

eLabFTW Guide (User)

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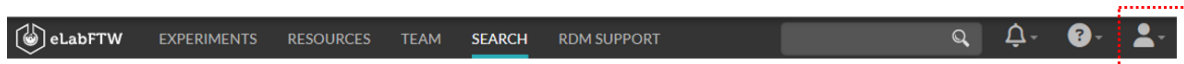
1) Role

“Users” are the main user group in eLabFTW and they can all use the same range of functions that the tool offers. To be a user at all, you have to be assigned to at least one team in eLabFTW. It is therefore possible to be in several teams at the same time, but it is advisable to keep this number as low as possible. As a user in several teams, there are special points to consider.

2) Get Access

You can access eLabFTW via elabftw.uni-graz.at and can log in there using eLabFTW login credentials. To get this login credentials you have to register once directly in the tool and then you will be unlocked. You can access it with any device that has internet access and a web browser. If you register for the first time and do not have an account yet, you will be added to the standard team (**Uni Graz General**). If you want to be added to an existing team, the admin of the desired team can take on this task or the SysAdmin (**Alexander Bardel, alexander.bardel@tugraz.at**). The SysAdmin team will then take over this step. The next time you log in, you will see an overview of the teams you are a member of. You can then select the team and log in.

3) User menu



The icon on the far right of the header deals with the user's personal menu. Here you can see directly in which team you are currently logged in, get access to your tool settings depending on your role and log out of eLabFTW. In addition, there are the following helpful options in the drop-down menu:

1) „Switch Team“

If you are a member of several teams, you can switch directly to another team here. You will then return to a selection window and choose your available teams.

2) Dashboard

This button will take you to an overview of your experiments, resources and next bookings.

3) Templates (Experiments)

Via the button "Templates" you can jump directly to all templates available for you. You can create and edit your templates there. When you create a new template, you will be able to predefine some

areas of an experiment entry, but others are missing. These fields are added as soon as a new entry is created from the template. Please note the “Scope” button, which filters the display and by default only shows your templates. So if you want to see your team's templates, change the setting in the scope button. **It is also possible to transfer the ownership to another user and import already existing template in .eln format into your own collection.** Templates can play an important role when it comes to documenting experiments with a similar structure. This not only saves time but can also be of great advantage for reasons of reproducibility. Laboratory exercises are another use case where templates can be very supportive. In the experiment entries section, you can access a favourite selection of templates using the “Create” button. To do this, you must first pin your preferred template using the pin in the Template section.

4) My Profile

“My Profile” is a very important window for you, as it gives you a complete overview of all the teams you are in and a list of the groups you are also a member of. In addition, you can see who is also present in these groups and always know with whom you share your experiments. You also get statistics about the status of your experiments. In addition, you have further tabs here which give you an overview of all your uploaded attachments and also direct access to the import/export area.

5) ToDo List


The "ToDo" list is a nice feature to leave yourself short notes as a reminder. In addition, you can keep track of open "steps" from experiments and resources entries for yourself or your team. You can also access this via Short Cut (see Settings).

6) Import

If you want to import entries from other teams or other eLabFTW instances, you can do so in this area. Please note that you can only import files of the type .eln and .csv here. The entries will then be assigned to you as the creator.

7) Export

If you would like to export all your entries in the experiments and resources section or the templates in these sections in one go, you should use this option (Figure 1). You can also select the desired format and certain additional options. Depending on the application, you should select the appropriate file type.

 Create export ×

Export source

☒ Experiments ☐ Templates ☐ Resources ☐ Resources categories

Export format

Select a format ELN archive

Options

Include changelog
The PDF files will contain the changelog.

Use PDF/A
For long term archiving. Warning: using this option will make the files much bigger!

Include JSON
Only for ZIP: include a full JSON export for each entry.

Close

Create

Figure 1: Data Export via User menu

Depending on the section in eLabFTW, different export formats are available for one or more entries. This allows you to use your documentation externally or, for example, as additional information for publications or audits. Below you will find an overview of the available export formats and a short description:

Experiment/Resource Export options: Single entry view mode

- | | |
|-------------------------|---|
| • PDF file | Regular PDF format (no attached files) |
| • Long term storage PDF | PDF/A, an ISO-standardized version of the PDF format ¹ |
| • ZIP Archive | Regular ZIP format, entire entry with all files |
| • Long term storage ZIP | Regular ZIP format with PDF/A included ¹ |
| • ELN Archive | Interchange format (JSON-LD) for export/import of datasets ² |
| • CSV file | Regular CSV format |
| • QR codes | QR as .png type for printing |
| • JSON | Information about the entry in JSON format (machine readable) |

Experiment/Resource Export options: Overview mode

- | | |
|----------------|---|
| • ELN Archive | Interchange format (JSON-LD) for export/import of datasets ² |
| • ZIP Archive | Regular ZIP format, entire entry with all files |
| • CSV file | Regular CSV format |
| • PDF file | Regular PDF format (no attached files) |
| • QR codes PDF | Multiple QRs as PDF type for documentation/printing |
| • JSON | Information about the entry in JSON format (machine readable) |

¹ PDF format designed for long term storage and includes changelog, but transparent PNG will appear with a black background. This PDF format is also used for timestamping.

² Designed to promote the The ELN Consortium and allows to exchange one or more entries between eLabFTW instances and users.

8) Settings

The User Panel (Figure 2) is the first and most important place to go to configure how you experience eLabFTW. Especially when logging in for the first time, you should familiarise yourself with this menu before proceeding. This area contains several sub-areas, which are explained below.

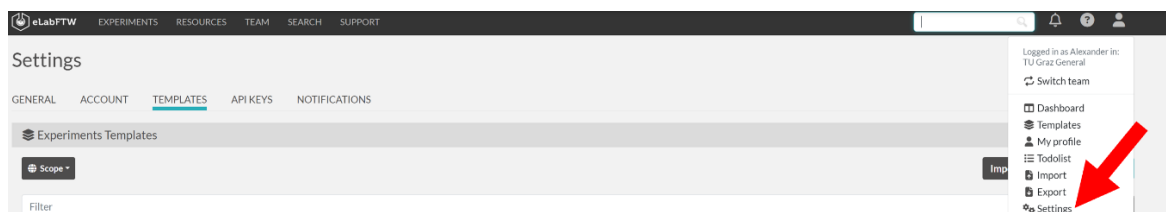


Figure 2: User menu (Settings)

General

In the first tab of the Settings, you can select your preferences for certain aspects of the tool. eLabFTW currently distinguishes between 5 areas:

Preferences: Here you can set the language in which eLabFTW is displayed for you.

Display: You can set how many entries are displayed simultaneously and in what size. You can also switch between lists and table view. The order of the entries displayed can also be changed using various parameters. Which page should be displayed first when logging in (e.g. Dashboard) can be set here.

Keyboard Shortcuts: Five shortcuts are available for free assignment, but can also complete disabled. The "ToDo" list and "Search" are particularly helpful here.

PDF configuration: You can export entries as PDF and there are also some export settings available. Among other things, the format and language-specific fonts in Asian.

Miscellaneous: If you only want to write in Markdown, you can completely deactivate the Rich Text Editor here. **Default settings for viewing/writing rights for your new experiments can also be set. You can also set whether your personal entries should always be displayed, regardless of the team you are currently logged in to. In addition, you can set which team groups (the groups of a team) are available for rights management. You can limit the selection to the current team, or only the groups in which you are a member, or all groups that have been created in the instance.**

Account

In the account area, you can enter your ORCID-ID and select a passphrase to cryptographically sign experiments or resources. **The two-factor authentication can be activated manually by you, but is not mandatory.** First and last name are set directly during registration. If you would like to enter your ORCID ID, you are welcome to do so.

Templates (Experiments)

Templates are a helpful invention to make work easier for yourself and others. You can learn more about templates in a previous section (Templates (Experiments)).

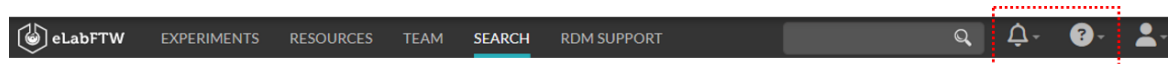
API Keys

Accessing eLabFTW via the browser interface is not the only option. APIs can also be used and one or more API keys must be generated for this purpose. This is also done directly in the Settings. Here you name your key, set whether it should have read-only or read/write rights and generate it directly. **It is then only displayed once for you and you have to save it externally.** The entire documentation on APIs in eLabFTW is also available [here](#) via a link. You can use this key in combination with a Python script and e.g.: add experiments automatically or append attachments.

Notifications

Certain notifications for events in eLabFTW can be set here. This means whether you want to receive these notifications by email or only in the browser or not at all. Depending on your role, different options are available.

4) Notifications and Help



On the right side of the header you will find two more symbols. The **bell** and the **question mark**. The first one shows the overview of your open notifications and the second one shows a variation of links to the open source community of eLabFTW. These are fellow stakeholders outside of University of Graz. An important point is the **"Support"** section, which links to the eLabFTW support page on GitHub. [Here](#) you will find the manuals and FAQ for eLabFTW.

5) Dashboard

The Dashboard is (as default setting) your starting point in eLabFTW. Here you get an overview of your experiments, your resources and which bookings have been made by you in the calendar for the future. You can also create new entries directly from this view. If you prefer to have the experiments or resources as the start page, you can change this via the settings in the User menu. In addition, you can also make a pre-selection of entries in the experiments and resources area using the categories and statuses that have been created by the team admins. By clicking on the category or status in the respective area, only the relevant entries are displayed.

6) Experiments

The central element of eLabFTW is the documentation of all relevant additional information (metadata) on experiments, laboratory exercises and basically all research activities. For this task, the button "Experiments" is available in the header and forwards to the overview of all experiment entries available to you. In addition to this overview, this view also provides you with a "Quick Search" bar, filter options and a sorting function (Figure 3 & Figure 4). These functions are described below:

1. In elabFTW there is no classical folder system, but entries are tagged for easier finding. Nevertheless, in combination with projects, which can be created as entries in the resource section, and the targeted use of tags plus categories and status, you can create a certain structure. Since it will come to an accumulation of certain tags in the use, you can store your favourite tags here. You also have access to your ToDo's here, i.e. all open steps that occur in your entries.
2. If you want to select all entries for further options or expand the editor area of all entries on the overview page, you can do it using these two buttons.
3. Here you can quickly switch between list and table view and use the "Scope" button to decide whether you only want to see your own experiments or those of your team or the entire

instance. eLabFTW also offers the possibility to filter and sort the experiment entries according to a number of different quantities.

4. The "Quick Search" bar searches all elements in the "Experiments" area for the term entered. You do not have to be careful whether it is a tag, full text or heading. If the search term occurs in the content of the entries, the corresponding experiments are displayed.
5. To create a new experiment entry, the "Create" button comes into action. This button is divided into two parts, although it is difficult to recognise. If you click on the right part ("Create"), a window opens and you can decide whether you want to create the default template or an empty experiment. The small arrow on the left side of the button offers the possibility to access the costume templates that have been created or shared and to create an experiment from them, also to import experiments from files.

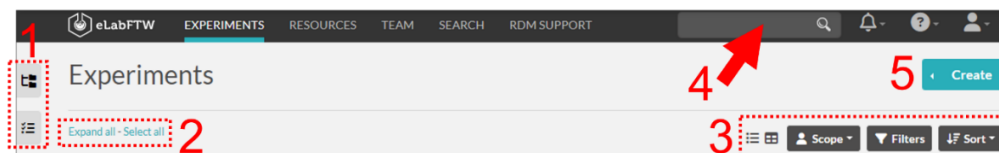


Figure 3: Experiments overview

6. With the filter option you can filter the available entries according to certain parameters. You can filter by the status and owner of the experiments, but also for whom the entries are visible or which group of the team has access to the entries. The number of results can also be limited during filtering and the included tags can be set. If you want to see archived entries, you still have to mark the corresponding checkbox.
7. If you have already selected one or more entries, you can make certain changes to all entries at the same time. This concerns the status, links or the read and write permissions of the entries. Also, the export of several entries is possible. In addition you can also immediately lock, timestamp, archive or even delete entries.

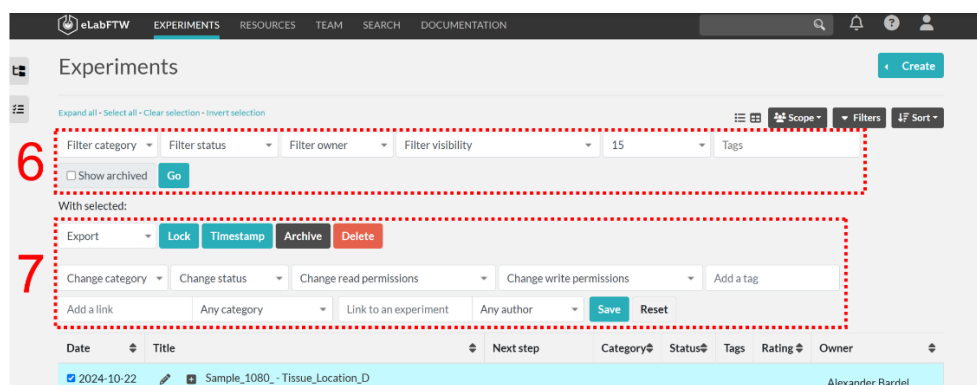


Figure 4: Filter and select Experiments

When you create a new experiment, a new window opens, which may have different contents depending on the templates used. The window has been separated into two figures for this manual and are visible in Figure 5 and Figure 6. The areas that appear in each experiment are explained in the next points:

8. Different icons here give you useful functions for your entry (from left to right):

- **Eye/pen:** Switch between viewing and editing mode
- **Sheets:** Duplicate entry
- **Add signature:** It is possible to 'sign' the current state of an entry. When you perform this action, the entry is cryptographically signed at the time of signing and added to the attachments as an archive file.
- **Timestamping:** Associate certain date and time to a digital document, which are legally valid.
- **Blocks:** Add entry to a blockchain
- **Download the entry:** see Export
- **Pin:** Favourite entry
- **Lock:** lock/open entry for editing (only available by the owner)
- **Enable/disable exclusive edit mode:** eLabFTW is a collaborative tool, however, two or more people cannot edit the same entry at the same time without risking errors. This mode temporarily gives you sole editing rights and prevents possible errors caused by parallel editing.
- **Request action:** You can request a user to perform a specific action on an entry. This is useful if you don't have the option itself or if a policy clearly defines the course of action.
- **Three dots:** Transfer of the ownership status, track changes and archive/unarchive entry.

9. You can set the start date (can be set as desired) and the status of the experiment at the beginning. A category can also be set, but is not necessary as long as the admin has not configured it. You can give your entry any title you wish. Different entries can also have exactly the same title, as each entry is given a unique ID which is automatically assigned and which uniquely identifies the entry. On top of that, a custom ID can also be created. Below that, you assign tags that replace the classic folder structure of known systems. Here you can use meaningful terms that relate to your experiment, e.g. project number, abbreviations, methods, etc. Tags can be predefined and moderated by the admin, but can also be created by the users themselves.

10. It is important to check the read and write permissions of the entry. You have set default settings in your user panel that are automatically assigned here, but can be changed manually. **You can share an entry at different levels at the same time. In relation to the entire instance, several teams, different groups of teams and individual users.**

11. In the rich text editor, you can describe your experiment and also record all the results. You have different formatting options, integration of graphics, tables, links, code and much more.

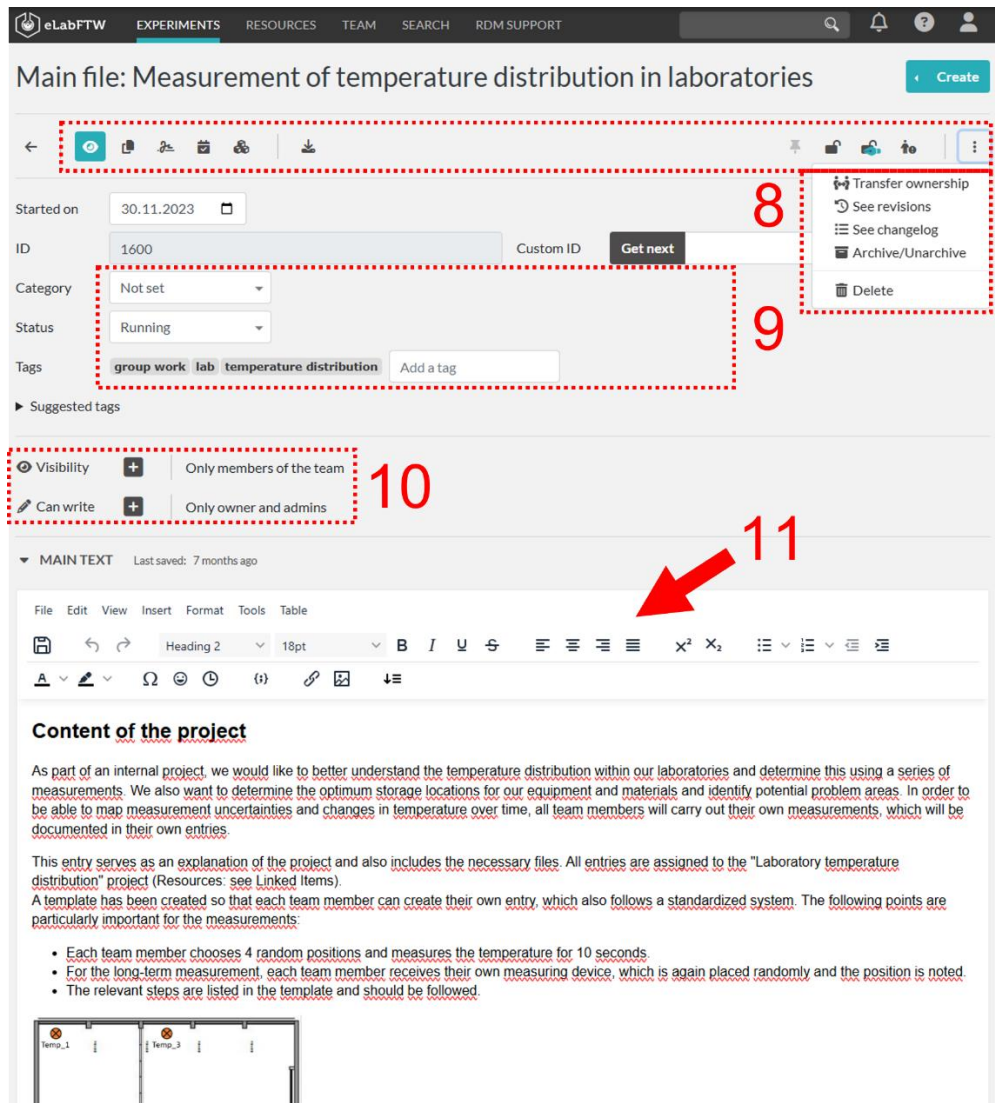


Figure 5: Experiments editor mode (Part 1)

12. Below the rich text editor, you can add interactive metadata fields, which you can organise in several groups and at the same time can have different functions like a dropdown menu or checkboxes. The "Load fields" button allows you to import the metadata fields of an existing entry and use them directly.
13. Experiments go through different steps and you can name these steps here. The advantage here is that you can mark them as done/open and they will show up in your "ToDo" list. **Steps can also be given a deadline and added to the notifications as well as directly as a link in the editor area.**

14. Experiments rarely stand alone or require no tools. You can add existing experiment entries as well as resource entries to your entry and thus create links to quickly get to other relevant entries. This function works in both directions and so the other entries also receive a link.
15. You can add all kinds of files to your entry. Currently there are no known restrictions on the file type, but the size is limited to 100 MB. Graphics of the type .png and .jpeg can also be transferred directly into the rich text editor. You can drag and drop files into the field or click on it and the familiar selection editor opens.
16. There are three editors available that allow you to create additional information in special formats directly in eLabFTW. With the "JSON editor", metadata can be stored as machine-readable information and can also be edited directly in eLabFTW. In the "Draw Something" editor you can easily make sketches and make additions in uploaded .png and .jpg. The "Molecule Editor" allows you to build molecular structures and save them in different formats.

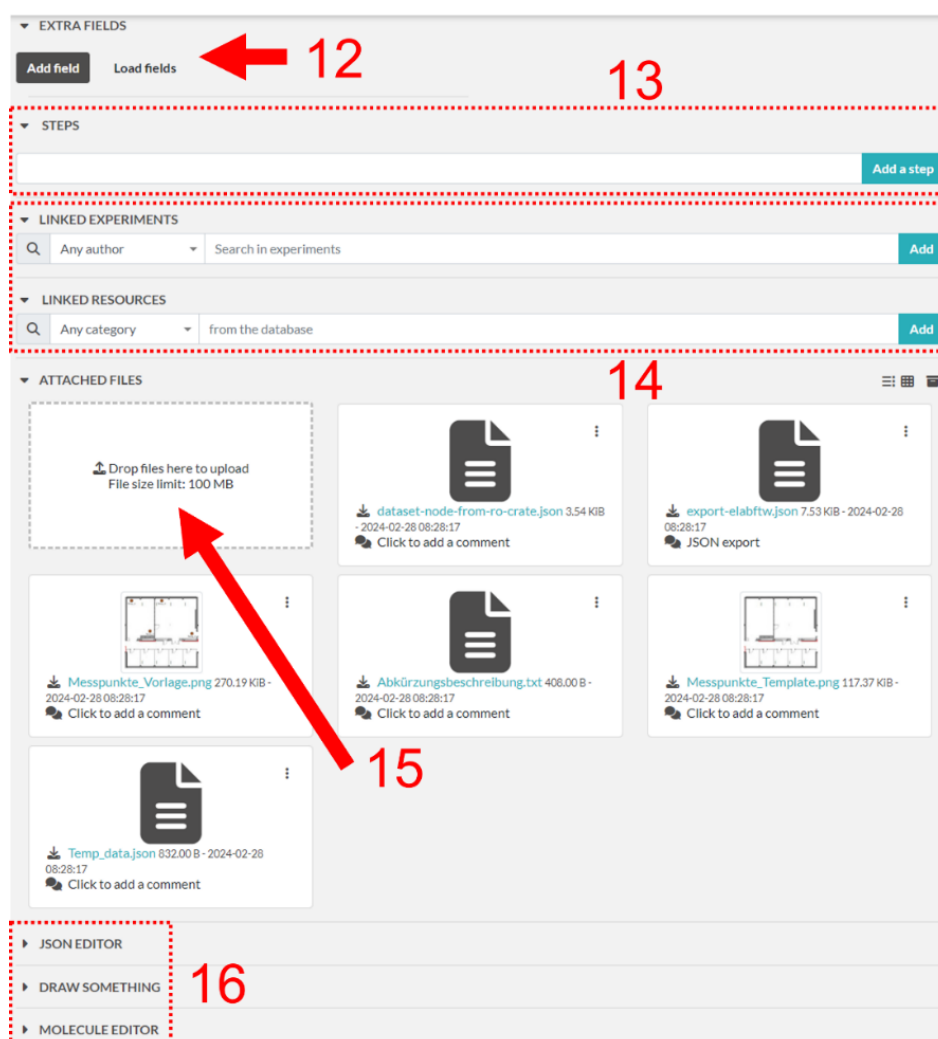


Figure 6: Experiments editor mode (Part 2)

When you are finished with your entry, you can save it at any time and edit it later. In any case, you can switch from the editing mode to the viewing mode and check the entry. For this manual this is again divided into two figures and visible in Figure 7 and Figure 8:

17. This area is almost the same as its counterpart in edit mode, except that exclusive edit mode cannot be activated directly here (see number 8). It is important to note here that the affiliation of the entry to a certain team can be found beneath.
18. The ID that is assigned internally to an entry can be found here. It is the same digit that can be found at the end of the URL of an entry. This ID is not to be mistaken with the eLabFTW UniqueID, which is truly unique and not a running number like this ID.
19. In view mode, the rich text editor corresponds to the main text area. If you open individual entries in the experiment overview, this area is displayed as well. You will also find the creator and the eLabFTW UniqueID of the entry in the lower right corner.
20. All individual metadata fields that you have added are visible in this area and are displayed in groups (if assigned). Changes to the metadata fields can only be made in edit mode. In this mode the fields are not interactive.
21. Here you can see your work steps and check them off or open them again. You will also always be shown how long ago the task was completed.
22. Here you have an overview of all linked elements in the experiments and the resources. You can jump directly to the elements and, in the case of resources entries, also directly to the scheduler.
23. In the overview of all attached documents, you can get different information and make changes depending on the file type. This also includes changing the name, deleting, archiving/unarchiving and a content preview. It is also possible to display the files that have been stored as attachments, or to change the display layout. (Cave: Changes of the attachments will not be saved in the revisions, deleted files are therefore lost.) Below this is the comment line. Here you or your colleagues can leave comments on the entry, practical for feedback or messages.

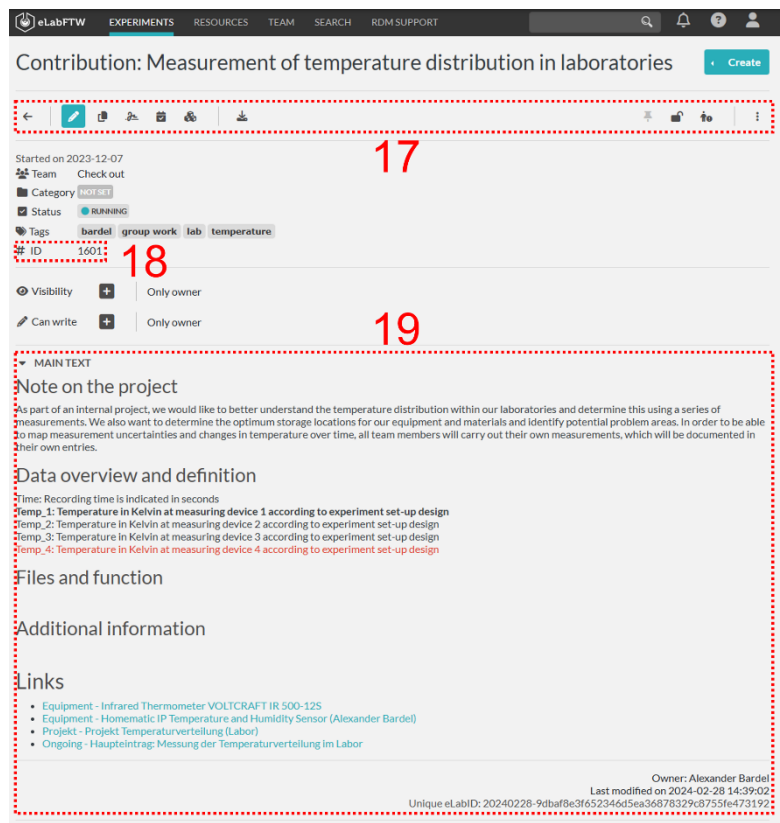


Figure 7: Experiments view mode (Part 1)

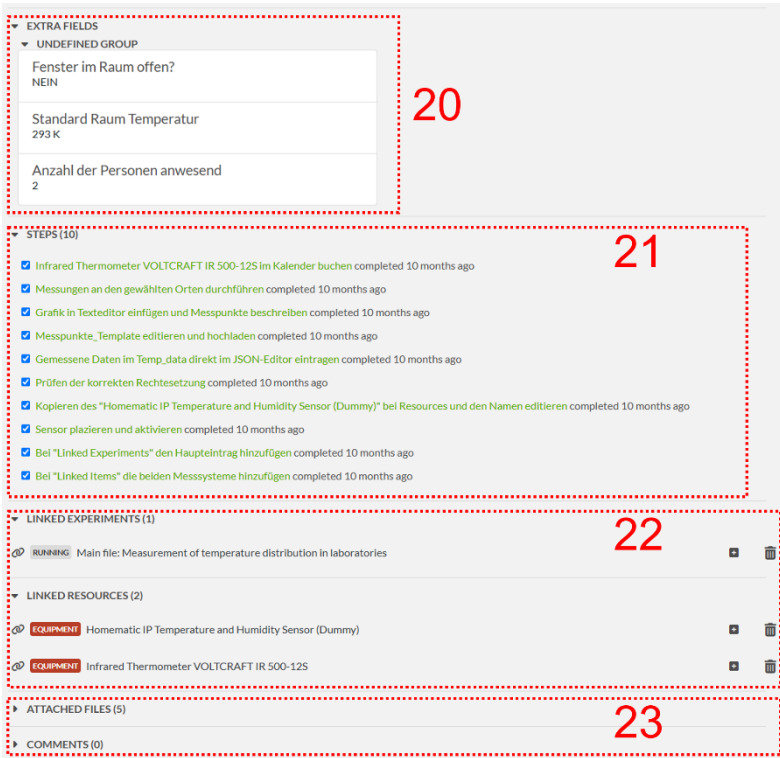


Figure 8: Experiments view mode (Part 2)

7) Resources

The second very important area in eLabFTW can be accessed through the "Resources" button. The entries in this section can be seen as part of project and lab management, i.e. equipment, tasks, lab exercises. An important difference to the experiments is that each element in the "resources" necessarily belongs to a certain category. These categories are also templates for resource entries. The possible categories are defined by the admin of the team. The structure and functionality do not differ substantially from the Experiments overview (see Figure 3 and Figure 4).

Note: For example, you can create a "Project" category that contains all the important information about your research project. Experiments can add this entry to themselves and thus, in addition to the tags, you have the possibility to link experiments and resources elements to your project.

The creation of a resource entry works almost exactly the same way as in the experiments and can also be checked there (Figure 5). Just as with the experiments, it is possible to switch back to the view mode (Figure 7) after editing and check the entry (Figure 9):

1. Different icons here give you useful functions for your entry (from left to right):

- **Eye/pen:** Switch between viewing and editing mode
- **Sheets:** Duplicate entry
- **Calendar:** Jump directly to the scheduler and book the selected item
- **Add signature:** It is possible to 'sign' the current state of an entry. When you perform this action, the entry is cryptographically signed at the time of signing and added to the attachments as an archive file.
- **Timestamping:** Associate certain date and time to a digital document, which are legally valid.
- **Blocks:** Add entry to a blockchain
- **Download the entry:** see Export
- **Pin:** Favorite entry
- **Lock:** lock/open entry for editing (only available by the owner)
- **Request action:** You can request a user to perform a specific action on an entry. This is useful if you don't have the option itself or if a policy clearly defines the course of action.
- **Three dots:** Transfer of the ownership status, track changes and archive/unarchive entry. You can also customise the booking and procurement parameters here.

2. Shows when the entry was created and to which resource category (highlighted in the respective colour) it belongs, as well as the assigned title und the team, in which it was created, can be checked here. An important point compared to the entries in the experiments is the "Can book" option. Here you can additionally set who has the rights to book the

resource in the calendar. Read and write permissions, however, behave identically to the experiments.

3. In the rich text editor (here main text) all options are available as with its counterpart in the experiment entries.
4. Similar to the previous point, here you get an overview of all attached files. You can also add a comment to them directly. Here you have an overview of all linked elements in the experiments and in the resources. You can jump directly to the elements and, in the case of resource entries, also directly to the scheduler. It is also possible to comment on the entire entry. Practical for feedback or messages.
5. Similar to the three points of experiment entries, there are the archiving functions and a changelog. The ownership of a resource entry can be transferred to another user. **A further and important point for the resource management are the options "Modify booking parameters" and "Modify procurement parameters" which will be explained in more detail in Figure 10 and Figure 11.**

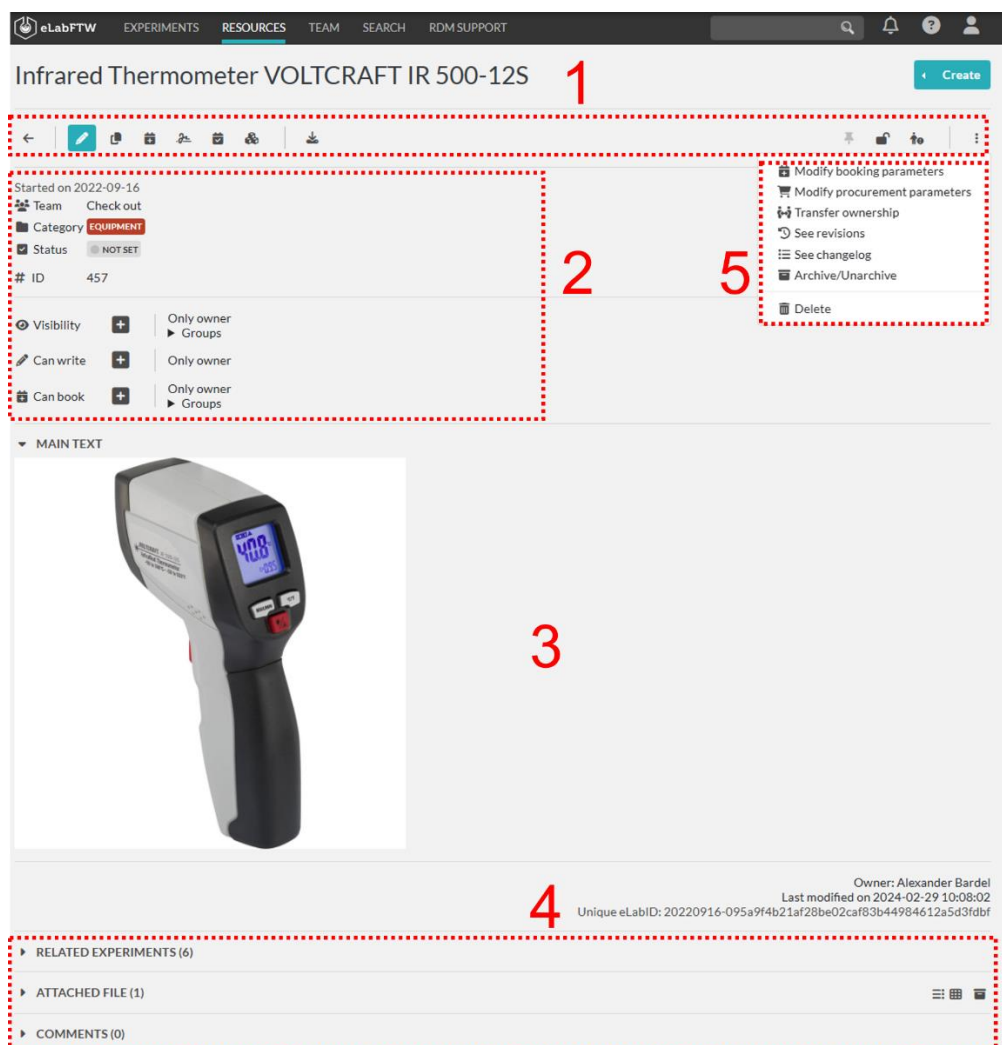


Figure 9: Resources view mode

By clicking on “Modify booking parameters” a pop-up window (Figure 10) opens and the following seven setting options are available:

- 1. Resource is bookable or not
- 2. Bookings of the same resource may overlap or not
- 3. Maximum duration of one booking slot
- 4. Maximum number of bookings per user for the future
- 5. Users can also book resources in the past or not
- 6. Bookings can be deleted by user or not
- 7. Maximum time before event start until which the booking slot can be deleted

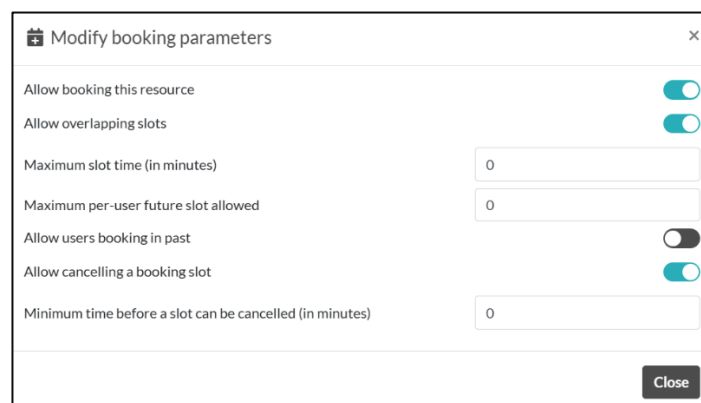
A screenshot of a web-based pop-up window titled "Modify booking parameters" with a close button (X) in the top right corner. The window contains seven settings: "Allow booking this resource" (toggle on), "Allow overlapping slots" (toggle on), "Maximum slot time (in minutes)" (input field with 0), "Maximum per-user future slot allowed" (input field with 0), "Allow users booking in past" (toggle off), "Allow cancelling a booking slot" (toggle on), and "Minimum time before a slot can be cancelled (in minutes)" (input field with 0). A "Close" button is located at the bottom right.

Figure 10: Resources view mode (Booking parameters)

By clicking on “Modify procurement parameters” a pop-up window (Figure 11) opens and the following five setting options are available:

- 1. Resource supports procurement or not
- 2. The size of the packaging
- 3. Price excluding tax
- 4. Price including tax
- 5. Currency of the transaction

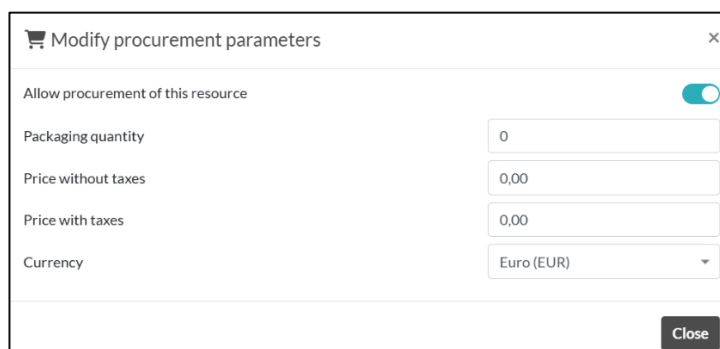
A screenshot of a web-based pop-up window titled "Modify procurement parameters" with a close button (X) in the top right corner. The window contains five settings: "Allow procurement of this resource" (toggle on), "Packaging quantity" (input field with 0), "Price without taxes" (input field with 0,00), "Price with taxes" (input field with 0,00), and "Currency" (dropdown menu showing Euro (EUR)). A "Close" button is located at the bottom right.

Figure 11: Resources view mode (Procurement parameters)

8) Team

The team menu (Figure 12), contains various information about the team members as well as contact options, the scheduler and to create **procurement requests** (**beta function**). There you can find four tabs:

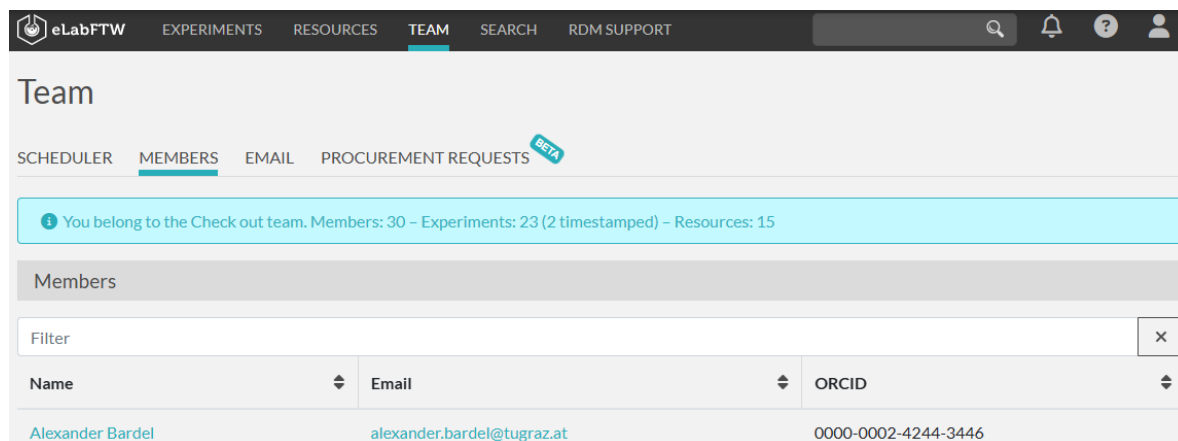


Figure 12: Team menu

Scheduler: Your team has its own calendar that can manage certain resources of your team in the form of a scheduler (Figure 13). Here, the resource entries of your team (not the experiments) can be filtered by category of resource item and individual resource element. Then you can book the item in the calendar with a short note. You can also display several items at the same time. This provides you with a simple tool for managing your laboratory equipment or exercise groups or planned activities in the team. You can also use the "Scope" button to pre-filter whether only your own resource entries or also the team or instance-wide resources should be available. A newly created calendar entry can also be edited (Figure 14).

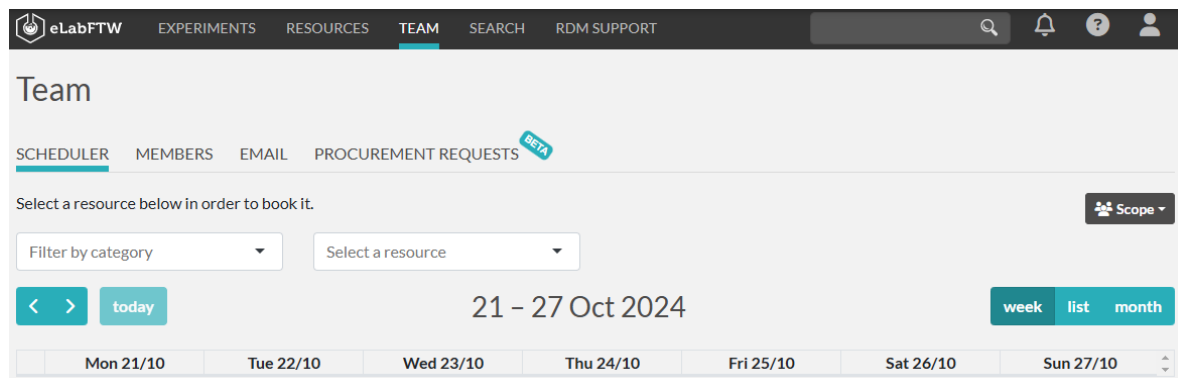


Figure 13: Team menu (Scheduler tab)

1. This field contains your note for the booking, but you can change it by clicking on the text.
2. If the booking may be deleted, this area is available, which can be a deletion without notification or with message to a certain group of people. **The first option "Past and ..." is about users of the last two months and the upcoming month.**

Figure 14: Scheduler: Edit event

Members: In this section you will get an overview of all members of your team. The role of the member and a contact option via email is also stored. Optionally, you can also look up the ORCID ID.

E-Mail: If you have a message that is relevant for members of your team, you can send it here to all members of the team or if you are also a member of one or more groups of the team you can limit it to this group of people.

Procurement requests: All procurement requests created for individual resources can be found here and can be commented on and deleted.

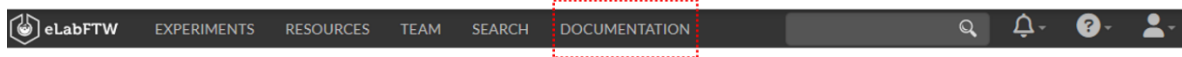
9) Search

Search (Figure 15) is a very powerful tool in eLabFTW. **Remember:** In eLabFTW there is no folder structure but categorisation is done with tags. This means that you can search for certain tags in the individual areas. The real strength lies in the extended fields, which allow a refined search in groups or for individual users. In addition, there are further specialised fields and also a search query if desired.

The screenshot shows the 'Advanced search' page in the eLabFTW application. At the top, there is a navigation bar with links for EXPERIMENTS, RESOURCES, TEAM, SEARCH (highlighted), and RDM SUPPORT. Below the navigation bar, the page title 'Advanced search' is displayed. The main section is titled 'Search query' and contains a large text input field with placeholder text: 'Enter search query, e.g.: (locked:yes OR timestamped:yes) AND author:"Firstname Lastname"'. Below the input field, there is a small instruction: 'Enter a term to search in title, body, date and elabid; or use advanced syntax, or a combination of both. Press **ctrl + enter** or **⌘ + enter** to submit search.' A 'HELP' section is expanded, showing 'Allowed Fields (field:value):' with two columns of fields and their search syntax: attachment, author, body, category, custom_id, date, elabid, extrafield, group, locked, rating, status, timestamped, title, and visibility. Below the help section, there are several filter sections: 'Search in' (Experiments), 'And category is' (Select category), 'And status is' (Select status), 'Date from' (tt.mm.jjjj), 'Date to (optional)' (tt.mm.jjjj), 'And author is/belongs to group:' (Select author/group), 'And visibility is:' (Select visibility), 'And rating is' (Select number of stars), 'And extra field is' (Name of field : Value), 'Locked' (Select lock status), and 'Timestamped' (Select timestamp status). A tip at the bottom states: 'Tip: you can use %' as wildcard in value'. At the bottom right, there are two buttons: 'Launch search' and 'Clear all'.

Figure 15: eLabFTW Search

10) Custom field a.k.a. Documentation



This field may or may not already have a new name in your team. The reason for this is that the admin of the team can assign a name and set the link behind it. This link can be anything, e.g. the website of your project team, the institute or a GitHub/GitLab page.

11) Hard Facts

Operating System: Linux

eLabFTW Version: 5.0.1

Docker image version: 5.0.0

PHP Version: 8.1.27

MySQL Version: 8.0.31

Maximum file size for uploaded files: 100M

Timezone: Europe/Paris

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