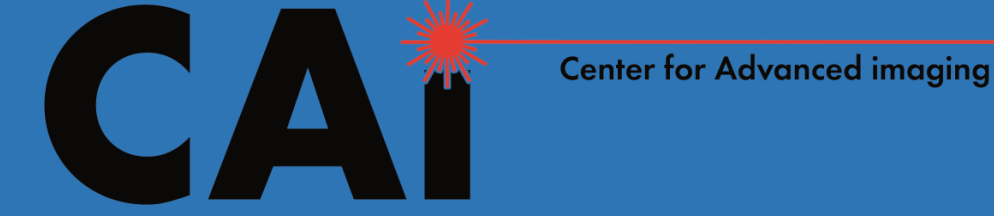
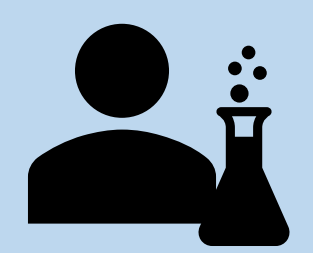


Workflow for user introduction into microscopy, OMERO and data management at Center for Advanced imaging

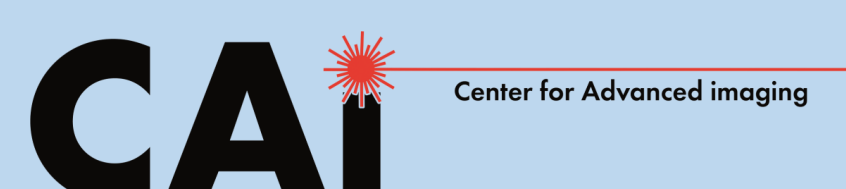
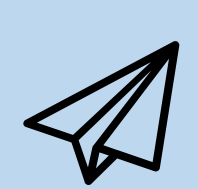
Ksenia Krooß, Vanessa Fuchs, Tom Boissonnet, Stefanie Weidtkamp-Peters
Center for Advanced imaging (CAi), Heinrich Heine University Düsseldorf



At the Center for Advanced Imaging (CAi), we have established a workflow to guide users through all aspects of bioimaging. The process begins with an initial consultation with our imaging specialists regarding microscopy techniques for their specific project. Users then receive training in microscope operation, ensuring they can handle the equipment effectively. If needed, our specialists also provide support in image analysis. Next, we introduce users to OMERO¹, highlighting its features and the advantages of using a bioimage data management system. They are then trained to structure and annotate their data within OMERO¹ according to the Recommended Metadata for Biological Images (REMBI²), taking their specific research topics into account. As users prepare for data publication, we assist with data organization and repository uploads. Our goal is to educate researchers in managing bioimage data throughout its entire lifecycle, with a strong emphasis on the FAIR³ (findable, accessible, interoperable, reusable) principles.



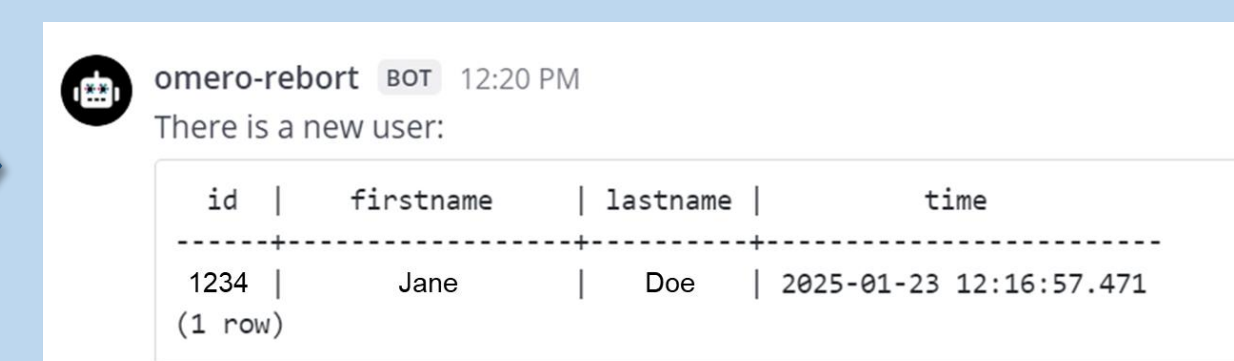
A user contacts CAi for a microscope introduction with one of our imaging specialists.



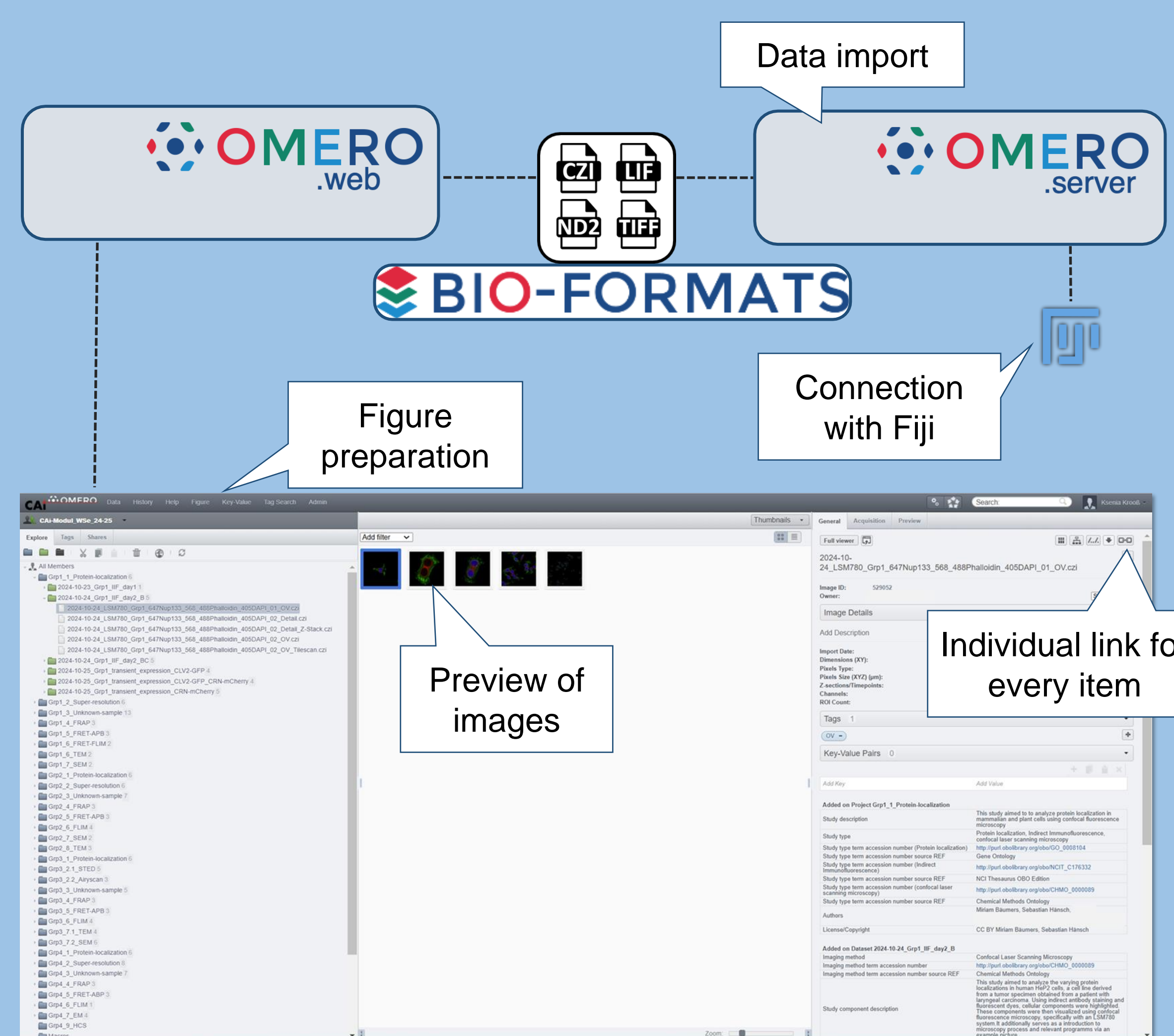
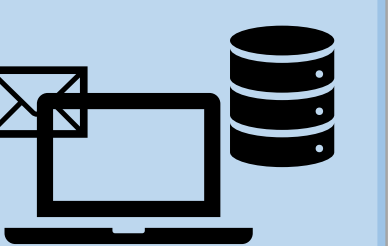
Our imaging specialists cover a broad range of modalities:
Sebastian Hänsch: super-resolution/fluorescence microscopy and spectroscopy
Miriam Bäumers: TEM and fluorescence microscopy
Manuel Anlauf: biosensors and fluorescence microscopy
Anna Hamacher high-content-screening and image analysis

The user is taught how to operate a microscope in two half-day one-on-one or small group sessions. During the sessions, the user is shown how to log in in OMERO.

After the microscope introduction, the user logs in for the first time on the OMERO server using university credentials. The OMERO server is connected to a Mattermost channel and sends a notification about the new user login.

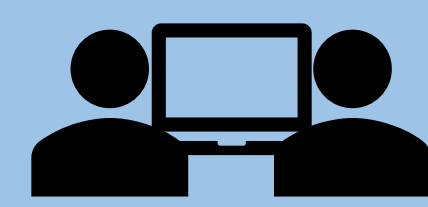


id	firstname	lastname	time
1234	Jane	Doe	2025-01-23 12:16:57.471



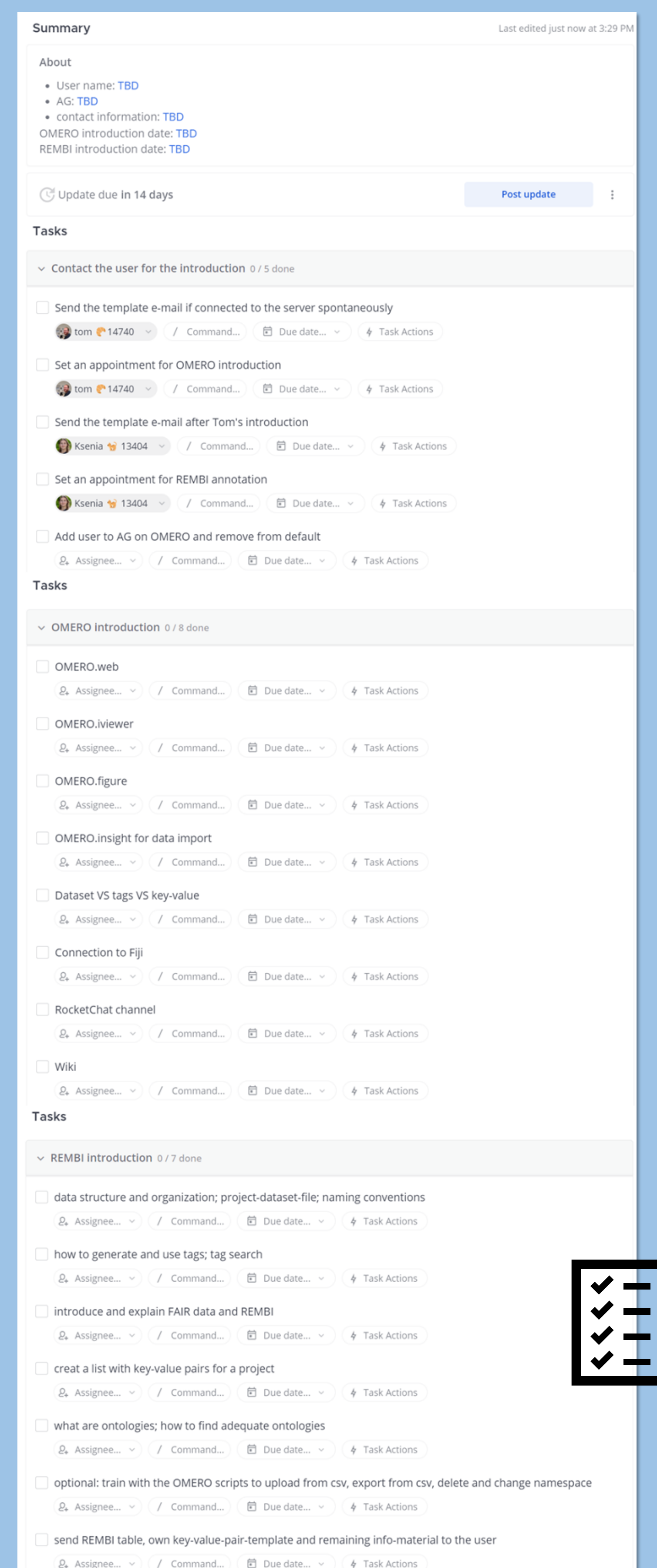
The user takes the appointment. In a one hour one-to-one session, Tom explains all main features of OMERO and how to make use of them. This includes:

- how to upload data through OMERO.insight
- what bio-formats does
- how to view the images
- how to generate figures
- the possibilities of integrating image analysis tools (e.g. Fiji) within OMERO



After the appointment, Tom marks the introduction to OMERO as done in the Mattermost playbook and Ksenia Krooß/Vanessa Fuchs contact the person via e-mail and offer a meeting to demonstrate how to organize and annotate data on OMERO.

After the notification, Tom Boissonnet creates a playbook in Mattermost to track the following process. Tom contacts the person via e-mail and offers a meeting to demonstrate how to use OMERO. Tom adds the user to the respective working group on OMERO and points the user to the HHU-RocketChat OMERO channels and internal HHU-Wiki for support and updates.



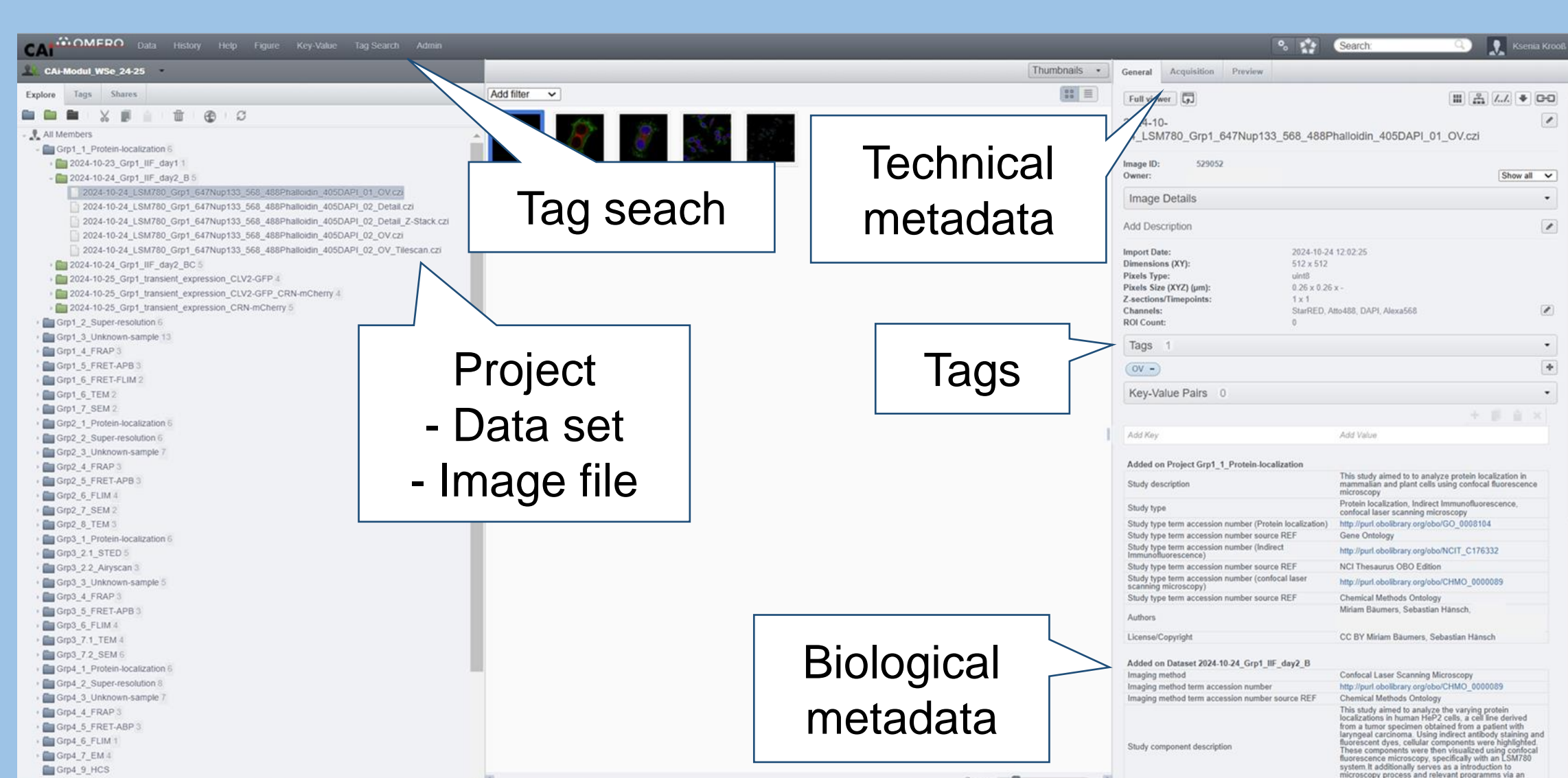
Summary	
About	
• User name: TBD	
• AG: TBD	
• contact information: TBD	
OMERO introduction date: TBD	
REMBI introduction date: TBD	
Update in 14 days	
Post update	
Tasks	
Contact the user for the introduction 0 / 5 done	
<input type="checkbox"/> Send the template e-mail if connected to the server spontaneously	
<input type="checkbox"/> Set an appointment for OMERO introduction	
<input type="checkbox"/> Send the template e-mail after Tom's introduction	
<input type="checkbox"/> Set an appointment for REMBI annotation	
<input type="checkbox"/> Add user to AG on OMERO and remove from default	
OMERO introduction 0 / 8 done	
<input type="checkbox"/> OMERO.web	
<input type="checkbox"/> OMERO.viewer	
<input type="checkbox"/> OMERO.figure	
<input type="checkbox"/> OMERO.insight for data import	
<input type="checkbox"/> Dataset VS tags VS key-value	
<input type="checkbox"/> Connection to Fiji	
<input type="checkbox"/> RocketChat channel	
<input type="checkbox"/> Wiki	
REMBI introduction 0 / 7 done	
<input type="checkbox"/> data structure and organization; project-dataset-file; naming conventions	
<input type="checkbox"/> how to generate and use tags; tag search	
<input type="checkbox"/> introduce and explain FAIR data and REMBI	
<input type="checkbox"/> create a list with key-value pairs for a project	
<input type="checkbox"/> what are ontologies; how to find adequate ontologies	
<input type="checkbox"/> optional: train with the OMERO scripts to upload from csv, export from csv, delete and change namespace	
<input type="checkbox"/> send REMBI table, own key-value-pair-template and remaining info-material to the user	

The user takes the appointment. In a one and a half hour one-to-one session, Ksenia/Vanessa explain the user data management on OMERO. This includes:

- the folder structure
- what a data set is
- naming conventions
- how to use tags for flexible organization
- where to find technical metadata
- FAIR principles
- the REMBI table
- how to annotate biological metadata
- what ontologies are and where to find them
- data publication



During the appointment, Ksenia/Vanessa generate a custom REMBI metadata template for the user according to her/his needs and research topic.



After the appointment, the user receives her/his custom REMBI template and links for further information regarding:

- the REMBI table and paper
- annotation tools for ontologies
- training videos on OMERO from the I3D:bio project
- image data repositories

Ksenia/Vanessa close the Mattermost playbook.

We encourage the user to contact CAi members at any time for help or in case of questions.

