MXCuBE Developer's Meeting

Whereby, September 13, 2024

Meeting Minutes

Participants

Marcus Oscarsson, Antonia Beteva, Yan Walesch, Axel Bocciiarelli(ERSF)

Andrey Gruzinov (DESY)

Elmir Yagudin, Fabien Coronis, Dominika Trojanowska (MAX IV)

Alessandro Olivo, Nicola Demitri (Elettra)

Annie Heroux (ex Elettra)

Martin Savko, Dan Costin (SOLEIL)

Rasmus Fogh (Global Phasing)

Jacob Oldfield, (ANSTO)

Nicolas Moliterrro(LNLS)

Lais do Carmo (ESS)

BoYi Liao (NSRRC)

XML- YAML conversion

RF gave an overview of the structure of the YAML-configuration system. Main points:

- It is now possible to work with a mixture of XML and YAML-configured objects (thank you, EY), but the full change-over will be a breaking change
- All hardware objects are direct attributes in their parent objects, and form a tree rooted at the beamline object
- Properties are a data structure (eventually to be implemented as Pydantic) that are in the '.config' attribute of the hardware objects.
- Some functionality will not be supported in YAML configuration, notably accessing objects by list or dictionary access (anObj[...]). Deprecated functions give a deprecation warning.

- Properties that consist of nested data structures in XML will require modification, as the data structures required for XML configuration do not map well to the simpler dictionary/list combinations used in YAML.
- Functions to note are ‘get_property(name, default=None) (alternative to direct access, but taking a default); get_by_id(id) that take a dotted string as input and returns the hardware object at that relative id (e.g. beamline.get_by_id(“detector.distance” returns beamline.detector.distance. There was a discussion whether get_object_by_role (currently deprecated) should be removed as obsolete, opaque or both, with some strong voices in favour of removal and others against.

EY gave an overview of the current status. A fully YAML-configured mock beamline has been written, tested, and works. EY is in the process of implementing full YAML configuration at µMAX, for test purposes. There are still problems being solved, most recently with channels and command objects.

DC proposed to take this opportunity to get rid of get_property and set_property functions and replace them with Python properties; there was agreement on the goal, but it seems like there are already few of these functions left, and the use of direct attribute access for child objects and Pydantic for properties should generally take care of this.

The documentation for the transition was praised (Thanks to EY), but there are still some pieces that need expanding.

AB raised the point of being able to access objects that were not in the tree of hardware objects and might not be in use everywhere with the Bliss object being the use case. RF was wondering if this could not be taken out from the configuration system and treated as a special case. The discussion should continue as in Issue.

Deployment

The deployment survey has had ten answers so far, so 3-5 are still missing. A slot will be made during the upcoming (Elettra) MXCuBE meeting to discuss this.

Working groups

The process of making working groups is still going ahead. The idea is that the WG should be self-forming, from the people who have an interest in the relevant topics, and that they should essentially speak for all of MXCuBE. This would require that meetings were minuted and that deliberations and decisions were shared with the full developers’ meeting, The final list of topics was

- Deployment and cybersecurity
- Testing

- Sample environment and centering
- Automation/UDC and Queue

The idea of making a Documentation WG was not taken up – FC noted that every WG should take care of documentation as a part of its remit.

The possibility of adding a LIMS WG was discussed.

Any Other Business

MO was mentioning the possibility of making mocks of actual hardware servers to better emulate beamline behaviour. EY has already done work on a mock for the Exporter protocol.

DC raised the question of how one could add mock samples to a real sample changer, for testing. In response it was proposed to use the mock sample changer for testing instead.