



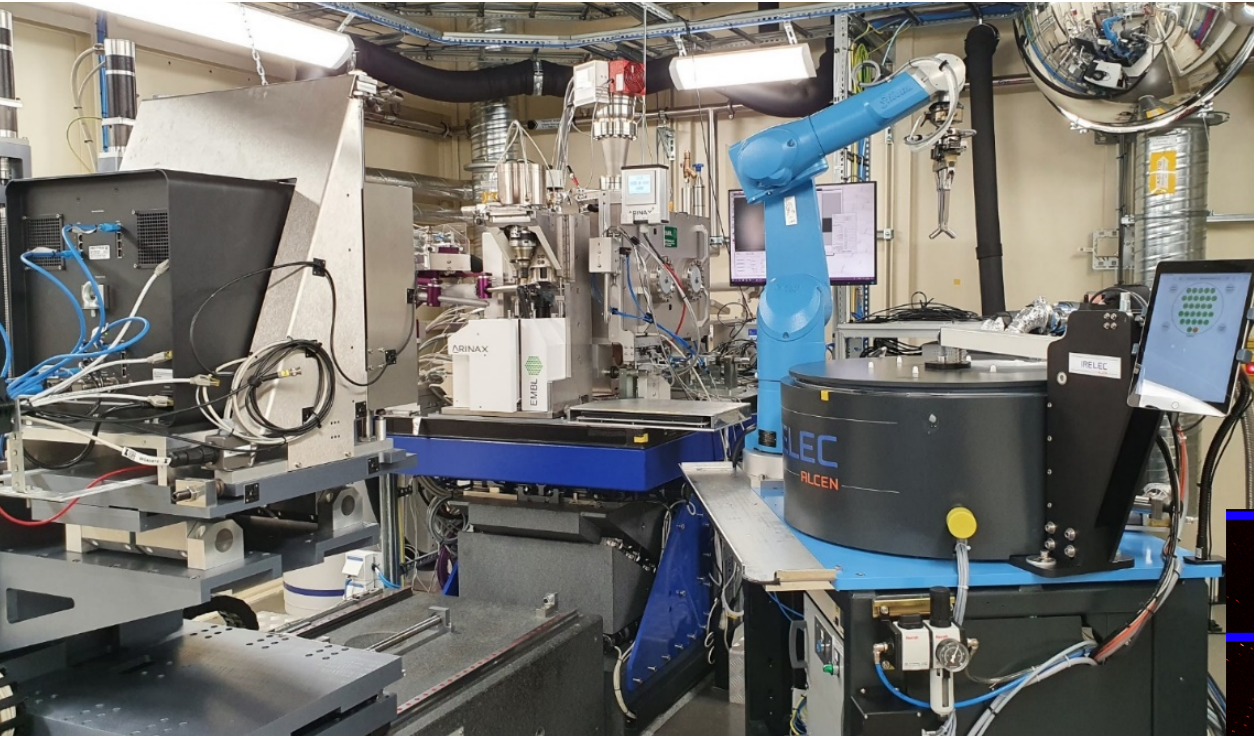
Taranta and MAX IV MX beamlines

Mikel Eguiraun

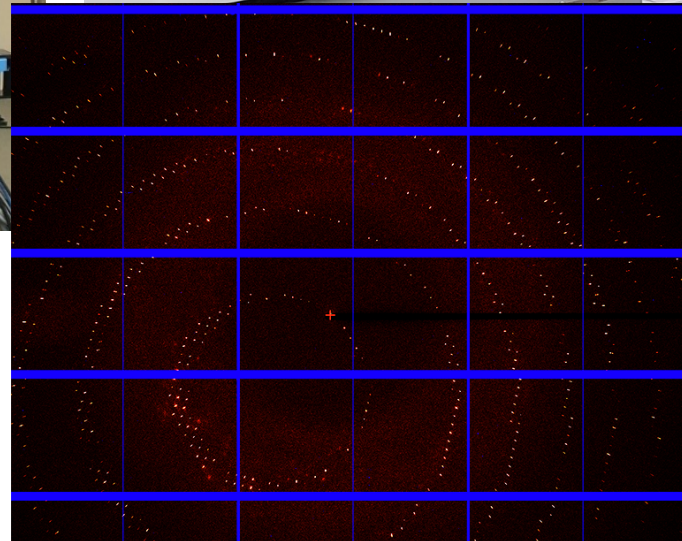
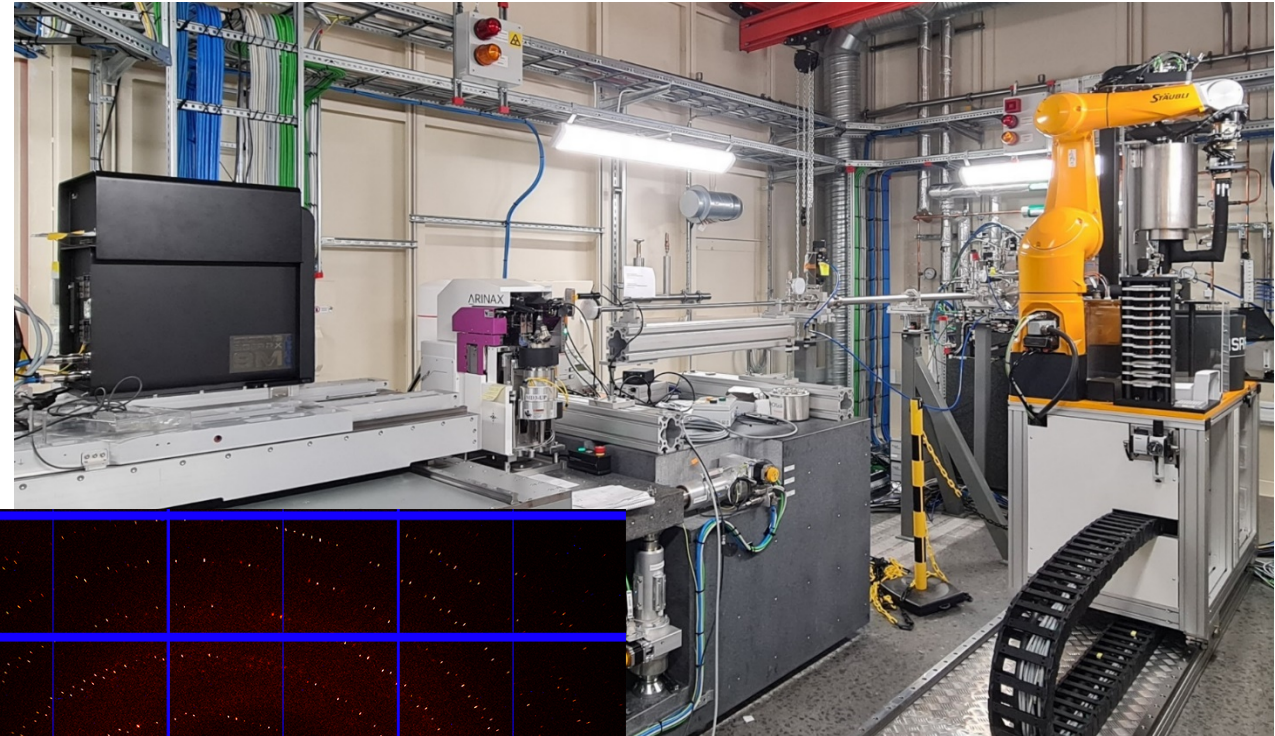
May. 29, 2023

MX beamlines at MAX IV

BioMAX in operation



MicroMAX under commissioning



- Experiment Control
- Web App
- React
- Python

MXCuBE-Web (osc)

Samples Data collection Equipment System log

Energy: 12.8260 KeV Resolution: 5.013 A Transmission: 10.0 %
Wavelength: 0.9667 A Detector: 514.3 mm

Beamline Actions ▾

Phase Control:
Centring

Beam size:
5 ▾

Omega:
350.00 ▴ ▾ 90.0 °

Kappa:
0.0 ▴ ▾ 0.1 °

Kappa Phi:
0.0 ▴ ▾ 0.1 °

Sample alignment:

⬆
⬅ ⚙ ➡
⬇

⚙ Show motors ▾

Snapshot Draw grid 3-click Centring Focus Zoom Backlight Frontlight Video size

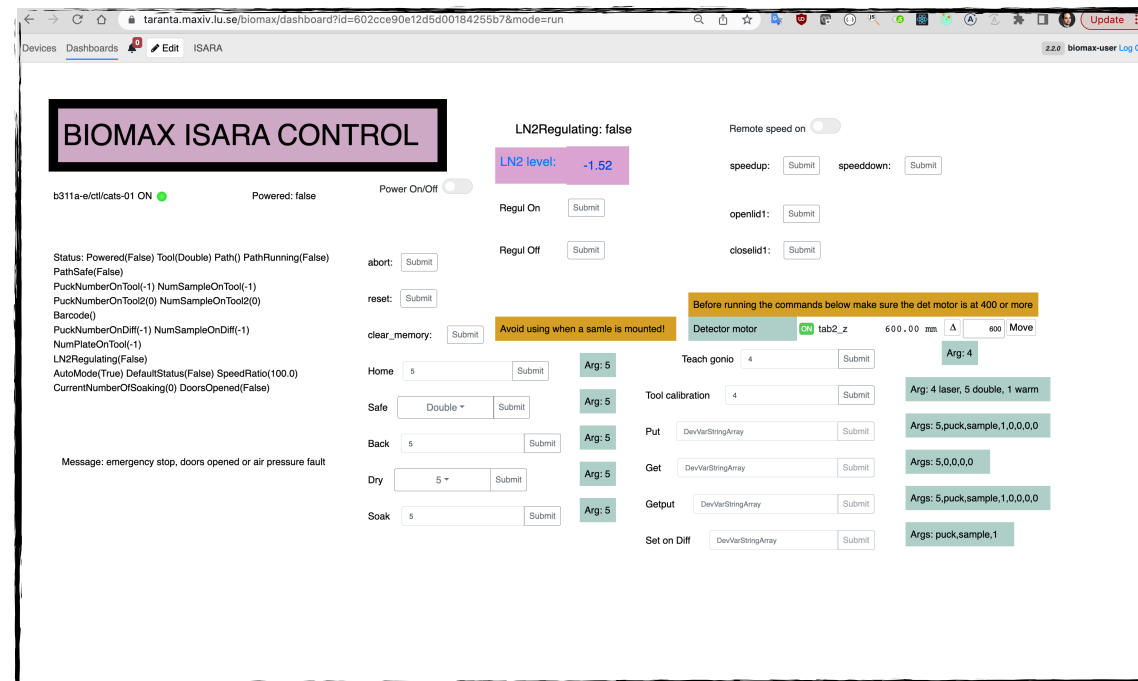
Point-1

MX beamlines at MAX IV

- Early adopters of all new stuff
 - that improves UX, reliability, support, maintenance
- Performance (in a broad sense) oriented
 - Users' shift of few hours
- Web, web, web
- One tool for all is better than many
- Infinite wishlist 😊

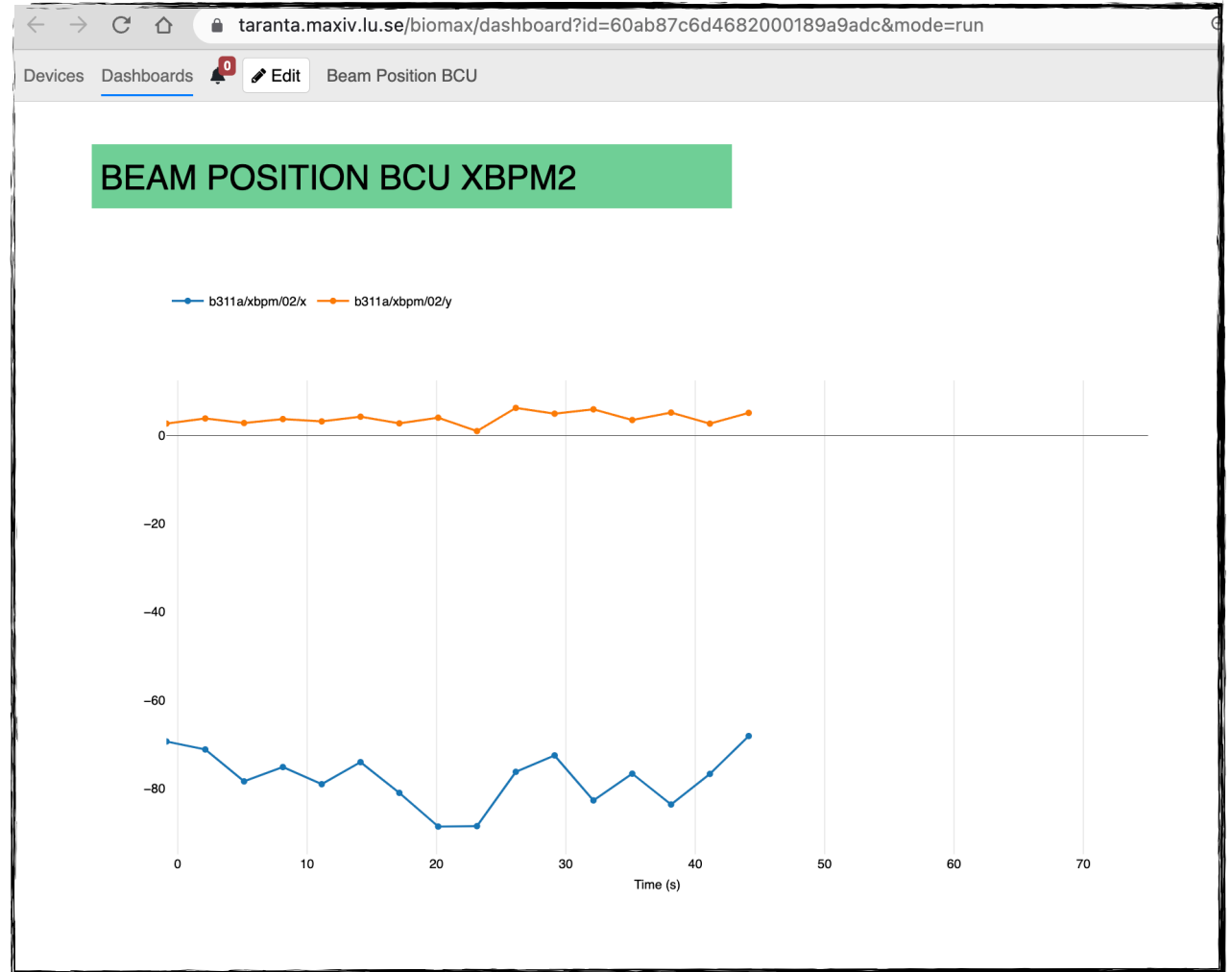
ISARA Sample Changer

- User operation via mxcube
- Maintenance via jive&taranta (Staff only)
 - Recovery can be complex

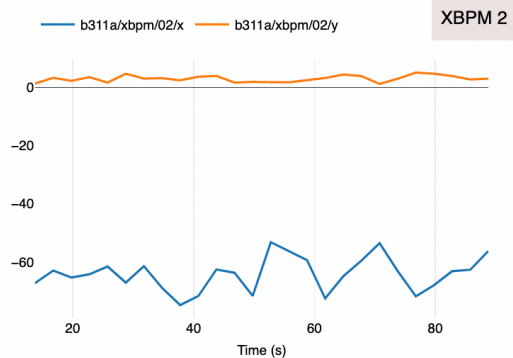


Beam Position

- Neck pain during commissioning
- Reference view during operation
 - Users can also use this tool



Beamline UI



Macros

Door_Biomax

Select Macro Macro Args string will appear here

Run

Door output will be displayed here

Motors

<input checked="" type="checkbox"/> tab2_z	600.00 mm	<input type="text" value="600"/>	Move
<input checked="" type="checkbox"/> energy	12700.0	<input type="text" value="12700.00000000"/>	Move
<input checked="" type="checkbox"/> transmission	80.5	<input type="text" value="80.4577697489"/>	Move
<input checked="" type="checkbox"/> piezo_vfm_fpit	25.234	<input type="text" value="25.2461"/>	Move
<input checked="" type="checkbox"/> piezo_hfm_fpit	23.878	<input type="text" value="23.8956"/>	Move
<input checked="" type="checkbox"/> bcu_xbpm02_x	-0.579	<input type="text" value="-0.57935802"/>	Move
<input checked="" type="checkbox"/> bcu_xbpm02_y	1.150	<input type="text" value="1.149737045"/>	Move
<input checked="" type="checkbox"/> piezo_mono_x2pit	7.634	<input type="text" value="7.5279"/>	Move
<input checked="" type="checkbox"/> piezo_mono_x2rol	8.461	<input type="text" value="0.3384"/>	Move

PID X State: MOVING

PID Y State: MOVING

Safety shutter StatusOpen ●

Colibri shutter Shutter ●

Det cover StatusOpen ●

B311A_VAC_RESET_C **PLC reset**

ISARA sample changer

Power Powered ●

Regulation LN2Regulating ●

Lid di_Lid1Open ●

Abort

LN2 level -1.46

Message: Gap X = -0.024 ; Gap Y = 0.008

Status: Powered(False) Tool(Double) Path() PathRunning(False)
PathSafe(True)
PuckNumberOnTool(-1) NumSampleOnTool(-1)
PuckNumberOnTool2(0) NumSampleOnTool2(0)
Barcode()
PuckNumberOnDiff(-1) NumSampleOnDiff(-1)
NumPlateOnTool(-1)
LN2Regulating(False)
AutoMode(True) DefaultStatus(False) SpeedRatio(100.0)
CurrentNumberOfSoaking(0) DoorsOpened(False)

Eiger

Eiger Status

FileGrabber Status

Start FileGrabber

Stop FileGrabber

Clear Buffer

Arm

Disarm

Useful links (in blue)

[AEM1](#) [AEM2](#) [AEM3](#)

[Hutch camera](#) [Sample changer camera](#)

[Sample camera](#) [Back sample camera](#)

[ISARA Loader](#)

[Portainer](#)

[Archive viewer](#)

- Beamline scripts into web interface
 - Complex sequence of actions
- *Prototype...* ahem ahem
 - No auth, local logs only, no output

← → ↻ 🏠 ⚠ Not Secure | 172.16.117.28:10000

Select Maintenance action

Restart MXCuBE

Submit

Restart BioMAX Servers

Submit

Prepare Beamline for Operation

Email

Proposal

Beam size 100 ▾

Restart sth

Submit

Sample Changer Calibration

Email

Submit

Current User

Submit

[Logged as anonymous, click to logout](#)

Questions

- How do you use dashboards on a beamline. Are they personal? Or shared between all users of the beamline?
- Do you have something like a status overview of the whole beamline, with icons for all the equipment and its status?
- If so, can you launch sub-screens for each piece of equipment to "drill down" into details?

Questions

- Can you reuse these sub-screens between different beamlines, parameterising with the name of the tango device?
- Do you launch any native applications (like a Qt GUI) from a dashboard?
- Do you have any data visualization (e.g. server reading from HDF file and GUI plotting it)
- Do you launch experiments from Taranta?