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yaIBEX - Yet Another Integrated Beamline Environment for (X)-ray Crystallography

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The MX1 and MX2 beamlines at the Australian Synchrotron are single crystal diffraction beamlines, servicing the needs of protein and chemical crystallography communities. We have developed a web-based user interface for driving data collections, called YAIBEX (Yet Another Integrated Beamline Environment for Crystallography). This system is designed to replace the collect tab on the SSRL BluICE system which is written in TCL language and was forked at deployment from the original code making it difficult to take advantage of bug fixes and improvements from the upstream. Our system utilises Flask, a minimalist Python web application framework, chosen to leverage the existing Python-based infrastructure existing at the beamline, the language's widespread use in the scientific community including existing libraries, and better support from the local Controls and Scientific Computing groups. Improvements on the existing system include integration with custom beamline libraries, user portal integration for pre-filling information and an easy, tabular layout to view a history of data collections for the current session and remote access directly in the user internet browser. Current developments include interaction with the robotic sample changer to allow mounting samples autonomously.

Keywords

crystallography gui beamline controls data acquisition

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