

PAUL SCHERRER INSTITUT



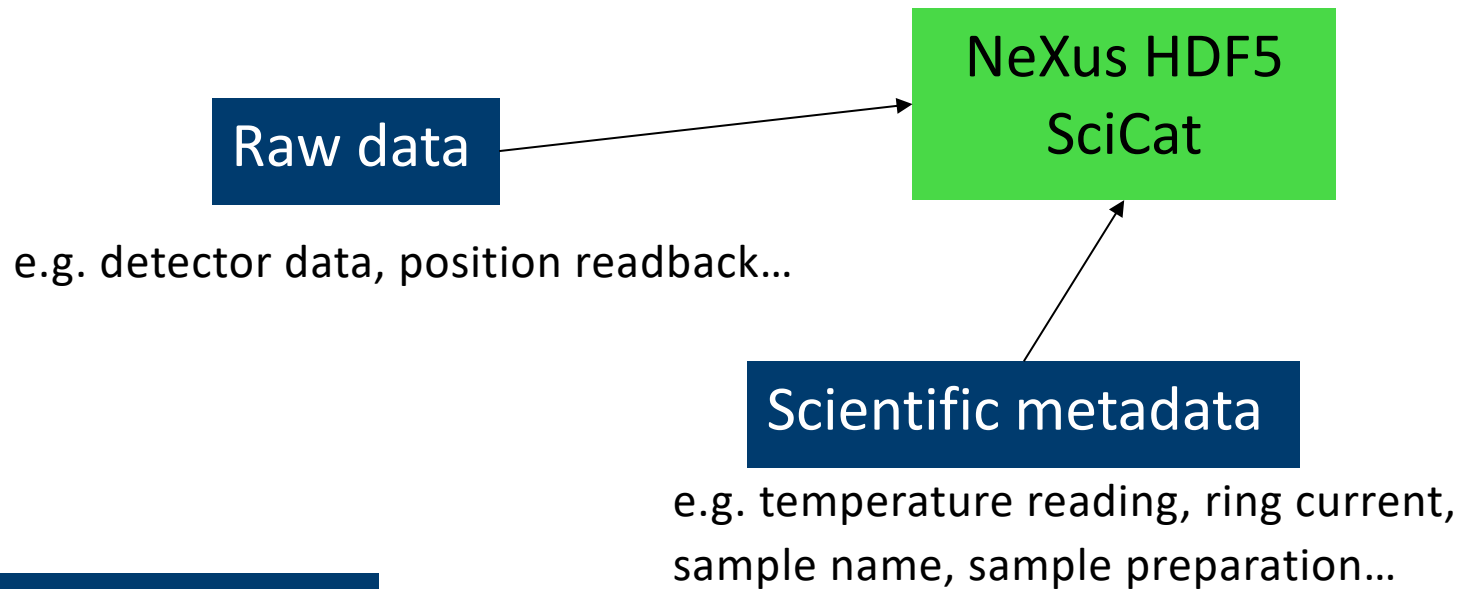
Klaus Wakonig :: Paul Scherrer Institute

SciLog – An electronic logbook for user experiments

May 3, 2022

A missing piece...

Data collection during a beamtime:



Scientist's intention

- Why were certain measurements repeated?
- What needs to be analysed?
- ...

SciLog from a user's perspective



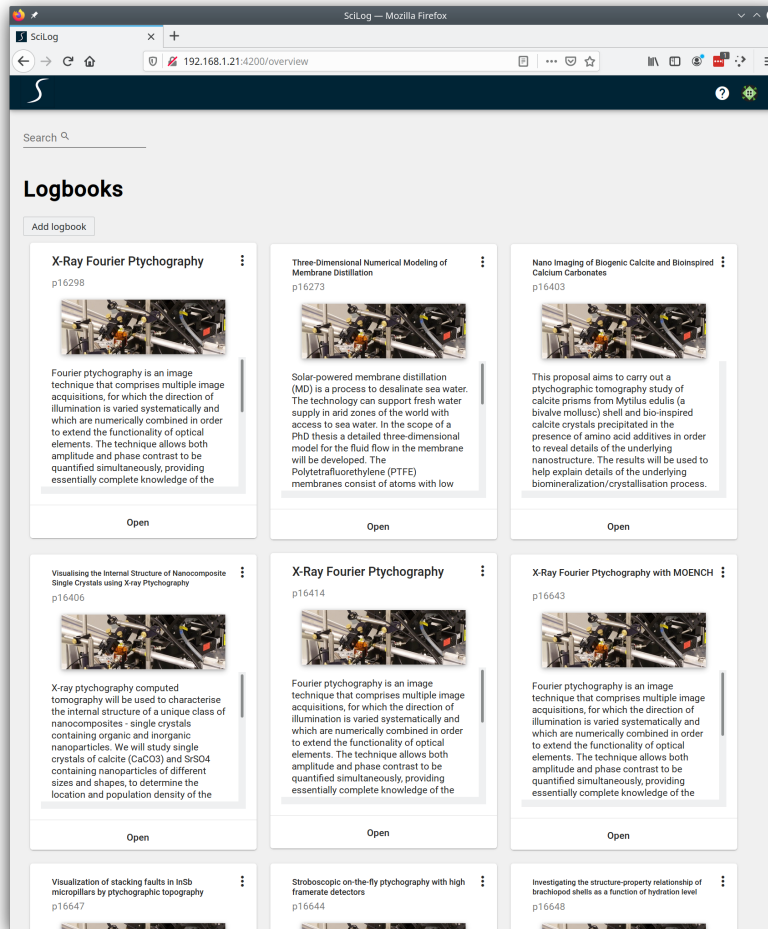
1. Login

Supported user accounts:

- PSI user account
- eaccount

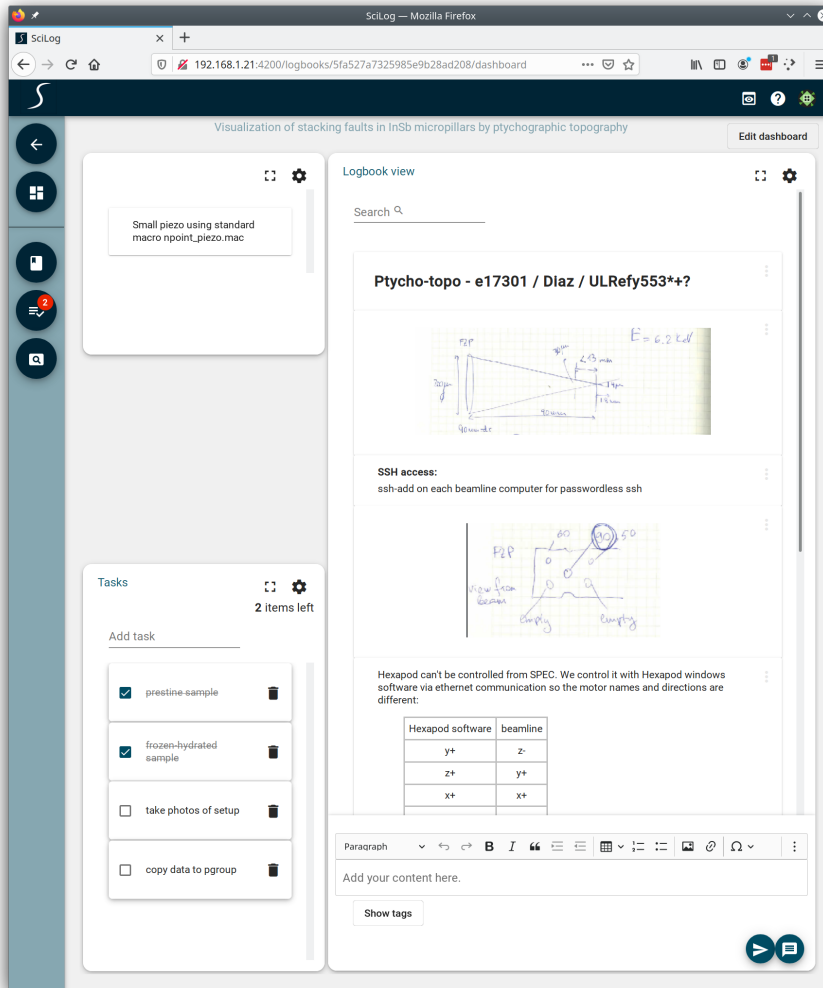
In development:

- Umbrella accounts



2. Logbook selection

- Select a logbook or create a new one
- Skipped for eaccounts as they only have access to one logbook

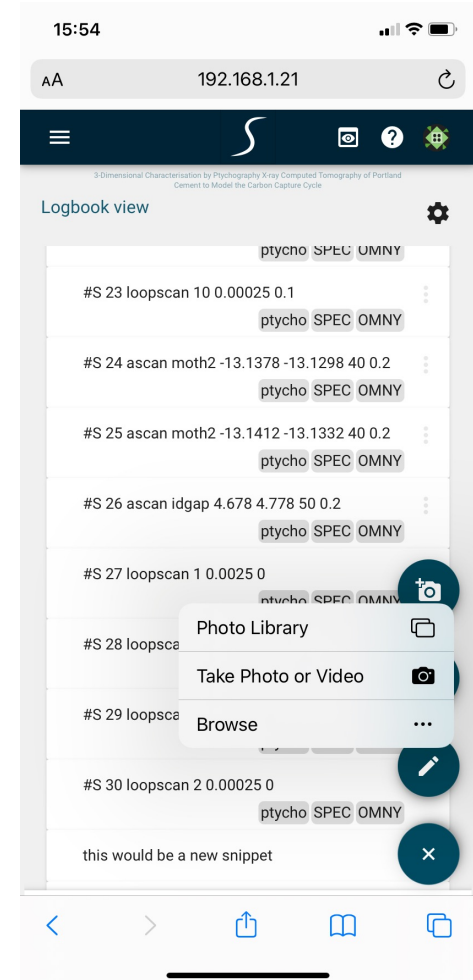
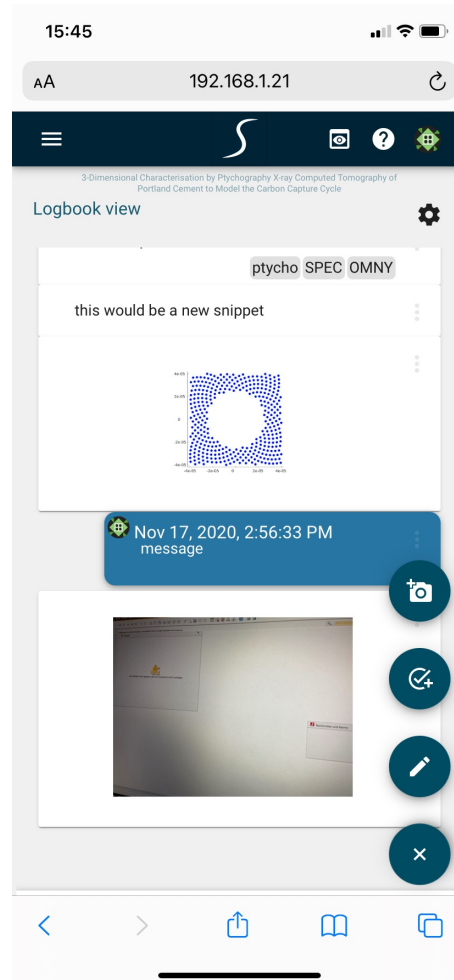
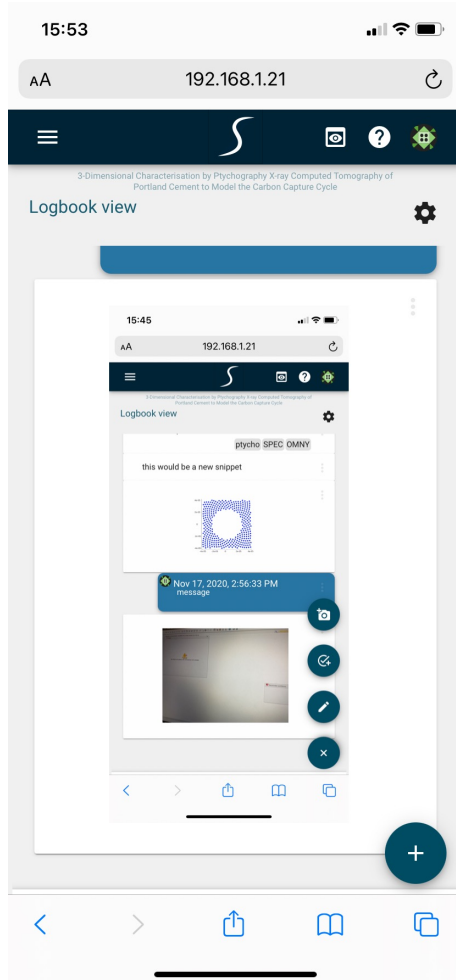


3. Add your content

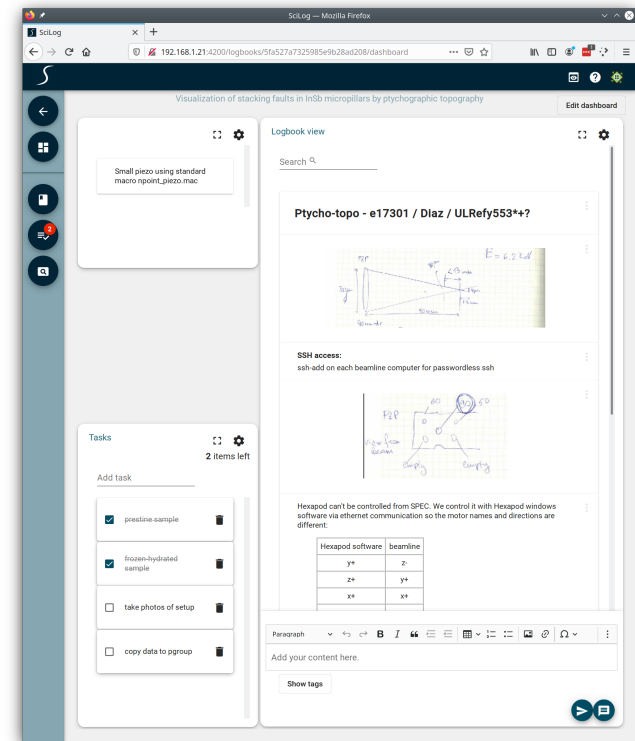
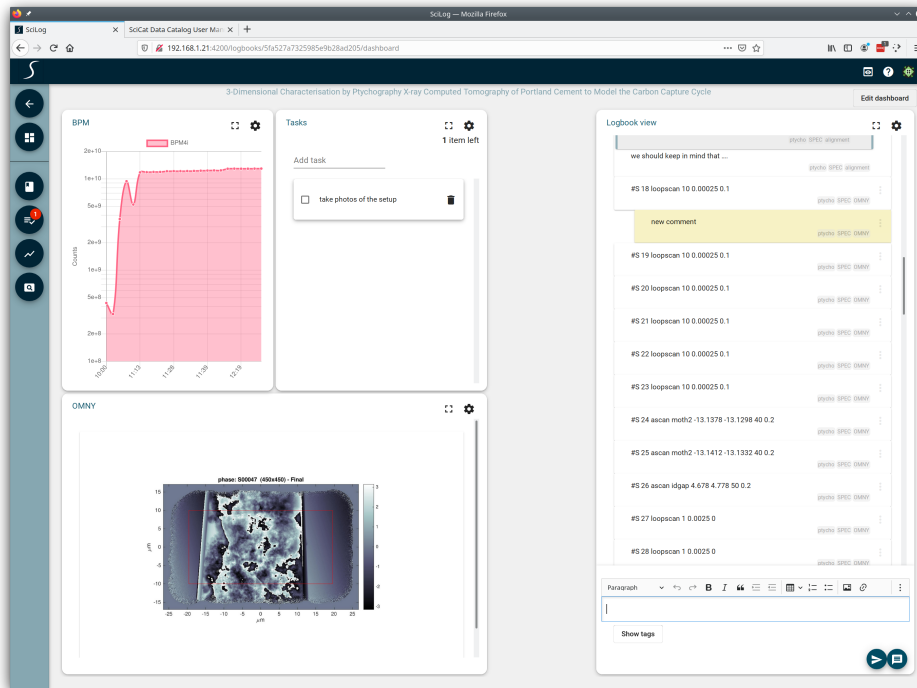
- Text content
- Images
- Tables
- Links
- Files
- Tasks
- ...

SciLog from a user's perspective

Add / update data and images directly from your mobile devices



Data visualization ("view") can be customized to the type of experiment



SciLog integration

The screenshot displays the SciLog web interface in a Mozilla Firefox browser window. The dashboard is titled "3-Dimensional Characterisation by Ptychography X-ray Computed Tomography of Portland Cement to Model the Carbon Capture Cycle".

- BPM Panel:** A line graph showing "Counts" on the y-axis (ranging from 1e+8 to 2e+10) against time on the x-axis (ranging from 10:00 to 12:19). A red line represents the BPM4 signal, which rises sharply and then levels off. A callout box labeled "Data from the BEC" points to the graph.
- Tasks Panel:** A list of tasks with "1 item left". The task is "take photos of the setup".
- Logbook view Panel:** A list of logbook entries, including "we should keep in mind that ...", "#S 18 loopscan 10 0.00025 0.1", "new comment", "#S 19 loopscan 10 0.00025 0.1", "#S 20 loopscan 10 0.00025 0.1", "#S 23 loopscan 10 0.00025 0.1", "#S 24 ascan moth2 -13.1378 -13.1298 40 0.2", "#S 25 ascan moth2 -13.1412 -13.1332 40 0.2", "#S 26 ascan idgap 4.678 4.778 50 0.2", "#S 27 loopscan 1 0.0025 0", and "#S 28 loopscan 1 0.0025 0". A callout box labeled "Data from the instrument" points to the logbook entries.
- OMNY Panel:** A 2D image titled "phase: S00047 (450x450) - Final" showing a grayscale micrograph of a sample. The axes are labeled in micrometers (µm).

ALPHA
📷 ? 🌐

Investigating Dose Requirements of X-Ray Fourier Ptychography
Edit dashboard

Tasks
🗑️ ⚙️

1 items left

Add task

Switch-to-Moench 🗑️

Std-nanoscope-images-at-8-keV 🗑️

return blue box to cSAXS (Smaract) 🗑️

1.-Repeat-radiography-Mariana-contrast-10s 🗑️

2.-Scan-zone-plate 🗑️

Logbook view
📄 🗑️ ⚙️

Investigating Dose Requirements of X-Ray Fourier Ptychography

Andreas Menzel, Klaus Wakonig, Mariana Verezhak, Anne Bonnin

18-22 November 2021

Energy change to 8keV with Multilayer

Nanoscope setup and alignment. Alignment of Zernike phase rings appeared to be very difficult at 8keV

In addition, SmarAct stages do not behave well. We noticed unexpected behavior and sound for FZPx and PRz. In addition, the controller card of FZPx is not working reliably and vibrates even in the still position. We had to turn cards on and off to make them work.

The alignment was done on the Siemens star (was very difficult) followed by alignment on the 3D Si test object.

The automatic alignment of the condenser seemed to work as expected: ~Data10/software/cSAXS_matlab_base/align_cond.m

tested with scan 08

We put another sample (a different Siemens star) and have the same difficulty aligning PR

We go to Si 111 at 8 keV

👤 p18985/ 👤 slstomcat

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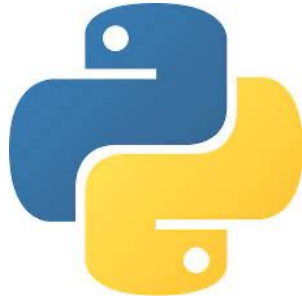
Add your content here.

🏷️ Add tags
➤

SciLog from a developer's perspective

Main developer:
Sven Augustin

py_scilog



SciLog web interface



client

websockets
(push notifications,
collaborative editing...)

REST

backend

Main developer:
Stephan Egli

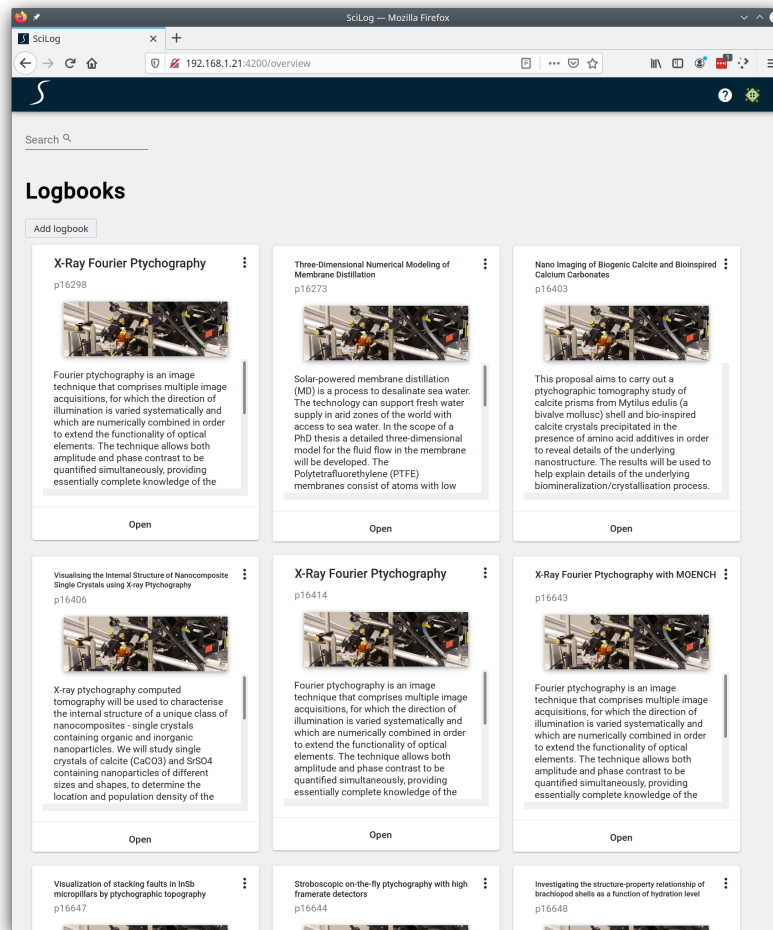


LoopBack

LDAP



SciLog from a developer's perspective



- Content is saved in the form of *data snippets*
- Permissions are managed with PSI's pgroups and user accounts

SciLog from a developer's perspective

Visualization of stacking faults in InSb micropillars by ptychographic topography

Small piezo using standard macro npoint_piezo.mac

Tasks
2 items left

- prestine-sample
- frozen-hydrated sample
- take photos of setup
- copy data to pgroup

Logbook view

Search

Ptycho-topo - e17301 / Diaz / ULRefy553+?

SSH access:
ssh-add on each beamline computer for passwordless ssh

Hexapod software	beamline
y+	z-
z+	y+
x+	x+

Data is decoupled from the view

Dashboard allows for a modular interface:

- Users / Beamline scientists can define “views” and share them with others
- Snippets can be searched, filtered, pinned...

- Still in test phase
 - Two instances are running within the PSI network:
 - **scilog-test.psi.ch** for users
 - **scilog-dev.psi.ch** for developers
- Deployment outside of the PSI network is ongoing (with *great* help from Carlo and Krisztian)

... so far...

Overwhelmingly positive feedback from beamlines