



# MAX IV / MXCuBE Status update

Jie Nan on behalf of the MX-group

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MAXIV

# MicroMAX status update

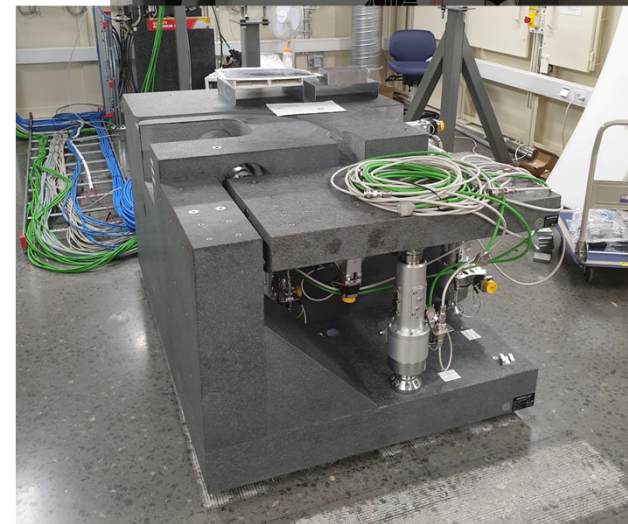
**Microfocus MX beamline** for serial crystallography, time-resolved experiments and high-throughput oscillation data collections.

## Recent progress

- Monochromators & beam diagnostics units installed
- Sample environment table installed

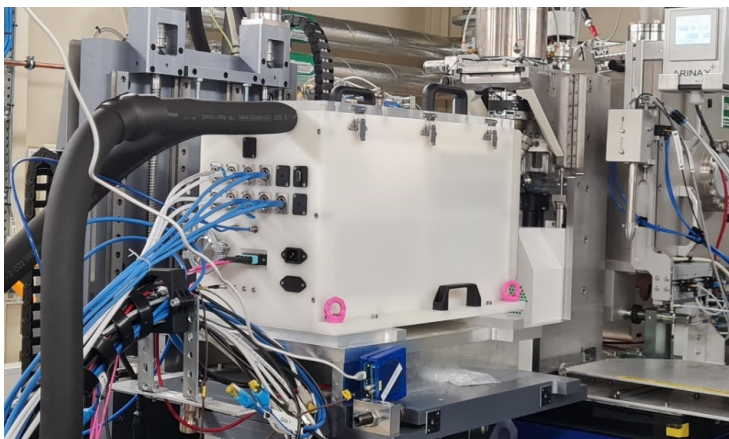
## Coming soon

- Arinax MD3-UP in early June
- ISARA Sample changer in August
- EIGER2 X CdTe 9M in September



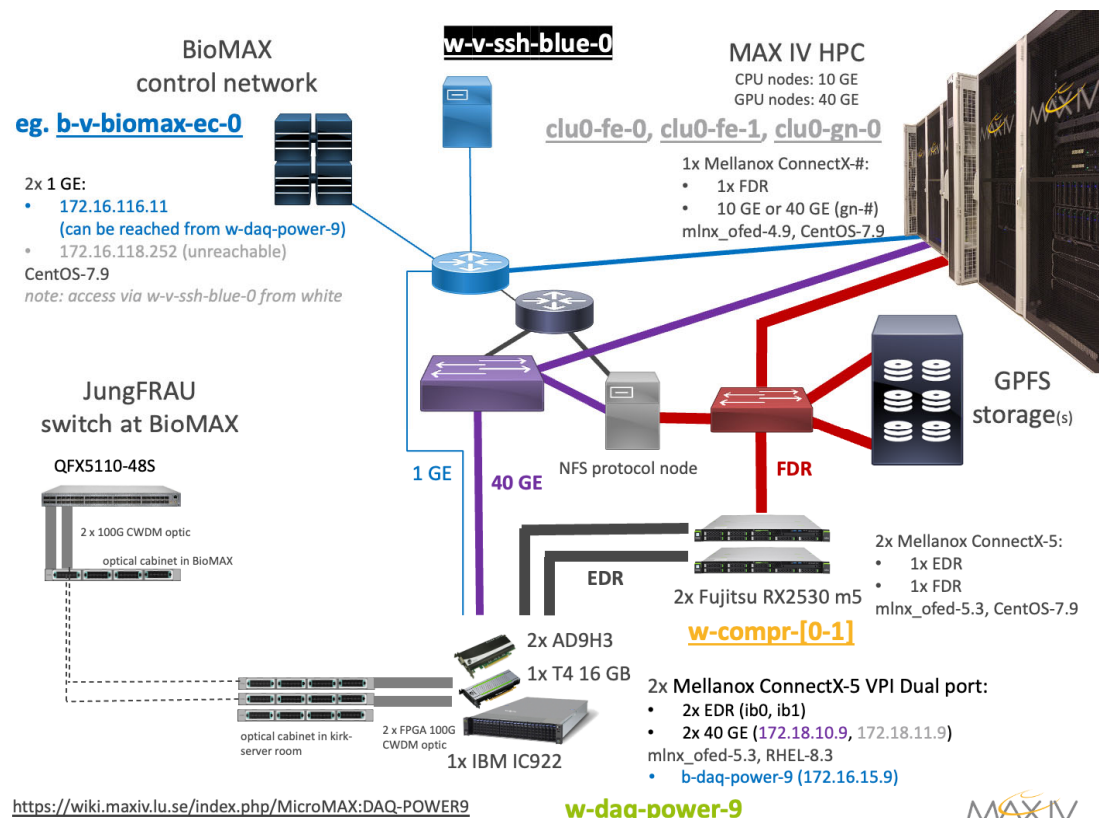
# Experiment with Jungfrau4M @ BioMAX

- Collaboration with PSI
- JUNGFRAU
  - Hybrid-pixel detector developed at PSI
  - Charge-integrating, adaptive gain
- Experiment
  - HVE, up to 2khz
  - Time-resolved HVE
  - Rotation collection



Jungfrau 4M installed at BioMAX

## IT infrastructure for Jungfrau



Courtesy: Zdenek Matej

# Experiment with Jungfrau4M @ BioMAX

## No changes on the UI

- Exposure -> laser exposure
- num\_images -> images per trigger

Acquisition			
Oscillation range	<input type="text" value="0.1"/>	Oscillation start	<input type="text" value="359.99"/>
Exposure time (s)	<input type="text" value="0.011"/>	Transmission	<input type="text" value="100"/>
Energy	<input type="text" value="12.700"/>	Resolution	<input type="text" value="2"/>
<small>Calculated Flux: NaN</small>		<small>Highest resolution: 1.237</small>	
Number of images	<input type="text" value="1800"/>	for which	Estimated dose: <b>3.60e-2 MGy</b>
Max images: 1001326	for	Dose limit (MGy)	<input type="text" value="20"/>
		Goal	Cryo High Resoluti

## HardwareObjects

Time resolved  
Collect hwobj  
delay generator hwobj

Eiger Hwobj

Jungfrau Hwobj

Eiger Tango Server

Jungfrau Tango Server



# Firmware upgrade of Eiger16M

2022. Jan – Feb, firmware upgrade to 1.8.0 (2020.2.6rc2)

Challenge, installation and configuration of 40Gb network card (previous custom upgrade)

## Outcome:

- Much more stable stream interface
  - Stream interface used to silently, daily restart of DAQ -> no restart for months
  - Continuous data acquisition with both stream and filewriter

## Work after firmware upgrade

- Control level, tango server needed to adapted to some changes of the simplon API
- New version of albula4.0 is required, 4.1 for monitor interface
- Work with the new filewriter, MX Gold Standard
  - Rotation axis, /entry/sample/transformations/omega
  - Detector translation vector, /entry/instrument/detector/transformations/translation/vector



## Other activities

- Interleave collection, data are repacked from original hdf5 files
- Continuous energy scan using panda box, scan works, being integrated in MXCuBE, Ishkhan Gorgisyan
- MXCuBE upgrade (to use mxcubecore), ongoing, Meghdad Yazdi
- Prepare\_operation, continuously being developed

## Acknowledgement

MX team at MAX IV

KITs group at MAX IV

Jungfrau experiment

- PSI MX Group
- PSI Detector Group
- PSI Laboratory of Biological Research

Eiger FW upgrade

- Dectris Support
- Filip Leonarski
- Clemens Vornrhein
- Kay Diederichs
- Graeme Winter

# Thank you!