

MXCuBE / ISPyB meeting



# MAX IV MXCuBE Status Report

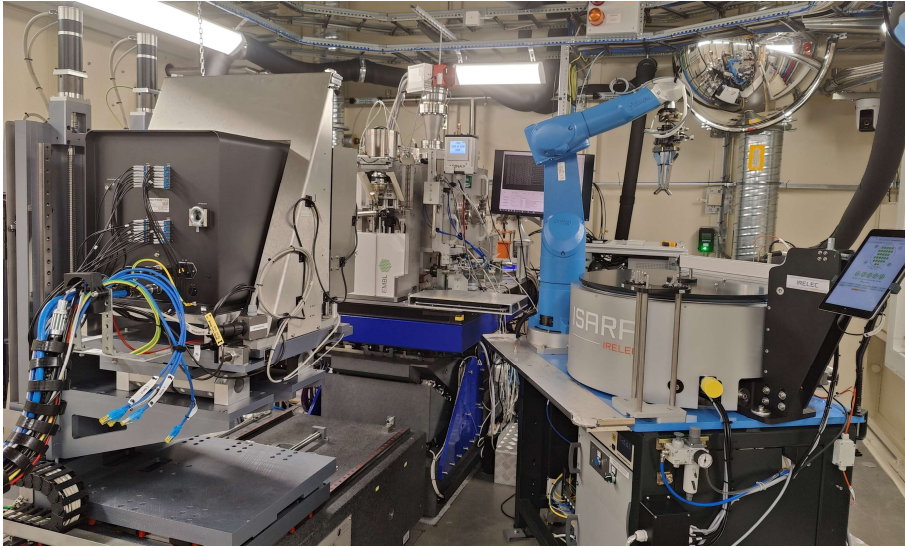
Jie Nan on behalf of the MX-group

2024 Nov. 22th



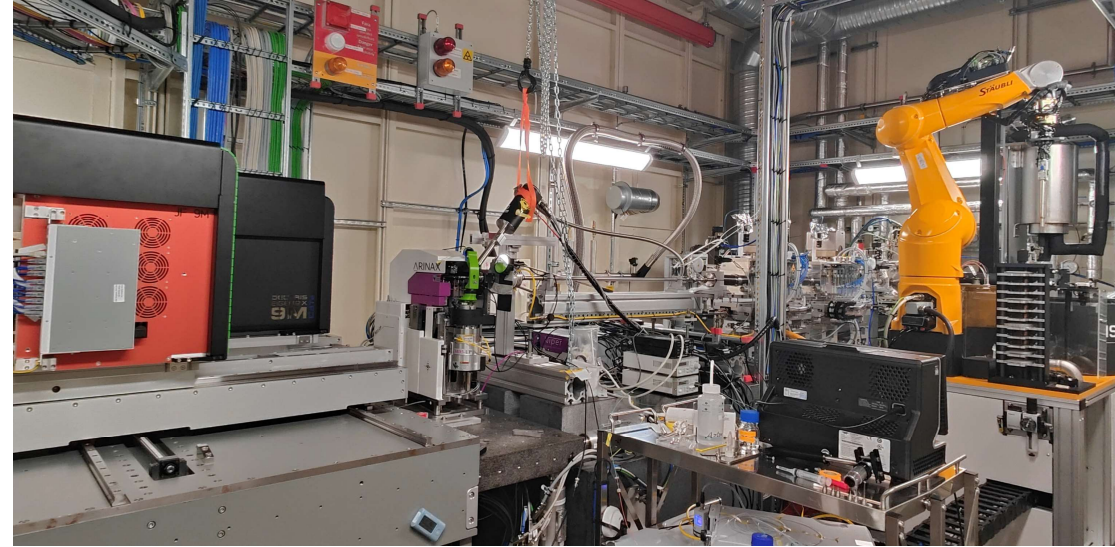
# MX beamlines at MAX IV

## BioMAX



- Tunable Energy (6-24keV)
- hDCM,  $10^{13}$  ph/s,  $20 \times 5 \mu\text{m}^2$
- Eiger2 XE CdTe 16M
- MD3-down
- ISARA
- Amptek fluorescence detector
- REX, Cryojet5, HC-lab

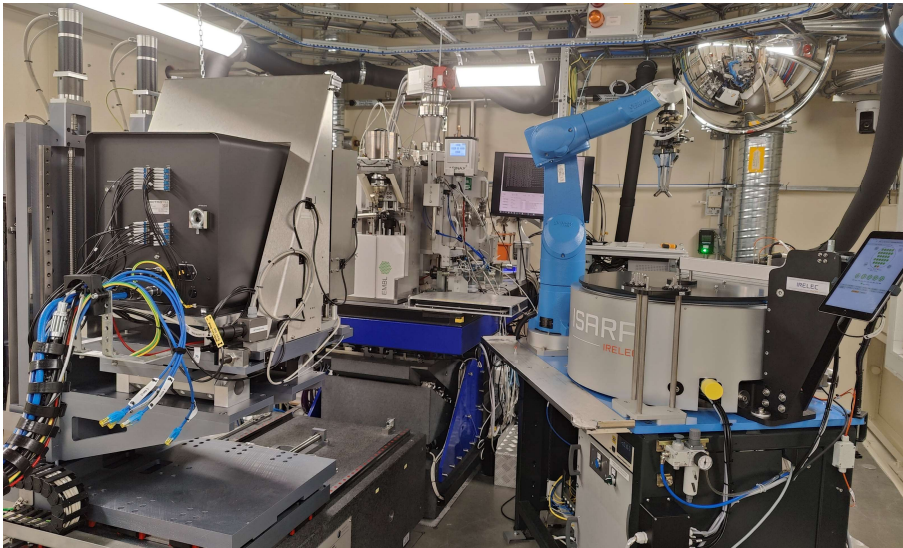
## MicroMAX



- Tunable Energy (5-25keV)
- hDCM,  $10^{13}$  ph/s, now  $14 \times 4 \mu\text{m}^2$  (1  $\mu\text{m}$  with mirrors)
- MLM,  $>10^{14}$  ph/s
- ISARA2
- Cryostream 1000
- MD3-up
- Eiger2 X CdTe 9M
- Jungfrau 9M
- ns Laser
- X-ray Chopper
- BCU

# MX beamlines at MAX IV

## BioMAX

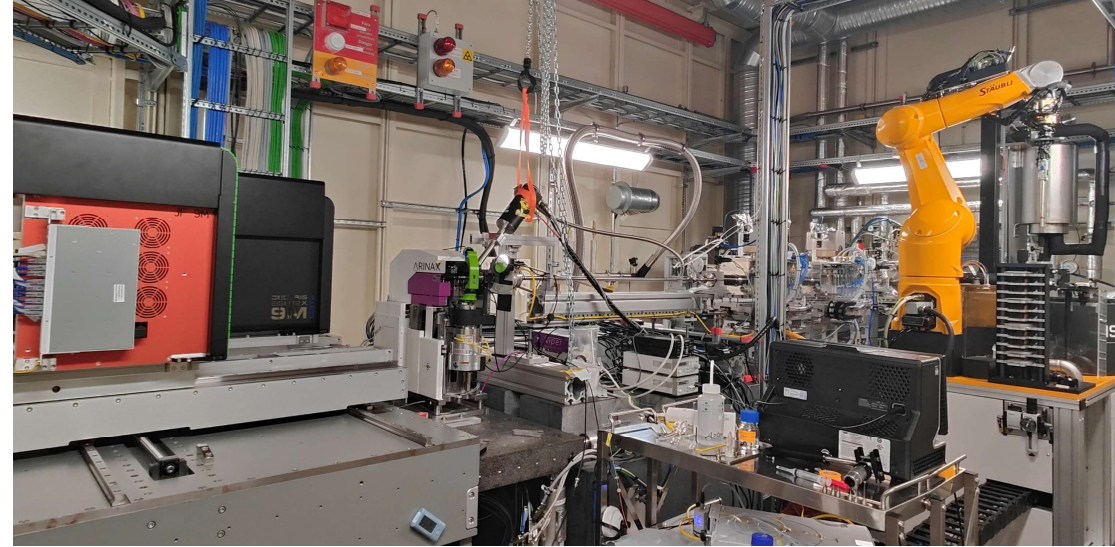


MXCuBE3 v3.0  
hwobj v2.2



MXCuBE-web latest  
mxcubecore develop

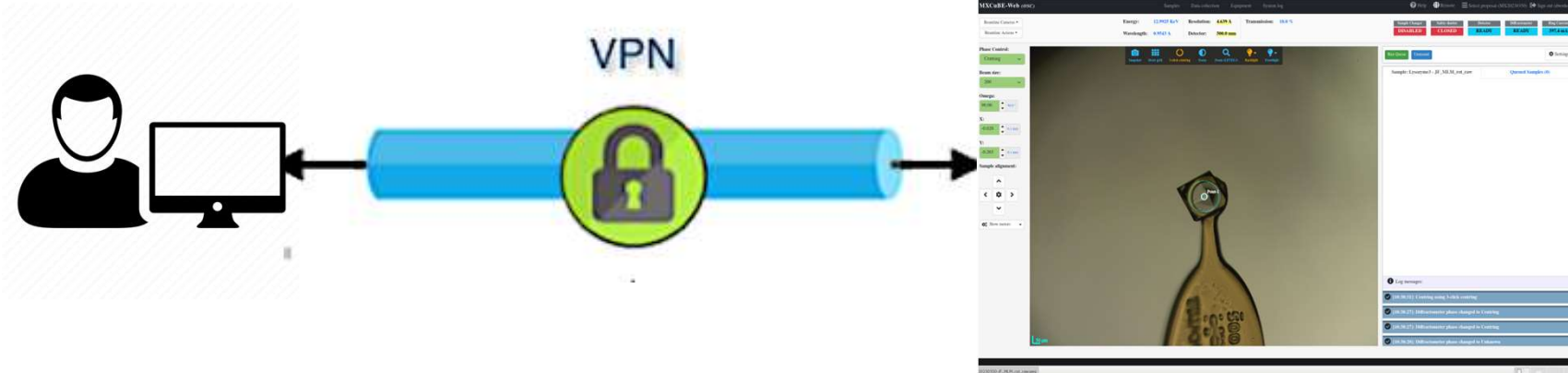
## MicroMAX



MXCuBE-web latest  
mxcubecore develop

# Multi Factor Authentication

- All external access to MAX IV resources requires 2-factor authentication
- Time-Based one-time password (TOTP)
- mobile application, no SMS since 2024-01-15



# BioMAX - recent development

## MXCuBE3

- Automated collection → Unattended collection for industrial users

## MXCuBE4

- ~~Integrate with the new isara tango device, including empty mount, sc timeout etc (done)~~
- ~~Energy Scan / XRF (done)~~
- ~~Basic support for plate manipulator (done)~~
- Continue to integrate with Global Phasing workflow, (manual available, auto ongoing)
- X-ray centering (ongoing)
- Beamline actions (ongoing)

# MicroMAX

## Experiment setup

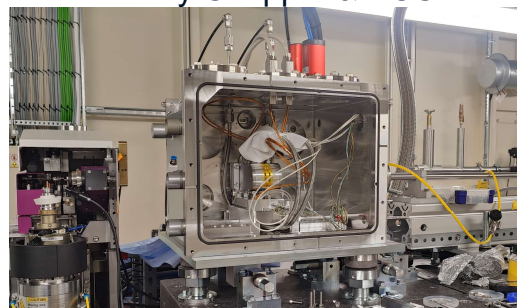
- ns-laser safety system installed recently
- X-ray Chopper & BCU installed
- Timing control and synchronization via Pandabox
- Offline UV-Vis Spectrometer

## MXCuBE4

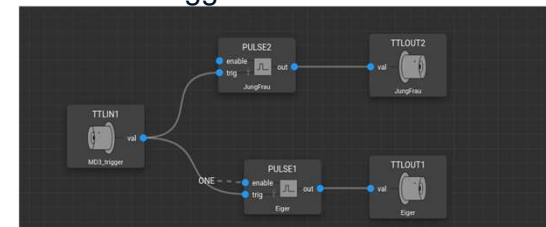
- Dashboard, to easy the switch between different experiment setups including two detectors

## Ramp up with user operation

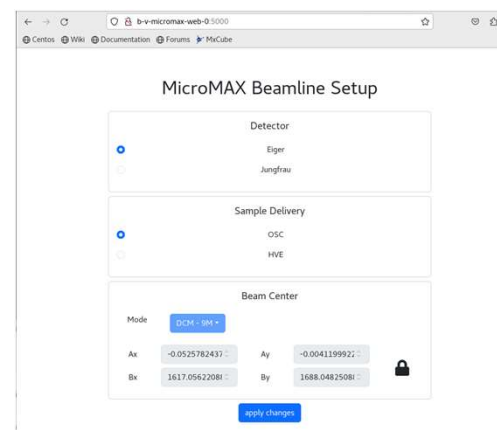
X-ray Chopper & BCU



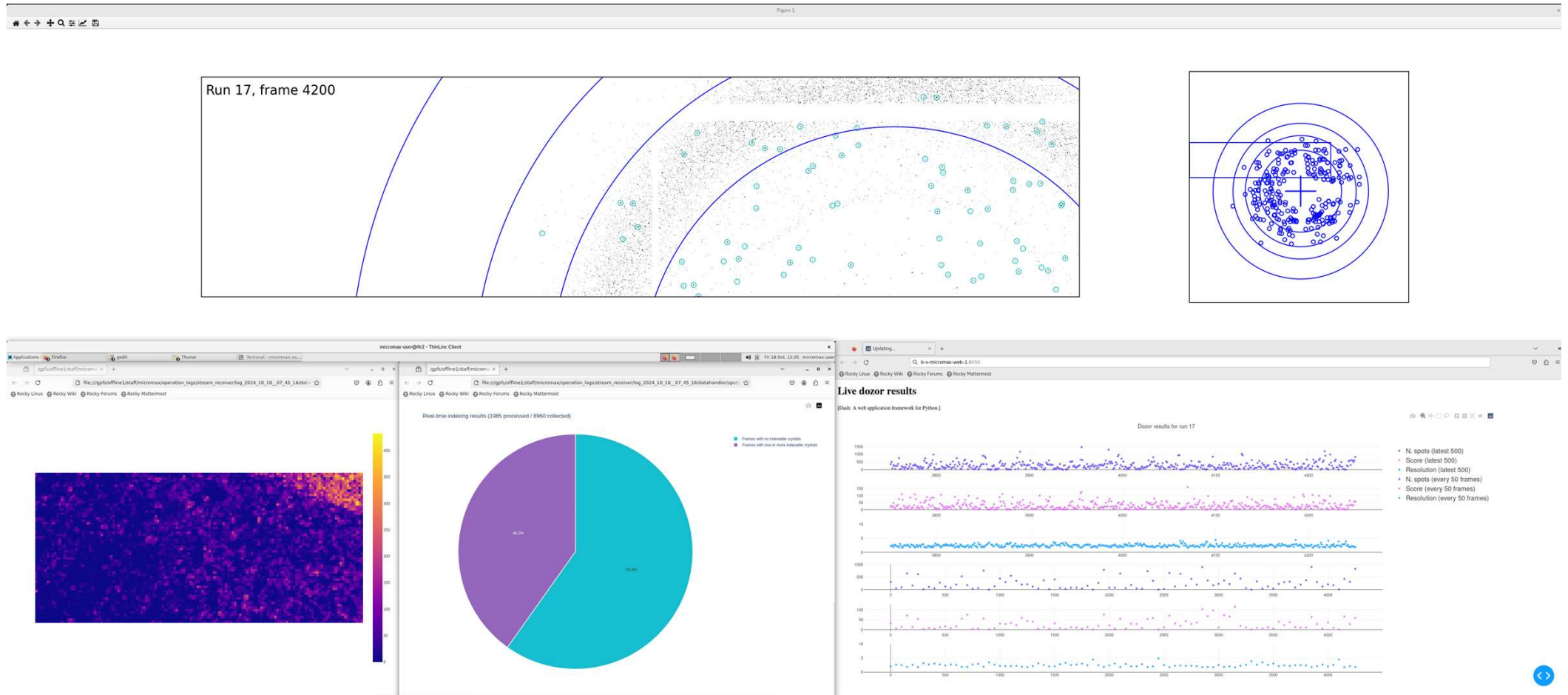
Detector trigger control in PandaBox



MXCuBE dashboard



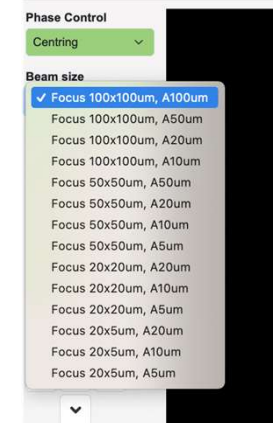
# MXSuite – online peak search & indexing (ongoing)



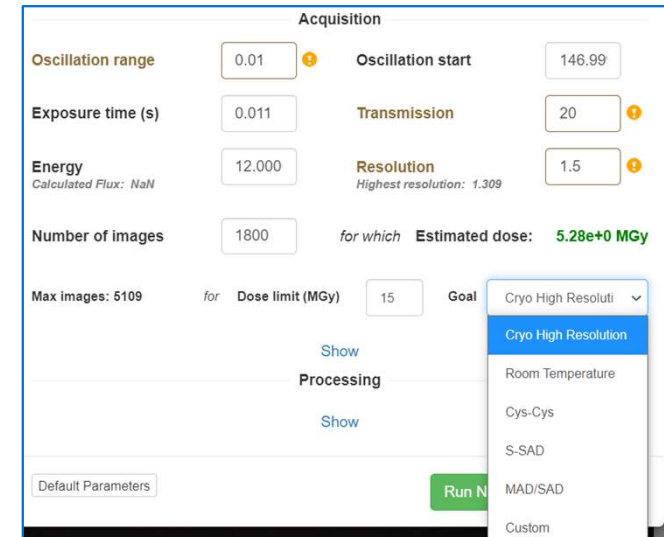
# Plans for the next six months

- Beamfocus control (BioMAX)
- interactive dose estimation UI (similar to MXCuBE3)
- Support automatic / unattended data collection (BioMAX)
- MXCuBE4 in production (BioMAX)
  
- Continue to develop the (TR-)SSX features at MicroMAX

beam size control



Dose estimation in mxcube3





# Acknowledgements

## MAX IV

- MX group
- Software group
  - Mikel Eguiraun
  - Elmir Jagudin
  - Fabien Coronis
  - Pawel Mocko (S2 innovation)
  - Dominika Trojanowska (S2 innovation)
- Many others

## Global Phasing Ltd.

- Gérard Bricogne
- Rasmus Fogh
- Claus Flensburg
- Peter Keller

**Open positions:** We're looking for two software developers.

Contact, Mirjam Lindberg, [mirjam.lindberg@maxiv.lu.se](mailto:mirjam.lindberg@maxiv.lu.se)