reagents** tab in the **Admin** menu. This feature uses information from the prebuilt **LabCollector** module Reagents & Supplies.

Unlike other parameters, when you click on the **Add** button, it opens **LabCollector LIMS**. Each new reagent must be created in the **LabCollector** Reagents & Supplies module before it can be accessed by the LSM. Once the new entry is saved in the **LabCollector** database, return to the **LSM** page and refresh your web browser (if the newly added entry does not appear). The new reagent will be displayed in the list. Double-clicking on a reagent record in the list opens the detailed LabCollector information page.
For reagent and supplies that are used in the LSM it is recommended that the fields displayed are set to be mandatory within LabCollector (in LabCollector **Admin > Default Fields > Reagents & Supplies**).


Reagents & Supplies List

Add Print

Total 42 Records.

Page Size 100 Page 1 Of 1

Filter buffer In Category

Apply Clear

Name	Category	Seller	Storage Location	Quantity
Buffer 2	Buffers	Sigma		16.00
Landau's Buffer	Buffers	Sigma		0
Extraction buffer A (EBA)	Buffers	In House		999426.50

To add new reagents, you need a LabCollector user account (login and password). Refer to your LabCollector administrator if needed.

The quantity listed only takes items with an amount defined in the lots/batches.

3-3. Manage equipment

This section allows appropriate equipment selection to perform assays. Similar to the LSM management of Reagents & Supplies, equipment management is linked to **LabCollector** LIMS. This feature uses information from the prebuilt **LabCollector** module. It is recommended that the fields present in the list for the LSM are set to mandatory (in LabCollector **Admin > Default Fields > Equipment**).

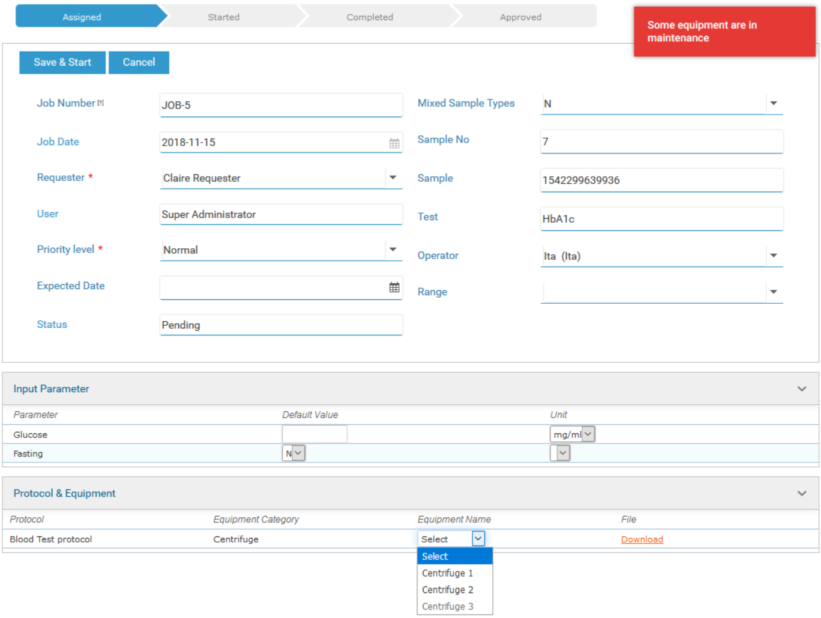
The equipment list has a sorting and filtering function to help with locating equipment records. Type in the filter and select the field to filter, then click apply. To sort a list, simply click the column header and an arrow will appear to indicate sorting in ascending or descending order. Sorting and filtering may be combined.

Select the **Equipment** tab in the **Admin** menu, click on the **Add** button and edit the new entry in the Equipment Module. The new equipment will be displayed in the list. Double-clicking on an equipment record in the list opens the detailed LabCollector record.

Color indicators give information on equipment status:

In maintenance alert Out of service

The equipment status is based on the status from the **LabCollector** Equipment module. **Only equipment with no color indicators can be selected when running a job.**

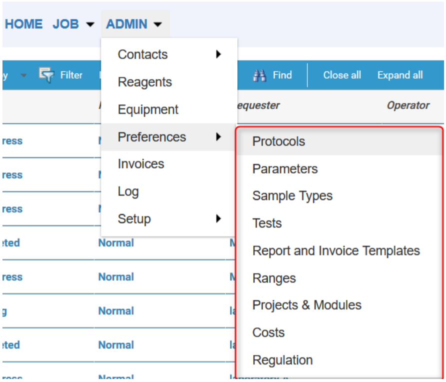


To add new equipment, you need a LabCollector user account with an appropriate permission level (login and password). Refer to your LabCollector administrator.

You cannot create a new equipment category within the LSM. These must first be defined in the preferences for LabCollector Equipment Categories (requires admin-level access in LabCollector).

3-4. Lab services definition and configuration

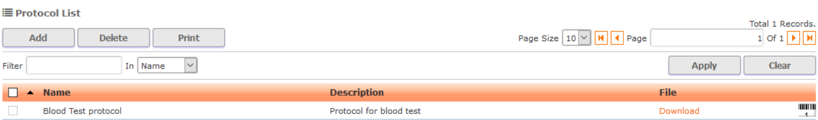
To customize the **LSM** according to your lab activities, go to the **Admin** > **Preferences** menu. This section is used to configure the laboratory service activities. On the initial setup, the order of selecting these is important as each part of the preferences relate to others.



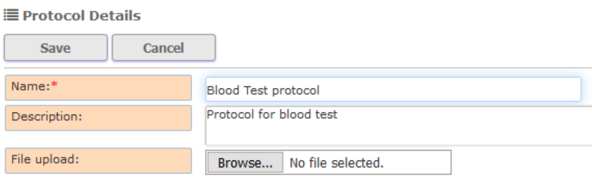
3-4-1. Create a protocol list

To perform analyses, you need to pool all the protocols needed. Within the LSM navigate to **Admin > Preferences > Protocols**. This section allows uploading protocols that will be used for tests/assays. Click on the **Add** button to add new protocols. Each protocol is associated with a unique ID allowing barcode label identification and data traceability. The protocols will be available to the person performing jobs connected to the protocol. A name for the protocol is required. A description is optional. The protocol can then be added by browsing for a file to upload.

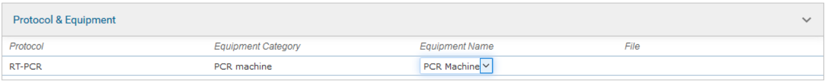
Files may be downloaded from the protocol list or when doing a job (also see chapter 4-).



View of protocol list.



View to edit protocol details.



View to retrieve protocol when doing a job.

Protocol names and descriptions can also be added to the final report. Please see section 3-4-4.

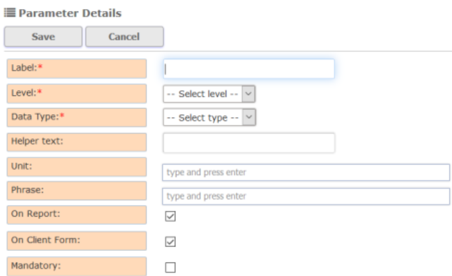
3-4-2. Create parameters

The parameter list pools all parameters that can be used during lab service activities.

Within the LSM navigate to **Admin > Preferences > Parameters.** Click on the **Add** button to create all needed variables (temperatures, volumes, concentrations, measurements…) that are relevant to perform assays/tests in the lab and define results.

Parameters can be INPUT or OUTPUT/RESULT values depending on whether they are needed when starting a job or to record the results of an assay or test.

Note: As of version 3.2063 it is possible to add test parameters while editing a test. See 3-4-5 for more details.

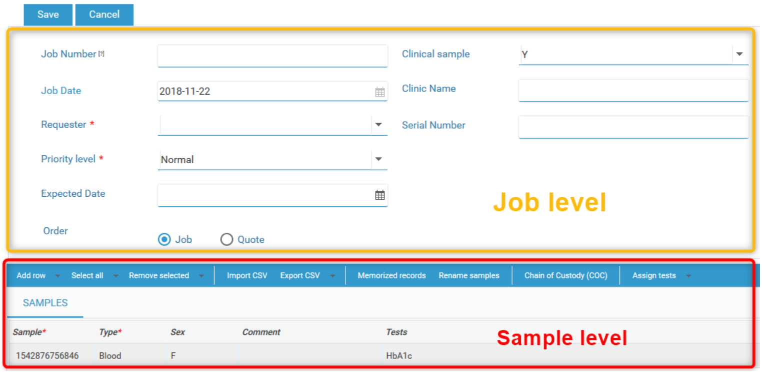


You can define where the parameters will be used (Level/Step):

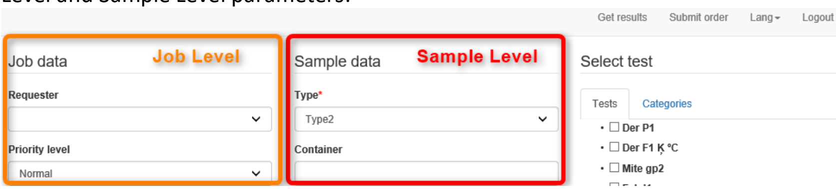
- **Job:** Will be a custom field on the Job definition form. These parameters apply to all samples and assays/tests for a job. Defined when submitting jobs via either the LSM or the LSMRemote.
- **Sample:** Will be a custom field for the sample form. These parameters apply to particular samples within each job. Defined when submitting jobs via either the LSM or the LSMRemote.

- **Assay/Test:** Will be used as an INPUT, PROCESSING or RESULT value field. These parameters are filled in only via the LSM by staff and/or admin-level LSM users. Further control is done by assay in Assay Details.

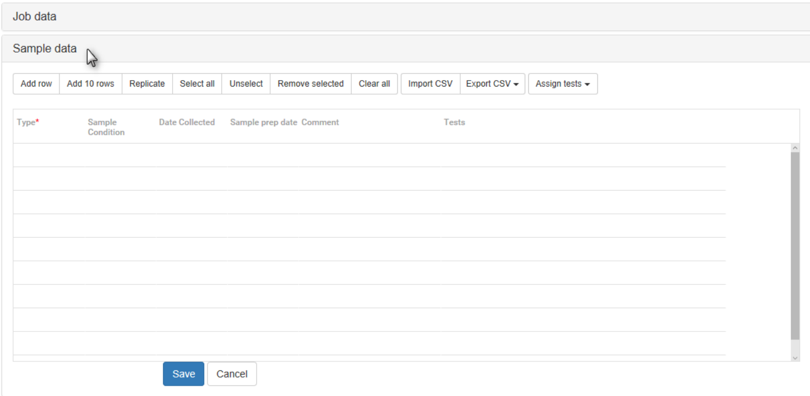
An example job submission form within the LSM showing the location of Job Level and Sample Level parameters:



An example job submission form within the LSMremote showing the location of Job Level and Sample Level parameters:



The above view is designed for jobs that will only have a single sample. The view below is for jobs that can take multiple samples. There are expandable tabs to enter job level and sample-level information. For more details on LSMremote configuration, please refer to this KB.



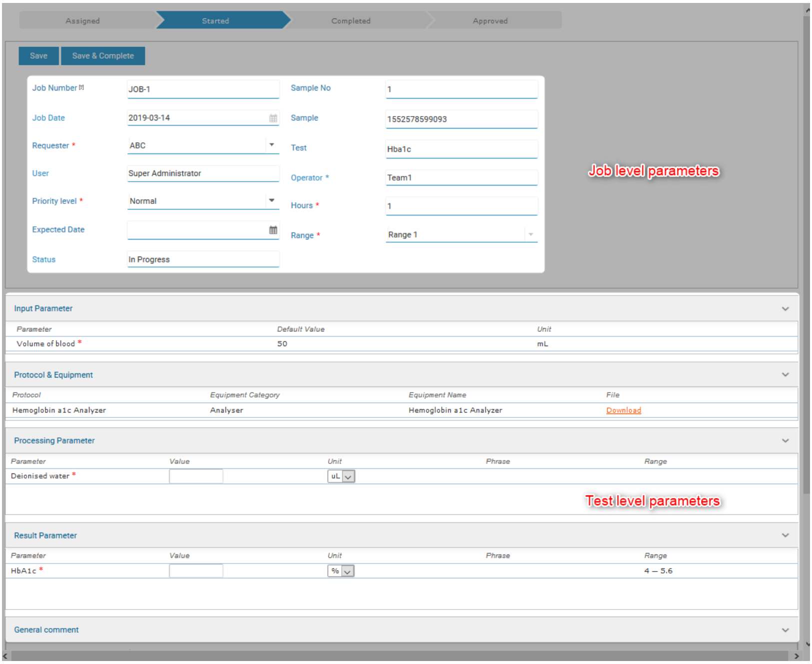
Assay/Test level parameter definition for an assay (below):

The Assay/Test takes the parameters that are already defined (details to create parameters are described above). The parameters can be set as an input, processing or a result.

Input parameters have an option to set a unit and default value (leave blank to have the value empty initially).

Processing and result parameters can have a default value, unit, Phrase (defined by the parameter definition), and phrase selection for values inside, above or below a range of results (the phrases available are set by the parameter definition).

Example job form showing location of test and job level parameters:

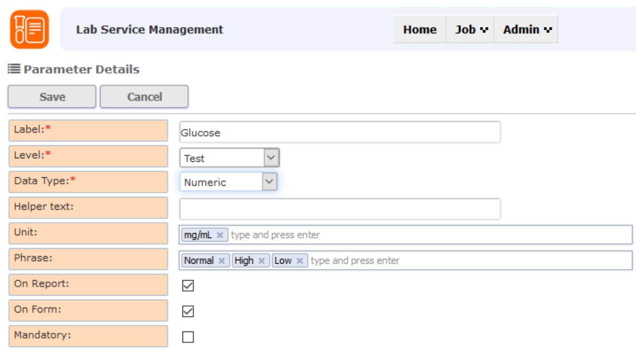


The lab can choose between several types of variables (Data Types):

- **Checkbox**: Binary answers Yes/No, True/False as a checkbox.
- **Date**: Reported as yyyy-mm-dd, entered using a calendar.
- **Datetime**: Reported as yyyy-mm-dd-hh-mm, entered using a calendar
- **Value list**: Provide values for a dropdown menu for a single choice.
- **Numeric**: Numeric user typed input. A range may be assigned to numeric parameters when defining assay details.
- **String**: Alphanumeric user typed input.
- **Longtext**: Field text with CKeditor (size = 1000 characters).
- **Image**: Field to upload images.
- **File**: Field to upload files.
- **AVG**: Allows you to get the average/mean value from a list of numeric parameters. There is also the option to show the standard deviation (Include SD).

- **SD**: Allows you to get the standard deviation value from a list of numeric parameters, in a specific field.
- **Calculated**: Allows you to use formula using numeric, AVG and SD fields.

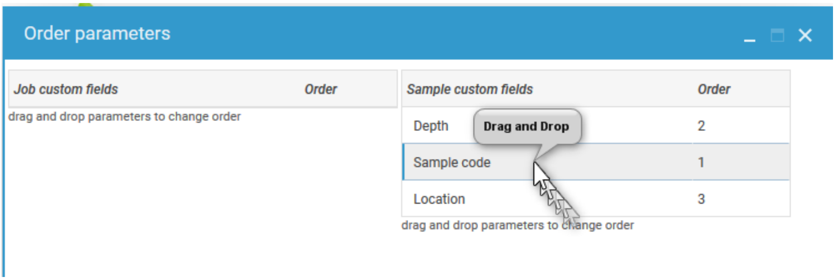
Press ENTER to validate a unit or a value list before saving your new parameter



For each parameter, you can define an associated phrase (or phrases) that will be used in result reports. Phrases are added in the same manner as values for a value list. Type in the box and click enter. This confirms the phrase indicated by a bubble around the text. Clicking the 'x' in the bubble will remove the phrase. A phrase has the option to be linked to a min-max range *if* the parameter has the data type numeric *and* is an assay level output. Note that multiple ranges are possible. For more information on ranges refer to the chapters describing tests/assays.

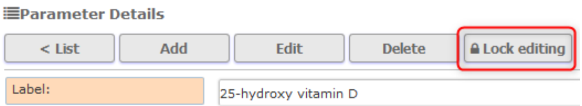
If you don't want to have this parameter of the final report, untick the box "On Report".
If you want to remove the parameter from the client form (using LSM remote or LSM), untick the box "On Client form". This parameter will be only visible by the staff.
If this parameter has to be filled in during the process, tick the box "Mandatory".

For job and sample levels, you can order the parameters by simply dragging and dropping them **from the top to the bottom** of the list. Just click on the **Order** button on the parameter list. No need to save.

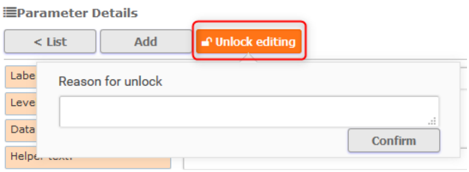


Locking/unlocking editing of parameters:

Once you're happy with the configuration of your parameter there is the option to lock it and prevent further editing by clicking on the **Lock editing** button.



To edit a parameter you need to click on **Unlock editing** and provide a reason for changing the parameter.



3-4-3. Manage sample types

The lab has to manage sample types according to the lab. Within the LSM, navigate to **Admin > Preferences > Sample Types**. The sample type is required to be included for all samples in all jobs. At least, one definition of sample type must be created.

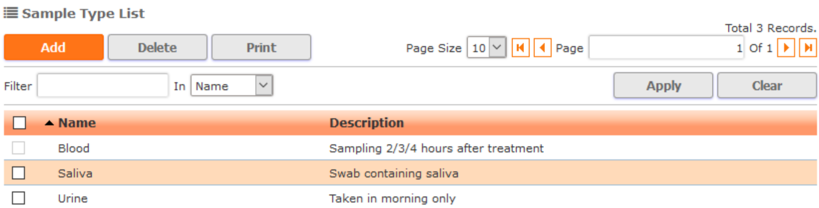
To add a new sample type click **Add** and complete the form. This section allows sample types definition (blood, DNA, protein extraction, tissue…). The name is mandatory and the description, storage information and handling conditions are optional.

To delete a sample type, click the checkbox next to the sample type name and then click delete.
Note that deleting a sample type that is currently being used is prohibited.
The sample type list may be printed.

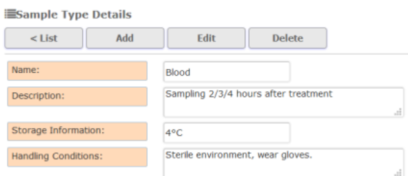
There are sorting and filtering options to help with managing long lists of sample types. Click a column header to sort in ascending or descending order (indicated by an arrow 

). There is also a filter that may be applied to either the name or description, click apply for the filter to take effect. The number of records per page may also be adjusted.

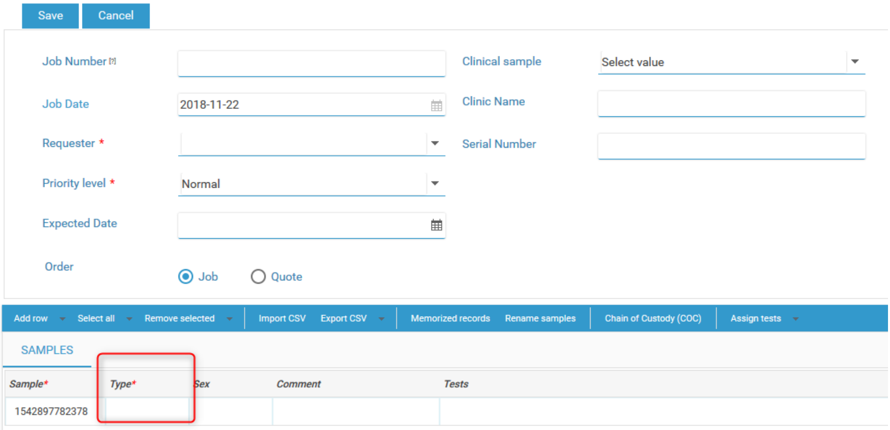
Entering a sample type is required when submitting a job that includes samples. You may not submit a job with sample(s) unless at least one sample type has been created. These sample types are distinct from the sample types created in LabCollector.

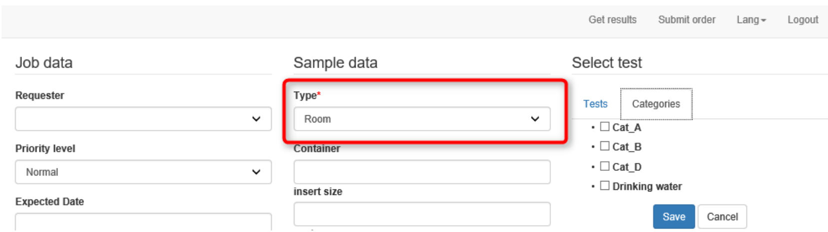


From the sample type list, the information may be edited by clicking on the desired sample type in the list and then clicking on edit. After making changes, click save to confirm changes or click cancel to avoid making changes.



The sample type is selected when submitting a job via a dropdown menu from the LSM or the LSMremote.





3-4-4. Report and invoice templates

In this section, you can create templates for result reports, a chain of custody list, a batch list and invoices to personalize documents that you will deliver to your customers and your staff.

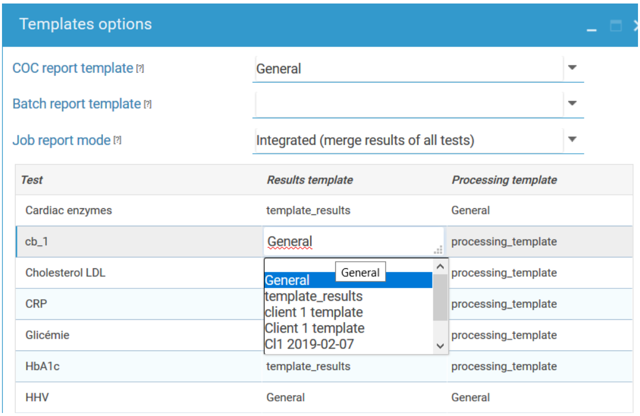
Each template is assigned a name and a short description.

The editor offers numerous options to customize templates. There are paste special buttons in the editor for images and for common programs such as MS-Word. HTML can be used to create templates. In many cases copying and pasting from existing forms, such as your existing documents or websites can be used to speed up the design or editing of templates.

This system is designed to enhance quality and save time. Manual entry is minimized.

Default tags are detailed below depending on the template. Individual tags corresponding to the parameters you created in section 3-4-2 can also be used, just copy **##name_of_parameter##** in the template.

Result and processing report templates can be chosen when you create a test (section 3-4-5) and can also be defined in the Templates options. Through **ADMIN > Preferences > Report**, on the top right, you have a button **Options**. Here you can define a template for tests, COC reports, and Batch reports. You can also select the job report mode: by default, results are separated by test; or integrated, results of all tests in a job are merged in the same design, or merged by template if different templates are designed for different tests in a same job. Selections are saved automatically.



Note: Just click in the cell where you want to select a new template. The update is automatic.

3.4.4.1 Results and Processing report templates

A template is related to an assay/test. For multiple tests/assays in a project, different templates can be applied.

To create templates that will include job-specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the final result document.

Specific HTML tags for results and processing reports:

##results##	Will be replaced by results narrow table
##results_extended##	Will be replaced by results wide table
##results_merged##	Will be replaced by results wide table, without break by sample
##process_extended##	Will be replaced by processing parameters table
##details##	Will be replaced by results detailed table
##matrix##	Will be replaced by results matrix
##samples##	Will be replaced by samples list
##requester_name##	Will be replaced by requester name
##requester_address##	Will be replaced by requester address
##job_number##	Will be replaced by job number
##job_date##	Will be replaced by job date
##job_param##	Will be replaced by job custom parameters
##job_submitter##	Will be replaced by the job submitter's name
##operator_name##	Will be replaced by operator name
##validator_name##	Will be replaced by validator name
##protocols##	Will be replaced by protocols list
##protocol_name##	Will be replaced by protocol name
##protocol_description##	Will be replaced by protocol description
##report_number##	Will be replaced by report unique identifier
##labname##	Will be replaced by lab name
##reagents##	Will be replaced by reagents list
##equipments##	Will be replaced by equipment list

3.4.4.2 Invoice templates

A template can be related to an invoice/quote.
To create templates that will include job-specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the final invoice document.

Specific HTML tags for invoices:

##details##	will be replaced by invoice details.
## requester _name##	will be replaced by requester/customer name.
## requester _address##	will be replaced by requester/customer address.
##requester_email##	Will be replaced by requester email
##job_number##	will be replaced by the job number.

##job_date##	will be replaced by the job date.
## job_submitter ##	will be replaced by name of the person with an active account who requested the job
##invoice_number##	will be replaced by the invoice number.
##invoice_date##	will be replaced by the invoice date.
##tax_number##	will be replaced by customer tax number.
##purchase_order##	will be replaced by job purchase order number

3.4.4.3 Chain of custody/shipment templates

A template can be related to a CoC.
To create templates that will include job-specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the CoC document.

Specific HTML tags for CoC reports:

##details##	Will be replaced by Chain of Custody (CoC) list
##requester_name##	will be replaced by requester/customer name
##requester_address##	will be replaced by requester/customer address
##requester_email##	Will be replaced by requester email
##job_number##	will be replaced by job number
##job_date##	will be replaced by job date
## job_submitter ##	will be replaced by name of the person with an active account who requested the job

3.4.4.4 Batch report templates

A template can be related to a batch report.

To create templates that will include batch-specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the Batch report.

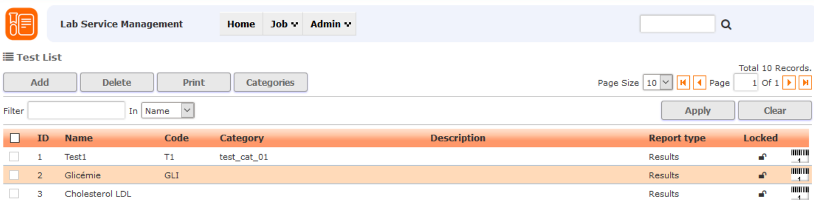
Specific HTML tags for Batch reports:

##details##	will be replaced by a detailed result table
##batch##	will be replaced by batch name/number

3-4-5. Define Tests/Assays

Labs can offer a panel of services/jobs which can be defined by one or more assays. From the LSM, navigate to **Admin > Preferences > Tests** (in some versions this is **Admin > Preferences > Assays**). Each assay/test is identified by its own ID allowing lab information traceability.

Assays/tests are the last item within the LSM that should be defined as it requires several options to be configured before starting.



The LSM admins can define tests. To add a new assay/test, click on the **Add** button. An assay/test is defined by:

Name: The name of the test/assay.

Code: Code for the test/assay.

Category: The test/assay may be assigned to a category – useful if panels are regularly performed together. This will appear as an option in both the LSM and LSMremote.

Sample type: The test will be restricted to a specific sample type. The selection during the creation of a job will be simplified.

Description: Description of the test.

Result Type: Choose from Results, Sample and File (see below).

Default operator: Preferred person to conduct the assay. It can be a single person or a team. This operator or team will see their jobs on the job board, dashboard, and calendar.

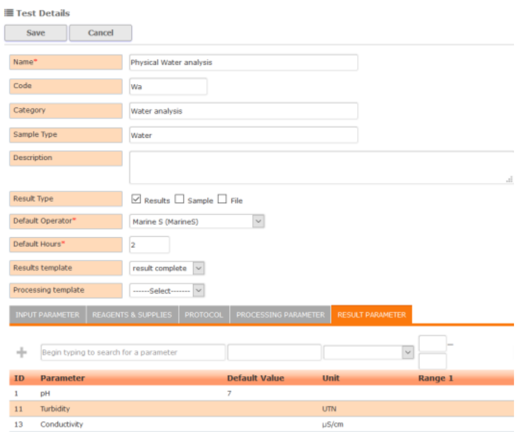
Default Hours: Default time expected to conduct the test/assay. Connects to dashboards and reporting.

Results template: Template for reporting a result. Select the name from a dropdown.

Processing template: Template for reporting the processing parameters. Select the name from a dropdown.

Three types of results are available:

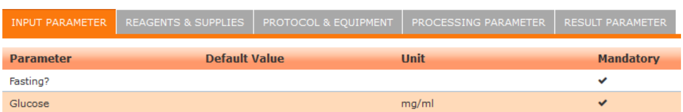
- **Results**: Insert selected result fields defined in the dictionary (see below). The results from parameters selected as assay level will appear as results in the report.
- **Sample**: The result when doing the job is the creation of a new sample for another analysis. This can iteratively create samples for the same assay from which the sample was created.
- **File**: Import a result file made as a result of doing the job multiple files may be combined in a zipped file. The file will be available for download via the LSM and the LSMremote when the job is completed.



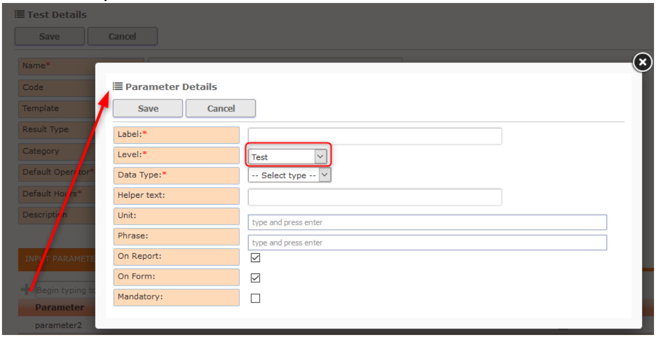
Below the assay information, five tabs are displayed to set up the test/assay. The tabs include input parameters, protocols, reagents, processing parameters, and result parameters:

- **Input parameters:**

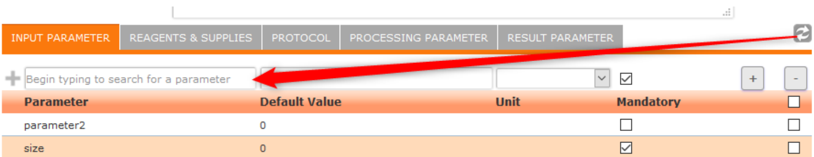
All variables required to design the test and to prepare samples for analysis can be added from this tab. Parameters must be defined with the assignment as Test/Assay level to be available for selection. Input parameters can be marked as mandatory and can have a default value and unit specified.



Note: For **Input, Processing and Result parameters** it's possible to create a new parameter directly in the test by clicking on the plus symbol to the left of where you type the name of a parameter.



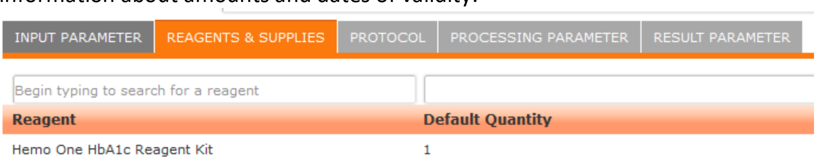
Also, if you have changed the name of a parameter while creating a test you can click on the Refresh button on the right-hand side and you should be able to find your newly modified parameter when you type its name in the parameter search.



Note: If you want to reorder parameters just drag and drop them into the required position.

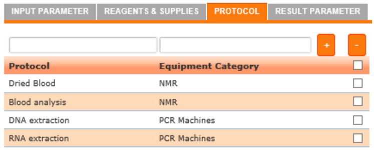
- **Reagents & supplies:**

This tab allows the lab to associate reagents (and their quantity) that will be used to perform the test/assay. The operator will be able to adjust the default amount to reflect actual usage when doing a job. Reagents and Supplies are connected to the LabCollector module Reagents & Supplies to provide details on available lots including information about amounts and dates of validity.



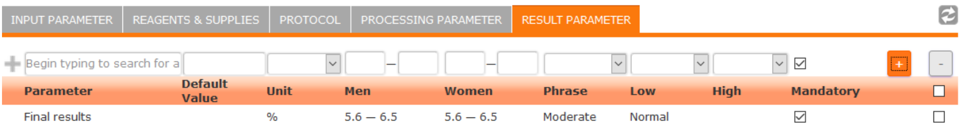
- **Protocols:**

Several protocols can be added for the same test if required. Equipment categories are also applied to the test from this tab.



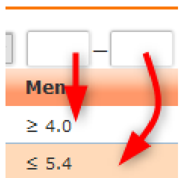
- **Processing and Results parameters:**

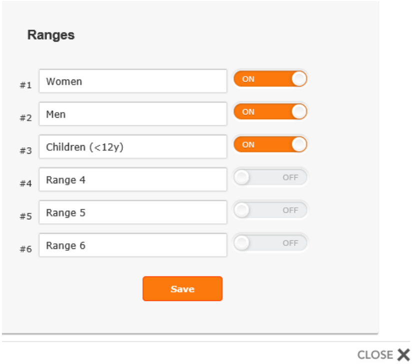
Processing parameters are ideal for all of those intermediate results whereas Result parameters are the final results that you wish to display in the report for the client. If "**Results"** was selected as **Result Type**, you must choose the ones that are relevant for this assay from the list of parameters. There are additional aspects of the results parameter to define including the default value, unit, the range, default phrase, default phrase if the result is lower than the range, default phrase if the result is higher than the range and whether or not to make the parameter mandatory.



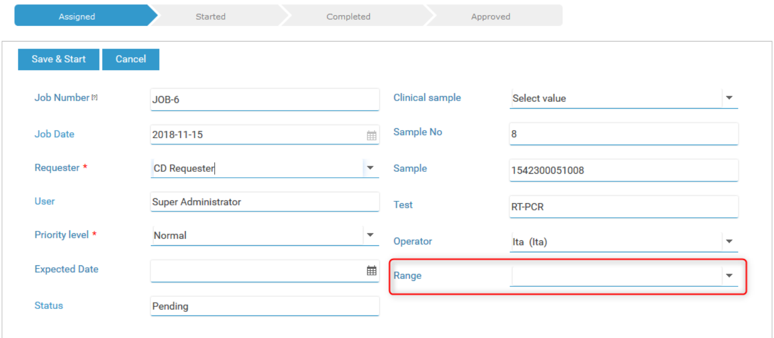
Ranges for parameters are defined by **Admin> Preferences > Ranges**. Up to 6 different ranges can be available when defining the assay details. The ranges require a name (the default names are Range 1, Range 2….). To make a range available to use, at least one of the range selector sliders must be switched to on.

While adding a parameter to the Processing or Result parameter tabs you can add a range with both the lower and upper bound filled in or just one of the two. Filling in just the lower bound will result in the ≥ symbol showing before the value and filling in just the upper bound results in the ≤ symbol showing before the value.

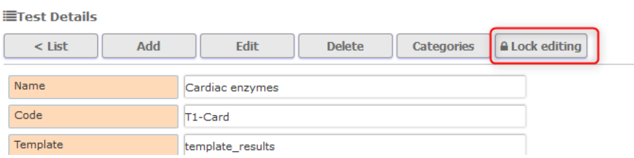




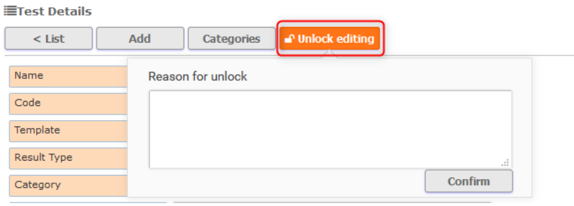
An individual test (and all of the associated samples) will only have a single range applied. The range is selected when starting the job.



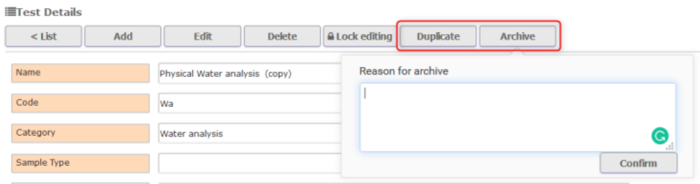
Once the configuration of a test is complete the test can be locked/validated to prevent further editing.



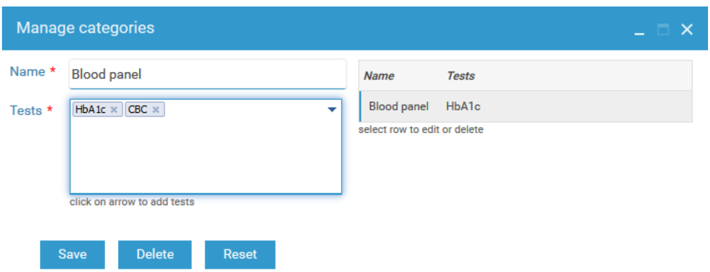
To unlock editing you must provide a reason.



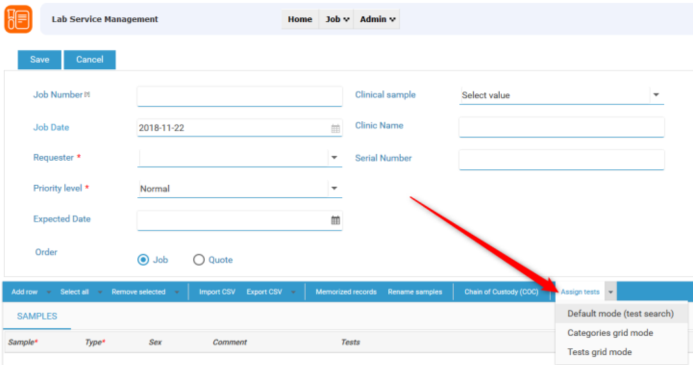
To be more efficient in the setup of the LSM, you can also duplicate the test with the button **Duplicate**. All the information from the “parent” test is kept, and *(copy)* is added to the name.
The last option is to let you archive a test after given a reason. An archived test will be not in the list of tests anymore in LSM and LSMremote. This archived test is always visible in the tests list but with the status Archived = YES. An archived test can be duplicated.



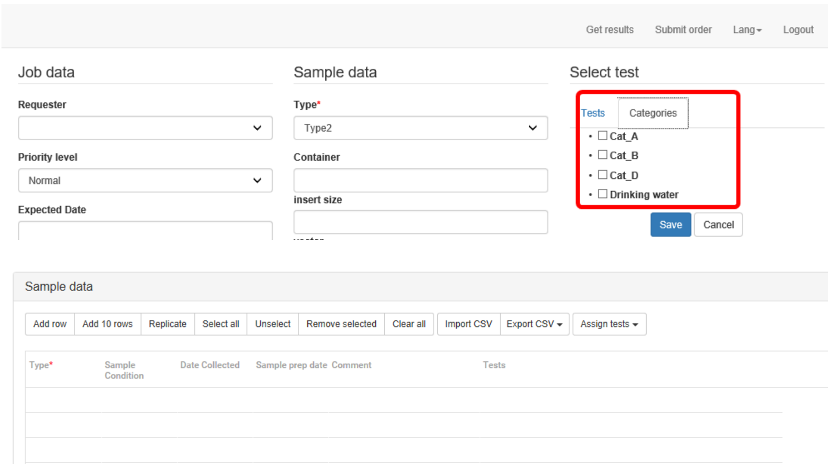
Tests may be assigned to a category. This menu allows the assignment of assays to a category (also known as Panels). When submitting a job either individual tests may be selected or categories of tests may be selected.



The selection appears by the sample when submitting a job from the LSM.



When submitting from LSMRemote there are two choices. One is a tickbox on the right-hand side. The other is a spreadsheet-style with an option to upload a CSV file.



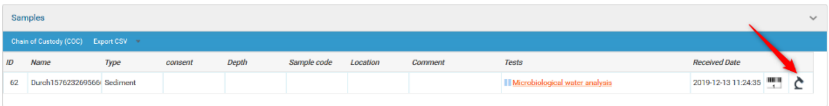
In Workflow Manager add-on version 4.38, a link to the LSM can be designed in order to send samples to a test lab for example.

The workflow template needs to have a link node containing a link URL such as:

https://[YOUR_URL]/extra_modules/lsmremote/addfromlc.php?testIDs=X, where X corresponds to the test ID in the LSM. For more detail, please refer to the Workflow manual.

3-4-6. Projects and modules

By default, all the samples added to a job in LSM can be added to the LabCollector inventory in the Samples module. By opening a job, click on the icon to the right to open the inventory form.



Navigate to **Admin > Preferences > Projects and modules** and switch the option to ON to select the LabCollector module to create the LSM samples. The selection is done per project.

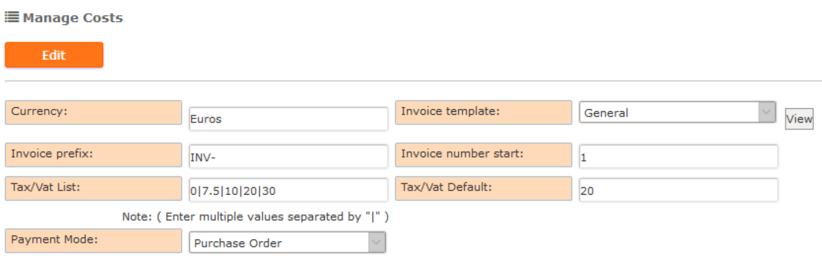
3-4-7. Cost definitions

This menu allows general cost parameters definition and attribution to each test/service. Navigate to **Admin > Preferences > Costs**.

⚠ *Your LSM license must include the billing option to have access to this feature.*

You can edit currency, invoice prefix, tax rate, invoice template, invoice number start, tax default, and payment mode.

Note that these values can be connected via the API for situations where you use an existing form or portal on your website.



Note: Enter multiple values separated by the bar "|".

Finally, you can configure the costs applied for each assay/test or category of tests. You can choose between hourly or fixed costs.

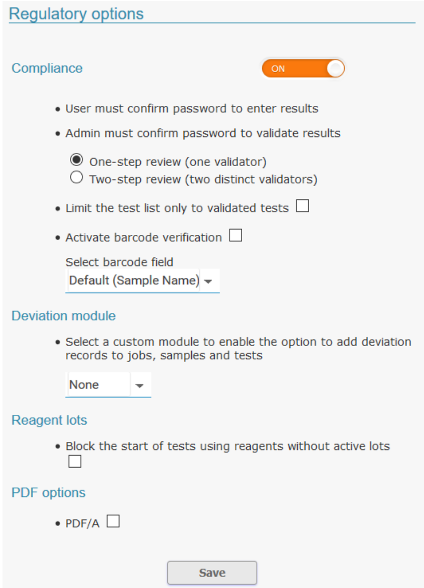
TESTS CATEGORIES

Test Name	Mode	Fix Price	Hourly Price
Der P1	Fix	500	0
Der F1 Ķ ºC	Fix	200	0
Mite gp2	Hourly	0	50

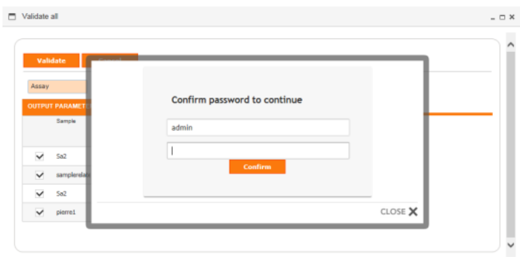
NOTE: Hourly price can also be used as a price per UNIT. For example, you have a test on slides, and you set up the price for 1 slide (/hour). Instead of enter the samples 10 times, you can set up a cost per hour and when the staff does the test, they can indicate the number of slides they worked on.

3-4-8. Regulations compliance & validation

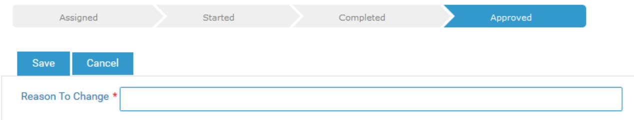
If you need security or regulation compliance, you can activate this function. By default, the value is OFF.



If this function is activated, when users perform validation actions (single sample or batch), the system asks the user to confirm their password. Only the super-administrator or users defined with the Administrator role within the LSM can validate results. The validator and timestamp of validation will be automatically added to reports. The number of validators needed can also be configured (one or two).



When a job is finished (last level), if an administrator needs to change result parameters, a reason for change needs to be added. This reason is added to the log.



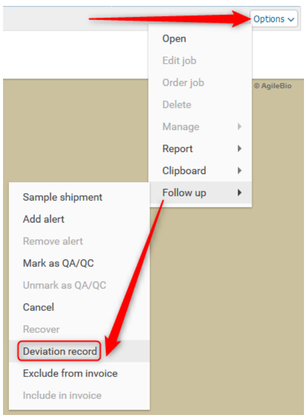
Date	Action	Comment	Username	IP
2018-07-19 18:37:02	Validated sample changed	wrong Ch4 results	admin	undefined

You can also limit the list of tests to the validated tests, the one LOCK in editing (see section 3-4-5.

When a job is started, you can ask that the staff has to scan a barcode relative to the sample name by default or a field previously populated in the input parameter for example.

If an issue is encountered during a test/assay, you may want to create a deviation record to record the issue. To set up this function, you have to choose a module to save the deviation records in **Regulatory Options**.

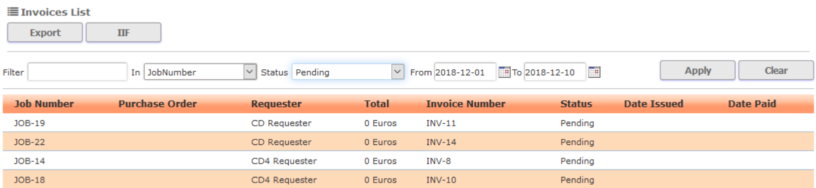
On the test/assay level, right-click on the name then go to **Manage > Deviation record**. A new window opens to fill in the form of the deviation record.



The sample will have a yellow triangle icon on the right allowing you to open the deviated module record.

3-5. Invoice Management (quotes and invoices)

Invoice management is only for the administrators and finance staff.
Go to the **Admin** menu and choose the **Invoices** tab.
In this section, you can find quotes, pending invoices, issued invoices, and paid invoices. There are options to search and filter the quotes and invoices.



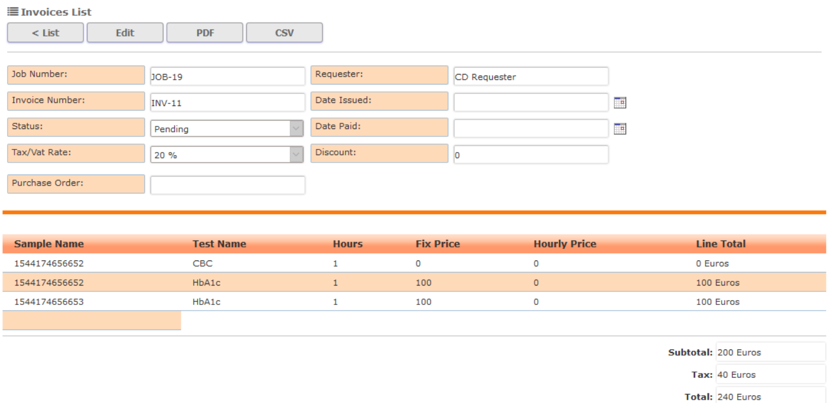
Job Number	Purchase Order	Requester	Total	Invoice Number	Status	Date Issued	Date Paid
JOB-19		CD Requester	0 Euros	INV-11	Pending		
JOB-22		CD Requester	0 Euros	INV-14	Pending		
JOB-14		CD4 Requester	0 Euros	INV-8	Pending		
JOB-18		CD4 Requester	0 Euros	INV-10	Pending		

When a job is finished and approved, an invoice is automatically created regarding cost parameters (previously defined via costs and assay details). The financial administrator can retrieve this menu of all invoices created.

Quotes are listed by default, select in the filter tab, ***Pending*** *status*

Invoices can be exported as .csv or .iif (quickbooks) file types.

Double-clicking on a line will provide more detailed information on a particular job invoice:



Sample Name	Test Name	Hours	Fix Price	Hourly Price	Line Total
1544174656652	CBC	1	0	0	0 Euros
1544174656652	HbA1c	1	100	0	100 Euros
1544174656653	HbA1c	1	100	0	100 Euros

The sample list and costs per sample/test will be available in the lower portion of the screen. The upper portion allows finance staff (or admins) to edit the status of the order (quote/pending/issued/paid), provide details on when invoices were issued and paid. Additionally, the tax rate and discount can be edited.

This information is also possible to edit using the API.

The invoice can then be generated as either a PDF or CSV file.

Quote, pending and issued invoices can now be edited in terms of prices and not only administrative data.

3-6. Audit Trail Log

The audit function allows administrators to follow up on user activities in the **LSM**. Go to the **Admin** Menu and choose the **Log** tab.

The application displays all modifications. Each one is dated and identified by an action, user login, and IP address. Specific actions or time periods can be reviewed using the search engine.

Audit Logs List

Export | Archive | Print — Page Size 10 — Page 1 Of 26 — Total 257 Records.

Filter In Date — Apply | Clear

Date	Action	Comment	Username	IP
2018-12-10 16:49:01	Job 23 Sample 34 Assay completed		Ita	undefined
2018-12-10 16:48:30	Job 23 Sample 34 Assay started		Ita	undefined
2018-12-10 16:47:30	New Job-JOB-22 inserted		Gareth	undefined
2018-12-07 17:33:48	Job JOB-21 updated		admin	undefined
2018-12-07 17:32:50	New Job-JOB-21 inserted		admin	undefined
2018-12-07 17:31:57	Job JOB-20 updated		admin	undefined

The results can also be exported.

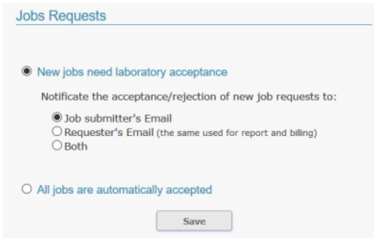
AuditlogID	Username	DTS	Action	Comment	IP
1730	admin	9/23/2017 6:23	New Assay-Test 2 Cat 1 inserted		[illegible]
1729	admin	9/23/2017 6:22	New Assay-Test 1 Cat 1 inserted		[illegible]
1728	admin	9/23/2017 5:57	Job 306 Sample 1861 Assay completed		[illegible]

3-7. Setup

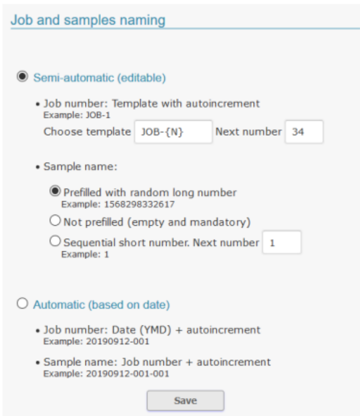
In this setup section, the functions are general to all the LSM add-on.

1. License page where you find the activation key to generate a license and the license by itself.

2. Job request options can be set up here. By default, new jobs are requested and you can select who will receive the notification: job submitter, requester or both. You can also disable the default status REQUEST for the new job (**All jobs are automatically accepted**).



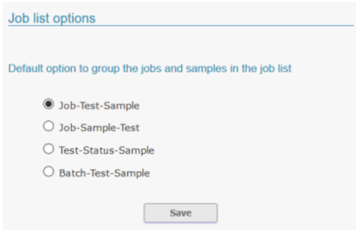
3. Job and sample naming can be set up in this section.



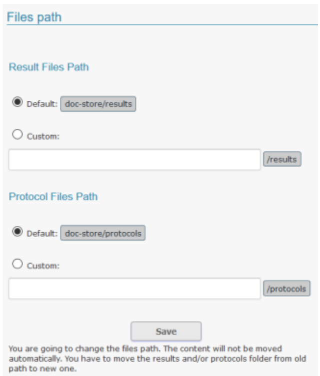
By default, the semi-automatic mode is selected. In this mode, the job number is based on the prefix **JOB-** and an autoincrement. Here, you can select another prefix and modify the next number. You can also modify the sample name logic. By default, it's a prefilled random long number, but you can select and empty and mandatory field name or a sequential short number.

The automatic mode is based on the server date. If you select it, the job number will be the date (yyyymmdd) followed by an autoincrement and the sample name will be the job number followed by an autoincrement.

4. The job list option allows you to define the default option to group the jobs and samples in the job list.



5. By default result files and protocols are stored on the server in the directory extra_modules/lsm/doc-store. You can choose here to modify this default setup and give your own path.



6. Remote API with the connection parameters to [PWNHealth](). To know more about API in LSM please refer to [this KB]().

4- OVERVIEW – Regular Use

This overview is more relevant for daily use.

4-1. Homepage

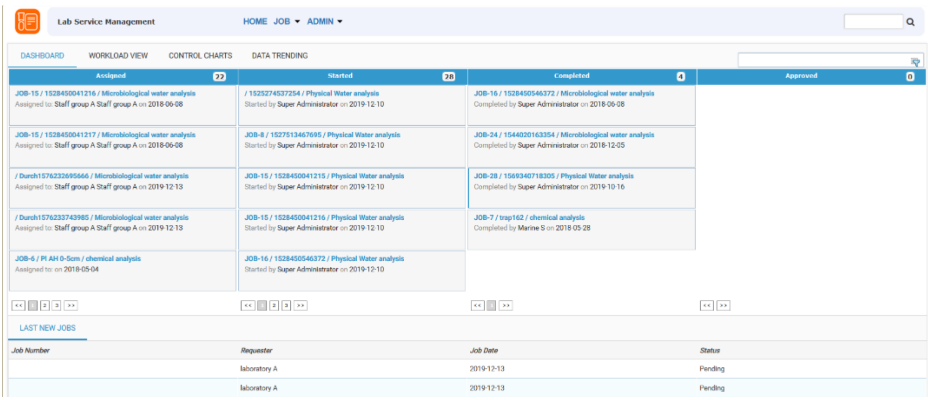
The **LSM**'s main interface is composed of several parts (see next picture):

- A menu bar (Home/Job/Admin).
- A search engine by keywords.
- A job summary by board or report views.

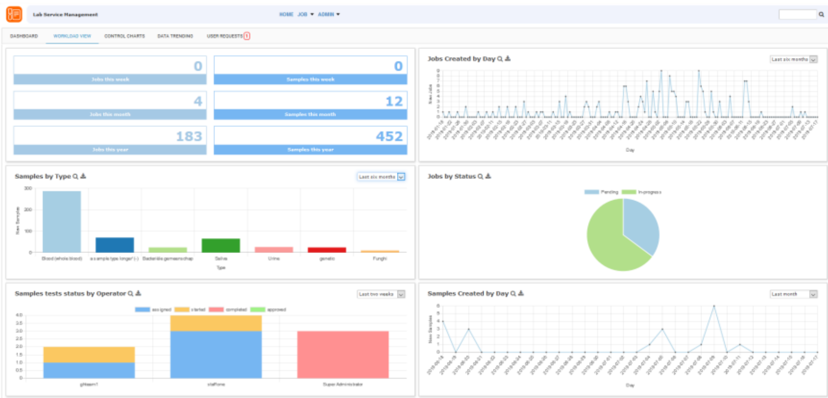
The home page allows users to quickly get information about the lab activity. Some tools have restricted access according to the users' status (admin, staff, guest…).

For customers, partners or requesters who only need to submit jobs and retrieve results the home page will be the LSMRemote. The LSMRemote has a minimal interface to allow 1) viewing of the status of jobs, 2) retrieval of results, 3) submission of jobs. The exact views will vary as they correspond to the way each lab configures their LSM.

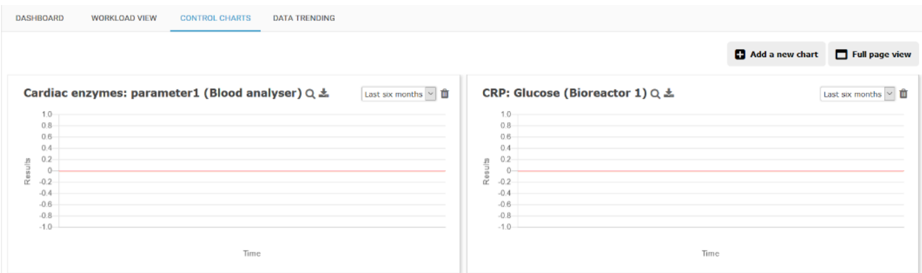
The **Board View** gives a summary of users ongoing tasks:



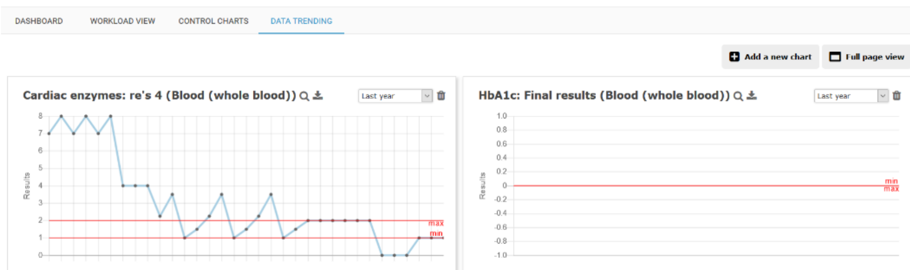
The **Workload View** gives some statistics on service workload:



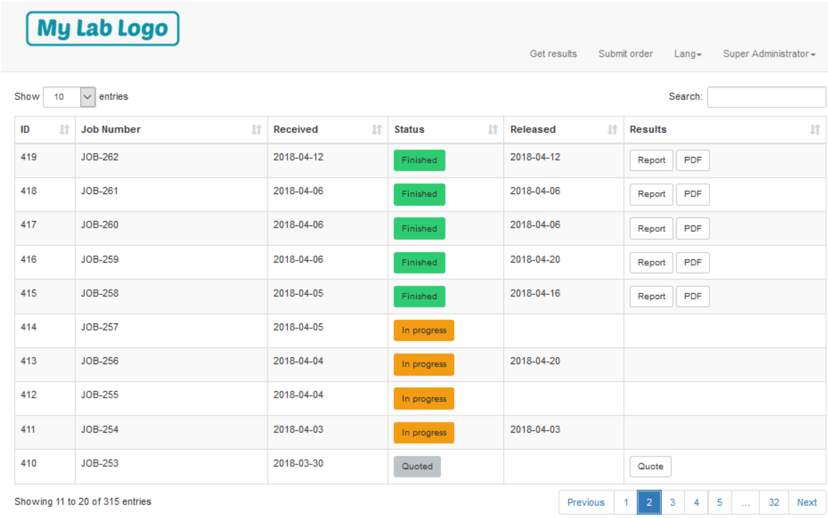
The **Control Charts** tab allows you to monitor QA/QC samples associated with equipment over time.



The **Data trending** tab allows you to follow data from one parameter assigned to a specific test over time.

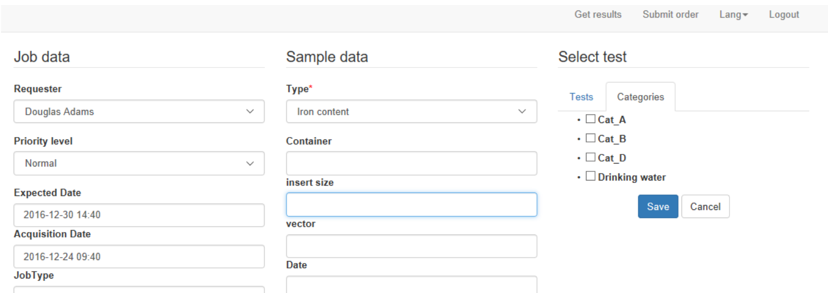


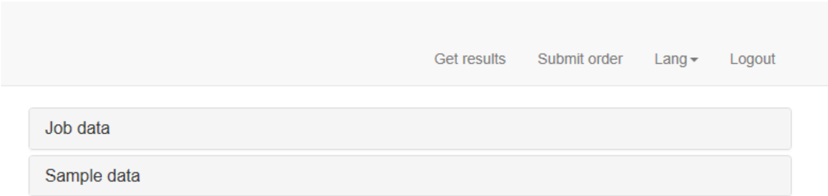
View of LSMRemote job list showing the status of jobs and links to retrieve results. Note that output can be sent as a .csv file to another program if needed (contact AgileBio for details).



ID	Job Number	Received	Status	Released	Results
419	JOB-262	2018-04-12	Finished	2018-04-12	Report PDF
418	JOB-261	2018-04-06	Finished	2018-04-06	Report PDF
417	JOB-260	2018-04-06	Finished	2018-04-06	Report PDF
416	JOB-259	2018-04-06	Finished	2018-04-20	Report PDF
415	JOB-258	2018-04-05	Finished	2018-04-16	Report PDF
414	JOB-257	2018-04-05	In progress		
413	JOB-256	2018-04-04	In progress	2018-04-20	
412	JOB-255	2018-04-04	In progress		
411	JOB-254	2018-04-03	In progress	2018-04-03	
410	JOB-253	2018-03-30	Quoted		Quote

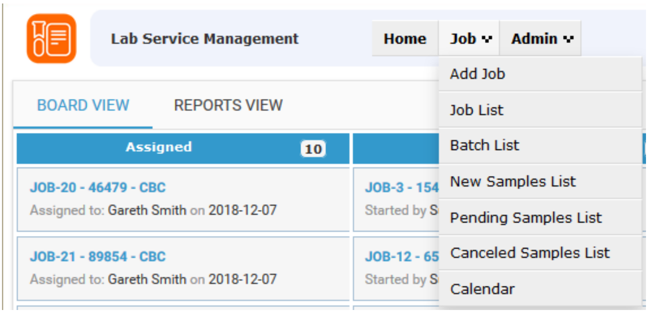
View of LSMRemote order submission form. Note that the appearance will vary slightly depending on the lab-specific configuration. The form may be connected to an existing website if desired. For more information, please read this KB.





4-2. Navigation

A tree view, search engine, and page navigator are integrated into the **LSM** to make it quick to navigate to any part of the LSM at any time. The tree view for jobs is available at any time via navigation in the menu at the top of all LSM pages (**Job > Job List)**.



4-2-1. Tree view display

The tree view is displayed when users manage jobs, worklists, tests, results and it allows a better overview of projects/jobs. Users can navigate between jobs and see all tests.

Various colored icons are added to help job status identification:

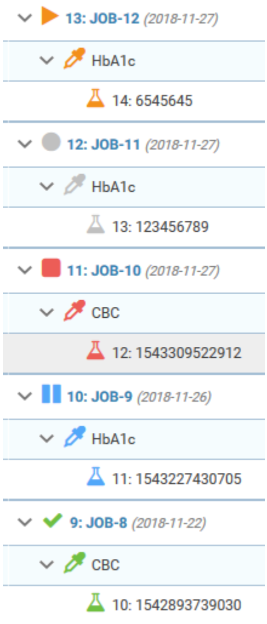
Quoted or Requested / Pending / In progress / Completed / Finished

The same icons are added to help tests status identification:

Quoted or Requested / Assigned/ Started/ Completed/ Approved/ Cancelled

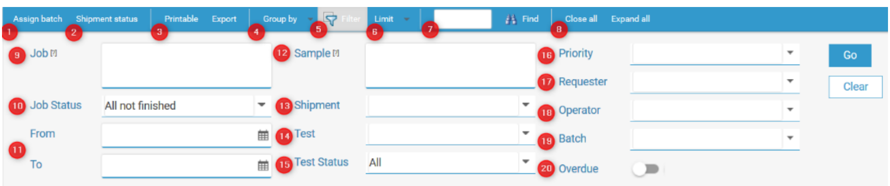
Sample statuses are symbolized by:

Quoted or Requested / Assigned/ Started/ Completed/ Approved/ Cancelled



4-2-2. Search engine – filtering and sorting

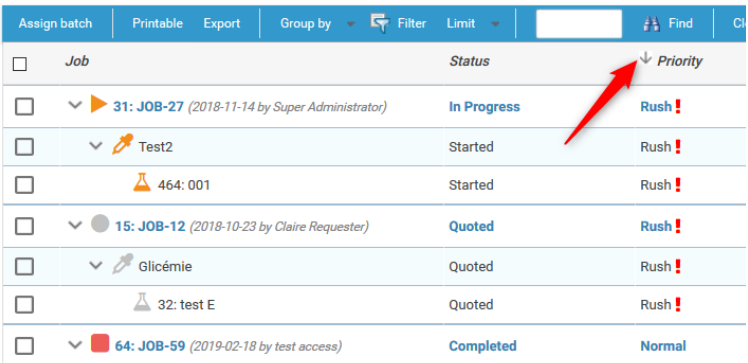
The **LSM** search engine allows information filtering on the job list. It searches by keyword in fields. The search engine field list depends on the page in which you are looking for information (jobs, worklists, results, suppliers, customers…).
Different filters can be used for advanced searches or to simplify views according to staff needs.



1. Assign batch. For more information please refer to the section **Batch**
2. Shipment status. Select the rows on the left and modify the shipment status (from Submitted to Return). Status can be modified automatically during the job or through other add-ons (e.g. Sample receiving add-on).
3. Printable – outputs the job list in HTML format ready for printing.
   Export – generates a CSV file of the job list

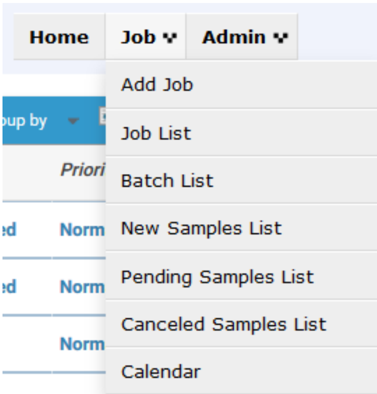
4. Group by. Please see section 5-3-1.
5. Filter – opens the Filter bar explained from point 9 onwards
6. Limit – limits the number of jobs shown per page
7. Find text/numbers in the job list.
8. The **Close all** button will close all jobs on the screen so that only the job level information is visible. Selecting **Expand all** will expand all to show the assay and sample information within each.
9. and 12. The Job and Sample search boxes allow you to search for multiple jobs/samples at once.
10. Job-status – filter by “All”, “All not finished”, “Finished”, “Completed”, “In Progress”, “Pending”, “Quoted” or “Requested”.
11. Date filters
13. Shipment – filter by shipment status
14. Test – filter by test
15. Test status – filter by test status
16. Priority – Normal, Rush or Slow
17. Requester
18. Operator
19. Batch – filter by Batch number
20. Overdue – filters all the tests with a negative **time left**

The column headers in the job list can be clicked to sort in ascending or descending order.



5- JOB MANAGEMENT

The job menu has several sections allowing job management and activity follow-up.



5-1. Add jobs

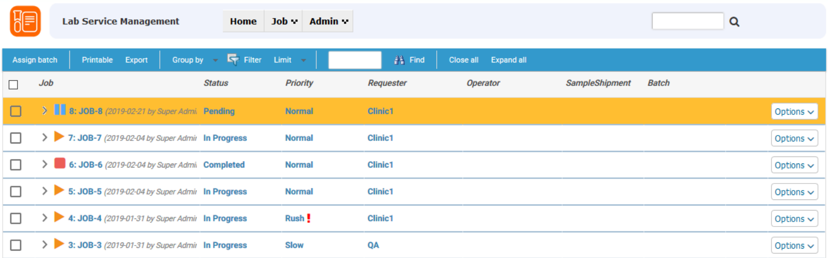
They are three (3) ways to add jobs in the lab services manager:

- A customer can add a job through a dedicated interface, LSM Remote - in this case, the customer can only see limited information for their own jobs.
- Lab staff can add a job through their dedicated interface (in this case, lab staff can see all the LSM jobs). More details about **all** jobs are available when using the LSM with admin, staff or finance access.
- A form can be used on another system or website. Information is then transmitted to the LSM via the API.

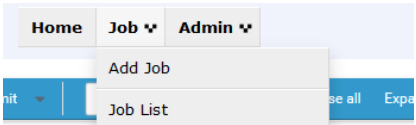
When first accessing the LSM the homepage provides some information about the latest jobs added, as well as dashboards to show information about a complete load of jobs.

The Job list section displays all jobs in the lab. By default, the application shows all jobs that are not finished. Using the filter tab you can filter and sort any and all jobs.

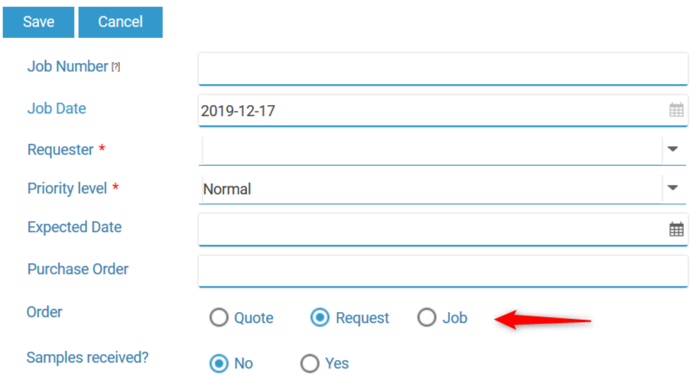
The job status is indicated for each job, in the main tab, and in the tree view. Jobs are identified by an ID for lab data traceability and barcoding. The job list displays job status, priority, requester, operator, sample shipment status and batch, allowing users to prioritize their tasks.



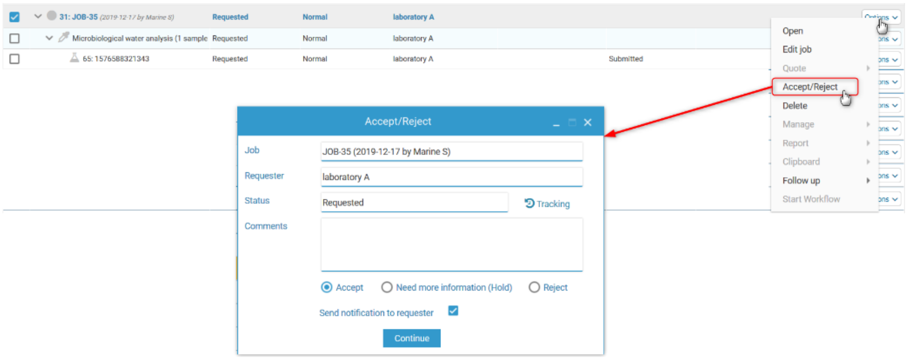
To create a new job, click on the **Add Job** button from the Job menu.



First, in the **Order** field, by default, the job will be **REQUESTED** (see section Setup). You can choose also between creating a new **JOB** directly or a **QUOTE**.



A requested job is represented by a icon in the job list. When you choose this option, an administrator of your lab needs to accept or reject this new request before to have it available for the staff team.



In the **Options** menu at the job level, the Accept/Reject option opens a new form that will allow accepting, rejecting or requesting more information from your client. For this last case, the job/test/sample will have the ON HOLD status, no actions will be possible on the samples. In the form, you can save comments or send them by email to the requester if you check the box "**Send notification to requester**".

A quoted job is represented by a icon in the job list. When you choose this option, you create an invoice entry that is managed in the invoices list (**Admin > Invoices** also see below). In the **Options** menu at the job level, you can generate the PDF and order the job. After ordering the job, the job switches automatically on the REQUEST status previously seen.

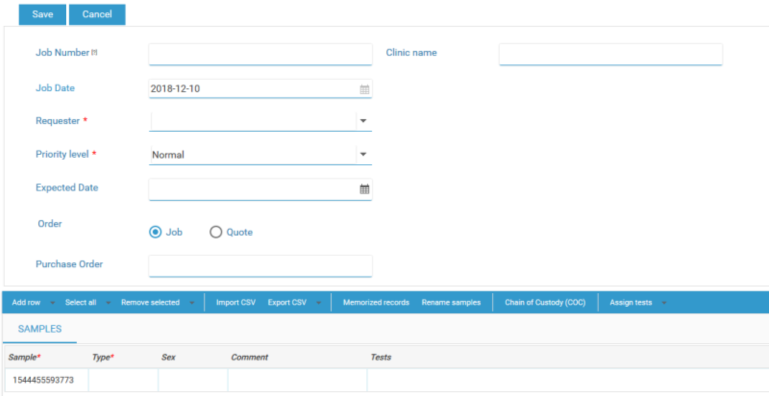
If you select Job, the job will be created immediately.

Below the entries for Job identification (default fields plus any parameter with the job level selected), there is a **Samples** tab to add all samples for the job. Multiple samples can be added for the same assay or for different ones. You can also assign the same sample to multiple assays/tests.

If samples already exist in LabCollector, they can be memorized and then added to a job using the **Memorized records** button. This will allow a selection from the memorized list to be used for the new job.

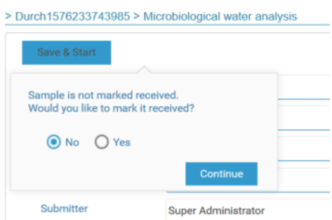
The sample addition can also be done by batch importing of a CSV list. Each row will be a sample for a single job. Each sample can be assigned to one or several assays.

Note: The CSV format can be checked by using the **Export CSV** button. The format will vary depending on the way you set up the parameters in the LSM. This gives you an empty Excel file that you can then fill and reload or provide for clients and partners. Not all the fields are mandatory.

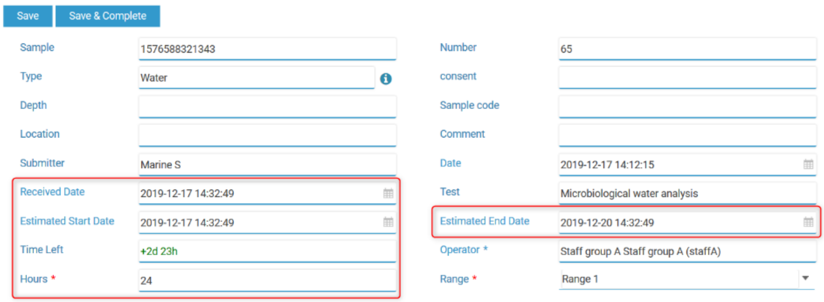


If, when the job is created, the samples are already received, click on YES and the received date-time will automatically be populated.

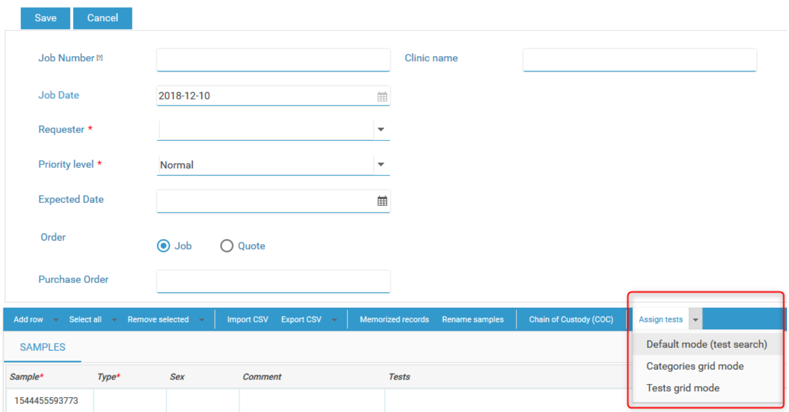
If you received the samples later, when you start the job, the timestamp can be applied when you click on Save & Start.



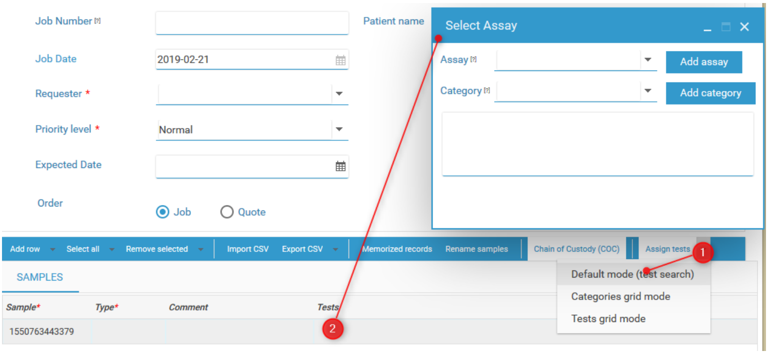
As soon as the received date is saved, it will create the estimated start date and linked to the estimated end date (calculated automatically with test default hours and taking into account working hours and weekends), the **time left** will be calculated automatically (Estimated End Date - Current Date) and display in all the sample lists and in sample/test popup.



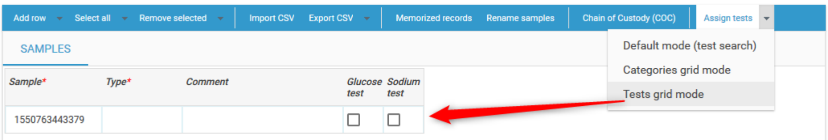
Assays/tests can be selected on a sample-by-sample basis. The method of selecting assays can be chosen by clicking on *Assign tests* and making a selection:



The Default mode (test search) will have the selection of tests via a pop-up menu when clicking the assay/test cell for the sample:



Grid mode can be by assay/test or category and uses checkboxes to select which assays/tests are to be done for each sample:



The **Chain of Custody/Shipping list** is generated as a PDF with the list of samples and checkboxes of assays/tests. You can choose the template for this list - please read chapter 3-4-4.

Print this shipping list and include it with the samples

#	Sample	Type	Sample Condition	Sample Description	Sample Layer	longtext sample	Date Collected	Sample prep date	Comment	Tests	Received
793	1524591067842	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
794	1524591067845	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
795	1524591067846	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
796	1524591067847	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	

Generated on 2018-04-27 11:33:12

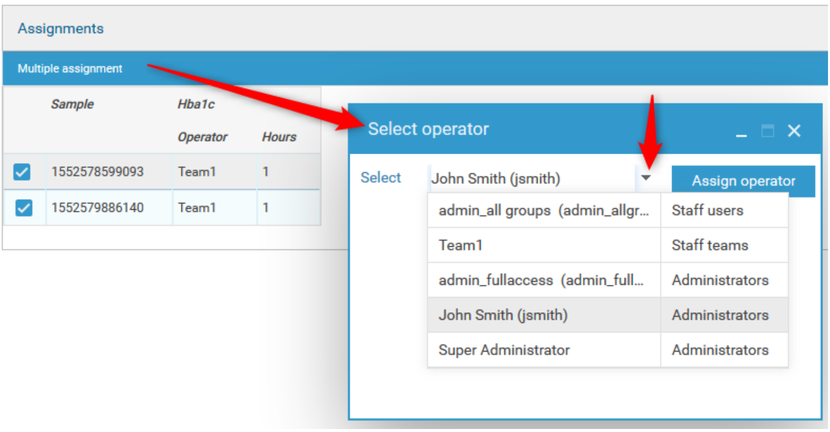
Once the job is created, it is displayed in the job list and the initial status is **pending**.

5-2. Job management

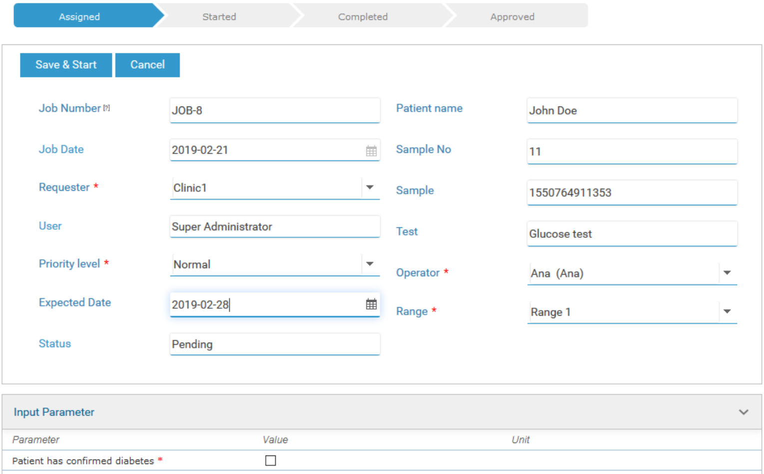
The OPTIONS button on the right side, depending on the level (job, test, sample) will give different possibilities of management.

A job can be deleted when it is pending then it can be archived.
On the job or test level, you can create a deviation record in the follow-up option.

By default, the job is assigned to the operator that you selected in the test configuration. Before entering results, you can assign the job/samples to another operator. You can do it sample-by-sample or in batch with multiple assignments. Click on the **Options** button of your job/test, go to **Manage > Assignments**. Select the samples of interest, click on Multiple assignment and choose the new operator in the popup.



To start a job, expand it in the Job List and select your *sample* of interest by going to **Options > Open**. Details are displayed in a new pop-up; select an operator and complete any other required/optional job fields, then click on the **Save & Start** button to begin work on the sample.



In the lower portion of the popup there are several items that are often useful to complete when starting some jobs if required:
- **Input parameters**: Lab designated parameters as input for a job. *These can only be input at the time of starting a job.*
- **Reagents & Supplies**: Lab designated reagents and supplies associated with the job/test/assay. *These can only be input at the time of starting a job.*
- **Protocol**: list of protocols and equipment categories for the job. The equipment may be selected and the protocol can be downloaded and/or viewed. *These can only be input at the time of starting a job*

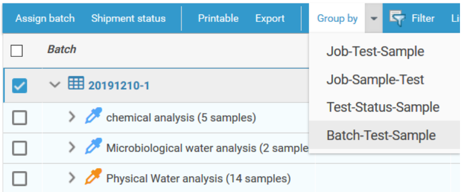
Mandatory fields are marked with an asterisk.

5-3. Job filtering

Note that some information on the LSM search engine is relevant to this section and a selection of information also appears in the section on general search and filtering.

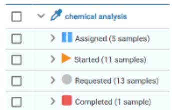
5-3-1. Group by function

Users can see and process samples for a particular assay or a particular batch using the item **Group by** in the toolbar.



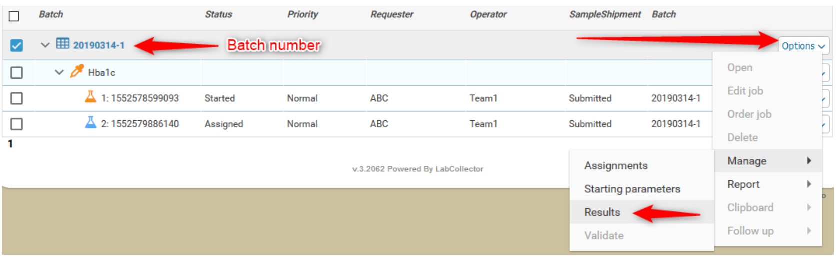
From the Job List (**Job > Job List**) **Group by** offers several options. This makes it possible to find, filter and sort any group of samples, jobs or tests to work on.

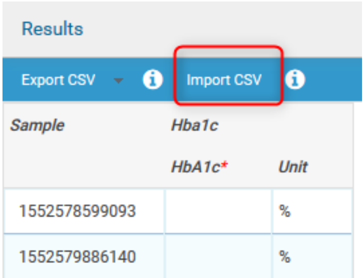
Job-Test-Sample: this is the default choice. This provides a tree view with the job at the top level, test as a middle level and sample as the next level.
Job-Sample-test: This provides a tree view with the job at the top level, sample as a middle level and assay as the next level.
Test-Status-Sample: Test is the top-level, each test has the next level in the tree organized by status, with sample as the next level of the tree.



Batch-Test-Sample: Batch is the top level of the tree, Test is the next level, followed by sample. Jobs and samples that have not been assigned a batch are grouped together in a blank batch.

Using this last filter, you can then import results in batch using the CSV file.

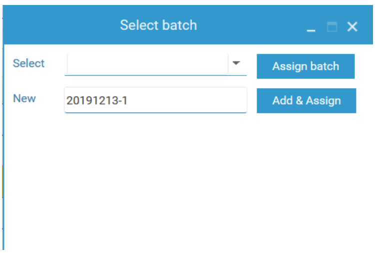




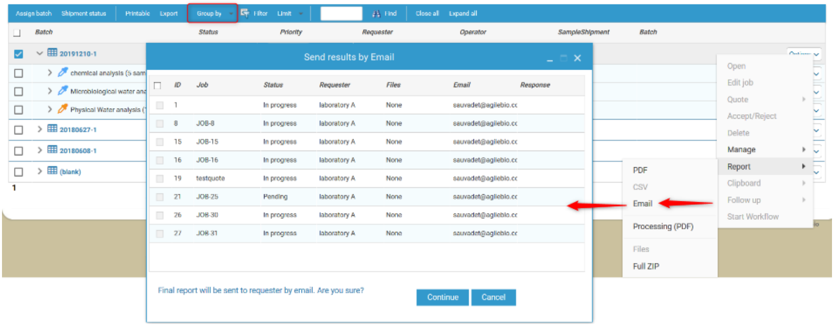
You can export a CSV file choosing the field separator, update it, and then import results in batch.
To import results, the first line of the file must contain the name of the columns to import, and the names have to match with the column names (case insensitive). If the column does not match the header, it will be ignored. It's not necessary that the file contains all the columns of the grid.

If you use the phrase option, if the phrase is blank, it will be updated based on the result value from the imported file.

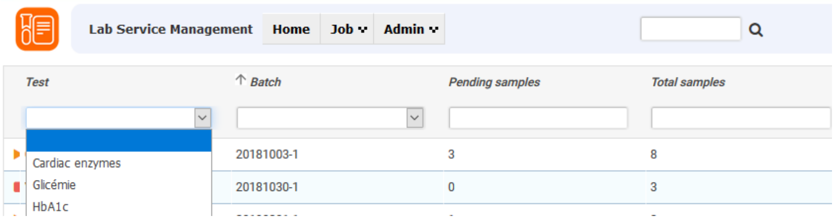
The field **Batch** is visible in the tree. To add jobs, tests or samples to a batch tick the relevant checkboxes to the left of the entries on the job list and select Assign Batch from the Menu. Grouping by batch-assay, users can perform actions on all samples with the same batch code.



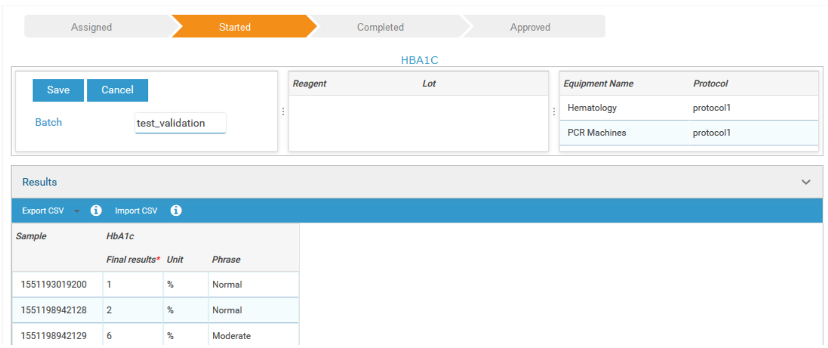
On the job list grouped by batch, you can also send the final result report by email to the requesters for the full batch.



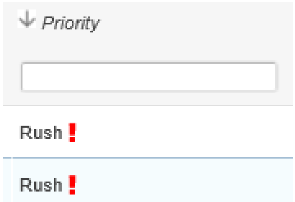
The **Batch List** found from **Job > Batch List** provides a list of assays/batches/samples that have been assigned to a batch. This view provides a list that can be filtered and sorted by assay, batch, number of pending samples and total samples. You may filter and sort based on multiple columns.



Clicking on a row brings up a popup that allows the editing of information for the batch.



The **Samples Lists** found from **Job menu** **(New, Pending or Canceled)** provide a list that includes columns that may be searched, filtered, or sorted for Job, Sample, Test, Priority, Expected (date), Customer, Operator, Batch, and flagged samples. Sorting by ascending or descending order is done by clicking on the column header, after which an arrow will indicate the sorting preference:

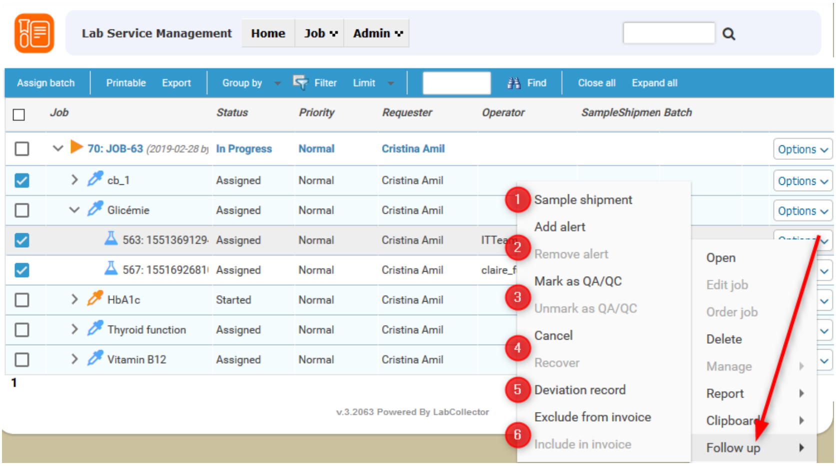


The new samples list allows having all the new samples independently of the job or the test. You can start the process one by one by clicking the sample or assign a batch, modify the status and do multiple assignments on multiple samples.

The pending samples list allows you to have in one list all the samples from which the test is started and in progress.

The canceled samples list allows you to export the entire list of canceled samples.

5-3-2. Sample follow up

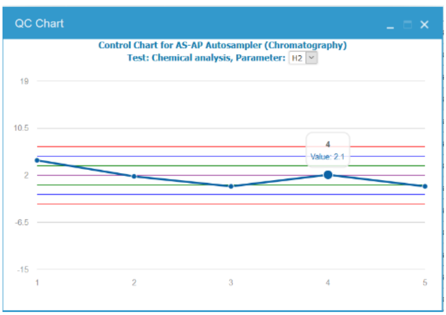


- ### Alert status

Users can mark samples as an alert to follow them more easily. Samples with alert status are colored in yellow. This status can be coupled to the priority parameter (Slow, Normal, and Rush). The status to mark for QA/QC follow-up, denoted by , can additionally be combined with the general alert.

- ### QA/QC status

Users can mark samples for QA/QC follow-up, denoted by . To have a QC chart, the operator needs to select a piece of equipment and enter results.



- **Cancel status**

Selecting *Cancel* changes the status of the sample/test to Canceled. When you *Cancel* a sample the mark as the free option is activated, so it shouldn't appear in the final invoice.

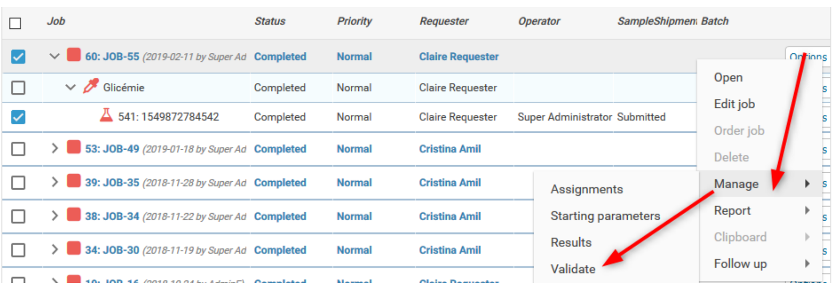
- **Free status**

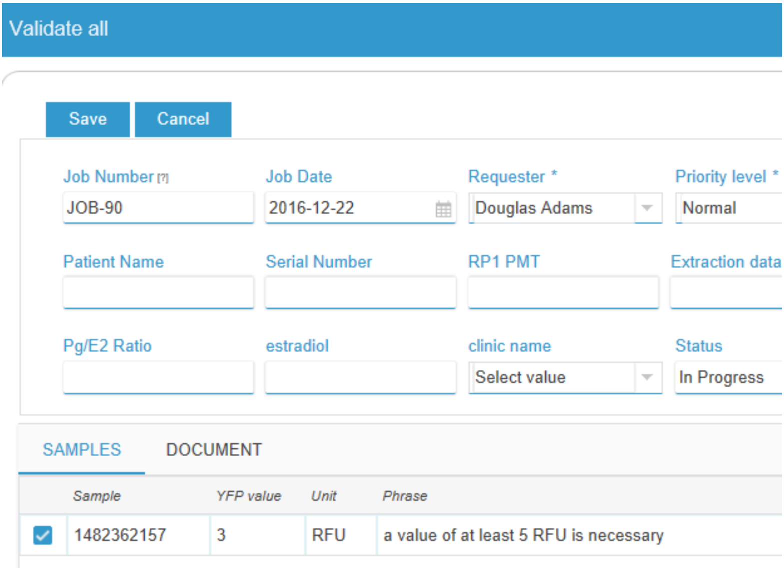
Mark as *Exclude from invoice* or Unmark as *Include from invoice*. If a sample is marked it shouldn't appear in the invoice.

5-4. Manage results

Once the job is started, users can add results. To add results, expand the related job and go to the **Options** button on the sample of interest and select **Open**. Then, you can fill in the result fields and click on **Save** to save all changes. When all result fields are completed, you can click on the **Complete** button to close the analysis. Be aware that, providing not all of your result fields are mandatory, you can select **Complete** before all results are entered – this will block further changes. This can be useful if some results cannot be completed.
Sample results can be validated in a similar way: **Options > Open > Validate/Reject**.

Job and test levels can also be validated – **Options > Manage > Validate> Validate/Reject**. On the Assay and Job levels, you can choose samples to be updated using the checkbox column in the grid of the four **Manage** actions: Assignments, Input data, Results and Validate.

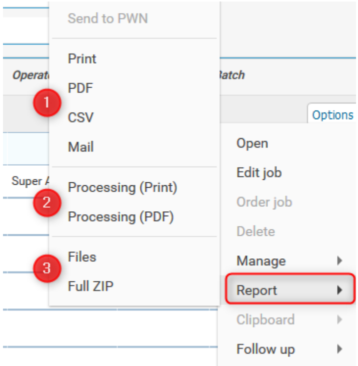




Users can also obtain result reports through this menu by selecting the **Report** option.

1. Selecting any of the options in Section 1 produces a report according to the template chosen for individual tests in **Admin > Preferences > Report and Invoice Templates > Options**.
2. Selecting a Processing report type in Section 2 produces a report whose template is specified in the **Processing report template** of **Admin > Preferences > Report and Invoice Templates > Options.**

3. Section 3 the **Files** option allows the user to download the files associated with the job/test/sample while the **Full ZIP** includes all the files along with the Processing report and the final results report from sections 1 and 2.

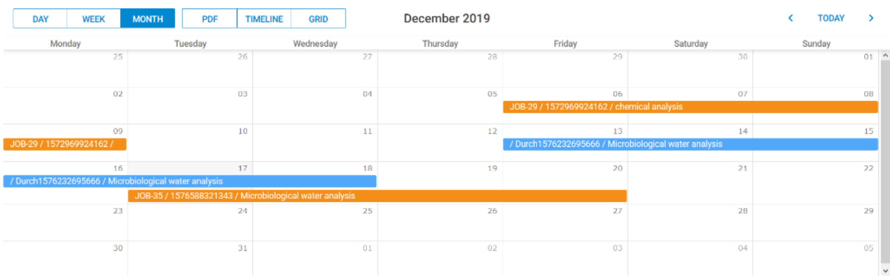


Through this menu, users can also edit/delete jobs (job level) and copy (at the sample level) and paste samples (at the test level) via **Options > Clipboard**.

A locking system is in place when editing jobs, during single sample editing (input parameters and results) and when editing samples in bulk (assignments, input data, results & validate).
A window opened in normal mode (editable) by user 1 makes blocks access to the sample by user 2. Locked samples are checked every 2 minutes. A window opened in read-only mode, becomes editable when samples are unlocked.

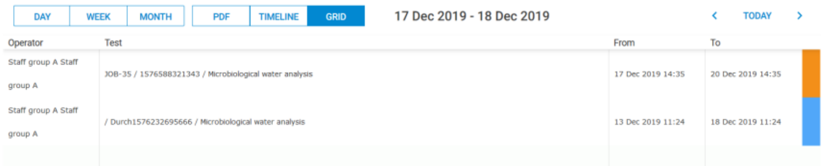
5-5. Scheduler/Calendar

This menu displays a timeline calendar with all jobs requested by day, week or month.



Items can be moved in the calendar and the relative dates will automatically be updated.

A PDF can be generated by clicking on the button *PDF* on the calendar page in month, week or day view. When using this button in the day view, a worklist is generated.

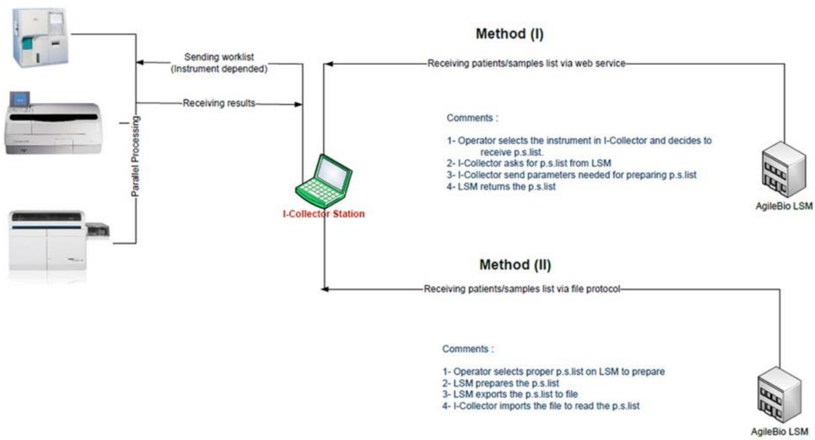


The timeline and the grid are given by the operator. And on each view, a click on a selected item opens the sample.

6- I-COLLECTOR AND LSM COMMUNICATION PROTOCOLS

The LabCollector **LSM** add-on can be associated with i-collector for direct communication with lab equipment.
This will allow a selection of some or all information from a test to be entered automatically with minimal manual data entry.

Here is an example:



Some equipment is already compatible with LabCollector. Most equipment from common suppliers can be readily connected. Contact us for details about your needs.

The LabCollector API contains many features that allow connections to websites or other systems.

7- UPGRADING AND UPDATING

To update or upgrade the **LSM Add-on** module, just download it from our website (www.labcollector.com). Then, unzip the folder and paste files in the following folder:

```
Programs\AgileBio\LabCollector\www\lab*\extra_modules\lsm
```

*The name of this folder is the laboratory nickname chosen during LabCollector installation.

As a best practice, we recommend making a LabCollector backup prior to performing an update or upgrade. Note that instances hosted with AgileBio are backed up regularly.

http://www.labcollector.com
sales@agilebio.com

AgileBio USA
5473 Kearny Villa Road Suite 255
San Diego, CA 92123
USA
Tel: 347 368 1315
Fax: (800) 453 9128

http://www.agilebio.com

AgileBio Headquarters
75 rue de Lourmel
75015 Paris
FRANCE
Tel: 01 41 79 15 85
Fax: 01 72 70 40 22