

Running an ultra-high throughput MX beamline entirely through Bluesky

Thursday 6 November 2025 13:50 (20 minutes)

Diamond Light Source is undergoing a major facility upgrade. One of the flagship beamlines included in this upgrade, called K04, has the ambitious target of collecting data from 10,000 samples per day and will be ran through an entirely automated unattended data collection (UDC) process. Over the last 4 years, the MX data acquisition software team have been developing the Bluesky-based system, called Hyperion, to orchestrate this UDC loop, and it is currently deployed on an existing MX beamline at DLS. Running the beamline using Hyperion already reduces the time taken per sample by approximately a factor of eight relative to the predecessor acquisition software. This talk will present a brief technical overview of the UDC loop as well as the developmental processes being used, before reflecting on the effectiveness of Bluesky for this project.

Author: SILVESTER, Ollie (Diamond Light Source)

Co-authors: Mr ORAM, Dominic (Diamond Light Source); Mr TUCK, Robert (Diamond Light Source)

Presenter: SILVESTER, Ollie (Diamond Light Source)

Session Classification: Community Talks