

LabCollector

"Your Laboratory management solution"

User guide



Workflow Manager

November 2019

Version 4.42



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1- INTRODUCTION

Thank you for choosing one of AgileBio's solutions. We hope it will help you to expand LabCollector's capabilities.

This add-on is a visual workflow designer to create custom workflow templates for any laboratory job.

Users of LabCollector's Workflow Manager Add-on can design any type of workflow. All jobs are stored and status and progress may be monitored. Workflow steps are linked to LabCollector data modules for recording and modifying, automatic record creation and documents/protocols associations. This add-on is associated with a dashboard to provide information on user's activities including the number of workflows per user, project or template.

The scope of the manual is for setup and basic usage. If you will be making and using highly complex workflows or plan on integrating instrument connections including the API, parser or I-Collector functionality it is recommended that you contact AgileBio for assistance.

You can get the **Workflow Manager Add-on** by downloading it from www.labcollector.com. LabCollector software has to be installed first as it contains the framework which the add-on uses. **Workflow Manager Add-on** can be installed on common operating systems (Windows, macOS X, and Linux). LabCollector support documents for installation are available on our website. Installation is performed by AgileBio on cloud-hosted instances.

As a general note, making a backup prior to installing or updating a new add-on is recommended.

A changelog is included in the download package and on the LabCollector website. It is also available by navigating the browser URL for your instance of LabCollector at */workflow/CHANGELOG.txt.

1-1. Manual mode

Unzip and copy the **Workflow Manager Add-on** folder into the extra modules folder. For Windows the default will be:

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

1-2. Automatic mode from LabCollector interface

You can also use LabCollector Menu *Admin > Setup > Upload/Add Addons > Upload Addon ZIP > Add Addon*

Open or return to LabCollector, the **Workflow Manager Add-on** module is now activated. Click on the module to finish the installation. The initial installation and upgrades will show any items created or checked in the database.

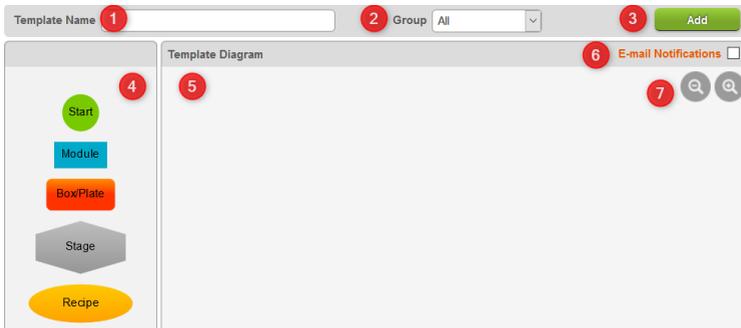
The Add-on will remain in a 30-day free trial mode until you save the final license in the *Setup* menu (requires admin credentials). To obtain a valid license, you have to copy and send the activation key to AgileBio. The license will be applied by AgileBio staff on hosted instances.

2- WORKFLOWS TEMPLATES

Templates are the basis of the Workflow add-on. In this section, you will see how to create a template and all the options associated with it. Super-administrator, administrators, and staff+ users can access the template page. Staff+ can only modify the existing templates. Through the menu **Template**, find the button **Add Template** on the top right.

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2-1. Template designer



The template designer has several sections:

1. Enter a template name
2. Group indicator/selection
3. Save/Validate buttons to save/validate work on a template



4. Choice of nodes for the workflow
5. Template design area
6. Choice for email alerts. By default, all the nodes will have the alert activated. Tick the box below to deactivate it depending on the node.

Template Notifications Are Active

E-mail notifications are sent once the previous node is completed.

Turn off e-mail notifications for this node

7. Zoom function and design print option

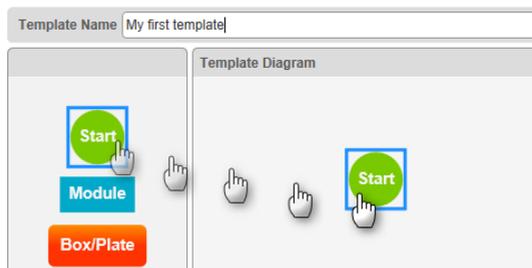
Note: A workflow can be associated with all LabCollector users or restricted to one or more groups. Only the super-administrator can make templates for different groups. The use of workflow teams can be combined to add another layer of access restrictions.

 Changing the name of an existing template followed by saving will create a new template.

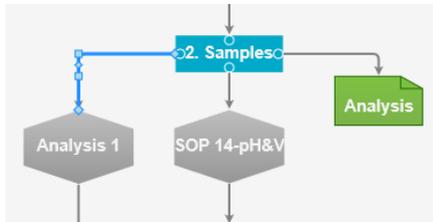
 Preserving the name and saving will overwrite the existing template. However, started jobs will retain the version of the template as it existed when the job began.

 **Validated Templates cannot be altered. You can only derive a new template based on the validated version.**

Workflows must begin with the 'Start' node . Begin by dragging and dropping the **Start** icon into the Template Diagram. Only one start node is permitted in each template. The start node may have multiple connections pointing to other nodes.



Steps must be connected. Many nodes can have multiple incoming and outgoing connections. When hovering the mouse over a module, dots appear that allow you to make connections from one step to the next by clicking and dragging the mouse. The lines are adjustable and automatically fit to the position.



To end the workflow logic, you have to click on the **End** icon and drag it into the Template Diagram. Multiple ends are possible. The end icon must be connected from a series of steps and connections to the start. **Don't forget to click save**  when you are done. Saving will be blocked if certain invalid choices are selected: a specific warning message will appear to assist with corrections.

2-2. Node description

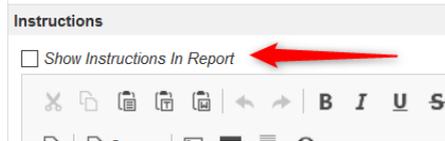
To add steps, click on a node icon and drag it into the design space. You can add as many nodes as needed. Note that each node has a unique menu for defining the workflow at that point. **Additionally, each node has menu options that change based on the nodes it's connected to.**

2-2-1. Module

The Module node links the workflow to a module. It allows you to choose fields relative to this module to fill out all the information you need during your workflow.

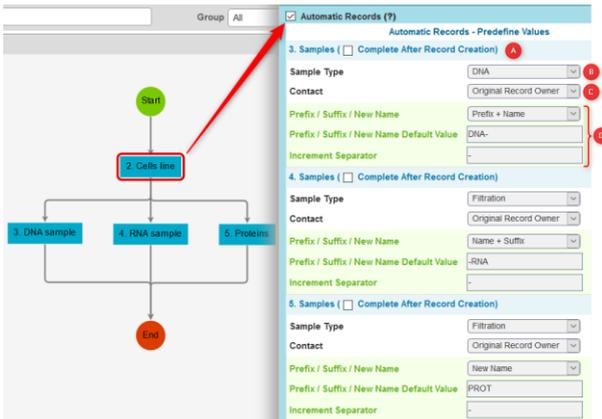
1. You have to select the module in the drop-down list. A **custom name** may be applied to show in place of the name of the module selected only in the Workflow add-on.
2. A **delay** is possible (select an integer value for minutes, hours, days, months). To use if you know that the next module record has to be created after 1 day or 1 hour the end of the previous module or stage or other nodes.
3. If you want to be able to print **barcodes** for the module record(s) at this step, you need to check this box.

- The **Instructions** section is a text editor to include instructions. Other instruction sections are available in the various nodes. By default, the instructions are not displayed on the report, but if you need you can show them by checking the following box.



- The module node can accept multiple incoming connections and have multiple outgoing connections. **Automatic naming** based on connected nodes is possible and will vary based on the template design. With this option, users can create automatic records from a LabCollector module (i.e. a workflow module node) towards other LabCollector modules (i.e. subsequent workflow module nodes). This feature allows records to be made with a predefined naming scheme for the workflow that accommodates the use of prefixes, suffixes, auto-filling of information and incremental naming.

In this example, Cells line may use automatic records to automatically create DNA samples, RNA samples, and proteins.



- Module nodes can be automatically completed, no action is required.

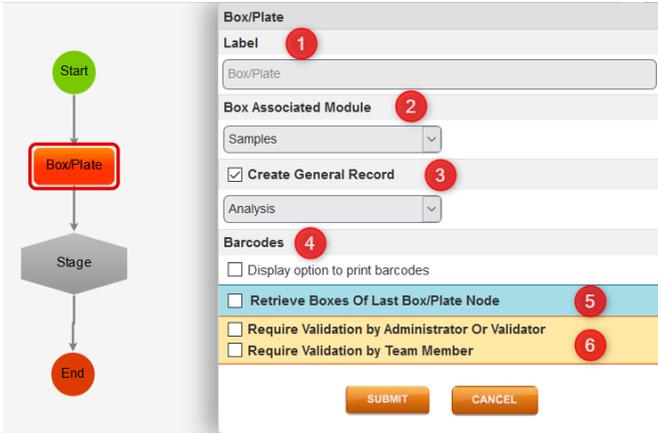
- b. Depending on the connected module node, different select lists can be prefilled. Here, the sample type from the Samples module is available.
 - c. You can choose the owner of the automatic record or keep the original record owner.
 - d. These options are to set up the auto-naming system. You can choose a prefix or a suffix associated with the name of the original record, or a new name. The incrementation will be separated by the character of your choice.
 - e.g. following the screenshot above:
 - the cell line record is CL160
 - the automatic DNA record will be DNA-CL160-1;
 - the automatic RNA record will be CL160-RNA-1;
 - the protein record will be PROT-x, x following the incrementation in the module.
6. If you don't use the automatic record option, you can also set up the name of the next module records using this option. When "Pick Record Based On Previous Name" is enabled, the records of the next module will be the same as the parent module (first one).
 7. A team may be assigned (section 4-1). In this case, only this team (and super-administrator) can perform actions in this module node.
 8. The deviation module can be selected here to report issues during the record creation.



Don't forget to submit. Submission will change the name from 'module' to that of the selected module and also include a unique reference ID.

2-2-2. Box plate

Box/Plate will link the workflow to plates or boxes in the storage browser.



1. Give a custom name to your box/plate node.
2. You have to select the box module in the select list relative to the records that you want to modify.
3. You also have the possibility to create a general record in a module of your choice. In this example, the stage that follows the box/plate node will be based on the General record module.
4. As previously, if you want to be able to print **barcodes** for the module record(s) at this step, you need to check the box.
5. If you have a complex workflow or if you use the master template, this option allows recovering the box from the last box node.
6. Validation options can be selected. See section 3-1.

 **Don't forget to submit.**

This node also allows linking to **Tube Sorter** (for sample moving/creation/derivation) in the stage that follows the box/plate node (See the [Stage](#) section). The Box/Plate node can accept multiple incoming connections and have multiple outgoing connections.

2-2-3. Stage

The Stage node is used to list steps/instructions and fill in information about records associated with a module or box/plate nodes. You can have multiple stages in a workflow. The stage node can accept multiple incoming connections and have multiple outgoing connections.

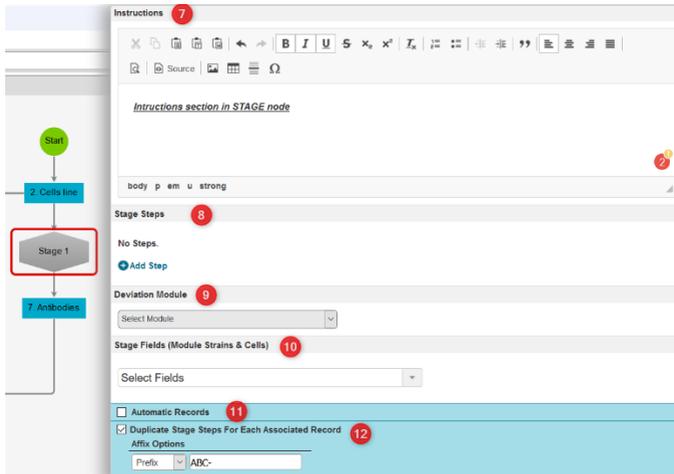
2

2.2.3.1 General options

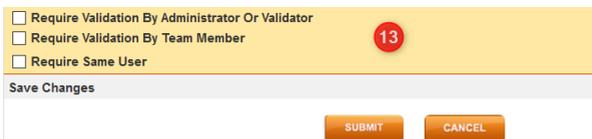
The screenshot shows the 'Stage Info' configuration form for 'Stage 1'. The form includes the following sections and options:

- Stage:** A text field containing 'Stage 1' (marked with a red 1).
- Start Delay:** A checked checkbox (marked with a red 2), a 'Minutes(s)' dropdown menu, and a note '(Only Accepts Integer Values)'. Below this is a 'Products' section with two entries: 'Polyacrylamide 6%/30% denaturation' and 'Sodium deoxycholate', each with a quantity of 1 and a units dropdown.
- Equipment (Category):** A checked checkbox (marked with a red 4), a dropdown menu showing 'Electrophoresis & Blotting' and 'Centrifuge', and two 'Mandatory Usage' checkboxes.
- Assign Team:** A dropdown menu showing 'Team 1' (marked with a red 5) and a checked checkbox for 'Mandatory Operator Assignment'.
- Barcodes:** A checked checkbox (marked with a red 6) for 'Display option to print barcodes'.

1. For each stage, you give a **name**.
2. A **delay** to start the stage is possible (select an integer value for minutes, hours, days, months).
3. **Products**, from the Reagent & Supplies module in LabCollector, are available on the stage level. You can select products that will be used during the stage. The quantity and units can already be selected by default or completed during the job execution.
4. **Equipment category**, from the Equipment module in LabCollector, can be selected at the stage level. The selection of equipment in a category can be made mandatory. Equipment with a maintenance out of date cannot be selected.
5. A **team** may be assigned. You can also request the assignment of an operator (e.g. the person who performed the benchwork). If the box is not checked, the operator is optional.
6. If you want to be able to print **barcodes** for the stage record(s), you need to check the box.



7. A text editor is available to include notes or **instructions** for the stage.
8. **Steps** and fields (from the record form) can be selected to be filled in during your process (see [Step section](#) below).
9. A **deviation** module can be selected to record details for a deviation or discrepancy. The Deviation option will be available at each step and/or in the general stage.
10. Fields to be edited can be for the entire stage or can be associated with specific steps (see point 8). You can see custom and default fields from one or multiple connected modules that point into the stage.
11. Automatic records for the next module node can also be set here. For more information, see [above](#).
12. If you have multiple records associated with the stage, you can choose to work with the same step for all the records or automatically duplicate the steps for each record.



13. Validation can be set as a requirement for the stage. For more information, please read [section 3-1](#). Only available with GxP mode.

Don't forget to submit changes AND save the workflow to save updates to the template.

2.2.3.2 Step section

Multiple steps can be created within a stage. The step name can be simple or more complex. Step numbering is by default.

Stage Steps

	Purification step (SIMPLE STEP NAME)	<input type="text"/>	MINUTES			
	Binding DNA	a. Remove a PureLink Spin Cartridge in a Collectic	<input type="text"/>	MINUTES		

Add Step Complete Stage (All Steps) Time Limit MINUTES

Step editor

Steps

1	Purification step (SIMPLE STEP NAME)	<input type="checkbox"/> Mark as Started	<input type="checkbox"/> Mark as Completed	
2	Binding DNA a. Remove a PureLink Spin Cartridge in a Collection Tube from the package. b. Add the lysate with Binding Buffer (L3) and ethanol prepared to the PureLink Spin Cartridge. c. Centrifuge the cartridge at 12,000 x g for 30 seconds at room temperature. d. Discard the collection tube and place the spin cartridge into a clean Wash Tube supplied with the kit. e. Proceed to Washing DNA	<input type="checkbox"/> Mark as Started	<input type="checkbox"/> Mark as Completed	

Running step

Five options are possible for each step. The option can be mixed for the same step.

Stage Steps

Step with fields

MINUTES

Step Fields (Strains & Cells)

Strain_and_cells_type

Organism

1

Step with product

MINUTES

Step Products

Tetramin Flake

dried bloodworms

Qt 2

Units

Qt

Units

Add Product

2

Step with equipment

MINUTES

Step Equipment (Category)

Chromatography

Mandatory Equipment Usage

3

Step with verification

MINUTES

Step Verification

No Password

Use Labcollector Login Password

Use Specific Password

4

Step in parallel execution

MINUTES

5

Add Step

Complete Stage (All Steps) Time Limit

MINUTES

1. **Step with fields.** As in the stage level, you can select for each step one or multiple fields. The fields are related to the module node or the box/plate general record.

 If you use **I-Collector**, **Parser** or the **API** to parse data from your equipment to LabCollector during your process, you don't need to select the parsed fields. These fields will be updated automatically.

2. **Step with products.** As in the stage level, you can select products from the Reagents & Supplies module, with quantity and units.

3. **Step with equipment.** As in the stage level, you can select an equipment category from the equipment module, but only one category per step. The same rules as for maintenance are applied here.
4. **Step with verification.** The step can be simply started, then completed or you can request a verified action. This verification can be done with no password, after the request of the LabCollector password of the user log in or with a specific password created in the template step form.
5. **Step in parallel execution.** By default, steps can only be started and completed in order (e.g. step 1, step 2, step 3, step 4 and step 5). If you activate this option, the step can be done in whatever order when you need (in the example here, steps 1 to 4 have to be done in order, whereas step 5 can be done whenever you want).

Steps can be reordered easily by drag and drop.



If a time limit is associated to the step an indicator will show if the step was completed within the time limit. The entire stage can also have a time limit for the total time taken between ticking the box in the first step through to ticking the end box of the final step. If the entire stage has a time limit, the intervals between the end of each step and the start of subsequent steps will be counted.

WORKFLOWS TEMPLATES

2

Steps

1	Step 1	Started on 2019-06-07 11:29:34 By Anne-Laure Sauvadet	<input type="checkbox"/> Mark as Completed	
				Expected Time: 1 Minute
2	Step 2	<input type="checkbox"/> Mark as Started	<input type="checkbox"/> Mark as Completed	
3	Step 3	<input type="checkbox"/> Mark as Started	<input type="checkbox"/> Mark as Completed	
				Expected Time: 3 Minutes
Expected Time (All Steps): 5 Minutes				

Steps

1	Step 1	Started on 2019-06-07 11:29:34 By Anne-Laure Sauvadet	Completed on 2019-06-07 11:29:55 By Anne-Laure Sauvadet
Completed In 00:00:21 / Expected: 1 Minute / Remaining: 00:00:39			
2	Step 2	Started on 2019-06-07 11:30:00 By Anne-Laure Sauvadet	Completed on 2019-06-07 11:30:02 By Anne-Laure Sauvadet
3	Step 3	Started on 2019-06-07 11:30:04 By Anne-Laure Sauvadet	Completed on 2019-06-07 11:32:53 By Anne-Laure Sauvadet
Completed In 00:02:49 / Expected: 3 Minutes / Remaining: 00:00:11			
STAGE TOTAL: Completed In 00:03:19 / Expected: 5 Minutes / Remaining: 00:01:41			

Status

In Preparation

Complete

Change Status

Steps

1	Step 1	Started on 2019-06-20 10:09:40 By Anne-Laure Sauvadet	Completed on 2019-06-20 10:10:26 By Anne-Laure Sauvadet
Completed In 00:00:46 / Expected: 1 Minute / Remaining: 00:00:14			
2	Step 2	Started on 2019-06-20 10:10:30 By Anne-Laure Sauvadet	Completed on 2019-06-20 10:10:32 By Anne-Laure Sauvadet
3	Step 3	Started on 2019-06-20 10:10:37 By Anne-Laure Sauvadet	Completed on 2019-06-20 10:17:06 By Anne-Laure Sauvadet
Completed In 00:06:29 / Expected: 3 Minutes / Delay: 00:03:29			
STAGE TOTAL: Completed In 00:07:26 / Expected: 5 Minutes / Delay: 00:02:26			

Status

In Preparation

Complete

Change Status

2-2-4. Recipe

This node is connected to the [recipe](#) tools of LabCollector.

Recipes, reagents, and supplies including lots must be defined/exist to use this option.

A predefined recipe may be inserted as a stage of the workflow.

2

Note that recipes must be defined within LabCollector by an admin level user ([Admin > Data > Manage Recipes](#)).

The screenshot displays the configuration interface for a 'Recipe' stage in a workflow. On the left, a flowchart shows the stage's position: 'Start' leads to '2. Cells line' and '3. Antibodies', which both feed into 'Stage 1', which then leads to 'Recipe' and finally 'End'. The 'Recipe' node is highlighted with a red box. On the right, the configuration panel includes sections for 'Stage Info', 'Assign Team', 'Barcodes', 'Stage Fields (Strains & Cells)', and 'Stage Fields (Antibodies)'. Red circles 1 through 6 are overlaid on the interface to indicate key configuration options: 1. Stage name, 2. Start Delay, 3. Recipe selection, 4. Team selection, 5. Barcodes display option, and 6. Stage Fields (Strains & Cells) and Stage Fields (Antibodies) sections.

The options available include:

1. Naming the stage.
2. A delay to start the recipe stage is possible (select an integer value for minutes, hours, days, months).
3. Selecting a recipe.
4. Assigning a team. You can also request the assignment of an operator (e.g. the person who performed the benchwork). If the box is not checked, the operator is optional.
5. Displaying barcodes.
6. If the recipe stage is linked to a module or a stage as above, you can select fields from this module to fill in during the recipe stage.

7. Selecting a deviation module to record details for a deviation or discrepancy.
8. Requiring validation. For more information, please read [section 3-1](#). Only available with GxP mode.

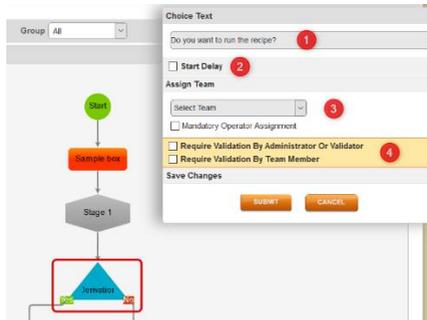
Use	Components	Quantity	Lot	Validity	Quantity
<input type="checkbox"/>	Urea 98%	12.6 g	58238-open	△, 2018-04-05	987.40 g
<input checked="" type="checkbox"/>	Solution 40% acrylamide/bis 37.5:1	15 mL	Out Of Stock		
<input type="checkbox"/>	Tris(acetic acid)EDTA 50X	2 mL	5987 aliquot	2019-06-12	10.00 mL
<input type="checkbox"/>	Deionised Formamide	12 mL	58748-open	△, 2017-03-28	488.00 mL

 If you attempt to create a workflow with the recipe node, but no recipes are defined the workflow cannot be completed.

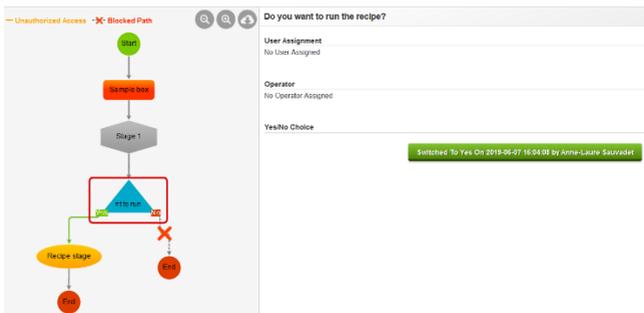
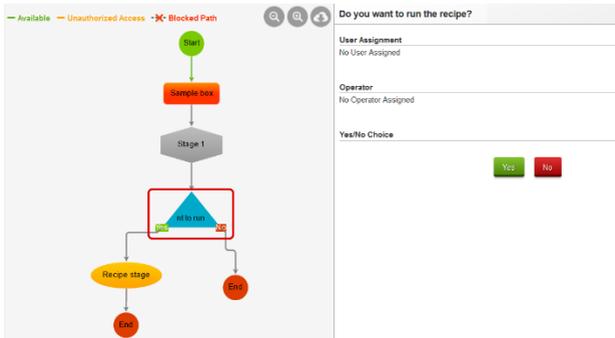
After clicking the **USE** button, the view is altered to show what was used in the recipe. A record may be created or updated as indicated by the recipe and a report will be created. The information about the recipe will also appear in the workflow report.

2-2-5. Derivation node

Derivative (Yes/No) selection allows you to choose one of two possible paths along a workflow.



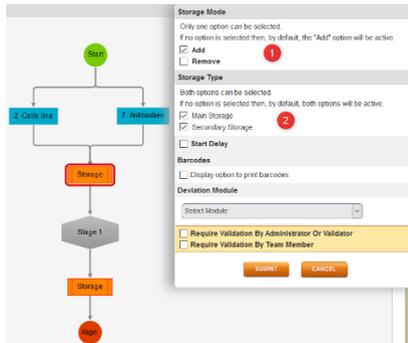
The question/decision may be written. The selected path becomes available, while the non-selected path is blocked. The selection will be given a date and time stamp. The Derivative node can accept multiple incoming connections and must have at least two outgoing connections, one for 'yes' and one for 'no'. A specific team or user can be assigned and an admin can be required to validate this node.



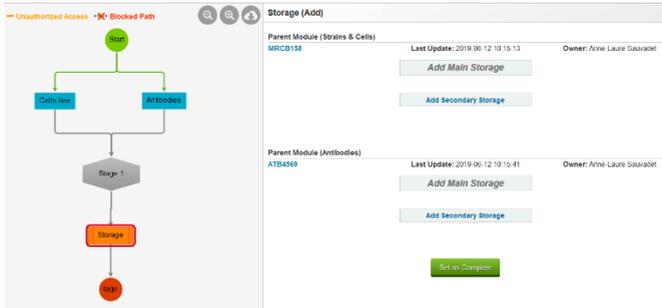
2-2-6. Storage

Following a module node (or a stage link to a module node), this node allows you to add or remove main and secondary storage.

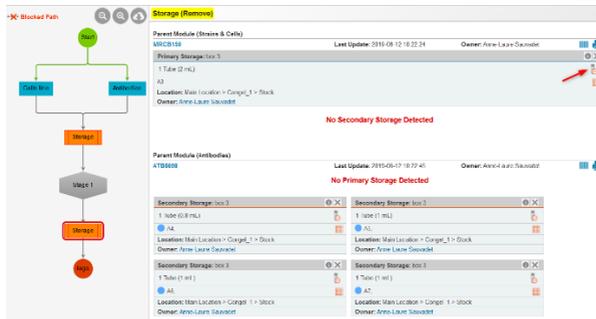
In the template, choose between the option Add or Remove (1), and the storage type (both can be selected) (2). Validation can be required so that storage choices can be reviewed.



If you select ADD, during the workflow, you will be able to add tubes/straws to one or multiple samples/records, depending on your workflow. Just click on “Add main storage” or “Add secondary storage” buttons.



If you select Remove, as in a module with storage, the icon  will appear to remove volume or tube.



2-2-7. Link

Link is a node that allows a connection to any URL. For example, it could be the LSM or ELN of LabCollector. The node takes a title, the URL, and instructions.

Some tags can be used to replace them with values such as workflow name, record ID, module ID... You also have an option to open this URL in a new tab of the browser or a popup.



Some example of links:

- **Link to LSM add-on**

The primary URL is [https://\[YOUR_URL\]/extra_modules/lsmremote/addfromlab.php](https://[YOUR_URL]/extra_modules/lsmremote/addfromlab.php)

This URL will open the LSMremote.

Some options can be applied like below:

[https://\[YOUR_URL\]/extra_modules/lsmremote/addfromlc.php?jobNumber=##WF_NAME##&sampleName=##WF_NAME##-DNA&testIDs=1&testReadOnly=true](https://[YOUR_URL]/extra_modules/lsmremote/addfromlc.php?jobNumber=##WF_NAME##&sampleName=##WF_NAME##-DNA&testIDs=1&testReadOnly=true)

jobNumber=##WF_NAME## will add the workflow name as the job number/name in LSM.

sampleName=##WF_NAME##-DNA will add the workflow name as the sample name and the suffix -DNA.

testIDs=1 will automatically select the test ID=1 in the LMM remote.

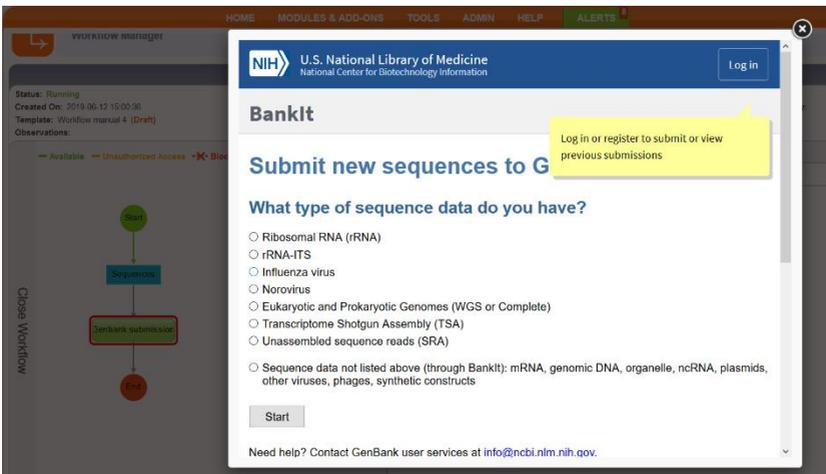
testReadOnly=true will block the selection of tests other than the one automatically selected.

- **Link to Tube Sorter add-on**

Please read [this KB](#) to have all the URLs relative to action in Tube Sorter

- **Link to outside URL**

For example, <https://www.ncbi.nlm.nih.gov/WebSub/> to submit a new sequence to GenBank during your workflow.



- **Link to a folder to open a file**

For example, [https://\[YOUR_URL\]/UserFiles/index.html](https://[YOUR_URL]/UserFiles/index.html) will open the file name "index.html" in the UserFiles folder.

At least one execution is necessary to complete the node. A confirmation is required to execute the link. Multiple executions can be done but a message will alert the user.



Link can be re-executed after completion if a reason is given.

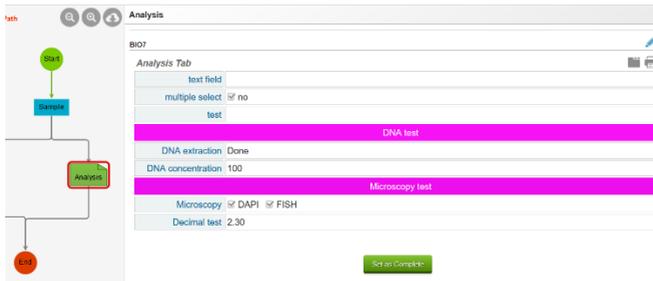
Note: **Actions taken there are not recorded by the Workflow module.** The only action in the workflow as executing link and completion is recorded in the workflow report and audit trail.

2-2-8. Analysis

Analysis is available to access and edit fields within the analysis tab. This node must come directly after a Module node. There will be a form to edit the fields in the analysis tab. The fields cannot be pre-selected in the template.

The node takes a title, delay option, barcodes, instructions, deviation and validation options.

This node only functions properly if the connected module has an analysis tab.

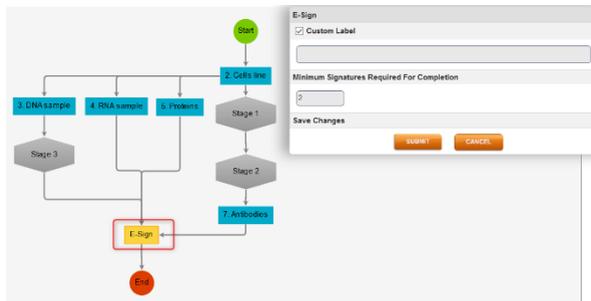


2-2-9. E-Sign

This node is only available if you have the [compliance pack](#) active in modules.

This node allows you to lock and sign all the records included in a workflow.

You can choose the minimum number of signatures required and rename the node as you need.

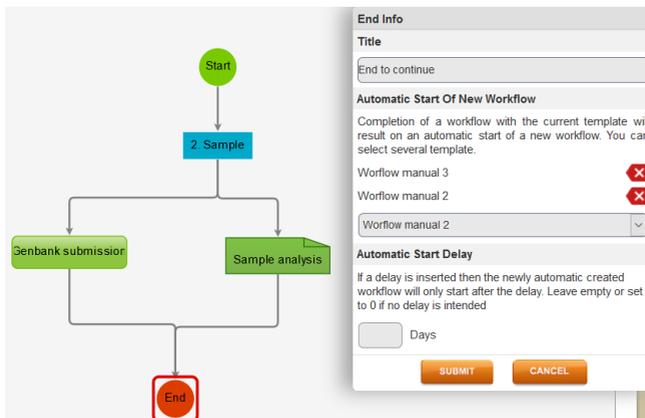


As in LabCollector, a reason needs to be given to validate the signature. For the first person that reaches the sign node, all the records will be signed at the same time. In the example below, at least two signatures are required to validate the node.

If the user already signed a record, the icon next to the record will be . A second user will have this icon for each record of the workflow to be signed by them.

2-2-10. End

The **End** node concludes a workflow. A path must exist from the start to an end node for completion. There may be multiple paths to get to an end node. Multiple end nodes may also be used.



The end node has multiple options. The default choice is for reaching the end node to indicate that the workflow is complete. Options may be selected where reaching the end node will allow the automatic start of another predefined workflow – one of which choices could be itself (i.e. a loop). This automatic start can be done after a delay. For more information on the linked template, please see section 2-3.

This screenshot shows the 'Automatic Start Of New Workflow' configuration panel. It features a title bar and a text box that reads 'Select the template that will be used to create the new Workflow:'. Below this text box are two radio button options: 'Workflow manual 3' and 'Workflow manual 2'. A green 'Select' button is positioned at the bottom center of the panel.

In GxP mode, master templates can also be created. For more details, please see section 3-2.

2-3. Link templates

When you need to connect templates to each other to reproduce your workflow exactly, you can use the [END node](#) to start a workflow after the initial one is done. As shown above, you can choose one or multiple templates to connect and a popup will open to choose the one corresponding to your needs. In the template library, such kind templates can be recognized with active links under “Outgoing linked templates” and “Incoming linked templates”.

27. Workflow manual 5
 Anne-Laure Sauvadet
 Set Default Drag
Outgoing Linked Templates: [Workflow manual 3](#), [Workflow manual 2](#)

26. Workflow manual 4
 Anne-Laure Sauvadet
 Set Default Drag
Outgoing Linked Templates: [Workflow manual 3](#), [Workflow manual 2](#)

25. Workflow manual 3
 Anne-Laure Sauvadet
 Set Default Drag
Incoming Linked Templates: [Workflow manual 4](#), [Workflow manual 5](#)

2-4. Template library

2-4-1. Template library options

ID	Name	Status	Used	Validated By	Validated On	Updates	Updated By	Updated On	Docs	Options
27	Workflow manual 5	Draft	2 times			1	Anne-Laure Sauvadet	2019-05-17 11:23:16	0	Details Edit Config Archive
26	Workflow manual 4	Active	3 times	Anne-Laure Sauvadet	2019-05-17 14:39:27	6	Anne-Laure Sauvadet	2019-05-12 15:52:23	0	Details View Config Derive Archive
25	Workflow manual 3	Archived	10 times			13	Marine Sauvadet	2019-05-17 11:52:21		Archived By: Anne-Laure Sauvadet Archived On: 2019-05-17 14:39:35 Details Restore

All the templates will be listed here. A unique ID (on the left) is generated for each template.

The **status** options are Active, Drafts, and Archived. Saved draft templates can be opened and modified, and saved to create new templates or archived using the choices under Options. However, once a template is validated it can no longer be edited (View config. only). Validated templates are only possible with the GxP mode (see section 3-). Archived and validated templates show the user who did the action with a date time stamp.

The left side shows the template name, user, validation status, who created the workflow template and option to make this the default selection.

The double arrow icon  allows clicking and dragging to rearrange the order of the templates in the list.

The icon  lists incoming and outgoing linked templates. This only appears if such links exist (see section 2-3).

Used information provides the number of times the template has been used to **start** a job.

The options available for each template (depending on their status) are:

Updated On	Docs	Options			
9-06-17 11:23:16	0	Details	Edit	Config	Archive

Updated On	Docs	Options			
9-06-12 16:52:23	0	Details	View Config	Derive	Archive

Archived By	Archived On	Docs	Options	
Anne-Laure Sauvadet	2019-06-17 14:39:35	0	Details	Restore

- **Docs** show the number of linked documents from the Documents module. This is a clickable link to edit the documents linked to the workflow. For more details see section 2-4-3.
- **Details** provides a view of the workflow along with some information about the workflow template.
- **Edit** allows you to load a saved template for editing and modifying. For drafts only.
- **Config** brings up a window that allows several configuration options to be applied to the entire workflow. See section 2-4-2 for normal mode and section 3-3 for GxP mode.

- **View Config** brings up a window in read-only mode to see the configuration option of a validated template.
- **Derive** allows the creation of a derivative template based on the validated template.
- **Archive** sends the workflow to the archive.
- **Restore** allows you to restore an archived template.

Additional information about each workflow is also displayed. Some of the information is a dynamic link to the content. There is also a search bar based on the template name.

2-4-2. Configuration option (Normal mode)

Workflow manual 5

Status: In Use Used: 2 times
 Created By: 7 Created On: 2019-06-17 11:21:51
 Group Permissions: All

Validate User

Requires User Authentication On Completing Nodes

Record's Name

No Repeat
 Repeat Workflow's Name in Record's Name field (First Node Only)
 Repeat Workflow's Name in Record's Name field (All Nodes)

Project Code

No Repeat
 Repeat Workflow's Project Code in Record's Project Code field (First Node Only)
 Repeat Workflow's Project Code in Record's Project Code field (All Nodes)

SAVE

The configuration options allow you to control the naming of records and the use of project codes (see section 4-3) during a workflow. Template wide options for validation can also be set. At each node, the user will be asked for password validation on the **Set as Complete** button.

 All changes will only become effective if you select save in the bottom right. Clicking the X in the top right will not save any changes.

2-4-3. Documents management

Each module in the workflow template can be linked to the LabCollector Documents module for documents/protocols associations. You can also associate a document with the whole workflow. To associate documents to a specific workflow, you have to click on the number below **Docs** as shown below.

2

23. Workflow manual	Status	Used	Updates	Updated By	Updated On	Docs	Options			
Anne-Laure Sauvadet Set Default Drag	Draft	15 times	12	Anne-Laure Sauvadet	2019-06-20 11:59:54	3	Details	Edit	Config	Archive

Click on specific nodes or on “General” if you want to make the document available for the entire workflow (1). Documents can be filtered by categories or searched by name (2).

Once the document is selected, you have to click on the icon to add it (3). A document can be removed by clicking on the icon (4). Multiple documents may be added to any stage within a template.

When you start your workflow, documents are accessible in each node in the *Documentation* section or in the general bar if you choose to link your document to the entire workflow (see below).

3- GXP MODE

3-1. Validation option

The Validation option is available in the Stage node, Box/Plate, Derivation node, Recipe stage, Storage and Analysis node.

Validation can be done with the user password or a specific password at the end of the node.

The first screenshot shows the following configuration:

- Require Validation By Administrator Or Validator
- Require Validation By Team Member
- Use Password
 - Use Labcollector Login Password
 - Use Specific Password

The second screenshot shows the following configuration:

- Require Validation By Administrator Or Validator
- Require Validation By Team Member
- Team Selection
 - Team 1
- Use Password
 - Use Labcollector Login Password
 - Use Specific Password

Validation can be required by an administrator or a validator (see section [Teams](#)) and/or by a team member. A validation popup will appear to allow an administrator or the person required to validate without the user having to log out. The person who completes the stage/node cannot validate.



Validation option allows three different actions:

1. Validation requires the admin/validator to simply approve the stage. The status is permanently set to complete.
2. Review. The stage may be re-opened and a reason has to be given for this. After this comment and modifications are made, the validator can validate to continue or reject to terminate the job.

Team Administrator Requested More Quality Control
(Team: Team 1)

Requested On 2019-06-17 11:30:48 by Anne-Laure Sauvadet

Final validation requires the reason for stage review

3. Rejection. The reviewer can reject the node. In this case, the whole workflow is terminated, the job status is changed and the workflow cannot be continued.

A single user for the stage can also be required for the Stage node, recipe stage, and analysis node.

Stage

First edition by Marine Sauvadet On 2019-06-17 11:43:03 (Only Marine Sauvadet is allowed to edit this stage)

Instructions

[Instructions section in STAGE node](#)

Stage 1

An administrator can switch the unique user using this icon .

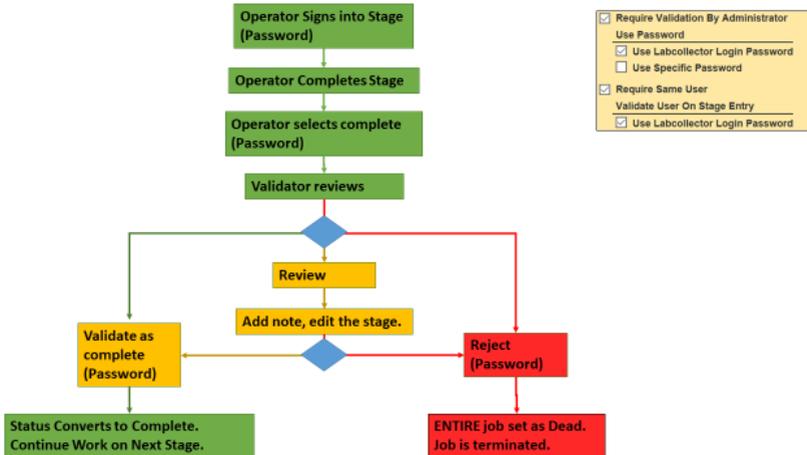
Switch Unique User (Current User: Marine Sauvadet)
Stage 1

Warning:
After the switch only the selected user will be allowed to edit this stage.
Proceed only if you're sure.

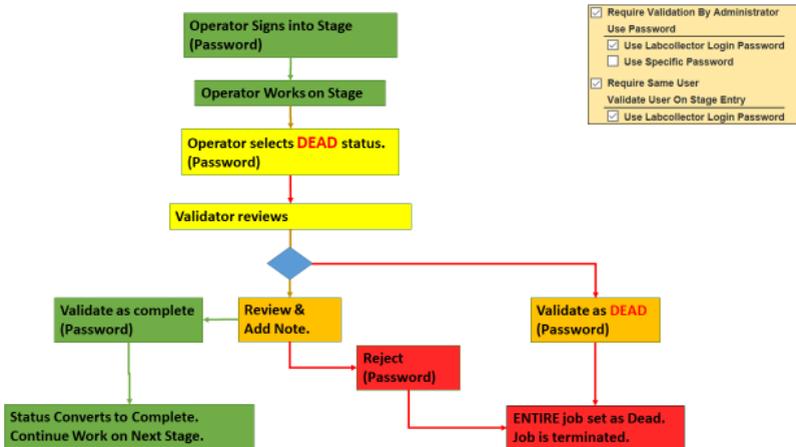
Select New User:
Anne-Laure Sauvadet

Confirm

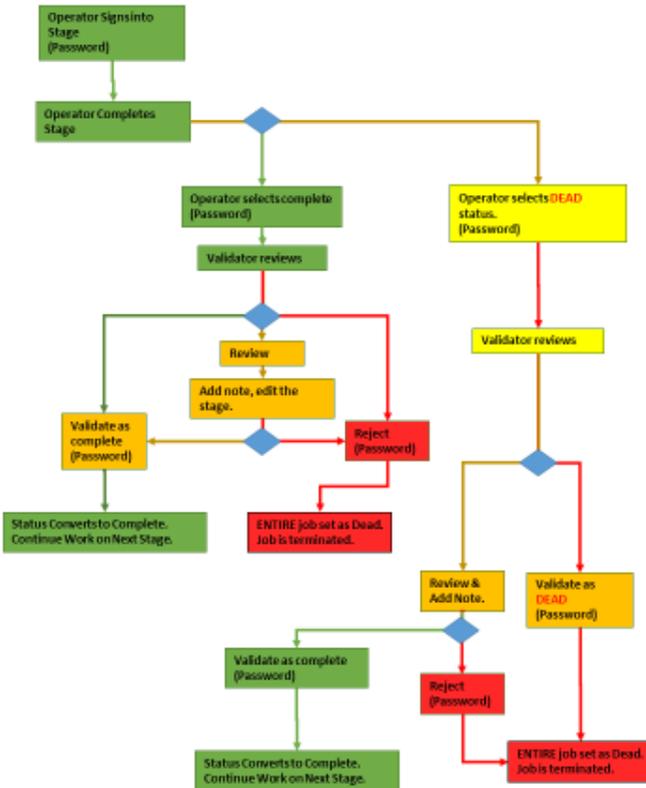
Below are flowcharts showing the maximum validation requirements for a node in a workflow. These show the logic for initial completion by the operator, initial rejection by the operator, and the combined scheme.



1. Validation scheme when an operator completes a stage intending to either continue work or as the completion of the workflow.



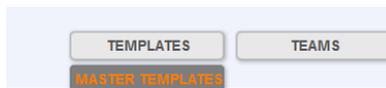
2. Validation scheme when an operator sets a status as dead. If there are no validation choices selected the user has the power to convert the entire workflow status to dead without any review.



3. Validation scheme showing all potential choices when the maximum requirement for validations is selected.

3-2. Master template

The same logic of linked templates is applied here but with a more powerful tool. To create a master template, go to the menu **MASTER TEMPLATES** then **Add Master Template**.



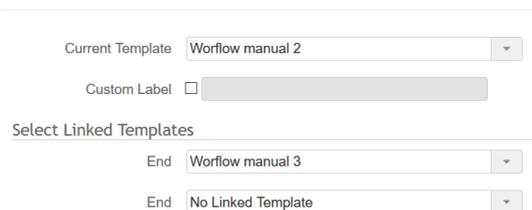
 All the templates need to be ready before the creation of a master template.



Master template creation requires:

1. A name.
2. Double click on the yellow button to select the first template. Once the template is selected, the magnifying glass allows you to see the template.
3. In the template info form, select the current template in the list.
4. You can give a custom label that will be available in the report, and in the homepage list or while in operator mode.
5. Once the template is selected, the END nodes will be automatically detected and you can select another template as above or terminate a branch or the master template.

Template Info



6. Save the template info form and continue until you draft your master template.
7. Add the new master template or save the modification.

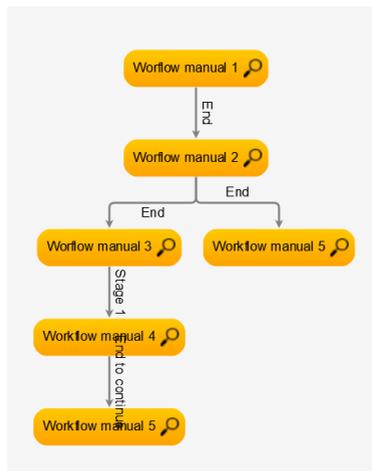
Add Master Template

Master template manual		Status	Used	Updated By	Updated On	Options		
	Anne-Laure Sauvadet	Draft	Never	Anne-Laure Sauvadet	2019-06-18 15:48:52	Edit	Derive	Delete
		Drag						

3

The Master template can be modified, derived and deleted. If all the templates constituting a master template are validated, you can also validate the master template. Then, only derivation and deletion of the master template are possible.

Below, an example of a Master template.



When you design a Master template, by default, the Start Workflow form will suggest a Master template list. See section 4-3 for more details.

3-3. Configuration options

After the creation of a template, you can access the configuration options based on naming, validation, and start.

workflow manual 6

Status: In Use **Used:** 1 time

Created By: 7 **Created On:** 2019-06-19 15:00:27

Group Permissions: All

Validate User

Requires User Authentication On Completing Nodes

Automatic Naming

Assign Unique Random ID as Name

Unique ID Size (Minimum: 5 | Maximum: 20 | Default: 12)

Unique ID Affix

Automatic Start

No Automatic Start

Automatic Start (Create New Record With Workflow's Name)

Automatic Start (Select Existing Record From Workflow Name)

Lock Records Created/Selected By Automatic Start

Block Duplicate Records (Automatic Start With New Record Creation Only)

Ignore Affix Value (Automatic Start With Record Selection Only)

Warning: Use caution when using automatic start with automatic linked workflows (selected in the END stage of the workflow). Automatic linked workflows can also set to completed the first workflow module stage!

Record's Name

No Repeat

Repeat Workflow's Name in Record's Name field (First Node Only)

Repeat Workflow's Name in Record's Name field (All Nodes)

- **Validate User:** The user must sign off on any module or stage. This is unchecked by default.
- **Automatic naming.** The name of the workflow job will be a unique ID. You can define the size and add an affix value (prefix/suffix).
- **Automatic start**

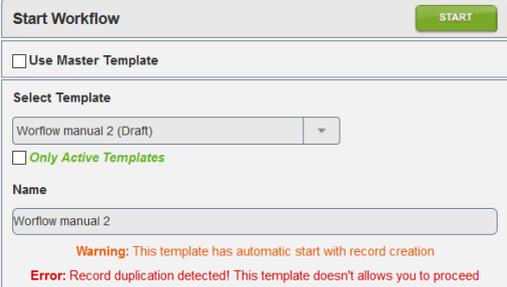
No Automatic Start: Default choice. No effect on record creation or naming.

Automatic Start (create new record with workflow's name): For all module nodes connected directly to the start node, starting a job with the template creates a new record using the name of the WF job. If one module node is directly linked to the start node, one new record will be created each time the template is used.

Automatic Start (select Existing Record from workflow name): For all module nodes connected directly to the start node, the start may only occur if there is a record with the exact same name as the workflow name.

Lock Records Created by Automatic Start: When selected, this option locks the fields of the record from being edited outside of the workflow add-on. This is indicated in the module by the icon . This will also remove icons allowing manual modification and archiving. Storage details of a locked record may still be edited. Automatic information updating the record such as alerts and storage location changes will still occur.

Block duplicate records. Only with automatic start with new record creation. If you already used the same workflow name, the start popup will not allow you to start with the same name.



Start Workflow START

Use Master Template

Select Template

Workflow manual 2 (Draft) ▾

Only Active Templates

Name

Workflow manual 2

Warning: This template has automatic start with record creation

Error: Record duplication detected! This template doesn't allow you to proceed

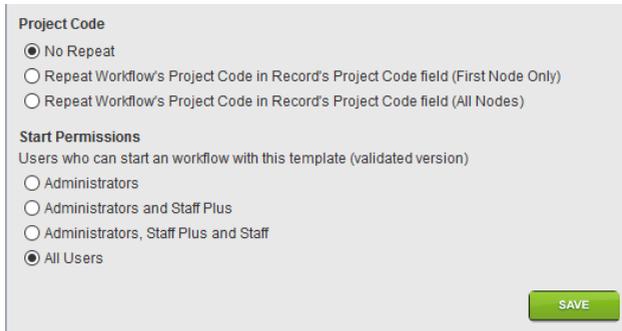
Ignore Affix value. Only with automatic start with record selection. All the records with the same workflow name will be selected, ignoring the same affix value.

- **Record's name**

No Repeat: Naming of records is not affected by this choice.

Repeat Workflow's Name in Records Name field (First Node Only): The workflow name will be suggested as part of the record name when records are created in the first node.

Repeat Workflow's Name in Records Name field (All Nodes): The workflow name will be suggested as part of the record name when records are created.



The screenshot shows a configuration form with two sections: 'Project Code' and 'Start Permissions'. The 'Project Code' section has three radio button options: 'No Repeat' (selected), 'Repeat Workflow's Project Code in Record's Project Code field (First Node Only)', and 'Repeat Workflow's Project Code in Record's Project Code field (All Nodes)'. The 'Start Permissions' section has a sub-header 'Users who can start an workflow with this template (validated version)' and four radio button options: 'Administrators', 'Administrators and Staff Plus', 'Administrators, Staff Plus and Staff', and 'All Users' (selected). A green 'SAVE' button is located at the bottom right of the form.

- **Project code**

No Repeat: The project code of records is not affected by this choice.

Repeat Workflow's Project Code in Record's Project Code field (First Node Only): If the workflow has a project code defined on starting, this will be applied to the records created that are directly connected to the start node.

Repeat Workflow's Project Code in Records Project Code field (All Nodes): If the workflow has a project code defined on starting, this will be applied to all records created as part of the workflow.

- **Start permissions.** Choose which level permission associated with users can start a **VALIDATED** workflow. By default, all users can start a validated workflow.

Note: All users can start a drafted template. Drafted master templates can only be started by the super-administrator, administrators and staff +.

4- WORKFLOWS/JOBS

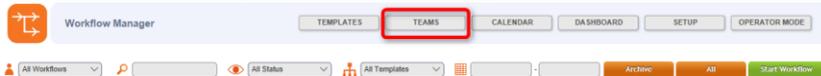
This chapter explains how to execute an existing Workflow/Job after a template has been made. Due to the freedom to create nearly any type of template, not all possible scenarios can be covered in this manual. For additional information, contact [AgileBio](#).

4

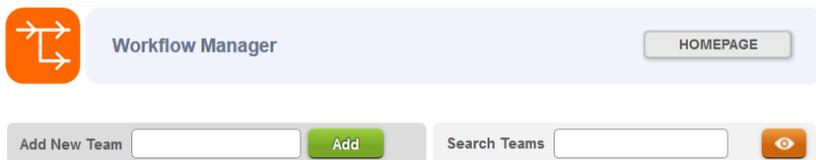
4-1. Teams

Teams can be created to allow assignment of workflow steps or entire workflows to a group of users rather than a single person. A single user may be placed on zero, one or multiple teams. A team may have one or multiple users. Teams may also have the ability to validate workflows (section Validation option). Note that admin and super-admin level users automatically have the ability to validate workflows.

To add a new team, navigate to teams by selecting the Teams button.



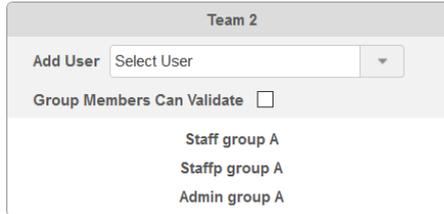
Then name the team and click the green add button.



A new team will be created with the name. There will be no users in the team upon creation.



To add users, type or select a user in the list. The box will act as both a dropdown menu and autocomplete to select a LabCollector user account. If you attempt to enter the name of a person that does not exist within LabCollector, the person will not be added to the team.



The screenshot shows a card titled "Team 2". At the top, there is a header bar with the title. Below the header, there is a section for adding users, labeled "Add User", which contains a text input field with the placeholder "Select User" and a dropdown arrow. Below this is a checkbox labeled "Group Members Can Validate". Underneath the checkbox, there is a list of user suggestions: "Staff group A", "Staffp group A", and "Admin group A".

To remove a user from the team, click on the name to be removed. Hovering the mouse will also present helper text on the actions for clicking.



The screenshot shows a card titled "Demo Team". At the top, there is a header bar with the title and two action buttons: "Deactivate" and "Delete". Below the header, there is a section for adding users, labeled "Add User", which contains a text input field and a dropdown arrow. Below this, there is a list of team members: "james" and "Françoise".

Click the name of the team to provide the options to **Deactivate** or **Delete** the team. There are some restrictions on deleting a team. If the team has been used, it may only be deactivated. Selecting **Deactivate** will remove the team from the list of available teams to assign to a workflow.

If you have a workflow template in use that requires a team that is deactivated, the assignments will be empty. Take care when deactivating a team to avoid a lack of assignment on existing templates.

Clicking the box "Group Members Can Validate" will allow the members of the team to validate workflows. In many situations, it is useful to create a specific team for validations. By default, users with admin level access may validate workflows. If you do not want a workflow validator to have admin-level permission in the rest of LabCollector they can have this permission by being assigned to a team with validation privileges.

4-2. Homepage

In the Workflow Manager Add-on, job status and progress can be monitored. If users validate each step of the workflow by clicking on the **Set as complete** icon, they can have a quick view of their job advancement summarized on the homepage. The view and options adapt to the individual user permissions.

Job Name	Master Template	Template	Status	Progress	Current Step	Next Step	Start Date
Master template manual_1	Master template manual	(Draft) Workflow manual_1	Running	0%	Cell the (Module)	DNA sample (Module) RNA sample (Module) Protein (Module) Stage 1 (Stage)	2019-06-19
workflow_manual_3	(Draft) Workflow manual_3	(Draft) Workflow manual_3	Running	33%	Storage (Energy)	Stage 1 (Stage)	2019-06-19
Workflow manual_2	(Draft) Workflow manual_2	(Draft) Workflow manual_2	Running	20%	Stage 1 (Stage)	Do you want to run the recipe? (Yes, No)	2019-06-19
Workflow manual_9	(Draft) Workflow manual_9	(Draft) Workflow manual_9	Running	11%	DNA sample (Module) RNA sample (Module) Protein (Module) Stage 1 (Stage)	Stage 3 (Stage) E-Sign (Sign) Stage 2 (Stage)	2019-06-18
Workflow manual_5_3	(Draft) Workflow manual_5_3	(Draft) Workflow manual_5_3	Complete	100%			2019-06-17
Workflow manual_3_0	(Draft) Workflow manual_3_0	(Draft) Workflow manual_3_0	Terminated	50%	Stage 1 (Stage)	Storage (Storage)	2019-06-17
Workflow manual_5_2	(Draft) Workflow manual_5_2	(Draft) Workflow manual_5_2	Blocked	20%	Stage 1 (Stage)	Do you want to run the recipe? (Yes, No)	2019-06-17

4-2-1. Icons

For each job, on the home page, you have several possible actions via the buttons on the right:



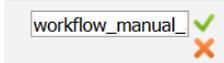
Enter a job or view details to continue work on the job.



View Gantt chart (see section 5-2)



Change the workflow's name. Not available to lower-level users.



Delete a workflow. **Only possible when a job is at 0% progress without any records created or added.**



Archive a workflow. **Only possible when a job has 100% COMPLETE status or TERMINATED status.**



Workflow Report. Available to admin level users. Generates a report on the workflow, listing information about the template used, as well as specific information from each node within the template. For more details, see section 5-3.

4-2-2. Filter

The list can be filtered by user, template, date and by making a search on the name.



1. By default, only active workflows are listed. You can choose to see only the archived workflow or all the workflow jobs.
2. **Module**. If you search for a record in a specific module, the list will be filtered according to this record name found in jobs.
3. **Lot number**. If you scan a lot number, all the jobs containing the product with this lot number will be filtered.
4. **User**. Searches based on the assigned user. By default, all workflows are listed. “My workflow” can be selected to quickly list your workflow(s).
5. General search on Job **Name**.
6. **Status**. Filter based on status - complete, running, blocked, terminated. By default, all the statuses are listed.
7. **Master template**. Filter based on the master template.
8. **Template**. Filter based on a template.
9. **Start date**. Filter based on start date.
10. Single tab lists and details all the templates, even the one in a master template. The master tab lists all the master templates.



To remove a filter, don't forget to use the **CLEAR** orange button.

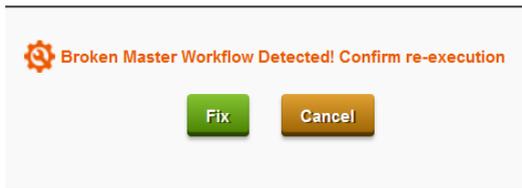
4-2-3. Status

As soon as a job is started, a status is applied. The different status types are:

- **Running** (blue icon), when a template is just started, in progress or in preparation
- **Complete** (green icon), when a template is 100% finished
- **Blocked** (red icon), when a template has been blocked during validation on a module node level, or a blocked or pending status is selected during a stage. This status can be changed.
- **Terminated** (grey icon), when a template has been permanently blocked during validation on a module node level, or the status terminated is selected during a stage.
- **Unstarted** (uncolored icon), when a template will start after a delay (see section [2-2-10](#)).

- Broken master template.** If something happens during the progression of the master template, an automatic tool allows you to recover the master template.

Job Name	Master Template	Template	Status	Progress
Master template manual_1		(Draft) Workflow manual 2	Running	0%
Master template manual_1	Master template manual	(Draft) Workflow manual 1	Complete 	100%
workflow_manual_3		(Draft) Workflow manual 3	Running	33%



 The status of "Terminated" and "Complete" cannot be changed once set.

The screenshot shows a workflow configuration page for "stage 1". On the left is a flowchart with nodes: Start (green circle), Sample (blue rectangle), stage 1 (grey hexagon, highlighted with a red box), and Job W (orange circle). The main panel shows details for "stage 1":

- User Assignment: No User Assigned
- Operator: No Operator Assigned
- Module: Samples (932 BT-932) | Last Update: 2019-09-19 15:00:54 | Owner: Anne-Laure Sauvadet
- Status: In Preparation (highlighted in green)
- Buttons: Complete, Change Status

Status can be changed during the completion of the job/template at different levels.

At the stage level, a **Complete** button allows the user to quickly complete a stage. If you need more options, the **Change Status** button allows access to a select list to choose the status of your choice.

Stage Status

Status

In Preparation ▾

In Preparation

Pending

In Progress

Completed

Blocked

To Repeat

Terminated

At the module level, in section Validations, you can add comments and change the status of the template.

Antibodies

Module Records
No Records +

Date & User Assignment
No Date & User Assigned 👤📅

Observations
No Observations 📝

Validations
No Validations +

Set as Complete

The first form will allow you to choose between a status of OK or Blocked.

Workflow manual_4 >> Antibodies

Title

Description

Initial Status

Ok ▾

Ok

Blocked

SAVE

If the template is blocked, another validation action is needed to change the status: the template can be OK, Blocked or be Permanently Blocked (Terminated).

Validations
Issue with ATB

Last Update: 2019-06-19 15:27:14

Status: **Blocked (Needs Correction)**

Set as Complete



Workflow manual_4 >> Antibodies

Title
Issue with ATB

Description

Status

Blocked

Ok

Blocked

Permanently Blocked

SAVE

4-3. Start new jobs

To start a new workflow, navigate to the LabCollector Workflows add-on homepage. Click on the **Start Workflow** button on the top of the homepage.

Lower level users have restricted access to only start a job using a validated template (see section 3-3 for GxP mode). Admin level users may start templates that are in draft mode prior to validation. Note that archived templates will not be available to any user to start a job.

1. If you have a master template designed, by default the start form will suggest starting a master template. Untick the box to access individual templates.
2. Select the appropriate template (a view of the selected template will appear).
3. If you only want to have a list with the active templates, tick the box.
4. Then name the workflow and enter additional information (These options can be expanded by clicking on “Enable Options”) such as:
5. Header information in the electronic batch record: Product name, batch number and batch size.

6. Start and end date. The start and end date are required to create a Gantt chart associated with the workflow job. These charts are automatically created.
7. Project code. Associate a project code listed in LabCollector to your Workflow.
8. Observations. The observations will appear in the header of the workflow.

Some of this information can also be updated or filled in while the workflow is in progress.

Depending on the configuration, warnings may appear if the name of the workflow could create a conflict by having a duplicate job or duplicate record. In some cases starting a job with an invalid name is blocked. Observe error messages to take corrective action. The corrective action in some cases may require updating a template or other actions requiring admin permissions.

To start this new workflow, click on the **START** button. After clicking the start, the workflow/job will be added to the list on the homepage.

4-4. Adding records and information

In the Workflow Manager, job steps are linked to LabCollector data modules for record storage and modification. There are two modes for adding records and information. The first described here is the main method. There is also an operator mode designed to show only the exact information needed to complete any particular step of the workflow (for more details, please read section 5-4).

To access a job first click on the icon  on the line for your job. From there you can add records either automatically or manually, depending on how the template was designed. A Job has the same header for each node of the template. You can retrieve the template name (original one and label if you use the Master template), status, progression, general documentation (see section 2-4-3), observations (that can be edited using the icon ). Using this form, you can also change the job name.

Master template manual 2

Template Label: Workflow manual 1

Status: Running

Created On: 2019-06-20 09:47:51

Observations: General observations

Documentation: R001

Progress: 0%

Created By: Anne-Laure Sauvadet

Template: Workflow manual (Draft)

Start: 2019-06-20 09:47:51

Last Update:

Master Template: Master template manual

End:

Updated By:

Master template manual 2

Name

End

Observations

General observations

SAVE

4-4-1. Module node

— Available — Unauthorized Access

-X- Blocked Path

Close Workflow

Strains & Cells

Documentation

Extraction DNA CHEMECO
 FastRNA extraction

Module Records +

No Records

Date & User Assignment

No Date & User Assigned

Observations

No Observations

Validations +

No Validations

Deviation Records +

Set as Complete

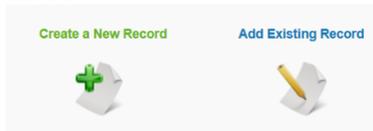
V4.42 - 47

On a module node you will have multiple options besides the one allowing you to link records to the job:

- **Documentation**. If documents have been linked to the module node, you will be able to consult them. For more details, read section 2-4-3).
- **Assign user** . with this function, you can assign a defined LabCollector user to a specific step. If a team is assigned during the template creation, the user has to be part of this team.
- **Set execution time** . To define the start/end dates associated with a module node. These are assigned dates – not actual dates for starting/ending. Some rules prevent assigning nonsensical dates.
- **Add observation**. This observation is applied to this specific module. Use the icon  to the right of observations to create one.
- **Add validation** . To add a validation step before moving to the next stage. NOTE: This validation is distinct from validation options chosen during template design.
- **Add derivation** . To add a derivation record before moving to the next stage. Only available if a module to record the derivation has been chosen during the template creation.

To add a record, a few steps need to be followed:

1. Click on the icon .



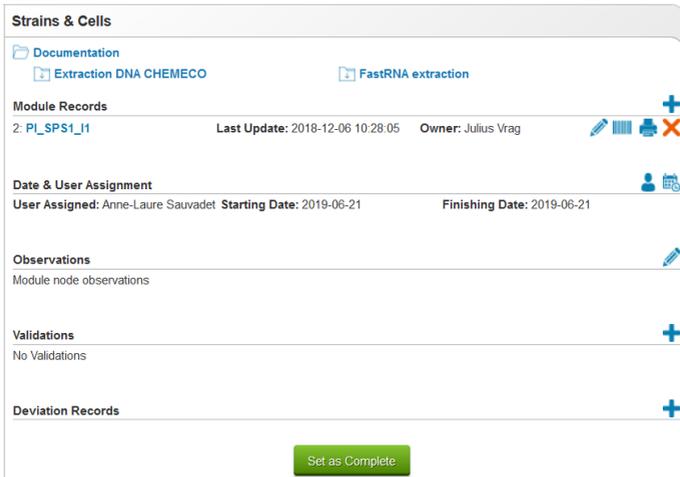
2. A new popup appears. Here you can choose to create a new record or to add an existing record. You can add multiple records including a mix of new and existing records. This choice may not be available depending on selections for record creation/selection in the configuration of the template (e.g. **Automatic start**).

Strains & Cells	
Select the desired record <input type="text"/>	
2	PL_SPS1_I1 Last Update: 2018-12-06 10:28:05 
3	PL_SPS1_I2 Last Update: 2018-12-06 13:23:31 
4	PL_SPS1_I3b Last Update: 2016-09-19 15:36:17 
5	PL_SPS1_I4 Last Update: 2015-12-09 09:29:22 

If you add an existing record a popup with a list of records and a search bar will appear. After searching for the desired record, select it by clicking .

Once the module record(s) is/are added, you can edit them by using the  icon. Editing is done in a new window within the workflow. New information must be saved as usual when updating records. Barcodes can be generated/printed using the icons:  and  if the option has been checked during template creation. If a record is added by mistake, it may be removed with the red cross.

4



Strains & Cells

Documentation

- Extraction DNA CHEMECO
- FastRNA extraction

Module Records

2: PI_SPS1_H Last Update: 2018-12-06 10:28:05 Owner: Julius Vrag

Date & User Assignment

User Assigned: Anne-Laure Sauvadet Starting Date: 2019-06-21 Finishing Date: 2019-06-21

Observations

Module node observations

Validations

No Validations

Deviation Records

Set as Complete

If you want to create a new record, the process is the same as in LabCollector (see LabCollector Manual for full details). In brief, a window appears allowing you to input all of the desired information about the record.

 If any fields are mandatory, they must be completed at this time. You must click on the SAVE icon to complete the action of adding the new record to the workflow.

The ability to add new or existing records may be unavailable with some automatic record creation options.

Master template manual 2 >> Strains & Cells

Insert the desired number of automatic records and the prefix / suffix for each module

Module	Number	Type	Prefix / Suffix	Increment Separator	Additional Info
Samples:	<input type="text" value="1"/>	Prefix	<input type="text" value="DNA-"/>	<input type="text" value="-"/>	Sample Type: DNA Contact:
Samples:	<input type="text" value="1"/>	Suffix	<input type="text" value="-RNA"/>	<input type="text" value="-"/>	Sample Type: Filtration Contact:
Samples:	<input type="text" value="1"/>	New Name	<input type="text" value="PROT"/>	<input type="text" value="-"/>	Sample Type: Filtration Contact:

If the **Automatic records** option has been selected, then the workflow users will automatically have LabCollector records made in the corresponding modules. **Automatic records creation will be effective after module record adding and workflow node validation.** In the example below, three samples will be created with an affix or a new name. This form is predefined during template creation but values can be modified during the job.

Steps/nodes must be validated in order. To continue from one node to the next with the possibility to validate subsequent steps, you must click on the **Set as Complete** button in the status section.

When a record is used in a workflow it will have a tab on the left side of the record to allow quick cross-referencing with the workflow. Basic information about the workflow job is presented as well as a link directing to the template in the workflow add-on.

39 BIO7 5699 Biofilm Marine Sauv...

Workflows:

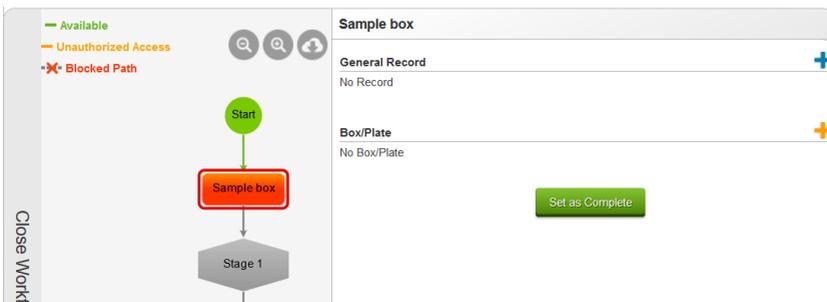
Job Name	Status	Progress	Start Date	End Date
Workflow manual 4_2	Running	33%	2019-06-12 15:23:10	
Workflow manual 5_2	Complete	100%	2019-06-17 11:30:17	

4-4-2. Box/Plate

Box/Plate node will allow you to link all the records from one or multiple plates to a workflow job and create a general record. The general record will be linked to the box /plate record and the box/plate record will be linked to the samples from the box selected.

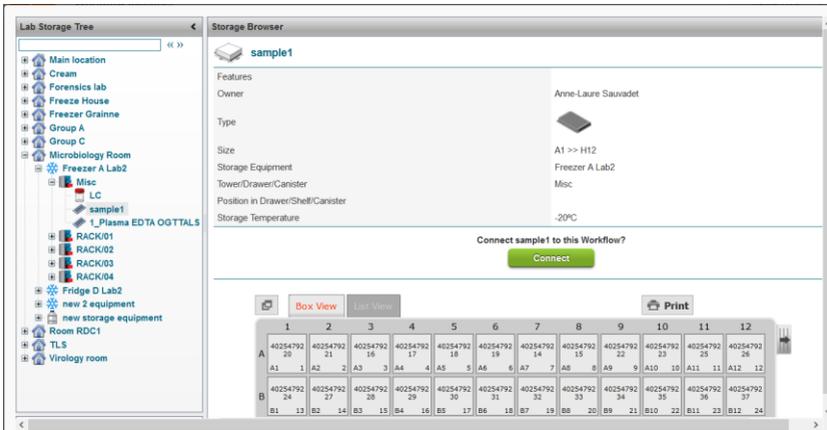
To add a General Record, use the icon  and proceed as for the module node (see above).

To add a box or a plate from the storage browser, use the icon .



The screenshot displays the LabCollector interface. On the left, a workflow diagram shows a 'Start' node (green circle) connected to a 'Sample box' node (red rectangle), which is then connected to a 'Stage 1' node (grey hexagon). A legend indicates: green line for 'Available', orange line for 'Unauthorized Access', and red line with an 'X' for 'Blocked Path'. A 'Close Workfl...' button is visible on the left side of the diagram. On the right, a 'Sample box' popup window is open. It has a title bar with search and refresh icons. Below the title bar, there are two sections: 'General Record' with a blue plus icon and 'Box/Plate' with an orange plus icon. Both sections currently show 'No Record' and 'No Box/Plate' respectively. A green 'Set as Complete' button is located at the bottom of the popup.

A popup opens to allow you to choose the box or plate. The storage browser as in the menu Tools of LabCollector allows you to search for the box by name and search in the tree on the left panel. Once selected, the box is visible in the right panel and you can **connect** it to the workflow.



One or multiple boxes can be connected to the same workflow and for each one, a box record can be created or selected using the **+** icon on the same line. Records in the box can be listed or the box can be drawn.

Sample box

General Record

15: [General record 1](#) Last Update: 2019-06-20 10:23:41 Owner:

sample1 Boite de lame FISH_2

sample1

Box Record 939: **BR-939**

Features
Owner Anne-Laure Sauvadet
Type
Size A1 >> H12
Storage Equipment Freezer A Lab2
Tower/Drawer/Canister Misc
Position in Drawer/Shelf/Canister
Storage Temperature -20°C

Box View **List View**

	1	2	3	4	5	6	7	8	9	10	11	12
A	40254792 20	40254792 21	40254792 16	40254792 17	40254792 18	40254792 19	40254792 14	40254792 15	40254792 22	40254792 23	40254792 25	40254792 26
B	40254792 24	40254792 27	40254792 28	40254792 29	40254792 30	40254792 31	40254792 32	40254792 33	40254792 34	40254792 35	40254792 36	40254792 37
B1	13	B2 14	B3 15	B4 16	B5 17	B6 18	B7 19	B8 20	B9 21	B10 22	B11 23	B12 24

Once all the boxes and records are created don't forget to complete the node.

If a stage follows the box/plate node, all the records will be linked to the stage, general and box records. Fields can also appear if the template is configured for that and will be based on the general record module.

4

A link through the Tube sorter add-on can be done at this step using the icon . A popup will ask you to select which box you want to open in Tube Sorter add-on and then the Tube Sorter function will be available.

Select Box

select_all

sample1

Boite de lame FISH_2

[Tube Sorter](#)

+	ID	Tube Code	Name	Rack / Tray	Position Volume	Box
<input checked="" type="checkbox"/>	1	673	4025479220	4025479220	sample1	A1
<input checked="" type="checkbox"/>	2	682	4025479223	4025479223	sample1	A10
<input checked="" type="checkbox"/>	3	683	4025479225	4025479225	sample1	A11
<input checked="" type="checkbox"/>	4	684	4025479226	4025479226	sample1	A12
<input checked="" type="checkbox"/>	5	674	4025479221	4025479221	sample1	A2
<input checked="" type="checkbox"/>	6	675	4025479216	4025479216	sample1	A3
<input checked="" type="checkbox"/>	7	676	4025479217	4025479217	sample1	A4
<input checked="" type="checkbox"/>	8	677	4025479218	4025479218	sample1	A5
<input checked="" type="checkbox"/>	9	678	4025479219	4025479219	sample1	A6
<input checked="" type="checkbox"/>	10	679	4025479214	4025479214	sample1	A7
<input checked="" type="checkbox"/>	11	680	4025479215	4025479215	sample1	A8
<input checked="" type="checkbox"/>	12	681	4025479222	4025479222	sample1	A9
<input checked="" type="checkbox"/>	13	685	4025479224	4025479224	sample1	B1

 CREATE Pick/Work List from selected: [Generate Worklist](#)
 CLEAN selected items from memory: [CLEAN](#)

For more information on the Tube Sorter add-on, please read the [manual](#).

4-4-3. Stage node

When a workflow is in progress the stage node works as follows.

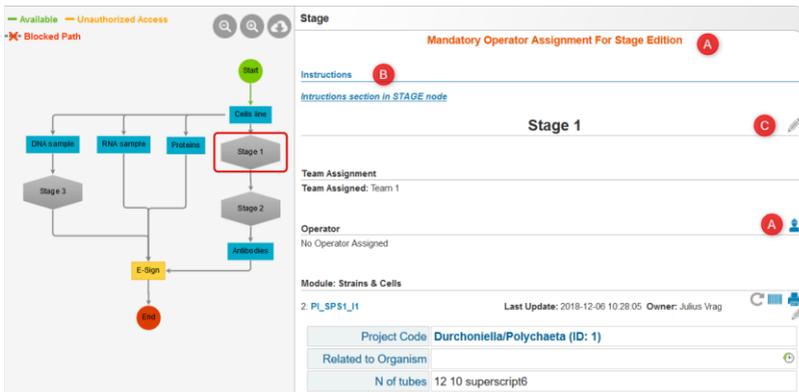
Documents associated with the stage appear at the top of the node-specific section.

4

If a mandatory option has been applied for the operator assignment, the stage will stay blocked until the operator has been chosen  (A).

If the instructions section has been populated during template creation, Instructions will appear on the top of the stage panel (B).

Observations specific to the stage node may be made by clicking the blue pencil icon  on the right of the stage name (C). Clicking will allow you to write a text for both the comments and results section.



The screenshot displays a workflow diagram on the left and a detailed 'Stage' panel on the right. The workflow diagram includes nodes for 'DNA sample', 'RNA sample', 'Process', 'Stage 1', 'Stage 2', 'Stage 3', 'E-sign', and 'Tube Sorter'. A red box highlights 'Stage 1' in the diagram. The 'Stage' panel for 'Stage 1' shows a 'Mandatory Operator Assignment For Stage Edition' (A), an 'Instructions' section (B) with the text 'Instructions section in STAGE node', and a 'Team Assignment' section with 'Team Assigned: Team 1'. The 'Operator' section shows 'No Operator Assigned' (A) with a person icon. Below this, the 'Module' is 'Strains & Cells', 'Project Code' is 'Durchoniella/Polychaeta (ID: 1)', and 'Related to Organism' is 'N of tubes 12 10 superscript6'. The 'Last Update' is '2018-12-06 10:28:05' and the 'Owner' is 'Julius Vrag'.

If fields have been selected in the general stage (not in a step, see below), they will appear as below (D). To edit a field press the icon , to print the barcode use  or . A data value can be updated using the icon , notably for calculated fields. If the versioning is activated in LabCollector, the icon  gives access to the versioning.

Note: If you select some data during the template creation, stage forms will be available to fill out, but only if the record has been created or added at a previous

module node. If multiple records were created or added you must select the record to update. The green save button must be used to save the changes to the record.

Stage

Instructions B

Instructions section in STAGE node

Stage 1 C

Team Assignment
Team Assigned: Team 1

Operator A

Operator Assigned: Marine Sauvadet Assigned On: 2019-06-20 09:55:24 Assigned By: Anne-Laure Sauvadet

Module: Strains & Cells D

2: PL_SPS1_11 Last Update: 2018-12-06 10:28:05 Owner: Julius Vrag

Project Code Durchoniella/Polychaeta (ID: 1)

Related to Organism

N of tubes 12 10 superscript6

Equipments (Electrophoresis & Blotting) (Mandatory Usage) E +

Equipments (Centrifuge) +

If one or multiple categories of equipment have been selected in the general stage (not in a step, see below), they will appear as above (E). To add a piece of equipment for each category press the icon +. A form opens and allows you to choose the equipment. Multiple pieces of equipment per category can be selected. Rules on maintenance are applied here, so all equipment out of service (red), in maintenance (yellow) or out of service (blue) cannot be selected. Select a piece of equipment by clicking +.

Equipment (Electrophoresis & Blotting)

Select the desired record

9	🚧 DCode Universal Mutation Detection System	Next Maintenance: 2019-07-20 (Maintenance Alert)	+
48	🚫 DCode Labo1523	Next Maintenance: 2019-06-20 (Out Of Service)	+
49	DCode labo A789	Next Maintenance: 2019-11-20	+

Once the equipment is selected, you can print his barcode and manage his reservation using the icon +. The scheduler page will automatically open in a popup. The deletion of incorrect equipment can be done as long as the stage is not completed.

Module: Strains & Cells
 2: **PI_SPS1_11** Last Update: 2018-12-06 10:28:05 Owner: Julius Vrag   

Project Code	Durchniella/Polychaeta (ID: 1)
Related to Organism	Durchniella 
N of tubes	12 10 superscript6

Equipments (Electrophoresis & Blotting) (Mandatory Usage) 

49: DCode labo A789	Next Maintenance: Decontamination	Date: 2019-11-20	  
---------------------	-----------------------------------	------------------	---

Equipments (Centrifuge) 

36: Centrifuge R8501	Next Maintenance: Cleaning	Date: 2018-10-13	  
----------------------	----------------------------	------------------	---

At the end of the stage form, if one or multiple categories of products have been selected during template creation, the user will be able to select the right lot relative to the process done in the stage. All the information on the lot will appear and the user has to tick the box "Use" to validate the destocking.

If no quantity is defined during template creation, the user can enter the quantity from 0 (not used) to the initial quantity.

Product	Qty	Units	Lot Details	Validity	Lot Qty	Use
Polyacrylamide 6%/30% denaturation	1	-	2017-03-30_ALS 	2017-03-30	92.00	<input type="checkbox"/>
Sodium deoxycholate	<input type="text"/>	-	Select Lot 			<input type="checkbox"/>

Status
In Preparation

Steps

1.1 Step with fields

Mark as Started Mark as Completed

2: PL_SPS1_J1 (ABC-1)

Project Code **Durchoniella/Polychaeta (ID: 1)**

Organism

1.2 Step with product

Mark as Started Mark as Completed

Product	Qty	Units	Lot Details	Use
Tetramin Flake	2	-	Select Lot	<input type="checkbox"/>
dried bloodworms	<input type="text"/>	-	Select Lot	<input type="checkbox"/>

1.3 Step with equipment

Mark as Started Mark as Completed

Equipment (Chromatography)

1.4 Step with verification

Mark as Started Mark as Verified Mark as Completed

1.5 Step in parallel execution

Mark as Started Mark as Completed

In steps, the same options appear but each step will have internal completion. For each step, there is a tick box for start, completion, and verification (optional). Ticking the box adds a timestamp including the user's name.

A deviation can also be reported using the icon . If the deviation is selected, the step affected will be highlighted in orange. If a module for deviation records was selected, a deviation record must be created before completing the stage. If a deviation module was not selected, the deviation will appear in the record of the workflow. Deviations can also be recorded at the stage level (configuration dependant).

Steps		
1.1 Step with fields		
Started on 2019-06-20 10:03:02 By Anne-Laure Sauvadet		
Completed on 2019-06-20 10:04:02 By Anne-Laure Sauvadet		
Deviation Reported On 2019-06-20 10:03:15 By Anne-Laure Sauvadet		
2: PI_SPS1_J1 (ABC-1)		
Project Code	Durchoniella/Polychaeta (ID: 1)	
Organism	Durchoniella	
1.2 Step with product		
Started on 2019-06-20 10:04:04 By Anne-Laure Sauvadet		
<input type="checkbox"/> Mark as Completed		
Product	Qty Units Lot Details Use	
Tetramin Flake	2 789654	Validity: 2024-06-21 2019-06-20
dried bloodworms	1 326589	Validity: 2021-06-17 Lot Qty: 7.00 <input type="checkbox"/>
1.3 Step with equipment		
<input type="checkbox"/> Mark as Started		
<input type="checkbox"/> Mark as Completed		
Equipment (Chromatography)		
1.4 Step with verification		
<input type="checkbox"/> Mark as Started		
<input type="checkbox"/> Mark as Verified		
<input type="checkbox"/> Mark as Completed		
1.5 Step in parallel execution		
Started on 2019-06-20 10:03:04 By Anne-Laure Sauvadet		
<input type="checkbox"/> Mark as Completed		

Fields, equipment and products work in the same way as at the stage level.

As you see above, parallel execution of steps can be applied. In the example above, step 1.5 can be started at the same time as the other sequential steps.

1.2 Step with product		
Started on 2019-06-20 10:04:04 By Anne-Laure Sauvadet		
Completed on 2019-06-20 10:05:03 By Anne-Laure Sauvadet		
Product	Qty Units Lot Details Use	
Tetramin Flake	2 789654	Validity: 2024-06-21 2019-06-20
dried bloodworms	1 326589	Validity: 2021-06-17 2019-06-20
1.3 Step with equipment		
Started on 2019-06-20 10:05:04 By Anne-Laure Sauvadet		
Completed on 2019-06-20 10:05:17 By Anne-Laure Sauvadet		
Equipment (Chromatography)		
8: AS-AP Autosampler	Next Maintenance: Date:	
1.4 Step with verification		
Started on 2019-06-20 10:05:19 By Anne-Laure Sauvadet		
<input type="checkbox"/> Mark as Verified		
<input type="checkbox"/> Mark as Completed		

The verification option will activate a popup asking for the login and password of user that can verify. The user who entered the information (the user who start) cannot verify.

Verify Step
Step with verification

Allowed Validators: Administrators/Validators + Team Team 1

User

Password (*Labcollector Password*)

Confirm Password

At the end of the stage, the user needs to update the status. A quick **COMPLETE** button is available or you can select one of the statuses described in section 4-2-3. Timestamp and the user will be automatically applied.

As long as the next node is not completed, review is possible for better Quality Control. Administrators can reopen the stage to allow the user to change values in fields or other data. Each review asks for a reason that will be indicated in the report.

Status

Completed

Completed On 2019-06-20 10:08:39 by Anne-Laure Sauvadet

Reopen Stage For Review

Administrator Requested More Quality Control

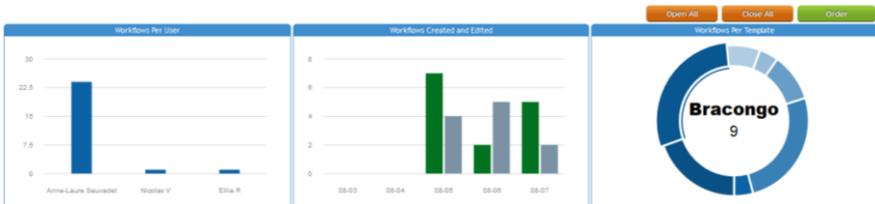
Requested On 2019-06-20 10:07:45 by Anne-Laure Sauvadet

Final validation requires the reason for stage review

5- OTHERS TOOLS

5-1. Dashboard

The Workflow Manager add-on includes a dashboard view giving information on users' activities and the number of workflows per user, project or template. Several views are available and these can be adjusted to the preference of the user.



5

5-2. Gantt chart and calendar

The Workflow Manager add-on includes a Gantt viewer. Clicking on the **View Gantt Chart** icon  to see a Gantt chart of a job. Hovering the mouse over several areas will provide additional information. Clicking in some areas will act as a link to go to additional information.

The Gantt chart can only display information about nodes with defined calendar information.

Task name	Start time	Duration	02 Jun - 08 Jun					09 Jun - 15 Jun					
			Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	
 Virus 2	2014-06-06	5			14%	Virus 2							
<input type="checkbox"/> Animals	2014-06-10	1								Animals			
<input type="checkbox"/> Sequences	2014-06-10	1								Sequences			

A calendar on the homepage is also available to have on the same calendar page all the workflows running. Start and end dates are necessary. The link in the job name opens the individual Gantt chart.

5-3. Electronic batch record

The Workflow Manager add-on includes a report generator. This is automatically made and fills in information based on the specific workflow. These are available as HTML and PDF formats.

Select Report Format
Master template manual 2

Report Scope:

Master Report Associated Workflows

Date Filtered Master Report Associated Workflows

Selected Workflow Only

Format:

PDF

Attach the Workflow Diagram *(Significant Increase In Resource Consumption)*

Attach the Associated Record(s) Content *(Significant Increase In Resource Consumption)*

PDF Format Additional Options:

Include All Associated Files

Include Single Reports For Each Workflow *(Significant Increase In Resource Consumption)*

5

Multiple options are possible either in HTML or PDF.

The report will include all the information and actions generated during the job. including: e.g. Job name, Template, Timestamp created (with user), Timestamp started (with user), Last Update, Completion time... Each node type will include specific information based on the node. Edited records will be included in the report showing the full versioning.

A header can be applied as described in section 4-3.

LabCollector

Lab

ELECTRONIC BATCH RECORD



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Master template manual 2



Product: Product name	Batch Number: 20190620-001	Batch Size: 10g
-----------------------	----------------------------	-----------------

Procedure/Template:	Workflow manual (23)		
Created On:	2019-06-20 09:47:51	Created By:	Anne-Laure Sauvadet
Last Update:	2019-06-20 10:19:40	Updated By:	Anne-Laure Sauvadet
Start Date:	2019-06-20 09:47:51		
First Workflow Stage Completion Date:	2019-06-20 09:54:42	Last Workflow Stage Completion Date:	2019-06-20 10:19:40
Completion Time:	31 minutes 49 seconds		
Observations:	General observations		

NEW! A setup on the homepage menu is available to select the status of the module node in the report. Select the option you want (visible or hidden).



Lab
ELECTRONIC BATCH RECORD



Workflow manual 5_2

Procedure/Template:	Workflow manual 5 <small>(Template ID 27)</small>		
Start Date:	2019-06-17 11:30:17	Completion Time:	1 minutes 29 seconds

Sample Module Node Information	
Module Name:	Samples
Linked Record Name:	BIO7

Genbank submission	
Executed by Anne-Laure Sauvadet On 2019-06-17 11:30:37	
Re-Executed After Completion by Anne-Laure Sauvadet On 2019-06-17 11:32:42 Reason: Re-Execution link Reason	
Completed by Anne-Laure Sauvadet On 2019-06-17 11:30:40	
Validated by Anne-Laure Sauvadet On 2019-06-17 11:31:25	
Review:	Yes
Review Reasons:	review reason

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Lab
ELECTRONIC BATCH RECORD



Workflow manual 5_2

Procedure/Template:	Workflow manual 5 <small>(Template ID 27)</small>		
Start Date:	2019-06-17 11:30:17	Completion Time:	1 minutes 29 seconds

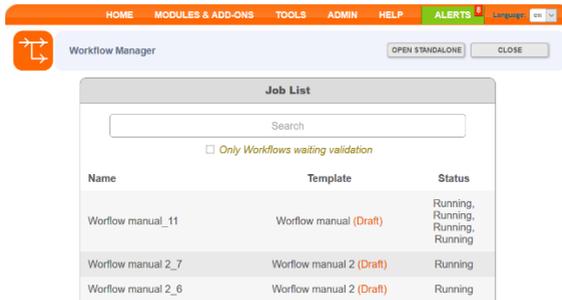
Genbank submission	
Executed by Anne-Laure Sauvadet On 2019-06-17 11:30:37	
Re-Executed After Completion by Anne-Laure Sauvadet On 2019-06-17 11:32:42 Reason: Re-Execution link Reason	
Completed by Anne-Laure Sauvadet On 2019-06-17 11:30:40	
Validated by Anne-Laure Sauvadet On 2019-06-17 11:31:25	
Review:	Yes
Review Reasons:	review reason

5-4. Operator mode

The workflows may be executed in a more restricted view called operator mode or standalone operator mode. The view and screen layouts are designed to provide only the essential information, instruction, and input capability for the exact workflow at hand. Connections to other parts of LabCollector are almost entirely hidden. The operator view will conceal the visual diagram of the workflow template.



Selecting operator mode presents a simplified view.



The job list only provides basic information about jobs. Only jobs specifically available to the user are visible to search and select.

The close button at the top right returns to the Workflows home page. The button Open Standalone removes further extraneous information and options. The user only views the information and options necessary to complete their workflow jobs. Some abilities to view, edit, and print are unavailable within operator mode.

Active Session: Anne-Laure Sauvadet (ALS)

Logout

Job List		
<input type="text" value="Search"/>		
<input type="checkbox"/> Only Workflows waiting validation		
Name	Template	Status
Workflow manual_11	Workflow manual (Draft)	Running, Running, Running, Running
Workflow manual 2_7	Workflow manual 2 (Draft)	Running
Workflow manual 2_6	Workflow manual 2 (Draft)	Running
Master template manual 2	Master template manual >> Workflow manual 3 (Draft)	Running

5

When conducting work in operator mode, the user doesn't see the diagram of the workflow template. For workflows with complex logic, a thorough test and review should be done to ensure operators are presented with appropriate jobs and information. When nodes are meant to be available in parallel and the person working in operator mode has permission and assignment to work on multiple nodes, they have the opportunity to switch to the alternate available node(s). The menu in the top left allows the user to switch to another available part of the workflow.

Also Available:
 Navigate Active Branches

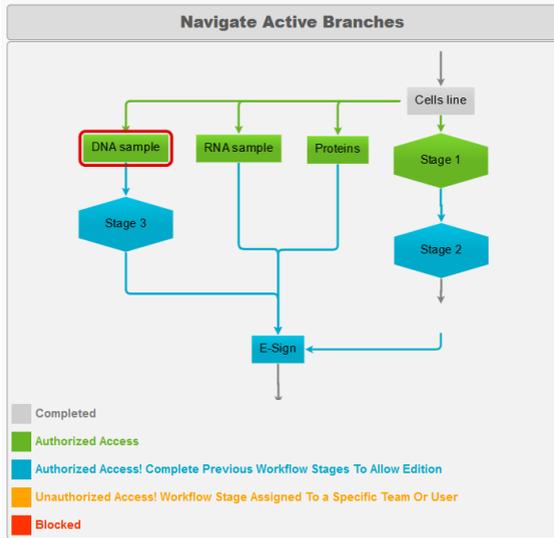
Workflow manual 11
Back

Workflow manual

R001

Samples

A diagram to show the template design can also be viewed. A legend shows which parts of the workflow are complete vs. available using color-coding.



6- UPDATING AND UPGRADING

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

e.g. on a Windows setup:

```
Programs\AgileBio\LabCollector\www\lab\extra_modules\work  
flow
```

As a general suggestion, we always recommend making a backup prior to performing an upgrade or update.

If your instance of LabCollector is cloud-hosted with AgileBio, contact a sales or support representative to perform the update.



<http://www.labcollector.com>

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