MXCuBE web meeting 13 March 2020

Participants:

Lais do Carno (LNLS)
Bo Yi, (NSRRC Taiwan)
Michael Hellmig, (HZB).
Ivars Karpics (EMBL-HH)
Jordi Andreu (ALBA)
Martin Savko, (Soleil)
Rasmus Fogh, (GPhL) (Arrived later)
Marcus Oscarsson (ESRF)

Status reports

LNLS Have been busy with delivering the OH for their MX beamline, writing EPICS IOC's and PyQt applications for the OH instrumentation. LdC is investigating and searching for a suitable tool to create beamline synoptic. LdC have also worked on the Arinax BZoom.

NSRRC Have not been able to work on MXCuBE since the last meeting due to reprioritization of their powder diffraction beamline. This beamline will get and MD3 and an Eiger 9M. They are currently using GDA for data acquisition on the powder diffraction beamline and MXCuBE3 on the MX beamline.

HZB MH have integrated a Pilatus 3 6M detector for beamline 14.1 and replacing the old MAR detector on the fixed energy beamline with the 14.1's previous Pilatus detector. This simplifies the collect routine within MXCuBE since the they only need to consider pixel detectors. MH have observed some issues with the cam server crashing now and then (1 out of 10 times) when taking larger sequences of images (more than 100 ?). There are some changes within their team, meaning that MH will come back to work full time for MX and will also work on ISPyB.

EMBL-HH IK is just back from parental leave and have quickly picked up the work with reviewing PR's and continuing with the issues created during the december face to face developers meeting. IK is also working, together with the ISPyB collaboration, on a new micro-service oriented backend built on Flask (inspired by MXCuBE3) for ISPyB. EMBL-HH have suspended user operation because of the coronavirus epidemic.

ALBA JA have been working on the design if the Xaira beamline they will have an Eiger 2XE that they plan to use with LIMA. The detector is capable of collecting at 550Hz which requires special considerations for processing infrastructure. ALBA have decided to develop their own goniometer and JA is involved in the design of the control software.

SOLEIL The problem with the sample-detection of the diffractometer, caused by a loose cable and slip ring have been solved. MS have worked on simplifying the robot handling on PX2 resulting in a UI that is easier to use. MS have together with Vicente Ray implemented mesh scans for PX1. SOLEIL are investigating whether its feasible to develop a goniometer inhouse or if there are commercial options that suit their needs. SOLEIL recommends users to perform remote experiments due to the coronavirus outbreak.

ESRF All ESRF MX beamlines now have beam in the experimental hutches, and all except 23-1 at sample position. Radiation tests at 200 mA is currently being performed with certification for usage starting in a few weeks. The certification will take place in phases starting with ID30. The BZoom have now been integrated and most of the initial issues have been solved. Arinax have developed a Lima Tango device server for windows and integrated the zoom control with the diffractometer software. Both the diffractometer and BZoom software run on the same Windows computer simplifying installation and maintenance. The beam can currently not be seen with the BZoom due to a bug in the Lima Tango device server, Arinax is currently working on resolving it. AB and MO have been working on AbstractMotor, AbstractActuator and AbstractNstate which have been iterated with RH and IK. MO and AB have merged and tested the latest version of maser on ID30B and created a PR’s with the changes needed to get MXCuBE3 and HardwareRepository to work with the new API changes. These PR’s makes MXCuBE3 functional on ID30B and tests are now being performed to ensure all functionality, MO notes that the basic collect routines and the general behaviour of the application seems ok.

Refactoring

RH sent a mail found in Appendix A, with a few remarks and questions before the meeting. All participants agreed to the mail with the change that move_relative would be changed to set_value_relative and not set_value. MO noted that the part’s of this email that can be seen as guidelines should be added to the online documentation.

Code camp

MO had managed to get an approval to host a code camp at ESRF at the end of April, however the corona virus outbreak changed this decision as for the time being no visitors are allowed at ESRF and it's not known when this will change. MO therefore proposes to host a virtual code camp and to send out a document describing the aim and how this code camp could be conducted.

Any other business

None

Further Meetings

Developers (Virtual) Code camp, in April exact date to be decided

Appendix A - Mail from R. Fogh.

-1- AbstractActuator - Proposed general principles:

- Functions get_value, get_limits, get_state, and get_specific_state must get their values directly from the hardware.

- Each function has an internal attribute for the nominal or last-set value: _nominal_value, _nominal_limits, _state, and _specific_state.

- The internal values are set by update_value, update_limits, update_state, and update_specific_state, which are called from the hardware.
These functions will send signals if the value has changed

- Only where there is no value to be got from the hardware (mock objects, 'limits' for zoom motors, etc.) should the getter functions get their values from the internal attributes; in these cases you can use 'update_state/update_specific_state (etc.) to set the internal attributes.

- set_ functions should always set a value in the hardware where possible.
*There should be *no* set_state or set_specific_state functions.*

-2- AbstractActuator setters and movers.

I would propose that
- move, move_relative, convert to set_value(value)
- syncMove, syncMoveRelative, convert to set_value(value, timeout=number_or_None)
- _set_value should do no updating of state or internal attributes, but leave that to AbstractActuator.set_value.

If people are OK with this I can go ahead with making the change immediately.

-3- As we discuss Marcus' new AbstractNState proposal, we also need to look a little more generally at how to handle state, specific_state and NState.