# eLabFTW

by Deltablot

Deltablot

Chapter 00

# DELTABLOT: WHO WE ARE

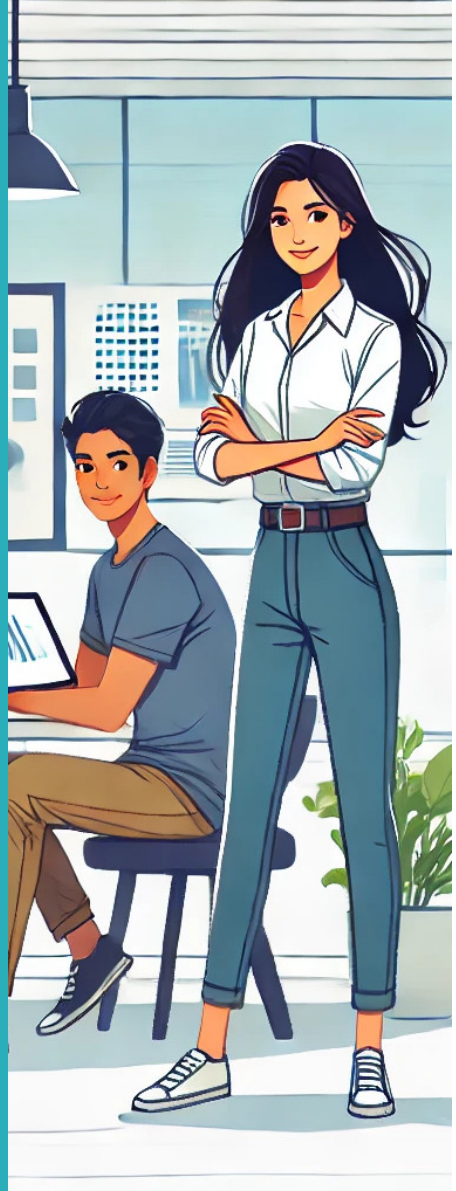
Nicolas Carpi
Director

Sydney Koke
Customer Success Manager

Moustapha Camara
Full Stack Developer

Elsa Touma
Full Stack Developer

- Founded in 2019
- Located in Paris, France
- Operating on four continents



# External collaborators

- **Marcel Bolten**: Fullstack developer

- **Hüseyin Uzun**: Video editor, german language trainer

- **Manon Stripes**: UI/UX design

- **Manuel Lera Ramirez**: cloning tool development

  (OpenCloning addon)

+ external contributors worldwide

Chapter 01

# DELTABLOT: WE ❤️ OPEN SOURCE

# Our core values

- Free software: users have the freedom to run, copy, distribute, study, change and improve the software

Learn more: https://www.deltablot.com/opensource/

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# Our core values

- Free software: users have the freedom to run, copy, distribute, study, change and improve the software
- We maintain open source projects
- We contribute to open source projects
- We donate to open source projects
- We are a member of APRIL association for the promotion of free and libre software

Learn more: https://www.deltablot.com/opensource/

# Why this impacts you?

- **Sovereignty**: hosted where you decide; full control of access, backups, and retention

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- **Long-term continuity**: usable and maintainable even if a vendor changes terms or disappears
- **Security & auditability**: transparent code; easier independent review and faster patching
- **Adaptable & interoperable**: customize workflows and integrate with your stack (SSO/LIMS/instruments)

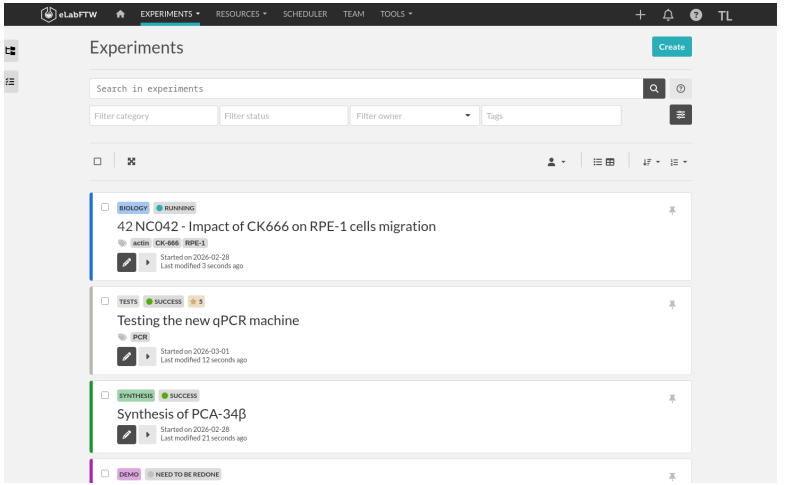
Chapter 02

# ELABFTW

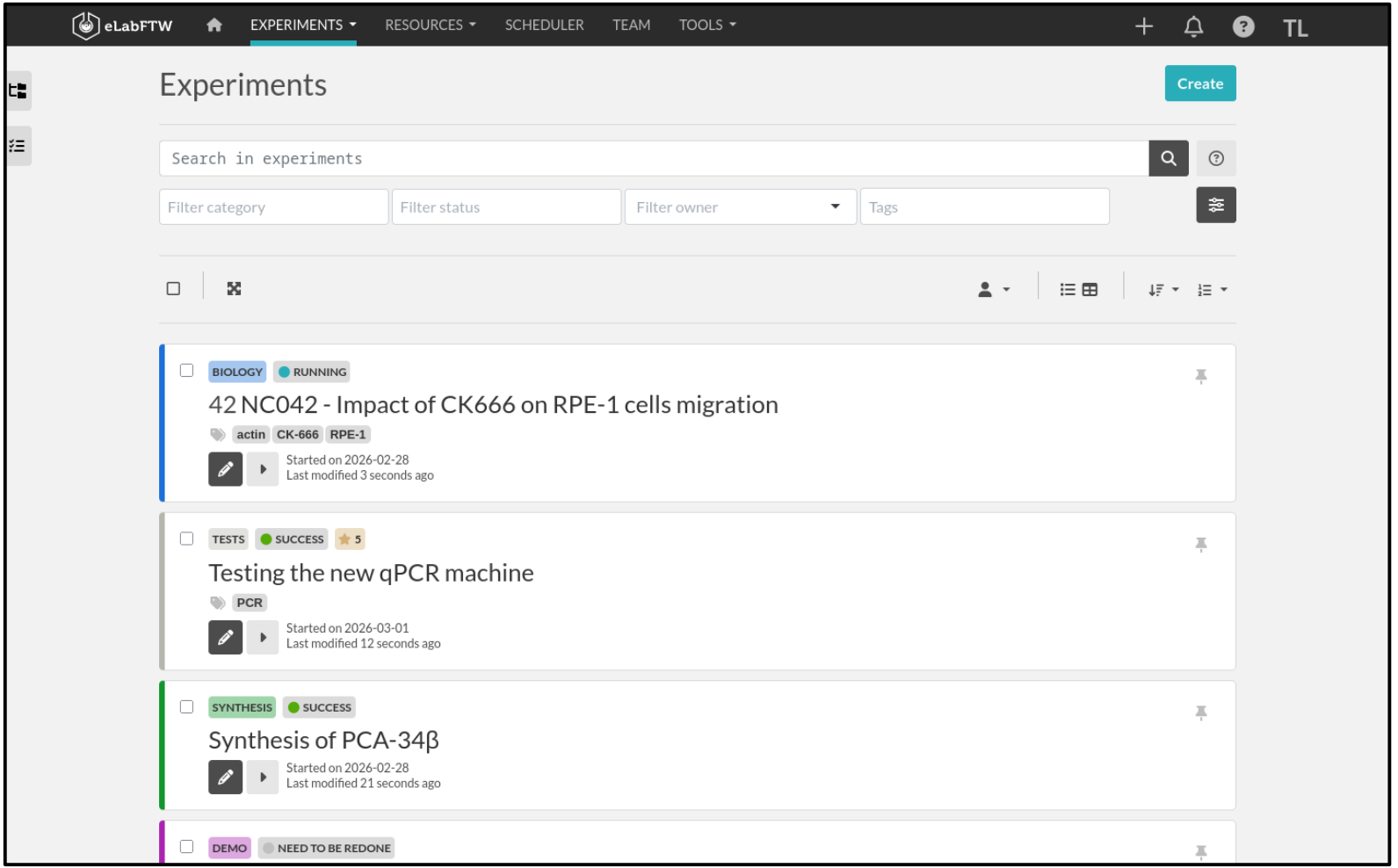
# The software: eLabFTW

**eLabFTW** is an electronic laboratory notebook for research groups

Modernity

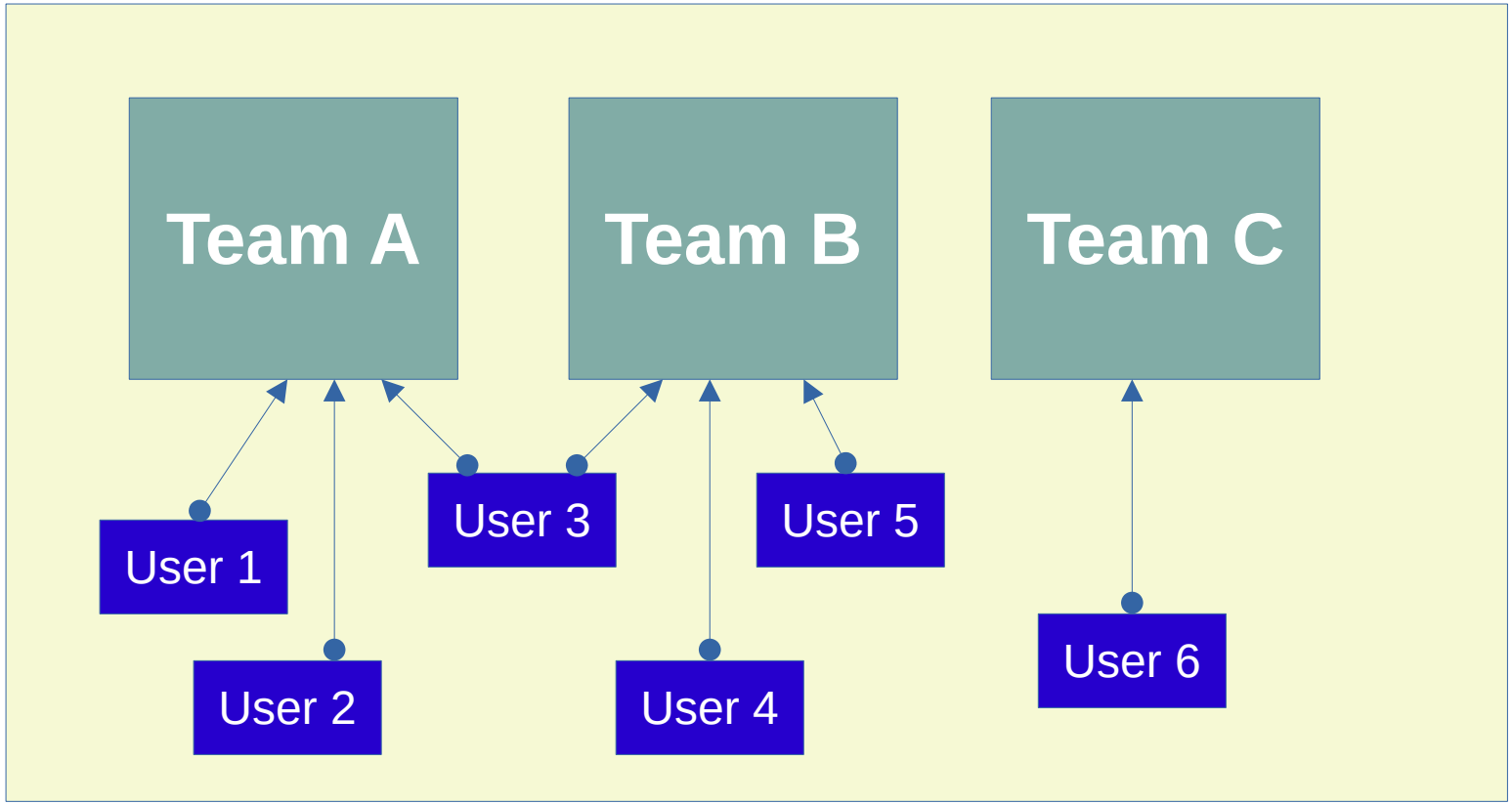


# The software: eLabFTW



# Main concepts

**https://elabftw.example.com**



# Main concepts

**Experiments**

**Resources**
(plasmids, cell lines, equipment, chemicals, ...)

Categories

Status

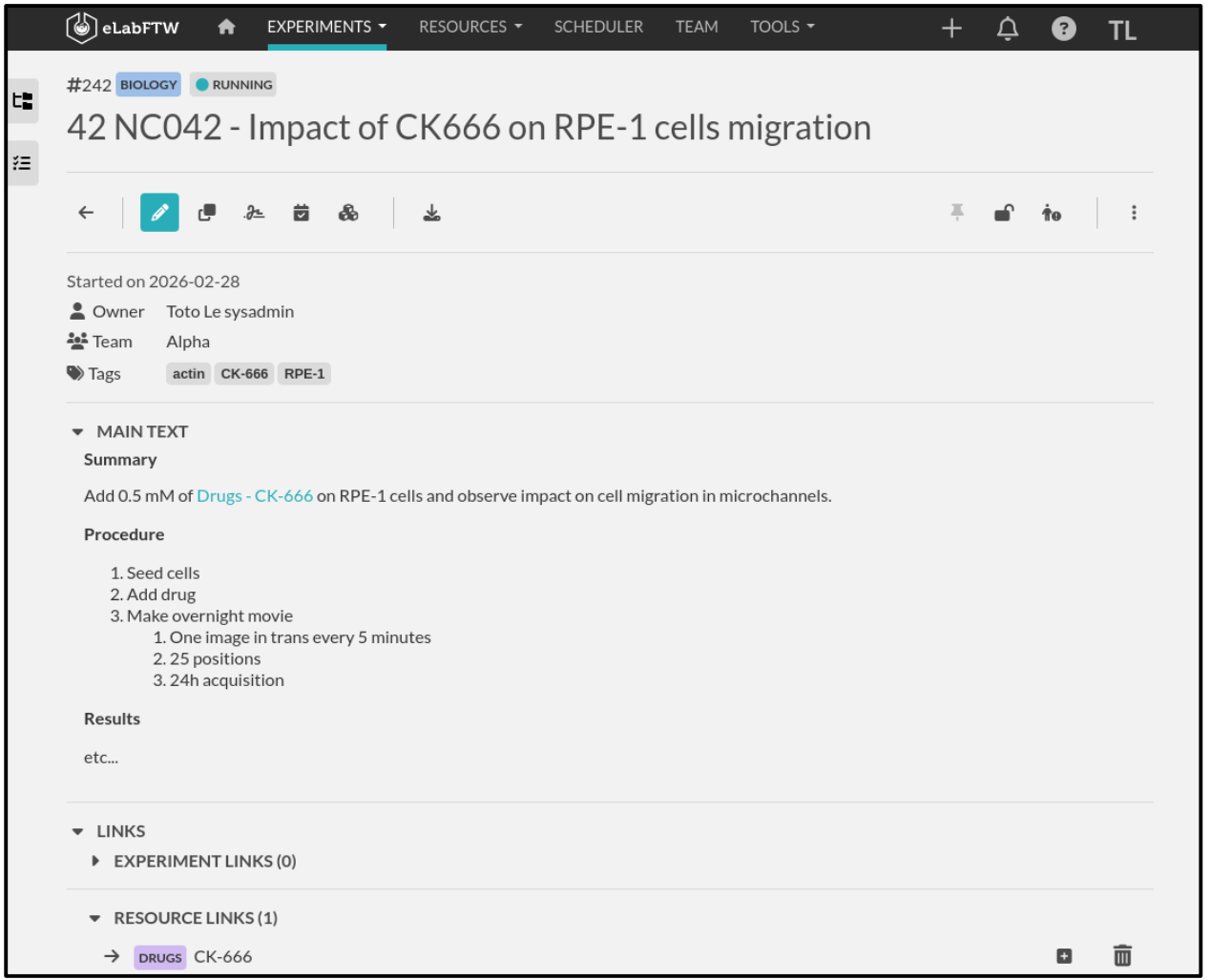
Tags

Attachments

Custom fields

Comments

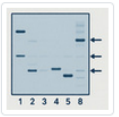
# An experiment



# An experiment

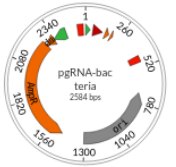
▼ ATTACHED FILES (3)

example-2sheets.xlsx 6.59 KiB - 2026-03-01 17:18:40
Click to add a comment




example.png 1.86 MiB - 2026-03-01 17:18:21
Click to add a comment

Open Viewer




example.dna 26.42 KiB - 2026-03-01 17:18:14
Click to add a comment

▶ LINKS

▼ PERMISSIONS

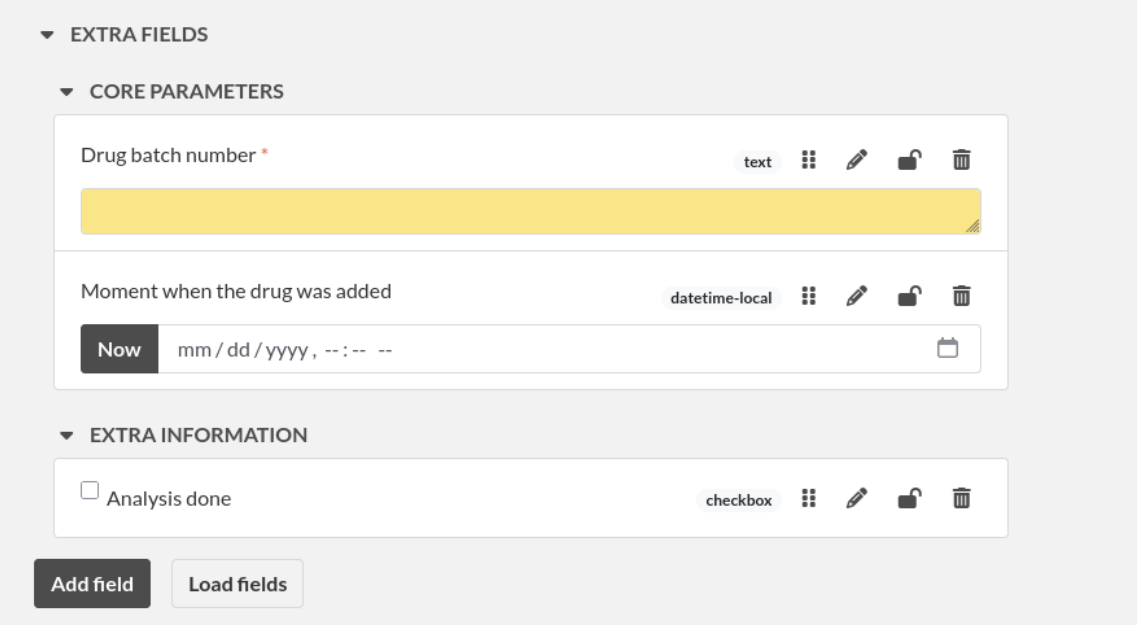
| | |
|---|---|
| Visibility | Only members of the team |
| Can write | Only owner and admins |

▼ COMMENTS (0)

Add a comment

Last modified on 2026-03-01 17:20:15
Unique eLabID: 20260228-0065c22c59fdf60eb8d6125c90c24169ac554f21

# Custom fields can be added to templates and experiments



## Add an extra field

▸ Manage field groups

Selected field group

Default group

### Add an extra field

Field type

Number

Name (required) *

Example number with units

Description

This input has multiple units and only accepts numbers

Available units

µM

mM

M

Add another choice

Blank value on duplicate

Required

## Add an extra field

▸ Manage field groups

Selected field group

Default group

### Add an extra field

Field type

Dropdown menu

Name (required) *

Example dropdown menu

Description

Multiple choices menu

Choices

Yes

No

Maybe -

Add another choice

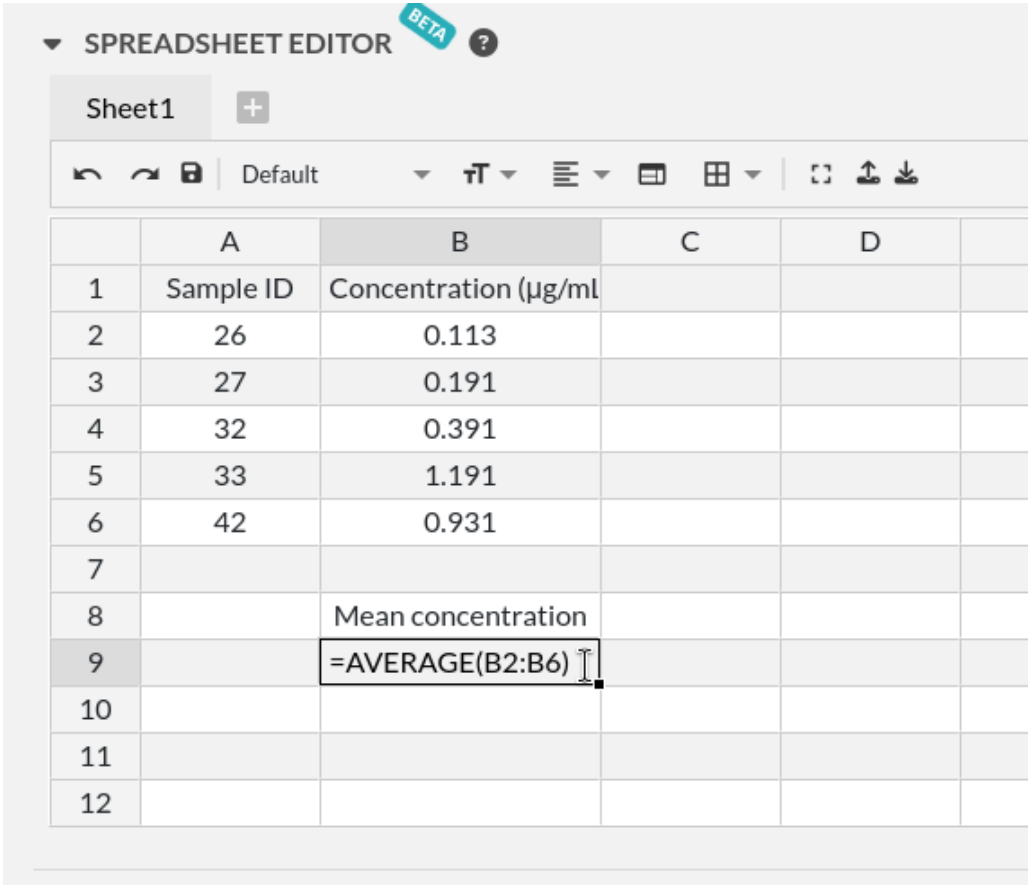
Blank value on duplicate

Required

Allow selection of multiple values?

Close Save

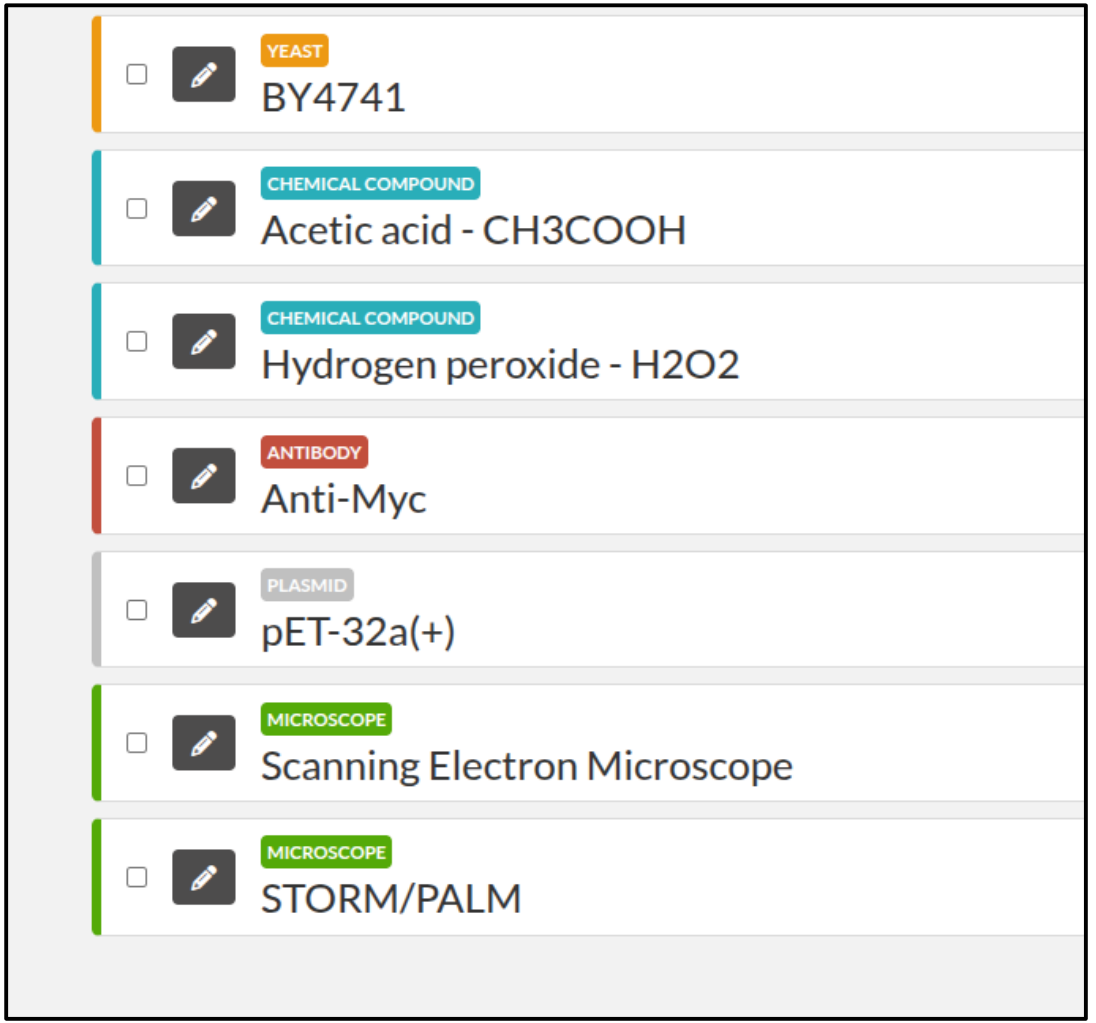
# Spreadsheet editor

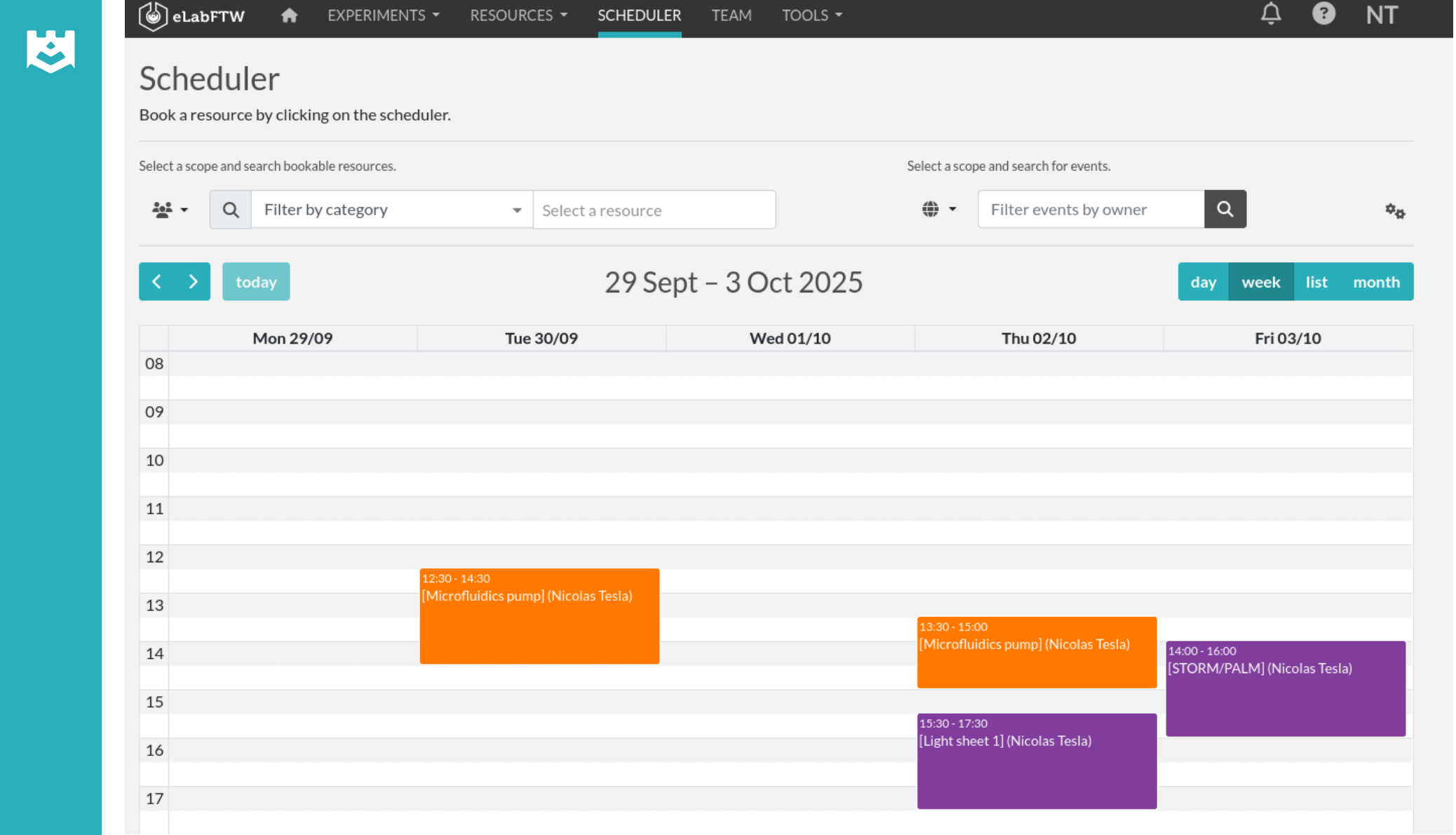



| | A | B | C | D |
|---|---|---|---|---|
| 1 | Sample ID | Concentration (µg/ml | | |
| 2 | 26 | 0.113 | | |
| 3 | 27 | 0.191 | | |
| 4 | 32 | 0.391 | | |
| 5 | 33 | 1.191 | | |
| 6 | 42 | 0.931 | | |
| 7 | | | | |
| 8 | | Mean concentration | | |
| 9 | | =AVERAGE(B2:B6) | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

# Resources: store your materials and equipment

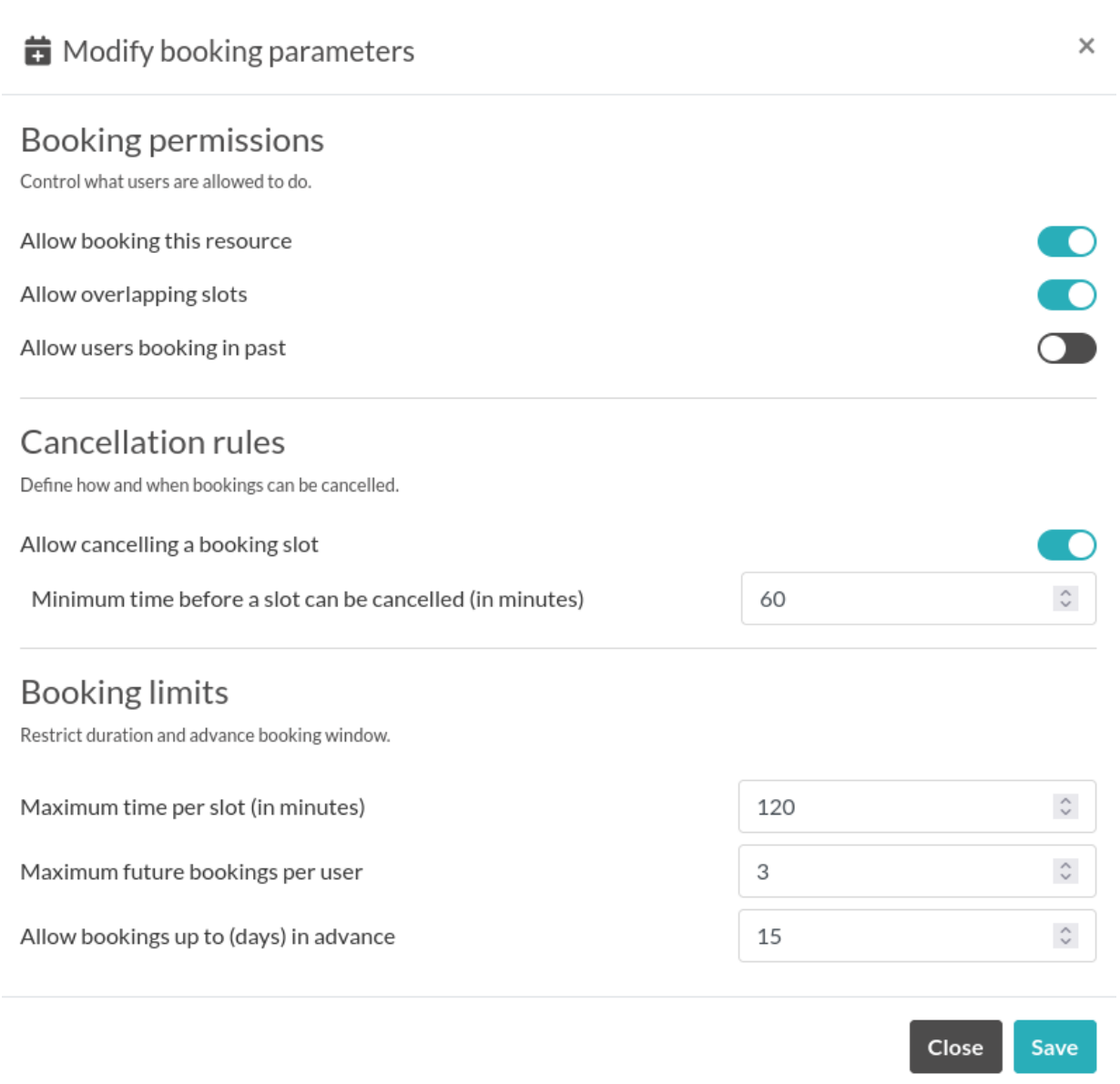
- Similar to experiments
- Highly customizable
- Booking system
- Inventory




eLabFTW
EXPERIMENTS
RESOURCES
SCHEDULER
TEAM
TOOLS
NT
Scheduler
Book a resource by clicking on the scheduler.
Select a scope and search bookable resources.
Filter by category
Select a resource
Select a scope and search for events.
Filter events by owner
today
29 Sept – 3 Oct 2025
day
week
list
month
Mon 29/09
Tue 30/09
Wed 01/10
Thu 02/10
Fri 03/10
08
09
10
11
12
13
14
15
16
17
12:30 - 14:30
[Microfluidics pump] (Nicolas Tesla)
13:30 - 15:00
[Microfluidics pump] (Nicolas Tesla)
14:00 - 16:00
[STORM/PALM] (Nicolas Tesla)
15:30 - 17:30
[Light sheet 1] (Nicolas Tesla)

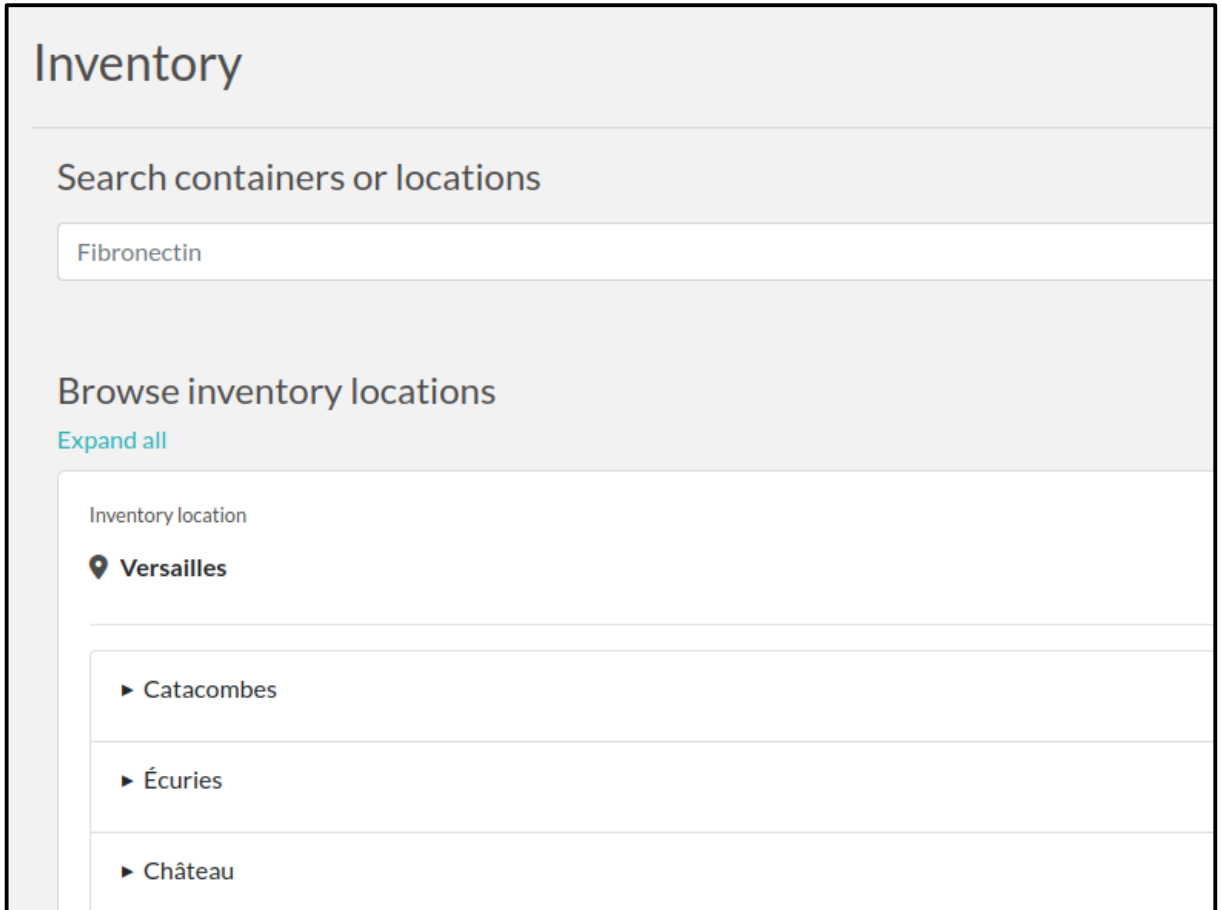
# Integrated booking system

- Manage booking of resources:
  - Microscopes
  - Analyzers
  - Rooms
  - Machines, *etc*...

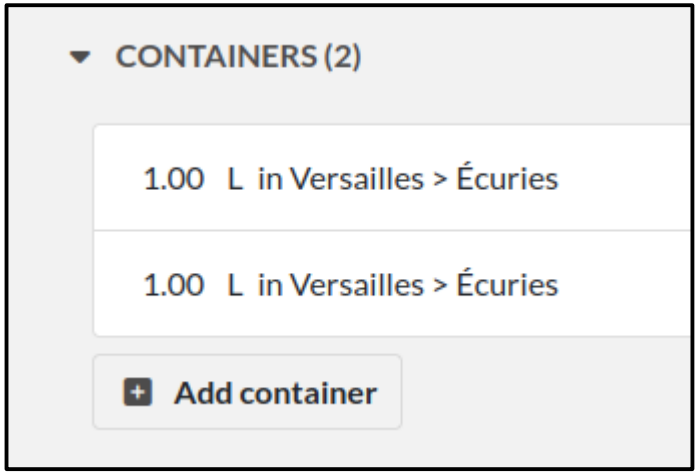


# Inventory

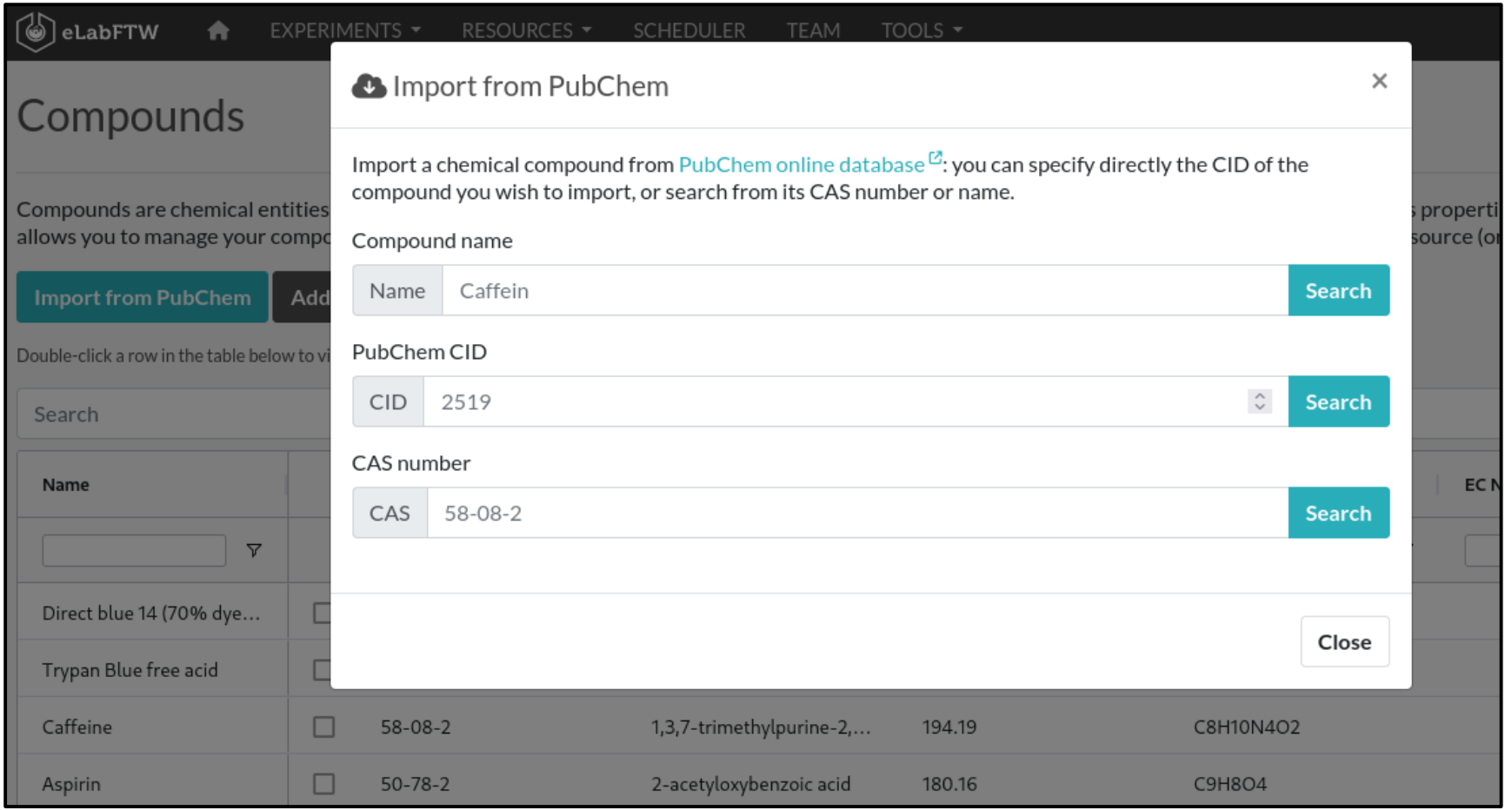
## Define inventory locations




## Add containers in locations



# A chemical compounds database



# Edit compound

Search associated resources

Name
Kynurenic Acid

IUPAC Name
4-oxo-1H-quinoline-2-carboxylic acid

CAS number
492-27-3

EC number
200-362-1

Molecular formula
C10H7NO3

Molecular weight
189.17

SMILES
C1=CC=C2C(=C1)C(=O)C=C(N2)C(=O)O

InChI
InChI=1S/C10H7NO3/c12-9-5-8(10(13)14)11-7-4-2-1-3-6(7

InChI Key
HCZHHEIFKROPDY-UHFFFAOYSA-N

## Safety information

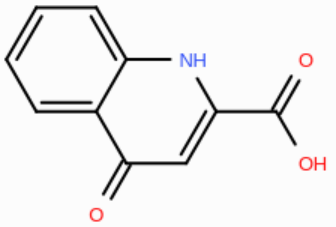
Hazardous to health

## Safety information

- Hazardous to health — off
- Corrosive — off
- Explosive — off
- Flammable — on
- Gas under pressure — off
- Hazardous to environment — on
- Serious health hazard — off
- Oxidising — on
- Toxic — off
- Radioactive — off
- Controlled substance — off
- Antibiotic precursor — off
- Explosive precursor — off
- Drug precursor — off
- Carcinogenic, mutagenic and reprotoxic (CMR) — off
- Nanomaterial — off

EXPERIMENTS TEMPLATES RESOURCES SCHEDULER TEAM TOOLS TL

# Chemical Structure Editor



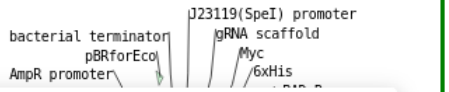

Add to compounds database | Search similar structures | Exact structure

# OpenCloning

CLONING PRIMERS DESCRIPTION SEQUENCE DATA MODEL

1 Read from file example.gbk

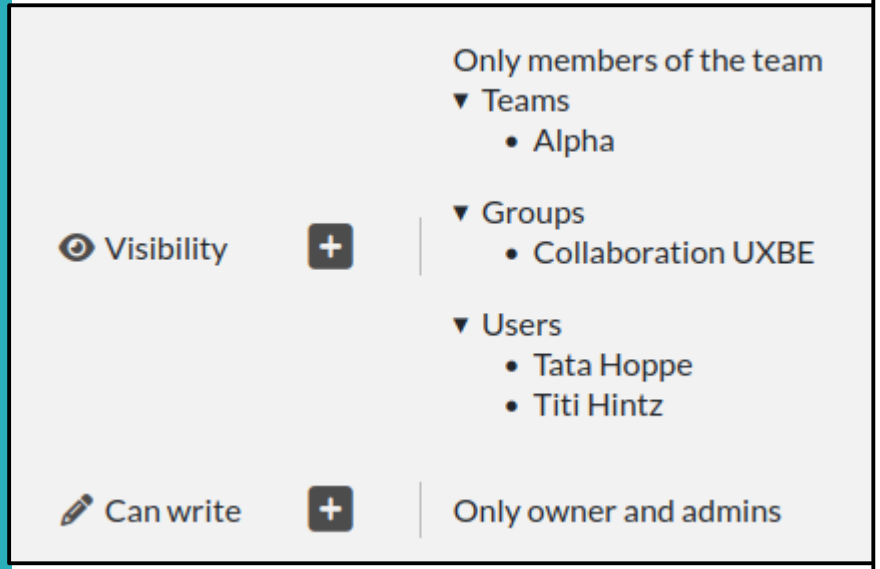
2

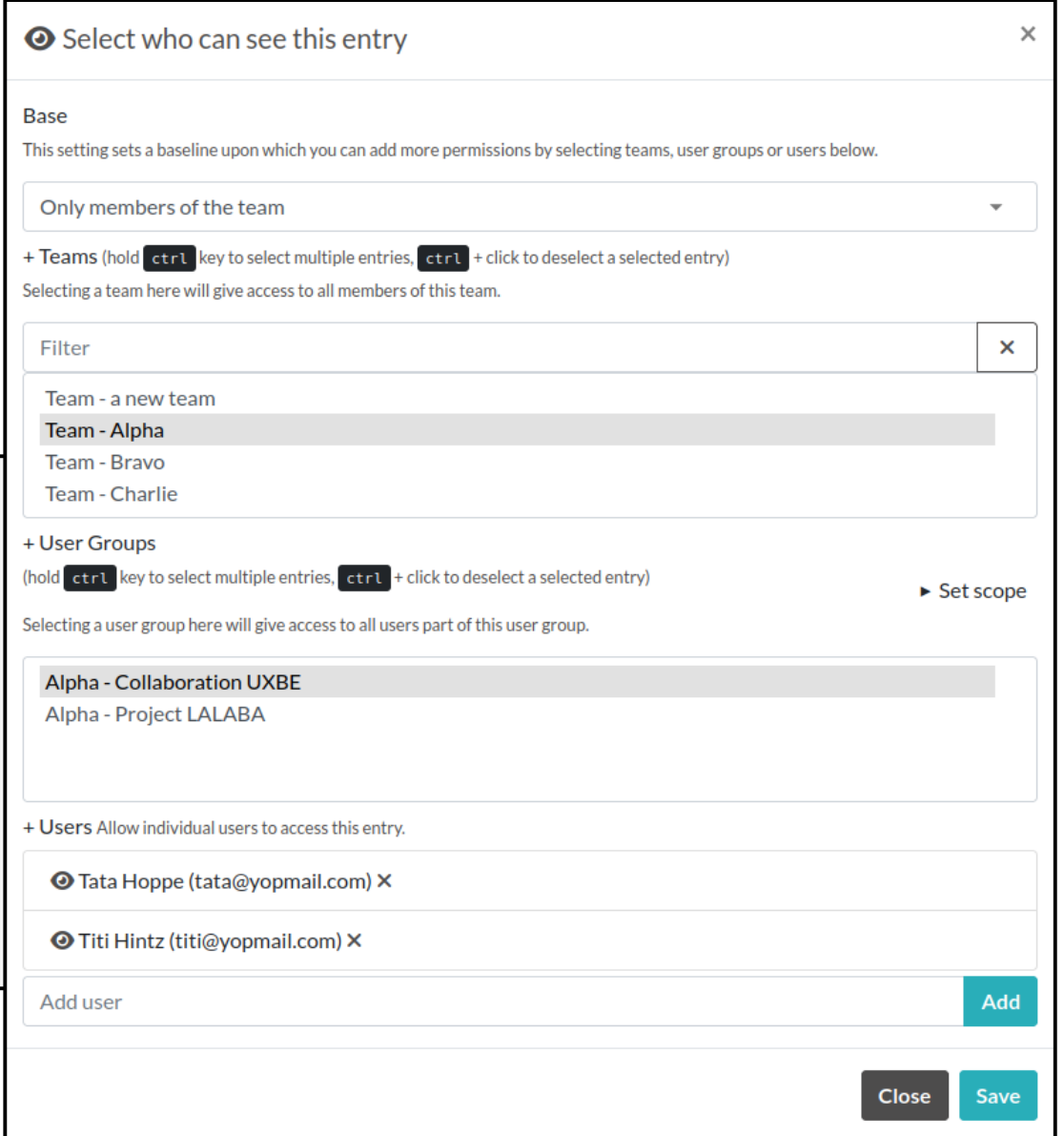



- Annotate features
- CRISPR
- Gateway
- Gibson assembly
- Homologous recombination
- In-Fusion
- Join overlap extension PCR fragments
- Ligation (sticky / blunt)
- PCR
- Polymerase extension
- Restriction
- Restriction + ligation / Golden Gate

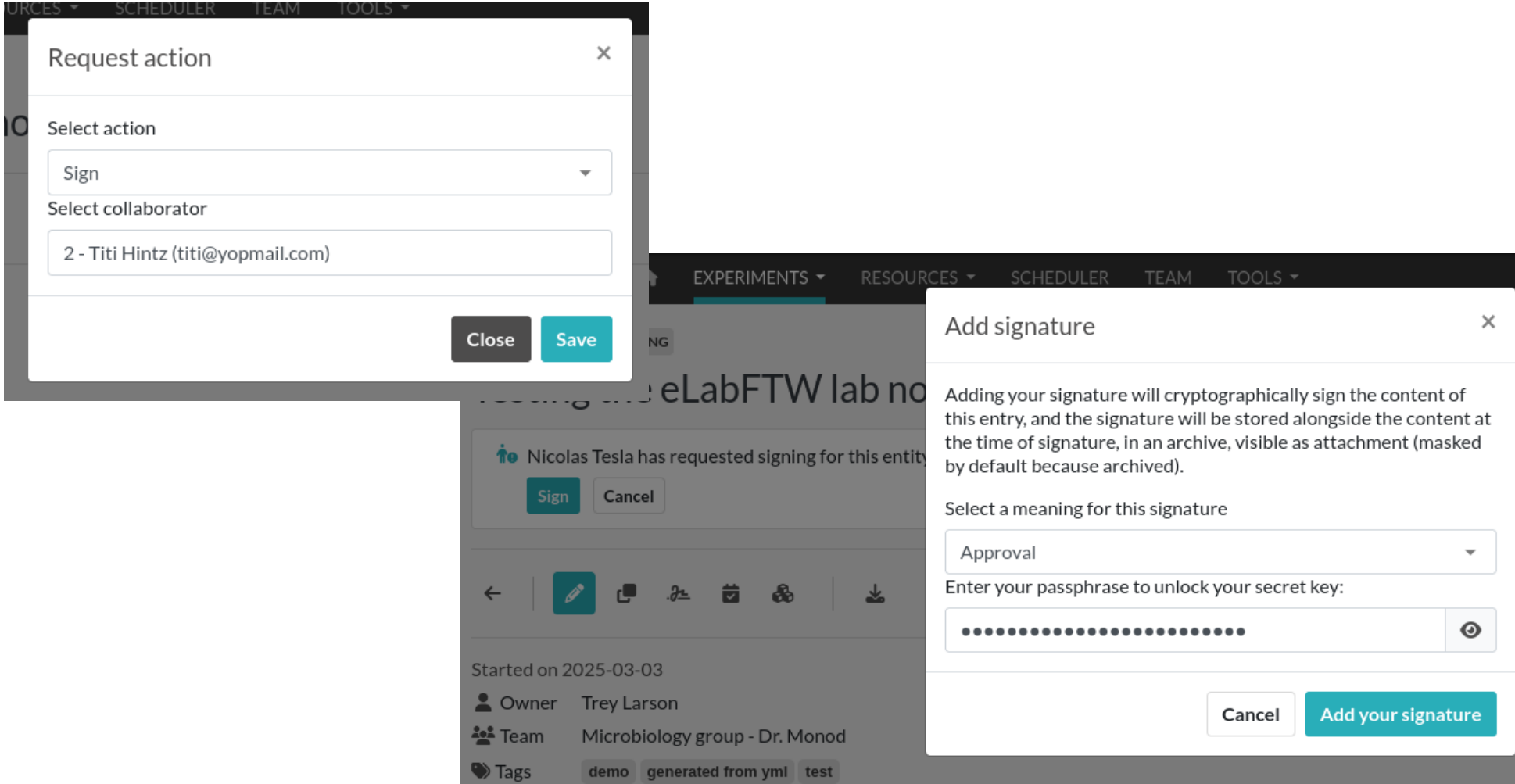
# Fine-grained permissions system

Control who can see what precisely



# Request actions from collaborators



# Electronic signatures

State of the art cryptographic signatures

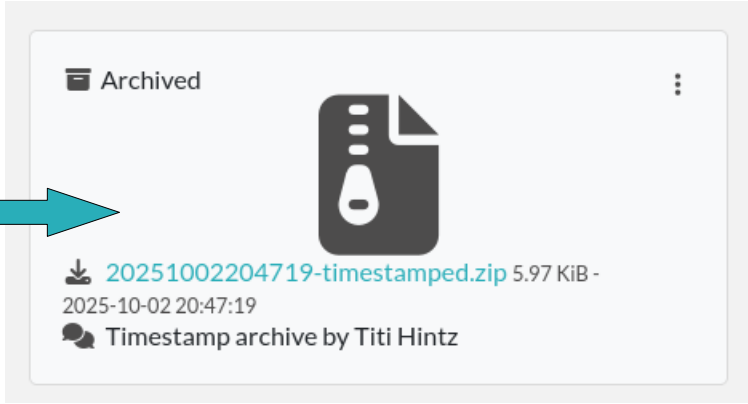
- Asymetric encrypted keys
- Passphrase protection
- Elliptic curves cryptography
- Minisign standard
- Immutable archives
- Out-of-band verifiability

# Qualified Trusted Timestamping

eIDAS

- Compliant with European regulation **910/EU/2014**
- Protocol standardized by **RFC 3161**
- **Qualified** timestamping authority: Signaturit Group

Contains signed token for out-of-band verifiability



# Blockchain timestamping

- Based on Ethereum blockchain
- Integrated in eLabFTW

THE bloxberg
ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND BLOCKCHAIN

ISSUES THIS

# RESEARCH OBJECT CERTIFICATE

## #23930

The bloxberg certificate serves as a proof of existence that the data corresponding to the cryptographic identifier were transacted on the bloxberg blockchain at the issued time.

**MINTED NFT**

https://blockexplorer.bloxberg.org/23930

**TRANSACTION DETAILS**

0x6cccf57361eddee5afb2bbb7b790a8fddaad1e166f6806bab5653e1ebdcc2f01

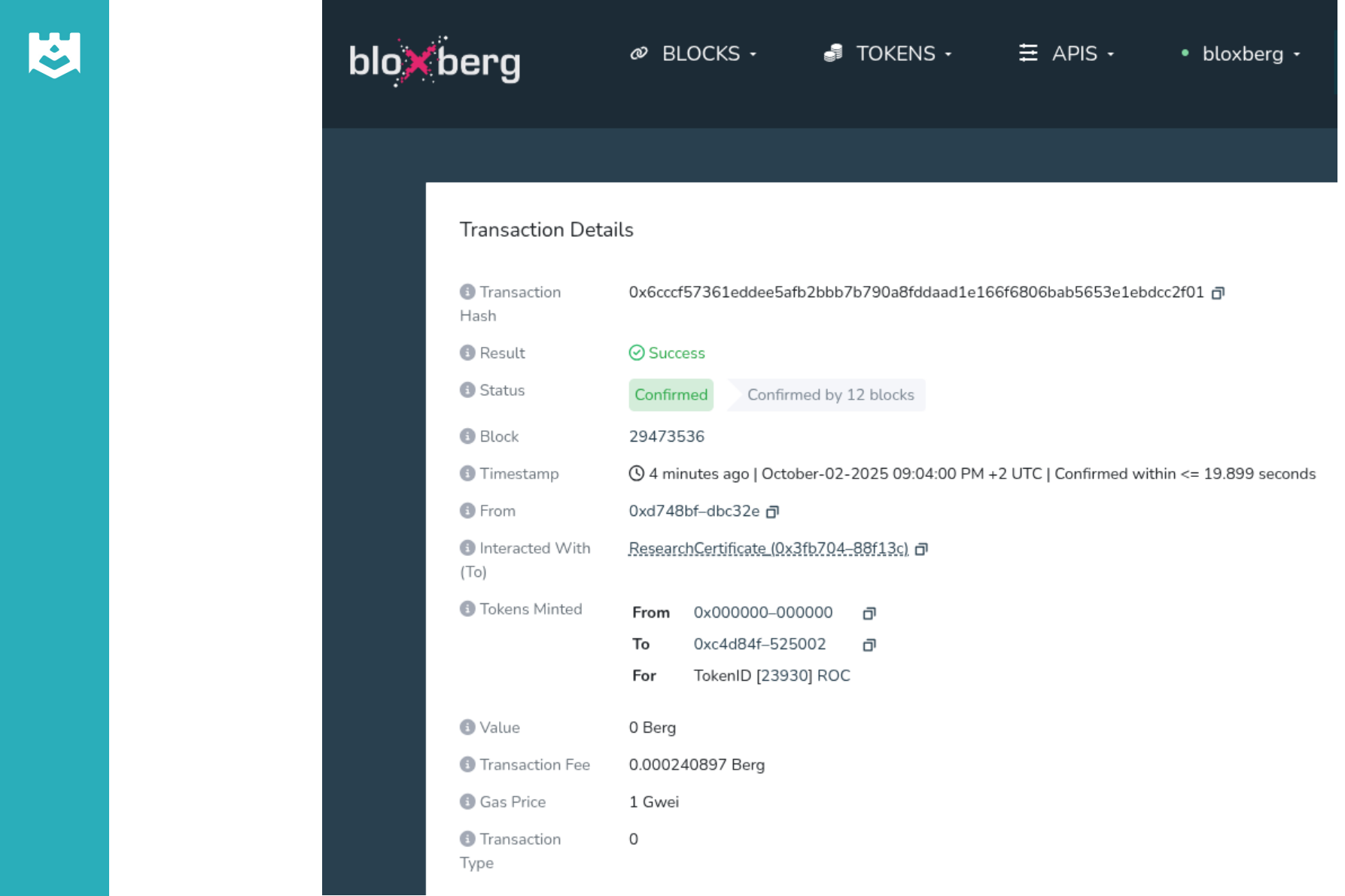
**FILE HASH**

0x9d993062add7429afd362700a2734987f3b905147cd2a149b53e37e50c06750c

**TIME STAMP**

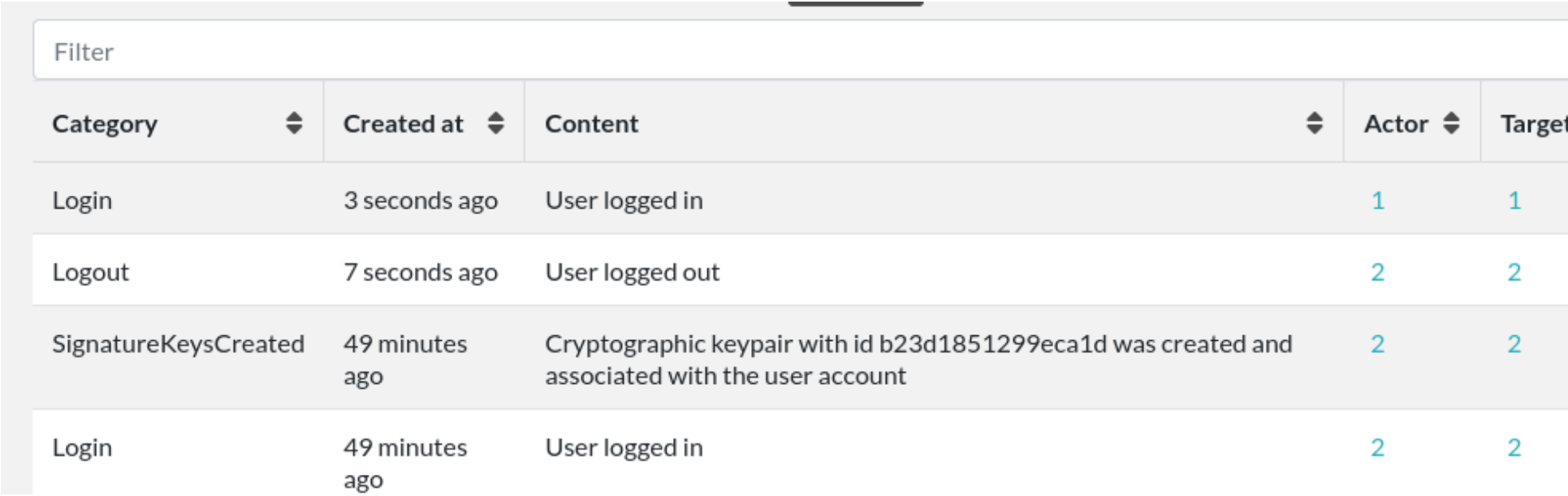
2025-10-02T19:04:00.566990

CERTIFIED VERIFY.BLOXBERG.ORG

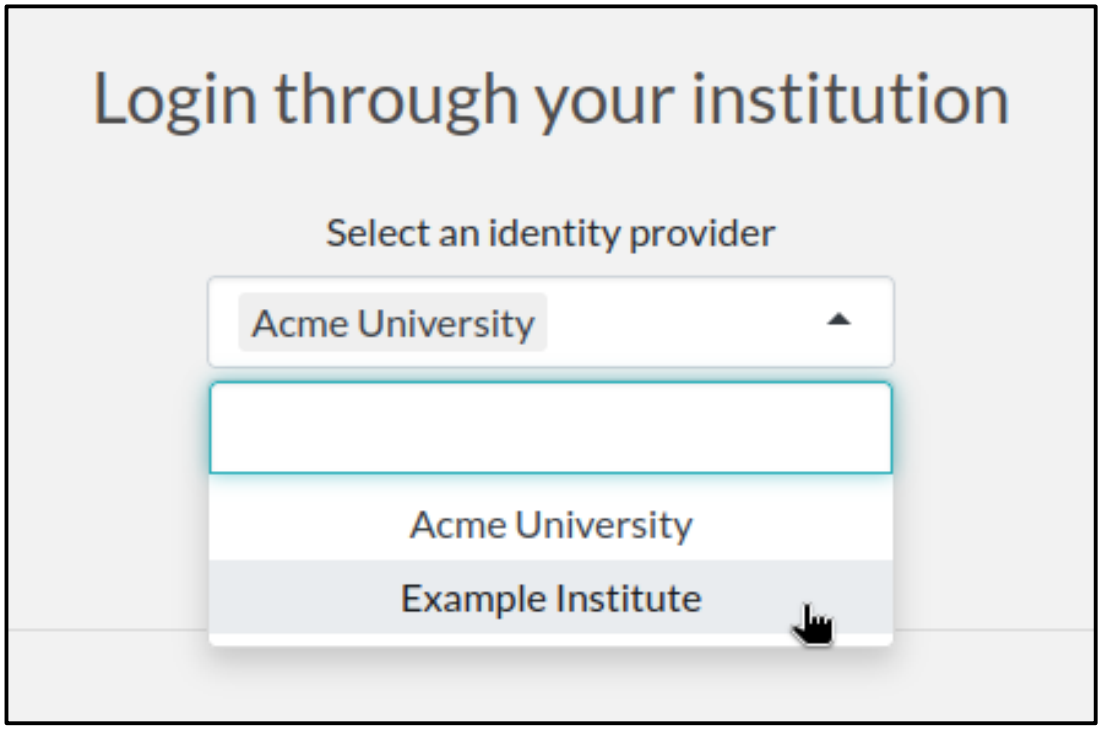

bloxberg
BLOCKS
TOKENS
APIS
bloxberg
Transaction Details
Transaction Hash
0x6cccf57361eddee5afb2bbb7b790a8fddaad1e166f6806bab5653e1ebdcc2f01
Result
Success
Status
Confirmed
Confirmed by 12 blocks
Block
29473536
Timestamp
4 minutes ago | October-02-2025 09:04:00 PM +2 UTC | Confirmed within <= 19.899 seconds
From
0xd748bf–dbc32e
Interacted With (To)
ResearchCertificate (0x3fb704–88f13c)
Tokens Minted
From 0x000000–000000
To 0xc4d84f–525002
For TokenID [23930] ROC
Value
0 Berg
Transaction Fee
0.000240897 Berg
Gas Price
1 Gwei
Transaction Type
0

# Integrity and traceability

- Immutable audit logs
- Immutable files with integrity cryptographic sum
- Soft delete mechanism to prevent destructive actions

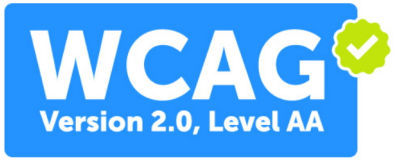


# Centralised authentication



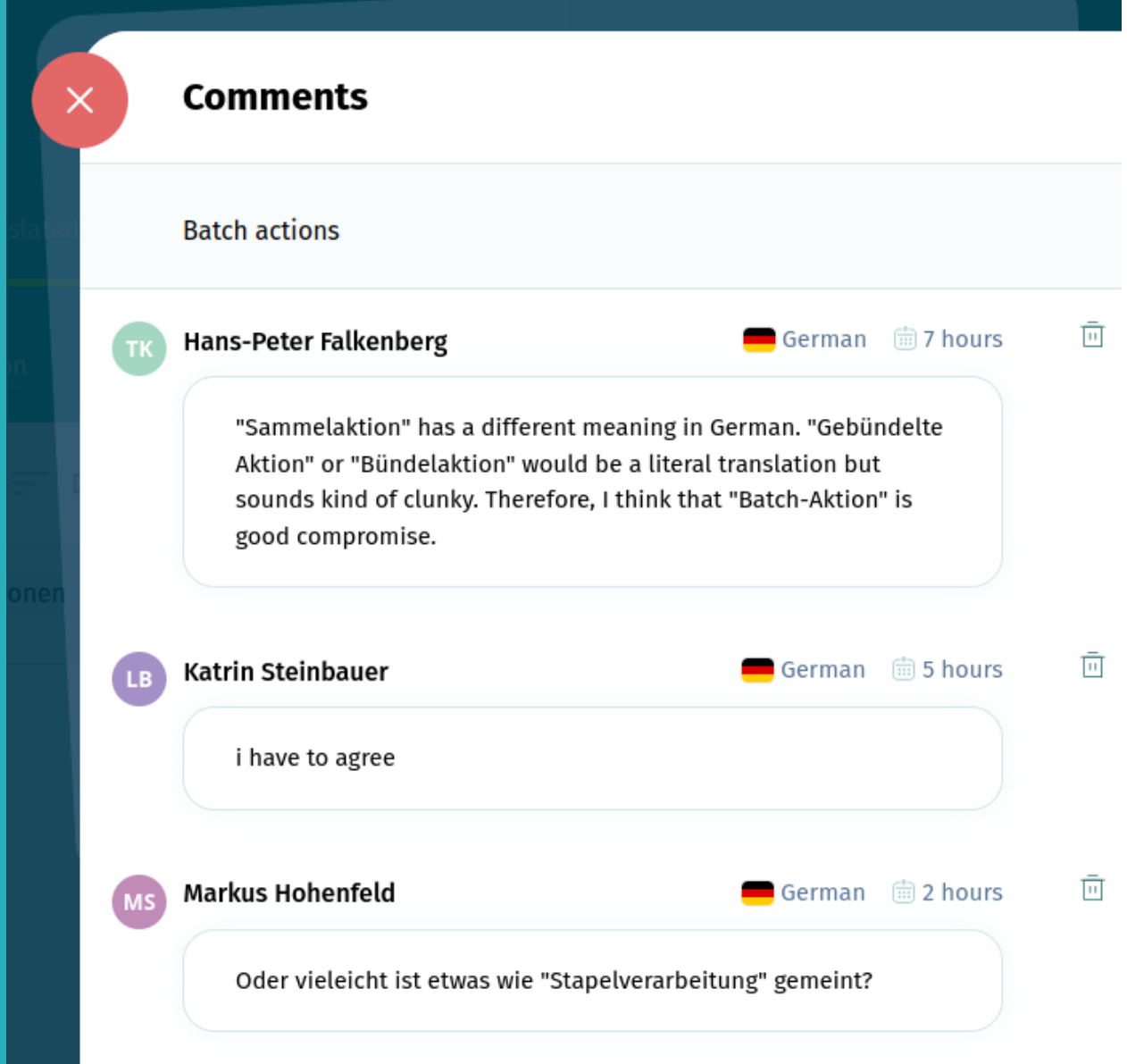

- Use your institutional authentication service
- Support for **federated** services
- **SAML** or **LDAP** protocols

# Accessibility



- Compliant with WCAG2.1 guidelines
- Level AA and AAA when possible
- Included in Continuous Integration pipeline
- Compliant with RGAA 4.1 guidelines (see report)

Download our accessibility report:
https://www.deltablot.com/files/deltablot-accessibility-report-WCAG.pdf




# Internationalization

Translated into 21 languages by the user community (160+ contributors)

Each user is free to display the interface in the language of their choice

# Features of eLabFTW

- **Freedom**: published under an OSI approved license (AGPL3.0)
- **Utility**: saves time
- **Popular**: greatly appreciated by users
- **Flexibility**: adaptable to all kinds of research
- **Accessibility**: compliant to international accessibility standards
- **Internationalisation** : available in 21 languages
- **Community**: large user base from various domains
- **Extendable**: provides an easy-to-use HTTP REST API
- **Security**: code audits, bug bounty program, good practices

Chapter 02

# SOFTWARE SECURITY

# Quality and security

openssf best practices | silver

- Basics 13/13
- Change Control 9/9
- Reporting 8/8
- Quality 13/13
- Security 16/16
- Analysis 8/8

**Quality and security aspects**

- Code audits by external security companies
- Bug bounty program for security researchers
- Responsible disclosure through CVE publication
- Advanced configuration options: centralized authentication, password policy, multi factor, protection against brute-force attacks, *etc*...
- Good practices of project management (OpenSSF referential)

# eLabFTW: quality and security

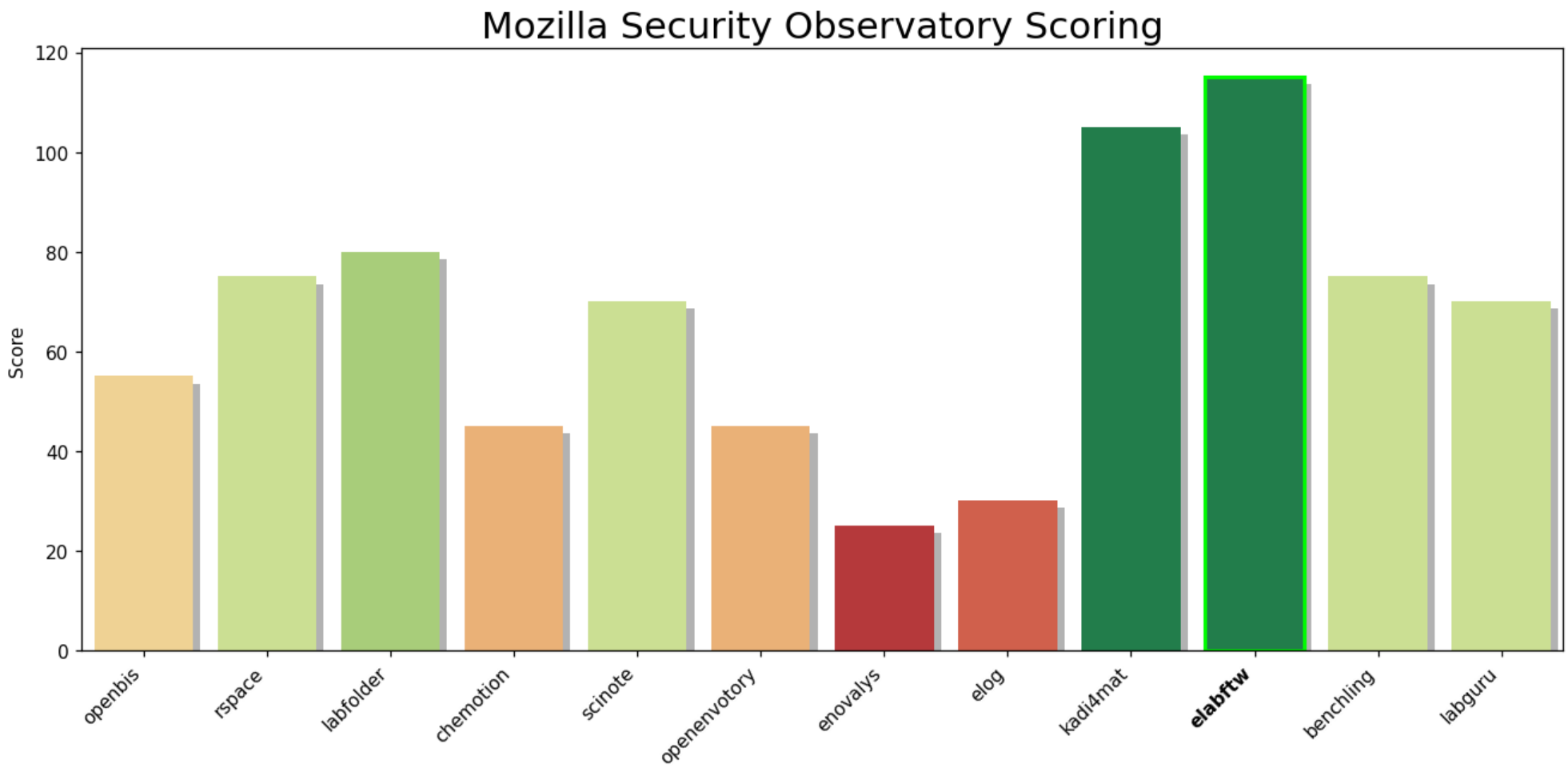
## Scan Summary

| | |
|---|---|
| **Host:** | demo.elabftw.net |
| **Scan ID #:** | 20518336 (unlisted) |
| **Start Time:** | July 28, 2021 2:59 PM |
| **Duration:** | 6 seconds |
| | |
| **Score:** | 115/100 |
| **Tests Passed:** | 11/11 |

*Scan result from observatory.mozilla.org*

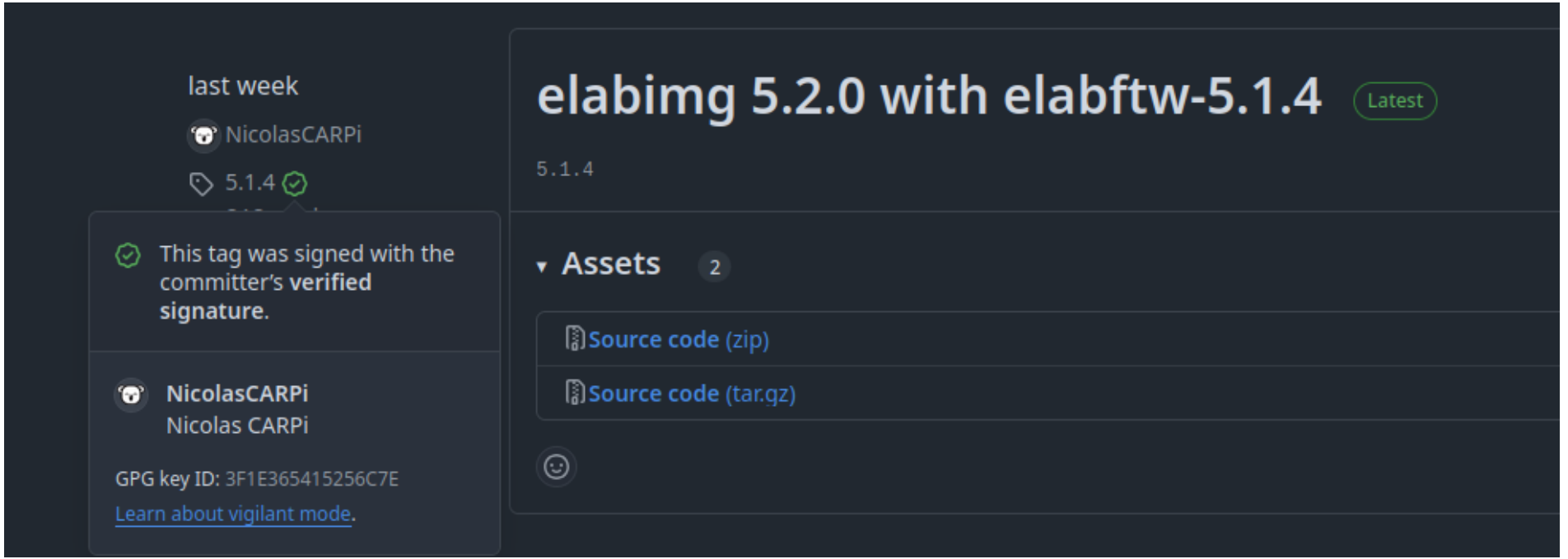
**More security aspects**

- Perfect score on Mozilla's Obervatory
- Services hardening
- Services containerization
- Automated vulnerabilities scanning



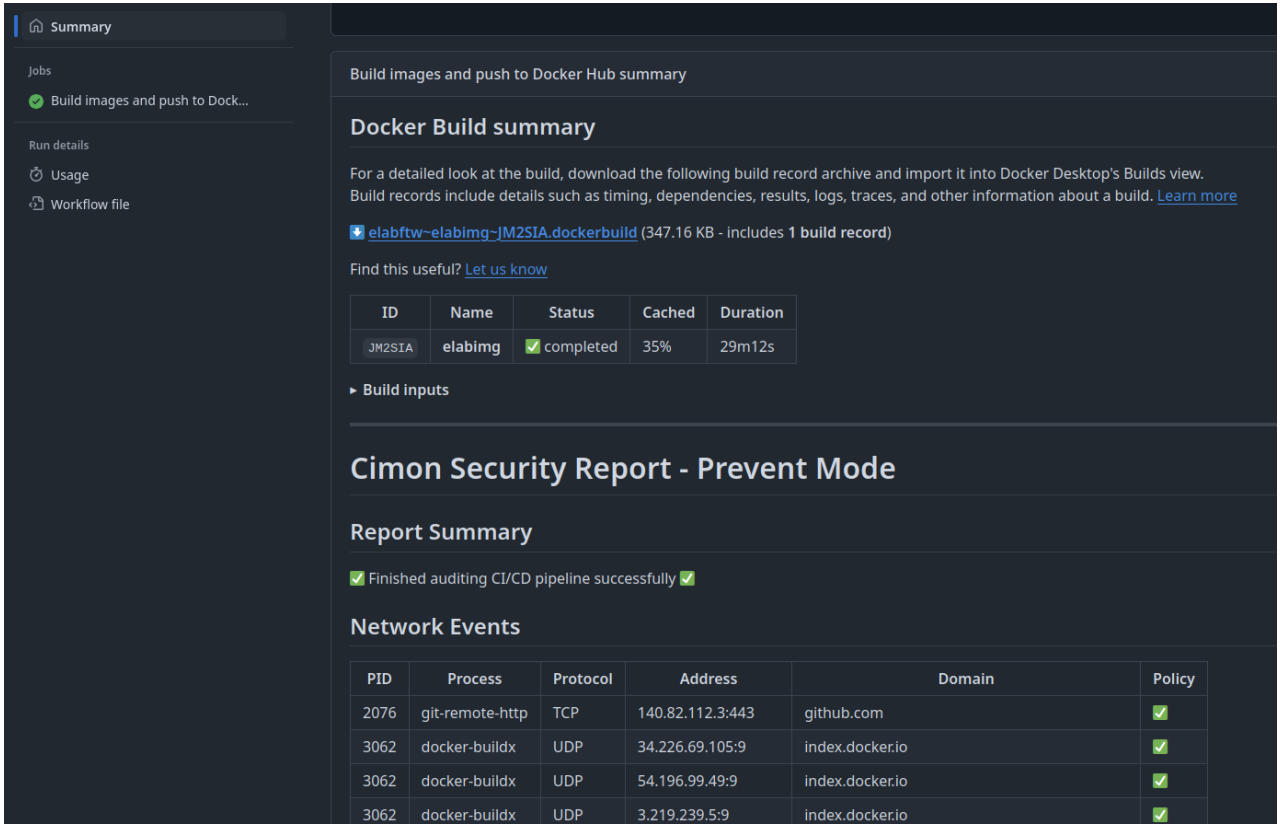

*Scan results from observatory.mozilla.org*

# eLabFTW: quality and security




*Tagged releases are signed with a GPG key and have a public build log*

# eLabFTW: quality and security




*Auditable build logs with kernel level protection against supply chain attacks*

Chapter 03

# OPEN SCIENCE COMMUNITY

# eLabFTW: a major actor in open science and FAIR data

**Founding member of The ELN Consortium**

- 15+ members including other ELN editors
- Created a standardized exchange file format (.eln)
- Based on RO-Crate and JSON-LD
- Recognized as an official media type by IANA
- Increases interoperability of data (FAIR)

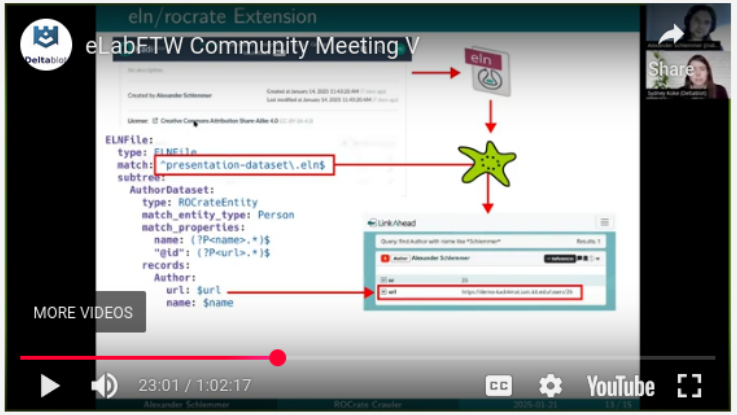
## Organizer of Community Meetings (bi-monthly)

### Fifth eLabFTW Community Meeting

In this session, we learned about the integration of eLabFTW with other tools.

1. Dr. Alexander Schlemmer (IndiScale): “Data Integration from RO-Crate and the ELN-File format using the LinkAhead Crawler”
2. Open session where users can ask questions, discuss upcoming features, and talk about their experiences with eLabFTW.

Watch recording

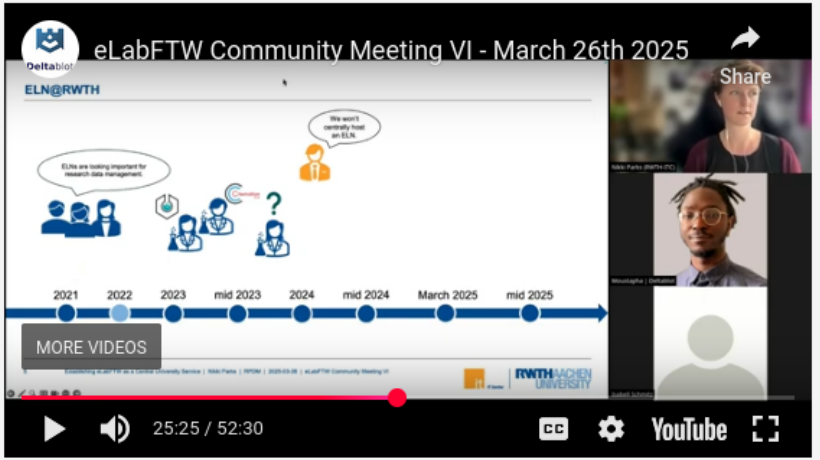



### Sixth eLabFTW Community Meeting

In this session, we learned about strategies for teaching with eLabFTW and implementing the software at research institutions.

1. Nikki Parks (RWTH Aachen University) - “Establishing eLabFTW as a Central University Service”
2. Isabell Schmitz (Goethe University Frankfurt) - “Transforming Lab Education: Teaching with eLabFTW”

Watch recording




elabftw

community meeting

Chapter 05

# CHOOSE YOUR PLAN

# Two main plans

## 1 PRO SUPPORT

We help you deploy eLabFTW on your network and provide support and training (On-Premise)

## 2 PRO HOSTING

We take care of everything (SaaS)

| | PRO Support 3k€/year | PRO Hosting 3.2~9k€/year |
|---|---|---|
| Email support | ✓ | ✓ |
| Training webinars (English, French or German) | ✓ | ✓ |
| Discount on custom development requests | ✓ | ✓ |
| eIDAS qualified timestamping tokens | ✓ | ✓ |
| Managed dedicated instance | ○ | ✓ |
| Managed updates | ○ | ✓ |
| Managed encrypted backups with geo-redundancy and immutable snapshots | ○ | ✓ |

# Users in Europe

eLabFTW ELN is massively used in Europe by numerous Universities and companies

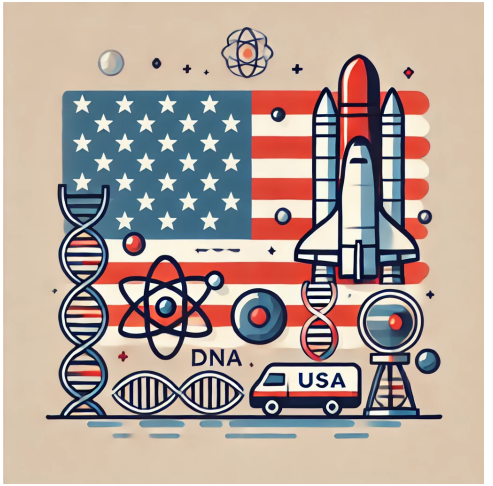
France: CNRS, IRD, INRAE, SOLEIL, ENS, various Universities and research centers

Germany: even more in use than France…

Spain, Portugal, Belgium, Italy, United Kingdom, Finland, Sweden,

the list doesn’t stop!

# Users in United States of America




- **Brandeis University** (Massachussets)
- **Montana State Universit**y (Montana)
- **University of New England** (Maine)
- **NHLBI National Heart, Lung, and Blood Institute** (Maryland)
- + various labs and private companies

# What our Users say

RWTH AACHEN UNIVERSITY

"A user-friendly and flexible open source tool with great support and a helpful community."

**Nikki Parks**
Data Steward
IT Center RWTH Aachen

TU Clausthal

"Great tool for doing and teaching good RDM practices"

**Florian Strauss**
Dr. rer. nat. Librarian at Clausthal University of Technology

Heidelberg

"Super fast developer feedback.
Easy setup and onboarding."

**Alexander Haller**
Master of Science - Duale Hochschule Baden-Württemberg Karlsruhe

Leibniz Universität Hannover

"Well maintained interdisciplinary ELN with a lively community."

**Lauritz Bußfeld**
Alumni

Universität Münster

"Intuitive to use, great UI, great cdommunity, open source and generically usable."

**Adrienne Karsten**
Referentin für Forschungsdatenmanagement
ULB-Zentralbibliothek

ÉCOLE POLYTECHNIQUE
UNIVERSITÉ PARIS-SACLAY

"The most adapted ELN software for academic research groups. A true alternative to paper notebooks, that is simple andintuitive to use."

**Garrett Curley**
Ecole Polytechnique
Laboratoire Physique des Plasmas

Bifrost biosystems

"I can highly recommend elabFTW. I'm using it since more than two years. It's easy to install and maintain. And more over, requests for features are listened to and implemented."

**Christoph Engwer**
Dr. rer. nat. Senior Software Engineer at Bifrost Biosystems

TEXAS A&M UNIVERSITY

"Easy and simple to setup and use."

**Rohit Karthikeyan**
Ph.D. | Human Factors | Robotics | Mechanical Engineering

# Contact

Thank you!

For any questions or to request a quotation, please email us at:

**contact@deltablot.email**