Feedback on the use of the eLabFTW in a (very small) INRAE research unit

Marine Navarro, **Nadia Ponts**

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Nouvelle Aquitaine Bordeaux - France

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What is an e-Lab Notebook ?

- ➜ A lab notebook that is electronic
- ➜ An alternative to paper notebook



Characteristics

- ✓ Open Source

https://github.com/elabftw/elabftw.git

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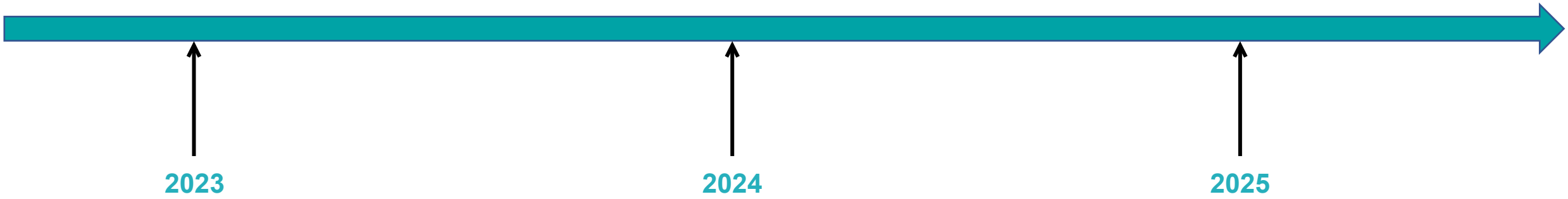
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Notebook, inventory, calendar…	*Multi-fonctions*

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History @ MycSA : how did we come to use the eLab Notebook ?

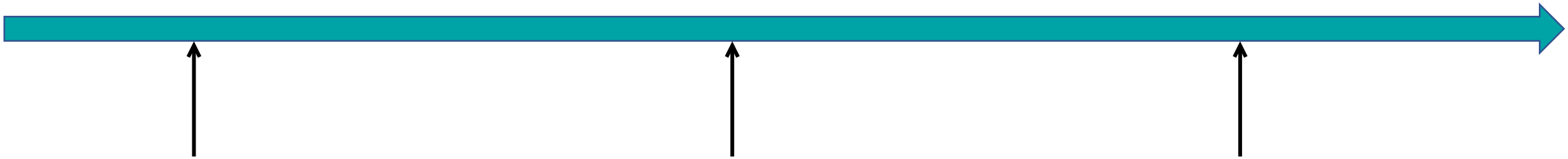


1st informal exchanges with E. Quinton - (EABX – CATI GEDEOP)

- On-premise @ EABX
- Choose local admins
- Propose to users

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L'historique MycSA : comment en sommes-nous arrivés à utiliser le eLab Notebook ?



2023

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2024

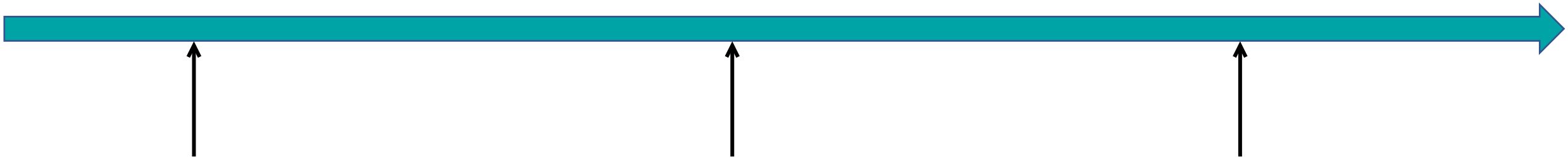
Everybody connected once & almost everybody uses it

- Feedbacks I like / I don't like
- Feedbacks works / does not work
- Making adjustments

2025

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Thoughts on using more features

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Keys to success @ MycSA

- Intuitive and accessible interface
- Searchable notebook (queries by keywords, tags, *etc.*)
- Can be shared in read, write, or not (à la carte)
- Flexible data types that can be included (text, images, tables, lines of code, *etc.*)
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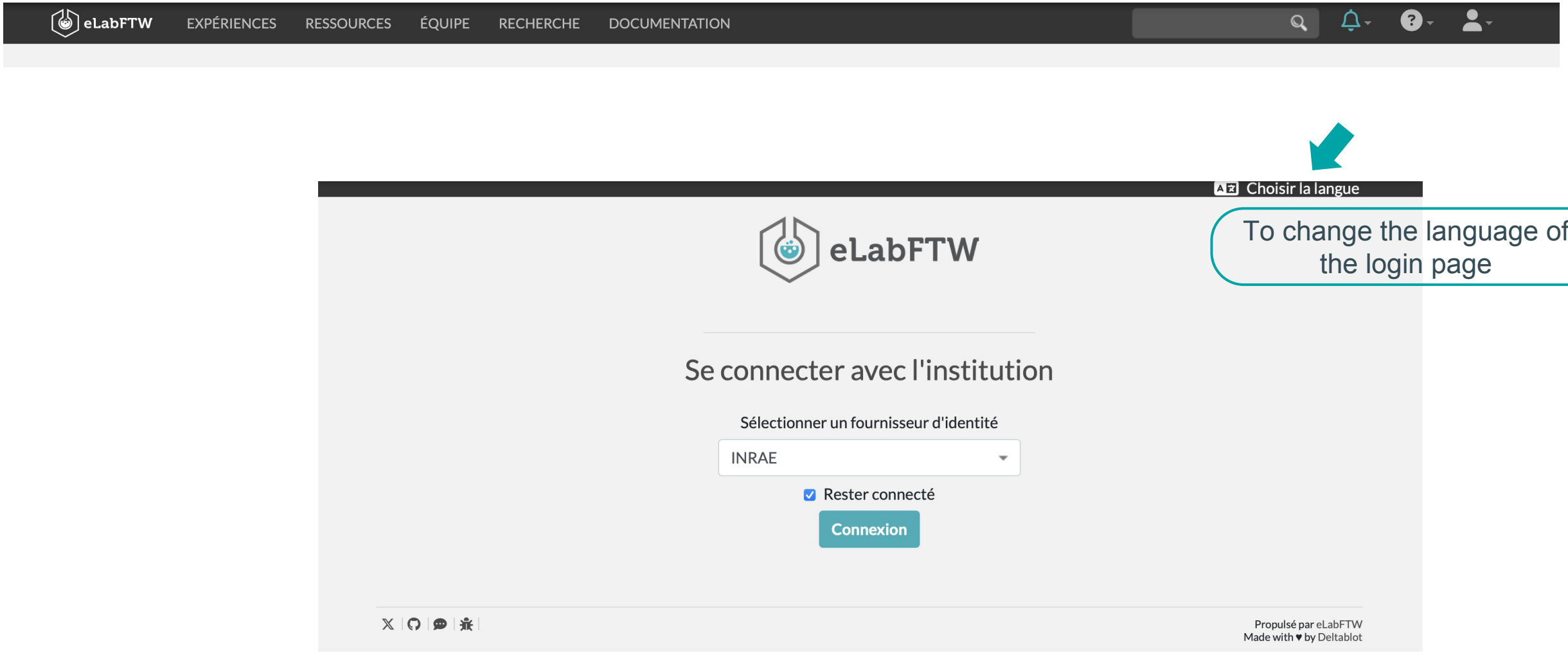
Support as needed

Interfacing with the quality assurance unit

Constant communication between users and admins

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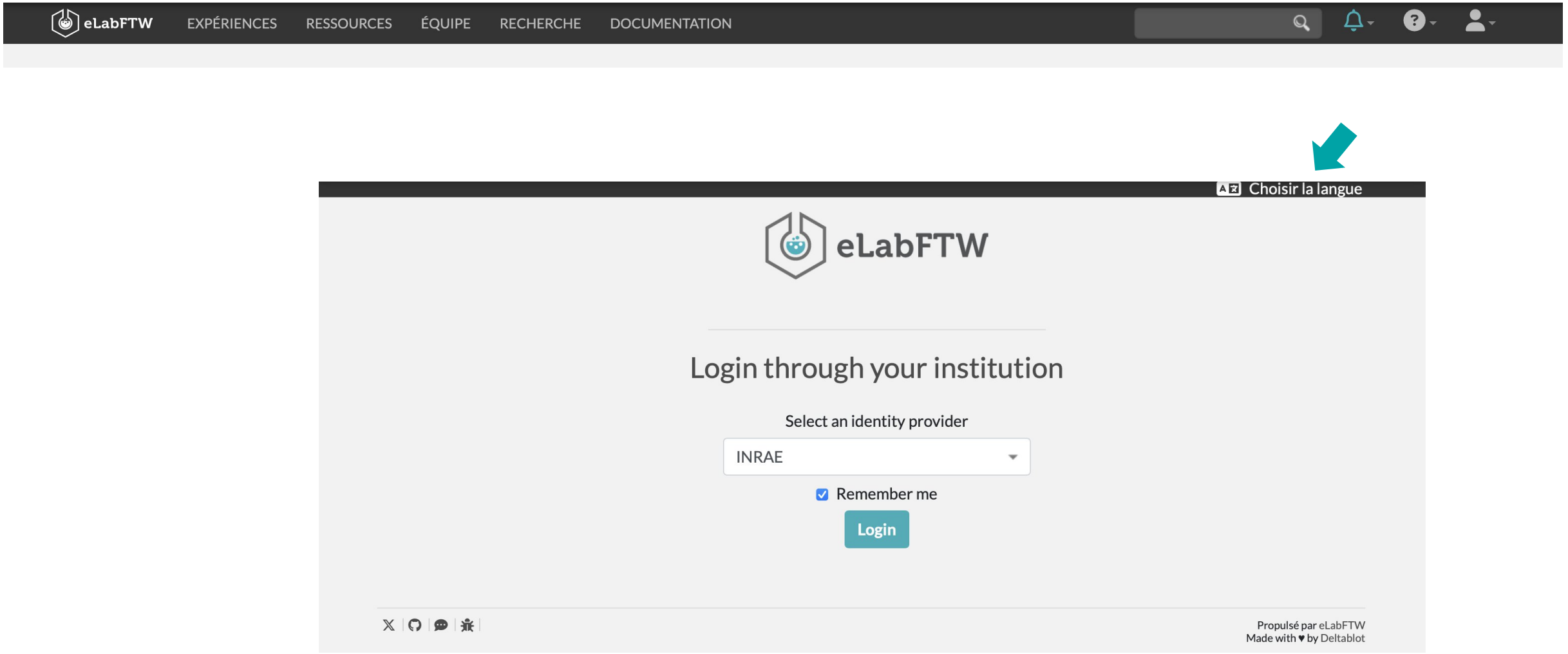
The eLabFTW interface: the login



To change the language of the login page

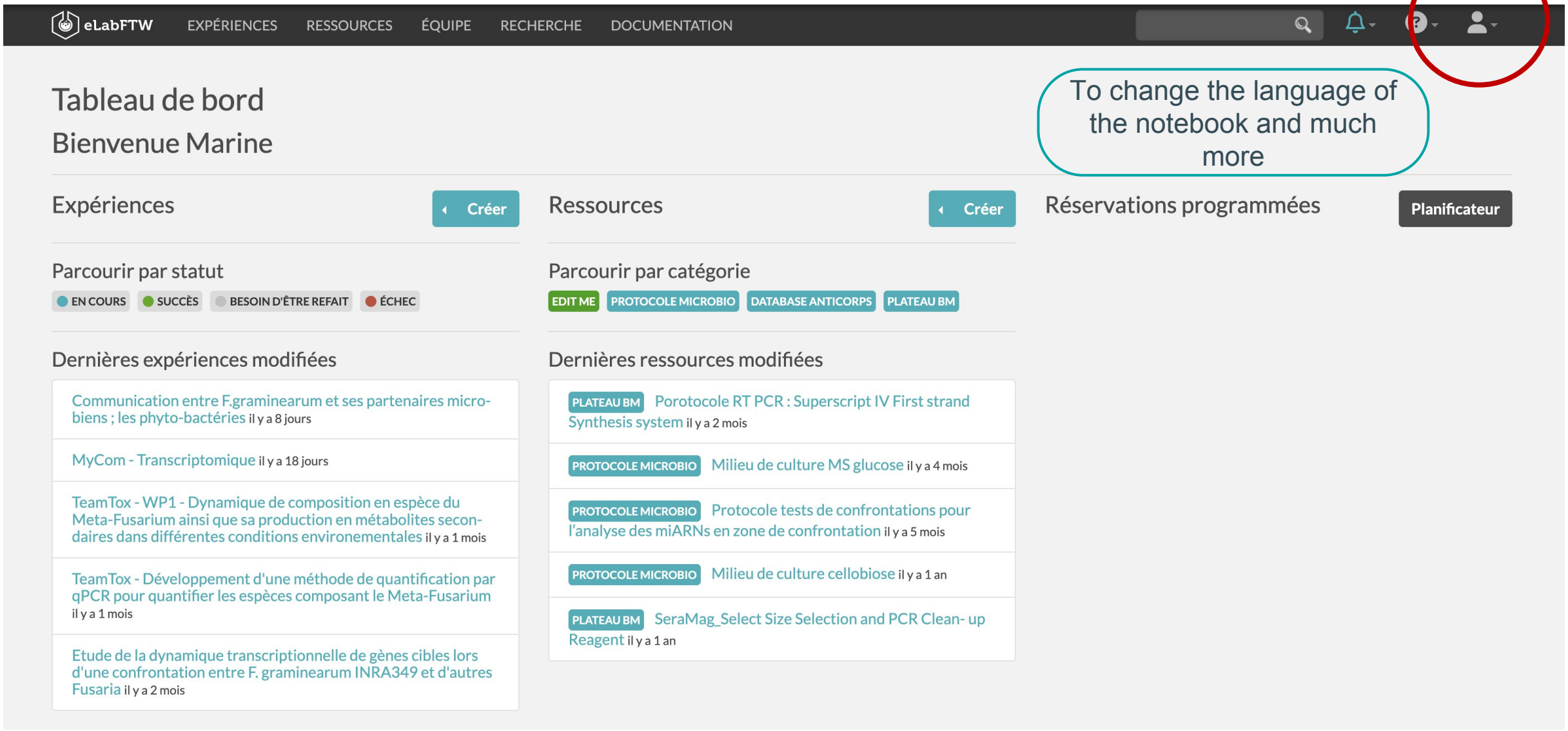
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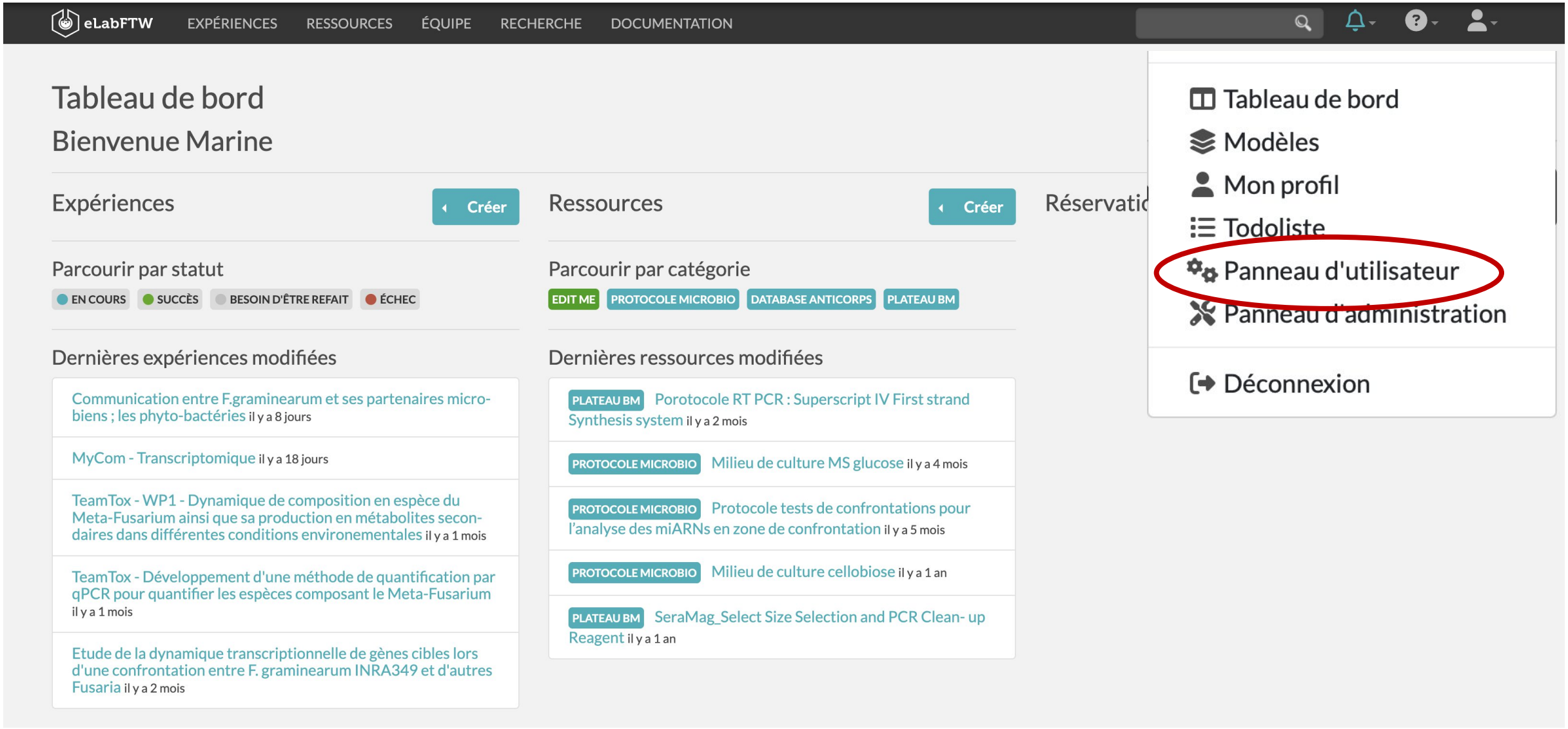
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The eLabFTW interface: the main dashboard



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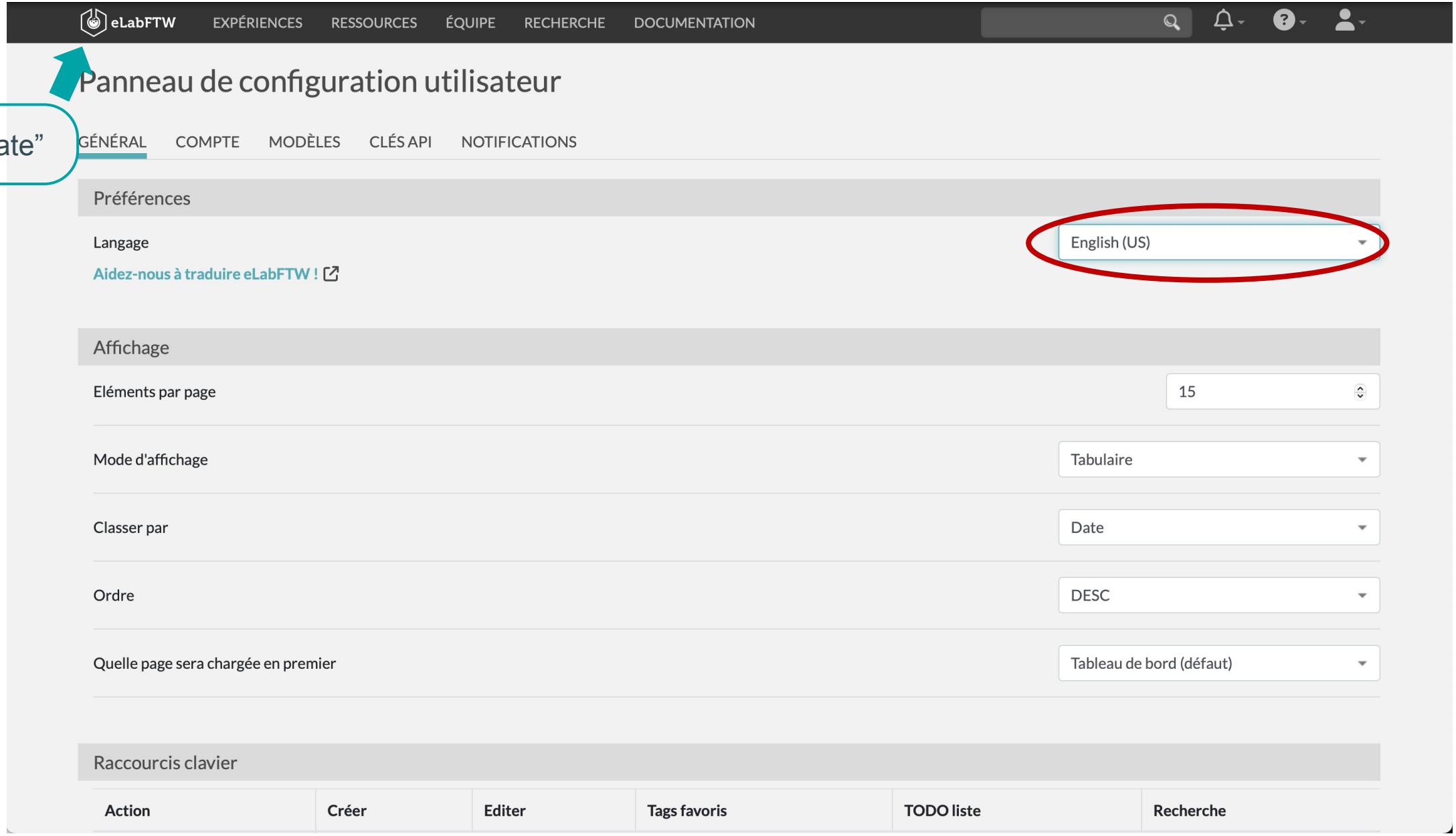
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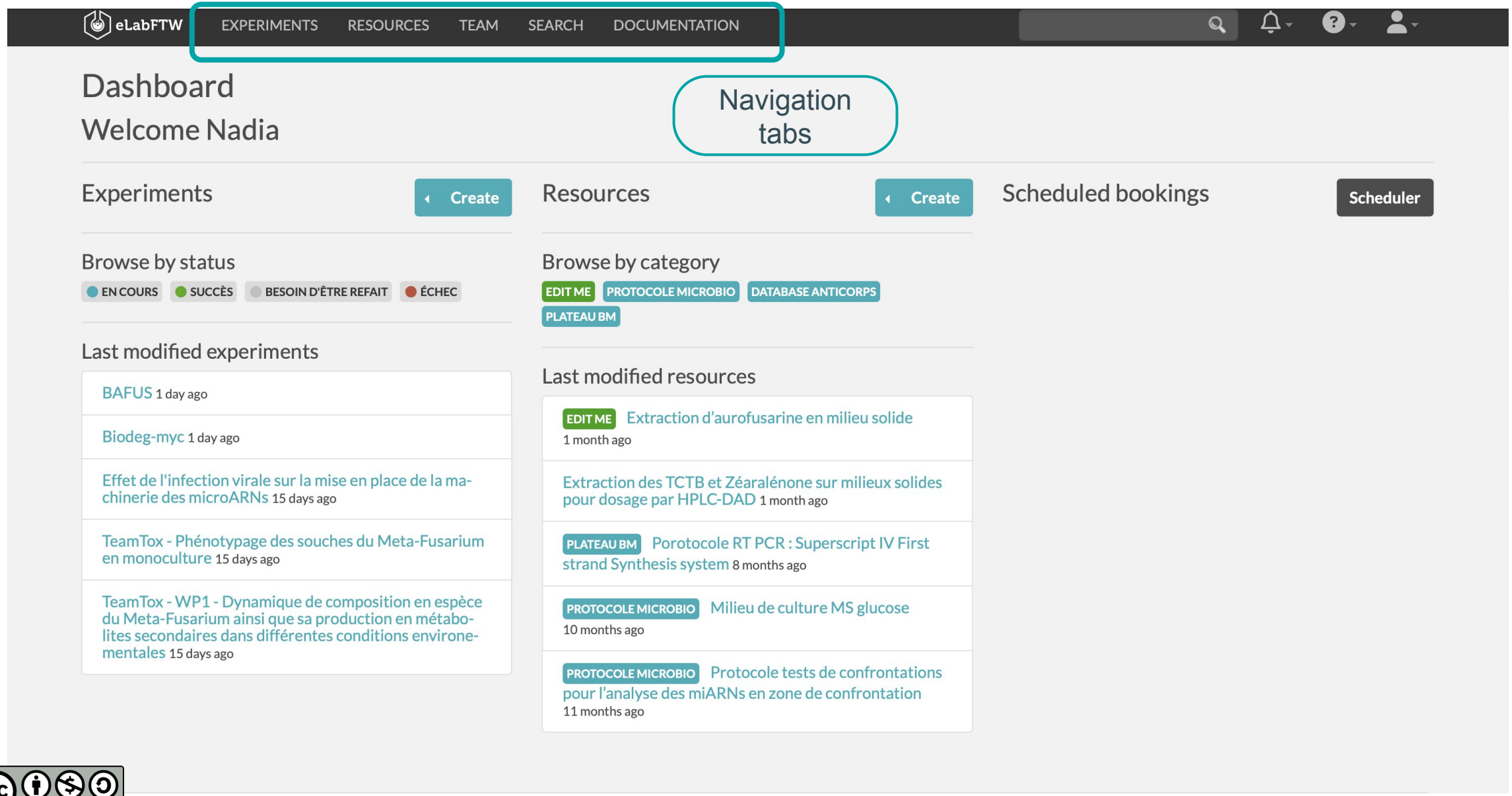
The eLabFTW interface: the user panel

To “validate”



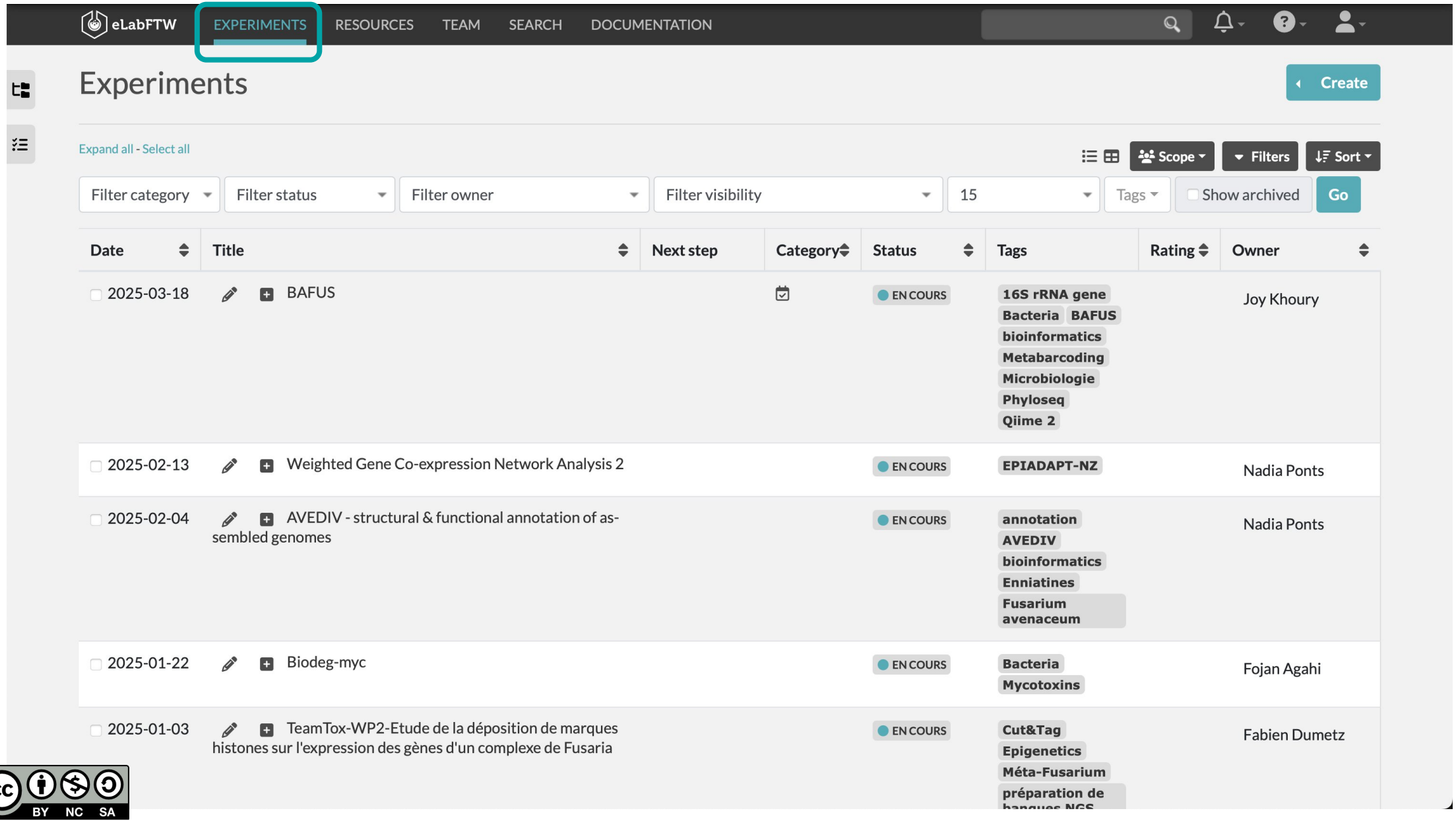
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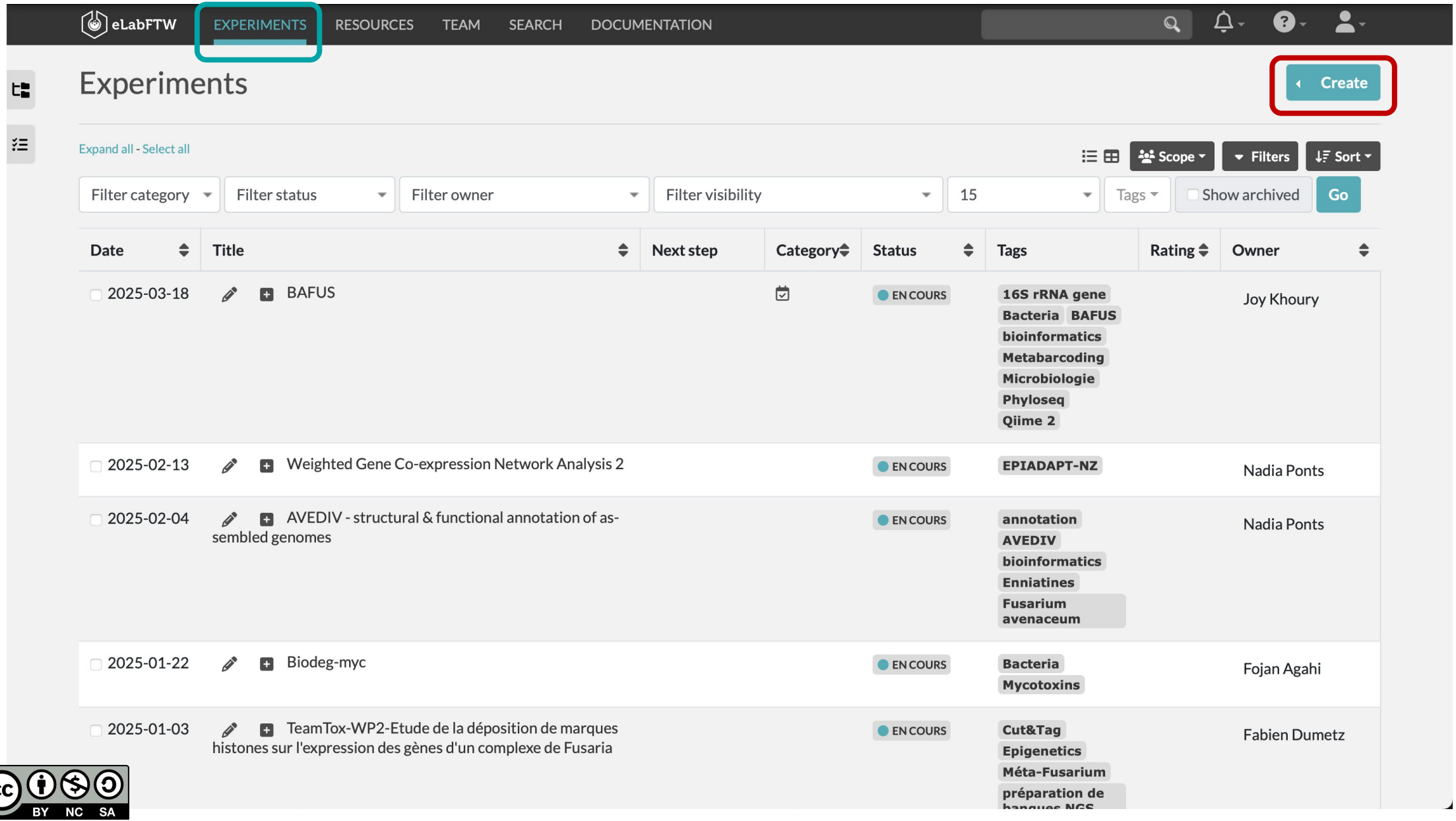
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The Experiment: the central object of eLabFTW



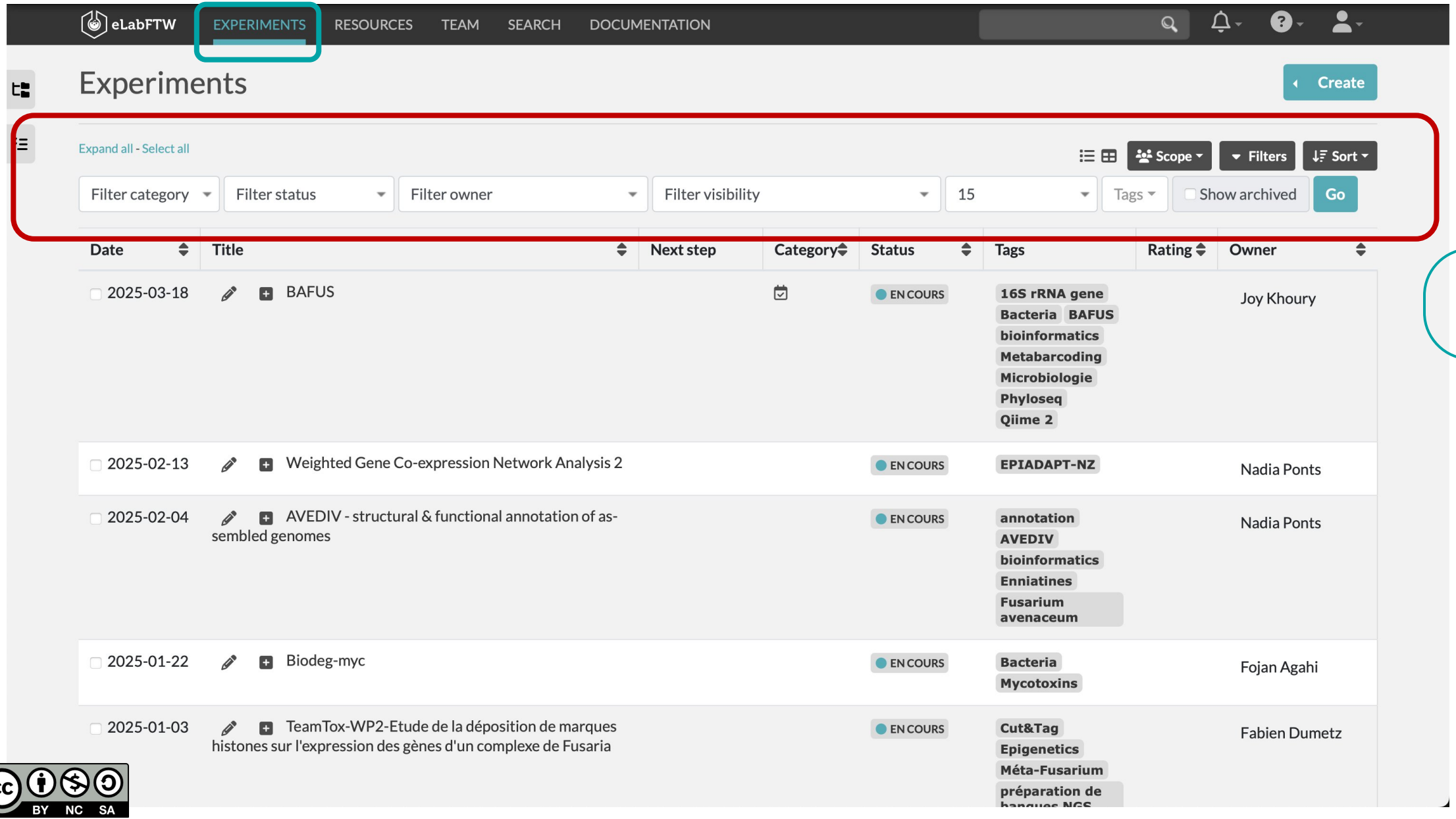
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The Experiment: the central object of eLabFTW



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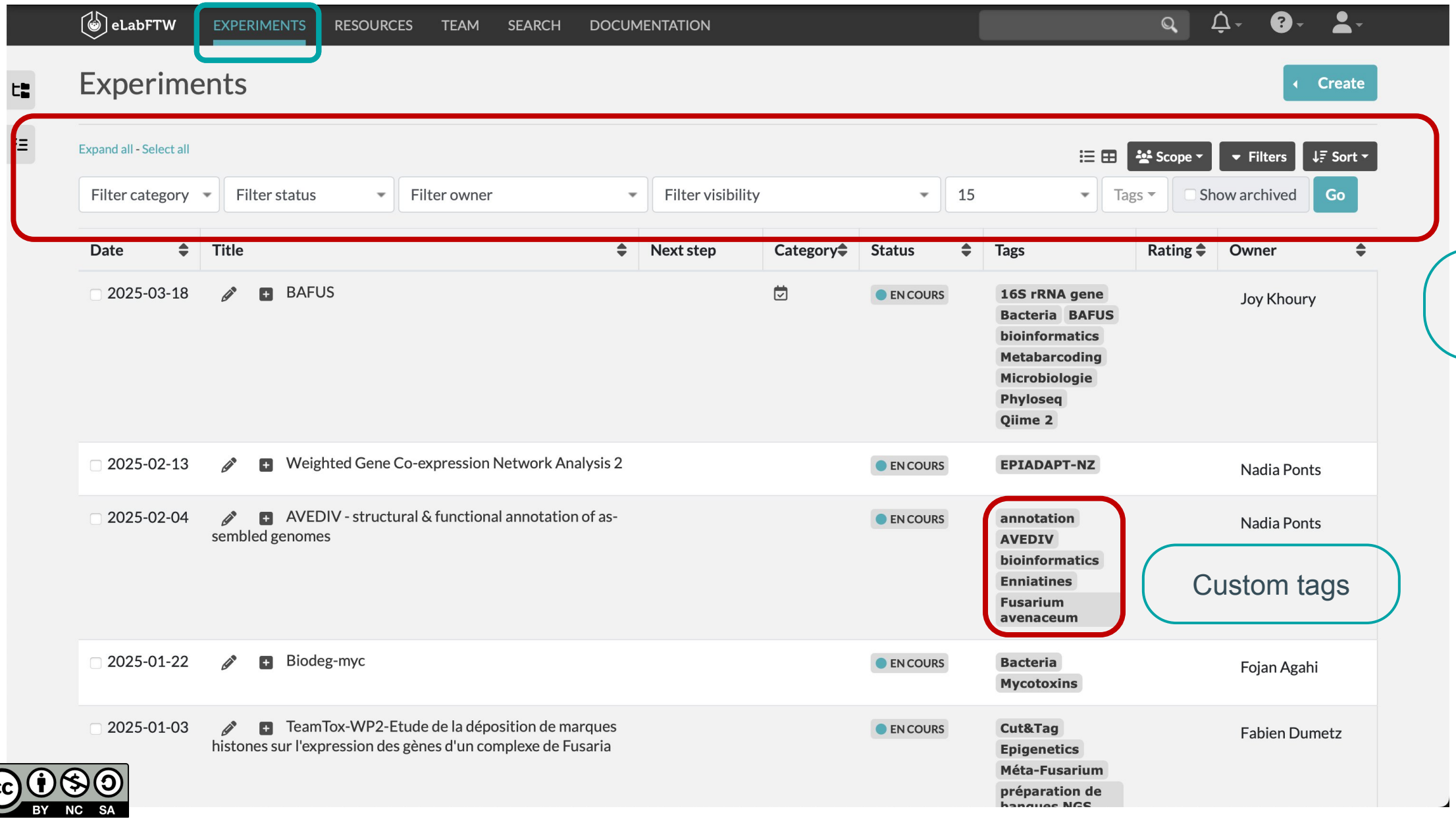
The Experiment: the central object of eLabFTW



Combinable search filters

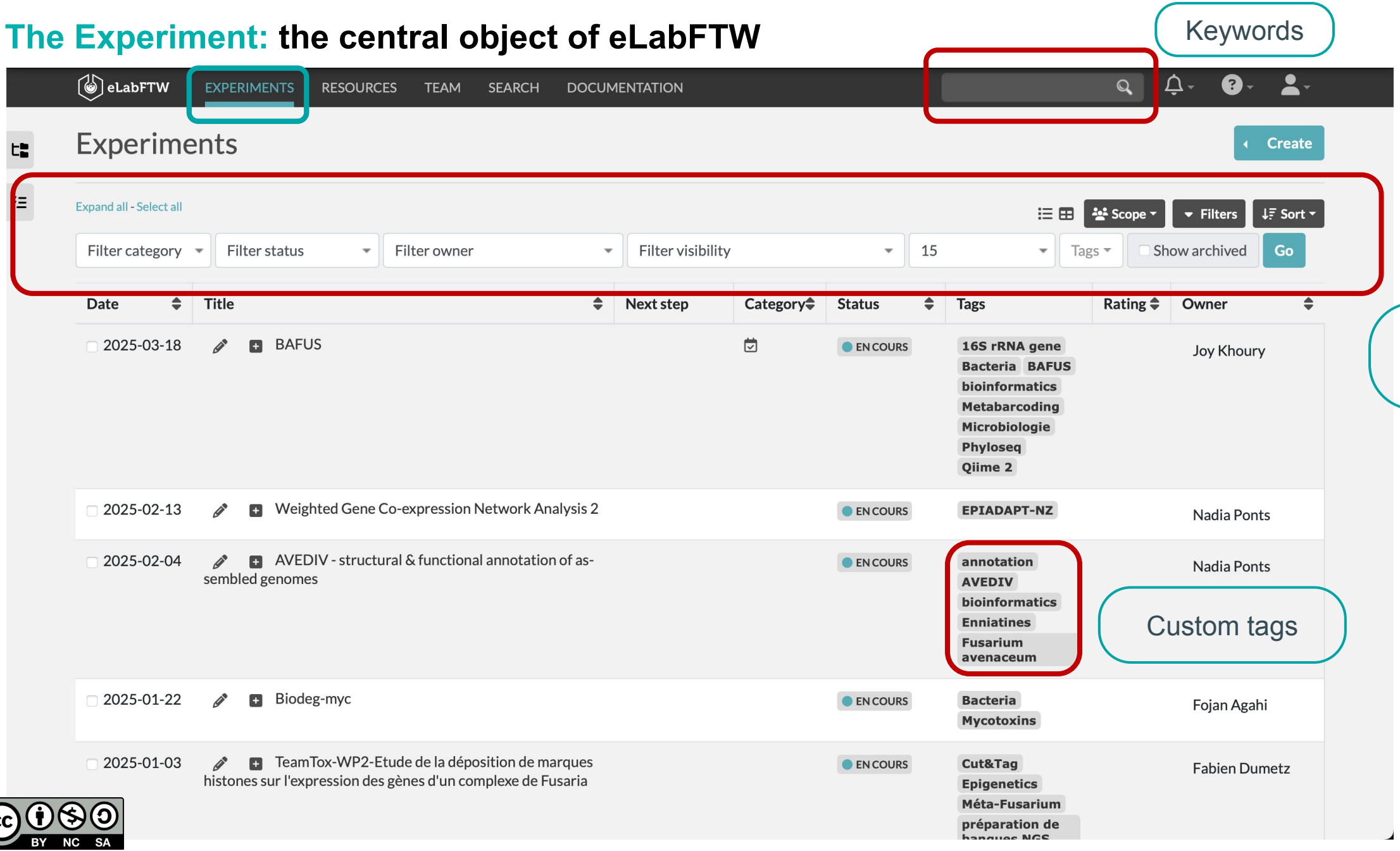
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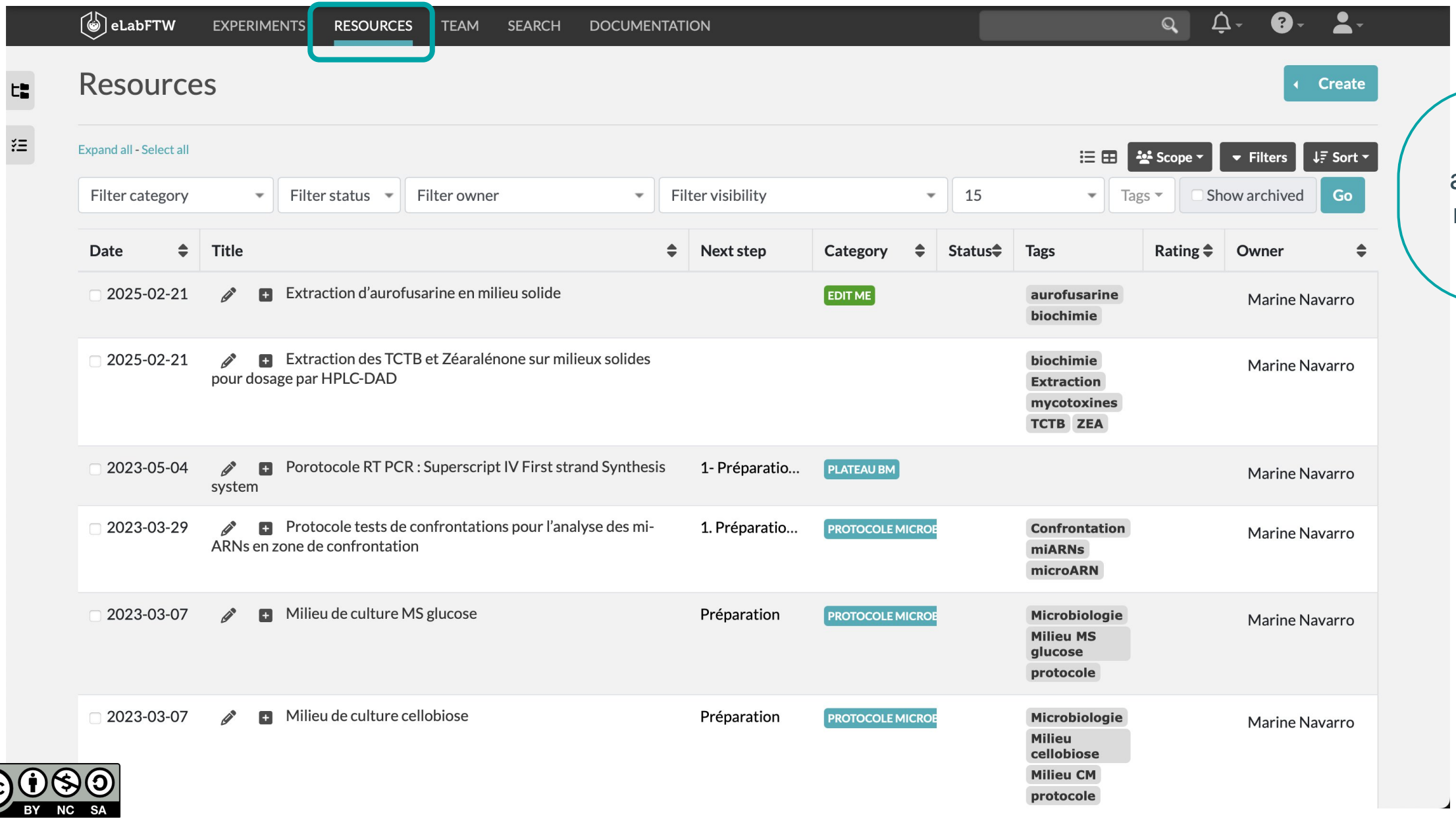
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The Experiment: the central object of eLabFTW



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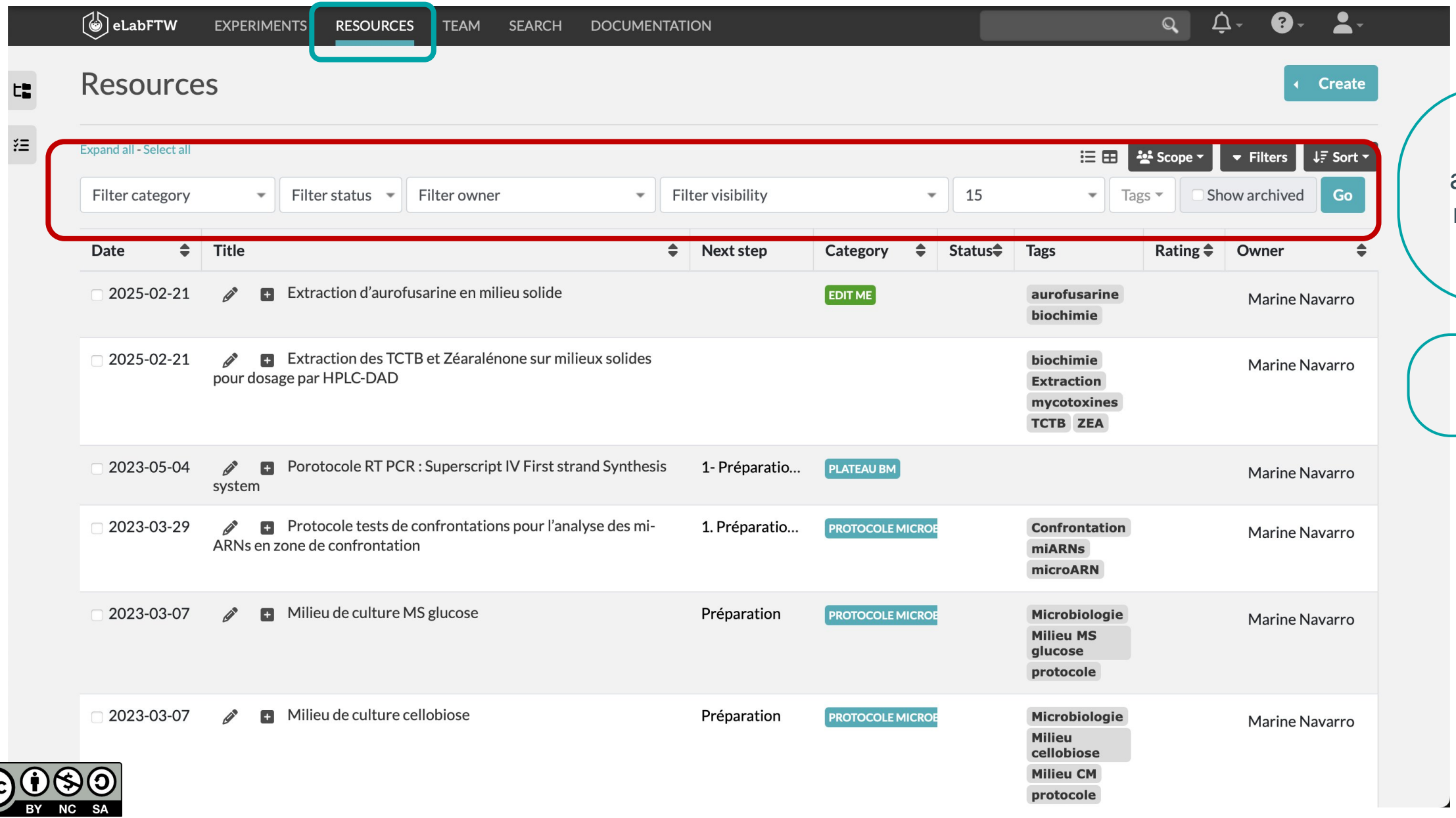
Resources: to share protocols, databases, machine life sheets, *etc.*



Link with quality assurance, metrology, platforms, *etc.*

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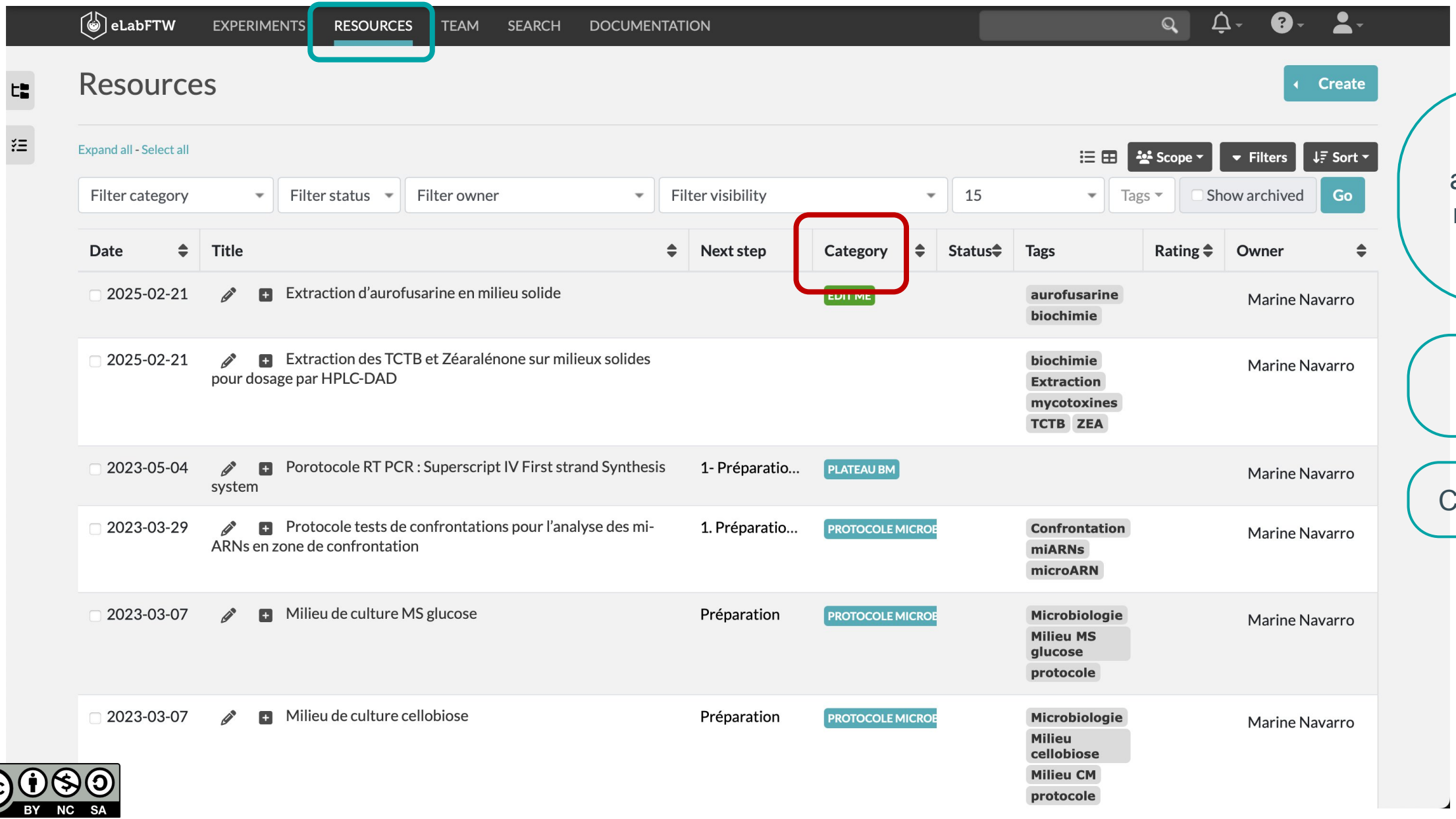


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Filters for queries

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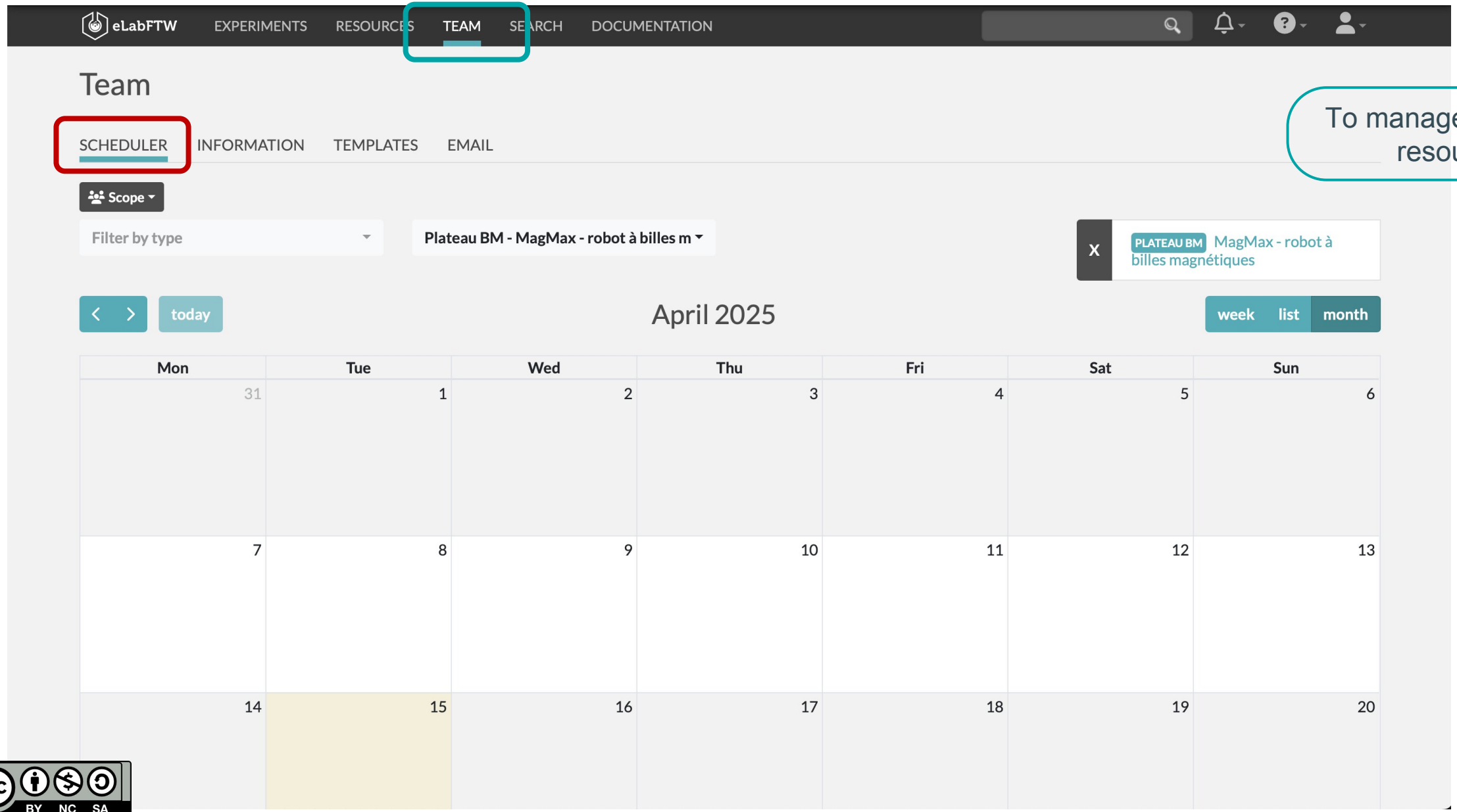
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Filters for queries

Customisable

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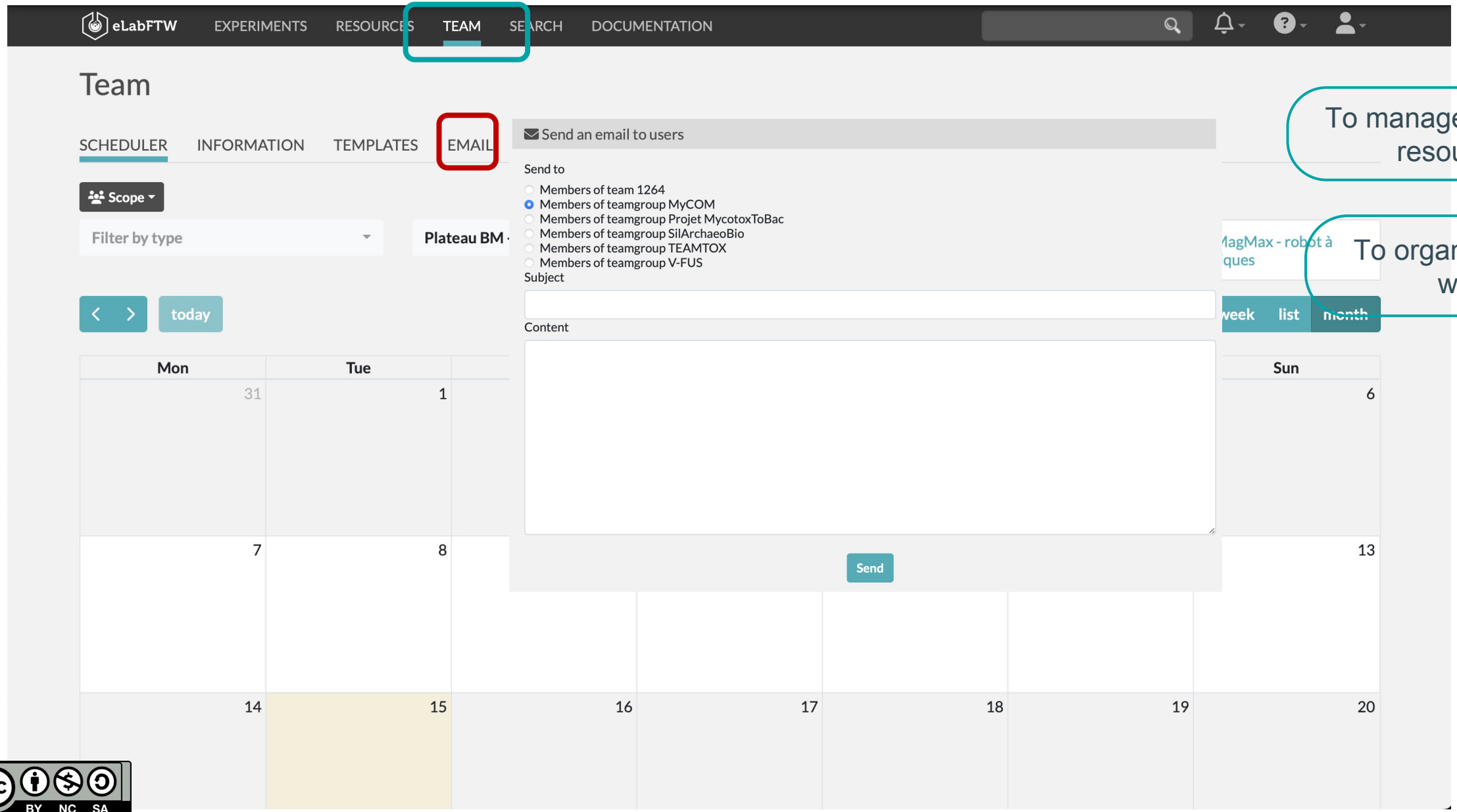
The Team: a tool for management



To manage hardware resources

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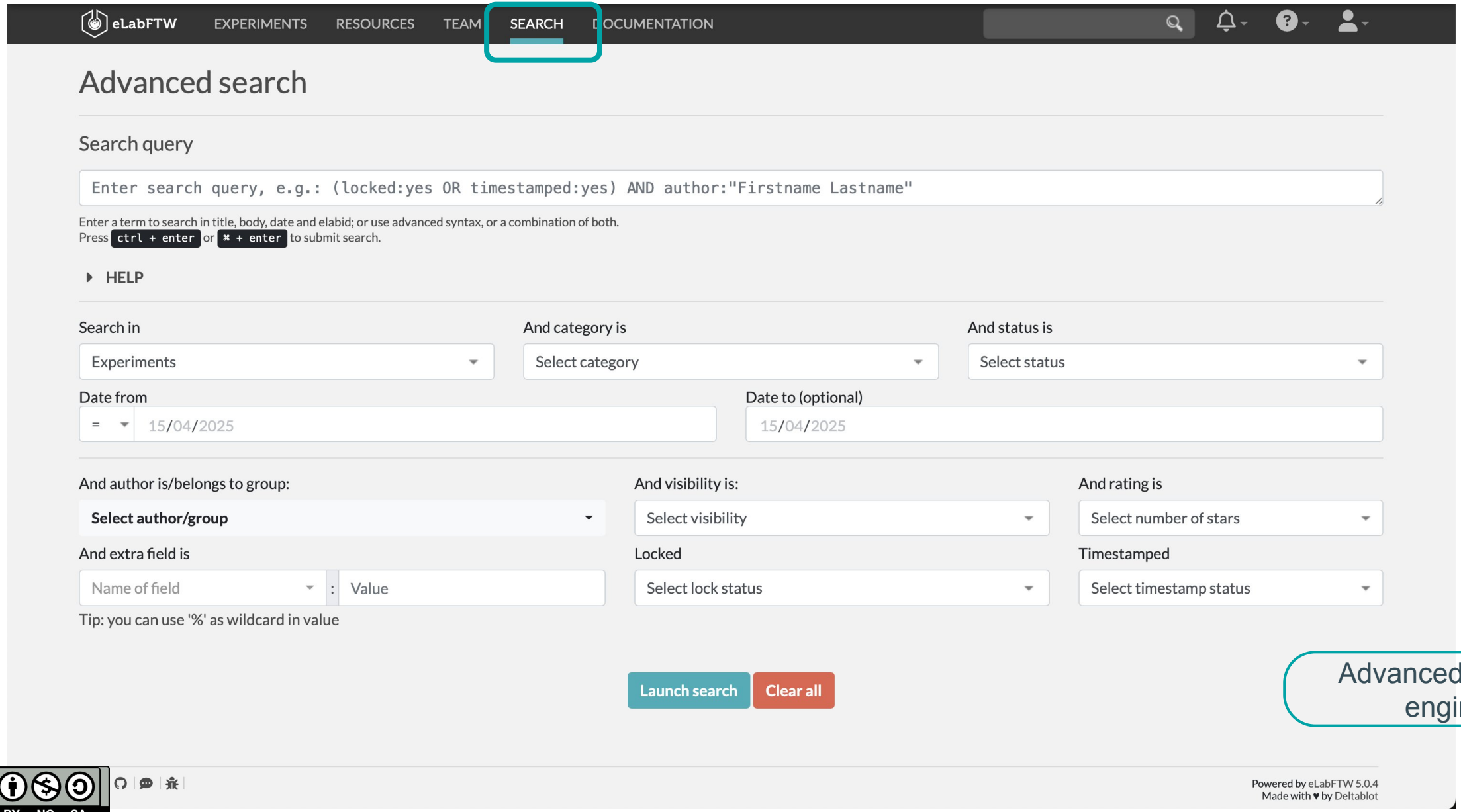


To manage hardware resources

To organize group work

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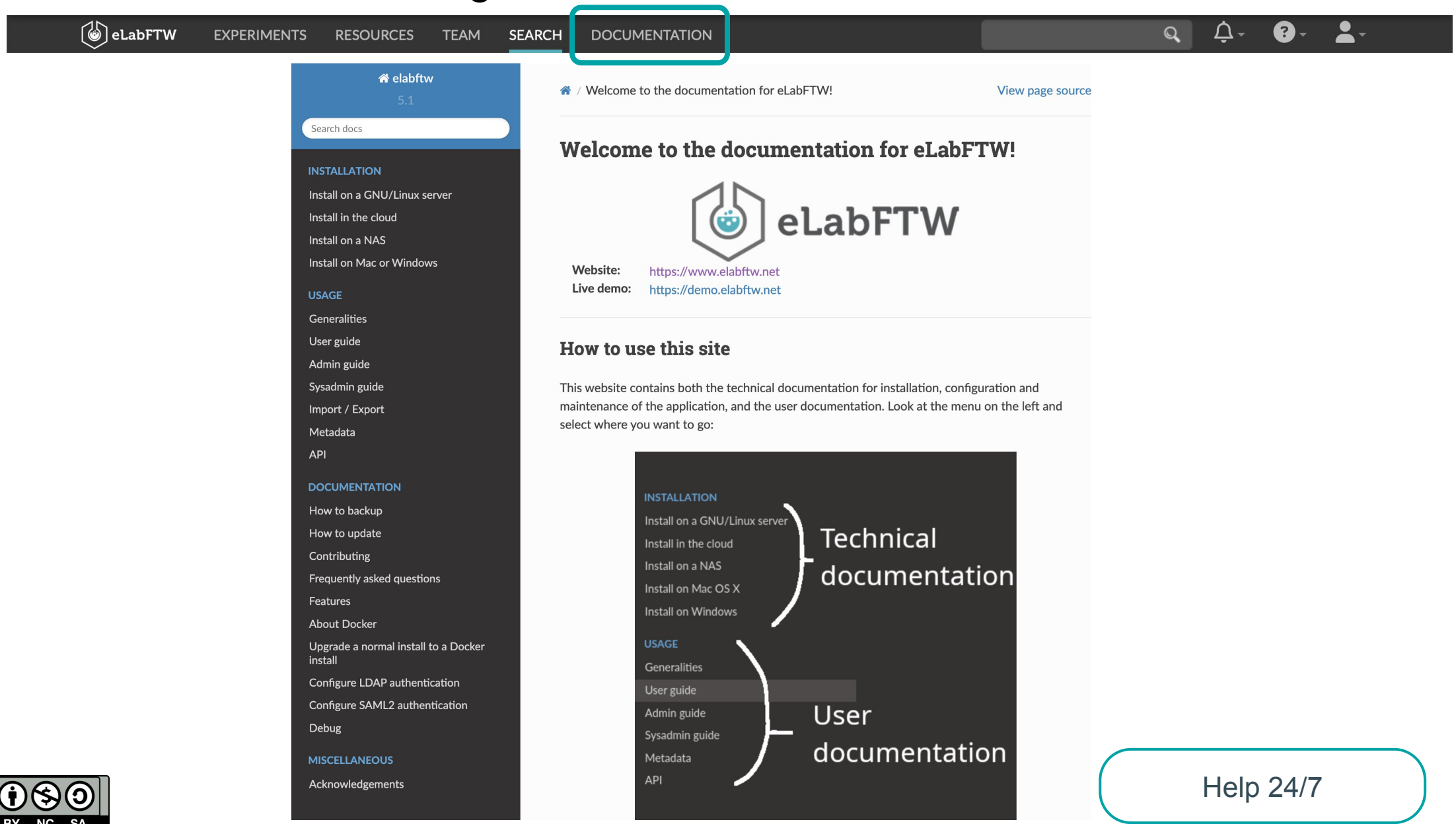
Search & Documentation : to go further



Advanced search engine

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Search & Documentation : to go further

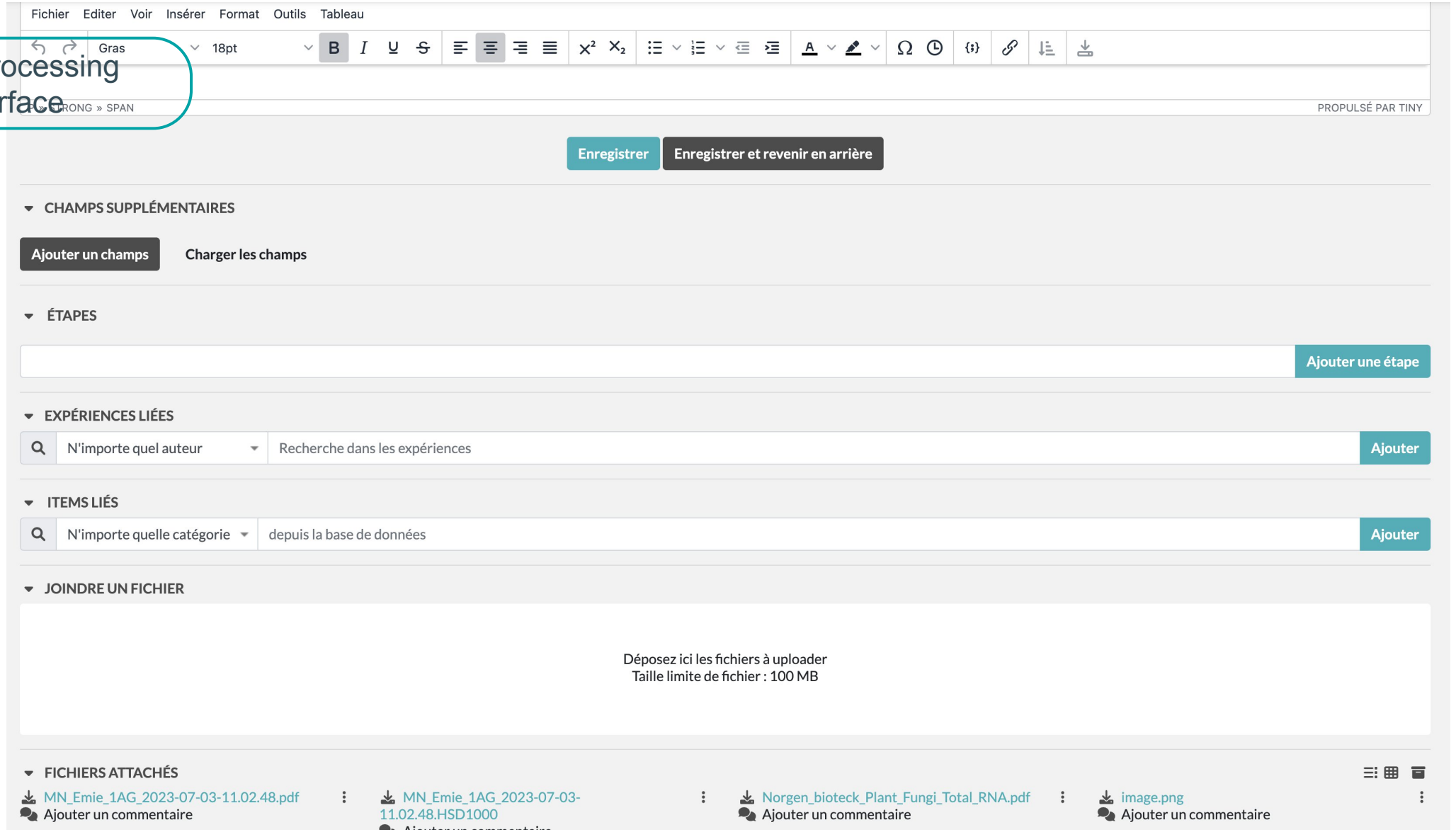


Help 24/7

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The Experience: what do we put in it?

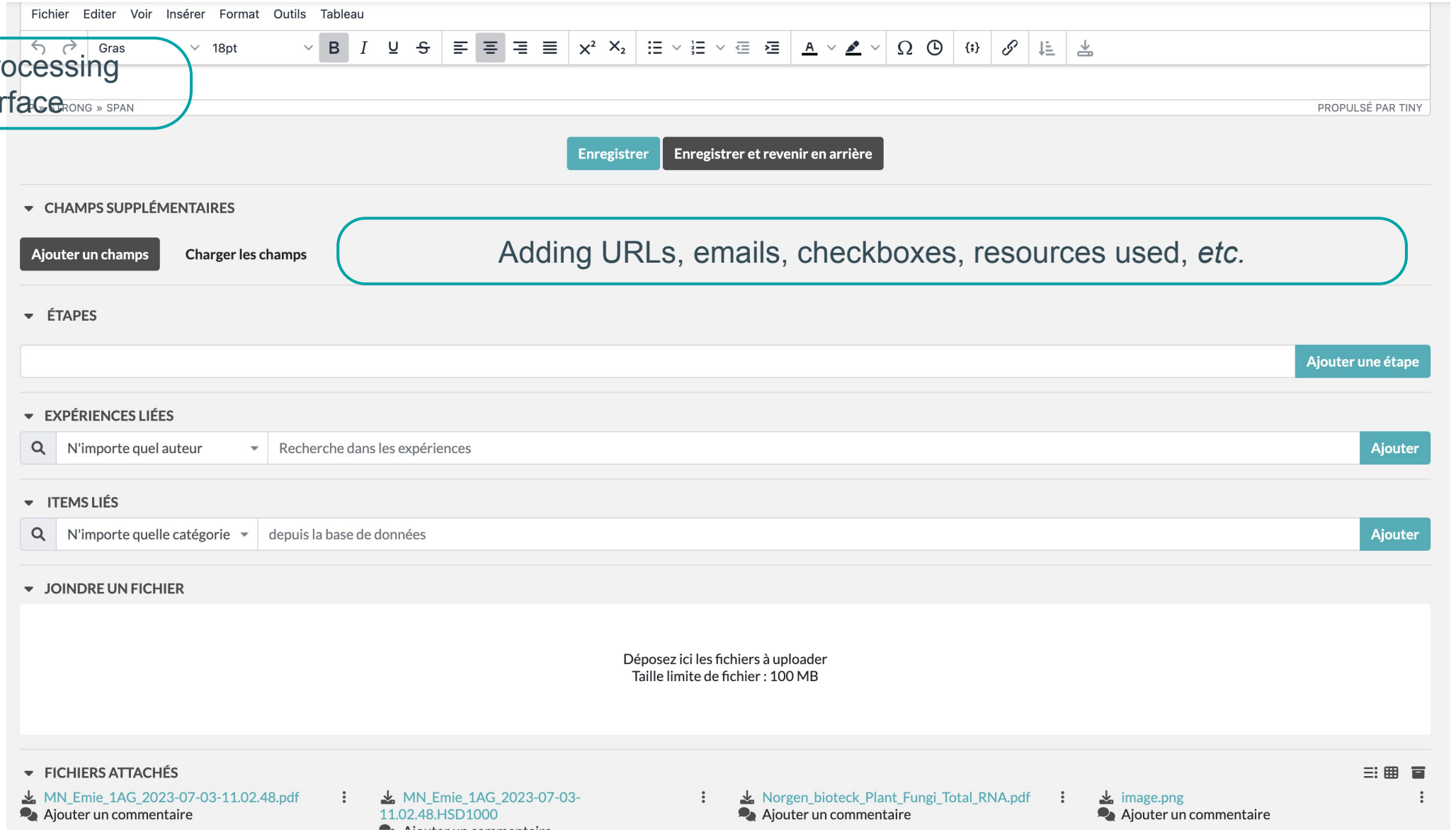
Word processing interface



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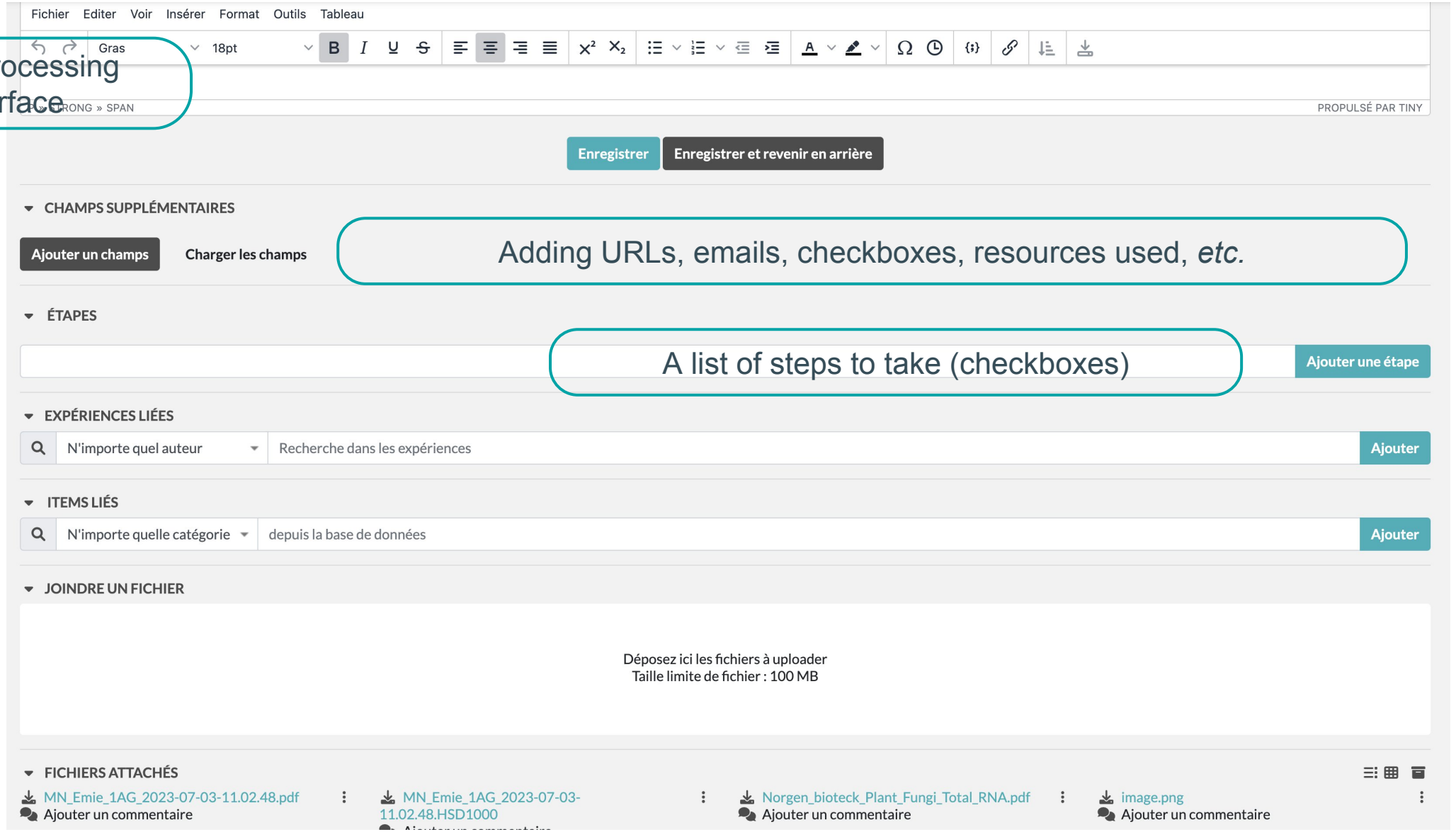
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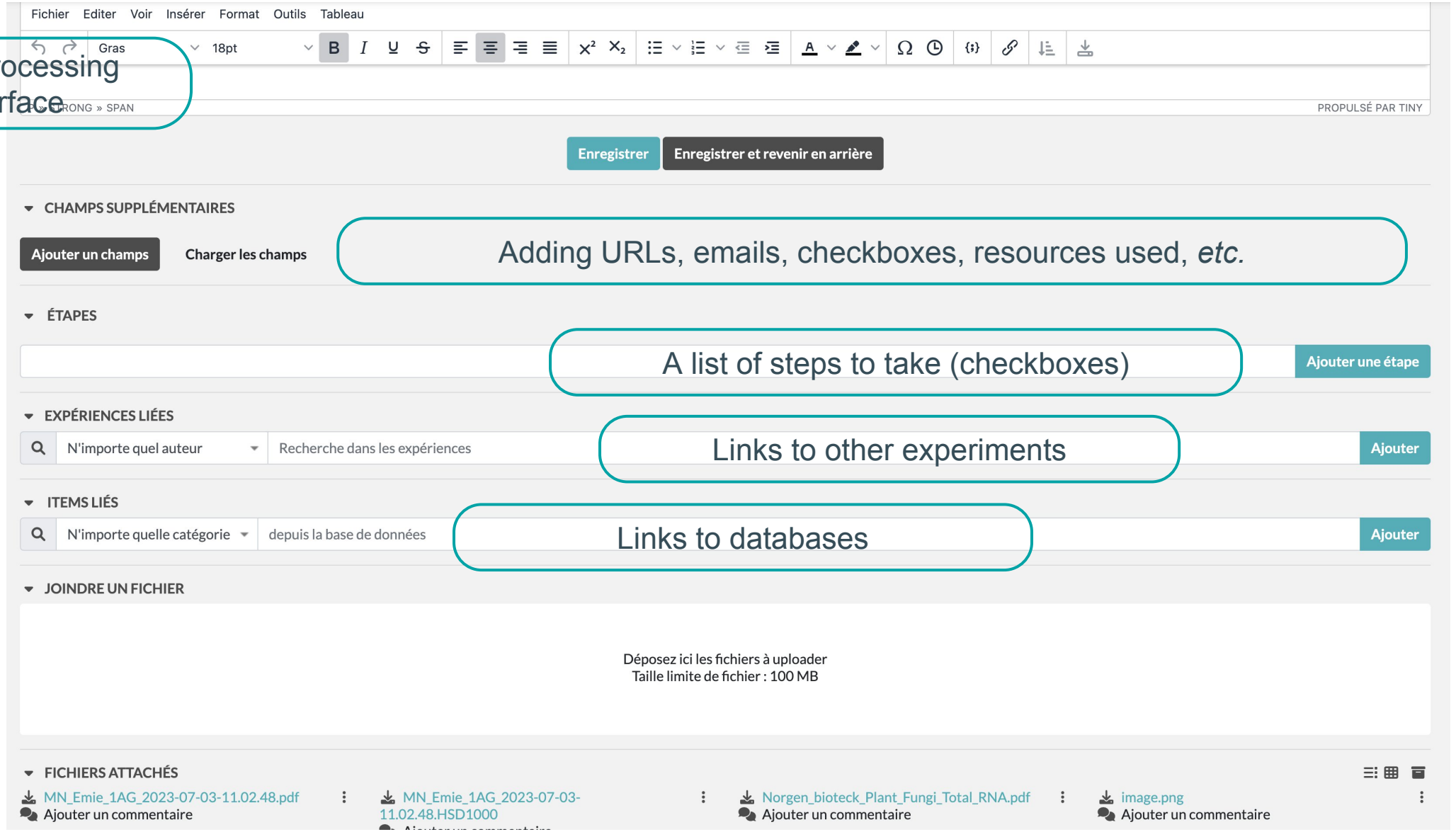
The Experience: what do we put in it?

Word processing interface



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The Experience: what do we put in it?



Word processing interface

Adding URLs, emails, checkboxes, resources used, *etc.*

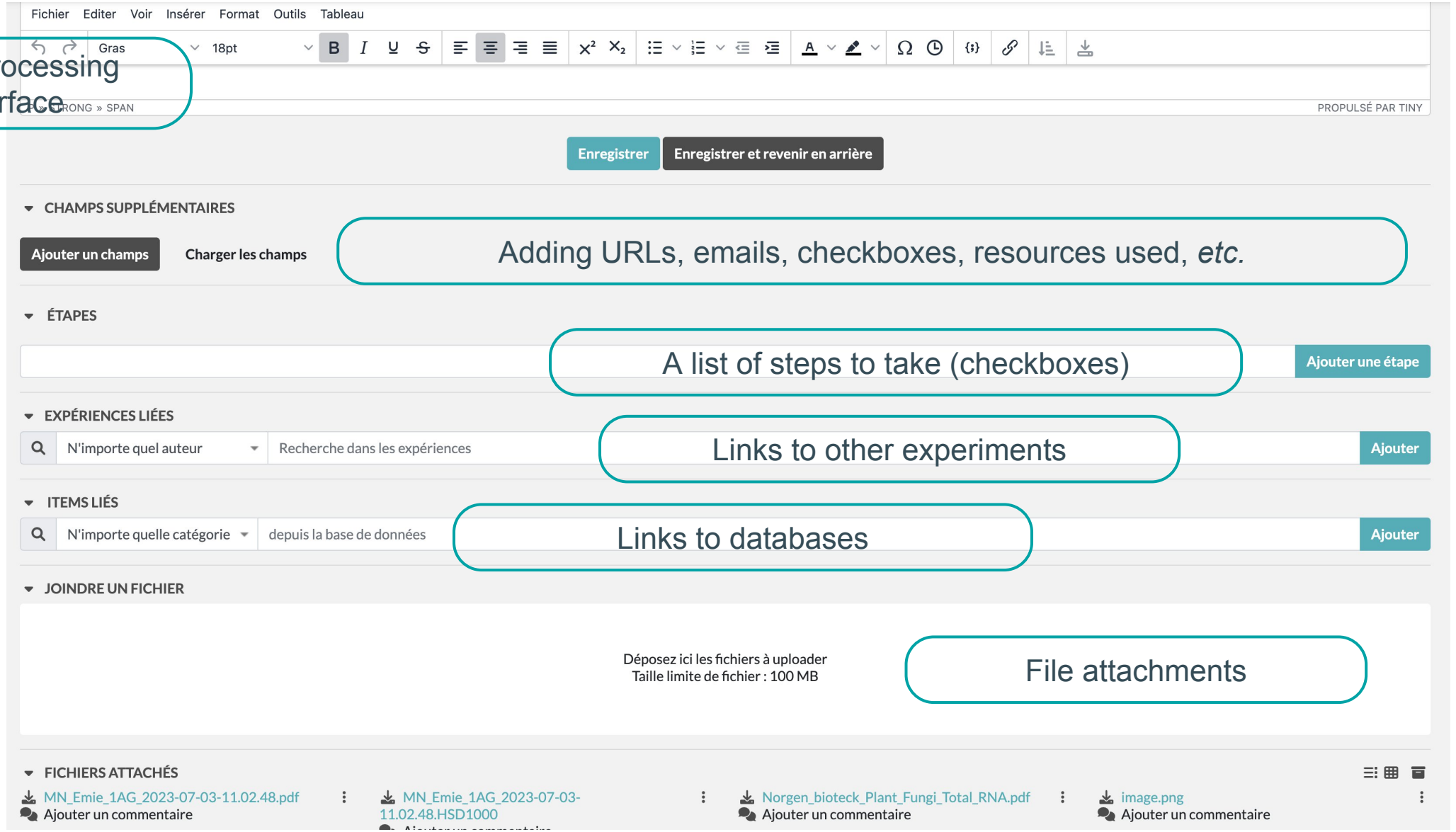
A list of steps to take (checkboxes)

Links to other experiments

Links to databases

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The Experience: what do we put in it?



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The Experience: what do we put in it?

Explore the dynamics of physical interactions between *Fusarium* species and their morphological consequences

Bibliography

Description du projet + objectifs : Projet.pptx

Attachments and links to attachments

- Francisco CS, Ma X, Zwyssig MM, McDonald BA, Palma-Guerrero J. Morphological changes in response to environmental stresses in the fungal plant pathogen Zymoseptoria tritici. Sci Rep. 2019 Jul 3;9(1):9642.
- Schuster M, Guiu-Aragones C, Steinberg G. Class V chitin synthase and β(1,3)-glucan synthase co-travel in the same vesicle in Zymoseptoria tritici. Fungal Genetics and Biology. 2020 Feb;135:103286.
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- Harish E, Osherov N. Fungal Priming: Prepare or Perish. JoF. 2022 Apr 25;8(5):448.
- Leslie JF, Summerell BA. The fusarium laboratory manual. Ames (Iowa): Blackwell publ; 2006.
- Cochrane VW, Cochrane JC. Chlamydospore Induction in Pure Culture in Fusarium solani. Mycologia. 1971;63(3):462–77.

Text

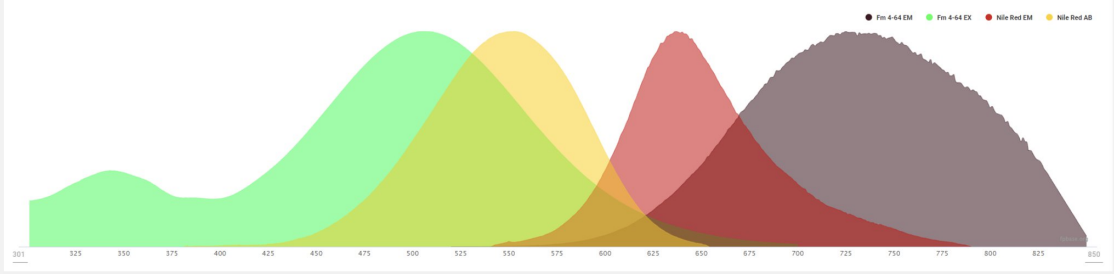
Objectives

1. Hyphal morphology : characterized by light microscopy. Fungal_interactions_induce_changes_in_hyphal_morphology_and_enzyme_production.pdf
2. Follow the establishment of specific cellular structures during interactions between *Fusarium*.

Colorants / dyes

Name	Target	Emission	Reference	Bibliography
Calofluor white	Chitin	475 nm	/	Francisco and al. 2019 Morphological_changes_in_response_to_environmental.pdf
FM4-64	Vacuolar membranes (500nm)	515 / 640 nm	T13320 (thermofisher)	Abenza JF and al.2009
Nile Red	Clamydospores	552 / 636 nm	N1142 (thermofisher)	Francisco and al. 2019

Tables



Graphs

https://www.fpbase.org/spectra/

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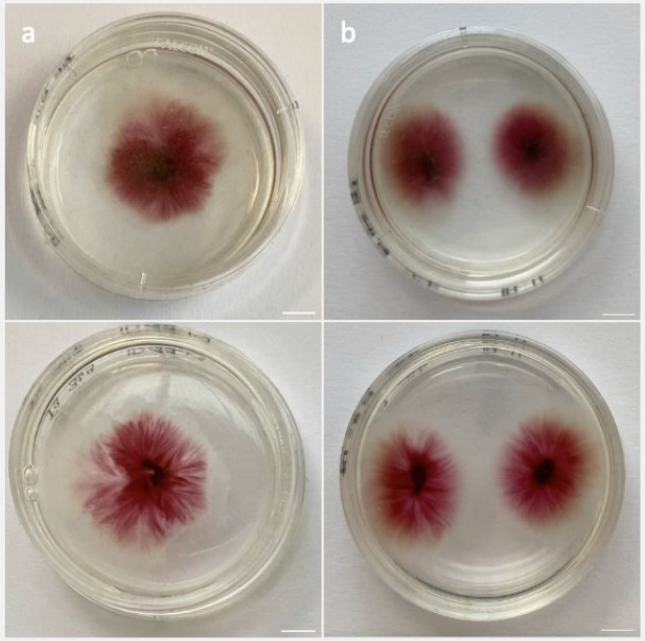
The Experience: what do we put in it?

Result of confrontation tests in light microscopy 14/11/23

- Microscopy images were taken using an "Oxion Inverso Microscope".

F.graminearum INRA349

- PDA medium at 25°C in the dark
- 3 days post inoculation (25°C) + 1 day on fridge (4°C)

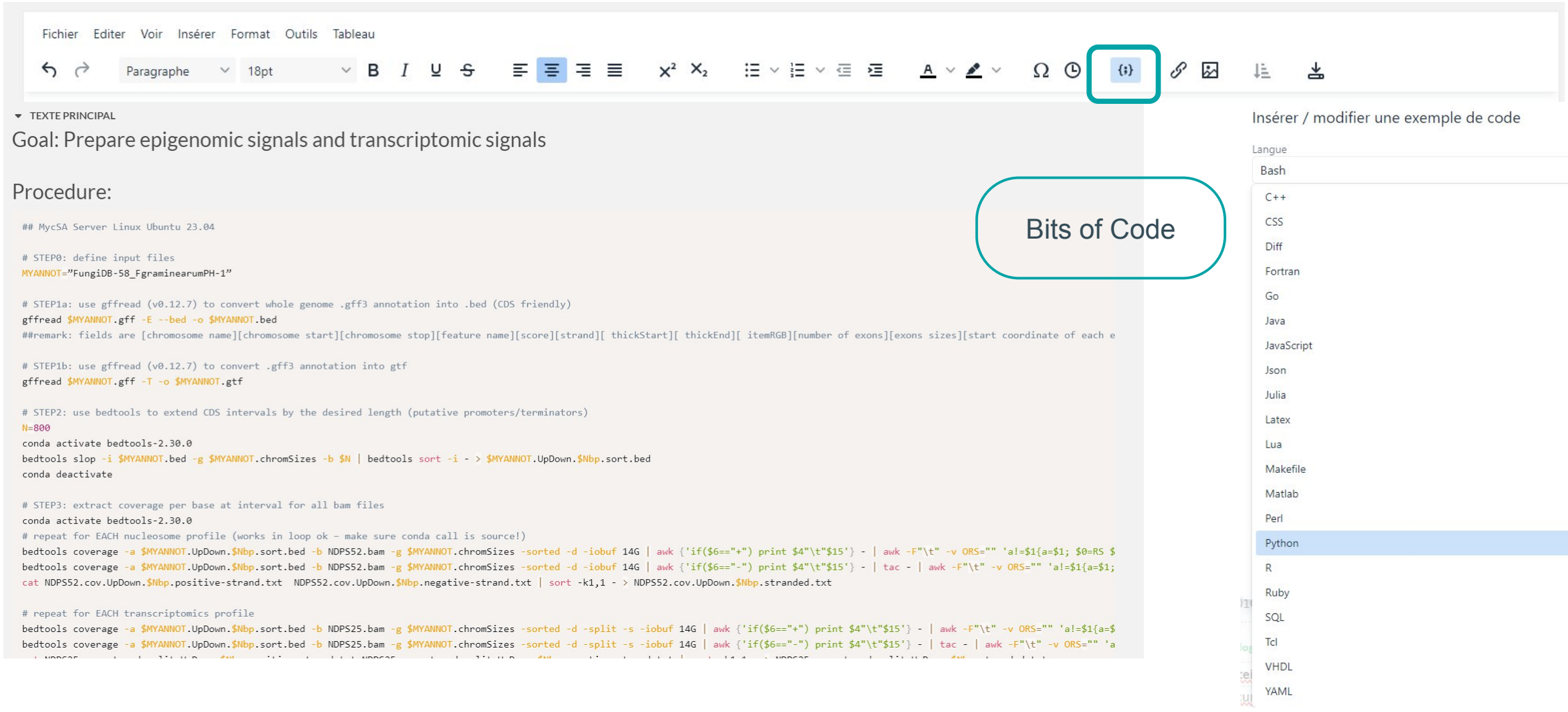


***F.graminearum INRA349* on PDA after 3 days of culture at 25°C in the dark.**
a) Single culture from above and bottom, b) Confrontation with itself from above and bottom, Scale bar; 5 mm

Pictures

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The Experience: what do we put in it?



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In short: In short: why use an electronic lab notebook?

- ✚ Adding attachments ➜ qPCR report, Excel spreadsheet, photographs…
- ✚ Reduced impression rate ➜ environment friendly!
- ✚ Sharing lab notebooks ➜ Visible from any location
  ➜ Anyone can add content (customizable)
- ✚ Sharing knowledge and protocols ➜ Use tags, sort by user name, date…

- ➖ Not accessible if internet problem / maintenance
- ➖ No electronic notebook during the experiments*

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For the PI…

- ✚ "Real-time" monitoring/interactions, including remotely
- ✚ Centralization of information around the same project
- ✚ Added value for long and/or multi-actor projects
- ✚ Accessible in confined premises
- ✚ No need to decrypt hand writting!

For the team, the lab …

- ✚ Quality Assurance, Metrology, Shared Resources Interfacing...
  - ➜ Need for local admins
  - ➜ Need for support, a lot or a little depending on the individual needs
  - ➜ Tight link required with IT services

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So many questions...

➜ Widespread use of electronic laboratory notebooks ?

➜ Which visibility practice to choose (*e.g.,* read-only by default for team members)?

➜ 1 notebook per person, 1 per project, several?

➜ How to manage tags?

➜ What should we do after users leave ? What about short stays ?

➜ How to interface (or not) elab with existing databases, calendars *etc.* ?

...

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We went for it!

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Thank you for your attention







Thanks Marine!

INRAE
Centre Nouvelle Aquitaine

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité